



INSTALLATION MANUAL

Product Name	GT Supercharger System
Product Use	Automobile Part
Part Number	12001-AT007
Applicable Model Year(s)	TOYOTA VELLFIRE / 2008/05~2012/12
Make/Model	DBA-GGH20W / GGH25W ※In order to install the kit to vehicles equipped with pre-crash safety system, relocation of fluid cooler core is required.
Engine Code	2GR-FE

※This application was confirmed by December 2012.



REVISION OF MANUAL

Rev. Number	Date	Manual Number	Details
3-3.01	2012/8	E04215-T57050-00	1 st Edition
3-3.02	2012/12	E04215-T57051-00	Number of parts changed. Instruction added.

Published in December, 2012 by HKS Co., Ltd. (Unauthorized reproduction is strictly prohibited.)

REMARKS

- HKS will not be responsible for any and all damages to the vehicle's engine or other supplemental devices through the use of this product.
- This kit (12001-AT007) includes the HKS GT Supercharger System Complete Kit base warranty.
- This kit includes a specific preset sub-computer; this product is best used with the following parts on the Recommended Parts List.
 - Use of inapplicable components will void the product warranty.
 - Using inapplicable components may cause serious damage to the engine.

Required Items for HKS GT Supercharger System

Spark Plug	HKS Super Fire Racing M40iL or M45iL
Engine Oil	HKS Engine Oil Series (Viscosity must be higher than 40)

- If the product is used under the following conditions, the warranty will be void.

Conditions/Usage That Voids Warranty

The impeller's maximum RPM should not exceed 110,000 rpm. HKS will not be responsible for any damage caused by the use of this product beyond the impeller's maximum RPM limit.

○Required Modifications

Parts	Modification	Material	Remarks
LLC Reserve Tank	Partially cut	Resin	
Front Grill	Removal of back plate	Resin	
Radiator Cover	Partially cut	Resin	
Back of Glove compartment	Drill a hole	Resin	To connect the F-CON harness.

○Required Special Tool

Tool	Remarks
Flathead Precision Screwdriver	Tip width is approximately 1mm.
Short Type Hex Wrench	5mm ·6mm

○Required Items

Parts	Remarks
Spark Plug	HKS Super Fire Racing M40iL or M45iL
Engine Oil	HKS Engine Oil Series (Viscosity must be higher than 40)

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NOTICE

This manual assumes that you have and know how to use the tools and equipment necessary to safely perform service operations on your vehicle. This manual assumes that you are familiar with typical automotive systems and basic service and repair procedures. Do not attempt to carry out the operations shown in this manual unless these assumptions are correct. Always have access to a factory service manual. To avoid injury, follow the safety precautions contained in the factory service manual.

ATTENTION

- This manual indicates items you need to pay attention to in order to install this product safely and lists precautions to avoid any possible damage and/or accidents.
- This product is an automobile part. Do not use for any other purposes.
- HKS will not be responsible for any damage caused by incorrect installation and/or use, or use after modification and/or dismantling of this product.
- This product was designed for installation on a specific factory vehicle.
- The specifications of this product are subject to change without notice.
- The instructions are subject to change without notice. Make sure to refer to the most recent instructions.

SAFETY PRECAUTIONS

The following precautions for use of this product are to prevent possible accidents and/or injuries and for proper use.



WARNING: Indicates risk of serious injury and/or possible death.



CAUTION: Indicates risk of serious injury and/or possible property damage (i.e. vehicle damage as from use of this product.).

PARTS LIST

No.1

NO.	DESCRIPTIONS	QT	NO.	DESCRIPTIONS	QT
A1	GTS7040	1	D7	6-pin Connector (For S Terminal)	2
A2	S/C Bracket No.1	1	D8	Joint Pipe 16mm	1
A3	S/C Bracket No.2	1			
A4	S/C Bracket No.3	1	E1	Fluid Tank	1
A5	S/C Bracket No.4	1	E2	Fluid Tank Bracket	1
A6	Spacer D=20 d=10 t=6	1	E3	Silicone Hose 70mm x L20	2
A7	Spacer D=20 d=10 t= 4	1	E4	Hose Clamp #48	2
A8	Spacer D=20 d=10 L=34	2	E5	Traction Fluid *	1
A9	Idler Pulley 55mm	2	E6	Hose Assembly 10mm (w/ filter)	1
A10	Idler Pulley 60mm	3	E7	Hose Assembly 8mm (L=3000)	1
A11	S/C Gasket 70mm	1	E8	Hose Clamp 10mm	3
A12	S/C Gasket 60mm	1	E9	Hose Clamp 8mm	6
A13	Solenoid Valve Bracket (t=3)	1	E10	Joint Pipe 8mm-10mm	1
A14	Belt 7PK2565	1			
			F1	Fluid Cooler Core	1
B1	Idler Pulley Bracket No.1	1	F2	Fluid Cooler Bracket No.1	1
B2	Idler Pulley Bracket No.2	1	F3	Fluid Cooler Bracket No.2	1
B3	Idler Pulley Bracket No.3	1	F4	Spacer D=20 d=10 t=5	1
B4	Hex Spacer M6	1			
B5	Hex Spacer – M10	1	G1	Battery Tray	1
B6	Spacer D=20 d=10 t=33	1	G2	Battery Mount Bolt	1
B7	Spacer D=20 d=10 t=9	2	G3	Battery Mount Bracket	1
B8	Spacer D=20 d=10 t=8	1			
B9	Stud Bolt M10-M10	1	H1	Intercooler	1
B10	Spacer D=20 d=10 L=56.6	1	H2	Intercooler Bracket No.1	1
			H3	Intercooler Bracket No.2	1
C1	Banjo #4 16mm	2	H4	Intercooler Bracket No.3	1
C2	Hose Assembly #4	1	H5	Intercooler Air Guide	1
C3	VVT Oil Hose Bracket (t=2)	1			
C4	Copper Washer 16mm t=2.0	1	I1	Inlet Pipe	1
C5	Copper Washer 16mm t=1.0	3	I2	Outlet Pipe	1
			I3	Blow-off Valve	1
D1	Suction Pipe	1			
D2	Airflow Adapter	1	J1	One Way Valve	1
D3	Air Cleaner 200mm-80mm	1	J2	Pressure Sensor	1
D4	Bracket 80mm	1	J3	Air Filter 4mm	1
D5	Air Cleaner Bracket	1	J4	T-fitting 4mm-4mm-4mm	1
D6	Airflow Extension Harness	1	J5	Hose 4mm (L=2000)	1

PARTS LIST

No.2

NO.	DESCRIPTIONS	QT	NO.	DESCRIPTIONS	QT
K1	F-CON iS	1	M21	Flush Bolt M8 L=35	1
K2	OSC	1	M22	Flush Bolt M8 L=65	2
K3	F-CON iS Communication Cable	1	M23	Washer M4	2
K4	INJ Adapter	1	M24	Washer M6	20
K5	F-CON Harness	1	M25	Washer M6 Major Dia.	1
K6	6-pin Connector (For L Terminal)	1	M26	Washer M8	25
K7	3-pin Connector (For L Terminal)	2	M27	Washer M10	10
K8	10-pin Connector (For S Terminal)	1	M28	Flange Nut M6	15
K9	2-pin Connector (For S Terminal)	1	M29	Flange Nut M8	15
K10	Dummy Plug	3	M30	Flange Nut M10	6
L1	Corrugated Tube	2	N1	Silicone Hose 50mm L=70	1
L2	Tie Wrap L	20	N2	Silicone Hose 60mm w/ Cushion	2
L3	Tie Wrap M	20	N3	Silicone Hose 80mm-60mm	1
L4	Tie Wrap S	20	N4	Silicone Hose 80 L=55	2
L5	Thermo Tape (100×100)	1	N5	Hose 16mm L=150	1
L6	Airtight Tape L=300	5	N6	Hose 22mm L=500mm	1
			N7	Hose Clamp 16mm	2
M1	Cap Bolt M4 L=8	2	N8	Hose Clamp #16	2
M2	Cap Bolt M6 L=15	10	N9	Hose Clamp #28	2
M3	Cap Bolt M6 L=18	1	N10	Hose Clamp #36	5
M4	Cap Bolt M6 L=25	3	N11	Hose Clamp #48	5
M5	Cap Bolt M8 L=12	4			
M6	Cap Bolt M8 L=15	3	O1	Installation Manual	1
M7	Cap Bolt M8 L=20	4	O2	Installation Manual (to connect F-CON Harness)	1
M8	Cap Bolt M8 L=22	4	O3	Instruction Manual	1
M9	Cap Bolt M8 L=30	1			
M10	Cap Bolt M8 L=35	3			
M11	Cap Bolt M8 L=40	3			
M12	Cap Bolt M10 P1.5 L=20	1			
M13	Cap Bolt M10 P1.25 L=30	1			
M14	Cap Bolt M10 P1.25 L=35	2			
M15	Cap Bolt M10 P1.25 L=45	2			
M16	Cap Bolt M10 P1.25 L=50	1			
M17	Cap Bolt M10 P1.25 L=60	1			
M18	Cap Bolt M10 P1.25 L=90	1			
M19	Hex Bolt M6 L=15	2			
M20	Button Bolt M6 L=10	4			

※Contact your dealer for spare parts.
 ※Extra bolts, nuts, and washer may be included. Please keep them as spare parts.

MAIN PARTS (1)



A1: GTS7040



A2: S/C Bracket No.1



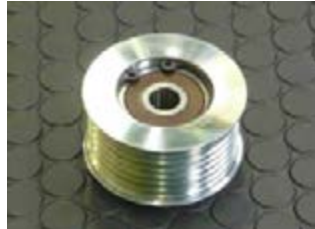
A3: S/C Bracket No.2.



A4: S/C Bracket No.3



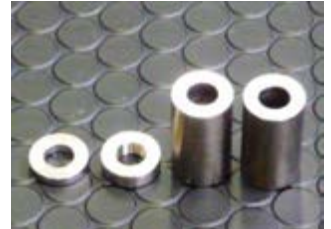
A5: S/C Bracket No.4



A9: Idler Pulley 55mm



A10: Idler Pulley 60mm



Spacer
A6: D=20 d=10 t=6 (Middle)
A7: D=20 d=10 t=4 (Left)
A8: D=20 d=10 L=34 (Right)



A11: S/C Gasket 70mm
A12: S/C Gasket 60mm



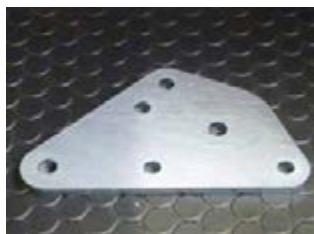
A13: Solenoid Valve Bracket



A14: Belt 7PK2565



B1: Idler Pulley Bracket No.1



B2: Idler Pulley Bracket No.2



B3: Idler Pulley Bracket No.3



B5: Hex Spacer M10 (Left)
B4: Hex Spacer M6 (Right)



Spacer
B7: D=20 d=10 t=9 (Left)
B8: D=20 d=10 t=8 (Middle)
B6: D=20 d=10 L=33 (Right)



B09: Stud Bolt M10-M10



B10: Spacer
D=20 d=10 t=56.6



C1: Banjo #4 16mm
C4: Cu Washer 16mm t=2
C5: Cu Washer 16mm t=1



C2: Hose Assy #4



C3: VVT Oil Hose Bracket

MAIN PARTS (2)



D1 : Suction Pipe



D2 : Airflow Adapter



D3 : Air Cleaner
200mm-80mm



D4 : Bracket 80mm



D5 : Air Cleaner
Bracket



D6 : Airflow Extension
Harness



D7 : 6-pin Connector



D8 : Joint Pipe 16mm



E1 : Fluid Tank



E2 : Fluid Tank Bracket



E5 : Traction Fluid



E10 : Joint Pipe
8mm-10mm



F1 : Fluid Cooler Core



F2 : Fluid Cooler Bracket
No.1



F3 : Fluid Cooler Bracket
No.2



F4 : Spacer
D=20 d=10 t=5



G1 : Battery Tray

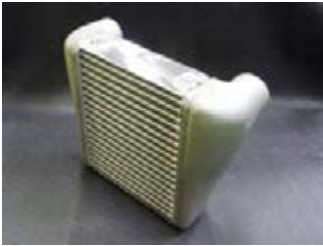


G2 : Battery Mount Bolt



G3 : Battery Mount Bracket

MAIN PARTS (3)



H1 : Intercooler



H2 : Intercooler Bracket No.1



H3 : Intercooler Bracket No.2



H4 : Intercooler Bracket No.3



H5 : Intercooler Air Guide



I1 : Inlet Pipe



I2 : Outlet Pipe



I3 : Blow-off Valve



J1 : One Way Valve



J2 : Pressure Sensor
J3 : Air Filter 4mm



J4 : T-fitting
4mm-4mm-4mm



K1 : F-CON iS



K2 : OSC



K3 : F-CON iS
Communication Cable



K4 : INJ Adapter



K5 : F-CON Harness



K6 : 6-pin Connector
(For L Terminal)



K7 : 3-pin Connector
(For L Terminal)



K8 : 10-pin Connector
(For S Terminal)



K9 : 2-pin Connector
(For S Terminal)



K10 : Dummy
Plug

1. REMOVAL OF FACTORY PARTS

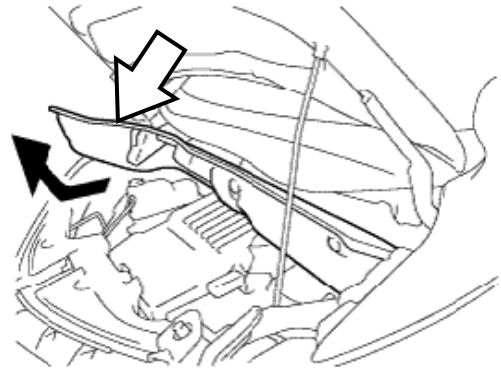
Refer to this instruction manual and the factory service manual to remove the factory parts.

- A garage jack or scissors jack is required.
- Turn on the ignition. Leave it at least for 6 minutes for the HDD navigation setting and memory storage.
- Disconnect the cable from the battery.
- Lift the vehicle.

- Remove the left and right tires.
- Remove the radiator cover.
- Remove the wiper motor and link assembly.
- Remove the engine under cover.



- Remove the outside cowl top panel.



- Remove the battery.
- Remove the air cleaner box and air cleaner hose.
- Disconnect the airflow sensor from the air cleaner box.

- Remove the battery tray and air cleaner duct.



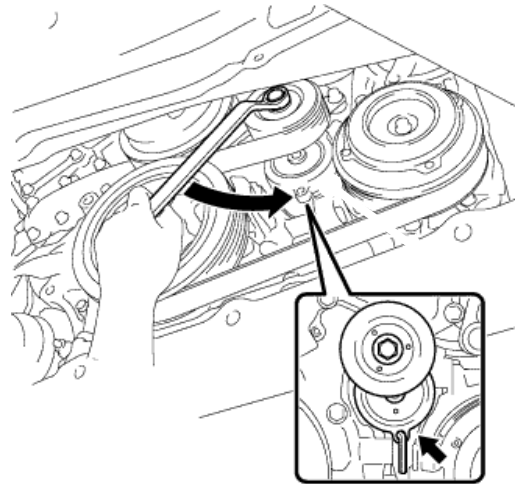
- Remove only the front bumper side of the left front inner fender; then, remove the air cleaner duct resonator.
-

- Remove the battery mounts.

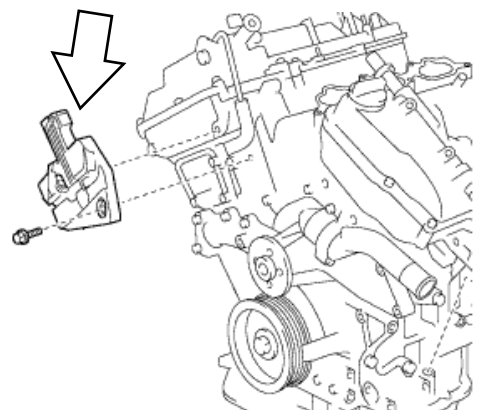


- Remove the intake air surge tank. Replace the spark plugs with HKS' spark plugs. (HKS' spark plugs are not included in this kit. They must be purchased separately.)
 - Reinstall the intake air surge tank.
-

- Hold the tensioner pulley set bolt with a tool, and rotate the tensioner to the left to lower the tension.
 - ※ Rotate the bolt to the right to loosen it.
- Remove the belt holding the tensioner with a 5mm hex wrench as illustrated in the diagram.



- Remove the timing gear cover.



