



**LHD/RHD COMPRESSOR KIT  
COROLLA TS  
ZZE123**

**ATTENTION**

Read this installation instruction manual carefully, before you start the installation.

Installing this compressor kit requires a skilled "TOYOTA Pro Technician" or similar.

When opening packages, first check the contents and the quantity using a check sheet. After installation operation is started, request for the missing parts may not be accepted.

**INSTALLATION  
INSTRUCTION MANUAL**

ISS	REVISION RECORD	DATE	REVR.
	<i>NEW</i>	May 05	1.0



## TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b> .....	<b>3</b>
<b>PRECAUTIONS</b> .....	<b>8</b>
<b>PREPARATION</b> .....	<b>9</b>
<b>1. SST (Special Service Tools)</b> .....	<b>9</b>
<b>2. Lubricant</b> .....	<b>9</b>
<b>VEHICLE LIFT LOCATIONS</b> .....	<b>10</b>
<b>PARTS</b> .....	<b>11</b>
<b>1. Location</b> .....	<b>11</b>
1.1. Engine (oil return and secondary-air valve fixation) .....	11
1.2. Intake manifold .....	12
1.3. Compressor .....	12
1.4. Throttle body fixation .....	13
1.5. Oil cooler .....	14
1.6. Compressor wiring and electronic components .....	15
1.7. Alternator fixation .....	16
1.8. Radiator .....	17
1.9. Reinforcements .....	17
1.10. Front brakes .....	18
1.11. Steering gear .....	18
1.12. Shockabsorbers / Springs .....	19
1.13. Rear skirt .....	20
1.14. Exhaust system .....	20
1.15. A/C system .....	20
1.16. Interior kit .....	21
1.17. Loose parts .....	21
<b>2. Parts List</b> .....	<b>22</b>
<b>3. Specified torque</b> .....	<b>26</b>
<b>INSTALLATION PROCEDURES</b> .....	<b>28</b>
<b>1. Introduction</b> .....	<b>28</b>
1.1. Si unit .....	28
1.2. Caution * notice * hint .....	28
1.3. Definition of symbols .....	28
1.4. Water hose and clamp .....	28
1.5. Air hose and clamp .....	29
1.6. Oil and coolant .....	29
<b>2. Operation in engine compartment (Upper side removing parts)</b> .....	<b>30</b>
1. Remove radiator cover. ....	30
2. Remove engine cover. ....	30
3. Remove battery negative lead. ....	30
4. Remove refrigerant from A/C system. ....	30
5. Remove front bumper connection. ....	31
6. Remove head lamp water hose. ....	31
7. Remove foglamp connectors and front bumper. ....	31
8. Remove splash shield left and right. ....	31
9. Remove inlet hose between air filter and throttle body. ....	32
10. Preparation inlet hose. ....	32
11. Remove vsv from air filter .....	32
12. Remove hose secondary-air valve. ....	32
13. Remove secondary-air valve pipe. ....	33
14. Preparation secondary-air valve pipe. ....	33
15. Remove cooling fan assembly. ....	33
16. Remove parts from fan shroud. ....	33
17. Assembly fan shroud. ....	34
18. Position coolant reservoir. ....	34
19. Remove radiator. ....	34

20. Preparation radiator. ....	34
21. Remove throttle body from intake manifold. ....	35
22. Remove hoses and secondary-air valve from intake manifold. ....	35
23. Remove A/C high pressure hose on A/C compressor side. ....	35
24. Remove A/C high pressure hose fire wall side. ....	36
25. Preparation A/C high pressure hose. ....	36
26. Loosen engine cable harness. ....	36
27. Loosen engine cable harness. ....	36
28. Place engine cable harness aside. ....	37
29. Remove brackets. ....	37
30. Remove poly V-belt. ....	37
31. Remove alternator. ....	37
32. Remove intake manifold bracket and suppressor. ....	38
33. Remove intake manifold. ....	38
34. Remove studs from intake manifold. ....	38
35. Intake manifold cylinder head studs. ....	38
36. Remove the dip stick pipe and dip stick. ....	39
37. Remove oil return pipe. ....	39
38. Remove secondary-air valve and studs. ....	39
<b>3. Operation in engine compartment (Upper side installing parts) .....</b>	<b>40</b>
1. Install spacer between secondary-air valve and engine mounting. ....	40
2. Reposition water hoses oil cooler. ....	40
3. Oil cooler fixing points preparation. ....	40
4. Oil cooler preparation. ....	40
5. Oil cooler brackets. ....	41
6. Install oil cooler. ....	41
7. Oil filter preparation. ....	41
8. Install oil cooler hoses. ....	42
9. Cable harness preparation. ....	42
10. Install lower oil return hose and install connector bracket. ....	42
11. Install oil return pipe. ....	43
12. Install dipstick pipe. ....	43
13. Install extra cable harness A/C compressor. ....	43
14. Preparations compressor. ....	43
15. Preparation lower connection compressor. ....	44
16. Position compressor and install lower connection bolt. ....	44
17. Preparations intake manifold. ....	44
18. Turn fuel rail aside. ....	45
19. Installing intake manifold. ....	45
20. Remove injectors ....	45
21. Install injectors ....	45
22. Install fuel rail. ....	46
23. Install intake manifold foam and protection cable harness. ....	46
24. Installing compressor in position. ....	46
25. Install A/C high pressure hose. ....	47
26. Preparation throttle body connection. ....	47
27. Installing throttle body connection and extra bracket intake manifold. ....	48
28. Repositioning water hose throttle body. ....	48
29. Replacing connector ISC valve. ....	48
30. Preparation extra cable harness isc valve. ....	49
31. Installing throttle body. ....	49
32. Install the hoses on the intake manifold and throttle body. ....	49
33. Install the hoses of the secondary-air control valve. ....	49
34. Install inlet hose between air filter and throttle body. ....	50
35. Install radiator. ....	50
36. Install cooling fan assembly. ....	50
37. Install breeder hose. ....	50
38. Installing oil return pipe and oil dip stick. ....	51
39. Installing compressor inlet cover. ....	51
40. Tighten oil return connection. ....	51
41. Tighten lower oil return connection. ....	51

42. Tighten A/C high pressure hose. ....	52
43. Installing outlet pipe between outlet compressor and intake manifold. ....	52
44. Installing inlet pipe between compressor inlet and throttle body. ....	52
45. Installing secondary-air valve pipe. ....	52
<b>4. Operation in engine compartment (Under side removing parts) .....</b>	<b>53</b>
1. Remove wheels. ....	53
2. Remove steering column connection. ....	53
3. Remove anti roll bar link left and right. ....	53
4. Remove lower ball joints left and right. ....	53
5. Remove steering gear bolts and nuts. ....	54
6. Remove centre member and engine mount connection. ....	54
7. Mark sub frame position. ....	54
8. Remove sub frame complete. ....	54
9. Turn steering gear rubbers. ....	55
10. Preparation exhaust heat shield. ....	55
11. Preparation alternator. ....	55
12. Preparation alternator cable harness. ....	55
13. Remove free-wheel poly V-belt. ....	56
14. Reposition upper sliding sleeve (if needed). ....	56
15. Position upper alternator bracket. ....	56
16. Install alternator. ....	56
<b>5. Operation in engine compartment (Under side installing parts) .....</b>	<b>57</b>
1. Extra washer steering gear. ....	57
2. Install sub frame and reinforcement engine member. ....	57
3. Install lower ball joints left and right. ....	57
4. Install steering gear. ....	57
5. Install centre member bolt. ....	58
6. Installation of lower reinforcement engine member (front). ....	58
7. Install centre member and engine mount connection. ....	58
8. Install anti roll bar link left and right. ....	58
9. Install steering column connection. ....	59
10. Install poly V-belt. ....	59
11. Install splash shield left and right. ....	59
12. Install front bumpers and foglamp connectors. ....	59
13. Install head lamp washer hose. ....	60
14. Install front bumper connection. ....	60
<b>6. Operation in engine compartment and dashboard (Compressor wiring and electronic comp)...</b>	<b>61</b>
1. Replace fuse EFI. ....	61
2. Install compressor relay and cable harness. ....	61
3. Install compressor earth connection. ....	61
4. Install compressor connector. ....	61
5. Position alternator cable harnesses. ....	62
6. Connect alternator cable harness. ....	62
7. Connect alternator B+ cable harness. ....	62
8. Remove glove box. ....	62
9. Remove lower panel. ....	63
10. Remove ECU. ....	63
11. Preparation ECU. ....	63
12. Install ECU. ....	63
13. Install lower panel. ....	64
14. Install glove box. ....	64
15. Radio with multi-information display. ....	64
16. Remove gear lever panel and middle console panel. ....	64
17. Remove radio with panel. ....	65
18. Preparation radio connector. ....	65
19. Install radio with panel. ....	65
20. Install middle console panel and gear lever panel. ....	65
21. Install engine cover studs. ....	66
22. Install engine cover. ....	66
23. Install radiator cover. ....	66

## 7. Operation brake system 67

1. Remove brake calliper and brake pads. .... 67
2. Remove brake calliper bracket and brake disc. .... 67
3. Remove brake disc cover. .... 67
4. Install the extension bracket. .... 67
5. Install brake disc and brake calliper bracket. .... 68
6. Install brake pads and brake calliper. .... 68

## 8. Shock absorber front ..... 69

1. Remove anti roll bar link. .... 69
2. Remove brake hose and ABS cable bracket from shock absorber. .... 69
3. Remove lower shock absorber connection. .... 69
4. Remove upper strut connection. .... 69
5. Position strut in spring compressor. .... 70
6. Disassemble front strut. .... 70
7. Remove parts. .... 70
8. Position lower shock absorber rubber. .... 70
9. Position shock absorber and spring. .... 71
10. Position upper spring rubber. .... 71
11. Position spring plate. .... 71
12. Position upper mounting and tighten nut. .... 71
13. Install tower bar and strut. .... 72
14. Install lower strut connection. .... 72
15. Install ABS cable bracket and brake hose. .... 72
16. Install anti roll bar link. .... 72
17. RHD only: Install throttle cable clip. .... 73

## 9. Shock absorber rear ..... 74

1. Remove rear trunk panel. .... 74
2. Remove storage boxes. .... 74
3. Trunk panel left and right. .... 74
4. Position lifting jack. .... 74
5. Remove upper shock absorber connection. .... 75
6. Remove lower shock absorber connection. .... 75
7. Position shock absorber in spring compressor. .... 75
8. Loosen shock absorber nut. .... 75
9. Remove parts. .... 76
10. Position spring. .... 76
11. Install parts. .... 76
12. Install rear shock absorber nut. .... 76
13. Check position of shock absorber. .... 77
14. Install lower shock absorber connection. .... 77
15. Install upper shock absorber connection. .... 77
16. Install trunk panels. .... 77

## 10. Rear skirt ..... 78

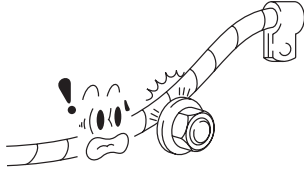
1. Mark middle line rear bumper. .... 78
2. Remove rear bumper nuts. .... 78
3. Remove lower protection cover. .... 78
4. Remove rear bumper. .... 78
5. Remove rear towing bracket. .... 79
6. Install rear bumper brace. .... 79
7. Remove rear bumper skirts. .... 79
8. Remove rear skirt left and right. .... 79
9. Mark position where to cut. .... 80
10. Remove marked part. .... 80
11. Install rear bumper. .... 80
12. Clean rear bumper. .... 80
13. Clean rear skirt. .... 81
14. Preparation rear skirt with kit. .... 81
15. Install rear skirt. .... 81
16. Install lower clips. .... 81
17. Install extra clips. .... 82
18. Check rear skirt operation. .... 82

<b>11. Exhaust system</b> .....	<b>83</b>
1. Remove rear muffler. ....	83
2. Install rear muffler. ....	83
3. Install extra brackets. ....	83
4. Install exhaust pipe. ....	83
<b>12. Reinforcement bars front</b> .....	<b>84</b>
1. Installation of lower reinforcement engine member. (rear) .....	84
2. Installation of lower reinforcement engine member. (front) .....	84
3. Remove tower bar. ....	84
4. Install tower bar. ....	84
5. RHD only: Install throttle cable clip. ....	85
<b>13. Rear bumper brace</b> .....	<b>86</b>
1. Remove rear towing bracket. ....	86
2. Install rear bumper brace. ....	86
<b>14. Interior parts installation</b> .....	<b>87</b>
1. Remove driver's airbag. ....	87
2. Remove driver's airbag connectors. ....	87
3. Remove steering wheel. ....	87
4. Check correct position airbag connectors. ....	87
5. Install steering wheel. ....	88
6. Install driver's airbag connectors. ....	88
7. Install driver's airbag. ....	88
8. Remove gear lever knob. ....	88
9. Install gear lever knob. ....	89
10. Hand brake lever, mark cutting position. ....	89
11. Install hand brake lever. ....	89
<b>15. General Inspection</b> .....	<b>90</b>
1. Install battery negative lead. ....	90
2. Checking. ....	90
3. Install spare wheel. ....	90
4. Checking/adjusting wheel alignment. ....	90
5. Position fuel octane label. ....	92
6. Position tire pressure label. ....	92
<b>KEY REGISTRATION IN NEW ENGINE ECU</b> .....	<b>93</b>
1. Registration of existing transponder keys to the new installed engine ECU. ....	93
2. Registration of additional transponder key. ....	93

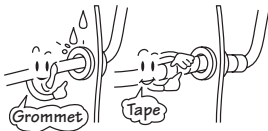
## PRECAUTIONS

PLEASE READ THOROUGHLY THESE PRECAUTIONS BEFORE INSTALLING THE COMPRESSOR KIT

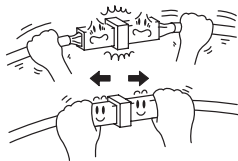
Do not pinch the rear wiring or harness in the tightened part.



When passing the wires through the dashboard or other panels, use a grommet to ensure waterproofing. Protect the wiring with tape when it is passed through a hole.



When disconnecting a connector, be sure to grip the connector body. Do not tug on the wiring.



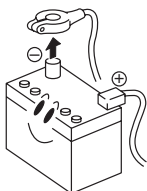
Do not forcibly pull any car wiring harness. Rough tugging may result in opened connectors, or a broken wire harness.



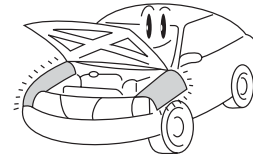
After installation, check that all the functions of the car are normal.



