

INSTALLATION MANUAL

Read this manual thoroughly prior to the installation.

Installation must be done by a professional.

Store this manual together with the Instruction Manual in a safe place.

This product fits only the following vehicle.

Should the model of your vehicle not comply with the application of this product, contact the seller at your earliest convenience.

PRODUCT NAME	GT2 SUPERCHARGER SYSTEM Pro
PURPOSE	AUTOMOBILE PARTS
PART NUMBER	12001-KZ001
MANUAL NUMBER	E04215-Z30012-00 Ver.3-3.03
VEHICLE	 MAZDA MX-5 Manual Transmission Vehicles Left handle Vehicle (Compatibility of right-hand drive vehicle not confirmed)
ENGINE	SKYACTIV-G 2.0L
MODEL YEAR	MAZDA MX-5 2016~2018
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. Change of Battery is required. The recommended battery size: Non Start-stop car B19L ※Battery pole adapter JIS S type to DIN is necessary. ODYSSEY Battery:PC680MJT Start-stop car 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: Sealing tape Stainless steel wire Vinyl tape Required tools to install this kit: Remove crankshaft pulley

REVISION OF MANUAL

Rev. Number	Date	Details
3-3.01	2019/8	1 st Edition
3-3.02	2023/9	2 nd Edition
3-3.03	2025/5	3 rd Edition

INDEX

NOTICE / ATTENTION / SAFETY PRECAUTIONS	∙1
PARTS LIST ·····	·2
1. REMOVAL OF STOCK PARTS ·····	_
2. MODIFICATION & RELOCATION OF STOCK PARTS	.9
3. INSTALLATION OF SUPERCHARGER ······	·15
4. INSTALLATION OF TRACTION FLUID COOLER ······	
5. INSTALLATION OF INTERCOOLER & PIPING	.22
6. INSTALLATION OF WASHER TANK ······	
7. INSTALLATION OF SUCTION PIPE ······	
8. REINSTALLATION OF STOCK PARTS	.30
9. CONFIRMATION AFTER INSTALLATION & FILLING TRACTION FLUID	
10. ADJUSTMENT OF BELT TENSION	.32
11. 1 ST MONTH INSPECTION······	
12. MAINTENANCE · · · · · · · · · · · · · · · · · · ·	
13. TROUBLESHOOTING······	.34
14. IF BELT BREAKS ·····	.35

NOTICE

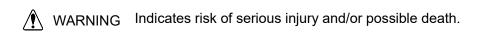
Thank you for purchasing HKS GT2 SUPERCHARGER SYSTEM. This manual assumes that you have and know how to use the tools and equipment necessary to safely perform service operations on your vehicle. This manual assumes that you are familiar with typical automotive systems and basic service and repair procedures. Do not attempt to carry out the operations shown in this manual unless these assumptions are correct. Always have access to a stock service manual. To avoid injury, follow the safety precautions contained in the stock 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 stock 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.



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

PARTS LIST No.1

			NO.1
No.	Part Name	QT	Description
1	GT2 Supercharger	1	GT2-7040L
2	Supercharger pulley	1	OD85mm-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 1	1	For OD50mm
17	Pipe bracket 2	2	For OD60mm
18	Crankshaft pulley	1	
19	Supercharger bracket spacer L85.5	1	OD18×ID8×L85.5
20	Supercharger bracket spacer L70.0	1	OD18×ID8×L70.0
21	Supercharger bracket spacer L36.5	1	OD24×ID8×L36.5
22	Supercharger bracket spacer L82.3	1	OD18×ID8×L82.3
23	Idler pulley	1	OD59mm
24	Tensioner pulley shaft	1	
25	Tensioner pulley adjust bolt	1	
26	V-ribbed belt	1	6PK707
27	Intercooler	1	
28	Air cleaner	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	includes 2 cap bolts M6 L=45
37	Supercharger inlet pipe gasket	1	
38	Nipple OD11-1/8PT	1	

PARTS LIST No.2

1 / 11 / 11	J LIO I	1	NO.2
No.	Part Name	QT	Description
39	Traction fluid cooler	1	
40	Traction fluid tank	1	
41	Traction fluid filter	1	
42	Traction fluid	1	
43	Hose ID4	1	L1000
44	Hose ID8	1	L2500
45	Hose ID9	1	L500
46	Hose ID10	1	L1200 Fabric Blade
47	Silicone hose ID22	1	
48	Silicone hose ID55	1	
49	Silicone cushion hose ID50	1	
50	Silicone cushion hose ID60	1	
51	Silicone hose ID60	6	
52	Silicone cushion hose ID65	1	
53	Silicone hose ID70	1	
54	Rubber cap	1	ID29
55	Corrugated tube ID15	1	L2500
56	Corrugated tube ID22	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 ID6.8	2	Mark 68
63	Hose clamp ID13.0	3	Mark 130
64	Hose clamp ID13.8	1	Mark 138
65	Hose clamp ID15.5	6	Mark 155
66	Washer tank	1	
67	Terminal set	2	
68	Pressure sensor	1	
69	T-fitting OD10-OD4-OD10	1	
70	Spacer OD20×ID10×L4	1	
71	Spacer OD20×ID10×L5	3	
72	Joint pipe OD10	1	
73	Tie wrap (M)	24	
74	Tie wrap (L)	5	
75	Masking sheet	1	
76	Sponge	5	L300

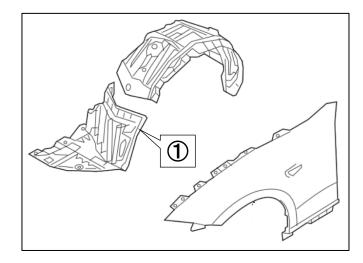
PARTS LIST No.3

I AIT I C LIG I							
No.	Part Name	QT	Description				
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	Flat head 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	OD40×ID16×L10				
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	Hose clamp ID14.5	2	Mark 145				
104	Installation manual	1	The Book				
105	Instruction manual	1					
106	General manual	1					