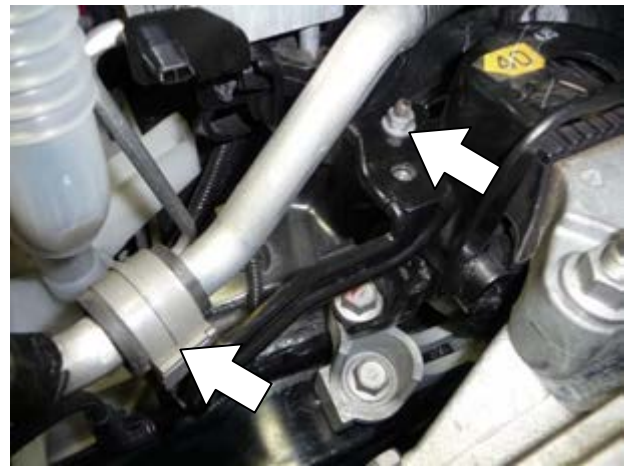
- Remove the radiator reservoir tank.



- Remove the radiator reservoir tank bracket.



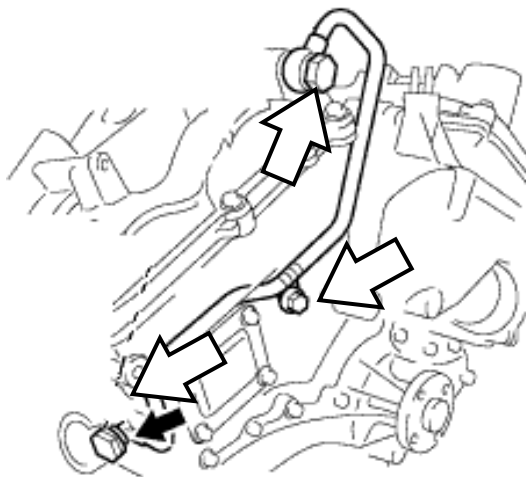
- Remove the cooler pipe bracket fixing nut.
- Remove clamps from the cooler pipe bracket.



- Disconnect the grounding wire.
- Remove 2 brackets.
- Remove 2 of M8 stud bolts.
- Temporarily install the M8 P=1.25 bolt to the stud bolt hole. If the hole is too small, adjust the thread using the M8 P=1.25 tap.



- Remove the VVT-i oil pipe on the right bank side.
 - When removing the banjo bolt, make sure not to drop the oil filter attached to the banjo bolt on the head cover side.
 - When removing the bolt on the engine block side, make sure to catch the remaining fuel from the bolt hole with a container.
- Make sure to cover the bolt hole so no foreign object gets inside the engine through the hole.

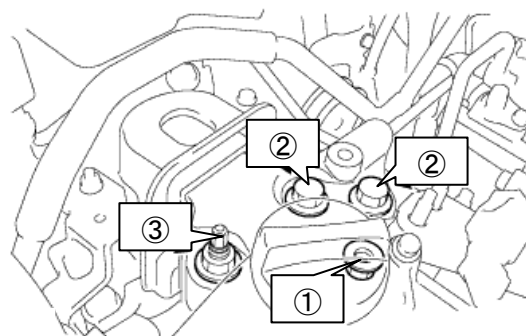


•Oil Filter attached to Banjo Bolt's Tip

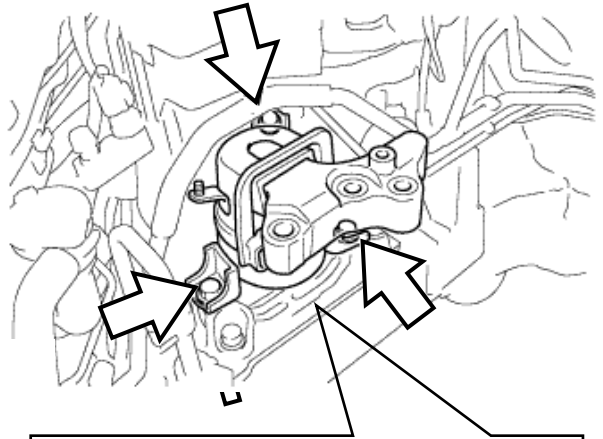
2. INSTALLATION OF IDLER PULLEY BRACKET



- Slightly lift the engine with a garage jack or scissors jack. Make sure to protect the oil pan from being deformed using a wooden board.
- Remove the nut ① on the back of the engine mount.
- Remove 2 bolts ② on the upper side of the engine mount.
- Remove the nut and stud bolt ③.
 - ※ Make sure to adjust the engine position using a garage jack or scissors jack to prevent excessive force on the bolt.



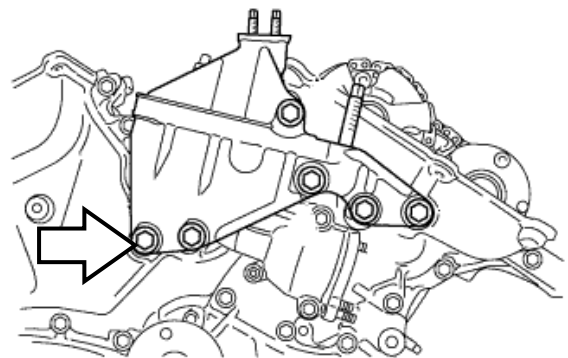
- Remove 3 bolts on the lower side of the engine mount.
- Remove 2 bolts from the engine mounting spacer.
- Remove the engine mount spacer. Make sure to leave the engine mount to the engine compartment.



- Remove the M10 bolt that is indicated by an arrow in the diagram. Install the Stud Bolt M10-M10 P=1.25 instead. Make sure the bolt side that the thread length is 25mm (P=1.25) is installed to the engine side.



•Stud Bolt M10-M10



- Install the Hex Spacer M10 to the Stud Bolt M10-M10. Make sure to install the spacer to the side that the thread length is 17mm (P=1.5).



•Hex Spacer M10



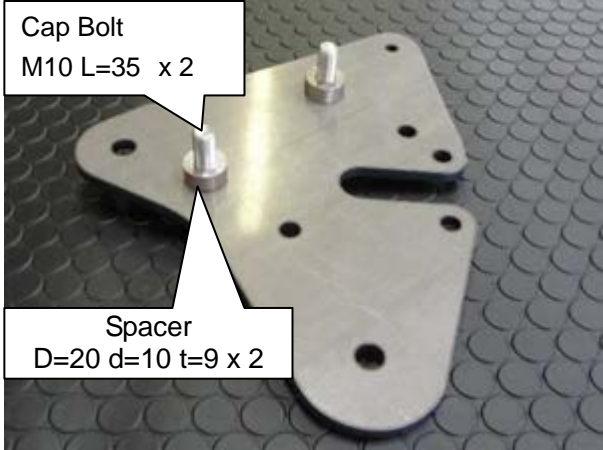
Tightening Torque N·m (kgf·m)

T = 54 (5.51)

- Install the Idler Pulley 60mm to the Idler Pulley Bracket No.1.



- Idler Pulley Bracket No.1
- Idler Pulley 60mm (2 pcs.)
- Spacer D=20 d=10 t=9 (2 pcs.)
- Cap Bolt M10 L=35 (2 pcs.)
- Washer M10 (2 pcs.)
- Flange Nut M10 (2 pcs.)



Cap Bolt
M10 L=35 x 2

Spacer
D=20 d=10 t=9 x 2



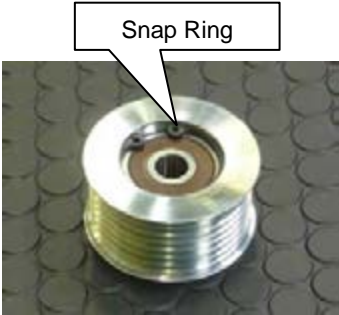
Idler Pulley 60mm x 2

Tightening Torque N·m (kgf·m)
T = 47 (4.79)

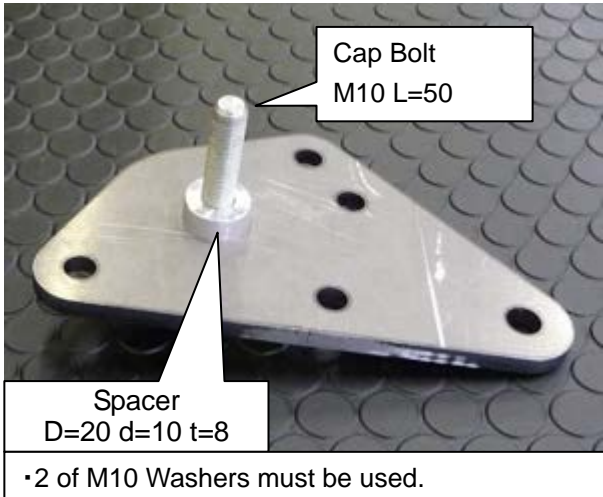
- Install the Idler Pulley 55mm to the Idler Pulley Bracket No.2.



- Idler Pulley Bracket No.2
- Idler Pulley 55mm
- Spacer D=20 d=8 t=8
- Cap Bolt M10 L=50
- Washer M10 (2 pcs.)
- Flange Nut M10



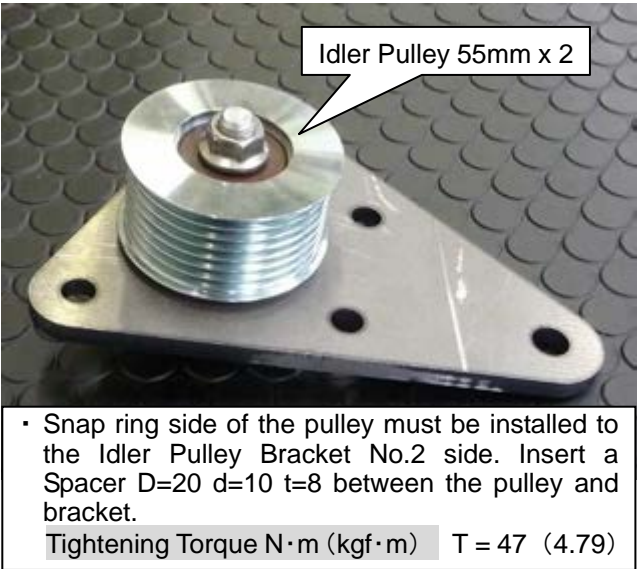
Snap Ring



Cap Bolt
M10 L=50

Spacer
D=20 d=10 t=8

• 2 of M10 Washers must be used.



Idler Pulley 55mm x 2

• Snap ring side of the pulley must be installed to the Idler Pulley Bracket No.2 side. Insert a Spacer D=20 d=10 t=8 between the pulley and bracket.
Tightening Torque N·m (kgf·m) T = 47 (4.79)

○ Install the Idler Pulley Bracket No.1.



- Hex Spacer M6
- Spacer D=20 d=10 L=33
- Cap Bolt M10 L=60
- Cap Bolt M10 P=1.5 L=20
- Cap Bolt M6 L=18
- Washer M10 (2 pcs.)
- Washer M6

※ Make sure the spacer's size is L=33 not L=34..

• Remove the M6 bolt.



• Install the Hex Spacer M6.

Tightening Torque N·m (kgf·m)

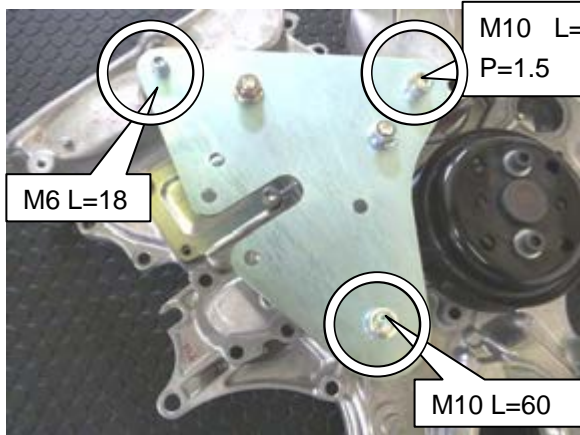
T =10 (1.02)



• Install the Idler Pulley Bracket No.1.

– Lower the engine to install the Bolt M10 L=60.

– Temporarily install the bolts.



- Lift the engine and install the Bolt M6 L=18.
 - Lift the engine to secure adequate space to install the bolts.
 - Temporarily install the bolts.
- Install the Bolt M10 P=1.5 L=20. Tighten all bolts with appropriate torque.
- Tighten the Bolt M6 L=18.
- Lower the engine again to install the Bolt M10 L=60. Tighten the bolt.

Tightening Torque N·m(kgf·m)

M10 :T = 47 (4.79)

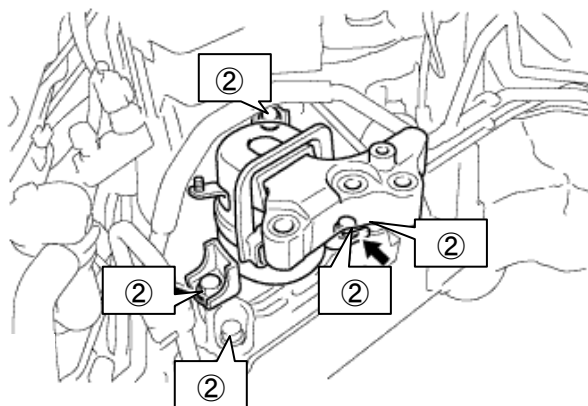
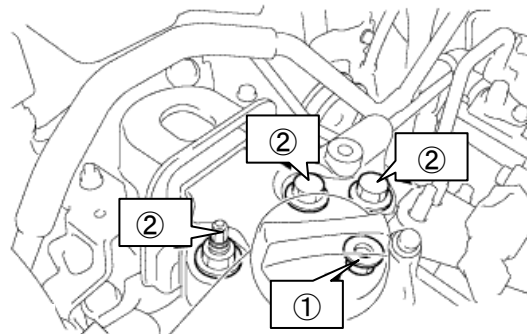
M6 :T =10 (1.22)

- Lift the engine and reinstall the engine mounting spacer and engine mount.

Tightening Torque N·m(kgf·m)

① T = 52 (5.30)

② T = 95 (9.69)



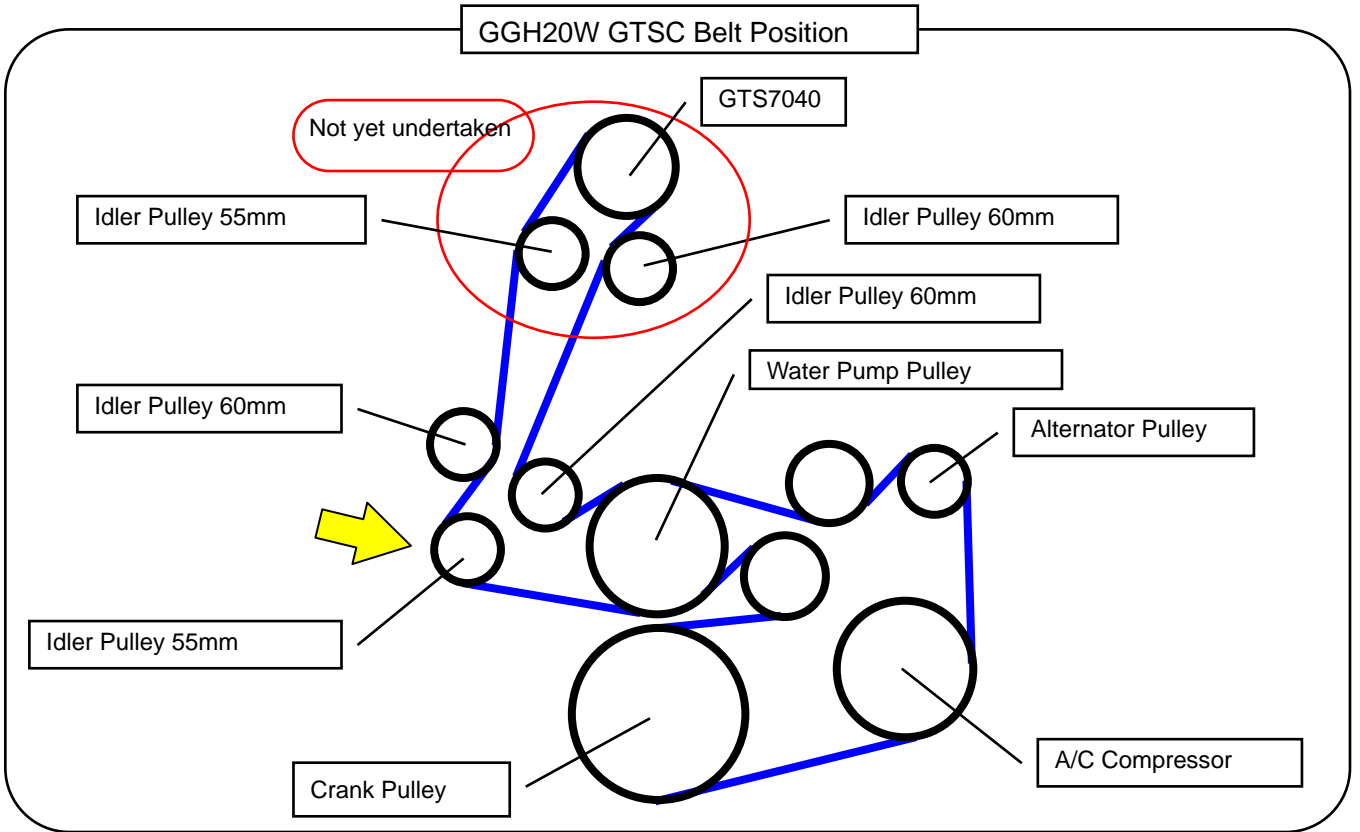
- Install the Idler Pulley Bracket No.2 and No.3.