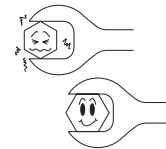
Be sure to disconnect the negative (-) lead from the battery terminals.



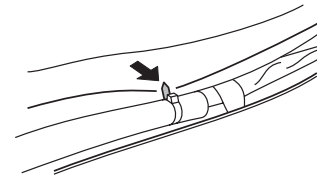
Protect the car with fender covers and so on.



Use the correct tool when tightening bolts and nuts.



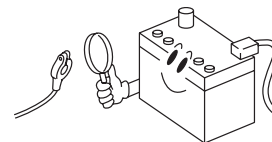
After fastening band clamps, cut away all the excess of the clamps.



Be sure to firmly tighten connectors and terminals.



Before connecting the power wiring to the battery, check the wiring connectors, harness, etc. to see that they are properly secured.



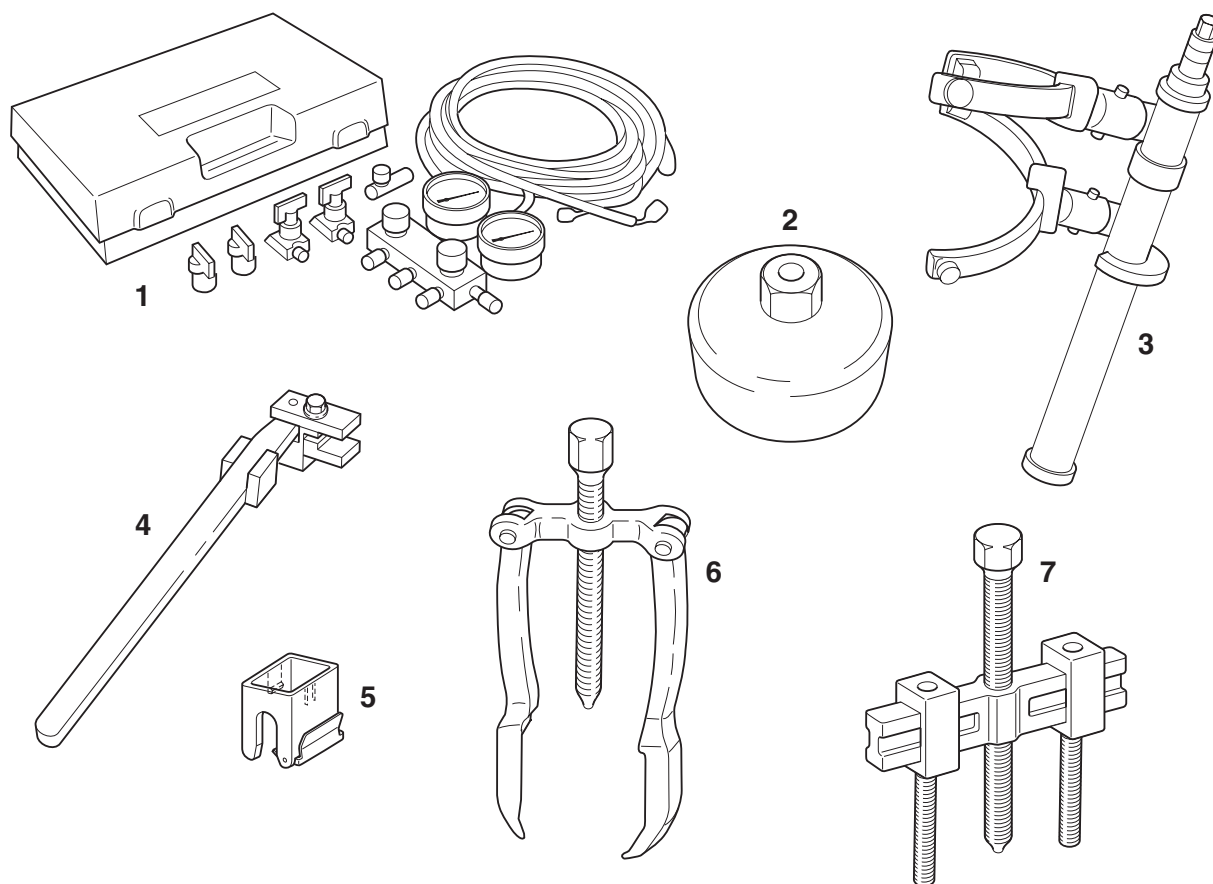
Check body and trim near area of installation to be certain no dirt or scratches resulted from the installation.

During any operation on fuel system, keep away from fire.



## PREPARATION

### 1. SST (Special Service Tools)



1	07110-58060	Air conditioner Service Tool Set	
2	09228-06501	Oil filter wrench	
3	09727-30021	Spring compressor	
4	09729-22031	Front spring upper seat holder	
5	09870-00015	A/C Quick Joint Puller	
6	09950-50100	Puller	
7	09950-50013	Puller steering wheel	

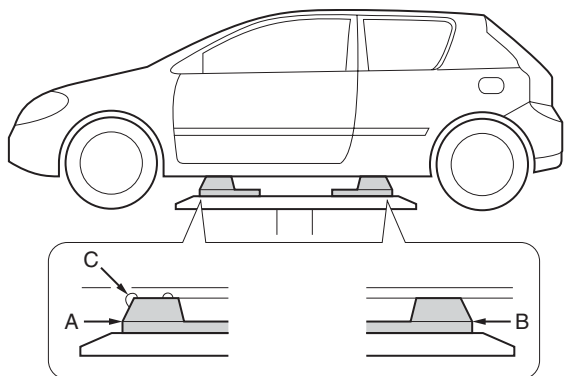
### 2. Lubricants / Liquids

Refrigerant	R134a	
Engine Coolant	Ethylene-glycol base	
Engine oil	API grade SH energy-conserving II or SJ energy-conserving or ILSAC multigrade engine oil. Refer to the owners manual for the viscosity to recommend.	

## VEHICLE LIFT LOCATIONS

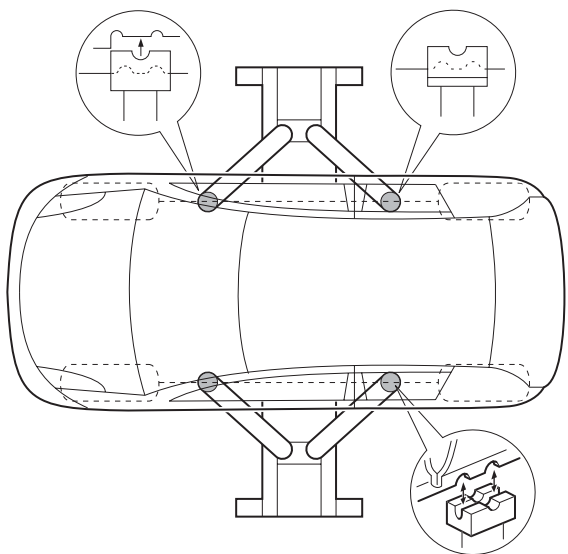
In this manual, a plate type or swing arm lift is recommended. See the description below for details of the supporting and attachment positions.

### Plate type lift:



- (a) Place the vehicle over the centre of the lift.
- (b) Align the cushion gum ends of the plate with the attachment lower ends (A,B).
- (c) Align the attachment upper end with the rocker flange front notch.

### Swing arm type lift:

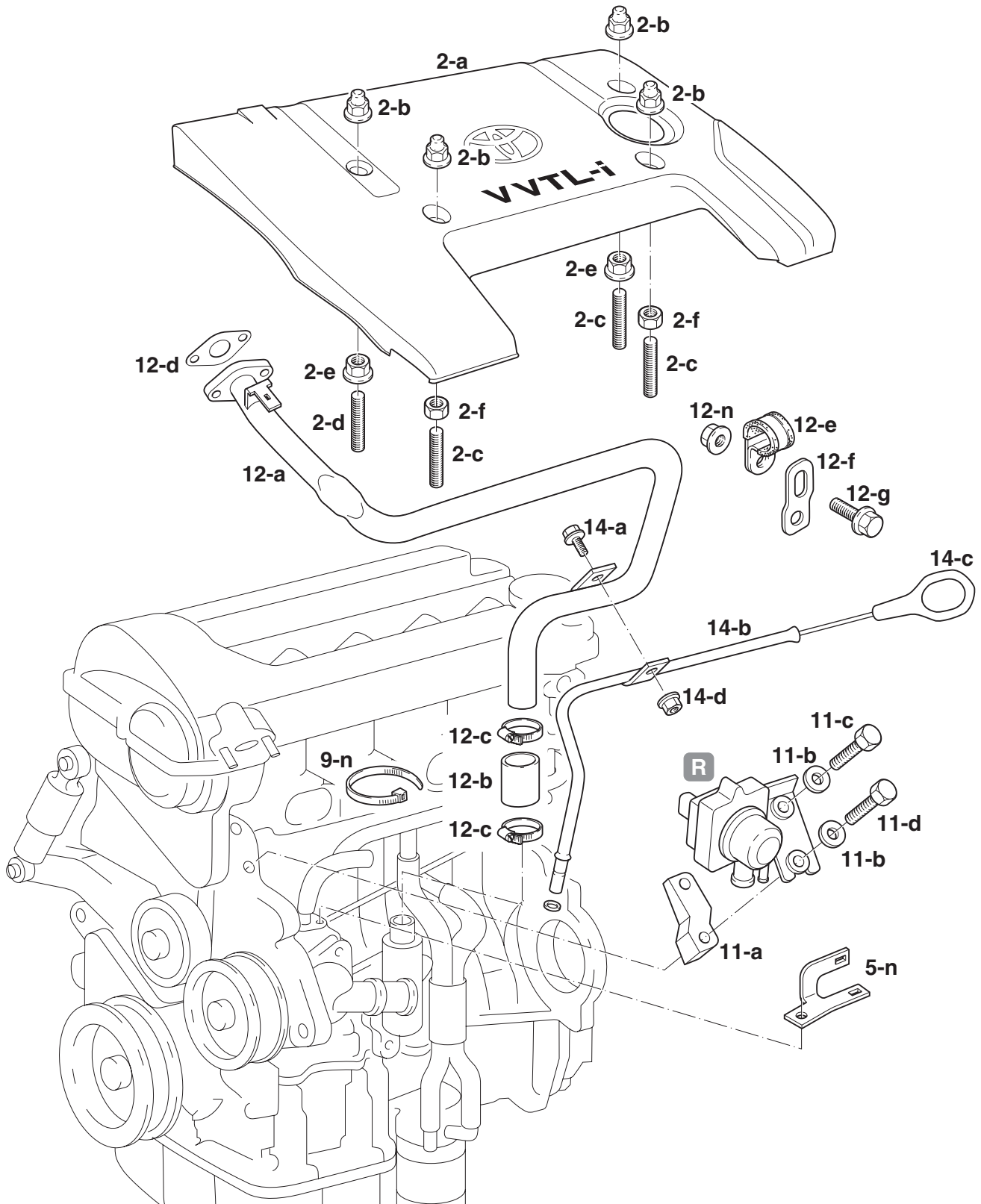


# PARTS

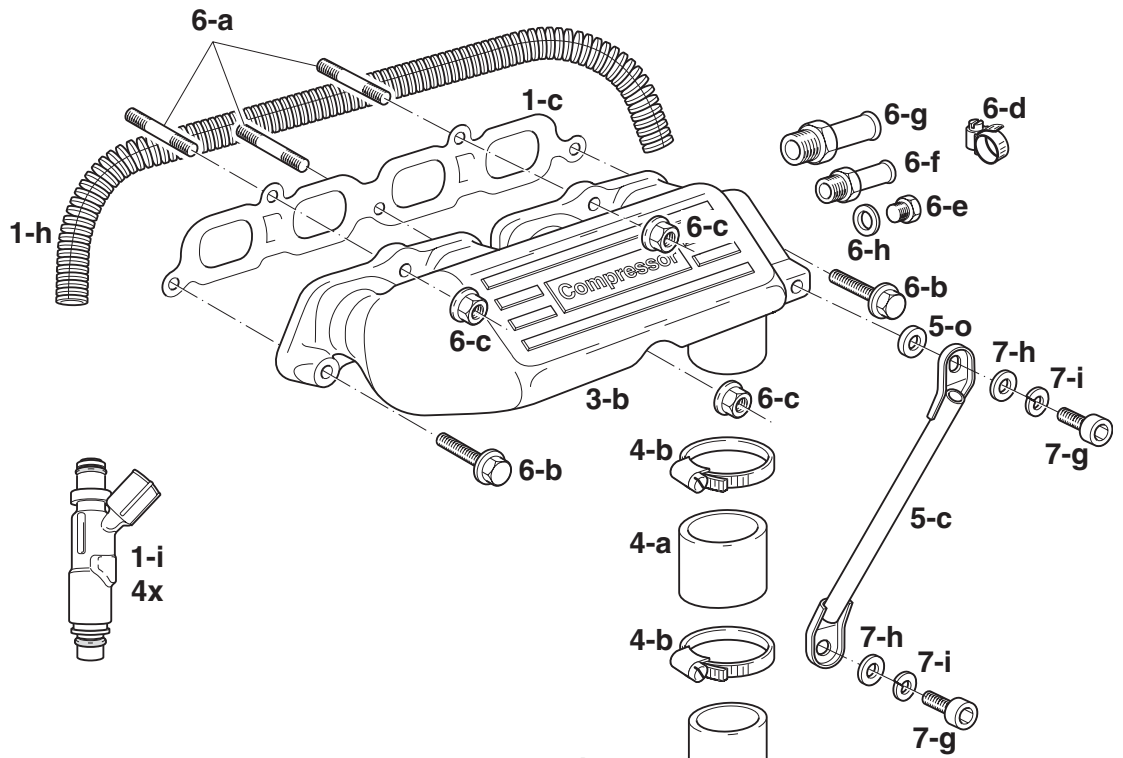
## 1. Location

Numbers with a character (Ex. 14-d) in "PARTS LOCATION" correspondent to numbers in the text and the illustration in "INSTALLATION PROCEDURES" as well as "No." in "PARTS LIST".

