



INSTALLATION MANUAL

Installation must be done by a professional.

Read this manual prior to the installation.

Always have access to this manual as well as a factory service manual.

※ Make sure the vehicle is applicable to this kit.

NAME OF PRODUCT	GT2 SUPERCHARGER SYSTEM Pro
PRODUCT USE	Automobile Part
PART NUMBER	12001-KZ001
APPLICATION	MAZDA MX-5 <ul style="list-style-type: none"> • Manual Transmission Vehicles • Left handle Vehicle (Conformity of right-hand drive vehicle not confirmed) • 2016~2018
ENGINE	SKYACTIV-G 2.0L
REMARKS	<ul style="list-style-type: none"> ○ 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. ○ Change of Battery is required. The recommended battery size: <ul style="list-style-type: none"> ◇ Non Start-stop car <ul style="list-style-type: none"> · B19L ※Battery pole adapter JIS S type to DIN is necessary. · ODYSSEY Battery:PC680MJT ◇ Start-stop car <ul style="list-style-type: none"> · M-42/B20L ※Battery pole adapter JIS S type to DIN is necessary. ○ Degas the air conditioner and replenish it is required. ○ Modifications of the Front bumper reinforcement, Air conditioner pipe, etc. are required. ○ Fuel and ignition timing adjustments are required. If neglected, the engine may be damaged. ○ The recommended viscosity of engine oil is 40 or more. ○ Required parts separately to install this kit: <ul style="list-style-type: none"> • Sealing tape • stainless steel wire • Vinyl tape ○ Required tools to install this kit: <ul style="list-style-type: none"> • Remove crankshaft pulley

REVISION OF MANUAL

Rev. Number	Date	Manual Number	Details
3-3.01	2019/8	E04215-Z30010-00	1 st Edition

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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	REMARKS
1	Supercharger	1	GT2-7040L
2	Supercharger pulley	1	Φ85mm-8PK
3	Supercharger bracket	1	
4	Traction fluid tank bracket	1	
5	Traction fluid cooler bracket 1	1	
6	Traction fluid cooler bracket 2	1	
7	Traction fluid cooler bracket 3	1	
8	Traction fluid hose bracket	1	
9	Air cleaner bracket	1	
10	Intercooler bracket 1	1	
11	Intercooler bracket 2	1	
12	Intercooler bracket 3	1	
13	Washer tank bracket 1	1	
14	Washer tank bracket 2	1	
15	Tensioner bolt bracket	1	
16	Pipe bracket Φ50	1	
17	Pipe bracket Φ60	2	
18	Crankshaft pulley	1	
19	Supercharger bracket spacer L85.5	1	Φ18-8 L85.5
20	Supercharger bracket spacer L70.0	1	Φ18-8 L70.0
21	Supercharger bracket spacer L36.5	1	Φ24-8 L36.5
22	Supercharger bracket spacer L82.3	1	Φ18-8 L82.3
23	Idler pulley	1	Φ59
24	Tensioner pulley shaft	1	
25	Tensioner pulley adjust bolt	1	
26	V-ribbed belt	1	6PK707
27	Intercooler	1	
28	Super power flow	1	
29	Suction pipe 1	1	
30	Suction Pipe 2	1	Casting
31	Intercooler inlet pipe 1	1	
32	Intercooler inlet pipe 2	1	
33	Intercooler outlet pipe 1	1	
34	Intercooler outlet pipe 2	1	
35	Intercooler outlet pipe 3	1	
36	Blow-off Valve	1	
37	Supercharger inlet pipe gasket	1	
38	Nipple Φ11-1/8PT	1	

PARTS LIST

No.2

NO.	DESCRIPTIONS	QT	REMARKS
39	Traction fluid cooler	1	
40	Traction fluid tank	1	
41	Traction fluid filter	1	
42	Traction fluid	1	800mL
43	Hose Φ 4	1	L1000
44	Hose Φ 8	1	L2500
45	Hose Φ 9	1	L500
46	Hose Φ 10	1	L1200 Fabric Blade
47	Silicon hose Φ 22	1	
48	Silicon hose Φ 55	1	
49	Silicon cushion hose Φ 50	1	
50	Silicon cushion hose Φ 60	1	
51	Silicon hose Φ 60	6	
52	Silicon cushion hose Φ 65	1	
53	Silicon hose Φ 70	1	
54	Rubber cap	1	Φ 29
55	Corrugate tube Φ 15	1	L2500
56	Corrugate tube Φ 22	1	L100
57	Air conditioner hose	1	
58	Hose band #12	2	
59	Hose band #32	3	
60	Hose band #40	17	
61	Hose band #44	2	
62	Hose clamp Φ 6.8	2	Mark 68
63	Hose clamp Φ 13.0	3	Mark 130
64	Hose clamp Φ 13.8	3	Mark 138
65	Hose clamp Φ 15.5	6	Mark 155
66	Washer tank kit	1	
67	Terminal set	2	
68	Pressure sensor	1	
69	T-fitting 10mm-4mm-10mm	1	
70	Spacer Φ 20-10 t=4	1	
71	Spacer Φ 20-10 t=5	3	
72	Joint pipe 10mm	1	
73	Tie wrap (M)	24	
74	Tie wrap (L)	5	
75	Masking sheet	1	
76	Sponge	5	

PARTS LIST

No.3

NO.	DESCRIPTIONS	QT	REMARKS
77	Insulator rubber	2	
78	Button bolt M4 L12	2	
79	Low head cap bolt M6 L12	6	
80	Flange bolt M6 L20	3	
81	Hexagon bolt M6 L15	13	
82	Hexagon bolt M6 L20	1	
83	Hexagon bolt M8 L15	5	
84	Hexagon bolt M8 L20	8	
85	Dish bolt M8 L35	3	
86	Cap bolt M8 L115	1	
87	Cap bolt M8 L120	3	
88	Hexagon bolt M16 L60	1	
89	Flat washer M6 Major Dia.	14	
90	Flat washer M8	10	
91	Flat washer M8 Small Dia.	11	
92	Crank pulley washer	1	Φ40-16 t=10
93	Flange nut M6	13	
94	Flange nut M8	5	
95	Flange nut M10	1	
96	Air cleaner case 1	1	
97	Air cleaner case 2	1	
98	Air cleaner case 3	1	
99	Air cleaner case bracket	1	
100	Clip	8	
101	Wave washer	8	
102	Spark plug	4	M45HL
103	Installation manual	1	
104	Instruction manual	1	
105	General manual	1	

1. REMOVAL OF FACTORY PARTS

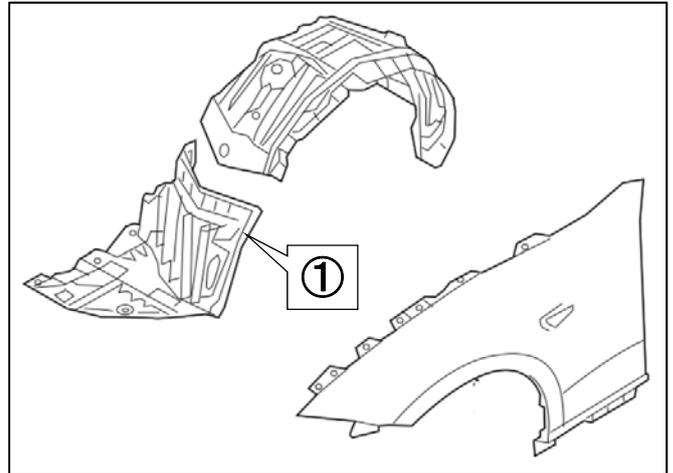
Refer to this instruction manual and the factory service manual to remove the factory parts.

(1) Degas at a facility that can recover gas from air conditioners.

(2) Disconnect the cable from the battery.

(3) Remove the ①Front mad guard RH & LH.

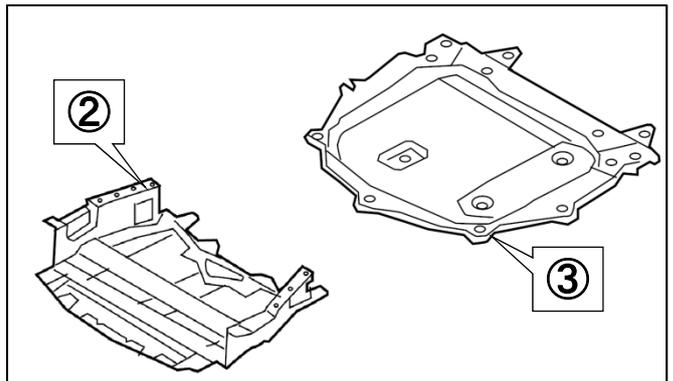
(4)



(5) Remove the ②Engine under cover 1.

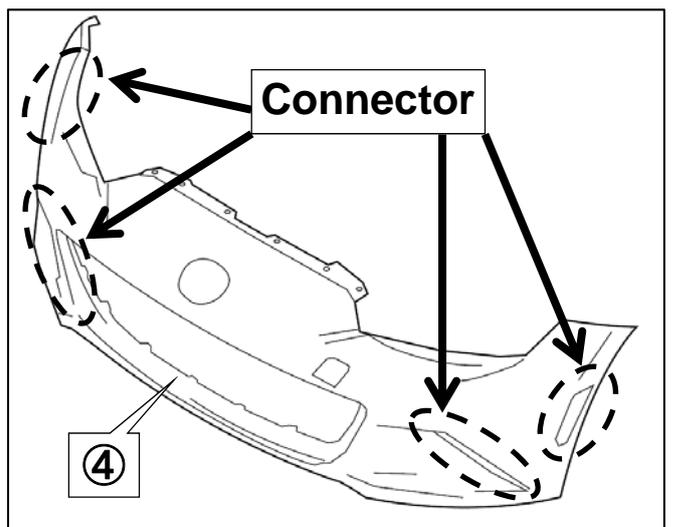
(6)

(7) Remove the ③Engine under cover 2.

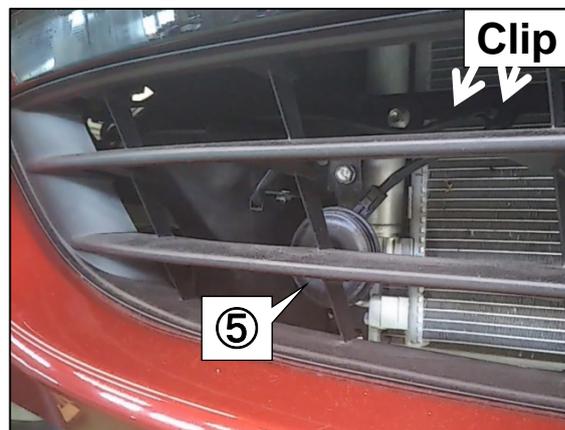


(8) Disconnect connector of turn signal lights and running light.

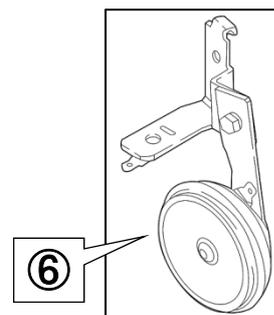
(9) Remove ④Front bumper.



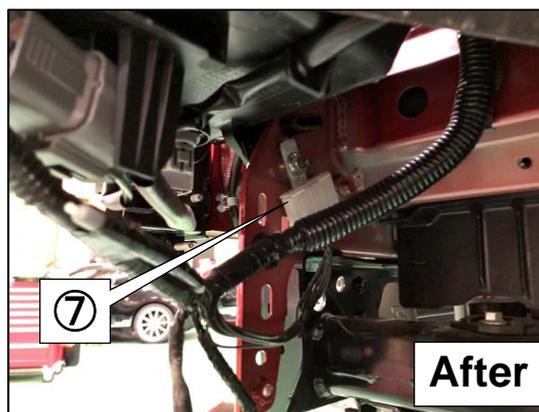
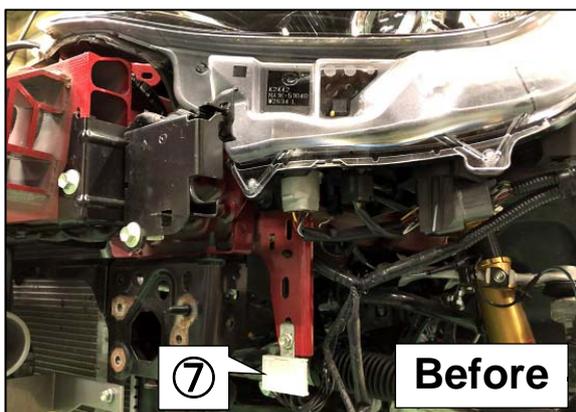
(10) Remove ⑤Horn Low (Keep it for later use.) & electrical wire clip.



(11) Remove ⑦orn High. (Keep it for later use.)



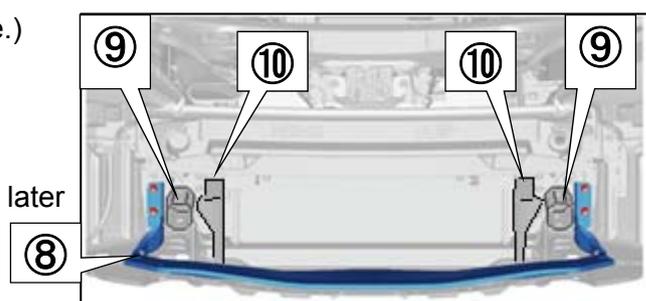
(12) Move ⑦Electrical wire parts.



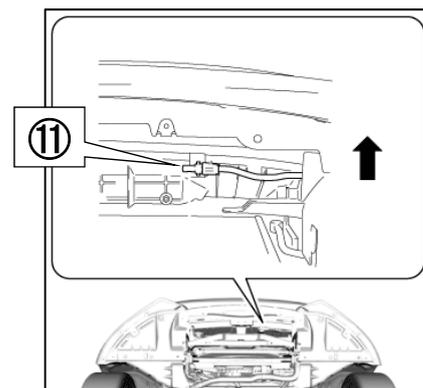
(13) Remove ⑧Bumper stiffener . (Keep it for later use.)

(14) Remove ⑨Reinforcement(x2).