- Place the Belt as the factory belt was placed.



•Belt 7PK2526

- To place the belt as shown in the diagram, install the Idler Pulley Bracket No.2 with the Belt placed on the Idler Pulley 55mm.



- Place the Belt on the factory parts in the same way as the factory belt was placed.



- Pull out the belt on the water pump pulley as shown in the diagram above; then place the belt on the Idler Pulley 55mm.

- Pull out the belt from between 2 Idler Pulley 60mm as shown in the diagram.

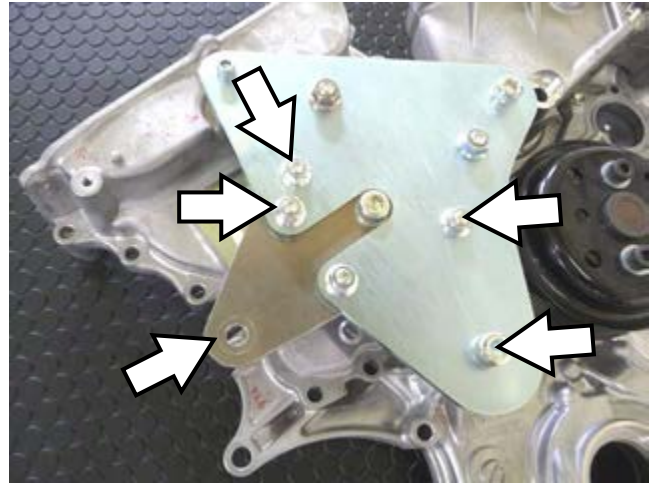


- Install the Idler Pulley Bracket No.2.
 - Slide the bracket between the Idler Pulley Bracket No.1 and the timing tune cover when installing the bracket No.2.
 - Insert the bolt from the engine side.

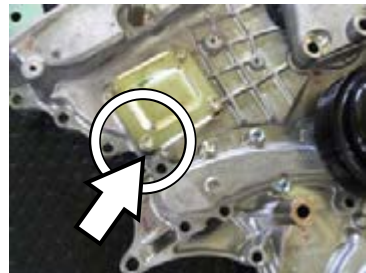
- Cap Bolt M8 L=22 (4 pcs.)
- Washer M8 (4pcs.)
- Flange Nut M8 (4 pcs.)

Tightening Torque N·m(kgf·m)

$$T = 21 \quad (2.14)$$



- Reinstall the M6 bolt to the original position.



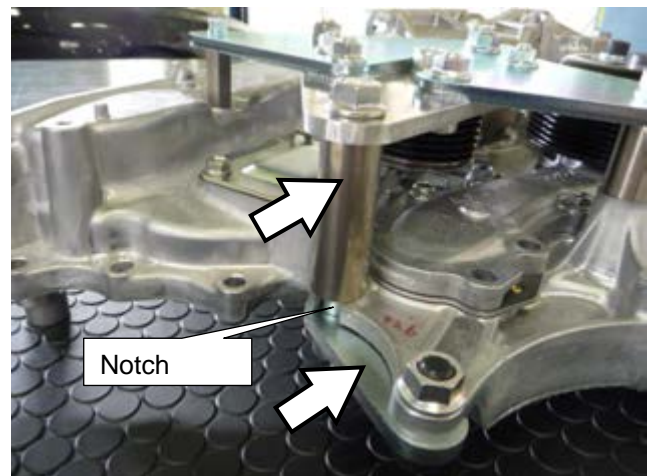
- Install the Idler Pulley Bracket No.3 and Spacer D=20 d=10 L=56.6.



- Idler Pulley Bracket No.3
- Spacer D=20 d=10 L=56.6
- Cap Bolt M10 L=90
- Cap Bolt M10 L=30
- Washer M10 (3 pcs.)
- Flange Nut M10 (2 pcs.)

Tightening Torque N·m(kgf·m)

$$T = 47 \quad (4.79)$$



- When installing the Cap Bolt M10 L=90, use 2 of Washer M10 and place the cap toward the engine side. Temporarily assemble 2 of Washer M10, Idler Pulley Bracket No.3, and Spacer D=20 d=10 L=56.6; then, insert them to the notch.

3. INSTALLATION OF VVT-i OIL HOSE



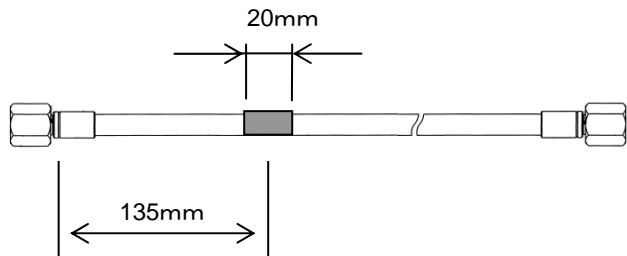
- Remove the clamp from the factory oil pipe.



- Cut the provided Thermo Tape to 35mm x 20mm and affix it to the Hose Assembly #4 as shown in the diagram below.



• Hose Assy #4
 • Thermo Tape(100x100)



- Install the removed factory clamp on the Thermo Tape as shown in the diagram on the right.
- Temporarily install the VVT Oil Bracket to the factory clamp.



• VVT Oil Hose Bracket (t=2)
 • Hex Bolt M6 L=15
 • Washer M6
 • Flange Nut M6



- Install the Banjo to the Hose Assembly #4.
- Install the provided Banjo and Hose Assembly #4 to the engine block using the factory banjo bolt.

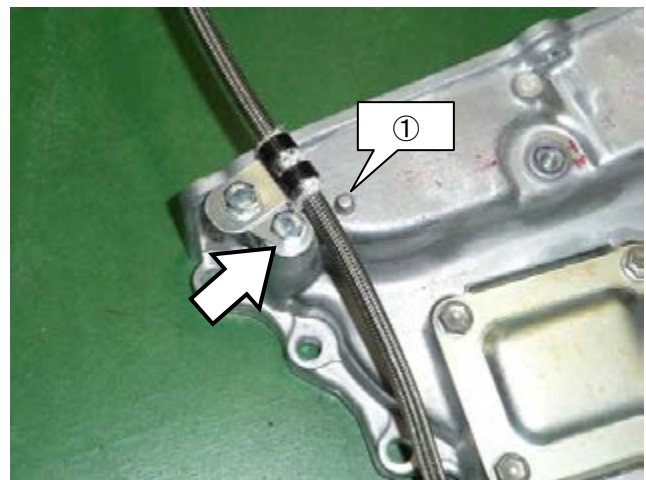


- Banjo #4 16mm
- Cu Washer 16mm t=1 (2 pcs.)



- Secure the Hose Assembly #4.
 - Route the hose between ① nub and M6 boss.
 - Tighten the Hex Bolt and install the VVT Oil Bracket.

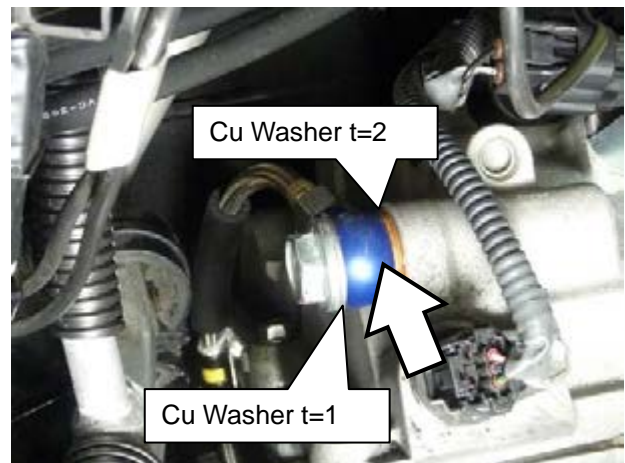
- Hex Bolt M6 L=15
- Washer M6



- Install the provided Banjo on the right bank head using the factory banjo bolt.
- Install the factory oil filter to the provided Banjo's tip as the oil filter was installed to the factory banjo.
 - Install the provided Cu Washer t=2 to the cylinder head's side and the Cu Washer t=1 to the opposite side.



- Banjo #4 16mm
- Cu Washer 16mm t=2
- Cu Washer 16mm t=1



Tightening Torque N·m (kgf·m)

T = 21 (2.14)

- Install the Hose Assembly #4 to the factory banjo.


4. INSTALLATION OF GTS7040

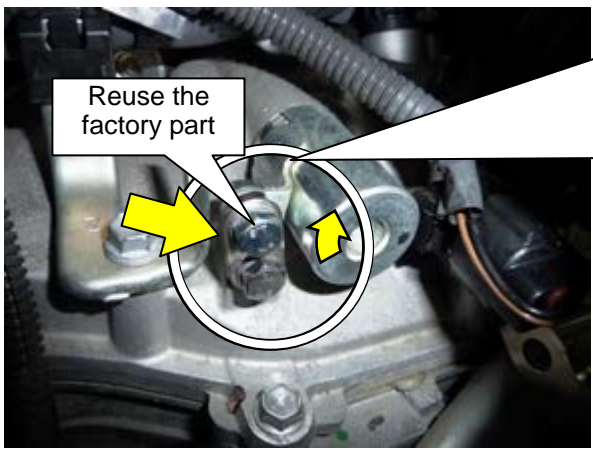


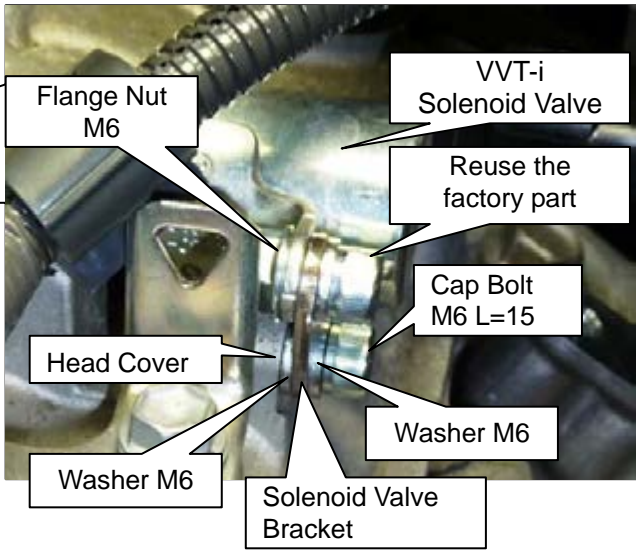
- Reinstall the removed grounding wire to the position circled in the diagram on the right.



- Rotate the VVT-i solenoid valve on the left bank intake side, and secure the valve using the provided Solenoid Valve Bracket.

	<ul style="list-style-type: none"> • Solenoid Valve Bracket (t=3) • Cap Bolt M6 L=15 • Washer M6 (2 pcs.) • Flange Nut M6
---	---



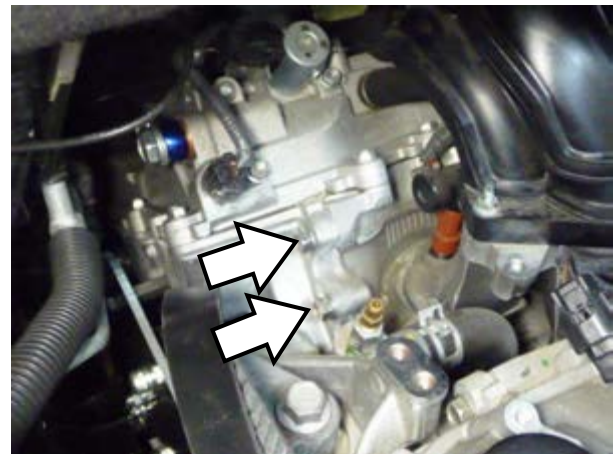


- Flange Nut M6
- VVT-i Solenoid Valve
- Reuse the factory part
- Cap Bolt M6 L=15
- Head Cover
- Washer M6
- Washer M6
- Solenoid Valve Bracket

- Secure the wires from the VVT-I solenoid valve using a harness tape as shown in the diagram on the right.



- Remove 2 M8 bolts.



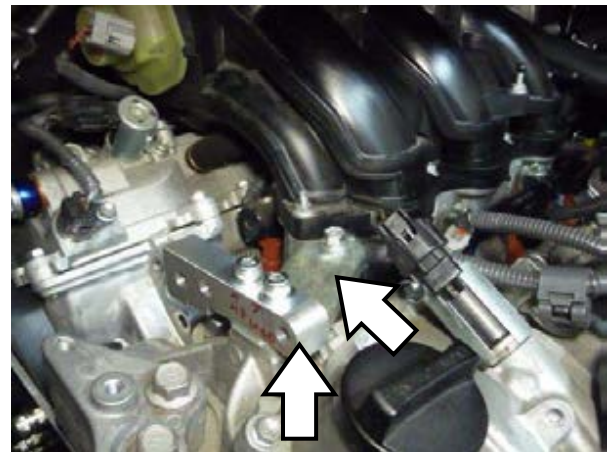
- Temporarily install the factory bracket.

- Cap Bolt M8 L=30
- Washer M8

- Temporarily install the S/C Bracket No.2.



- S/C Bracket No.2
- Cap Bolt M8 L=40 (2 pcs.)
- Washer M8 (2 pcs.)

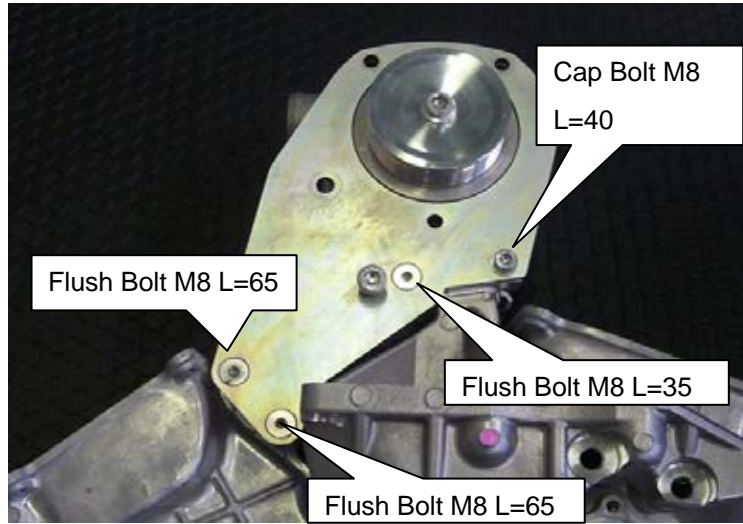
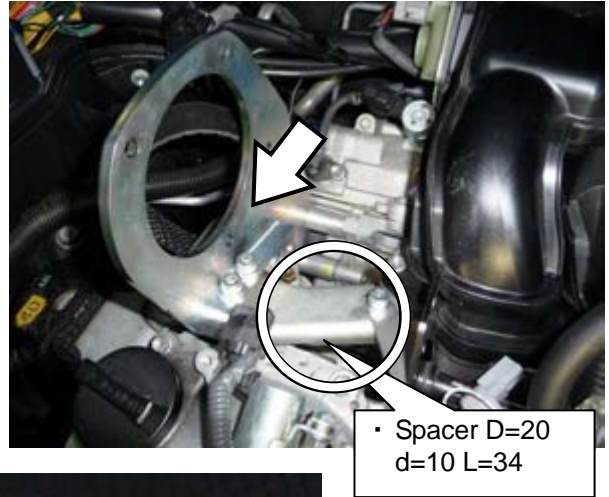


- Temporarily install the S/C Bracket No.1.



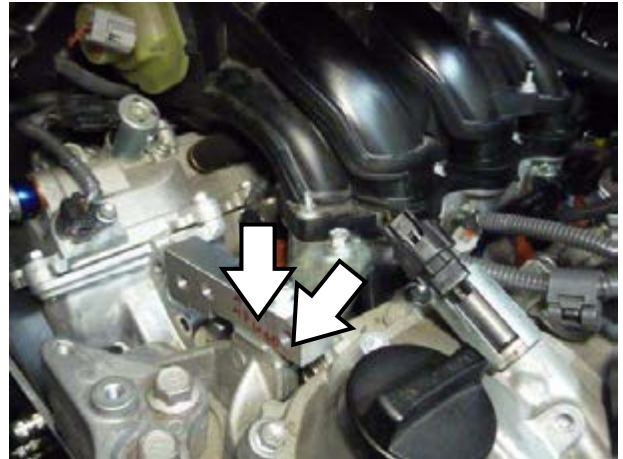
- S/C Bracket No.1
- Spacer D=20 d=10 L=34 (2 pcs.)
- Cap Bolt M8 L=40
- Flush Bolt M8 L=35
- Flush Bolt M8 L=65 (2 pcs.)
- Washer M8
- Flange Nut M8 (2 pcs.)