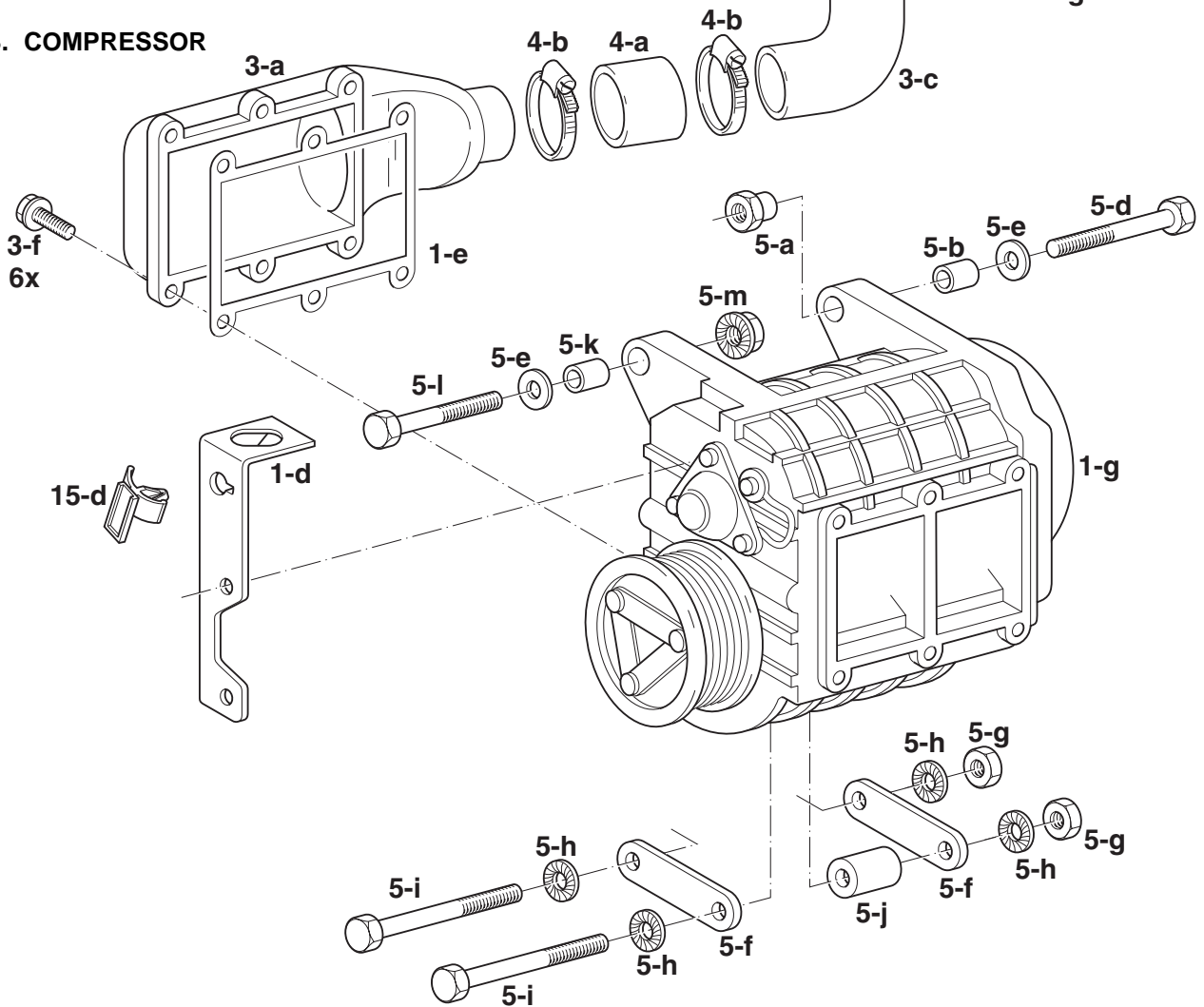
### 1.1. ENGINE (OIL RETURN AND SECONDARY-AIR VALVE FIXATION)