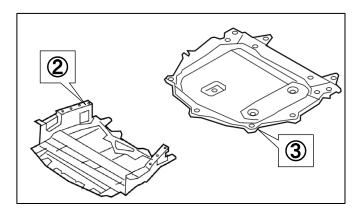
1. REMOVAL OF STOCK PARTS

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

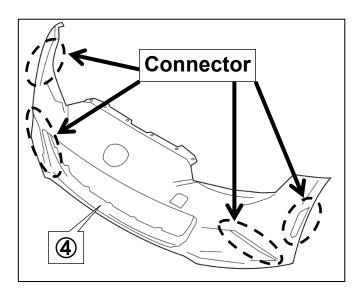
- (1) Degas at a facility that can recover gas from air conditioners.
- (2) Disconnect the cable from the battery.
- (3) Remove the ①Front mad guard RH & LH.



- (4) Remove the ②Engine under cover 1.
- (5) Remove the ③Engine under cover 2.



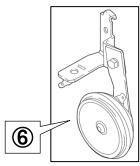
- (6) Disconnect connector of turn signal lights and running light.
- (7) Remove 4 Front bumper.



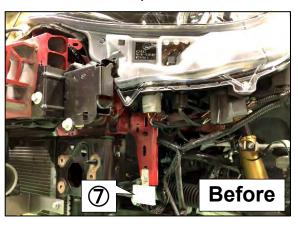
(8) Remove ⑤Horn Low (Keep it for later use.) and electrical wire clip.

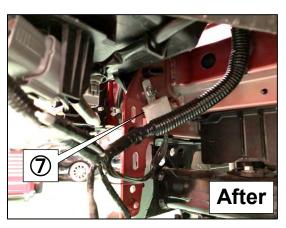


(9) Remove ⑦Horn High. (Keep it for later use.)

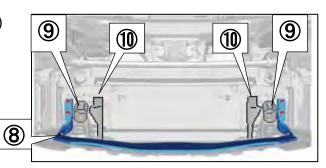


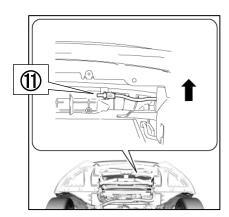
(10) Move ⑦Electrical wire parts.





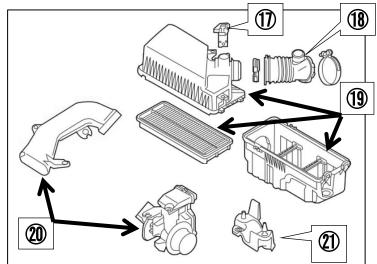
- (11) Remove ®Bumper stiffener . (Keep it for later use.)
- (12) Remove 9Reinforcement. (x2).
- (13) Remove [®]Radiator air guide RH&LH. (Keep it for later use.)
- (14) Remove ①Outside temperature sensor.





- (15) Remove ¹²Washer tank.
- (16) Remove (13)Air hose
- (17) Remove (4) Coolant hose. (Keep it for later use.)
- (18) Remove ⑤Coolant reserve tank. (Keep it for later use.)
- (19) Remove (16) Engine cover. (Keep it for later use.)
- (20) Remove ①Air flow meter. (Keep it for later use.)
- (21) Remove (18) Air intake hose.
- (22) Remove (19) Air cleaner case.
- (23) Remove @Air intake duct.
- (24) Remove ②Air cleaner case bracket.

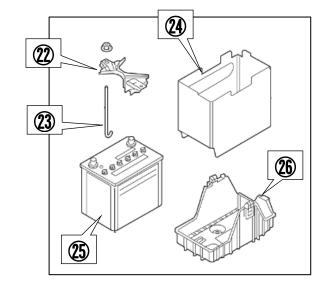


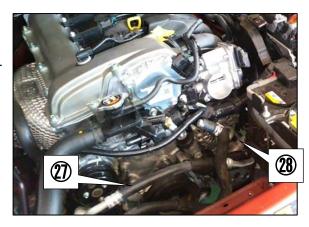


- (25) Remove ②Battery bracket & ③Hook bolt. (Keep it for later use.)
- (26) Remove @Battery cover.
- (27) Remove ②Battery.
- (28) Remove Battery tray. (Keep it for later use.)
- (29) Remove ②Air conditioner hose.
- (30) Temporarily remove (3) Alternator belt. (Keep it for later use.)

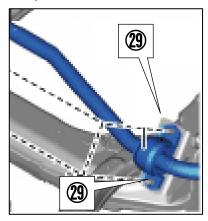
NOTE

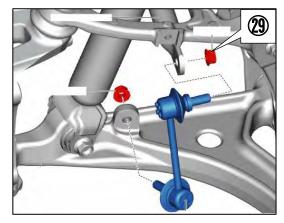
Remove the belt from the pulley of the auto tensioner and leave the belt in place.





(31) Remove ②Stabilizer nut.(Do not remove stabilizer from the car. Allow the stabilizer to move freely for ease of work.)

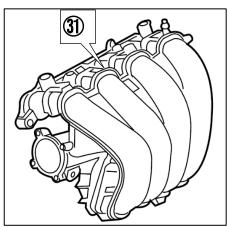




(32) Remove 30Air conditioner pipe bracket.

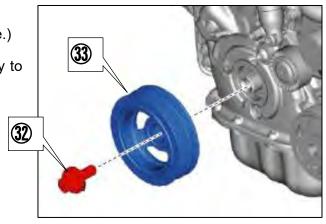


(33) Remove ③Intake manifold. (Keep it for later use.)