- Temporarily install each bolt. Make sure to tighten each bolt till there is no play left. Determine the position of the S/C Bracket No.1, No.2, and Spacer D=20 d=10 L=34. Make sure there is no gap between each matching face.



- After the position was determined, tighten the S/C Bracket No.2.

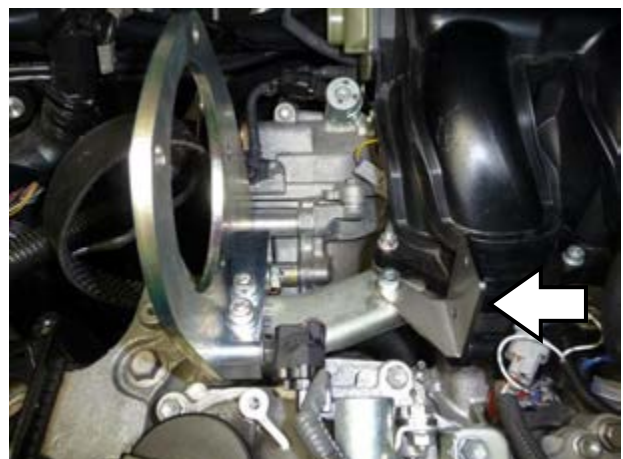
Tightening Torque N·m(kgf·m)
 $T = 20 (2.04)$



- Temporarily install the S/C Bracket No.4 and No.1. Make sure they become parallelized.



- S/C Bracket No.4
- Cap Bolt M8 L=30
- Washer M8



- Remove the S/C Bracket No.1.

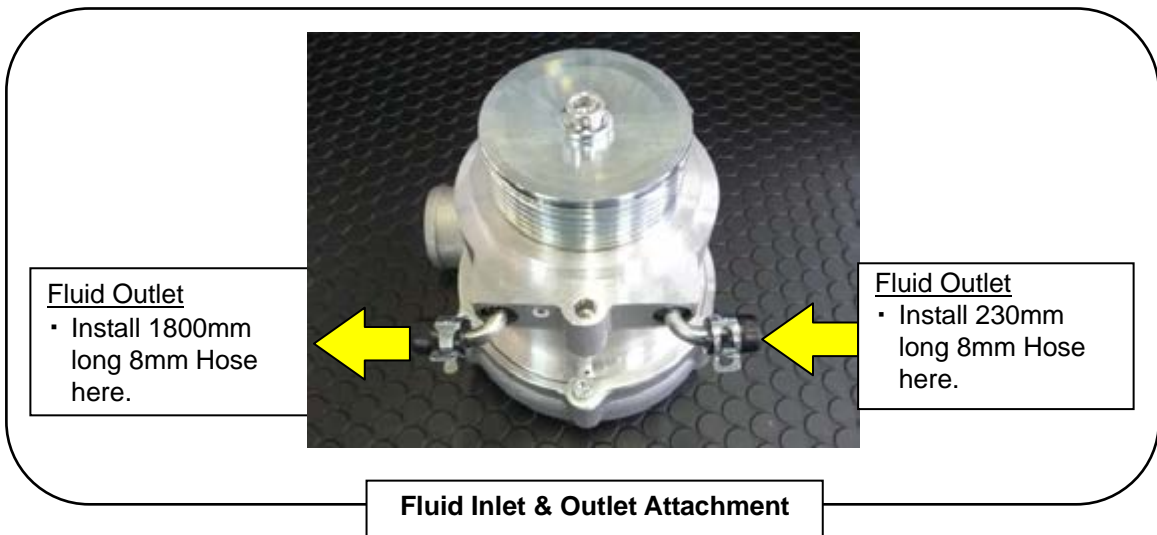
- Cut the 8mm Hose to 230mm. Install the cut hose to the fluid inlet of GTS7040 (※1). Cover the opening of the hose end with a masking tape so no foreign object gets inside the engine through the hose.

(※1 The fluid inlet attachment's diameter of the conventional supercharger was 10mm; however, the attachment diameter of this kit was changed to 8mm.)


- Hose 8mm
- Hose Clamp 8mm

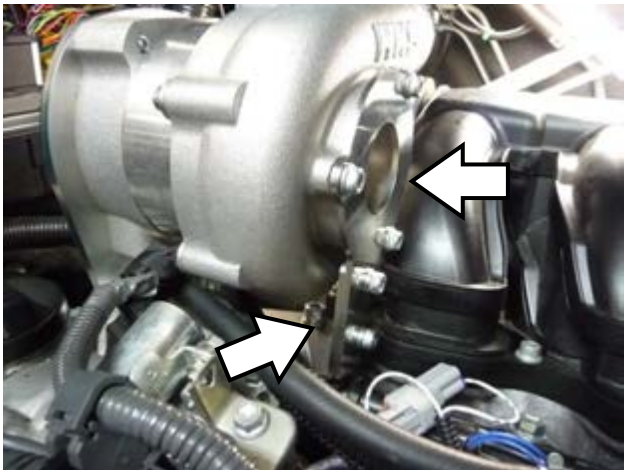
- Cut the 8mm Hose to 1800mm. Install the cut hose to the fluid outlet of GTS7040. Cover the opening of the hose end with a masking tape so no foreign object gets inside the engine through the hose.

- 
- GTS7040
 - Hose 8mm
 - Hose Clamp 8mm



- Temporarily install the S/C Bracket No.2 to the GTS7040.

- 
- S/C Bracket No.3
 - Gasket (60mm)
(Install temporarily)
 - Cap Bolt M6 L=15 (3 pcs.)
 - Washer M6 (3 pcs.)



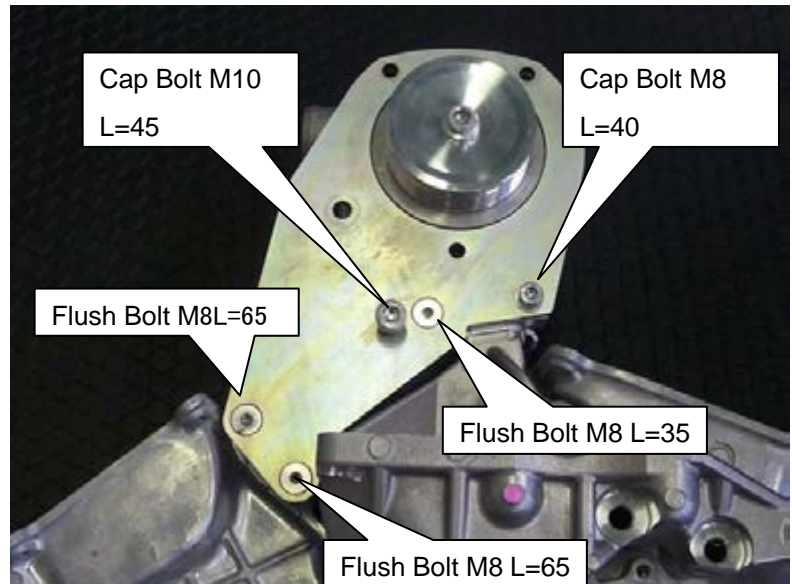
- Temporarily install the S/C Bracket No.3 to No.4.

- Cap Bolt M6 L=15 (2 pcs.)
- Washer M6 (2 pcs.)
- Flange Nut M6 (2 pcs.)

- Install the S/C Bracket No.1.



- S/C Bracket No.1
- Spacer D=20 d=10 L=34 (2 pcs.)
- Cap Bolt M8 L=40
- Cap Bolt M10 L=45
- Flush Bolt M8 L=35
- Flush Bolt M8 L=65 (2 pcs.)
- Washer M8
- Flange Nut M8 (2 pcs.)



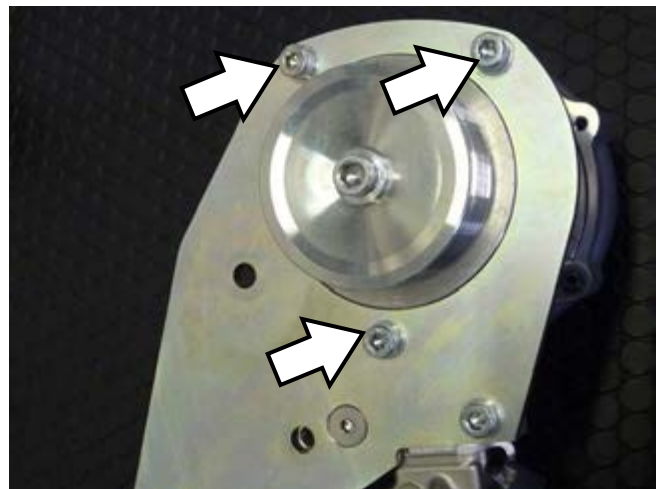
- After temporarily installing the Cap Bolt M10 L=45, temporarily install each bolt. Determine the position of the S/C Bracket No.1. Make sure the Cap Bolt M10 L=45 can be taken out.
- Tighten the bolts.

Tightening Torque N·m(kgf·m)
M8 Bolts: T = 20 (2.04)

- Install the GTS7040 to the S/C Bracket No.1.

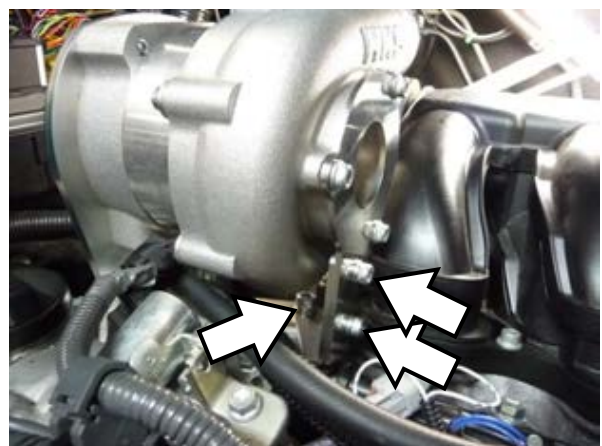
- Cap Bolt M8 L=35 (3 pcs.)
- Washer M8 (3 pcs.)

Tightening Torque N·m(kgf·m)
T = 29 (3.00)



- After confirming that the S/C Bracket No.3 and No.4 are installed without any gap between the GTS7040 compressor inlet surface, tighten the M8 and M6 Bolts of the S/C Bracket No.4.

Tightening Torque N·m(kgf·m)
M8 Bolts: T = 201 (2.04)



- Remove the Cap Bolt M10 L=45 that was temporarily installed.
Install the Idler Pulley 60mm.



- Idler Pulley 60mm
- Spacer D=20 d=10 t=4
- Cap Bolt M10 L=45
- Washer M10

Tightening Torque N·m(kgf·m)
T = 47 (4.79)

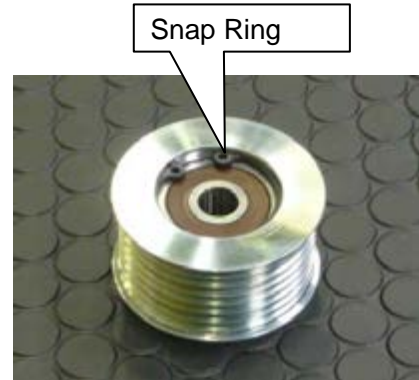


- Install the Idler Pulley 55mm.
 - Pulley's snap ring side must be toward the S/C Bracket's side. Insert the Spacer D=20 d=10 t=6 between the pulley and bracket.



- Idler Pulley 55mm
- Spacer D=20 d=10 t=6
- Cap Bolt M10 L=45
- Washer M10
- Flange Nut M10

Tightening Torque N·m(kgf·m)
T = 47 (4.79)



- Temporarily remove the belt on the A/C compressor, and put the S/C pulley on the belt.



5. INSTALLATION OF SUCTION PIPE

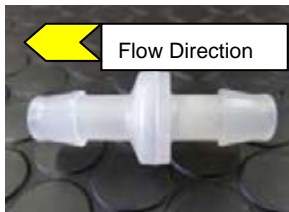
- Remove 3 of Cap Bolt M6 L=15 temporarily installed.
Install the provided Suction Pipe.



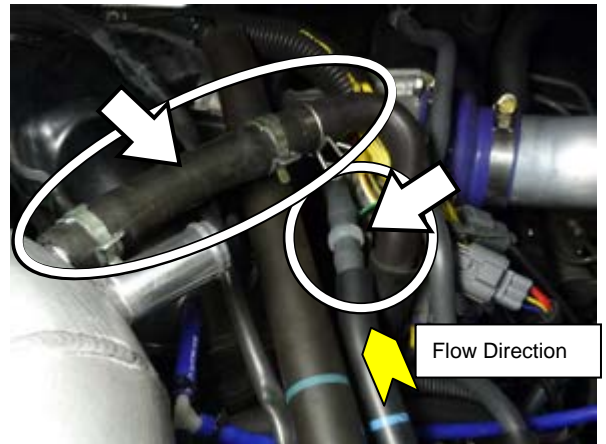
- Suction Pipe
- Gasket 70mm
- Cap Bolt M6 L=25 (3 pcs.)
- Washer M6 (3 pcs.)



- Cut the canister purge hose at the points arrows indicate in the diagram on the right.
Install the provided One Way Valve.



- One Way Valve
- Tie Wrap (S)



- Cut the canister purge hose and install the One Way Valve.

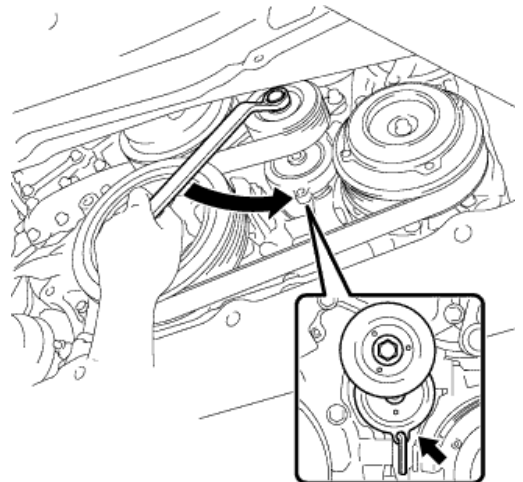
- Install 150mm long 16mm Hose.

- Hose 16mm (L=150mm)
- Joint Pipe 16mm
- Hose Clamp 16mm (2 pcs.)

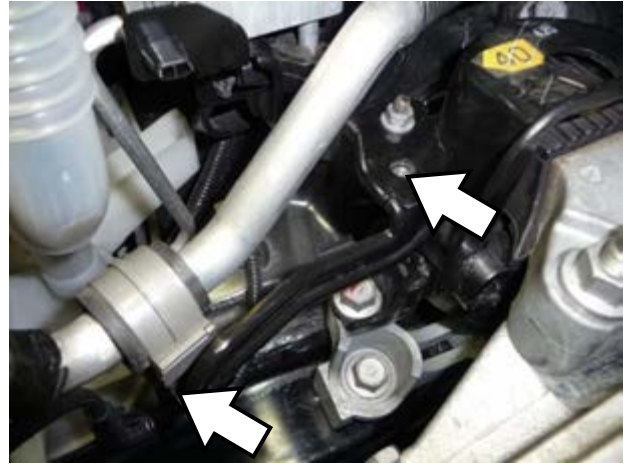
- Place a tool on the tensioner pulley bolt set. Rotate the tensioner to the left to lower the belt tension. Remove the 5mm fixing hex wrench.

※ Rotate the Pulley Set Bolt to the right to loosen the bolt.

- Reinstall the belt removed from the A/C compressor and tension the belt while there is tension on the belts.
- Make sure the belt is correctly aligned with the grooves on the pulley.



- Install the cooler pipe bracket fixing nut.
- Install clamps on the cooler pipe bracket.



- Install the Radiator Reservoir Tank Bracket.



6. INSTALLATION OF BATTERY TRAY



- Install the Battery Tray.