### 1.2. INTAKE MANIFOLD

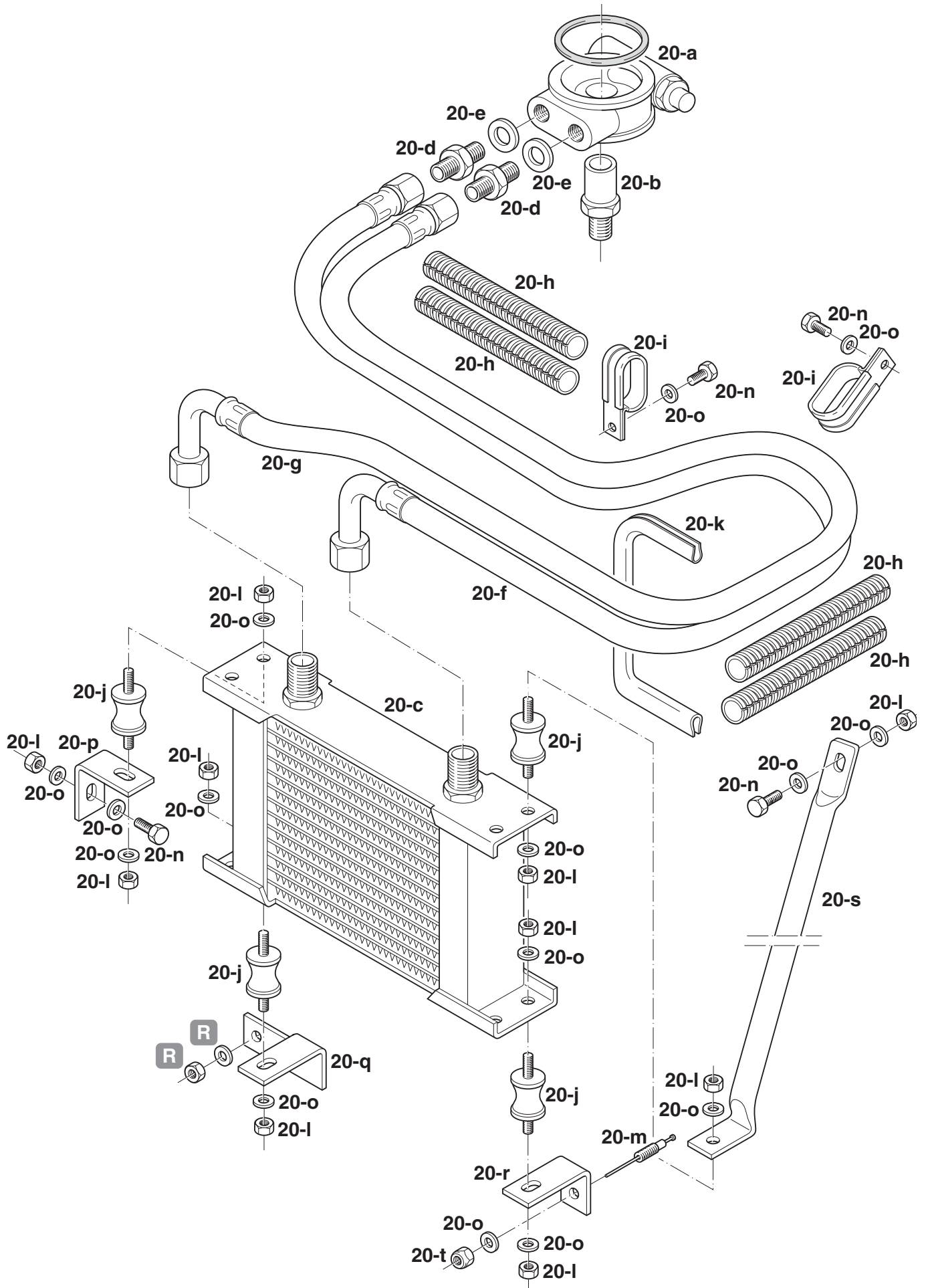


### 1.3. COMPRESSOR

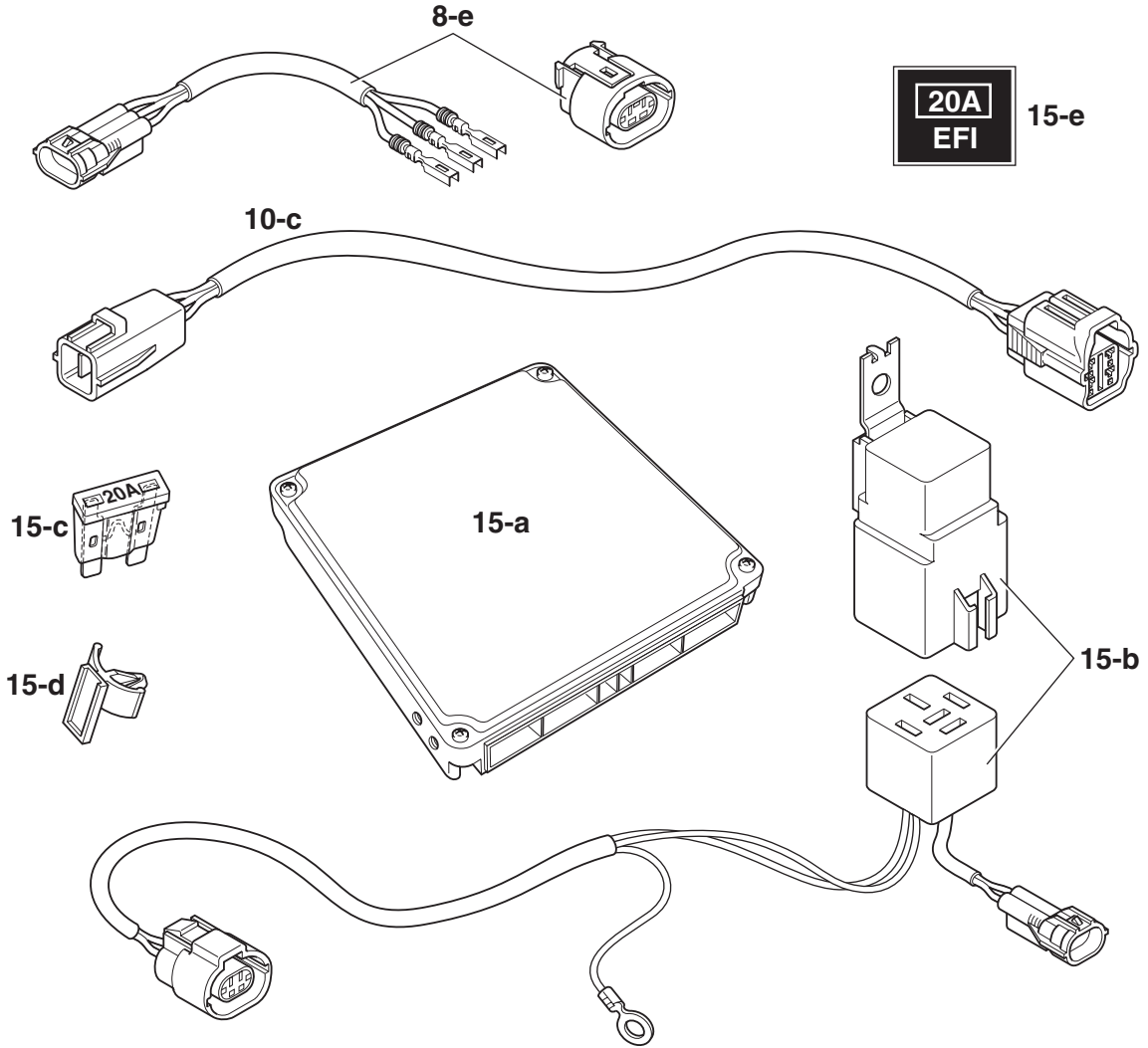




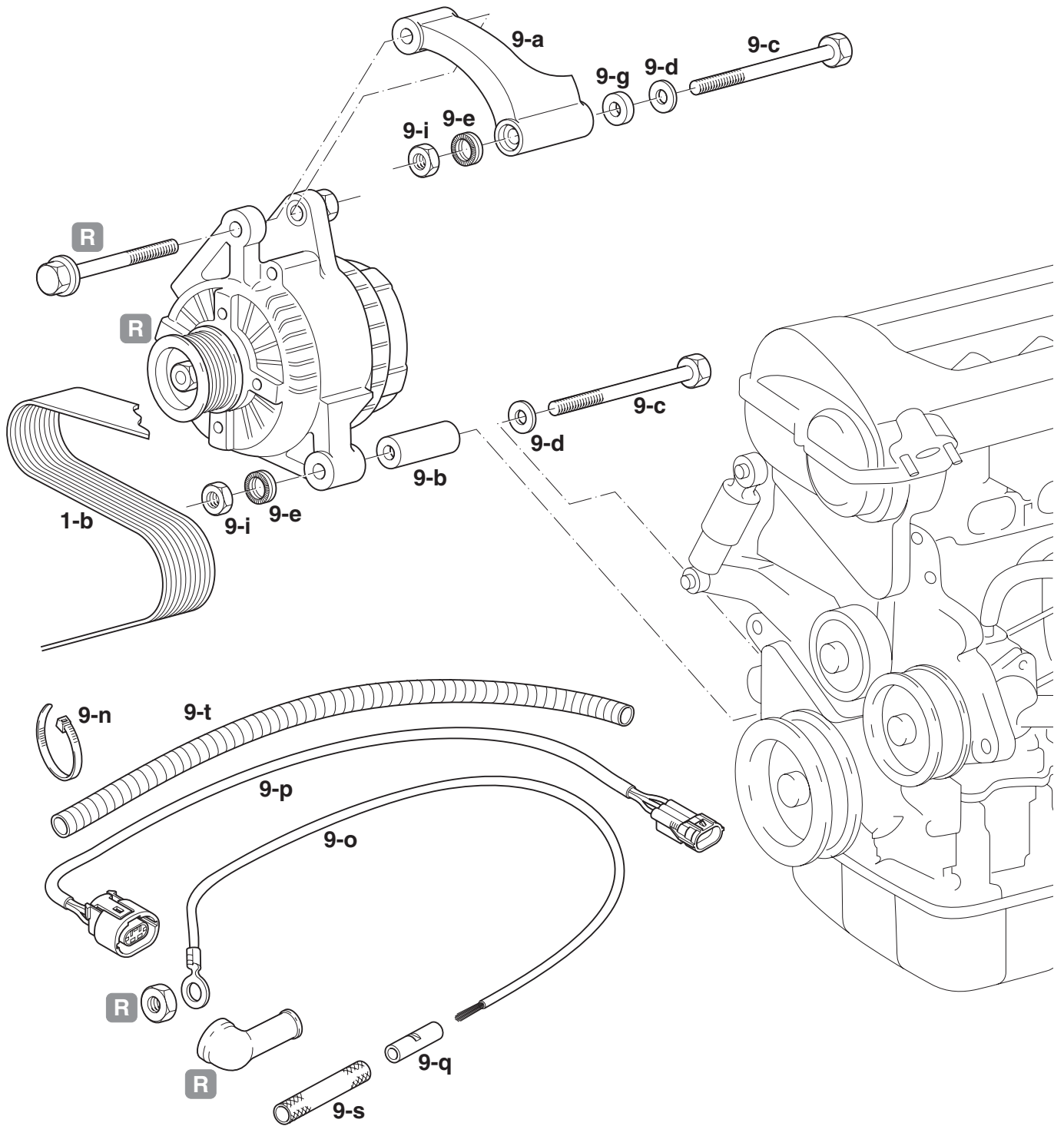
1.5. OIL COOLER



1.6. COMPRESSOR WIRING AND ELECTRONIC COMPONENTS

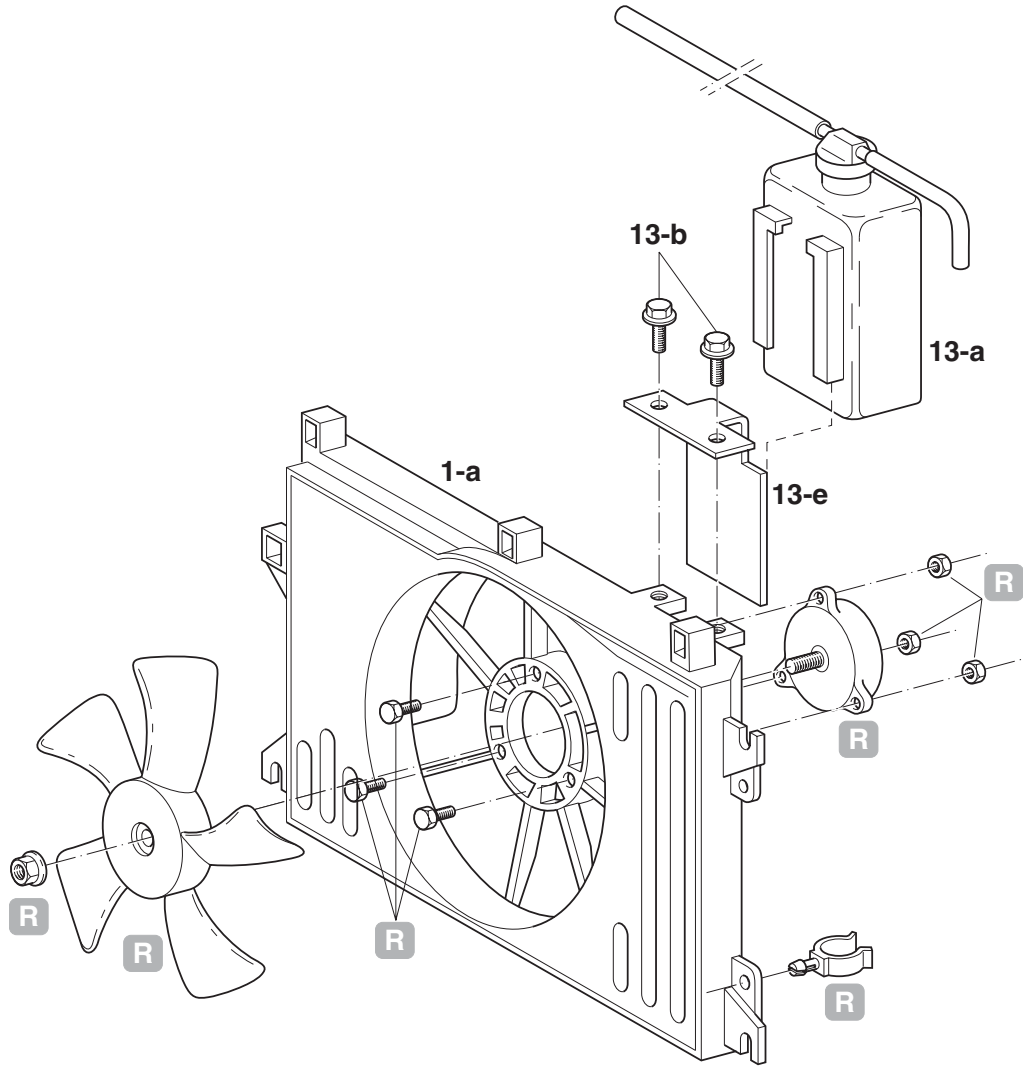


1.7. ALTERNATOR FIXATION

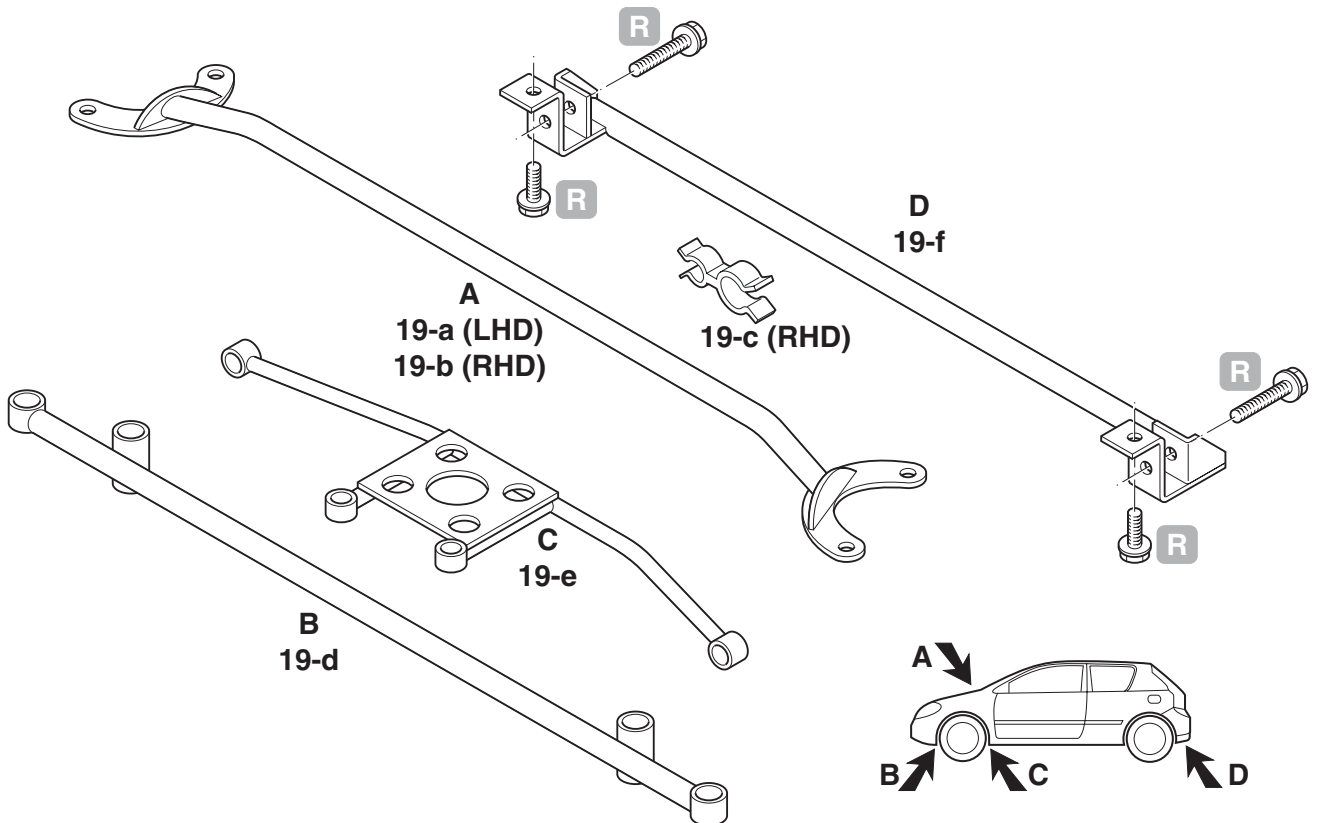




1.8. RADIATOR

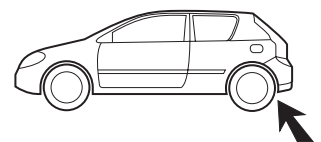
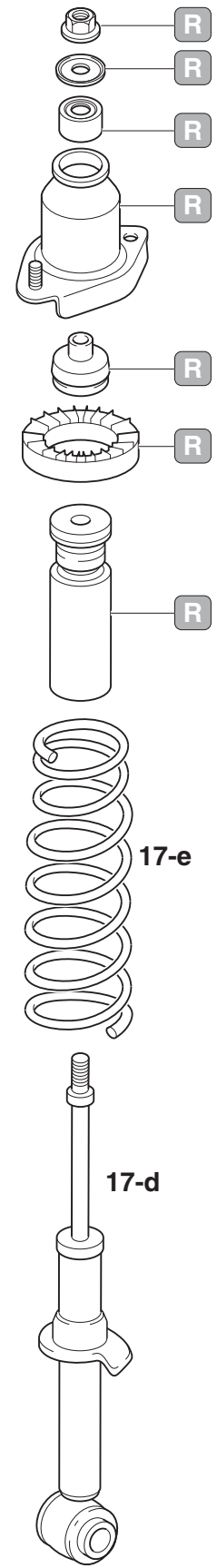
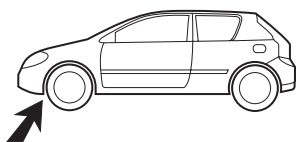
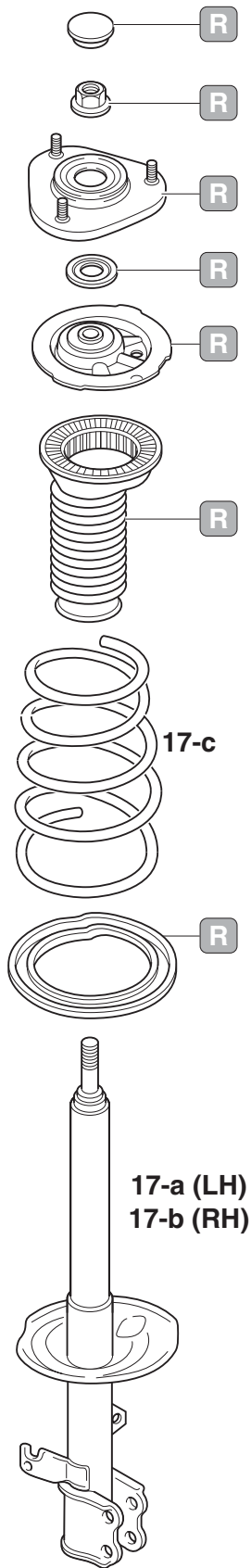