(15) Remove ⑩Radiator air guide RH&LH. (Keep it for later use.)



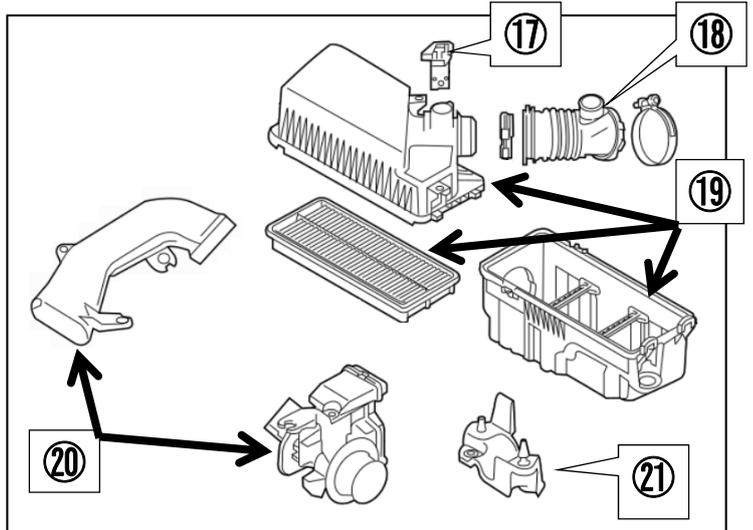
(16) Remove ⑪Outside temperature sensor.



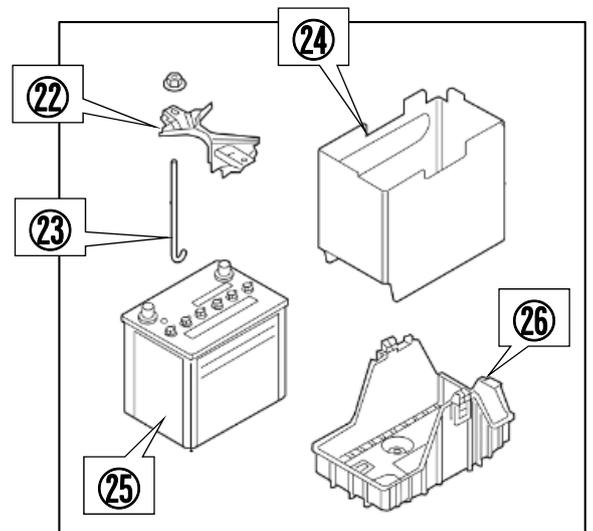
- (17) Remove ⑫Washer tank.
- (18) Remove ⑬Air hose
- (19) Remove ⑭Coolant hose. (Keep it for later use.)
- (20) Remove ⑮ coolant reserve tank. (Keep it for later use.)
- (21) Remove ⑯Engine cover. (Keep it for later use.)



- (22) Remove ⑰Air flow meter. (Keep it for later use.)
- (23) Remove ⑱Air intake hose.
- (24) Remove ⑲Air cleaner case.
- (25) Remove ⑳Air intake duct.
- (26) Remove ㉑Air cleaner case bracket.



- (27) Remove ㉒Battery bracket & ㉓Hook bolt. (Keep it for later use.)



- (28) Remove ㉔Battery cover.
- (29) Remove ㉕Battery.
- (30) Remove ㉖Battery tray. (Keep it for later use.)

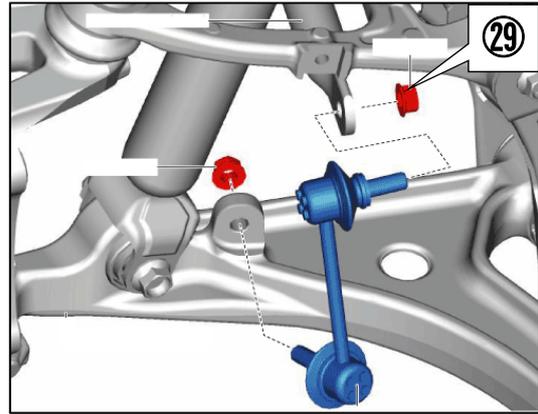
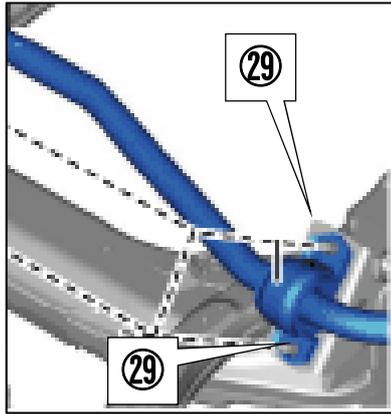
- (31) Remove ㉗Air conditioner hose.
- (32) Temporarily remove ㉘Alternator belt. (Keep it for later use.)

NOTE

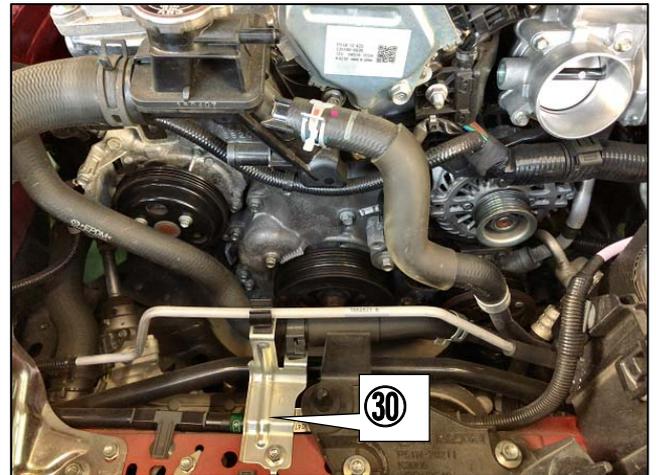
✧ Remove the belt from the pulley of the auto tensioner and leave the belt in place.



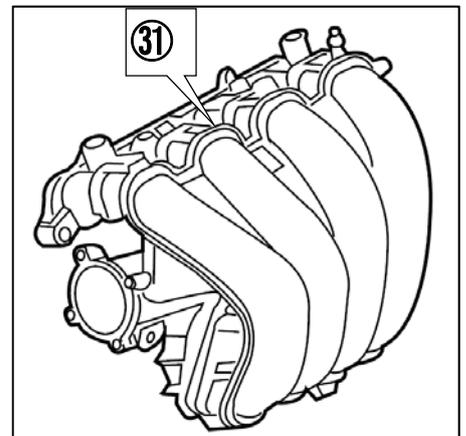
(33) Remove ②9 Stabilizer nut. (Do not remove stabilizer from the car. Allow the stabilizer to move freely for ease of work.)



(34) Remove ③0 Air conditioner pipe bracket.



(35) Remove ③1 Intake manifold. (Keep it for later use.)

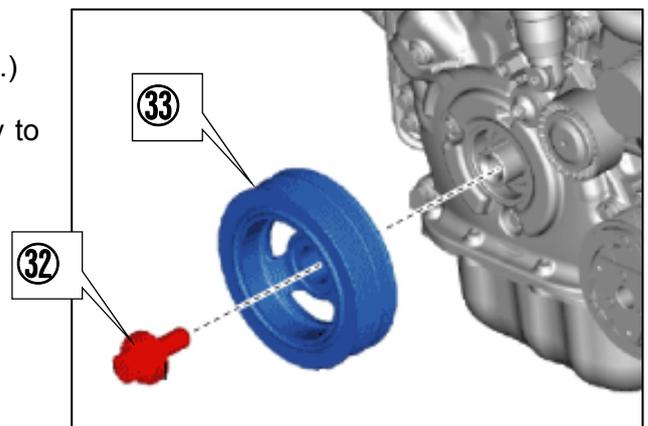


(36) Remove ③2 Crankshaft pulley bolt.

(37) Remove ③3 Crankshaft pulley. (Keep it for later use.)

NOTE

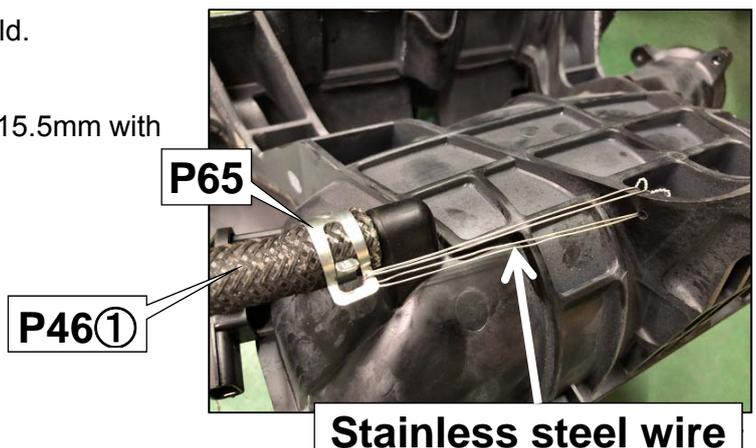
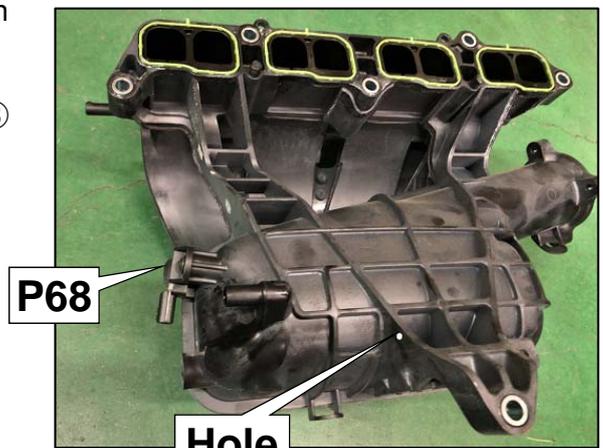
✧ Crankshaft pulley remove tool helps easy to work.



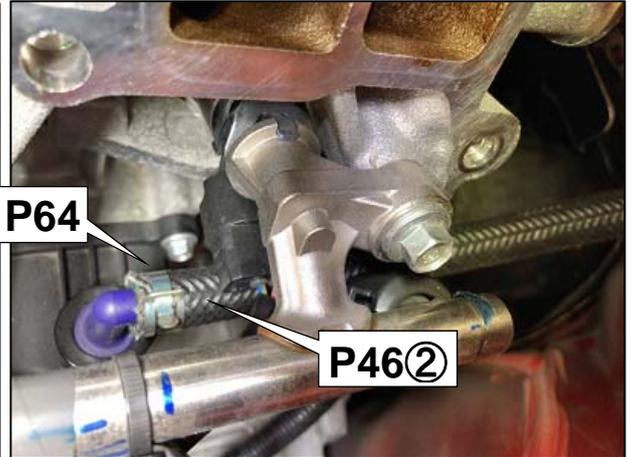
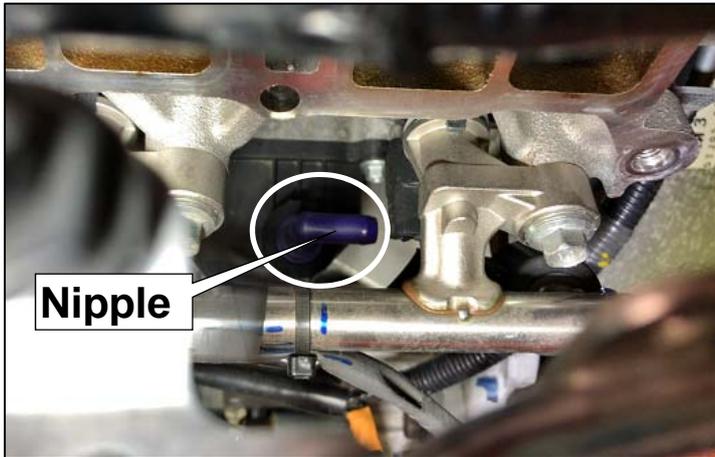
2. MODIFICATION & RELOCATION OF FACTORY PARTS

PARTS LIST			
	NO.	DESCRIPTIONS	QT
	P18	Crankshaft Pulley	1
	P43	Hose Φ 4	1
	P46	Hose Φ 10	1
	P54	Rubber cap	1
	P56	Corrugate tube Φ 22	1
	P57	Air conditioner hose	1
	P62	Hose clamp Φ 6.8	1
	P64	Hose clamp Φ 13.8mm	3
	P65	Hose clamp Φ 15.5mm	3
	P68	Pressure sensor	1
	P69	T-fitting Φ 10- Φ 4- Φ 10	1
	P72	Joint pipe Φ 10	1
	P73	Tie wrap (M)	4
	P83	Hexagon bolt M8 L15	3
	P88	Bolt M16 L60	1
	P91	Flat washer M8 small dia.	3
P92	Crank pulley washer	1	

- (1) Drill a hole of Φ 2 to the ③Intake manifold for through the wire.
- (2) Cut the Hose Φ 10 to ①170mm and ②250mm and ③700mm.
 - P46 Hose Φ 10 x 1
- (3) Replace pressure sensor of the ③Intake manifold.
 - P68 Pressure sensor x1
- (4) Install the Hose Φ 10① to ③Intake manifold.
 - P65 Hose Clamp 15.5mm x1
- (5) Tie the ③Intake manifold and hose clamp 15.5mm with stainless steel wire.

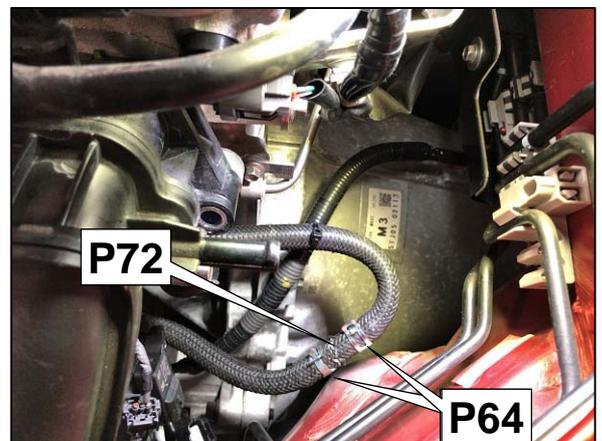


- (6) Install the Hose $\Phi 10$ ② to nipple on cylinder brock.
- P64 Hose clamp 13.8mm x1



- (7) Reinstall ③Intake manifold to the engine.