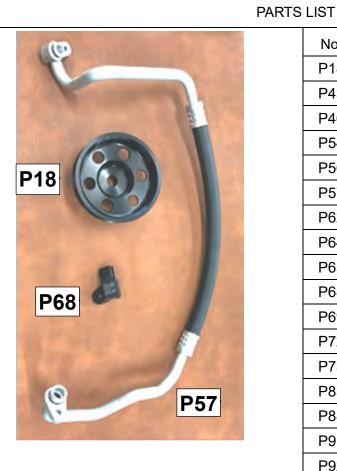


- (34) Remove ③ Crankshaft pulley bolt.
- (35) Remove ③Crankshaft pulley. (Keep it for later use.) NOTE
 - Crankshaft pulley remove tool helps easy to work.



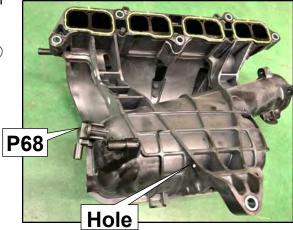


2. MODIFICATION & RELOCATION OF STOCK PARTS



) LI	LIGI				
	No.	Part Name	QT		
	P18	Crankshaft pulley	1		
	P43	Hose ID4	1		
	P46	Hose ID10	1		
	P54	Rubber cap	1		
	P56	Corrugated tube ID22	1		
	P57	Air conditioner hose	1		
	P62	Hose clamp ID6.8	1		
	P64	Hose clamp ID13.8	1		
	P65	Hose clamp ID15.5	3		
	P68	Pressure sensor	1		
	P69	T-fitting OD10-OD4-OD10	1		
	P72	Joint pipe OD10	1		
	P73	Tie wrap (M)	4		
	P83	Hexagon bolt M8 L15	3		
	P88	Hexagon bolt M16 L60	1		
	P91	Flat washer M8 Small dia.	3		
	P92	Crank pulley washer	1		
F	P103	Hose clamp ID14.5	2		

- (1) Drill a hole of 2mm to the ③Intake manifold for through the wire.
- (2) Cut the Hose ID10 to ①170mm and ②250mm and ③ 700mm.
 - P46 Hose ID10 x 1
- (3) Replace pressure sensor of the ③Intake manifold.
 - P68 Pressure sensor x1
- (4) Install the Hose ID10① to ③Intake manifold.
 - P65 Hose Clamp ID15.5 x1
- (5) Tie the ③Intake manifold and Hose clamp ID15.5 with stainless steel wire.





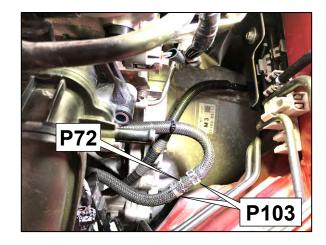
P46(1)

- (6) Install the Hose ID10② to nipple on cylinder brock.
 - P64 Hose clamp ID13.8 x1





- (7) Reinstall ③Intake manifold to the engine.
- (8) Connect the Hose ID10① and Hose ID10②.
 - P72 Joint pipe ID10 x1
 - P103 Hose clamp ID14.5 x2



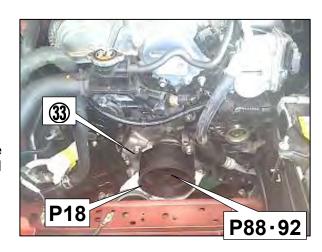
- (9) Install Crankshaft pulley, and reinstall stock 33crank pulley.

 - P18 Crankshaft pulley x1P88 Hexagon 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:

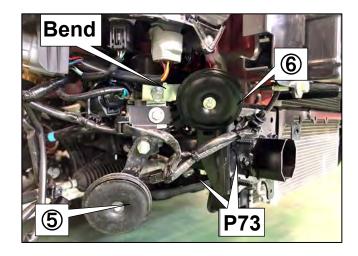
First step: 90—110 N·m Second step: 55-65°



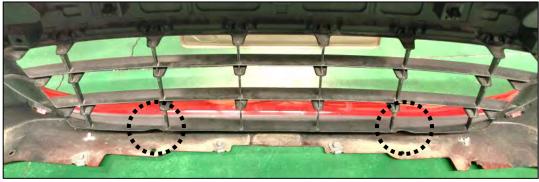
(10) Cut off the tip of the (4) Coolant hose by 10 mm.



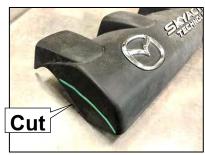
- (11) Bend ⑥Horn High bracket and reinstall ⑥Horn High.
- (12) Reinstall ⑤Horn Low.
- (13) Tie electrical wire.P73 Tie wrap(M) x2



(14) Shave the 4 Front bumper.

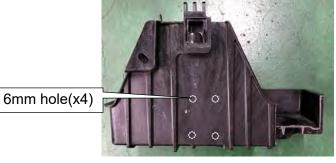


(15) Cut the **(b)**Intake manifold cover.

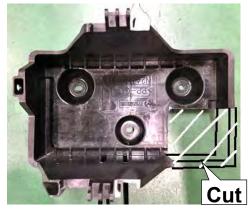




(16) Drill the 6mm hole(x4) in the Battery tray.



(17) Cut the ²⁶Battery tray.