- Battery Tray
- Cap Bolt M6 L=15 (2 pcs.)
- Washer M6 (2 pcs.)
- Washer M6 Major Dia.
- Flange Nut M8

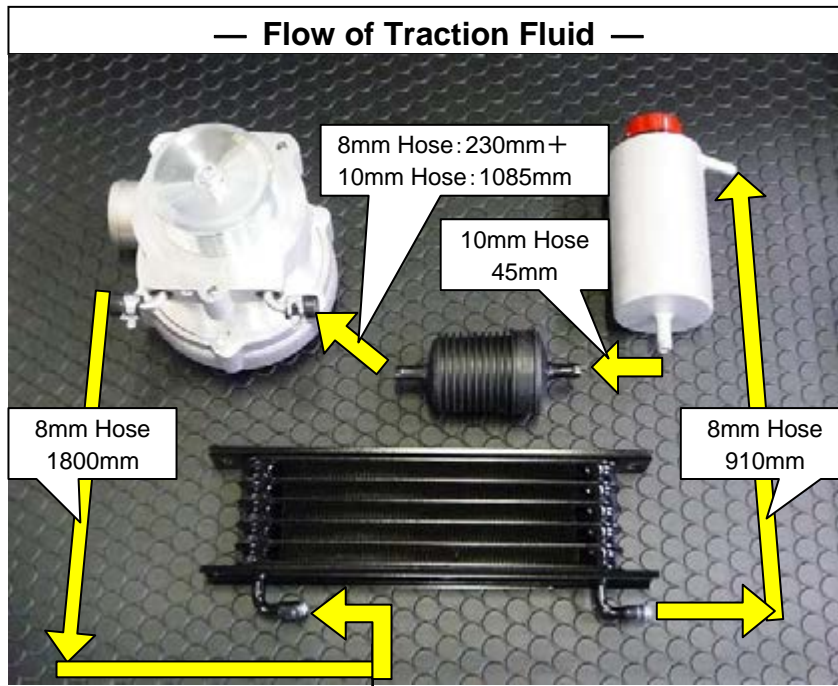
- The upper 2 points must be secured on the upper surface of the engine mount on the passenger's side.



- Insert the lower side of the tray through the bolt from the vehicle as shown in the diagram on the right.



7. INSTALLATION OF TRACTION FLUID TANK/COOLER CORE



NOTE

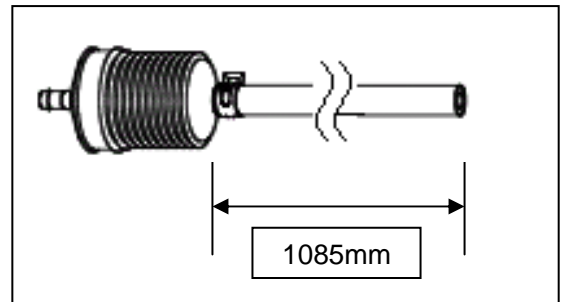
- The Supercharger unit is made with precision components. If any foreign objects should become mixed with the oil, the Supercharger may become damaged. Make sure the hoses and/or fitting ends are covered to prevent foreign objects from getting inside the hoses, tank and/or cooler.

- Cut the 10mm Hose to 1085mm in length from the fluid filter. (See the diagram below.)
 - ※ Make sure to cover the hose end with a tape to prevent foreign objects from getting inside the hose.

- Cut the remained 10mm Hose to 45mm.



• 10mm Hose Assembly



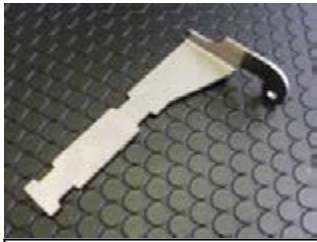
- Install the 70mm Silicone Hose (L=20).
- Connect the Fluid Tank and Fluid Filter with 45mm long 10mm Hose.



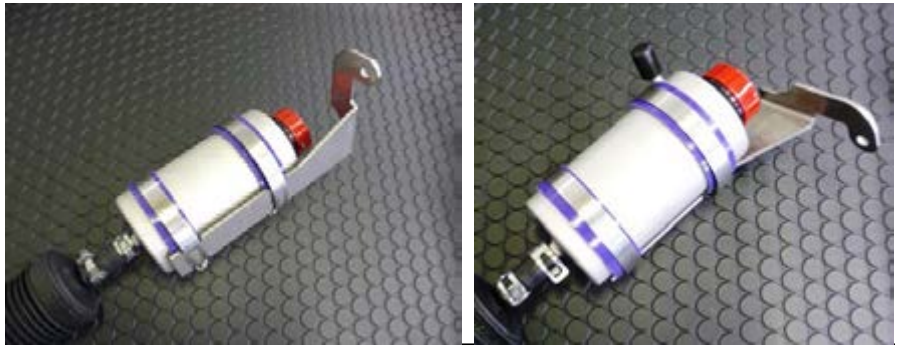
- Fluid Tank
- Silicone Hose 70mm L=20 (2 pcs.)
- Hose Clamp 10mm (2 pcs.)



- Install the Fluid Tank Bracket.



- Fluid Tank Bracket
- Hose Clamp #48 (2 pcs.)



- Install the 8mm Attachment to the Bracket. Make sure the Attachment is perpendicularly-placed to the Bracket.

- Cut the 8mm Hose to 910mm in length and connect to the 8mm Attachment.
 - ※ Make sure to cover the hose end with a tape to prevent foreign objects from getting inside the hose.

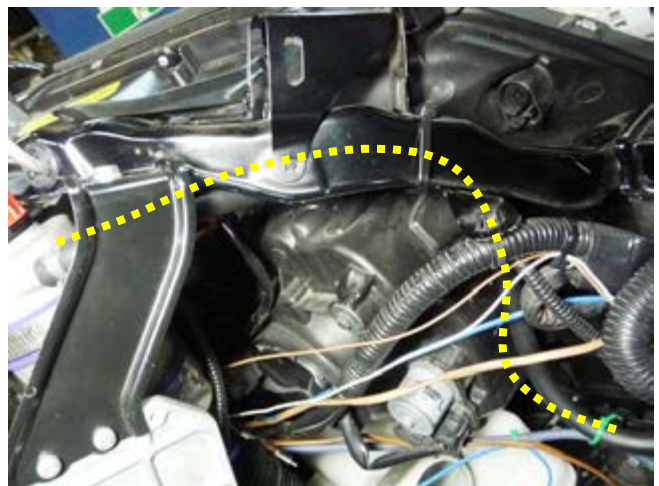
- Hose 8mm
- Hose Clamp 8mm

- Install the Fluid Tank to the back of the head light on the passenger's side.

- Cap Bolt M8 L=15
- Washer M8
- Flange Nut M8



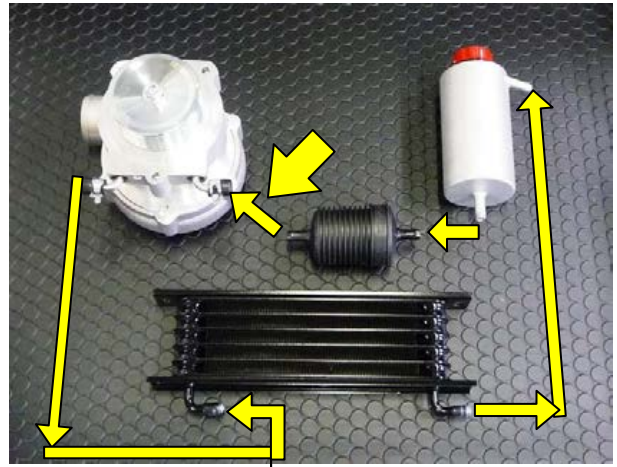
- Route the Hose through the head light frame.



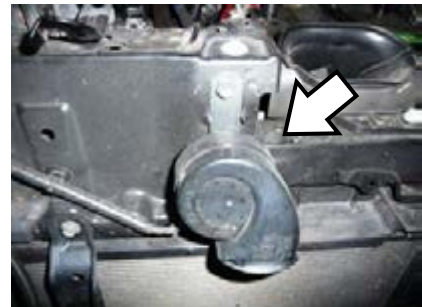
- Connect the 10mm Hose to the 8mm Hose (L=230mm) from the fluid inlet of the GTS7040 using the provided Joint Pipe 8mm-10mm.



- Joint Pipe 8mm-10mm
- Hose Clamp 8mm
- Hose Clamp 10mm



- Remove the horn of the passenger's side.



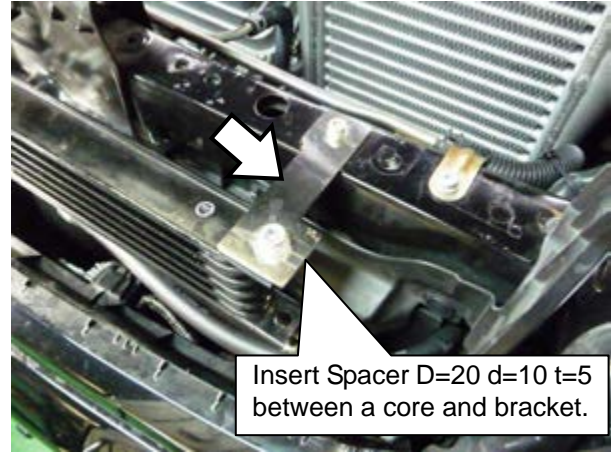
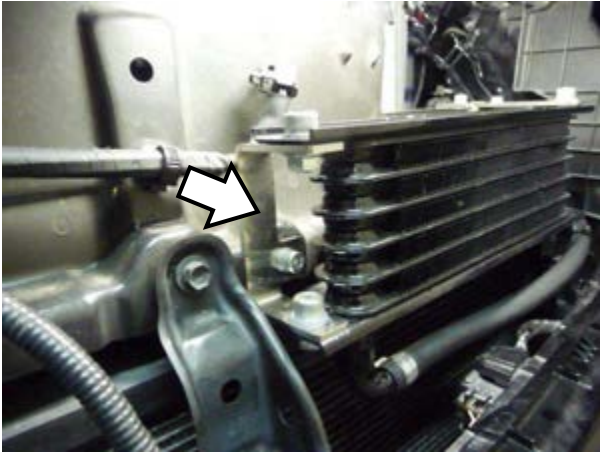
- Install the Fluid Cooler Core.



- Fluid Cooler Core
- Fluid Cooler Core Bracket No.1
- Fluid Cooler Core Bracket No.2
- Spacer D=20 d=10 t= 5
- Cap Bolt M6 L=15 (2 pcs.)
- Cap Bolt M8 L=15 (2 pcs.)
- Cap Bolt M8 L=20
- Washer M6 (2 pcs.)
- Washer M8 (3 pcs.)
- Flange Nut M8 (3 pcs.)

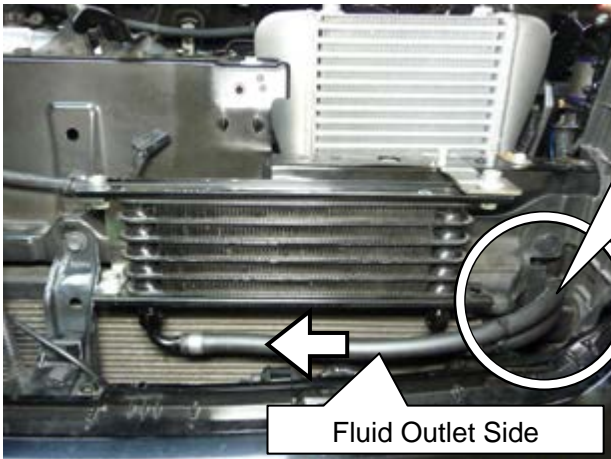


※In order to install the kit to vehicles equipped with pre-crash safety system, do not use the bracket in the kit and relocate it to the position where it does not interfere with the millimeter wave radar.

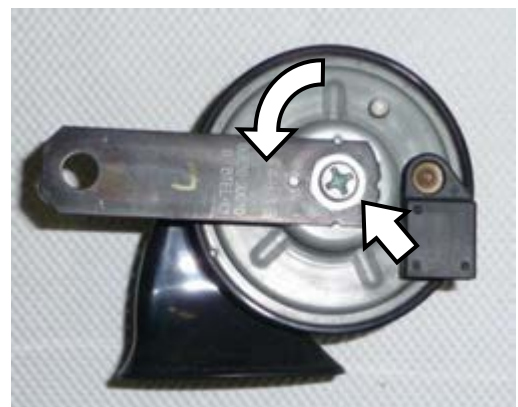


- Route the unconnected 8mm Hose through the radiator core and vehicle's body. Connect the Hose to the Fluid Cooler Core. Connect the Hose on the fluid outlet side to the attachment on the center of the vehicle.

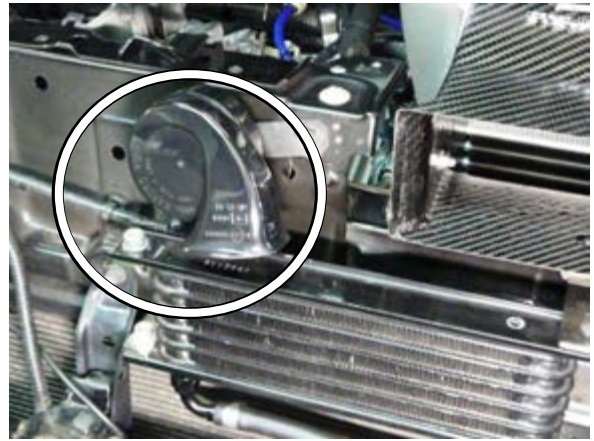
•Hose Clamp 8mm (2 pcs.)



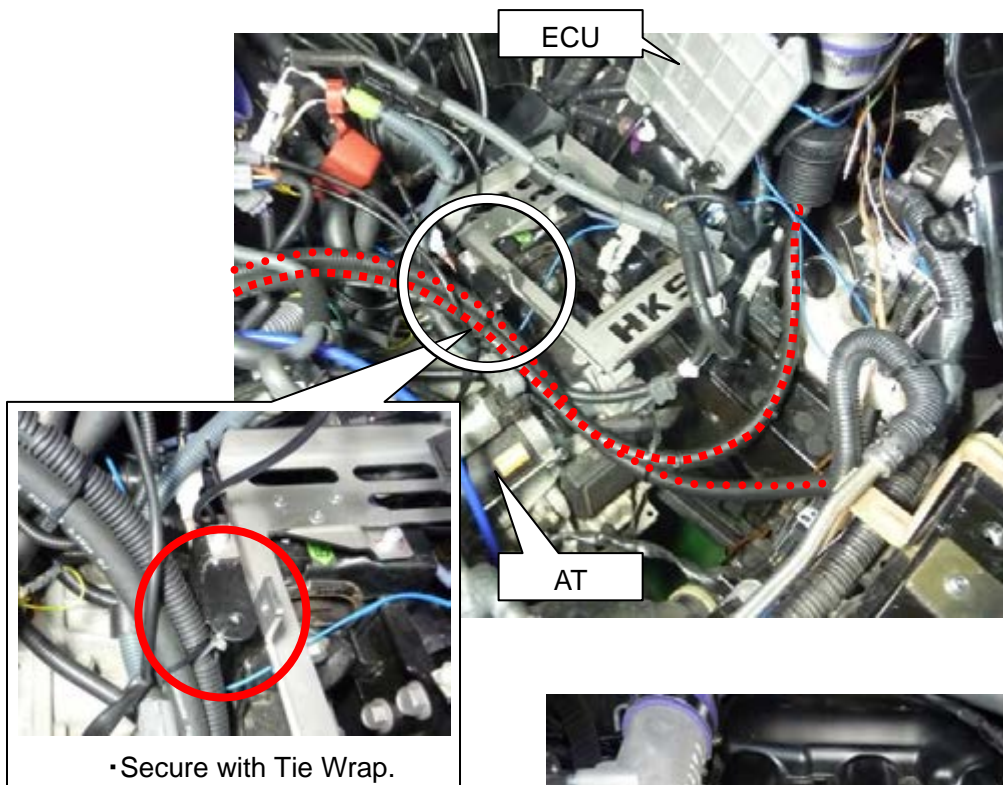
- Adjust the angle of the horn.
 - Loosen the bracket fixing nut on the passenger's side as shown in the diagram on the right. Rotate the horn 90 degree to the left and tighten the fixing nut.



- Install the horn.
Make sure the upper side of the horn does not come in contact with the radiator cover that will be installed later.



- Lay the 8mm and 10mm Hoses out as shown in the diagram below.
- Cover each hose with a corrugated tube and secure them using Tie Wraps.



8. INSTALLATION OF PRESSURE SENSOR



- Pressure Sensor
- Joint Pipe 4mm-6mm
- Hose 6mm
- Hose Clamp 6mm(2 pcs.)
- Cap Bolt M6 L=15
- Washer M6

- Install the 6mm Hose and Joint Pipe 4mm-6mm to the Pressure sensor.



- Install the Pressure Sensor to the threaded hole on the side of the passenger's side front strut tower.