- (8) Connect the Hose $\Phi 10$ ① and Hose $\Phi 10$ ②.
- P64 Hose clamp 13.8mm x2
 - P72 Joint pipe $\Phi 10$ x1



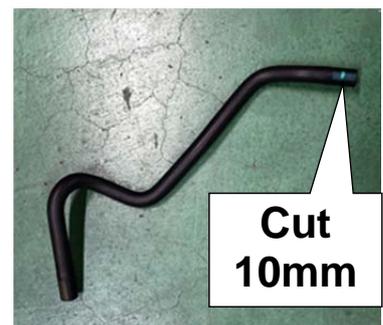
- (9) Install Crankshaft pulley , and reinstall factory ③③ crank pulley.
- P18 Crankshaft pulley x1
 - P88 Bolt M16 L60 x1
 - P92 Crank pulley washer x1

NOTE

- ◇ Wipe oil from the crankshaft pulley.
- ◇ Temporally tighten Bolt M16 L60, and Make sure that the crankshaft pulleys are installed correctly.
- ◇ Tighten torque:
 First step : 90—110 N·m
 Second step : 55—65°



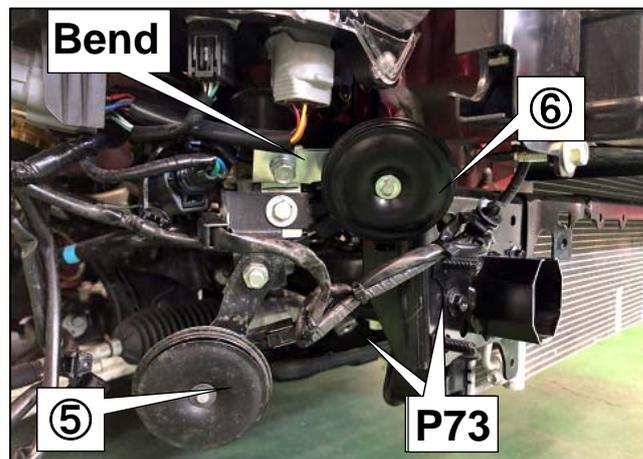
- (10) Cut off the tip of the ⑭Coolant hose by 10 mm.



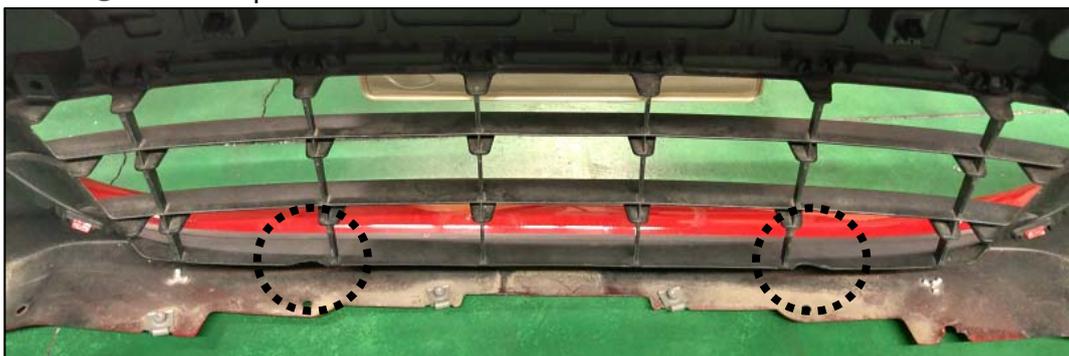
(11) Bend ⑥Horn High bracket and reinstall ⑥Horn High

(12) Reinstall ⑤Horn Low

(13) Tie electrical wire.
• P73 Tie wrap(M) x2



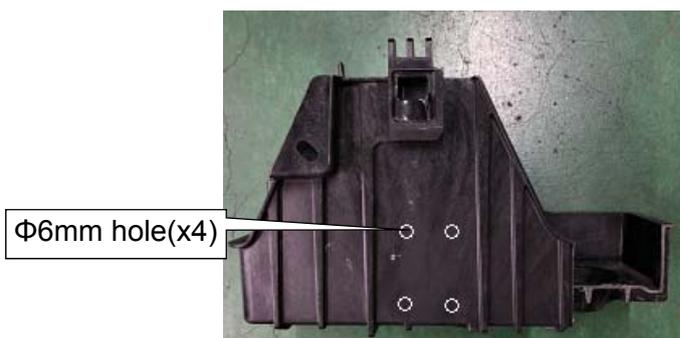
(14) Shave the ④Front bumper.



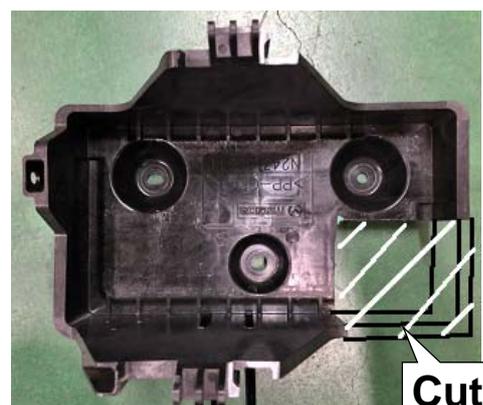
(15) Cut the ⑩Intake manifold cover.



(16) Drill the $\Phi 6\text{mm}$ hole(x4) in the ⑫Battery tray.



(17) Cut the ⑫Battery tray.



(18) Cut the ②⑥ Battery tray.

(19) Spread the hole(x3) of ②⑥ Battery tray by using stick file etc.

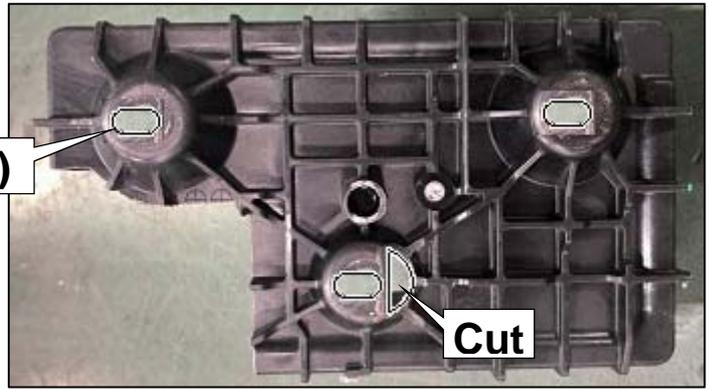
Spread the holes(x3)

(20) Reinstall ②⑥ Battery tray.

- P83 Hexagon bolt M8 L15 x3
- P91 Flat washer M8 small Dia. x3

NOTE

- ◇ Close to the rear of the vehicle for installation.

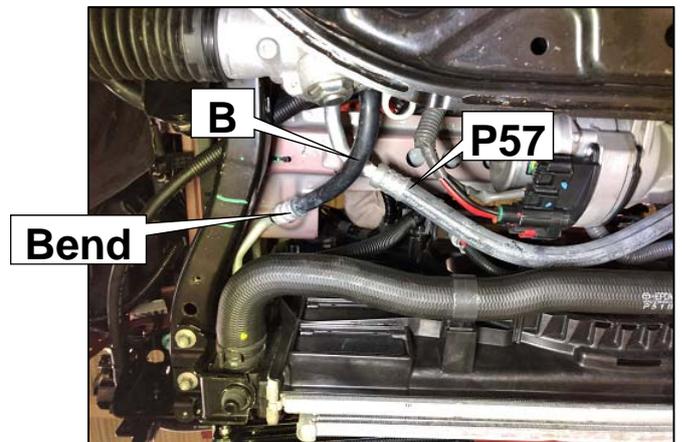
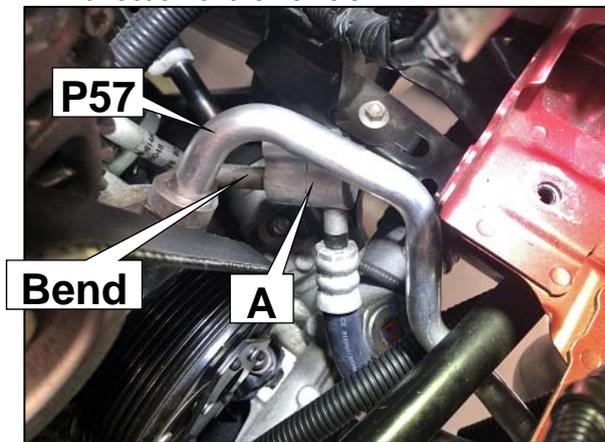


(21) Install Air conditioner hose.

- P57 Air conditioner hose x1

NOTE

- ◇ The Air conditioner hose of the kit parts and the "A" and "B" part of the factory Air conditioner hose are close, so bend the "A" and "B" part of the factory Air conditioner hose 20 mm in the downward direction of the vehicle.



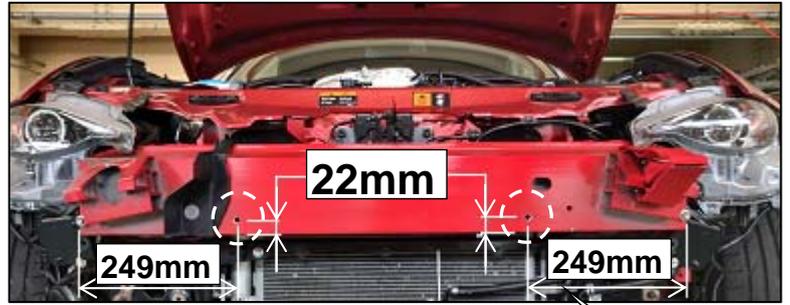
(22) Shave the pointed part of the figure.



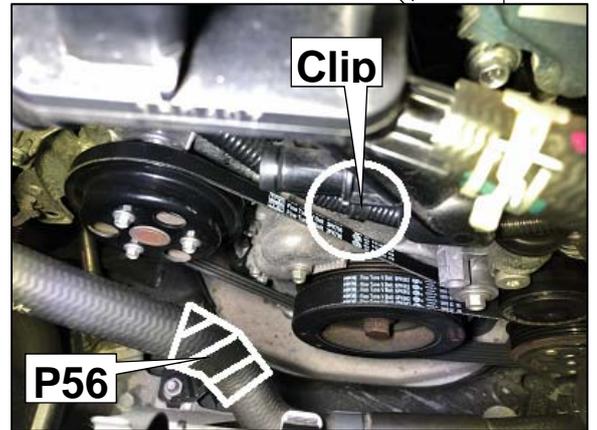
(23) Cut the ⑩ Radiator air guide RH part of the figure.



(24) Drill the $\Phi 9\text{mm}$ hole(x2) to the Front bumper reinforcement.

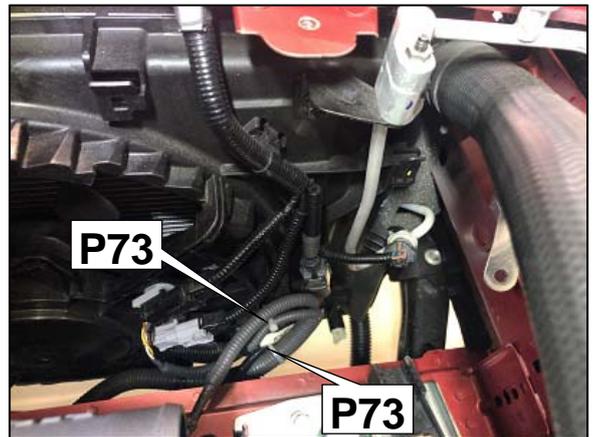


(25) Install Corrugate tube $\Phi 22$ to the heater hose.
• P56 Corrugate tube $\Phi 22$ x1

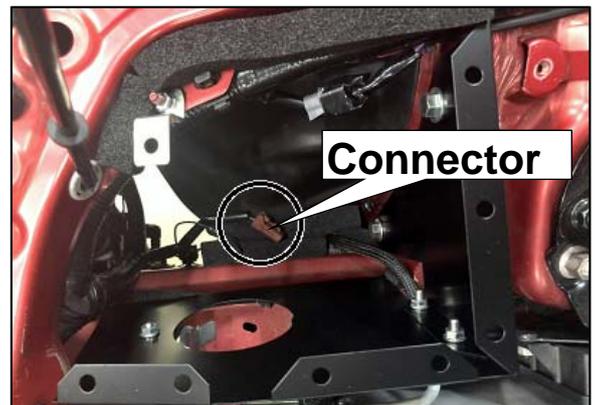


(26) Remove clip from engine wire .

(27) Tighten Radiator fan wire.
• P73 Tie wrap(M) x2



(28) Seal the washer level sensor connector by the Vinyl tape etc.



(29) Cut the hose $\Phi 4$ to 880mm.
• P43 hose $\Phi 4$ x1

(30) Cut the Brake vacuum hose.