- (18) Cut the ²⁶Battery tray.
- (19) Enlarge the hole(x3) of Battery tray by using stick file etc.
- (20) Reinstall 26 Battery tray.
 - P83 Hexagon bolt M8 L15 x3
 - P91 Flat washer M8 small Dia. x3

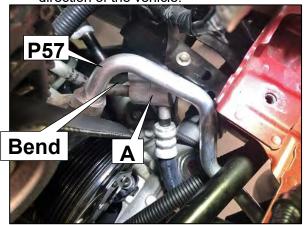
NOTE

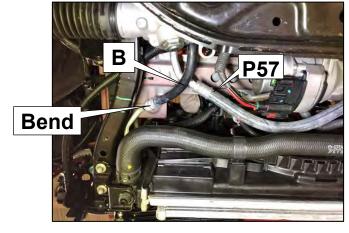
- Close to the rear of the vehicle for installation.
- (21) Install Air conditioner hose.
 - P57 Air conditioner hose x1

NOTE

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

Enlarge the holes(x3)





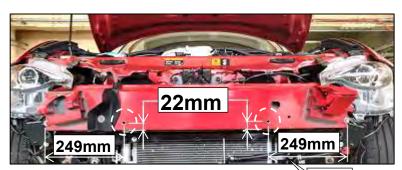
(22) Shave the pointed part of the figure.



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



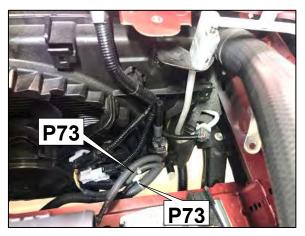
(24) Drill the 9mm hole(x2) to the Front bumper reinforcement.



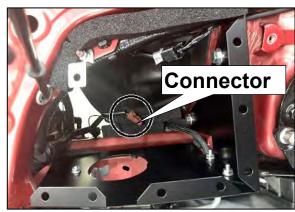
- (25) Install Corrugated tube ID22 to the heater hose.
 - P56 Corrugated tube ID22 x1
- (26) Remove clip from engine wire.



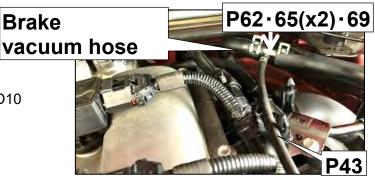
- (27) Tighten Radiator fan wire.
 - P73 Tie wrap(M) x2



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



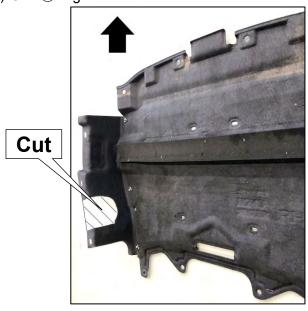
- (29) Cut the Hose ID4 to 880mm.
 - P43 Hose ID4 x1
- (30) Cut the Brake vacuum hose.
- (31) Install Hose ID4 and T-fitting OD10-OD4-OD10 to Brake vacuum hose.
 - P62 Hose Clamp ID6.8 x1
 - P65 Hose Clamp ID15.5 x2
 - P69 T-fitting OD10-OD4-OD10 x1

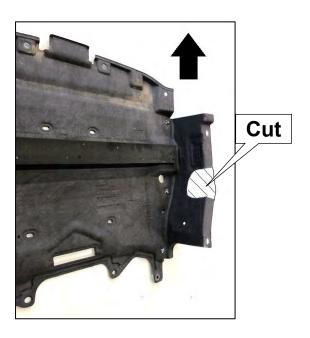


(32) Cut ①Mud guard LH.



(33) Cut ②Engine under cover 1.



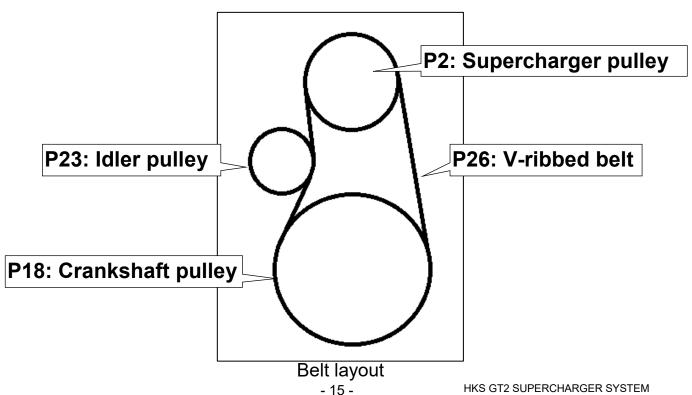


(34) Install Rubber cap to the camber.P54 Rubber cap x1



3. INSTALLATION OF SUPERCHARGER





(1) Install the Supercharger to the Supercharger bracket.

P1 GT2 Supercharger x1

P3 Supercharger bracket x1

P85 Flat head bolt M8 L35 x3

(2) Install the Supercharger pulley to the Supercharger.

P2 Supercharger pulley x1

• P79 Low head cap bolt M6 L12 x5

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

• P15 Tensioner bolt bracket x1

• P23 Idler pulley x1

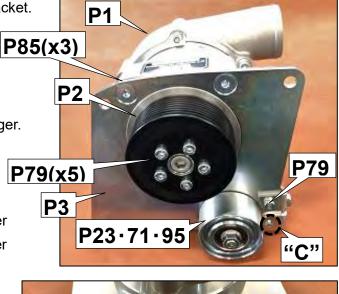
P24 Tensioner pulley shaft x1

P25 Tensioner pulley adjust bolt x1

• P71 Spacer OD20×ID10×L5 x1

P79 Low head cap bolt M6 L12 x1

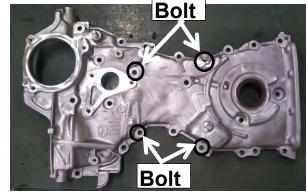
P95 Flange nut M10 x1





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

(5) Remove stock 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 x1

P20 Supercharger bracket spacer L70.0 x1

P21 Supercharger bracket spacer L36.5 x

P22 Supercharger bracket spacer L82.3 x1

P26 V-ribbed belt x1

• P86 Cap bolt M8 L115 x1

• P87 Cap bolt M8 L120 x3

P20·87

P8-21-86



→ 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.





- 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.