1.9. REINFORCEMENTS

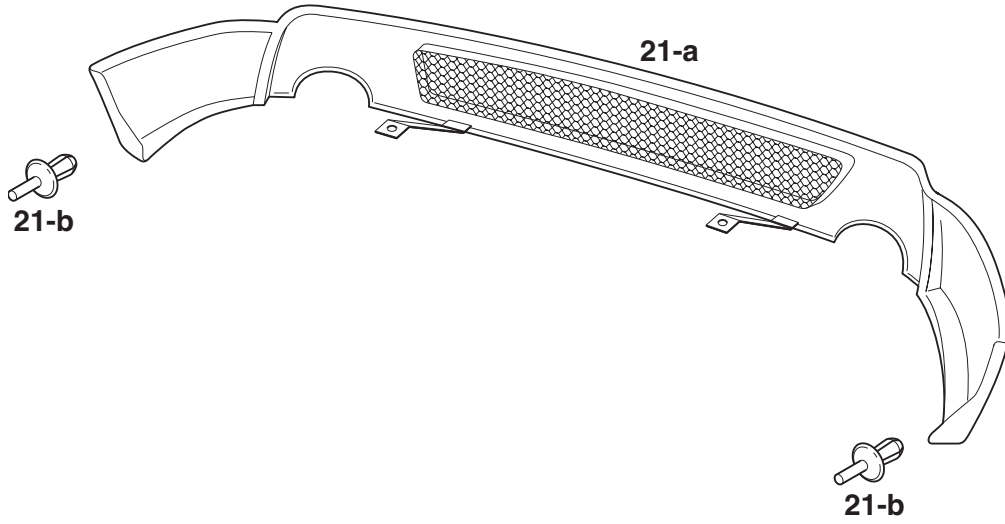




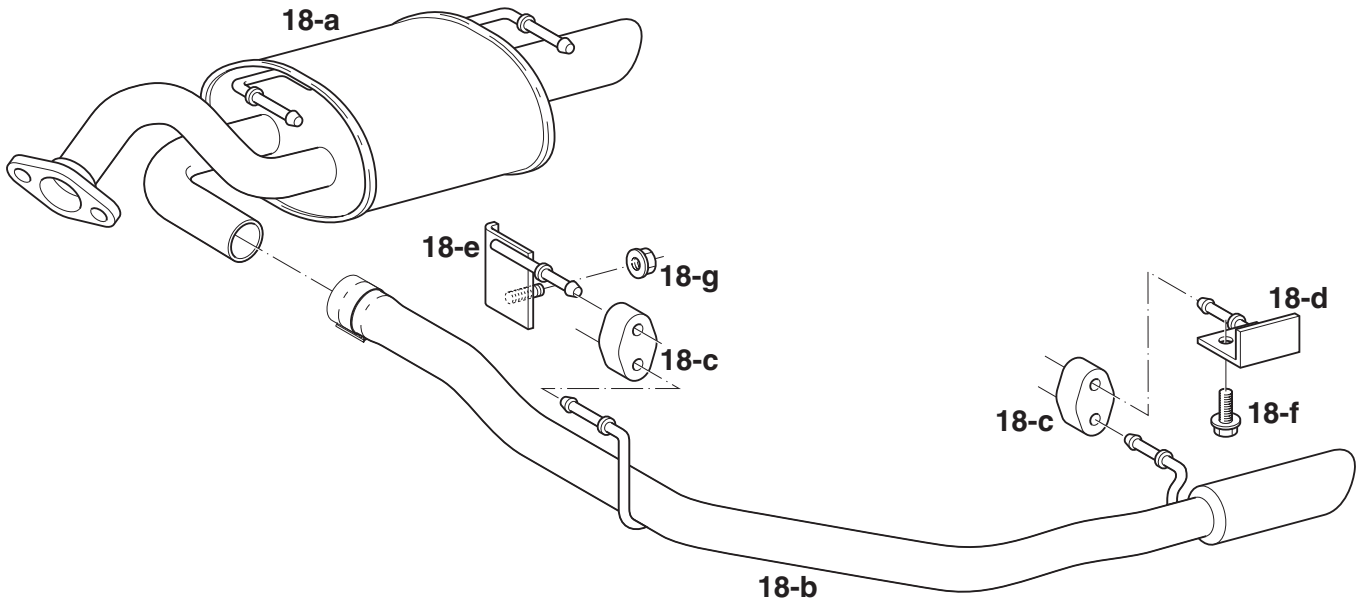
1.12.SHOCKABSORBERS / SPRINGS



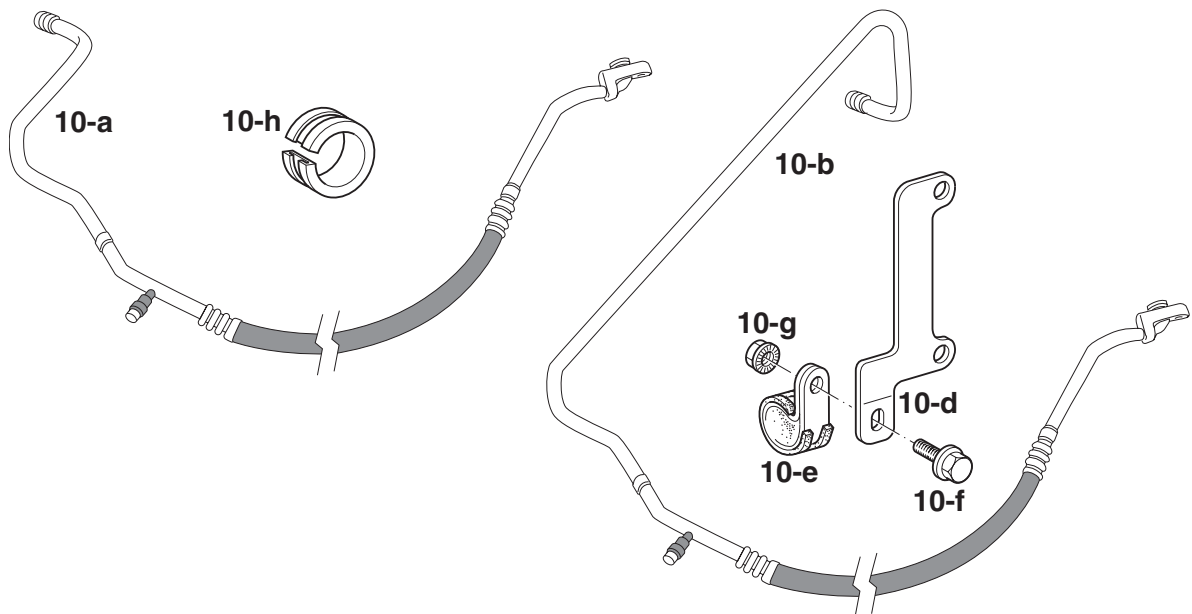
1.13.REAR SKIRT



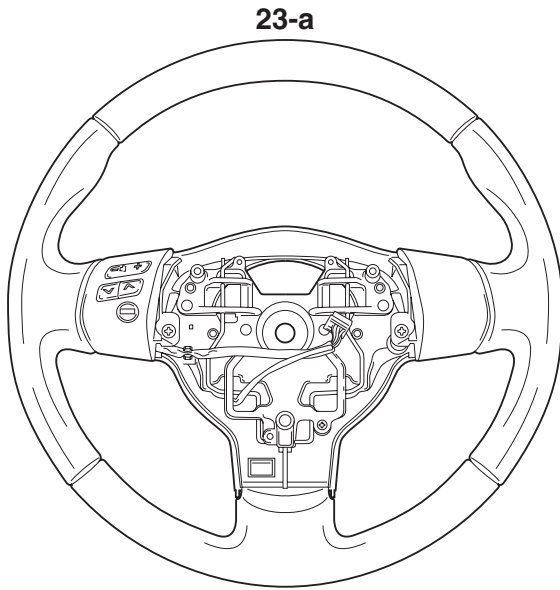
1.14.EXHAUST SYSTEM



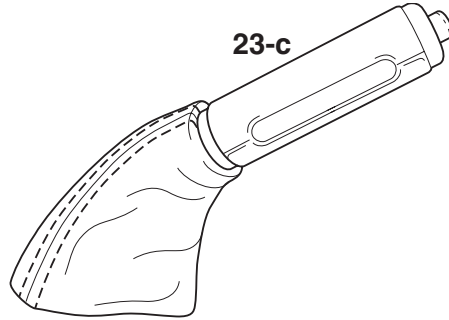
1.15.A/C SYSTEM



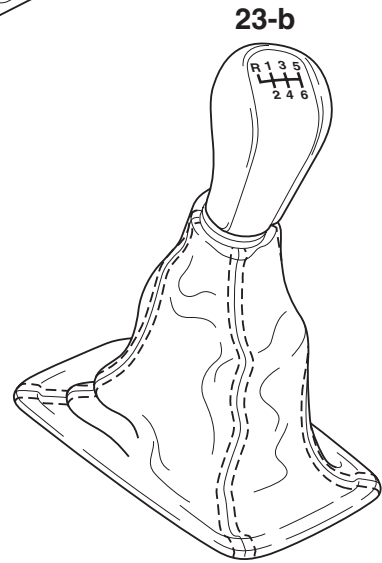
1.16.INTERIOR KIT



23-a

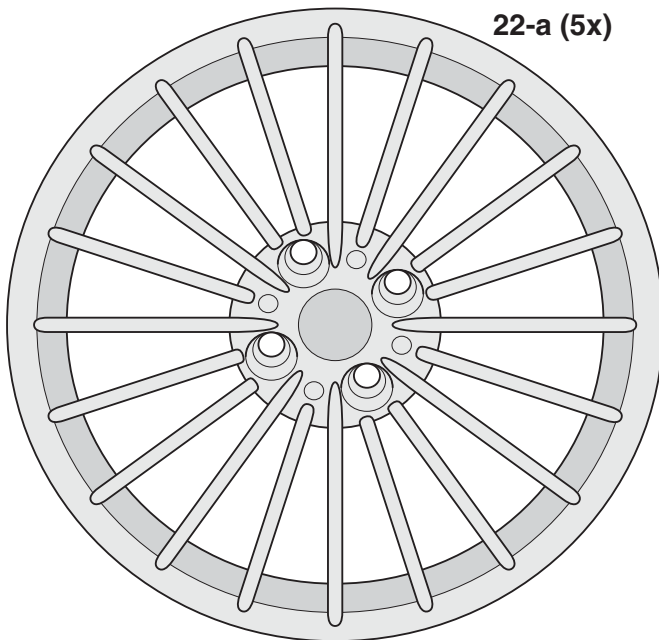


23-c



23-b

1.17.LOOSE PARTS



22-a (5x)




22-b

22-c

**TIRE LOADING INFORMATION**

Reifenluftdruck kalte reifen  
Cold tire inflation pressure  
Pression des pneus à froids  
Presión de neumáticos fríos

bar / psi			
215/45R17 87W	~ 160 km / h	2,2 / 32	2,2 / 32
205/45R17 84V		2,2 / 32	2,2 / 32
215/45R17 87W	160 km / h ~	2,2 / 32	2,2 / 32
205/45R17 84V		2,5 / 36	2,5 / 36

## 2. Parts List

No.	PART NAME	QTY	PART No.	REF
<b>1. SPARE PARTS</b>				
1-a	Fan shroud radiator	1	16711-YW501	
1-b	Poly V-belt 6 PK 2045	1	99366-D2050	
1-c	Gasket intake manifold	1	17177-22010	
1-d	Bracket, wiring loom compressor	1	82716-YW501	
1-e	Gasket, inlet compressor	2	17376-YW501	
1-g	Compressor	1	17620-YW501	
1-h	Cable protection	1	82817-YW501	
1-i	Fuel injector	4	23250-YW201	
<b>2. ENGINE COVER</b>				
2-a	Engine cover	1	11212-YW501	
2-b	Lock nut M6 black	4	AM179- 81000	
2-c	Stud M6 x 40	3	AM179- 82000	
2-d	Stud M6 x 50	1	AM300-11700	
2-e	Flange nut M6	2	AM300-11900	
2-f	Nut M6	2	AM300-12000	
<b>3. AIR TUBES MANIFOLD</b>				
3-a	Inlet compressor	2	17361-YW502	
3-b	Intake manifold	1	17111-YW501	
3-c	Air tube short (Pressure side)	1	17877-YW501	
3-d	Air tube long (Vacuum side)	1	17875-YW501	
3-e	Flange throttle body	1	17876-YW501	
3-f	Bolt M6 x 20	11	AM179- 83000	
3-g	Bolt M6 x 25	1	AM179- 84000	
<b>4. AIR HOSE</b>				
4-a	Hose L. 65 mm D. 60 mm	4	17341-YW501	
4-b	Hose clamp 60-80	8	AM300-17700	
<b>5. COMPRESSOR FIXATION</b>				
5-a	Headed bush, upper fixation	1	90389-YW501	
5-b	Plain bush, upper fixation	1	90380-YW501	
5-c	Support bracket, intake manifold	1	17138-YW502	
5-d	Bolt M8 x 60	1	AM179- 90000	
5-e	Washer M8	2	AM179- -91000	
5-f	Bracket, lower fixation	2	17625-YW501	
5-g	Nut M10 x 1.25	2	AM179- -93000	
5-h	Washer M10 Corrugated Tensilock	4	AM179- -94000	
5-i	Bolt M10 x 80 x 1.25	2	AM179- -95000	
5-j	Bush 19 x 20 x 10.5	1	90380-YW502	
5-k	Bush 16.6 x 9.6 x 8	1	90380-YW503	
5-l	Bolt M8 x 50 x 1.25	1	AM179- -98000	
5-m	Nut (Tensilock) M8	1	AM179- -99000	
5-n	Bracket cable plug at water flange	1	82717-YW501	
5-o	Spacer M10 x 7.6	1	90201-YW502	

No.	PART NAME	QTY	PART No.	REF
<b>6. INTAKE MANIFOLD</b>				
6-a	Studs intake manifold M8 x 40	3	90116-YW501	
6-b	Flange bolt M8 x 30	2	AM300-00200	
6-c	Nut (Tensilock) M8	3	AM300-00300	
6-d	Hose clamp 10-16	1	AM300-00400	
6-e	Screwed drain plug 1/8" D.5 mm	1	AM300-12200	
6-f	Air connection 1/4" D.8 mm	1	AM300-00600	
6-g	Air connection 3/4" D.20 mm	1	AM300-00700	
6-h	Gasket	1	AM300-12300	
<b>7. THROTTLE BODY FIXATION</b>				
7-a	Bracket, throttle body	1	22267-YW501	
7-b	Bracket cable plug	1	AM300-00900	
7-c	Bolt M8 x 20	1	AM300-01000	
7-d	Bolt M8 x 15	2	AM300-01100	
7-e	Nut M8	1	AM300-01200	
7-f	Washer M8	4	AM300-01300	
7-g	Bolt M10 x 25 x 1.25 (Hex socket)	2	AM300-17500	
7-h	Washer M10	2	AM300-01500	
7-i	Spring washer M10	2	AM300-01600	
<b>8. THROTTLE BODY COMPARTMENT</b>				
8-a	Bracket, rectangle with 4 holes	1	AM300-01700	
8-b	Bolt M6 x 10	2	AM300-01800	
8-c	Air connection 1/8" D.5 mm	1	AM300-01900	
8-d	Air connection 1/4" D.8 mm	1	AM300-02100	
8-e	Extension wiring loom (idle speed)	1	82122-YW501	
<b>9. ALTERNATOR FIXATION</b>				
9-a	Bracket, alternator fixation	1	12511-YW501	
9-b	Bush distance 45 x 18 x 10.5	1	90380-YW501	
9-c	Bolt M10 x 120 x 1.25	2	AM300-02400	
9-d	Washer M10	2	AM300-02500	
9-e	Washer Nordlock M10	2	AM300-02600	
9-g	Spacer M10 x 3.8	1	90201-YW503	
9-i	Nut M10 x 5 x 1.25	2	AM300-03000	
9-n	Cable tightener 4.7 x 200	2	AM300-03500	
9-o	Cable, extension alternator B+	1	82123-YW501	
9-p	Cable, extension alternator 3 pol	1	82124-YW501	
9-q	Butt splice	1	AM300-03800	
9-s	Shrink fit	1	AM300-15700	
9-t	Protection hose	1	AM300-16100	
<b>10.A/C SYSTEM PARTS</b>				
10-a	High pressure hose A/C LHD	1	88704-YW501	
10-b	High pressure hose A/C RHD	1	88704-YW502	
10-c	Cable harness A/C compressor, extension	1	88648-YW501	
10-d	Bracket high pressure hose A/C to compressor	1	AM300-21300	
10-e	Clamp high pressure hose A/C	1	AM300-21400	
10-f	Flange bolt M6 x 14	1	AM300-21500	
10-g	Flange nut M6	1	AM300-21600	
10-h	Rubber, A/C bracket	1	AM300-21200	

No.	PART NAME	QTY	PART No.	REF
<b>11.SECONDARY-AIR VALVE</b>				
11-a	Bracket, secondary air valve	1	25715-YW501	
11-b	Washer, d = 9 mm D= 24 mm	2	AM300-04200	
11-c	Bolt M8 x 50	1	AM300-04400	
11-d	Bolt M8 x 55	1	AM300-04300	
<b>12.OIL RETURN</b>				
12-a	Oil pipe, oil return	1	12221-YW501	
12-b	Height compensation	1	12261-YW502	
12-c	Hose clamp 20 - 32	2	AM300-04700	
12-d	Gasket oil return connection	1	12255-88600	
12-e	Clamp oil return pipe	1	AM300-21800	
12-f	Bracket oil return pipe	1	AM300-21900	
12-g	Flange bolt M6 x 14	1	AM300-21500	
12-n	Flange nut M6	1	AM300-21600	
<b>13.COOLANT RESERVOIR</b>				
13-a	Reservoir	1	16470-YW501	
13-b	Bolt (Tensilock) M6 x 15	2	AM300-05000	
13-e	Bracket for reservoir	1	16611-YW501	
<b>14.OIL DIPSTICK</b>				
14-a	Bolt (Tensilock) M6 x 10	1	AM300-05400	
14-b	Oil dipstick pipe new length, new bend (incl. o-ring)	1	11452-YW502	
14-c	Oil dipstick 630 mm	1	15301-YW501	
14-d	Nut (Tensilock) M6	1	AM300-05700	
<b>15.ELECTRONICS</b>				
15-a	ECU. Denso	1	AM300-12400	
15-b	Wiring compressor	1	AM300-12500	
15-c	Fuse 20 A	1	AM300-16200	
15-d	Clip connector AMP	1	AM300-16300	
15-e	Sticker 20A EFI	1	AM300-23600	
<b>16.FRONT BRAKE</b>				
16-a	Bracket caliper	2	47740-YW501	
16-b	Disc front brake LH	1	43512-YW501	
16-c	Disc front brake RH	1	43511-YW501	
16-e	Bolt M12 x 35 x 1.25	4	90105-12285	
16-f	Bolt M12 x 48 x 1.25	4	90105-12175	
<b>17.SHOCK ABSORBERS/SPRINGS</b>				
17-a	Front shock absorber LH	1	48520-YW501	
17-b	Front shock absorber RH	1	48510-YW501	
17-c	Front spring LH/RH	2	48131-YW501	
17-d	Rear shock absorber LH/RH	2	48530-YW501	
17-e	Rear spring LH/RH	2	48231-YW501	
<b>18.EXHAUST SYSTEM</b>				
18-a	Muffler	1	17430-YW501	
18-b	Exhaust pipe	1	17440-YW501	
18-c	Rubber	2	17565-OD030	
18-d	Bracket exhaust pipe rear	1	17506-YW501	
18-e	Bracket exhaust pipe middle	1	17507-YW501	
18-f	Bolt	1	91645-C1232	
18-g	Nut	1	94180-41000	