(31) Install hose $\Phi 4$ and T-fitting $\Phi 10-\Phi 4-\Phi 10$ to Brake vacuum hose.
• P62 Hose Clamp $\Phi 6.8$ x1
• P65 Hose Clamp $\Phi 15.5$ x2
• P69 T-fitting $\Phi 10-\Phi 4-\Phi 10$ x1

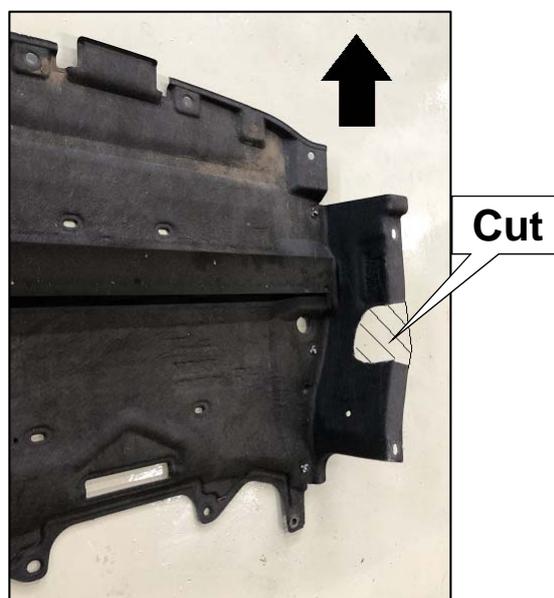
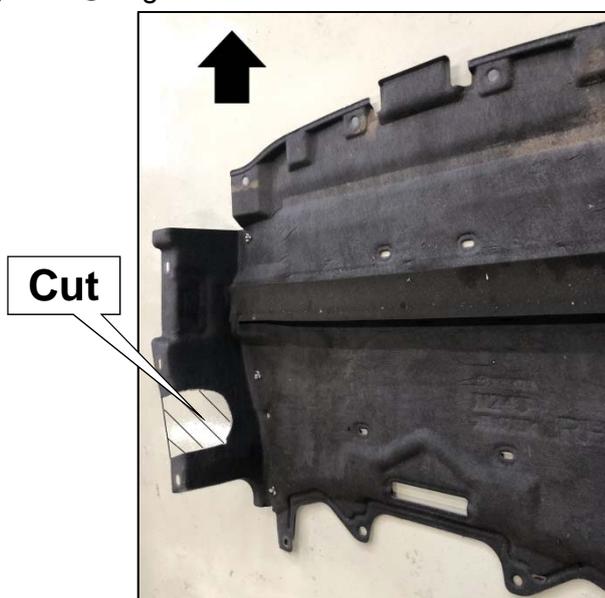
Brake vacuum hose P62·65(x2)·69



(32) Cut ①Mud guard LH.



(33) Cut ②Engine under cover 1.



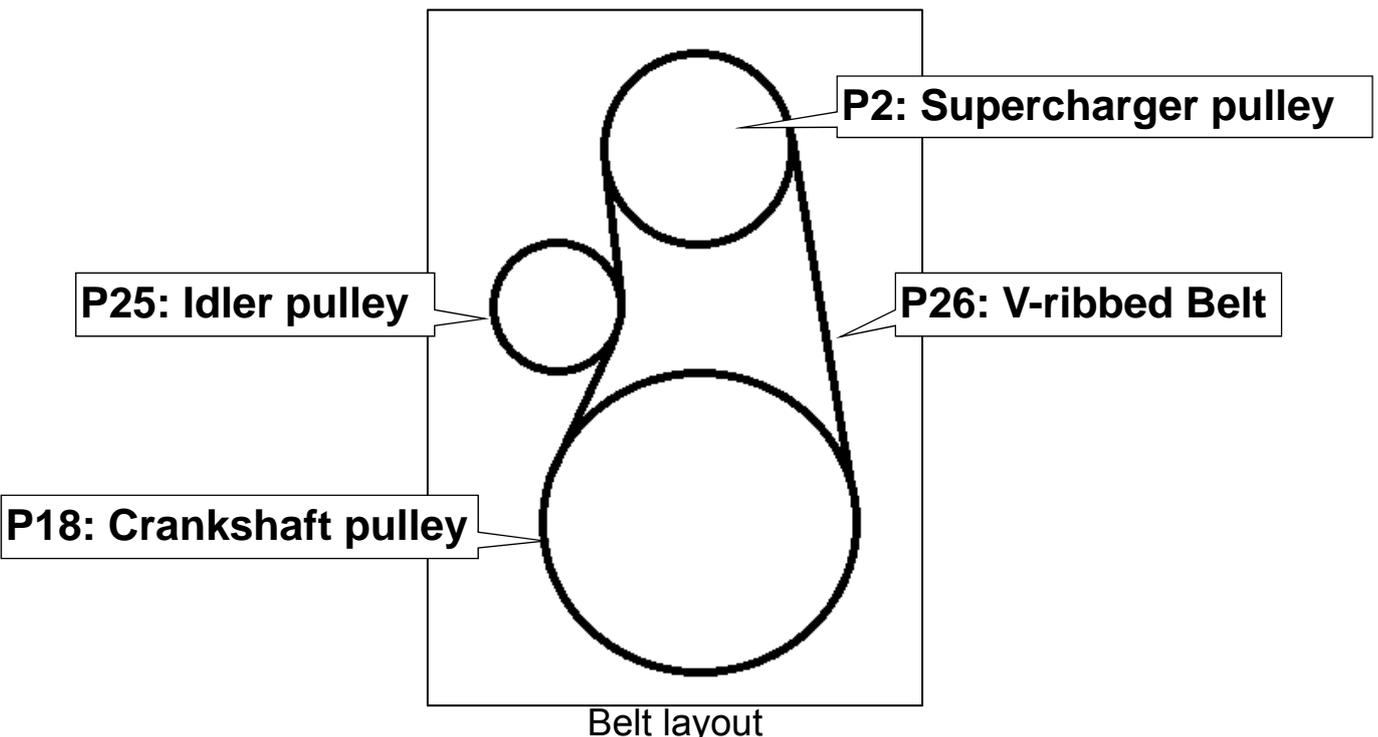
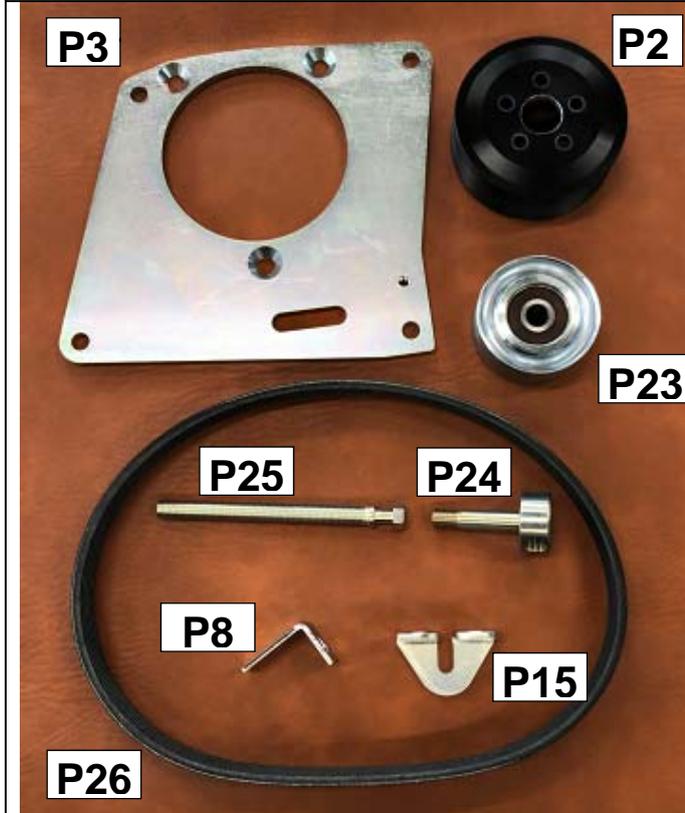
(34) Install Rubber cap to the camber.

- P54 Rubber cap x1



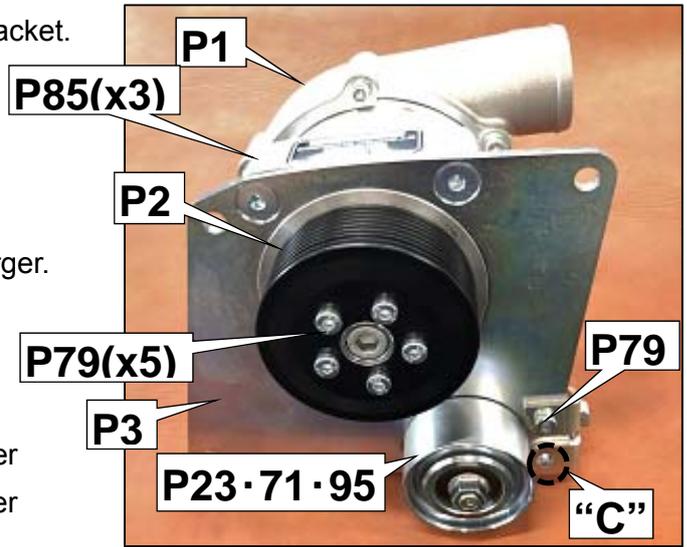
3. INSTALLATION OF SUPERCHARGER

PARTS LIST		
NO	DESCRIPTIONS	QT
P1	Supercharger	1
P2	Supercharger Pulley	1
P3	Supercharger Bracket	1
P8	Traction fluid hose bracket	1
P15	Tensioner bolt bracket	1
P19	Supercharger Bracket Spacer L85.5	1
P20	Supercharger Bracket Spacer L70.0	1
P21	Supercharger Bracket Spacer L36.5	1
P22	Supercharger Bracket Spacer L82.3	1
P23	Idler pulley	1
P24	Tensioner pulley shaft	1
P25	Tensioner pulley adjust bolt	1
P26	V-ribbed belt	1
P71	Spacer $\Phi 20-10$ t=5	1
P73	Tie wrap (M)	1
P79	Low head cap Bolt M6 L12	6
P85	Dish bolt M8 L35	3
P86	Cap bolt M8 L115	1
P87	Cap bolt M8 L120	3
P95	Flange nut M10	1



(1) Install the Supercharger to the Supercharger Bracket.

- P1 Supercharger x 1
- P3 Supercharger Bracket No.1 x 1
- P85 Dish bolt M8 L35 x 3



(2) Install the Supercharger Pulley to the Supercharger.

- P2 Supercharger Pulley x 1
- P79 Low head cap bolt M6 L12 x 5

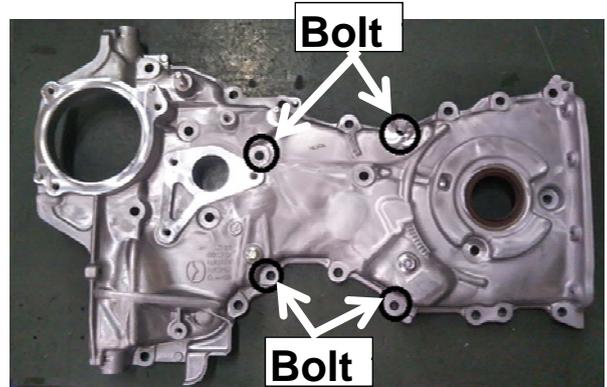
(3) Temporarily install Tensioner bolt bracket · Idler pulley · Tensioner pulley adjust bolt · Tensioner pulley shaft to the Supercharger bracket.

- P15 Tensioner bolt bracket x 1
- P23 Idler pulley x1
- P24 Tensioner pulley shaft x1
- P25 Tensioner pulley adjust bolt x1
- P71 Spacer $\Phi 20-10 t=5$
- P79 Low head cap bolt M6 L12 x 1
- P95 Flange nut M10 x1



(4) Align the hole at the position of "C" in the figure and tighten the Low head cap bolt M6 L12.

(5) Remove factory bolt(x4) from the engine front cover.

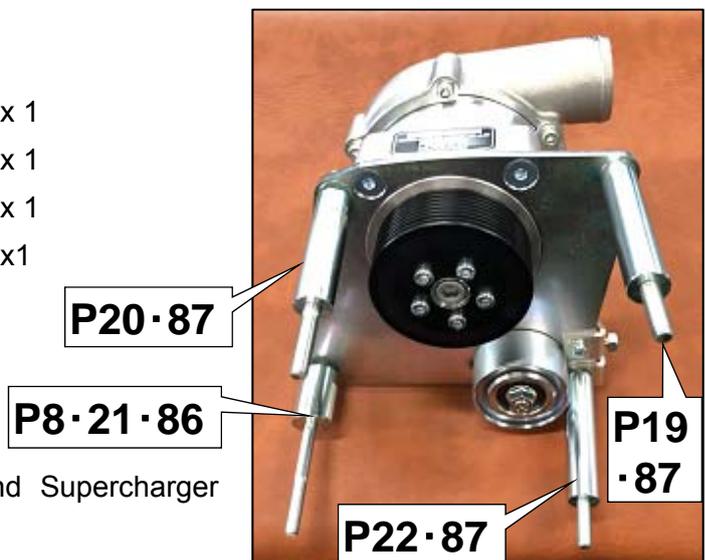


(6) Install Supercharger to the engine.

- P8 Traction fluid hose bracket x1
- P19 Supercharger Bracket Spacer L85.5 x 1
- P20 Supercharger Bracket Spacer L70.0 x 1
- P21 Supercharger Bracket Spacer L36.5 x 1
- P22 Supercharger Bracket Spacer L82.3 x1
- P26 V-ribbed belt x1
- P86 Cap bolt M8 L115 x1
- P87 Cap bolt M8 L120 x3

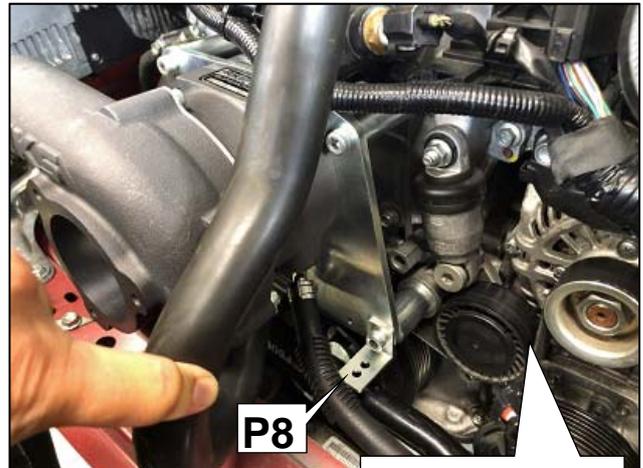
NOTE

- ◇ Tighten Traction fluid hose bracket and Supercharger bracket together.
- ◇ Reuse the Alternator belt.
- ◇ Make sure not to get caught the Alternator belt and Supercharger belt.



 **Caution**

- Make sure the V-ribbed belt is installed properly. Improper installation may cause damage to the belt when the engine is started.
- Rotate the crank pulley and position belt properly.



(7) Tie the engine wire.