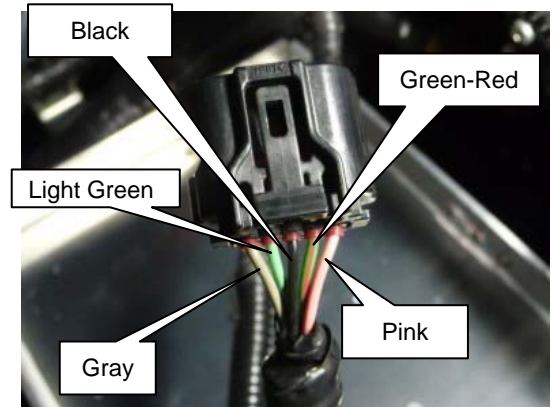
9. EXTENSION OF AIRFLOW HARNESS

- Remove the airflow harness clamp.

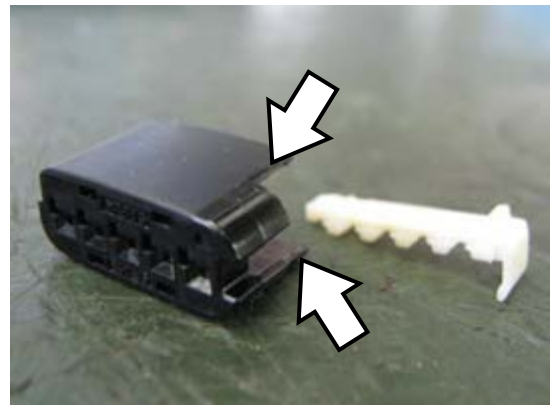
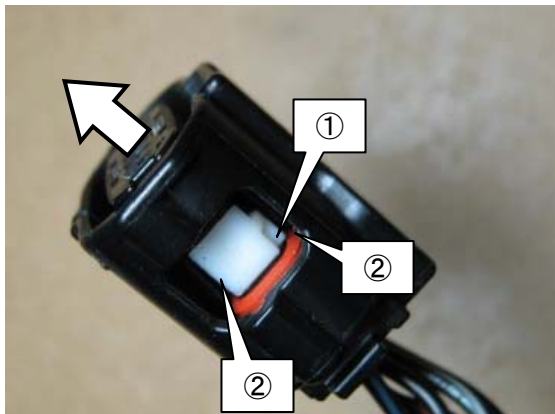


- Make sure the factory wire harnesses are arranged as follows when the connector lock is up and the harness is viewed from the terminal side:
Gray→ Light Green→Black→Green-Red→Pink.

Make a note if the order is different.



- Insert a small precision screwdriver into a hole ①, and pull out the retainer (a white resin part) .
- Insert a negative precision screwdriver into both gaps ②, press the cover apart, and remove the front holder.

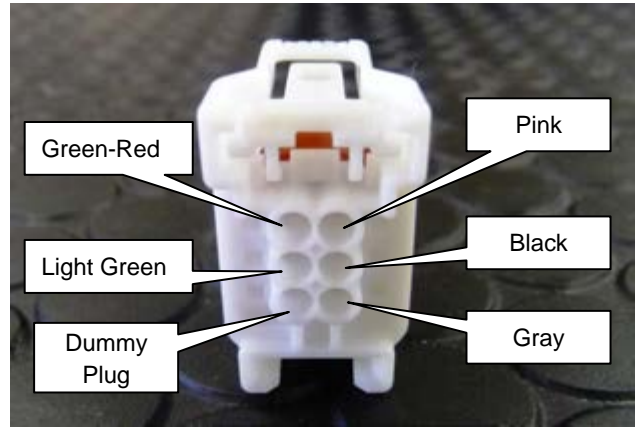
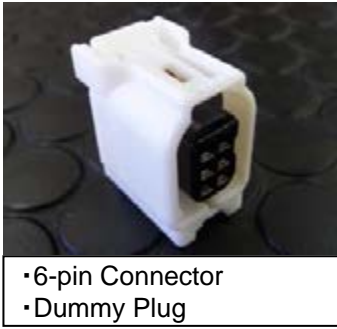


Press these parts apart (②)

- Push out the lock using a negative precision screwdriver and pull out the terminal.



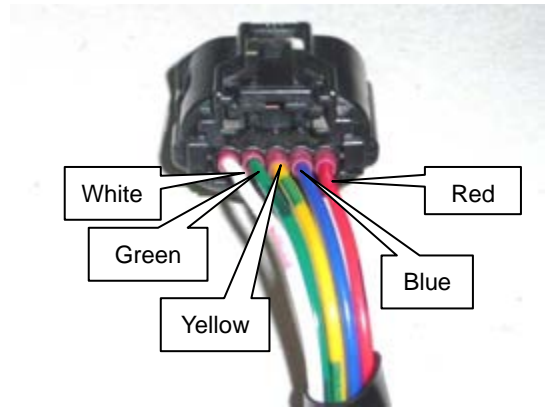
- Insert the removed terminal into the 6-pin Connector.



- Insert the terminal of the Airflow Extension Harness into the factory airflow connector.

Make sure the wires are arranged as follows when the connector lock is up and the harness is viewed from the terminal side:

White → Green → Yellow → Blue → Red



- Reinstall the factory connector's retainer and front holder.

- Connect the white connector of the Airflow Extension Harness to the 6-pin Connector the factory harness was inserted.

10. INSTALLATION OF F-CON HARNESS

- Connect the F-Con Harness to the ECU connector. Refer to the installation manual attached separately.



•Connector

•Dummy Plug



CAUTION

Improper connection may cause damage to the F-CON iS, ECU, and fuses on the vehicle's side. After connecting the harness, make sure connection is properly done and connectors are properly locked.

○ Complete the following before pulling the F-CON Harness into the vehicle's interior:

- Remove the glove compartment.
- Push the side of the box inward to unlock, and pull the box out. A lock is located in the position circled in the diagram. Another lock is located on the other side.
- Remove the fitting indicated by a square in the diagram. Separate the damper off.



- Close the glove compartment and pull the box out approximately 55°. Pull the box horizontally toward the vehicle's rear, and remove 2 of the hinge fitting. The glove compartment should be removed.

NOTE

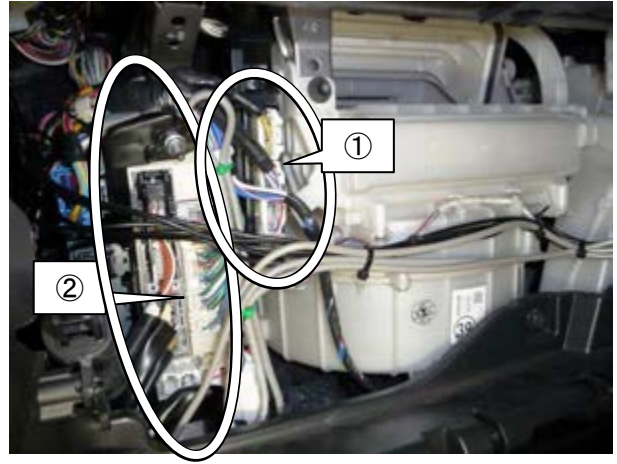
- The glove compartment must be pulled horizontally. If neglected, it may cause backlash to the hinge.



- Remove the under cover of the glove compartment.



- Disconnect the connector; then, remove the unit ① on the left side of the blower unit.
- Remove the fixing bolt and nut of the unit ② on the left side of the blower unit.
※Do not disconnect the connector.



- Pull the F-CON Harness into the vehicle's interior through the grommet hole on the bulk head.
- ※ Leave the Pressure Sensor's connector in the engine compartment side.



- Insulate a white and a brown wire of the F-CON iS Communication Cable terminals.



•F-CON iS Communication Cable

⚠ CAUTION

Improper insulation may cause damage not only to the F-CON iS, but also fuses on the vehicle's side.

- Connect the F-CON iS Communication Cable connector to the self-diagnosis terminal.

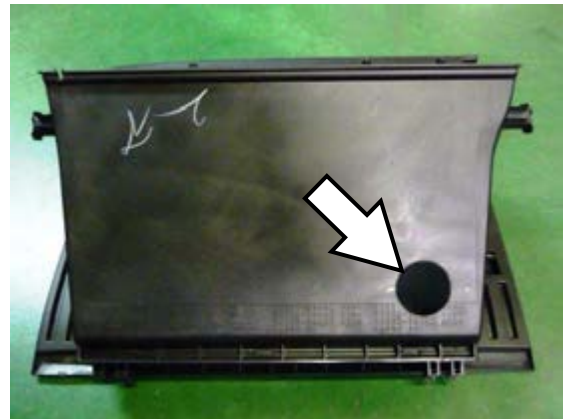


- Route the F-CON iS Communication Cable terminal from the driver's side to the passenger's side through a gap on the back of the center console.

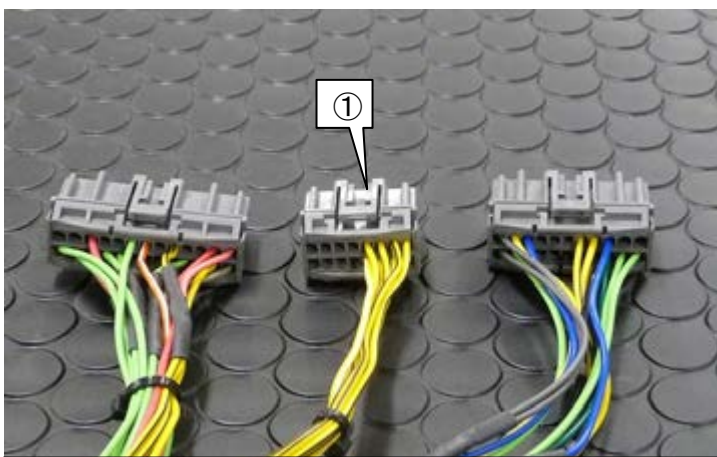


【This manual shows the procedures to install the F-CON iS inside the glove compartment. If the unit cannot be installed in the glove compartment, install it in a front-seat foot area of a passenger compartment. Make sure to keep the unit away from water.】

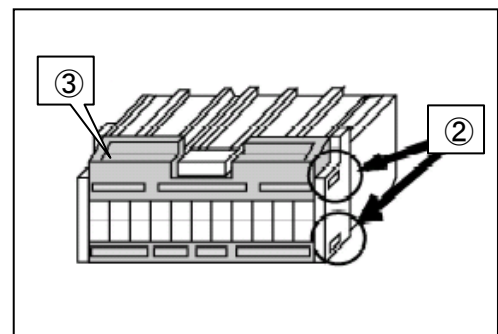
- Drill a hole on the glove compartment, and route the F-CON Harness and Communication Cable to the glove compartment through the hole.

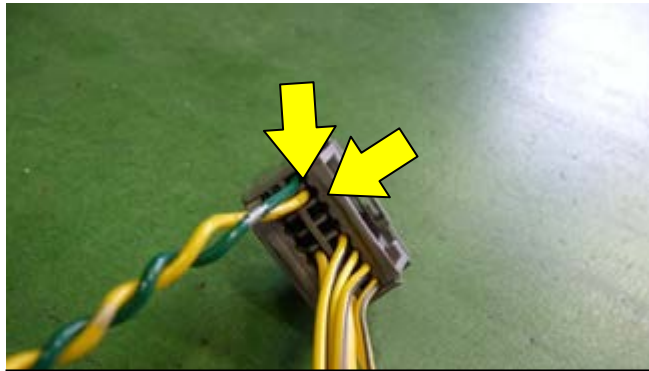


- Connect the F-CON iS Communication Cable to the F-CON Connector.

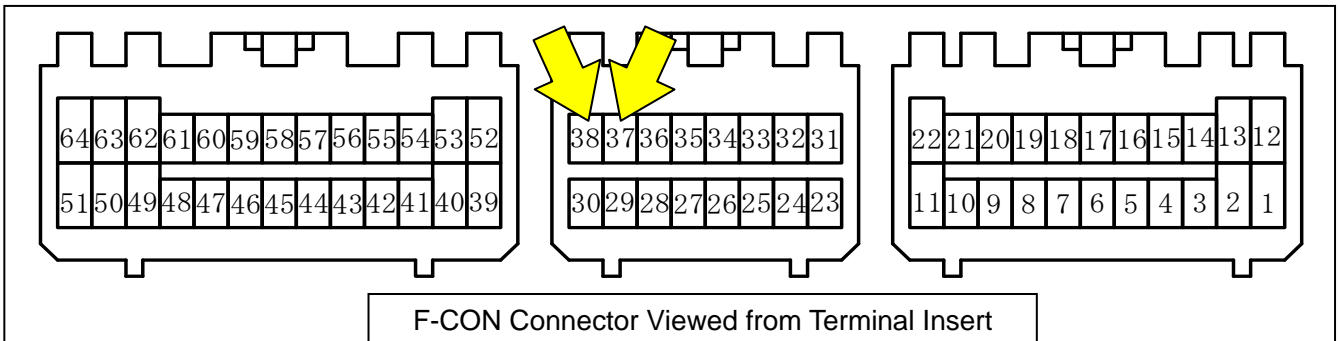



Unlock the tabs② on both sides. Open the cover③.





• Insert a yellow wire to #37 port of the connector① and a green wire to #38. Push them in till it's locked.
 • Push the cover③ in till it's locked.

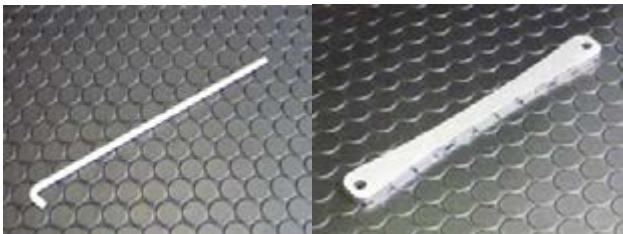


 **CAUTION**

Improper insulation may cause damage to the F-CON iS and fuses on the vehicle's side.

11. INSTALLATION OF BATTERY

- Reinstall the battery.
 - Do not connect the terminal, yet.



- Battery Mounting Bolt
- Battery Mounting Bracket
- Flange Nut M6 (2 pcs.)

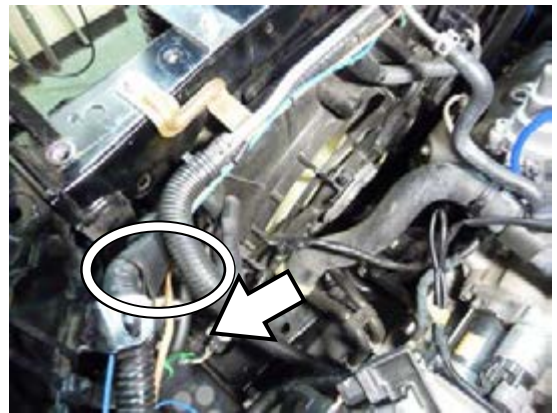


12. INSTALLATION OF INTERCOOLER



- Connect the Corrugated Tube to the radiator reservoir pipe.
- Put the pipe toward the harness of vehicle's side, and secure it with a Tie Wrap.

•Corrugated Tube
•Tie Wrap (L)



- Temporarily install the Intercooler Bracket No.1 to the Intercooler.



•Intercooler
•Intercooler Bracket No.1
•Cap Bolt M6 L=12 (2 pcs.)
•Washer M8 (2 pcs.)



- Temporarily install the intercooler with the Intercooler Bracket No.1 to the vehicle.

•Cap Bolt M8 L=20
•Washer M8



- Install the Intercooler Bracket No.1 to the threaded hole of the side member securing the factory battery mount.

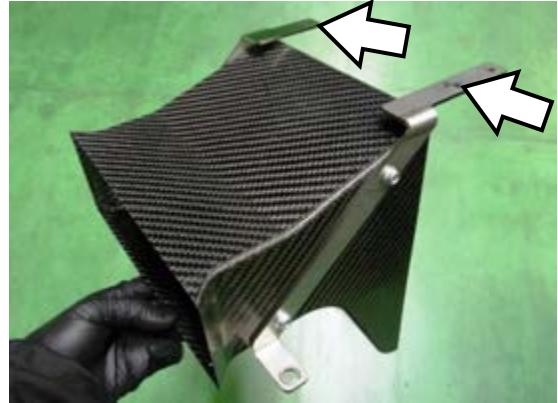


Install the bracket to the threaded hole the circled hole was supposed to be placed.

- Temporarily install the Intercooler Bracket No.2 and No.3 to the Intercooler Air Guide.