No.	PART NAME	QTY	PART No.	REF
<b>19.REINFORCEMENTS</b>				
19-a	Tower bar (front) position A LHD	1	PZ439-E0750-00	
19-b	Tower bar (front) position A RHD	1	48690-YW501	
19-c	Clip throttle cable RHD	1	90464-00738	
19-d	Reinforcement engine member position B	1	52853-YW501	
19-e	Reinforcement engine member position C	1	52852-YW501	
19-f	Rear bumper brace	1	52023-YW501	
<b>20.OIL COOLER</b>				
20-a	Adapter plate, between oil filter and oil cooler	1	15788-YW501	
20-b	Adapter bolt 3/4" UNF	1	15695-YW501	
20-c	Oil cooler 210 mm wide	1	15710-YW501	
20-d	Adapter steel 1/2" (mounted on adaptor plate)	2	15726-YW501	
20-e	Washer, copper 1/2"	2	AM300-114	
20-f	Hose for oil cooler, 1125 mm	1	15777-YW502	
20-g	Hose for oil cooler, 1330 mm	1	15778-YW501	
20-h	Protection tube for hose, d=20 mm, l=300 mm	4	15779-YW501	
20-i	Fixation clamp d=35 mm	2	15776-YW501	
20-j	Silent block, l=15 mm, M6 x 10	4	15789-YW501	
20-k	Strip for wire protection at edge, l=300 mm	1	AM300-109	
20-l	Nut, hex head, M6	10	AM300-05700	
20-m	Rivet stud M6 x 10	1	AM300-11500	
20-n	Bolt, hex head, M6 x 15	4	AM300-05000	
20-o	Washer M6, body washer	15	AM300-17300	
20-p	Bracket 1 upper right	1	15781-YW501	
20-q	Bracket 2 lower right	1	15782-YW501	
20-r	Bracket 3 lower left	1	15783-YW501	
20-s	Bracket 4 upper left/pipe	1	15784-YW501	
20-t	Nut selflocking M6	1	AM300-17400	
<b>21.REAR SKIRT1</b>				
21-a	Rear skirt assembly	1	76085-YW501	
21-b	Clips rear skirt	2	76086-YW501	
<b>22.LOOSE PARTS</b>				
22-a	Rim	5	42611-YW501	
22-b	Sticker euro super RON 98	1	74559-YW501	
22-c	Sticker tyre pressure label	1	42661-YW501	
22-d	Steering gear washer	4	51329-YW501	
<b>23.INTERIOR PARTS (OPTION)</b>				
23-a	Steering wheel	1	45100-YW501	
23-b	Gear lever knob	1	33504-YW501	
23-c	Hand brake lever	1	46215-YW501	

### 3. Specified torque

Part tightened	Torque specification			Page
	Nm	kgcm	ft.lbf	
Electric cooling fan motor	5	50	3.7	34
Reservoir bracket on fan	9	90	6.6	34
Secondary-air valve fixation bolts	21	210	15	40
Oil cooler silent block	10	100	7.4	40
Oil cooler bracket/connection A	10	100	7.4	41
Oil cooler bracket/connection B	6	60	4.4	41
Adapter plate	60	610	44	41
2 washers and nuts	35	355	26	41
Protection tubes and fixation clamps	10	100	7.4	41
Oil cooler hose connection A	35	355	26	41
Oil cooler hose connection B	25	255	18	41
Connector bracket nut	8	80	5.9	42
Compressor outlet cover bolts	9	90	6.6	43
Intake manifold nipple 1	45	460	33	44
Intake manifold nipple 2	32	325	24	44
Intake manifold nipple 3	22	225	16	44
Intake manifold nuts and bolts	34	345	25	45
Fuel rail bolts	29	295	21	45
Fuel rail bracket bolt	9	90	6.6	45
Compressor fixation bolts M8	32	325	24	46
Compressor fixation bolts M10	45	460	33	46
A/C High compressor hose	9.8	100	7.2	47
A/C High compressor hose clamps	9.8	100	7.2	47
Nipple 1 Throttle connection	22	225	16	47
Nipple 2 Throttle connection	22	225	16	47
Bracket (extra) throttle connection	8	80	5.9	47
Bracket throttle 2 bolts	8	80	5.9	47
Secondary-air control valve bolts	8	80	5.9	47
Suppressor bolt and nut	8	80	5.9	47
Upper intake manifold bolt	32	325	24	48
Lower intake manifold bolt	20	200	15	48
Throttle body nuts and bolts	22	225	16	49
Radiator upper brackets and bolts	19	195	14	50
Oil return pipe	8	80	5.9	50
Oil dipstick bolts	10	100	7.4	50
Compressor inlet cover	9	90	6.6	51
Bracket oil return pipe	9	90	6.6	51
Bracket A/C pipe	9	90	6.6	51
Secondary-air valve pipe bolts	8	80	5.9	52
Steering gear rubbers	29	295	21	55
Alternator B+ cable	8	80	5.9	55
Upper alternator connector connection	25	255	18	56
Lower alternator connector connection	58	590	43	56
Subframe bolt A	133	1355	98	57
Subframe bolt B	80	815	59	57
Subframe nut C	133	1355	98	57
Lower ball joints lower left and right	89	905	66	57

Part tightened	Torque specification			Page
	Nm	kgcm	ft.lbf	
Steering gear connection	49	500	36	57
Centre member bolt	52	530	38	58
Lower control arm bolt	137	1400	101	58
Centre member engine mount connection 3 nuts 2 bolts	52	530	38	58
Anti roll bar link left and right	44	450	32	58
Steering column connection	35	360	26	59
Bracket compressor	8	80	5.9	61
ECU brackets	5	50	3.7	63
ECU bolts	5	50	3.7	63
Engine coil	9	90	6.6	66
Engine cover studs and nuts	10	100	7.4	66
Engine cover	7	71	5.2	66
Extension bracket front brakes	107	1090	79	67
Front brake calliper bracket	107	1090	79	68
Front brake calliper	34	350	25	68
Front shock absorber nut	47	480	35	71
Tower bar and strut	39	400	29	72
Lower strut connection front	153	1550	113	72
ABS Bracket and brake hose	29	300	21	72
Anti roll bar link left and right	44	450	32	72
Rear shock absorber nut	56	570	41	76
Lower shock absorber connection rear	80	815	59	77
Upper shock absorber connection rear	80	815	59	77
Rear bumper brace: Bolt A	42	430	24	79
Rear bumper brace: Bolt B	20	200	15	79
Rear muffler connection	44	450	32	83
Bracket (chassis member left)	80	815	59	83
Bracket (spare wheel)	44	450	32	83
Exhaust pipe	25	250	18	83
Lower reinforcement engine member (rear)	80	815	59	84
Lower reinforcement engine member (front)	52	530	38	84
Lower reinforcement engine member (front)	137	1400	101	84
Tower bar	39	400	29	84
Rear bumper brace: Bolt A	42	430	24	86
Rear bumper brace: Bolt B	39	400	29	86
Steering wheel center nut	50	510	37	88
Wheel nuts	103	1050	76	90
Lower reinforcement engine member front	137	1400	101	90
Shock absorber bolts	80	815	59	91
Steering axle nuts	74	755	55	91

# INSTALLATION PROCEDURES

## 1. Introduction

### 1.1. SI UNIT.

The UNITS given in this manual are primarily expressed according to the SI (international System of Units), and alternately expressed in the metric system and in the English system.

### 1.2. CAUTION \* NOTICE \* HINT.

**CAUTION:** There is a possibility of injury to you or other people. Be sure to observe the contents.

**NOTICE:** There is a possibility of damage to the components or vehicle. Be sure to observe the contents.

**HINT:** Additional information to help you perform the installation correctly and efficiently.

### 1.3. DEFINITION OF SYMBOLS.

**U:** Part or parts that will become Unnecessary after removal or disassembly.

**K:** New part or parts from the Kit that will be used for installation or assembly.  
The numbers in the text and in the illustrations (Ex.4-C) which follow this symbol correspond to numbers in "PARTS LOCATION" and "No." in "PARTS LIST".

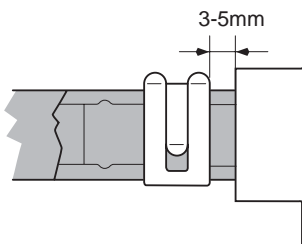
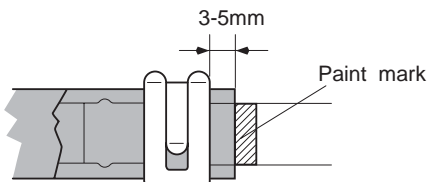
**R:** Part or parts that has/have been removed from the vehicle and will be Reused for installation or assembly.

### 1.4. WATER HOSE AND CLAMP.

**NOTICE:**

**Follow the instructions below. Otherwise the hose may come off or the coolant may leak from the connection, resulting in engine overheat.**

Example:



(a) When fitting the hose, mixture of water and L.L.C. (50: 50 to 100: 0) can be used for lubrication.

(b) The paint mark on the water hose is the reference for positioning. Unless otherwise specified in this manual, fit the hose with the mark at the top.

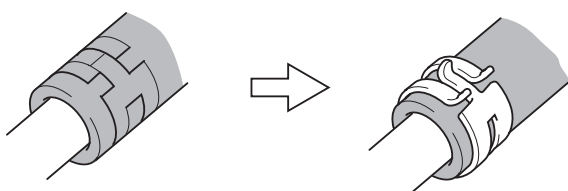
(c) When fitting the hose to the pipe, make sure to push in the hose until it reaches the paint mark. If there is no paint mark on The pipe, push the hose to the end.

(d) Unless otherwise specified in this manual, fit the hose clamp at 3 to 5 mm (0. 1 1 8 to 0.197in.) from the end of the hose while making sure the tabs do not interfere with any other parts.

**HINT:**

**Do not wrap the hose clamp around the hose at a slant.**

(e) When both the water hose and hose clamp are reused, make sure to fit the hose clamp at the mark left from previous clamping.

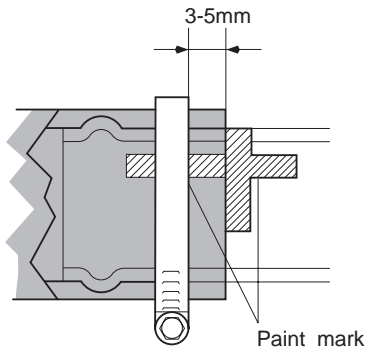


## 1.5. AIR HOSE AND CLAMP.

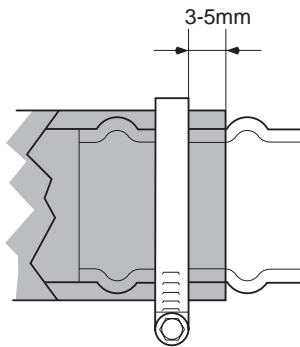
### NOTICE:

- Follow the instructions below. Otherwise the hose may come off or intake air may leak, disabling driving due to engine stop.
- Wrapping the hose clamp too tightly may damage the part or related parts.

Example:



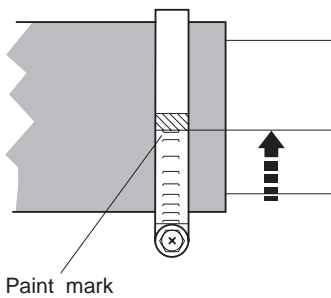
- (a) The paint mark on the air hose is the reference for positioning. Align the mark with that of the pipe for fitting.
- (b) When fitting the hose to the pipe, make sure to push in the hose until it reaches the paint mark. If there is no paint mark on the pipe, push the hose to the end.
- (c) Unless otherwise specified in this manual, fit the hose clamp at 3 to 5 mm (0.118 to 0.197 In.) from the end of the hose.



### HINT:

**Do not wrap the hose clamp around the hose at a slant.**

- (d) When tightening the hose clamp, check the illustration in this manual and make sure the position and orientation of the screw is appropriate for on-vehicle maintenance.



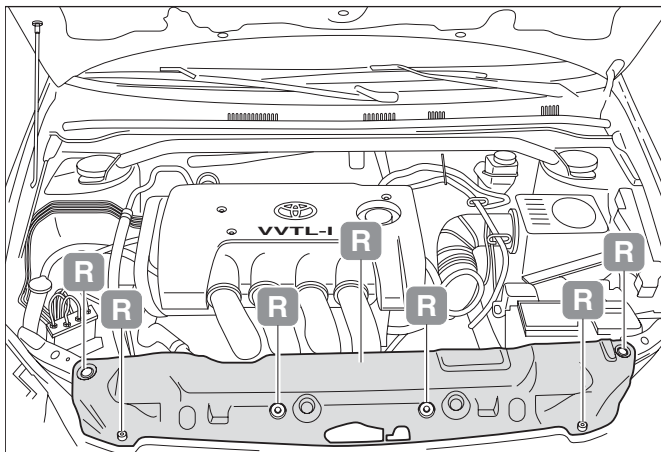
### HINT:

**Tighten the hose clamp until the end of the clamp reaches the paint mark, in order to ensure optimal tightening condition.**

## 1.6. OIL AND COOLANT.

Reuse the oil and coolant if it is judged possible from their condition.