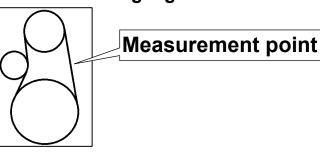




- (7) Tie the engine wire.
 - P73 Tie wrap (M) x1
- (8) Reinstall the stock V-ribbed belt.
- (9) Adjust the belt tension by Belt tension gauge.

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.



- 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.

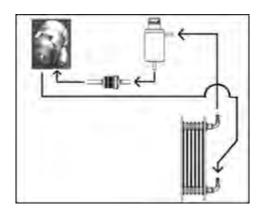
4. INSTALLATION OF TRACTION FLUID COOLER



*1 Use one of the clips attached with the supercharger.

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.



QT

1

1

1

1

1

1

1

1

1

1

1

1

1

2

4

4

1

10

5

5

2

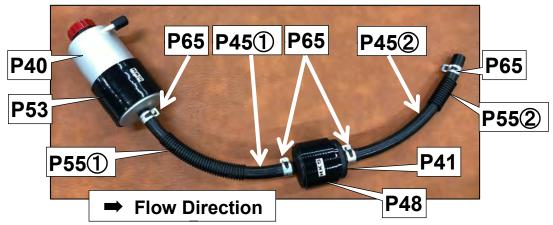
1

5

3

4

- (1) Cut the Hose ID9 to 1)235mm and 2)240mm.
 - P45 Hose ID9 x1
- (2) Cut the Corrugated tube ID15 to ①120mm, ②50mm, ③940mm, and ④1320mm.
 - P55 Corrugated tube ID15 x1
- (3) Cut the Hose ID8 to 1)1040mm and 2)1420mm.
 - P44 Hose ID8 x1
- (4) Install the Silicone hose ID55 to the Traction fluid filter.
 - P41 Traction fluid filter x1
 - P48 Silicone hose ID55 x1

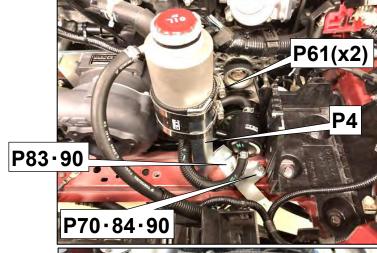


- (5) Install the Traction fluid hose ID9① and ② to the Traction fluid filter.
 - P65 Hose clamp ID15.5 x2

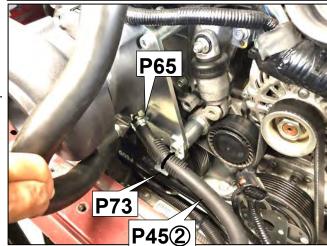
NOTE

- ♦ 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 ID15.5 is diverted from the supercharger rubber cap.
- (6) Install the Corrugated tube ID15① to the Traction fluid hose ID9①.
- (7) Install the Corrugated tube ID15② to the Traction fluid hose ID9②.
- (8) Install the Corrugated tube ID15③ to the Traction fluid hose ID8①.
- (9) Install the Corrugated tube ID154 to the Traction fluid hose ID82.
- (10) Install Silicone hose ID70 to the Traction fluid tank.
 - P53 Silicone hose ID70 x1
- (11) Install Hose ID9(1) to the Traction fluid tank.
 - P40 Traction fluid tank x1
 - P65 Hose clamp ID15.5 x1

- (12) Install Traction fluid tank to the vehicle.
 - P4 Traction fluid tank bracket x1
 - P61 Hose band #44 x2
 - P70 Spacer OD20×ID10×L4 x1
 - P83 Hexagon bolt M8 L15 x1
 - P84 Hexagon bolt M8 L20 x1
 - P90 Flat washer M8 x2



- (13) Install Hose ID92 to the Supercharger.
 - P65 Hose clamp ID15.5 x1
- (14) Tie Hose ID9② to the Traction fluid hose bracket.
 - P73 Tie wrap (M) x1



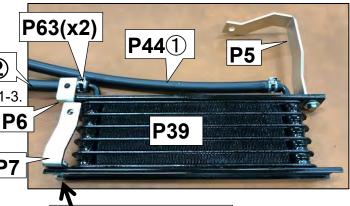
- (15) Tie Traction fluid filter to the Battery trey.
 - P74 Tie wrap (L) x2



- (16) Install Hose ID8①a and ② to the Traction fluid cooler.
 - P39 Traction fluid cooler x1
 - P63 Hose cramp ID13.0 x2

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

- P5 Traction fluid cooler bracket 1
- P6 Traction fluid cooler bracket 2
- 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

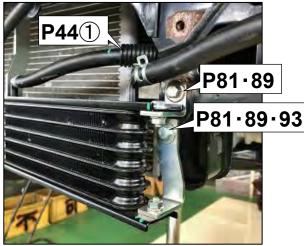


P81-89-93(allx3)

P7

P44(2)

- (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

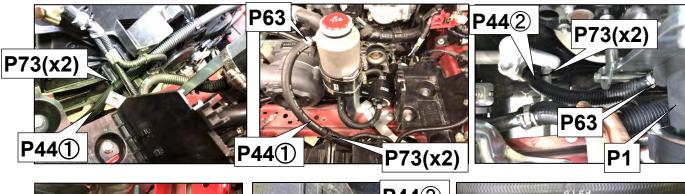


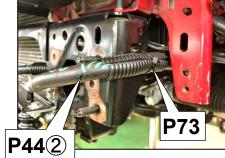


- (19) Install the Hose ID8① and ② to the Supercharger & Traction fluid tank, and fix the hose ID8① and ②.
 - P63 Hose cramp ID13.0 x2
 - P73 Tie wrap (M) x9
 - P74 Tie wrap (L) x3

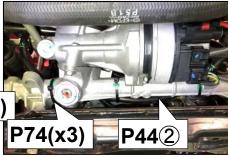
NOTE

- ♦ Connect Hose ID8① to the Traction fluid tank, and connect Hose ID8② to the Supercharger.
- ♦ One of the Hose clamp ID13.0 is diverted from the supercharger rubber cap.