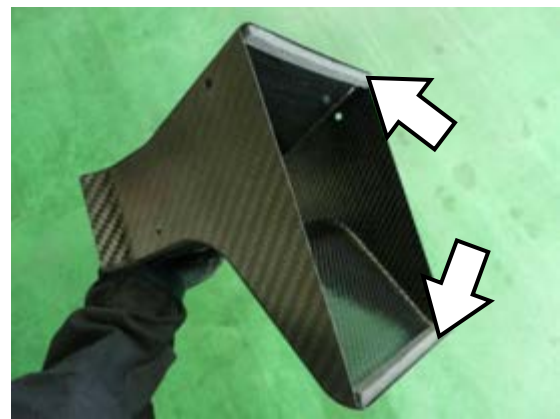
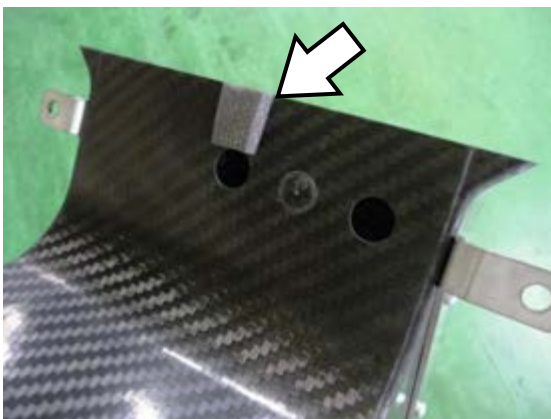


- Intercooler Air Guide
- Intercooler Bracket No.2
- Intercooler Bracket No.3
- Button Bolt M6 L=10 (4 pcs.)
- Flange Nut (4 pcs.)



- Affix the Sponge Tape to the Intercooler Air Guide.

- Sponge Tape x 2

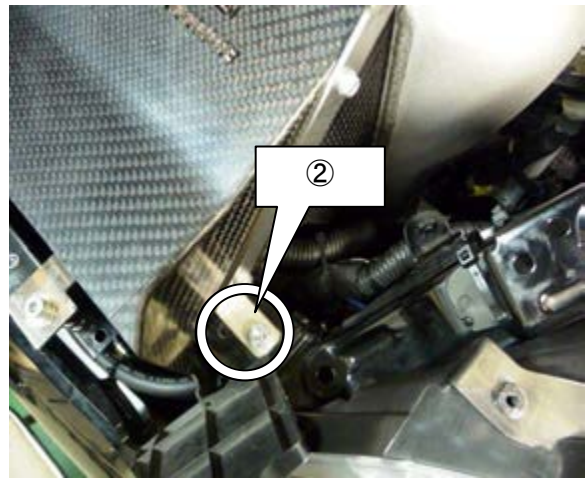
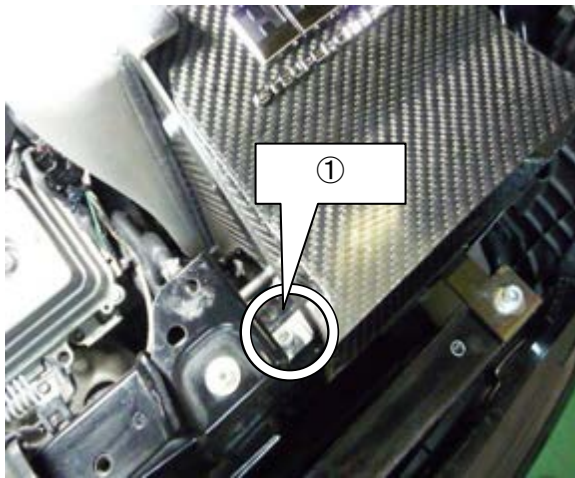
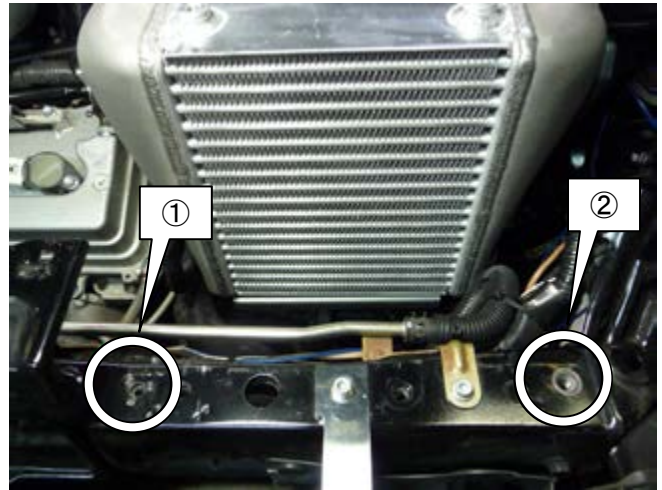


- Determine the installing position of the Intercooler Air Guide. Make sure there is no excessive force applies to the guide.
Install the Intercooler Bracket No.2 and No.3.

※In order to install to Alphard, modify the portion marked in the figure so that it does not interfere with the front grill.



-
- Remove the factory bolt from ②. Install the Intercooler Bracket No.2 and No.3 to the threaded hole ① and ②.



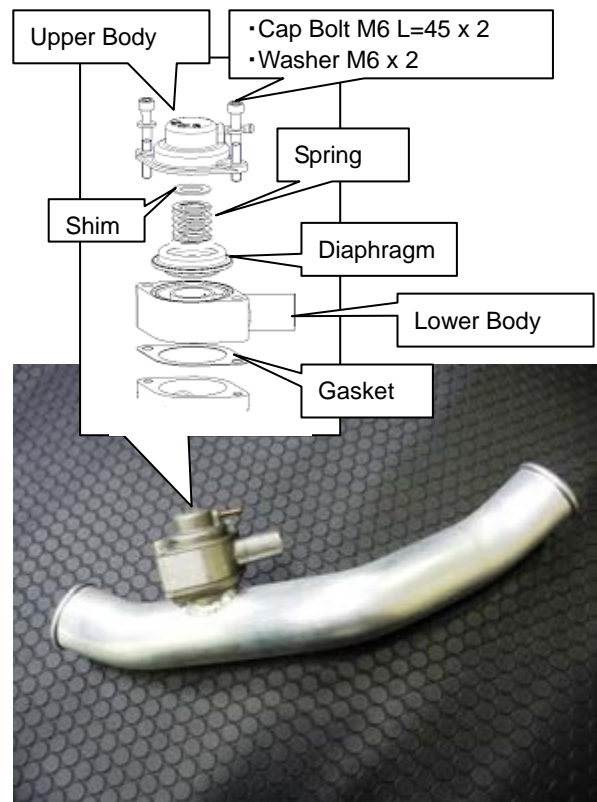
-
- Tighten the Intercooler Bracket No.1.
-
- Tighten the bolts temporarily installed on the intercooler duct.
-
- Remove the bonnet bracket anchor from the radiator cover and install it to the Intercooler Bracket No.3. Reuse the factory screw.



13. INSTALLTION OF INTERCOOLER PIPE



- Install the Blow-off Valve to the Outlet Pipe.



- ※ The gasket is inserted between the upper body and lower body at the factory. However, change the parts position as shown in the diagram on the right.

- Install the Outlet Pipe.

- Silicone Hose 60mm w/ Cushion
- Silicone Hose 60mm—80mm
- Hose Clamp #36 (3 pcs.)
- Hose Clamp #48



- Cut the 22mm Hose to 460mm in length. Connect the 460mm long Hose to the Blow-off Valve and Suction Pipe.

- Hose 22mm L=500
- Hose Clamp #16 (2 pcs.)

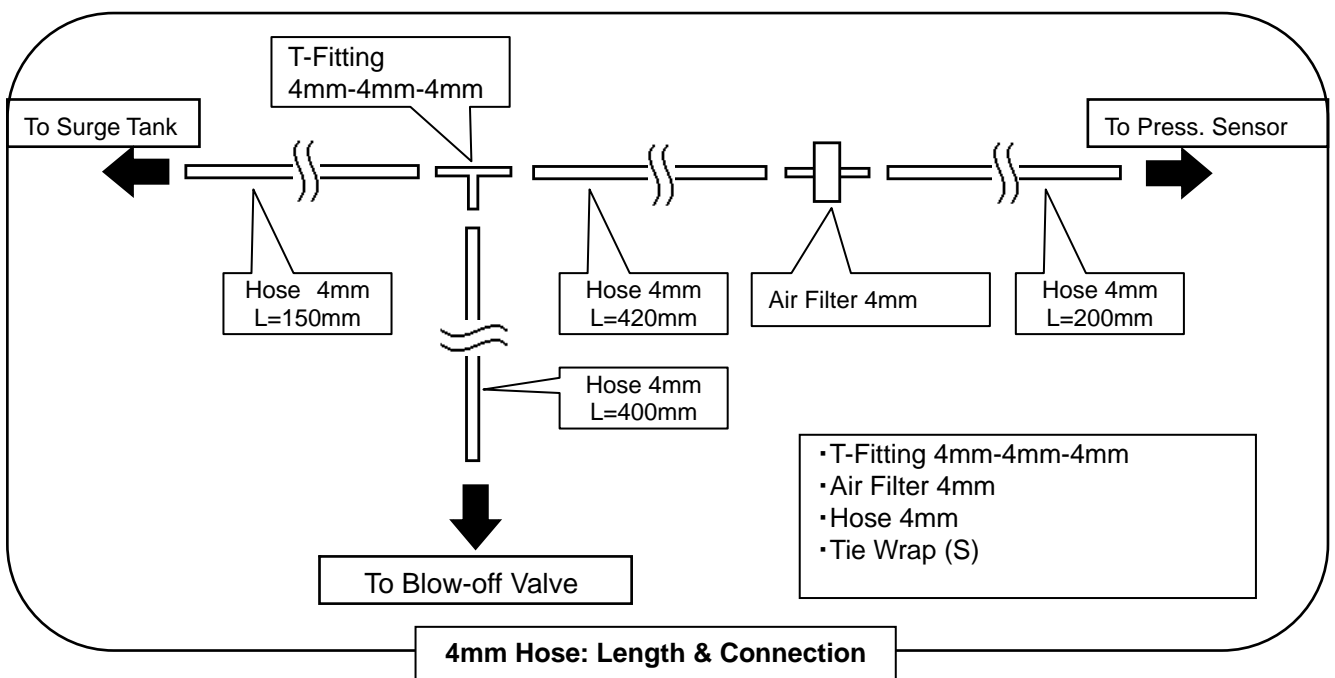
- Install the Inlet Pipe.



- Inlet Pipe
- Silicone Hose 60mm w/Cushion
- Silicone Hose 50mm
- Hose Clamp #28 (2 pcs.)
- Hose Clamp #36 (2 pcs.)



- Cut the 4mm Hose as depicted in the diagram below. Connect the provided T-fitting 4mm-4mm-4mm and Air Filter 4mm.
- Remove the 4mm Plug of the surge tank and connect the relief valve and pressure sensor using the 4mm Hose.
- Secure all connections using Tie Wraps (S).



14. INSTALLATION OF AIR FILTER



- Temporarily install the Air Cleaner Bracket and Bracket 80mm.



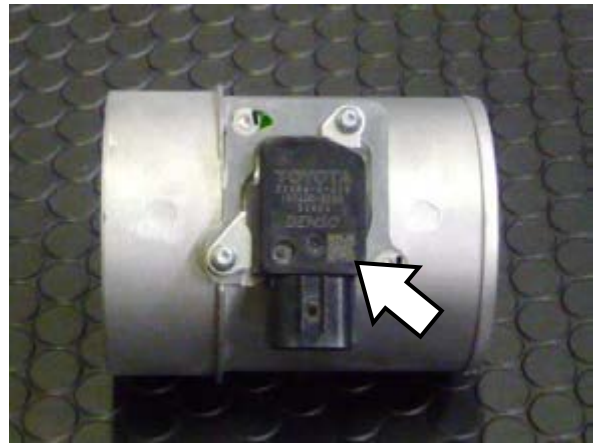
- Air Cleaner Bracket
- Bracket 80mm
- Cap Bolt M6 L=15 (2 pcs.)
- Washer M6 (2 pcs.)
- Flange Nut M6



- Install the factory airflow sensor to the provided Airflow Adapter.



- Airflow Adapter
- Cap Bolt M4 L=8 (2 pcs.)
- Washer M4 (2 pcs.)



- Install the provided Air Filter and Airflow Adapter.
- Connect the Airflow Sensor connector.



- Air Filter 200mm—80mm
- Silicone Hose 80mm L=55 (2 pcs.)
- Hose Clamp #48 (4 pcs.)

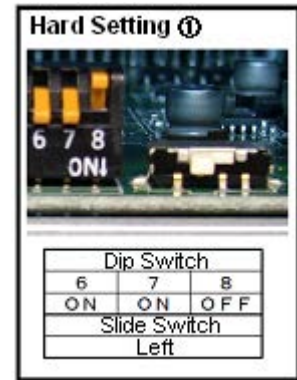


15. INSTALLATION OF F-CON iS

- Select “Hard Setting ①.”
- Connect the F-Con Harness to the F-CON iS and OSC.



•F-CON iS
•OSC

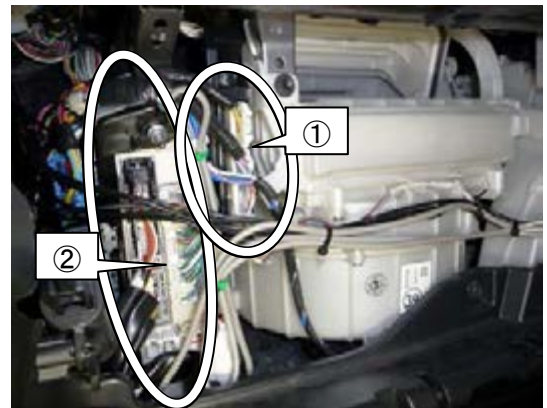


- Install the INJ Adapter to the 8-pin connector of the F-CON Harness.
- Secure the INJ Adapter and Harness using a Tie Wrap.



•INJ Adapter

- Reinstall the unit ① and ② beside the blower unit and connector.



- Mount the F-CON iS and OSC to the glove compartment. Secure them using a double-side tape or Tie Wrap.

※Input data to the F-CON iS and complete settings.

- Secure each harness so it does not get squeezed in a glove-compartment door when opening and closing the door.

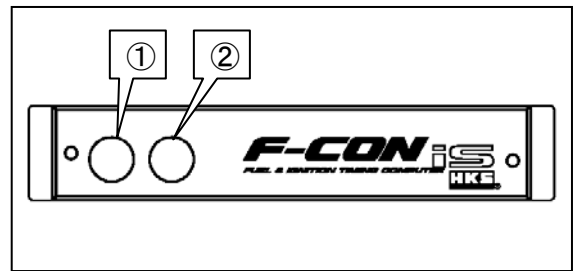


•Example of F-CON iS OSC Mounting

- Reinstall the glove compartment and under cover.
- Connect Pressure Sensor Harness connector.

《To Monitor the F-CON iS Data》

- To show the F-CON iS data on the monitor or in-car TV, connect an video-out cable to ①, and the provided monitor switch. (Video-out cable must be purchased separately.)



《To Use with CAMP2》

Install the CAMP2 referring to page 10 and 11 of the installation manual for the CAMP2. Also, refer to <When the vehicle's self-diagnosis connector is not available or not being used>

- The F-CON Connecting cable and 6-pin 4-core straight modular cable are required separately.)

16. REINSTALLATION OF FACTORY PARTS

- Cut off the radiator reservoir tank's tabs. (2 portions as shown in the diagram on the right.)

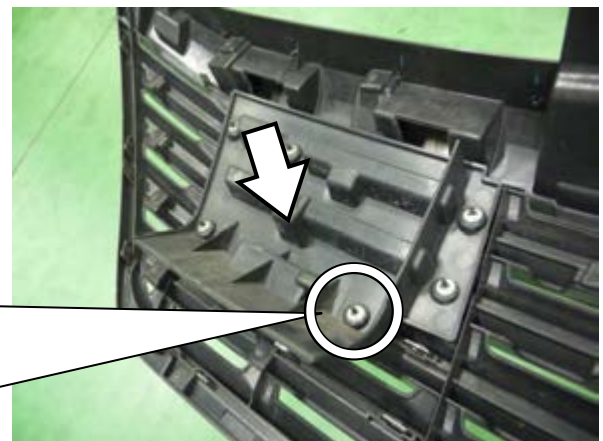


- Reinstall the radiator reservoir tank.
- Reinstall the cowl top panel OUT.
- Reinstall the wiper motor and link assembly.

- Remove the cover plate on the back of the front grill.



- Fold and take the pin off. Remove the lock plate.



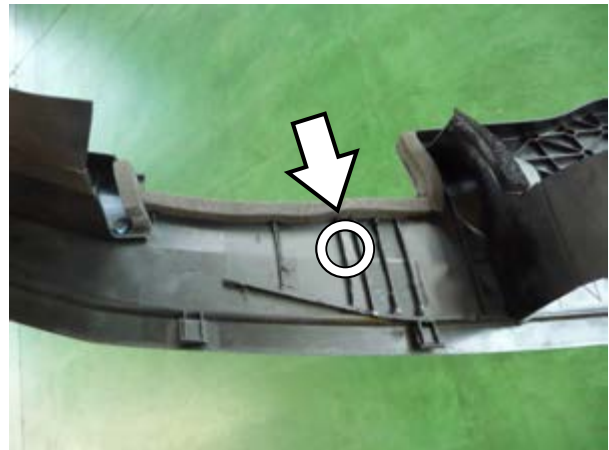
- Reinstall the front grill.