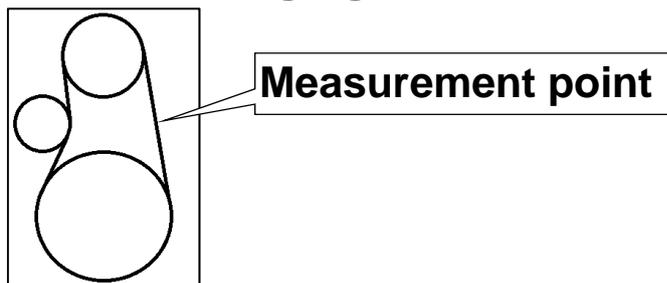
- P73 Tie wrap (M) x1

(8) Reinstall factory V-ribbed belt.

(9) Adjust the belt tension by Belt tension gauge.

Belt size	6PK707
Belt weight (g)	61
Weight per meter and rib (g)	14.4
Axis distance between supercharger and crankshaft (mm)	167

Parameter of Tension gauge



NOTE

- ◇ First time, Adjust tension to 700N.
- ◇ After engine start, Adjust tension to 500 - 600N (when engine is hot).
- ◇ Make sure not to get caught the Alternator belt and Supercharger belt.
- ◇ Measure tension after tightening the Flange nut M10.

 **Caution**

- The tension must be adjusted using a tension gauge.
 - Too low tension : The belt slips, and the frictional heat damages the belt.
 - Too high tension : The belt stretches, and crankshaft metal is damaged.

4. INSTALLATION OF TRACTION FLUID COOLER

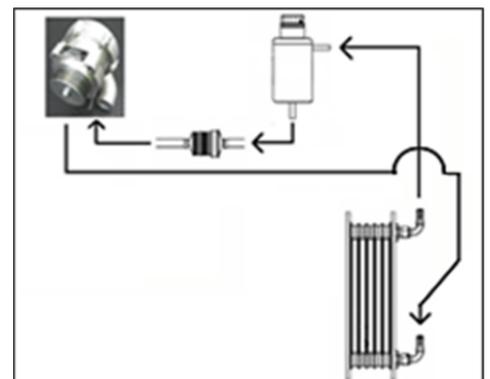
PARTS LIST



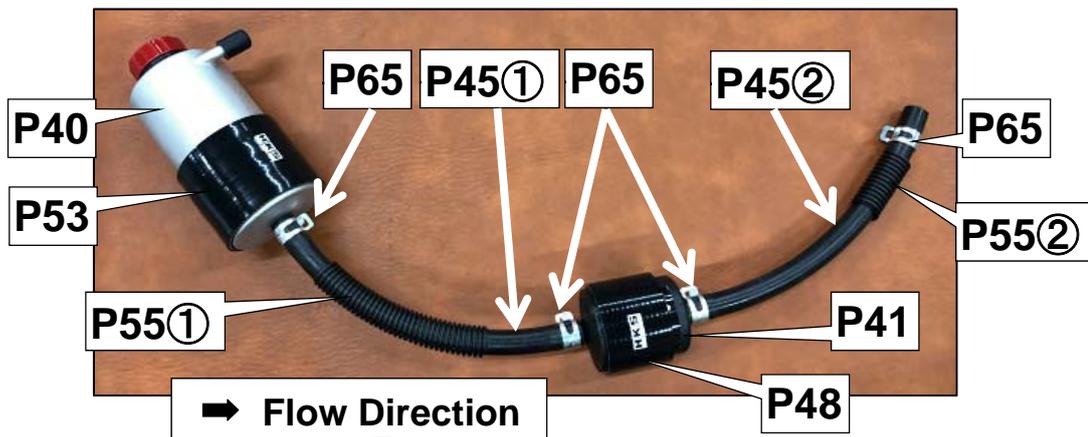
NO	DESCRIPTIONS	QT
P4	Traction fluid tank bracket	1
P5	Traction fluid cooler bracket 1	1
P6	Traction fluid cooler bracket 2	1
P7	Traction fluid cooler bracket 3	1
P39	Traction fluid Cooler	1
P40	Traction fluid Tank	1
P41	Traction fluid Filter	1
P42	Traction fluid	1
P44	Hose Φ 8	1
P45	Hose Φ 9	1
P48	Silicon hose Φ 55	1
P53	Silicon hose Φ 70	1
P55	Corrugate tube Φ 15	1
P61	Hose band #44	2
P63	Hose clamp Φ 13.0	4
P65	Hose clamp Φ 15.5	4
P70	Spacer Φ 20-10 t=4	1
P73	Tie wrap (M)	10
P74	Tie wrap (L)	5
P81	Hexagon bolt M6 L15	5
P83	Hexagon bolt M8 L15	2
P84	Hexagon bolt M8 L20	1
P89	Flat washer M6 Major Dia.	5
P90	Flat washer M8	3
P93	Flange nut M6	4
P94	Flange nut M8	1

NOTE

- ◇ The Supercharger unit is made with precision components. If any foreign objects should become mixed with the traction fluid, 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.
- ◇ Refer to the diagram below for connecting the traction fluid tank, cooler, and supercharger. Make sure to connect all parts properly.



- (1) Cut the Hose $\Phi 9$ to ①235mm and ②240mm.
 - P45 Hose $\Phi 9$ x 1
- (2) Cut the Corrugated Tube $\Phi 15$ to ①120mm, ②50mm, ③940mm, and ④1320mm.
 - P55 Corrugated tube $\Phi 15$ x 1
- (3) Cut the Hose $\Phi 8$ to ①1040mm and ②1420mm.
 - P44 Hose $\Phi 8$ x 1
- (4) Install the Silicone Hose $\Phi 55$ to the Traction Fluid Filter.
 - P41 Traction fluid filter x 1
 - P48 Silicone hose $\Phi 55$ x 1



- (5) Install the Traction Fluid Hose 9mm ① and ② to the Traction Fluid Filter.
 - P65 Hose clamp $\Phi 15.5$ x 4

NOTE

- ✧ Make sure to install the traction fluid filter in the correct direction. The arrow on the filter indicates the direction.
- ✧ One of the Hose clamp $\Phi 15.5$ is diverted from the supercharger rubber cap.

- (6) Install the Corrugated tube $\Phi 15$ ① to the Traction fluid hose $\Phi 9$ ①.
- (7) Install the Corrugated tube $\Phi 15$ ② to the Traction fluid hose $\Phi 9$ ②.
- (8) Install the Corrugated tube $\Phi 15$ ③ to the Traction fluid hose $\Phi 8$ ①.
- (9) Install the Corrugated tube $\Phi 15$ ④ to the Traction fluid hose $\Phi 8$ ②.

- (10) Install Silicon hose $\Phi 70$ to the Traction Fluid tank.

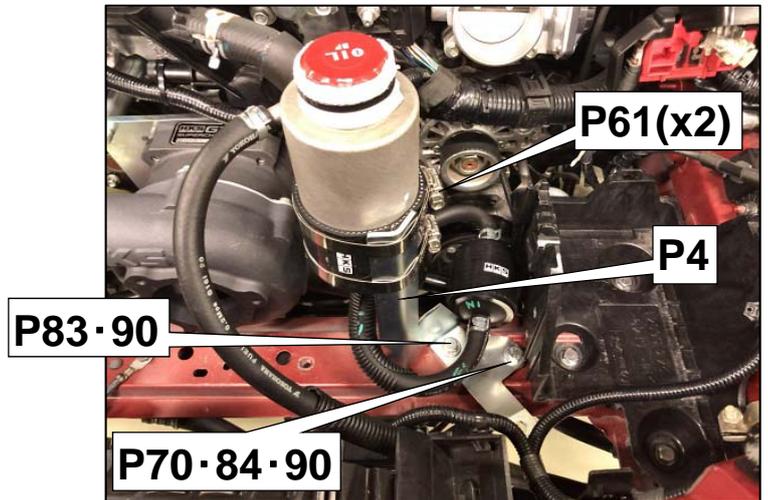
- P53 Silicon hose $\Phi 70$ x1

- (11) Install Hose $\Phi 9$ ① to the Traction Fluid tank.

- P40 Traction fluid tank x1
- P65 Hose clamp $\Phi 15.5$ x 2

(12) Install Traction fluid tank to the vehicle.

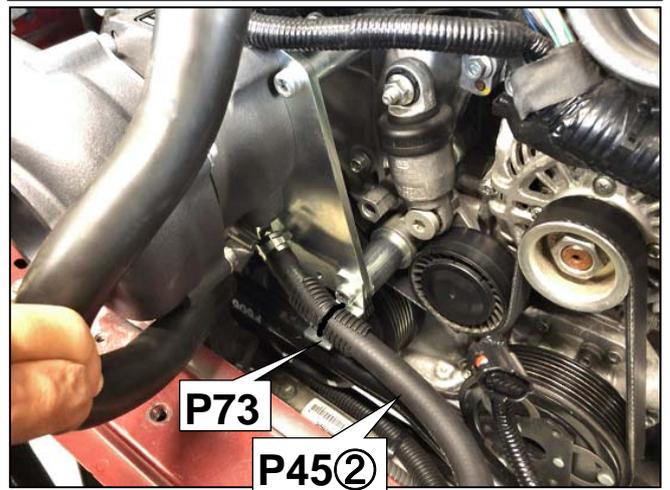
- P4 Traction Fluid tank bracket x1
- P61 Hose band #44 x2
- P70 Spacer $\Phi 20-10$ t=4 x1
- P83 Hexagon bolt M8 L15 x1
- P84 Hexagon bolt M8 L20 x1
- P90 Flat washer M8 x2



(13) Install Hose $\Phi 9$ ② to the Supercharger.

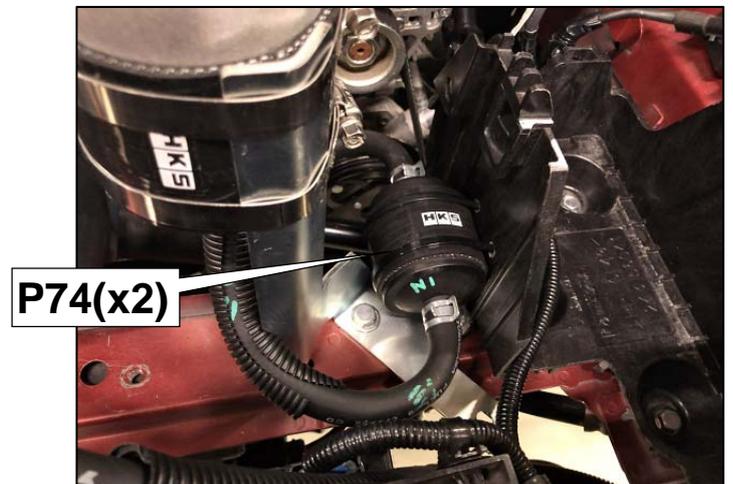
(14) Tie Hose $\Phi 9$ ② to the Traction fluid hose bracket.

- P73 Tie wrap (M) x1



(15) Tie Traction fluid filter to the Battery tray.

- P74 Tie wrap (L) x2

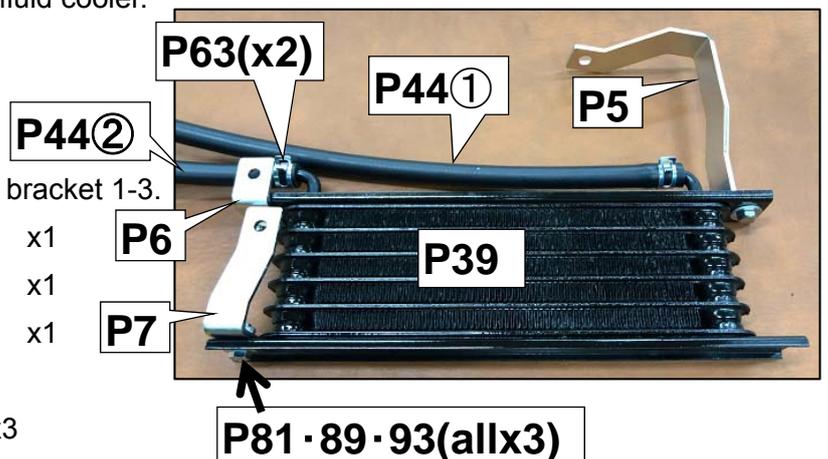


(16) Install Hose $\Phi 8$ ①&② to the Traction fluid cooler.

- P39 Traction fluid cooler x1
- P63 Hose clamp $\Phi 13.0$ x2

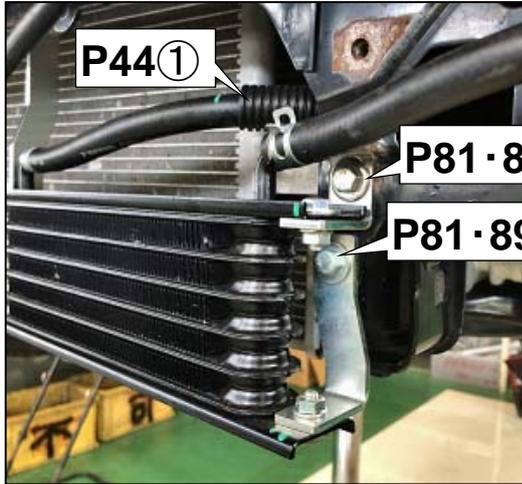
(17) Temporarily install Traction fluid cooler bracket 1-3.

- P5 Traction fluid cooler bracket 1 x1
- P6 Traction fluid cooler bracket 2 x1
- P7 Traction fluid cooler bracket 3 x1
- P81 Hexagon bolt M6 L15 x3
- P89 Flat washer M6 Major Dia. x3
- P93 Flange nut M6 x3



(18) Install Traction fluid cooler to the vehicle.