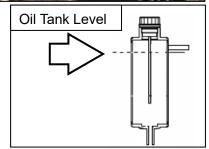








- (20) Make sure there are no foreign objects in the Traction fluid tank. Add the Traction fluid up to the dotted line in the diagram. Close the cap properly and securely.
 - P42 Traction fluid x1



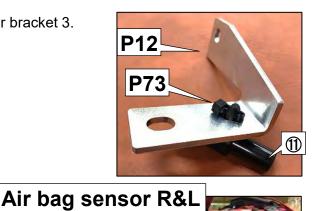
5. INSTALLATION OF INTERCOOLER & PIPING

PARTS LIST No. Part Name QT P12 **P9** P9 Air cleaner bracket 1 P10 1 Intercooler bracket 1 P16 P11 Intercooler bracket 2 1 P12 Intercooler bracket 3 1 P16 1 Pipe bracket 1 P17 Pipe bracket 2 1 P10 P27 Intercooler 1 P11 P17 P31 Intercooler inlet pipe 1 1 P32 Intercooler inlet pipe 2 1 P33 Intercooler outlet pipe 1 1 P34 Intercooler outlet pipe 2 1 1 P35 Intercooler outlet pipe 3 P49 Silicone cushion hose ID50 1 P51 Silicone hose ID60 5 **P33** P52 1 Silicone cushion hose ID65 **P31 P34** P35 P59 Hose band #32 3 P60 Hose band #40 13 1 P73 Tie wrap (M) P75 Masking sheet 1 P77 2 Insulator rubber P78 Button bolt M4 L12 2 P81 Hexagon bolt M6 L15 3 P52 **P49** P75 P82 1 Hexagon bolt M6 L20 P84 Hexagon bolt M8 L20 5 Flat washer M6 Major Dia. P89 4 P90 Flat washer M8 6 P93 Flange nut M6 3 **P77** P94 Flange nut M8 2

- (1) Spray the HKS logo to the Intercooler.
 - P27 Intercooler x1
 - P75 Masking sheet x1

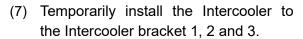


- (2) Install ①Outside temperature sensor to the Intercooler bracket 3.
 - P12 Intercooler cooler bracket 3 x 1
 - P73 Tie wrap (M) x1



P11-84-90-94

- (3) Reinstall ®Radiator air guide RH.
- (4) Remove Air bag sensor R and L.
- (5) Temporarily install the Intercooler bracket 1, 2 and 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.



- P84 Hexagon bolt M8 L20 x3
- P90 Flat washer M8 x3
- (8) Tighten all bolts of Intercooler and Intercooler bracket 1, 2 and 3.

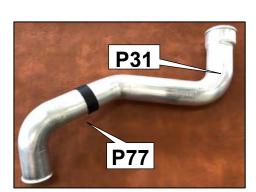


P10-82-89-93

- (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) Temporally install Intercooler inlet pipe 1 and 2 to the Supercharger and Intercooler.

• P32 Intercooler inlet pipe 2 x1

• P49 Silicone cushion hose ID50 x1

• P51 Silicone hose ID60 x2

• P59 Hose band #32 x2

• P60 Hose band #40 x4



• P9 Air cleaner bracket x1

• P16 Pipe bracket 1 x1

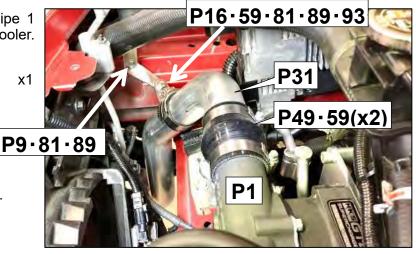
P59 Hose band #32 x1

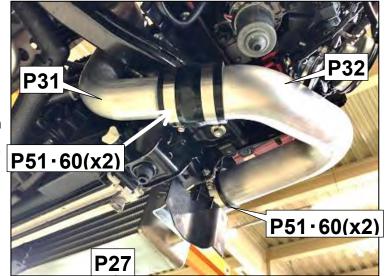
P81 Hexagon bolt M6 L15 x2

P89 Flat washer M6 Major Dia. x2

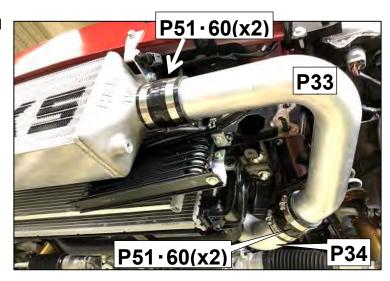
• P93 Flange nut M6 x 1

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





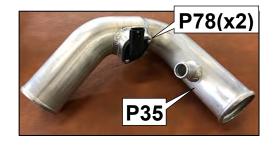
- (14) Temporally install Intercooler outlet pipe 1 and 2 to the Intercooler.
 - P33 Intercooler outlet pipe 1 x1
 - P34 Intercooler outlet pipe 2 x1
 - P51 Silicone hose ID60 x2
 - P60 Hose band #40 x4



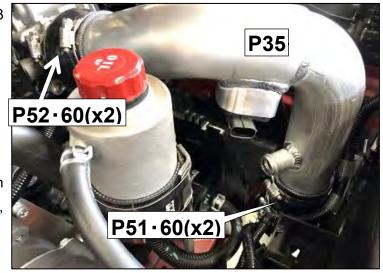
- (15) Temporally install Pipe bracket 2 to the Intercooler outlet pipe 2 and Traction fluid tank bracket.
 - P17 Pipe bracket 2 x1
 - P60 Hose band #40 x1
 - P81 Hexagon bolt M6 L15 x1
 - P89 Flat washer M6 Major dia. x1
 - P93 Flange nut M6 x1



- (16) Install (15) Air flow meter to Intercooler outlet pipe 3.
 - P35 Intercooler outlet pipe 3 x1
 - P78 Button bolt M4 L12 x2



- (17) Temporally install Intercooler outlet pipe 3 to the engine.
 - P51 Silicone hose ID60 x1
 - P52 Silicone cushion hose ID65 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.