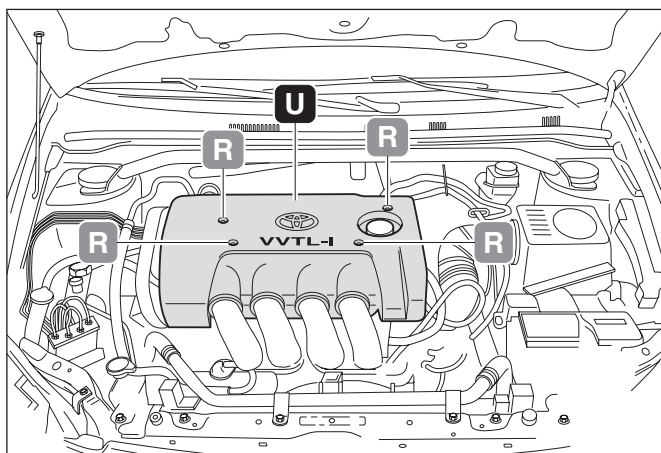
## 2. Operation in engine compartment (Upper side removing parts)



### 1. REMOVE RADIATOR COVER.

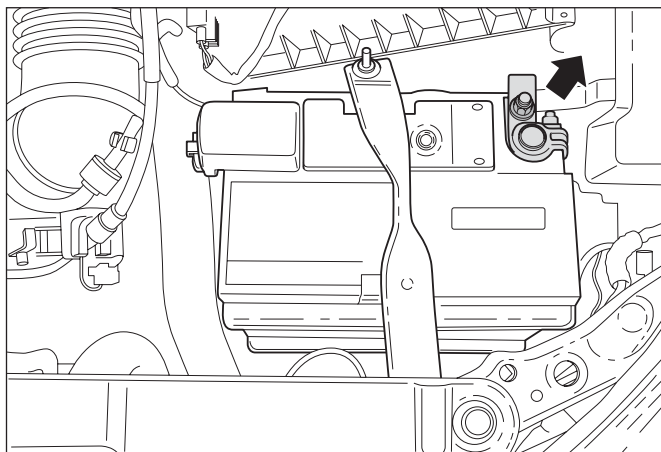
- (a) Remove the 4 clips and 2 screws.  
R: 4 clips and 2 screws.
- (b) Remove radiator cover.  
R: Radiator cover.

**NOTICE:** Protect the car, use covers over the fenders, front side and seat.



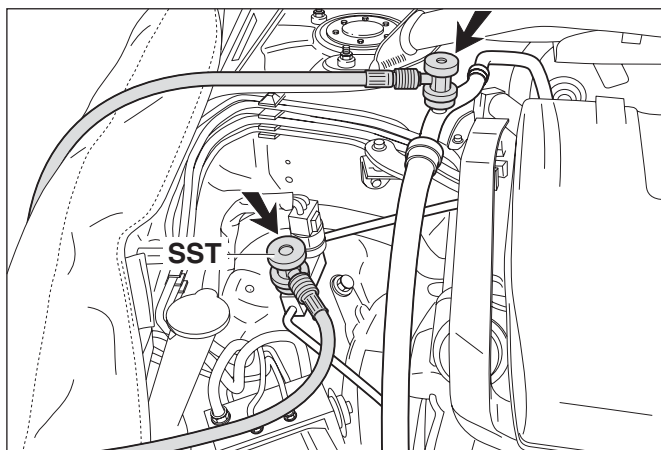
### 2. REMOVE ENGINE COVER.

- (a) Remove the 3 bolts and nut.  
R: 3 bolts and nut.
- (b) Remove engine cover.  
U: Engine cover.



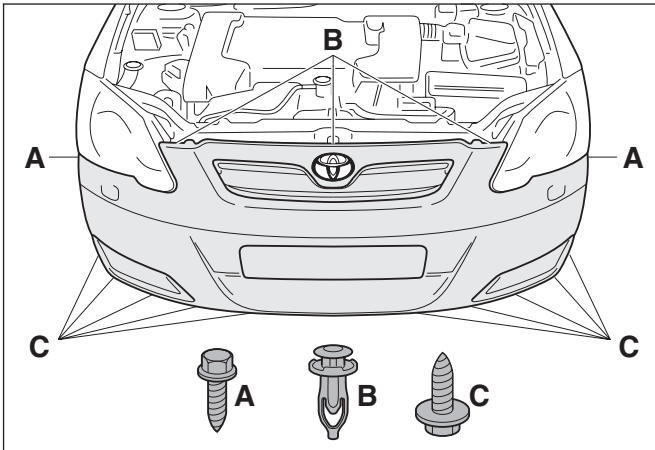
### 3. REMOVE BATTERY NEGATIVE LEAD.

- (a) Check if the ignition is turned off.
- (b) Loosen the nut and remove the negative lead.



### 4. REMOVE REFRIGERANT FROM A/C SYSTEM.

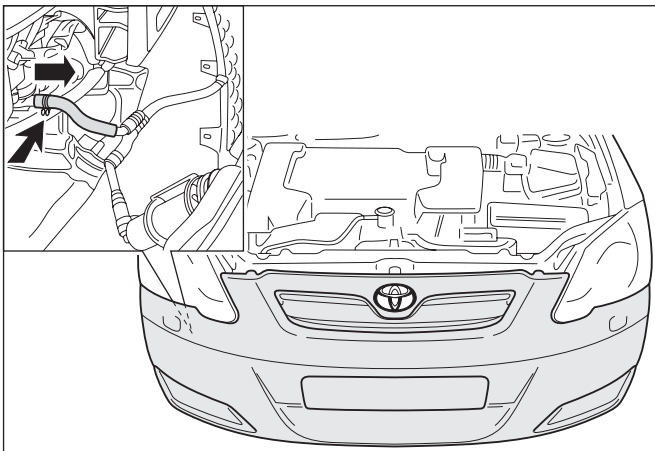
- (a) Remove the 2 protecting covers.  
R: 2 protecting covers.
- (b) Connect the low and high pressure hoses.  
 SST 07110-58060
- (c) Open the connections and start the system to remove the refrigerant (R134a).



### 5. REMOVE FRONT BUMPER CONNECTION.

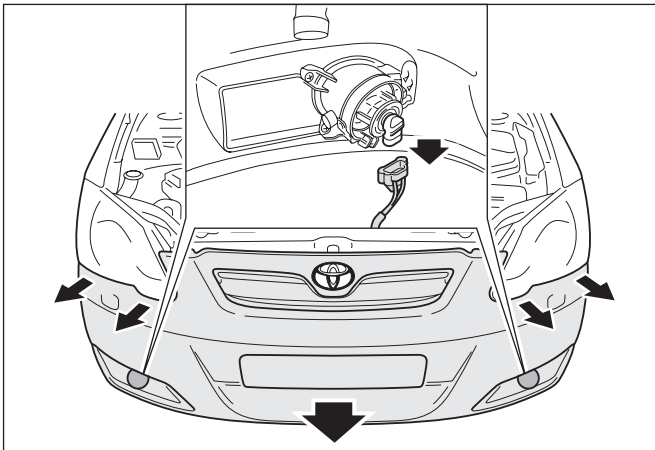
**Hint: The front bumper must be removed for the installation of the oil cooler.**

- (a) Remove the screws (A) left and right.
- (b) Remove the upper 3 clips (B).
- (c) Remove the lower screws (C).



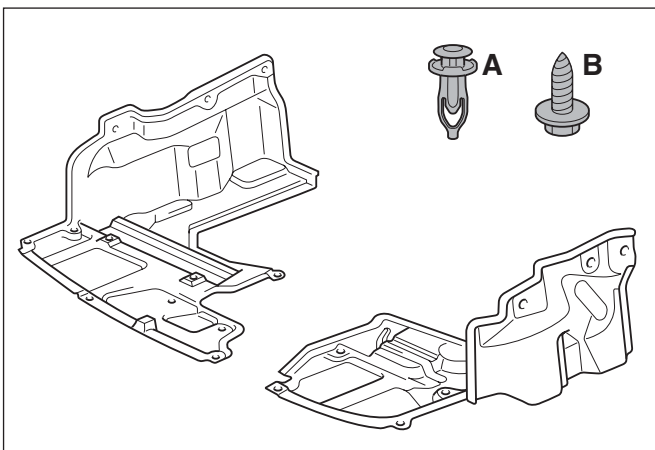
### 6. REMOVE HEAD LAMP WATER HOSE.

- (a) Remove head lamp water hose if present.



### 7. REMOVE FOGLAMP CONNECTORS AND FRONT BUMPER.

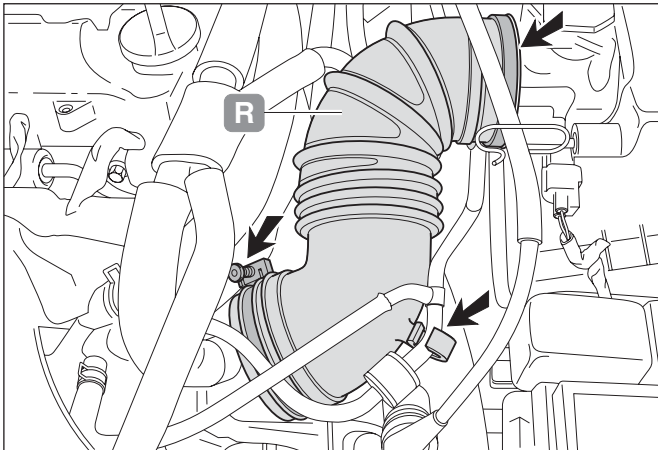
- (a) Remove the foglamp connectors.
- (b) Pull carefully the front bumper out the fixation clips.



### 8. REMOVE SPLASH SHIELD LEFT AND RIGHT.

- (a) Remove clips (A) and screws (B).
- (b) Remove splash shield left and right.

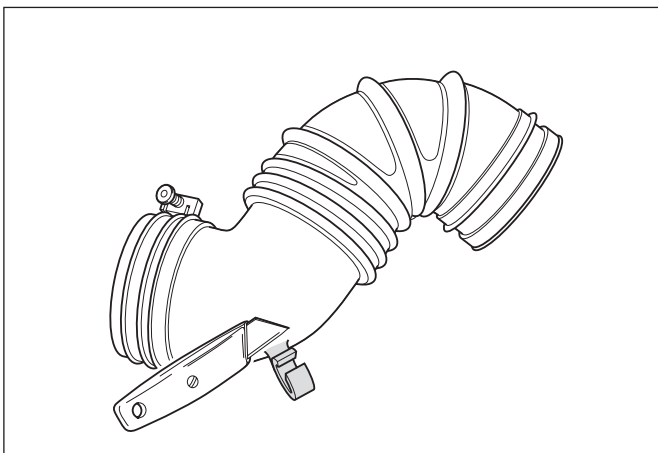




### 9. REMOVE INLET HOSE BETWEEN AIR FILTER AND THROTTLE BODY.

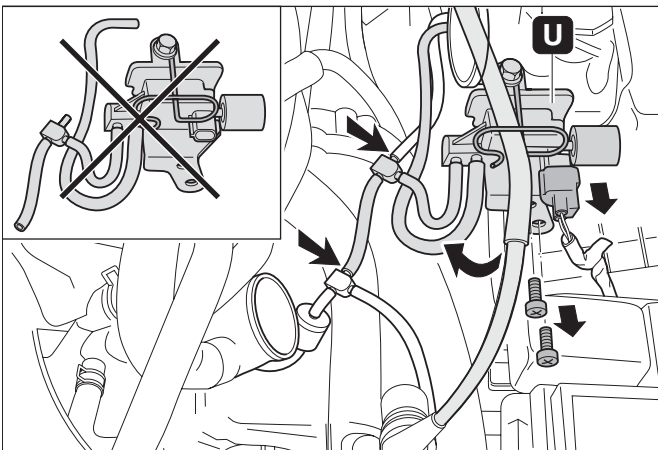
- (a) Loosen the 2 hose clamps.
  - (b) Pull vacuum hose out of the inlet hose.
  - (c) Remove inlet hose together with the hose clamps.
- R**: Inlet hose and 2 hose clamps.

**NOTICE:** Cover the intake and throttle body to avoid parts from falling in.



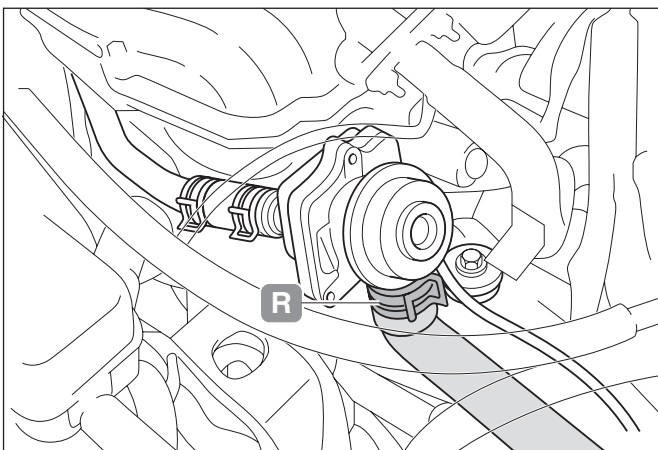
### 10. PREPARATION INLET HOSE.

- (a) Cut the extra fixation (vacuum hose) of the inlet hose.



### 11. REMOVE VSV FROM AIR FILTER

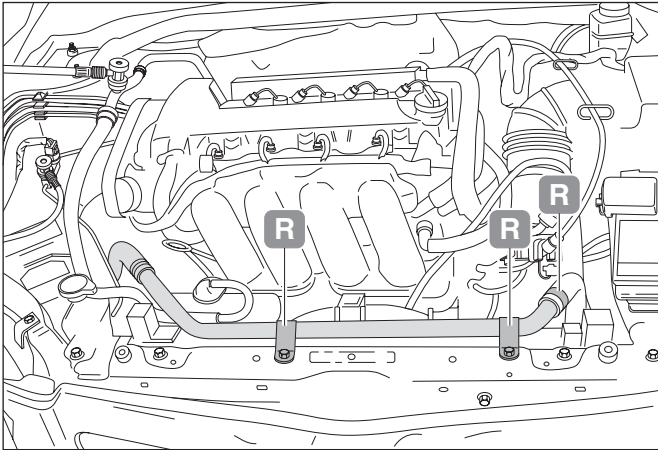
- (a) Pull throttle cable out fixation clamp.
  - (b) Remove connector and vacuum hoses.
  - (c) Remove VSV complete.
- U**: VSV complete.
- (d) Connect the existing vacuum hoses.



### 12. REMOVE HOSE SECONDARY-AIR VALVE.

- (a) Remove the hose clip.
- R**: Hose clip.
- (b) Remove the hose.