- P81 Hexagon bolt M6 L15 x2
- P83 Hexagon bolt M8 L15 x1
- P89 Flat washer M6 Major Dia. x2
- P90 Flat washer M8 x1
- P93 Flange nut M6 x1
- P94 Flange nut M8 x1

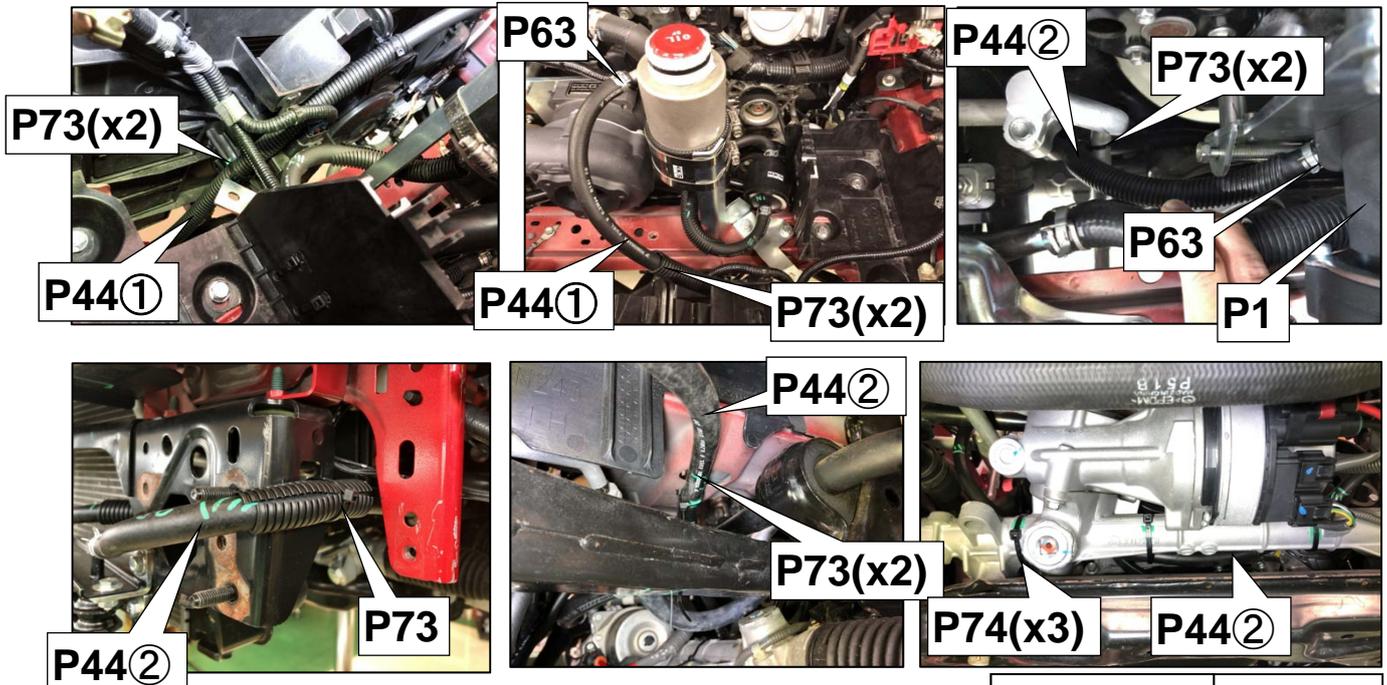


(19) Install the Hose $\Phi 8$ (1) and (2) to the Supercharger & Traction fluid tank, and fix the hose $\Phi 8$ (1) and (2).

- P63 Hose clamp $\Phi 13.0$ x2
- P73 Tie wrap (M) x9
- P74 Tie wrap (L) x3

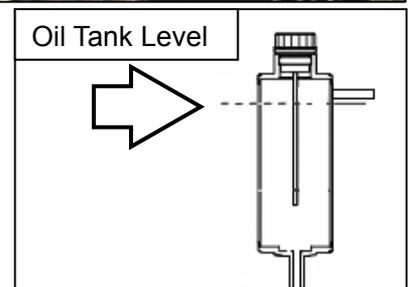
NOTE

- ✧ Connect Hose $\Phi 8$ (1) to the Traction fluid tank, and connect Hose $\Phi 8$ (2) to the Supercharger.
- ✧ One of the Hose clamp $\Phi 13.0$ is diverted from the supercharger rubber cap.



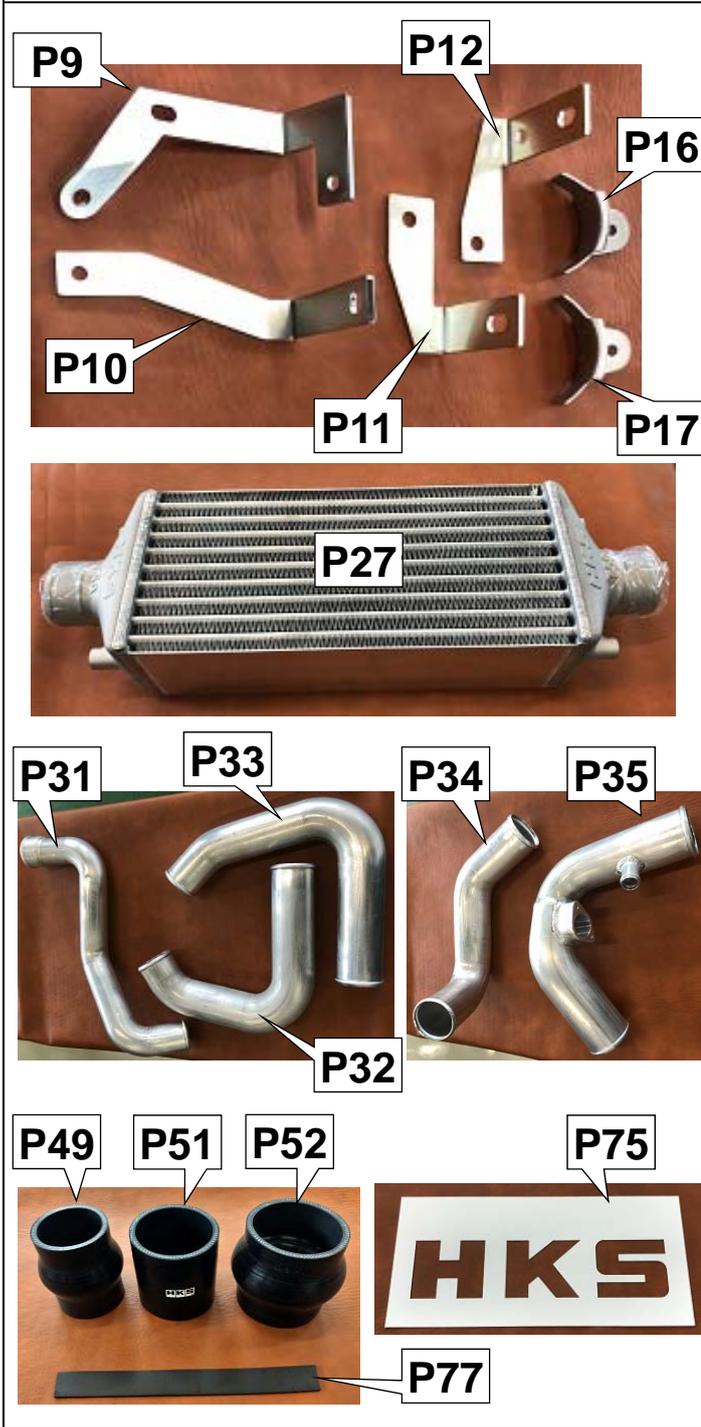
(20) Make sure there are no foreign objects in the Traction Fluid Tank. Add the Traction Fluid up to the dotted line in the diagram. Close the cap properly and securely.

- P42 Traction Fluid x1



5. INSTALLATION OF INTERCOOLER & PIPING

PARTS LIST



NO	DESCRIPTIONS	QT
P9	Air cleaner bracket	1
P10	Intercooler bracket 1	1
P11	Intercooler bracket 2	1
P12	Intercooler bracket 3	1
P16	Pipe bracket Φ50	1
P17	Pipe bracket Φ60	1
P27	Intercooler	1
P31	Intercooler inlet pipe 1	1
P32	Intercooler inlet pipe 2	1
P33	Intercooler outlet pipe 1	1
P34	Intercooler outlet pipe 2	1
P35	Intercooler outlet pipe 3	1
P49	Silicon Cushion hose Φ50	1
P51	Silicon hose Φ60	5
P52	Silicon Cushion hose Φ65	1
P59	Hose band #32	3
P60	Hose band #40	13
P73	Tie wrap (M)	1
P75	Masking sheet	1
P77	Insulator rubber	2
P78	Button bolt M4 L12	2
P81	Hexagon bolt M6 L15	3
P82	Hexagon bolt M6 L20	1
P84	Hexagon bolt M8 L20	5
P89	Flat washer M6 Major Dia.	4
P90	Flat washer M8	6
P93	Flange nut M6	2
P94	Flange nut M8	2

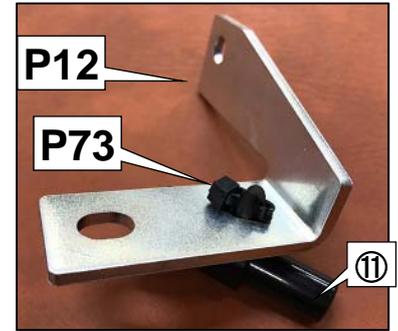
(1) Splay HKS logo to the Intercooler.

- P27 Intercooler x1
- P75 Masking sheet x1



(2) Install ⑩ Outside temperature sensor to the Intercooler bracket 3.

- P12 Intercooler cooler bracket 3 x 1
- P73 Tie wrap (M) x1

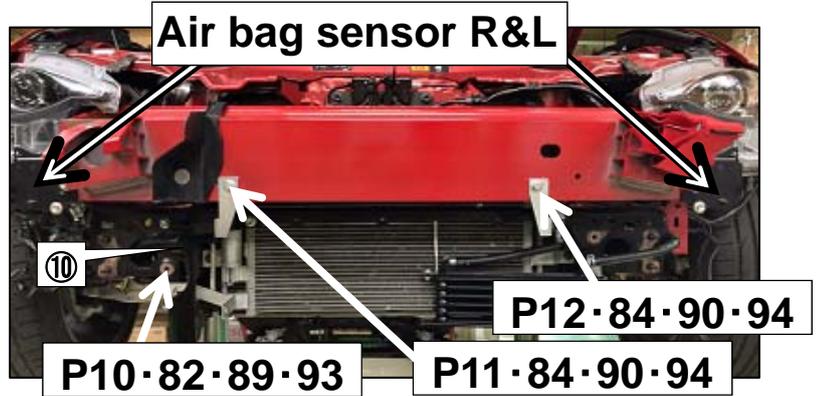


(3) Reinstall ⑩ Radiator air guide RH.

(4) Remove Air bag sensor R and L.

(5) Temporarily install the Intercooler bracket 1·2·3 to the vehicle.

- P10 Intercooler cooler bracket 1 x 1
- P11 Intercooler cooler bracket 2 x 1
- P12 Intercooler cooler bracket 3 x 1
- P82 Hexagon bolt M6 L20 x1
- P84 Hexagon bolt M8 L20 x2
- P89 Flat washer M6 Major Dia. x1
- P90 Flat washer M8 x2
- P93 Flange nut M6 x1
- P94 Flange nut M8 x2



(6) Reinstall Air bag sensor R and L.

(7) Temporarily install the Intercooler to the Intercooler bracket 1·2·3.

- P84 Hexagon bolt M8 L20 x3
- P90 Flat washer M8 x3

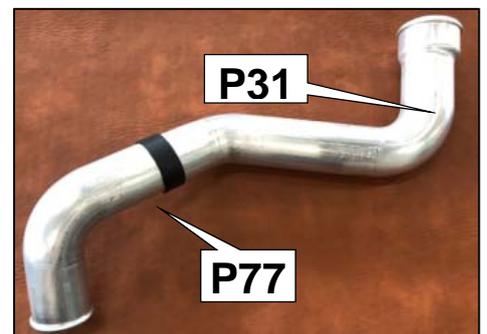


(8) Tighten all bolts of Intercooler and Intercooler bracket 1·2·3.

(9) Make sure the intercooler does not come in contact with any other parts of the vehicle, and Tighten all bolts.

(10) Install Insulator rubber to the Intercooler Inlet Pipe 1 and intercooler outlet pipe 2.

- P31 Intercooler inlet pipe 1 x1
- P34 Intercooler outlet pipe 2 x1
- P77 Insulator rubber x2

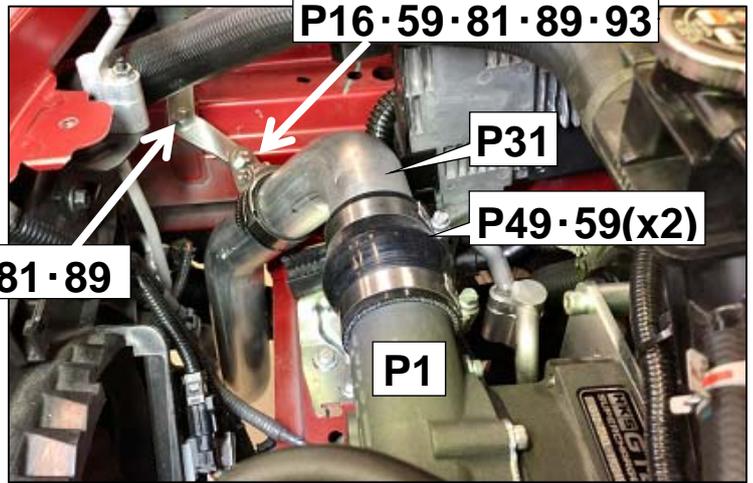


NOTE

- ◇ Wrap the insulator rubber around the pipe and cut it into a suitable length. And stick the insulator rubber to the Intercooler inlet pipe 1 with vinyl tape.