- Cut off the portion where the radiator cover comes in contact with the intercooler duct.

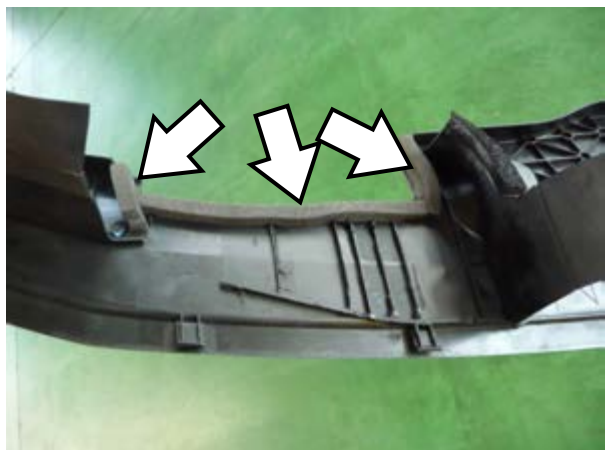


- Trim the ribs so they become level with the rib circled in the diagram on the right.

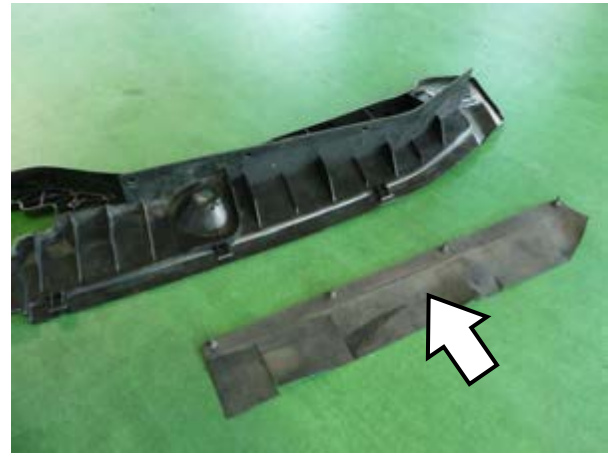


- Doubly cover the edges of the cut radiator cover with the provided Sponge Sheet.

•Sponge Sheet x 3



- Remove the rubber sheet from the radiator cover.



- Reinstall the modified radiator cover.
- Reinstall the engine under cover.
- Reinstall front tires to both sides.

17. FILLING TRACTION FLUID



•Traction Fluid

NOTE

This step MUST be conducted prior to starting the engine.

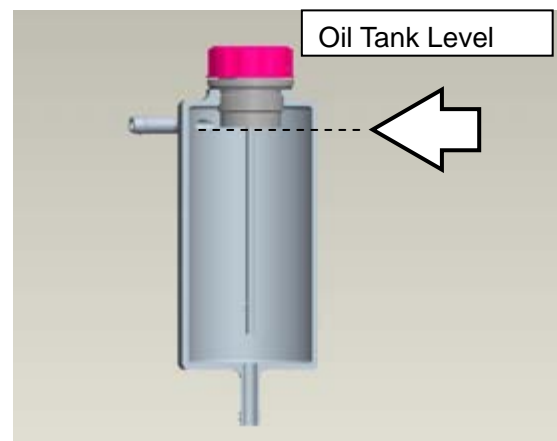
Starting the engine without first adding Traction Fluid can lead to damage to the Supercharger assembly.

Do not allow foreign objects to mix with the Traction Fluid.

The internal components of the Supercharger assembly are very precise and exact; foreign objects mixed with Traction Fluid can lead to damage to the Supercharger Assy.

- Check to make sure that there are no foreign objects in the Oil Tank.
- Add approximately 500cc of Traction Fluid to the Oil Tank (up to the dotted line in the diagram). Close the cap properly and securely.

※ Since the tank capacity is approximately 350cc, pour approximately 350cc; then, add the remained 150cc after the oil level is lowered.



- Reconnect both negative and positive terminals to the battery.

18. CHECKING TRACTION FLUID VOLUME

- Check off the following before starting the engine:

	Items to confirm:	Check
1	Make sure the hose layout is correct.	
2	Make sure the wiring harnesses and installed components do not come in contact with any other parts on the vehicle.	
3	Make sure the harness is not pinched at any point.	
4	Make sure the unused connectors on the F-Con Harness are left open.	
5	Make sure the belt is properly aligned with the grooves of the pulley.	
6	Make sure the Traction Fluid is at the correct level.	
7	Make sure all pipes and hoses are routed and connected correctly.	
8	Make sure hoses are not kinked or bent.	
9	Make sure all hose clamps are tight.	
10	Make sure all bolts (especially the pulley bolts) are tightened properly.	
11	Make sure all installed components are secured.	
12	Make sure the negative cable terminal is securely attached to the battery.	
13	Make sure the engine oil level dipstick is between H-L.	
14	Make sure the auto tensioner fixing hex wrench is removed.	
15	Make sure the F-Con data input and setting are properly done.	

- Prepare 80cc (2.7 oz) of Traction Fluid in a beaker or small container, open the oil cap and start the engine.

- Immediately after starting the engine, perform the following:

1. Check to make sure that the oil level starts to decline, and then increase again.
2. Add oil from the beaker or small container, so that the Oil Tank level does not get empty. Also make sure that the Oil Tank does not overflow.

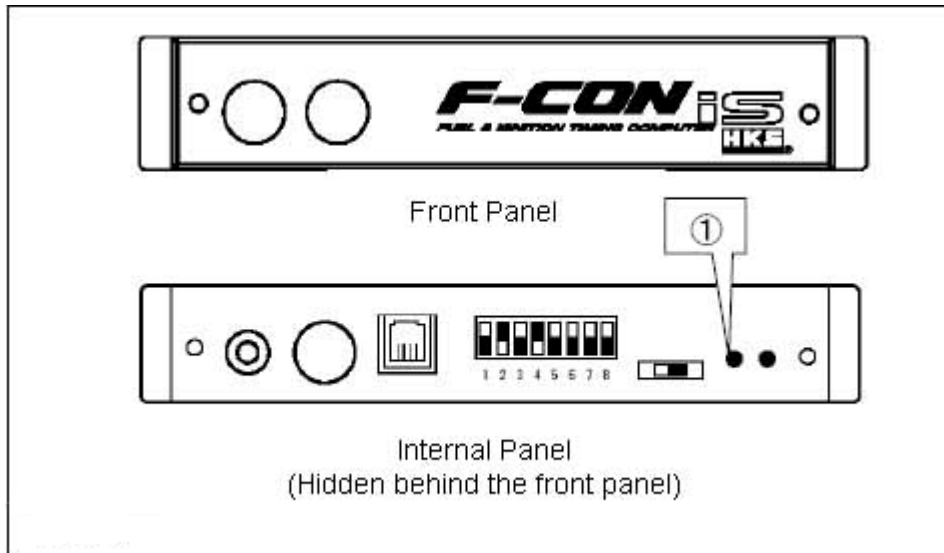
- ※ Engine stalling may occur right after reconnecting the cable to the battery. This is normal.
- ※ There may be some unusual or unpleasant noises emanating from the Supercharger Assembly after starting the engine. This is normal, and this noise will go away after the Traction Fluid warms up (approximately 2-3 minutes).

- Start the engine and perform the following checks after the engine reaches normal operating temperature:

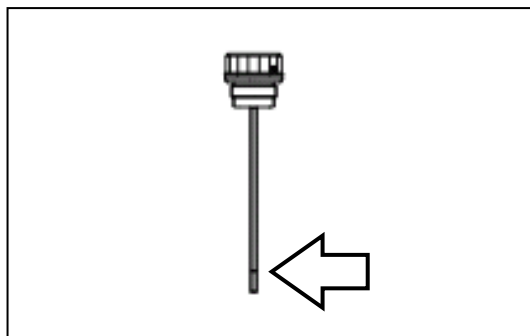
NOTE

Do not raise the engine RPM while the engine is warming up; let it idle.

	Items to confirm:	Check
1	Make sure the Traction Fluid returns to the Oil Tank.	
2	Make sure the green Power LED on the F-CON iS is ON. (See diagram below)	
3	Make sure there are no leaks in the fuel, Traction Fluid, coolant, or piping.	
4	Make sure there is no excessive stress on any harnesses, fuel lines, or hoses.	
5	Make sure the installed parts do not come in contact with any other parts.	



-
- After verifying the above items, raise and keep the RPM stable at 2000RPM for 10 seconds. Immediately shut off the engine and check the Traction Fluid level. The level needs to be at level indicated by an arrow in the diagram below. If it is lower, add Traction Fluid as necessary.



-
- ※ **If there is excess Traction Fluid remaining in the bottle, replace the cap on the bottle and store in a safe location. Always store excess Traction Fluid in the original bottle.**

-
- Put the oil tank cap back on.

19. CONFIRMATION AFTER INSTALLATION

- Lower the lift and unload the vehicle from the lift.
- Complete the settings for removal of the battery terminal referring to the factory service manual.

Settings for Removal of Battery Terminal

<u>Operation</u>	<u>Procedures</u>	<u>Influential Functions</u>	<u>Remarks</u>
Initializing the back guide monitor system.	1. Neutral point of rudder angle can be adjusted by fully turning the steering wheel to both sides on a flat road.	• Back Guide Monitor System (No IPA)	
Initializing the intelligent parking assist system.	1. Neutral point of rudder angle can be adjusted by fully turning the steering wheel to both sides on a flat road.	• Intelligent Parking Assist System • Side Monitor System • Back Guide Monitor System(w/IPA)	
Initializing the power slide door system.	1. Fully close the slide door by hand (off the courtesy switch).	• Power Slide Door System	This procedure is not required if the battery is disconnected when the back door is closed.
Setting location information (for vehicles with side lift-up seat.)	1. Switch to the EEPROM control mode. 2. Initialize the location information. 3. Switch to the single operation mode. 4. Set the original position of each motor under the single operation mode.	• Side Lift-up Seat	This procedure is required when the battery is disconnected within 10 seconds after operating the switch, after the buzzer beeps, or after the LH slide door is closed. (For details, refer to "Side Lift-up Seat System.")
Initializing the power back door system.	1. Fully close the slide door by hand. 2. Unlock the door control switch of the power window regulator switch assembly.	• Power Back Door System	If the battery is disconnected the back door is closed, conduct only 2.
Initializing the back door easy closer system (for vehicles with power back door system.)	1. Fully close the slide door by hand. 2. Unlock the door control switch of the power window regulator switch assembly.	• Back Door Easy Closer	If the battery is disconnected the back door is closed, conduct only 2.
Initializing the back door opener system.	1. Unlock the door control switch of the power window regulator switch assembly.	• Back Door Opener	

The installation process is now complete.

20. 1st MONTH INSPECTION

- Within 40 days of installation, it is recommended to consult your installer/retailer for the following 1st month inspection:
- if there is no trouble found after the inspection, fill out the registration form to register.

Entry Method	No Problem	<input checked="" type="checkbox"/>	Exchange	×	Adjust	A	Tighten	T
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	Inspection Item
1	<p><u>Supercharger Unit Check</u></p> <div style="border: 2px solid black; padding: 10px; margin: 10px auto; width: 80%; text-align: center;"> <p> WARNING</p> <ul style="list-style-type: none"> When checking operation of the unit, avoid touching any moving belts, even clothing. Touching these moving belts can lead to severe injury and damage. </div> <p>Compare the operating sound currently against initial installation, check for increased sound levels or unusual noises. <input type="checkbox"/></p> <p>Compare the sound of the air cleaner against initial installation, check for increased intake sound levels or unusual noises. <input type="checkbox"/></p> <p>Check Traction Oil level for unusually high Traction Oil consumption. (Oil level surface is not touching the oil level gauge) <input type="checkbox"/></p>
2	<p><u>Traction Oil Piping Inspection</u></p> <p>Check for Traction Oil leaking from the piping, loose hose clamps</p> <p>Locations:</p> <ul style="list-style-type: none"> Connection point to the Supercharger <input type="checkbox"/> Connection point to the oil cooler <input type="checkbox"/> Connection point to the oil tank <input type="checkbox"/> Connection point to the oil filter <input type="checkbox"/> <p>Signs of damage due to rubbing of the Traction Oil hose to other parts <input type="checkbox"/></p> <p>Cracks or breaks in the Traction Oil hose <input type="checkbox"/></p> <p>If Traction Oil filled to the marking level on the oil level gauge <input type="checkbox"/></p>
3	<p><u>Belt Inspection</u></p> <p>Check if belt tension is within the Auto-tensioner's adjusting range <input type="checkbox"/></p> <p>Cracks or breaks in the belts. <input type="checkbox"/></p>
4	<p><u>Bolt Tightening</u></p> <p>Check if Supercharger Assy mounting bolt is tightened <input type="checkbox"/></p> <p>Check if pulley mounting bolts are properly tightened <input type="checkbox"/></p>
5	<p><u>Other</u></p> <p>Check if any harnesses are interfering with other parts <input type="checkbox"/></p> <p>Locations:</p> <ul style="list-style-type: none"> Airflow Extension Harness <input type="checkbox"/> Pressure Sensor Harness <input type="checkbox"/> F-CON Harness <input type="checkbox"/> <p>Check all mounted parts for interference with other parts <input type="checkbox"/></p> <p>Locations:</p> <ul style="list-style-type: none"> Idler Pulley Bracket Fixing Bolt, nuts, and side member <input type="checkbox"/> VVT-I oil piping and surrounding parts <input type="checkbox"/> Blow-off Valve Hose and surrounding parts <input type="checkbox"/> <p>Check if hose clamps are properly tightened <input type="checkbox"/></p> <p>Check if engine oil level is between H-L <input type="checkbox"/></p>

21. MAINTENANCE/MANAGEMENT

- Traction Oil is used specifically for the HKS GT Supercharger. Do not use other types of oils; use of other or inappropriate brands of Traction Oil, engine oil, or transmission oil can lead to damage to the HKS GT Supercharger internals.



CAUTION

- Periodically check Traction Oil levels prior to driving the vehicle. If the oil level is too low, add Traction Oil as necessary.

- Use the part number below to order additional Traction Oil:

<u>Product Name</u>	<u>Part Number</u>
Traction Fluid	12002-AK029

- Replace the Traction Fluid Filter after 5 years or 70,000 km after installation of the HKS GT Supercharger. Use the part number below to order the Traction Fluid Filter:

<u>Product Name</u>	<u>Part Number</u>
Traction Fluid Filter	12002-AK015

- Belts are “wear and tear” items. Periodically check belts prior to driving for any cracks or tears. Replace damaged or worn belts immediately. Use the following chart for belt replacement:

<u>Product Name</u>	<u>Part Number</u>
Belt 7PK2565	G09961-K00050-00

22. TROUBLESHOOTING

- If this product does not perform properly, check all wiring and connections referring to the following before contacting your dealer.

<u>Symptom</u>	<u>Cause</u>	<u>Action</u>
<ul style="list-style-type: none"> • F-CON iS' Power LED does not come on when ignition is ON. • Engine does not start. • Engine is unstable. 	Bad connection	<ul style="list-style-type: none"> • Make sure each connector is clicked securely in place.
<ul style="list-style-type: none"> • Belt squeals when engine starts. 	—	<ul style="list-style-type: none"> • It is normal. Engine squeals a few times when it's started.
<ul style="list-style-type: none"> • Belt squeals for a few seconds when engine starts. • Engine output feels weak. • At wide open throttle the boost starts to decrease at a certain RPM while engine RPM is increasing. 	Low belt tension	<ul style="list-style-type: none"> • If the belt tension does not reach the required spec, replace with a new belt. • Replace the auto-tensioner with a new belt after 50,000km.
<ul style="list-style-type: none"> • Engine output feels weak. • At wide open throttle the boost starts to decrease at a certain RPM while engine RPM is increasing. 	Worn air filter	<ul style="list-style-type: none"> • Replace the filter element depending on dirt buildup. • If HKS Hybrid Filter was used for more than 3,000km, replace the filter element. (Replace the element even it's used less than 3,000km depending on the filter condition.)
<ul style="list-style-type: none"> • Belt squeals when revving engine at high RPM. 	This symptom does not always show malfunction.	<ul style="list-style-type: none"> • If the boost pressure does not drop at a certain engine RPM while driving, it is normal. • Usually engine RPM increases rapidly at revving; the belt may be more slippery. Especially with a cold engine, belt tension is low and slippery.

23. IF THE BELT BREAKS

- Park the vehicle in a safe place to check if the car is still drivable. Check for any damage caused by the torn belt such as oil leak, coolant leak, damaged harness, and etc.
- Do not drive the vehicle if the belt is damaged since the water pump and alternator are operated by the belt.
- Move the vehicle to a safe place and replace the belt with a brand new one. Repair any problems that may have caused the belt to break.