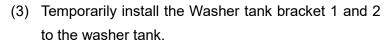
NOTE

♦ Close to the rear of the vehicle for installation.

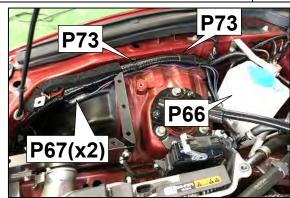
6. INSTALLATION OF WASHER TANK

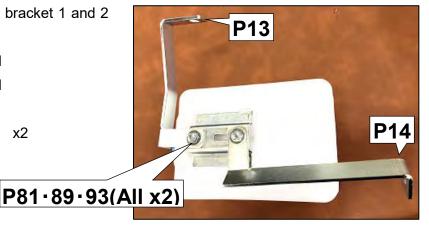
PARTS LIST				
	No.	Part Name	QT	
P66	P13	Washer tank bracket 1	1	
1 00	P14	Washer tank bracket 2	1	
NA.	P66	Washer tank	1	
	P67	Terminal set	2	
P14	P73	Tie wrap (M)	2	
P14 P13	P81	Hexagon bolt M6 L15	2	
	P89	Flat washer M6 Major Dia.	2	
	P93	Flange nut M6	2	

- (1) Install Washer tank connector in the washer tank to the stock wire.
 - P66 Washer tank x1
 - P67 Terminal set x2
- (2) Tie wire of Washer tank to the vehicle wire.
 - P73 Tie wrap (M) x2

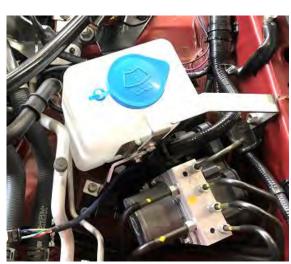


- P13 Washer tank bracket 1 x1
- P14 Washer tank bracket 2 x1
- P81 Hexagon bolt M6 L15 x2
- P89 Flat washer M6 Major Dia. x2
- P93 Flange nut M6 x2





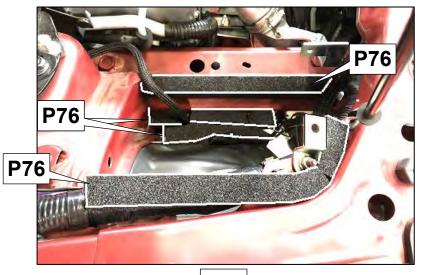
- (4) Install Washer hose and electrical wire to the Washer tank.
- (5) Install Washer tank to the vehicle.
- (6) Tighten Washer tank bracket 1 and 2.



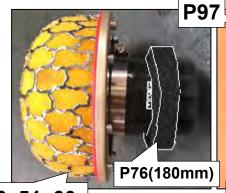
7. INSTALLATION OF SUCTION PIPE



- (1) Install Sponge to the vehicle.
 - P76 Sponge x4



- (2) Cut Sponge into 180mm and 120mm, install 180mm to Silicone hose ID60 and 120mm to Air cleaner case 2.
 - P28 Air cleaner x1
 - P51 Silicone hose ID60 x1
 - P60 Hose band #40 x1
 - P76 Sponge x1
 - P97 Air cleaner case 2 x1



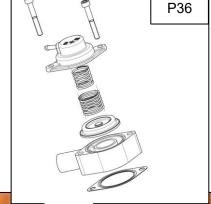
P76(120mm)

P28-51-60 P76(120n

- (3) Install Blow-off valve to the Suction pipe 2.
 - P30 Suction pipe 2 x1
 - P36 Blow-off valve x1
 - P47 Silicone hose ID22 x1
 - P58 Hose band #12 x1

NOTE

- ♦ Make sure not bite bellofram of Blow-off valve.
- Be sure to attach the blow-off valve with the two bolts provided.





- (4) Install Suction pipe 2 to the Supercharger, and install Silicone hose ID22 to the Intercooler outlet pipe 2.
 - P37 Supercharger inlet pipe gasket x1
 - P58 Hose band #12 x1
 - P80 Flange bolt M6 L20 x3



- (5) Install Nipple OD11-1/8PT to the Suction pipe 1.
 - P29 Suction pipe 1 x1
 - P38 Nipple OD11-1/8PT x1

NOTE

Wrap sealing tape around nipple OD11-1/8P/T 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) Temporally install Air cleaner case 1 and 3 to Air cleaner bracket and the vehicle.

> • P17 Pipe bracket 2 x1

P71 Spacer OD20×ID10×L5 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 х3

P94 Flange nut M8 x2

P96 Air cleaner case 1 x1

P98 Air cleaner case 3 x1

P71-84-90-94(Allx2) **P98**

P29

P38

P17-81 -89-93 P81-89-93(Allx2)

(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 the Air cleaner case 2 to determine the position.

(9) Install Air cleaner and Suction pipe 1.