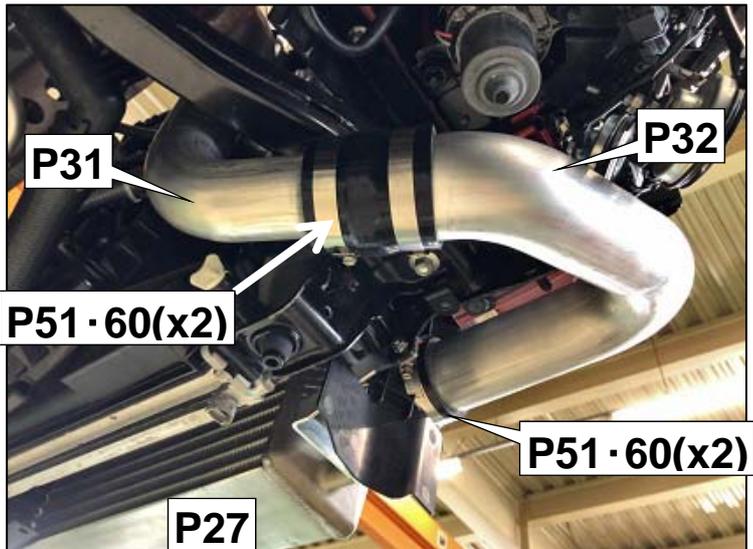
(11) Temporarily install Intercooler Inlet pipe 1 and 2 to the Supercharger and Intercooler.

- P32 Intercooler inlet pipe 2 x1
- P49 Silicon cushion hose $\Phi 50$ x1
- P51 Silicon hose $\Phi 60$ x2
- P59 Hose band #32 x2
- P60 Hose band #40 x4



(12) Temporarily install Air cleaner bracket.

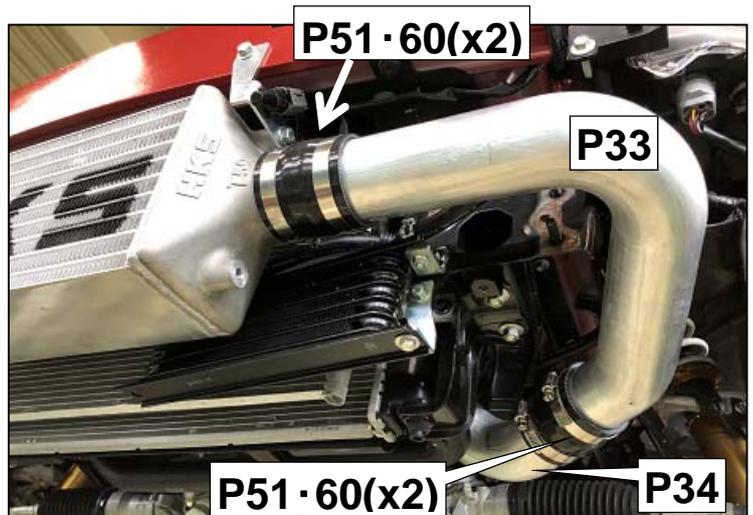
- P9 Air cleaner bracket x1
- P16 Pipe bracket $\Phi 50$ x1
- P59 Hose band #32 x1
- P81 Hexagon bolt M6 L15 x2
- P89 Flat washer M6 Major Dia. x2
- P93 Flange nut M6 x1



(13) Make sure the intercooler inlet pipe in contact with any other parts of the vehicle, and tighten Hose band and Bolt.

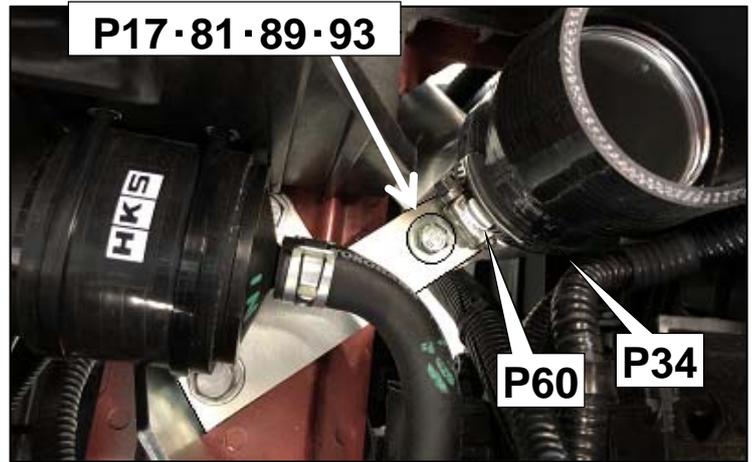
(14) Temporarily install Intercooler outlet pipe 1 & 2 to the Intercooler.

- P33 Intercooler outlet pipe 1 x1
- P34 Intercooler outlet pipe 2 x1
- P51 Silicon hose $\Phi 60$ x2
- P60 Hose band #40 x4



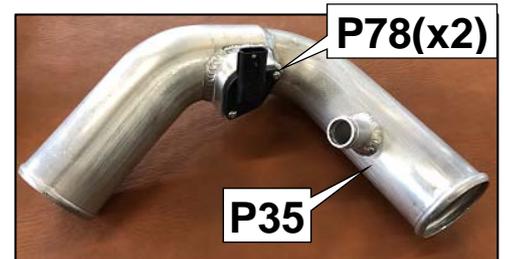
(15) Temporarily install Pipe bracket $\Phi 60$ to the Intercooler outlet pipe 2 and Traction fluid tank bracket.

- P17 Pipe bracket $\Phi 60$ x1
- P60 Hose band #40 x1
- P81 Hexagon bolt M6 L15 x1
- P89 Flat washer M6 Major dia. x1
- P93 Flange nut M6 x1



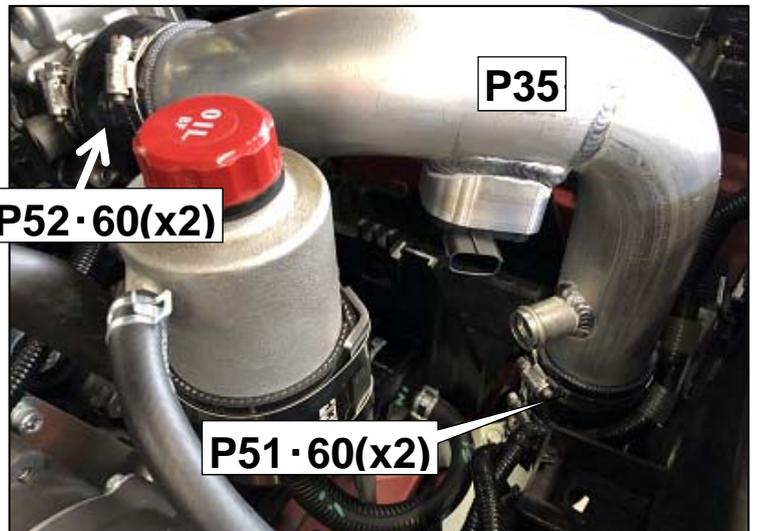
(16) Install ⑮ Air flow meter to Intercooler outlet pipe 3.

- P78 Button bolt M4 L12 x2
-



(17) Temporarily install Intercooler outlet pipe 3 to the engine.

- P35 Intercooler outlet pipe 1 x1
- P51 Silicon hose $\Phi 60$ x1
- P52 Silicon cushion hose $\Phi 65$ x1
- P60 Hose band #40 x4



(18) Make sure the intercooler inlet pipe in contact with any other parts of the vehicle, and tighten Hose band and Bolt.

(19) Install Battery.

NOTE

- ◇ Close to the rear of the vehicle for installation.

6. INSTALLATION OF WASHER TANK

PARTS LIST

NO	DESCRIPTIONS	QT
P13	Washer tank bracket 1	1
P14	Washer tank bracket 2	1
P66	Washer tank kit	1
P67	Terminal kit	2
P73	Tie wrap	2
P81	Hexagon bolt M6 L15	2
P89	Flat washer M6 Major Dia.	2
P93	Flange nut M6	2

- (1) Install Washer tank connector in the washer tank kit to the factory wire.
- P66 Washer tank kit x 1
 - P67 Terminal kit x 2

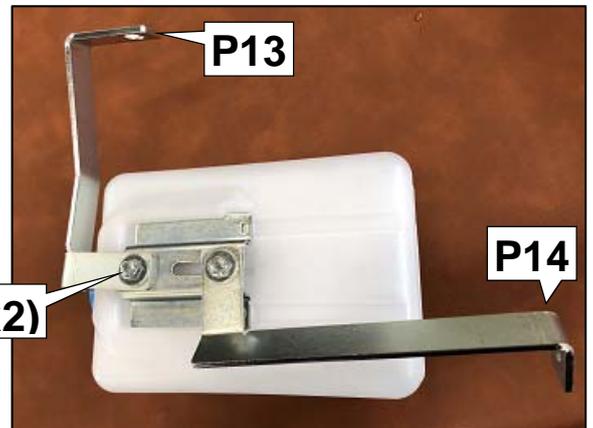
- (2) Tie wire of Washer tank kit to the vehicle wire.
- P73 Tie wrap (M) x 2

Temporarily install the Washer tank bracket 1 and 2 to the washer tank.

- P13 Washer tank bracket 1 x 1
- P14 Washer tank bracket 2 x 1
- P81 Hexagon bolt M6 L15 x 2
- P89 Flat washer M6 Major Dia. x 2
- P93 Flange nut M6 x 2

P81·89·93(All x2)

- (3) Install Washer hose and electrical wire to the Washer tank.
- (4) Install Washer tank to the vehicle.
- (5) Tighten Washer tank bracket 1 and 2.



7. INSTALLATION OF SUCTION PIPE

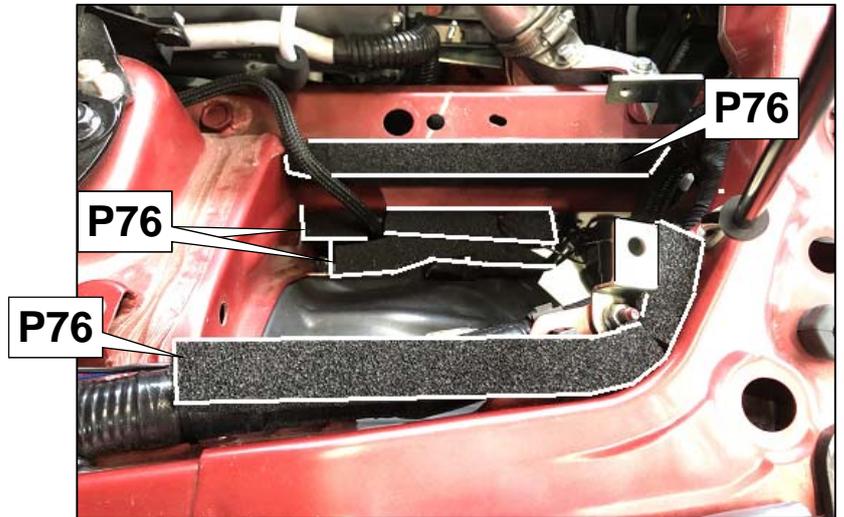
PARTS LIST



NO	DESCRIPTIONS	QT
P17	Pipe bracket $\Phi 60$	1
P28	Super power flow	1
P29	Suction pipe 1	1
P30	Suction pipe 2	1
P36	Blow-off valve	1
P37	Supercharger inlet pipe gasket	1
P38	Nipple $\Phi 11-1/8PT$	1
P47	Silicon hose $\Phi 22$	1
P50	Silicon cushion hose $\Phi 60$	1
P51	Silicon hose $\Phi 60$	1
P58	Hose band #12	2
P60	Hose band #40	4
P62	Hose clamp $\Phi 6.8$	1
P71	Spacer $\Phi 20-10 t=5$	2
P73	Tie wrap (M)	4
P76	Sponge	5
P80	Flange bolt M6 L20	3
P81	Hexagon bolt M6 L15	3
P84	Hexagon bolt M8 L20	2
P89	Flat washer M6 Major Dia.	3
P90	Flat washer M8	2
P91	Flat washer M8 Small dia.	8
P93	Flange nut M6	4
P94	Flange nut M8	2
P96	Air cleaner case 1	1
P97	Air cleaner case 2	1
P98	Air cleaner case 3	1
P99	Air cleaner case bracket	1
P100	Clip	8
P101	Wave washer	8
P102	Spark plug	4

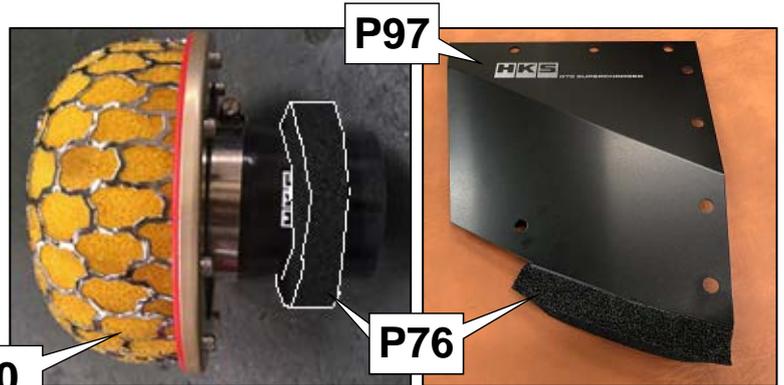
(1) Install Sponge to the vehicle.

- P76 Sponge x 4



(2) Install Sponge to the Silicon hose Φ60 and Air cleaner case 2.

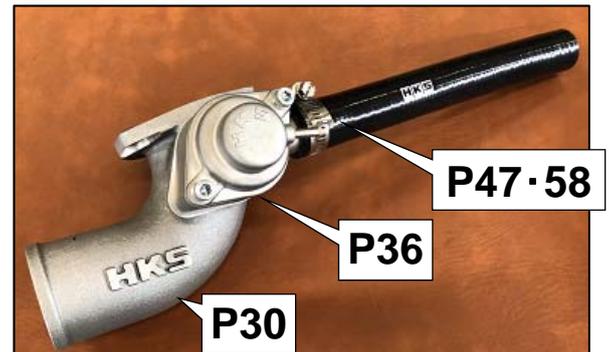
- P28 Super power flow x1
- P51 Silicon hose Φ60 x1
- P60 Hose band #40 x1
- P76 Sponge x 1
- P97 Air cleaner case 2 x1



P28·51·60

(3) Install Blow-off valve to the Suction pipe 2.

- P30 Suction pipe 2 x1
- P36 Blow-off valve x1
- P47 Silicon hose Φ22 x1
- P58 Hose band #12 x1



P47·58

P36

P30

NOTE

✧ Take care not bite bellofram of Blow-off valve.

(4) Install Suction pipe 2 to the Supercharger, and install Silicon hose Φ22 to the Intercooler outlet pipe 2.

- P37 Supercharger inlet pipe gasket x1
- P58 Hose band #12 x1
- P80 Flange bolt M6 L20 x3

P37·P80(x3)

P30

P58



(5) Install Nipple Φ11-1/8PT to the Suction pipe 1.

- P29 Suction pipe 1 x1
- P38 Nipple Φ11-1/8PT x1

P29

P38

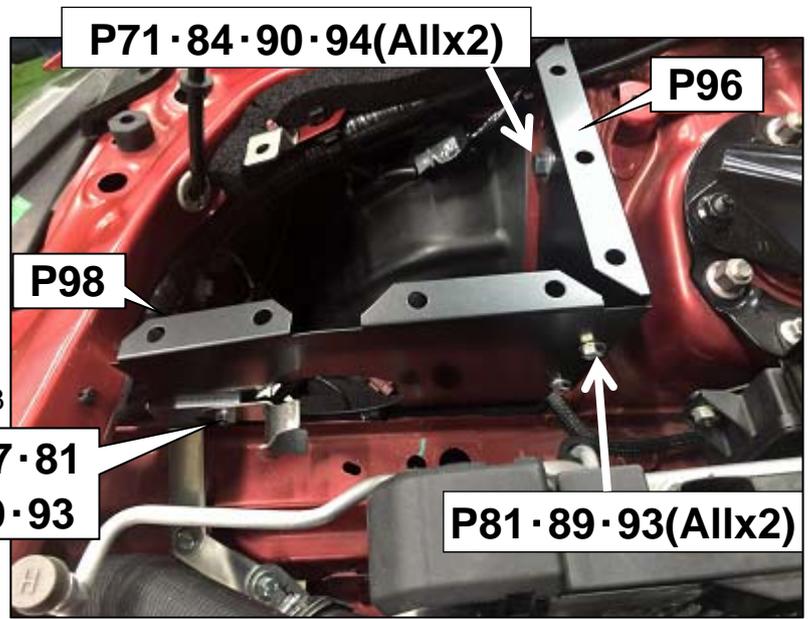


NOTE

- ✧ Wrap sealing tape around nipple Φ11-1/8PT screw and install to suction pipe.
- ✧ After tightening the fitting by hand, tighten it another one to two turns using the appropriate tools. (It is not necessary to tighten the fittings to the point where the nut touches the pipe.)

(6) Temporarily install Air cleaner case 1 and 3 to Air cleaner bracket and the vehicle.

- P17 Pipe bracket $\Phi 60$ x1
- P71 Spacer $\Phi 20-10$ t=5 x2
- P81 Hexagon bolt M6 L15 x3
- P84 Hexagon bolt M8 L20 x2
- P89 Flat washer M6 Major Dia. x3
- P90 Flat washer M8 x2
- P93 Flange nut M6 x3
- P94 Flange nut M8 x2
- P96 Air cleaner case 1 x1
- P98 Air cleaner case 3 x1



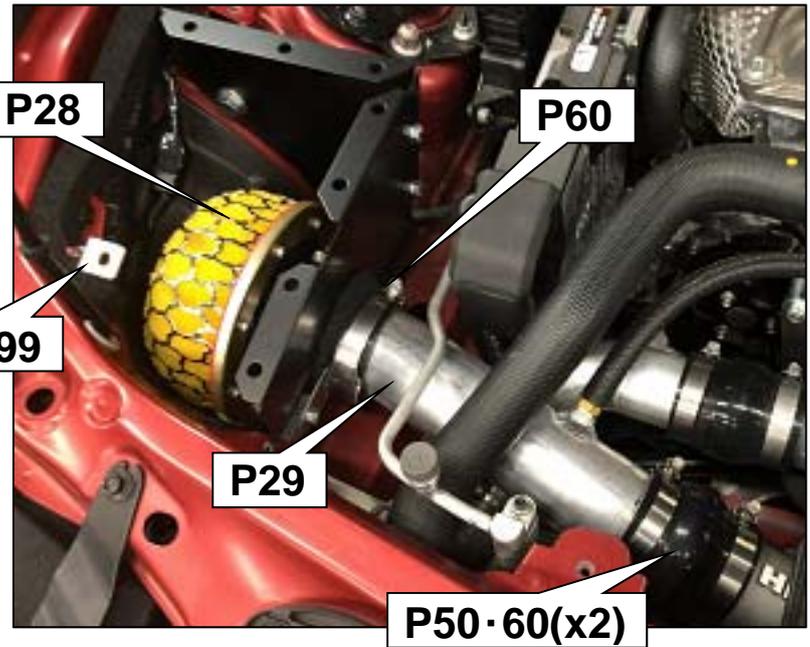
(7) Tighten Air cleaner case 1 and 3.

(8) Install Air cleaner case bracket to the vehicle.

- P93 Flange nut M6 x1
- P99 Air cleaner case bracket x1

NOTE

◇ Use P97 Air cleaner case 2 to determine the position.



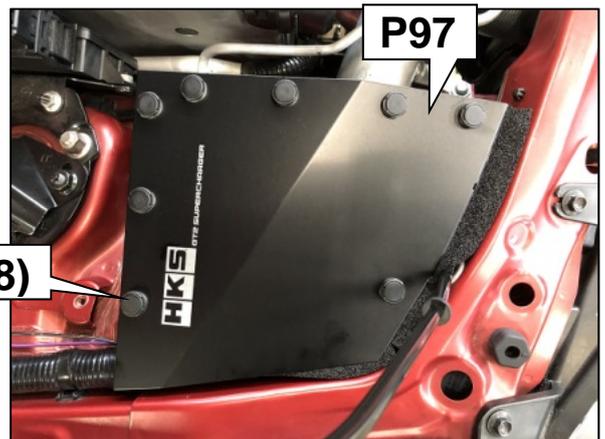
(9) Install Super power flow and Suction pipe 1.

- P50 Silicon cushion hose $\Phi 60$ x1
- P60 Hose band #40 x3

(10) Tighten Air cleaner bracket and Air cleaner case 1&3.

(11) Install Air cleaner case 2 to the Air cleaner case 1&3.

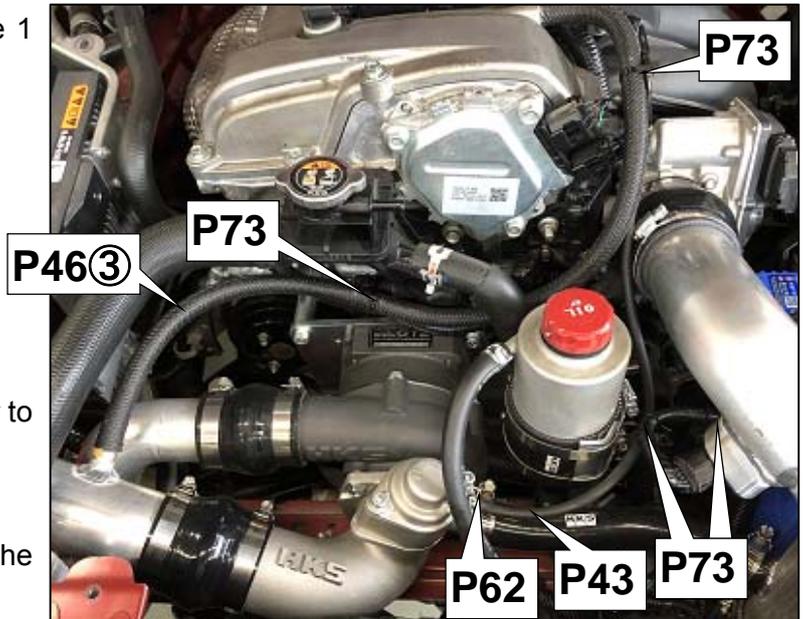
- P97 Air cleaner case 2 x1
- P91 Flat washer M8 small dia. x8
- P100 Clip x8
- P101 Wave washer x8



(12) Install Spark plug.

- P102 Spark plug x4

- (13) Install Hose $\Phi 10$ ③ to the Suction pipe 1 & engine.
- (14) Install Hose $\Phi 4$ to the Blow-off valve.
 - P62 Hose clamp $\Phi 6.8$ x 1
- (15) Tie Hose $\Phi 4$ & Hose $\Phi 10$
 - P73 Tie wrap (M) x 3
- (16) Tie Hose electrical wire of Air flow meter to the Battery ② Hook bolt.
 - P73 Tie wrap (M) x 1
- (17) Connect Air flow meter connector to the ⑩ Air flow meter.



8. REINSTALLATION OF FACTORY PARTS

- (1) Reinstall ⑳ Stabilizer nut.
- (2) Reinstall ⑩ Engine cover.
- (3) Reinstall ⑭ Coolant reserve tank.
- (4) Reinstall ⑬ Coolant hose.
- (5) Reinstall ⑧ Bumper Stiffener.
- (6) Reinstall ④ Front bumper.
- (7) Reinstall ③ Engine under cover 2.
- (8) Reinstall ② Engine under cover 1.
- (9) Reinstall ① Front mud guard RH & LH.

9. CONFIRMATION AFTER INSTALLATION & FILLING TRACTION FLUID

Check the following after the installation process is complete.

- (1) 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 all bolts (especially the pulley bolts) are tightened properly.	
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 and nuts are tightened.	
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.	

- (2) Prepare Traction Fluid in a beaker or small container, open the oil cap and start the engine.
- (3) Immediately after starting the engine, perform the following:
- a) Make sure that the oil level starts to decline, and then increase again.
 - b) Add oil from a beaker or small container preventing the oil tank get empty.
Also make sure that the Oil Tank does not overflow.
- ※ There may be some abnormal noises from the Supercharger after starting the engine but this is normal. This noise will disappear after the Traction Fluid warms up (approximately 2 to 3 minutes).
- (4) Start the engine and perform the following checks after the engine reaches normal operating temperature:

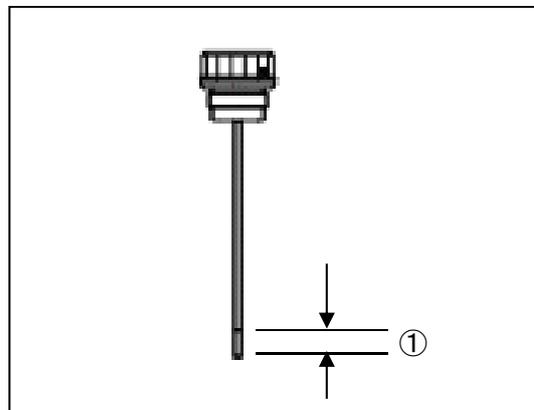
NOTE

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 there are no leaks in the fuel, Traction Fluid, coolant, or piping.	
3	Make sure there is no excessive stress on any harnesses, fuel lines or hoses.	
4	Make sure the installed parts do not come in contact with any other parts.	

- (5) After checking 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 ① indicated in below. If traction fluid is low, 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 to avoid damage to the bottle and/or degradation of the fluid.**



- (6) Put the oil tank cap back on.

The installation process is now complete

- ※ **After driving a while and when the engine room is at high temperature, the belt may make squeaking noises. This is caused by the factory auto-tensioner's adjustment function; this is normal.**

10. ADJUSTMENT OF BELT TENSION

- (1) Start and warm up the engine.
- (2) Adjust the belt tension by Belt tension gauge.

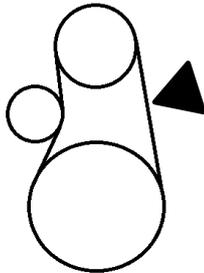
- **Parameter of Tension gauge**

Belt size	6PK707
Belt weight (g)	61
Weight per meter and rib (g)	14.4
Axis distance between supercharger and crankshaft (mm)	167

- **Adjustment target value**

When engine is hot	When engine is cold
500-600 N	200-300 N

- **Measurement point**



NOTE

- ◇ Measure tension after tightening the Flange nut M10.

 **Caution**

- In 3month or 3000km adjustment of belt tension is required.
- The tension must be adjusted using a tension gauge.
 - Too low tension : The belt slips, and the frictional heat damages the belt.
 - Too high tension : The belt stretches, and crankshaft metal is damaged.

11. 1ST MONTH INSPECTION

○ Inspection

1. 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: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;"> 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 v-belt's 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 mounting bolt is tightened <input type="checkbox"/></p> <p>Check if pulley mounting bolts are properly tightened <input type="checkbox"/></p> <p>Check if pulley does not come in contact with any other parts of the vehicle. <input type="checkbox"/></p>
5	<p><u>Other</u></p> <p>Check all mounted parts for interference with other parts</p> <p>Locations:</p> <ul style="list-style-type: none"> ▪ Suction pipe & vehicle <input type="checkbox"/> ▪ Traction Fluid Hose & vehicle <input type="checkbox"/> ▪ 4mm Hose from Blow-off Valve & vehicle <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>

12. MAINTENANCE

- Traction Oil is used specifically for the HKS Supercharger. Do not use other types of oils; use of other brands of Traction Oil, engine oil, or transmission oil can lead to damage to the HKS Supercharger internals.
- Traction Oil does not need to be replaced, however check oil level prior to driving. If oil level is low, add Traction Oil as necessary.
 - Use the part number below to order Traction Oil.

Product Name	Part Number
Traction Fluid	12002-AK029

- Replace the Traction Oil Filter every 5 years or 70,000km after installing the HKS Supercharger.
 - Use the part number below to order the Traction Oil Filter.

Product Name	Part Number
Traction Fluid Filter	12002-AK015

- Belts are consumable parts. Always check belts prior to driving for any cracks or tears.
- Replace damaged belts immediately. Do not use other types of belt; use of other brands of belt may cause belt to squeal.
 - Use the part number below to order the Ribbed Belt.

Product Name	Part Number
V-ribbed Belt 6PK707	24996-AK050

13. 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"> Belt squeals 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"> Check the belt tension. Adjust if necessary.
<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.

14. IF 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.
- Belt of supercharger kit drive only supercharger. If the other parts are not damaged, you can drive the vehicle.
- 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.



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