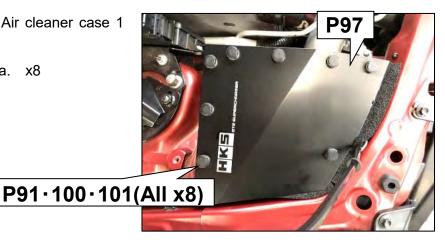
P50 Silicone cushion hose ID60

 P60 Hose band #40 x3

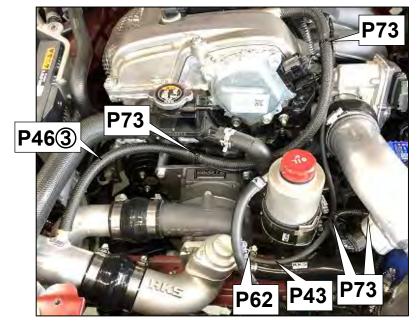
P28 P93-99 P50 · 60(x2)

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

- (11) Install Air cleaner case 2 to the Air cleaner case 1 and 3.
 - P91 Flat washer M8 Small dia. x8
 - P97 Air cleaner case 2 x1
 - P100 Clip x8
 - P101 Wave washer x8
- (12) Install Spark plug.
 - P102 Spark plug x4



- (13) Install Hose ID10③ to the Suction pipe 1 and engine.
- (14) Install Hose ID4 to the Blow-off valve.
 - P62 Hose clamp ID6.8 x1
- (15) Tie Hose ID4 & Hose ID10
 - P73 Tie wrap (M) x3
- (16) Tie Hose electrical wire of Air flow meter to the Battery ②Hook bolt.
 - P73 Tie wrap (M) x1
- (17) Connect Air flow meter connector to the **(16)** Air flow meter.



8. REINSTALLATION OF STOCK PARTS

- (1) Reinstall 28 Stabilizer nut.
- (2) Reinstall (6) Engine cover.
- (3) Reinstall (4) Coolant reserve tank.
- (4) Reinstall (3) Coolant hose.
- (5) Reinstall ®Bumper Stiffener.
- (6) Reinstall 4 Front bumper.
- (7) Reinstall ③Engine under cover 2.
- (8) Reinstall ②Engine under cover 1.
- (9) Reinstall ①Front 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:

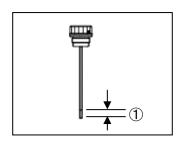
NOTE

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 stock 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.

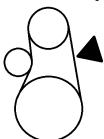
Parameter of Tension gauge

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.

. 1ST MONTH INSPECTION

Within 40 days of installation, it is recommended to consult your installer/retailer for the following 1st month inspection:

=-	_			_		_	
Entry Method	No Issue	Replace	×	Adjust	Α	Tighten	Т

	Inspection Item					
	Inspection of the GT2 Supercharger Unit					
	<u>M</u> WARNING					
	 When checking operation of the unit, avoid touching any moving belts, even clothing. Touching these moving belts can lead to severe injury and damage. 					
1	Compare the current operating sound against initial installation, check for increased sound levels or unusual noises.					
	Compare the sound of the air cleaner against initial installation, check for increased intake sound levels or unusual noises.					
	Check Traction Fluid level for unusually high Traction Fluid consumption. (Fluid level surface is not touching the Fluid level gauge)					
	Inspection of the Traction Fluid Piping					
	Check for Traction Fluid leaking from the piping, loose hose clamps.					
	Locations: •Connection point to the GT2 Supercharger.					
	·Connection point to the Traction Fluid Cooler.					
2	•Connection point to the Traction Fluid Tank.					
	Connection point to the Traction Fluid Filter.					
	Signs of damage due to rubbing of the Traction Fluid Hose to other parts.					
	Cracks or breaks in the Traction Fluid Hose.					
	If the Traction Fluid filled to the marking level on the Fluid level gauge.					
	Belt Inspection					
3	Check if belt's tension is within the Auto-tensioner's adjusting range.					
	Cracks or breaks in the belts.					
	Bolt Tightening					
4	Check if GT2 Supercharger mounting bolt is tightened.					
4	Check if pulley mounting bolts are properly tightened.					
	Check if pulley does not come in contact with any other parts of the vehicle.					
	<u>Other</u>					
	Check all mounted parts for interference with other parts.					
	Locations: • Belt and surrounding parts.					
5	Piping and surrounding parts.					
	Blow-off Valve Hose and surrounding parts.					
	Check if hose bands are properly tightened.					
	Check if engine oil level is between H-L.					

12. MAINTENANCE

O The Traction Fluid is exclusively for our GT2 Supercharger. Never use any Traction Fluid other than those specified by us. Using non-designated Traction Fluid, Engine Oil, Transmission Oil, or any other oils may damage the internal parts of the GT2 Supercharger.

! CAUTION

- Periodically check Traction Fluid levels prior to driving the vehicle. If the oil level is too low, add Traction Fluid as necessary.
- Use the part number below to order Traction Fluid.

PRODUCT NAME	PART No.
GT S/C TRACTION FLUID I	12002-AK029

%If the GT2 Supercharger System is used in an area minus 20°C, use the following Traction Fluid(Sold separately):

PRODUCT NAME	PART No.
GT S/C TRACTION FLUID II	12002-AK030

O Replace the Traction Fluid Filter after 5 years or 70,000 km after installation of the HKS GT2 Supercharger. Use the part number below to order the Traction Fluid Filter:

PRODUCT NAME	PART No.
Traction Fluid Filter	12002-AK015

O The V-ribbed Belt is a "wear and tear" part. Check if there are no cracks, fissures, or chippings at the inspection before driving.

Replace it if any cracks, fissures, or chippings are found. Never use any V-ribbed Belt other than the specified one. Using non-designated belts may cause noise from the V-ribbed Belt when starting the engine and/or at idle.

Use the part number below to order the V-ribbed Belt:

PRODUCT NAME	PART No.
V-ribbed Belt 6PK707	24996-AK050

13. TROUBLESHOOTING

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

Symptom	Cause	Action
 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	Check the belt tension. Adjust if necessary.
 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	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.



HKS Co., Ltd.

7181 Kitayama, Fujinomiya, Shizuoka 418-0192, Japan https://www.hks-power.co.jp/en/