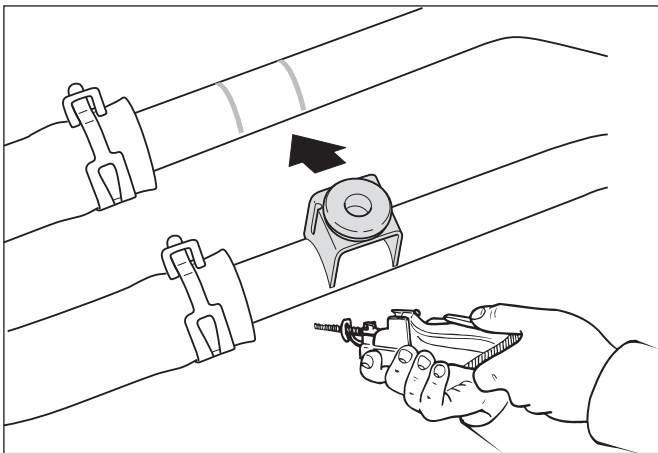




### 13. REMOVE SECONDARY-AIR VALVE PIPE.

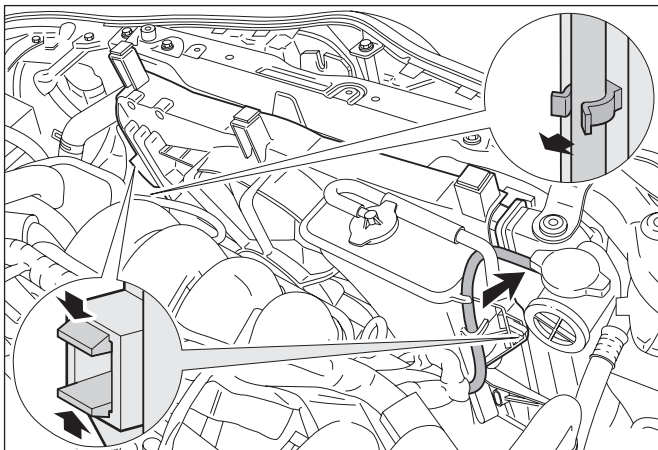
- (a) Remove the hose clip (battery side).  
R: Hose clip.
- (b) Remove the 2 bolts and take the pipe out.  
R: 2 bolts and pipe.

**NOTICE:** Cover the secondary-air valve hose in engine compartment to avoid parts from falling in.



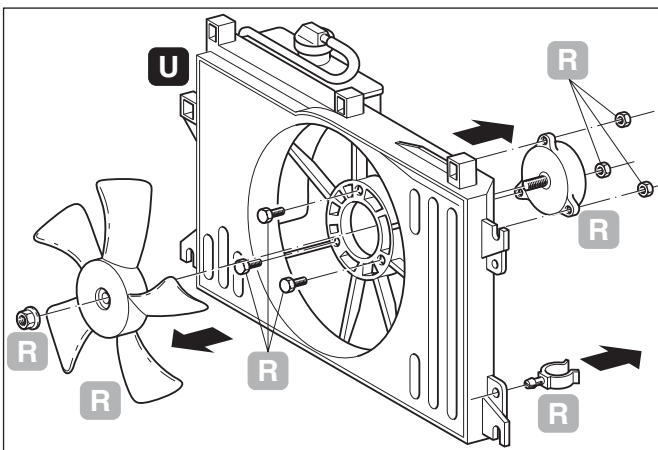
### 14. PREPARATION SECONDARY-AIR VALVE PIPE.

- (a) Cut the fixation from the pipe with an air driven saw.
- (b) Ensure that there are no sharp edges.
- (c) Protect the pipe with paint.



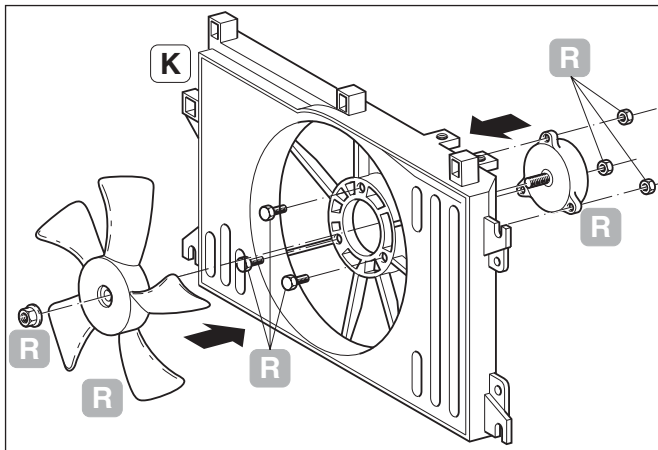
### 15. REMOVE COOLING FAN ASSEMBLY.

- (a) Remove breeder hose.
- (b) Remove the secondary-air valve hose out of the fan shroud clip.
- (c) Press upper fan shroud clips together (left and right) and turn the upper side of fan shroud towards engine.
- (d) Lift the complete fan shroud 100 mm and disconnect electric cooling fan connector (grey) and the 2 cable clips.



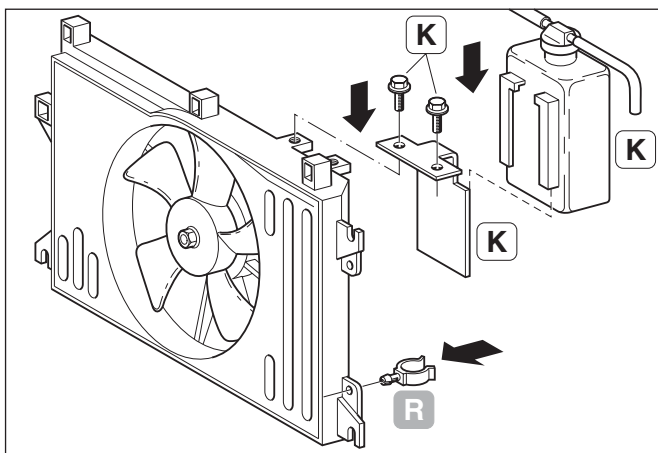
### 16. REMOVE PARTS FROM FAN SHROUD.

- (a) Remove the nut and fan.  
R: Nut and fan.
- (b) Remove the 3 bolts and the electric cooling fan motor.  
R: 3 Bolts and electric cooling fan motor.
- (c) Remove the clip.  
R: Clip.  
U: Complete fan shroud.



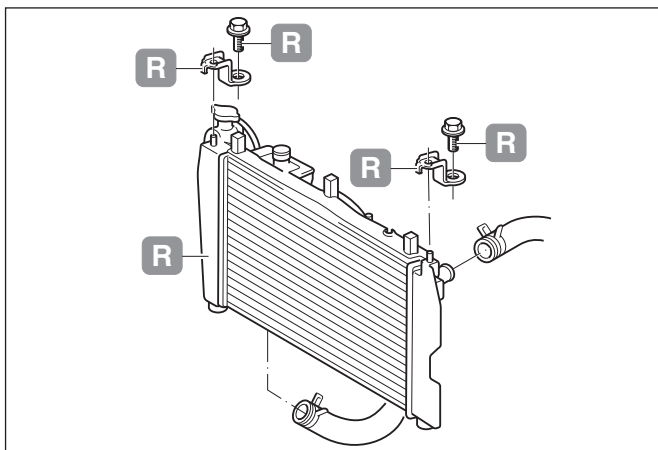
### 17. ASSEMBLY FAN SHROUD.

- (a) Position the electric cooling fan motor in fan shroud and tighten the 3 bolts.  
 (K): 1-a (fan shroud).  
 Torque: 5 Nm (50 kgcm, 3.7 ft.lbf).



### 18. POSITION COOLANT RESERVOIR.

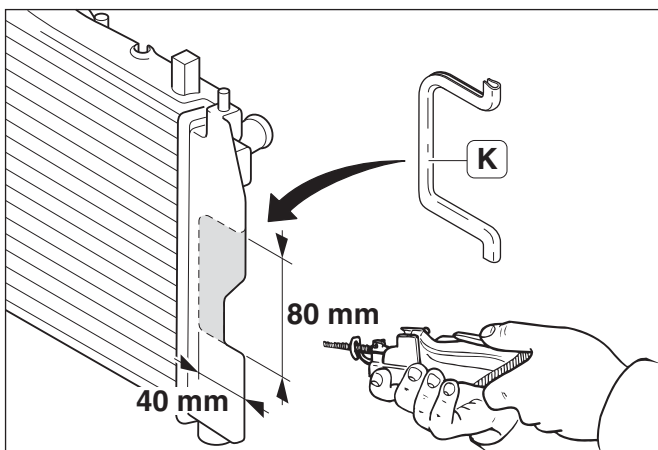
- (a) Position the reservoir bracket on fan shroud with 2 bolts.  
 (K): 13-e (reservoir bracket).  
 (K): 13-b (2 x bolt).  
 Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).  
 (b) Position coolant reservoir and check if it is correct secured.  
 (K): 13-a (coolant reservoir).  
 (c) Press clip in fan shroud.



### 19. REMOVE RADIATOR.

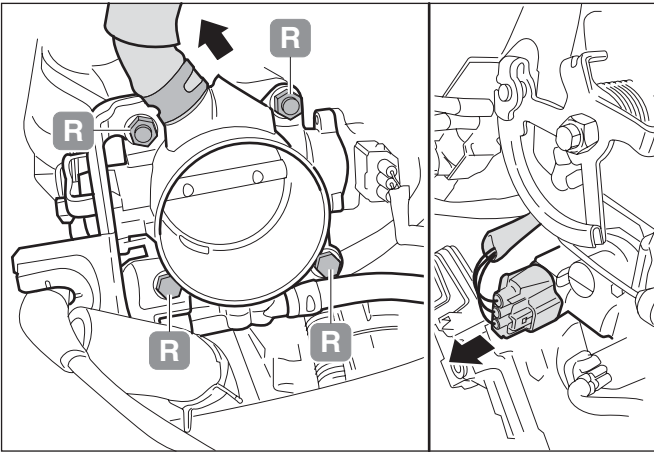
- (a) Remove the radiator cap.  
 (b) Open drain plug and collect the coolant (will be reused).  
 (c) Remove lower and upper radiator hose.  
 (d) Remove upper bolts and brackets.  
 (R): Bolts.  
 (R): Brackets.  
 (e) Remove connector and lift radiator out.  
 (R): Radiator.

**NOTICE:** Protect inside of condenser with a plastic plate.



### 20. PREPARATION RADIATOR.

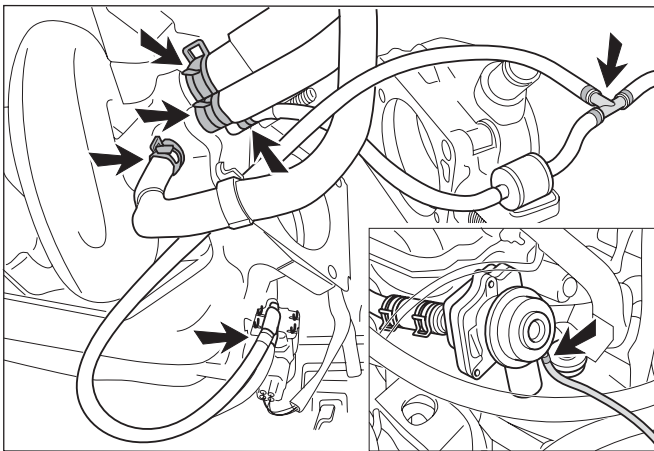
- (a) Mark the position where to cut.  
 (b) Remove the marked part, use an air driven saw.  
 (c) Remove sharp edges and install protection strip.  
 (K): 20-k (protection strip).



## 21. REMOVE THROTTLE BODY FROM INTAKE MANIFOLD.

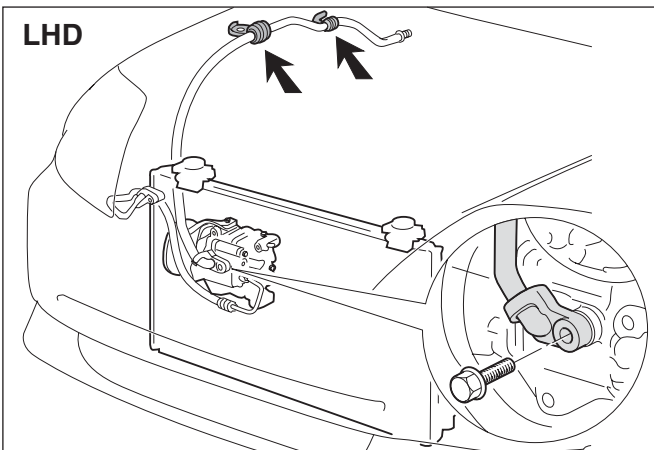
- Remove vacuum hose on the top.
- Remove upper 2 nuts and lower 2 bolts.  
R: 2 Nuts and 2 bolts.
- Press securing locking and remove the ISC valve connector (grey).
- Remove carefully the throttle body from intake manifold and turn it aside.  
R: Throttle body.
- Remove gasket from intake manifold.  
R: Gasket.

**NOTICE:** Cover the hole of the intake manifold to avoid parts from falling in.



## 22. REMOVE HOSES AND SECONDARY-AIR VALVE FROM INTAKE MANIFOLD.

- Remove the 4 hoses from inlet manifold.
- Remove the 2 hoses of the secondary-air control valve (one on control valve and one on T hose).
- Remove the 2 bolts and remove secondary-air control valve from intake manifold.  
R: 2 bolts.  
R: Secondary-air control valve with hoses.

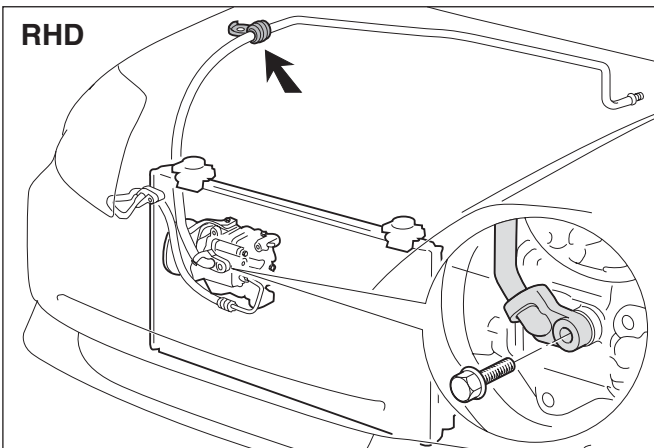


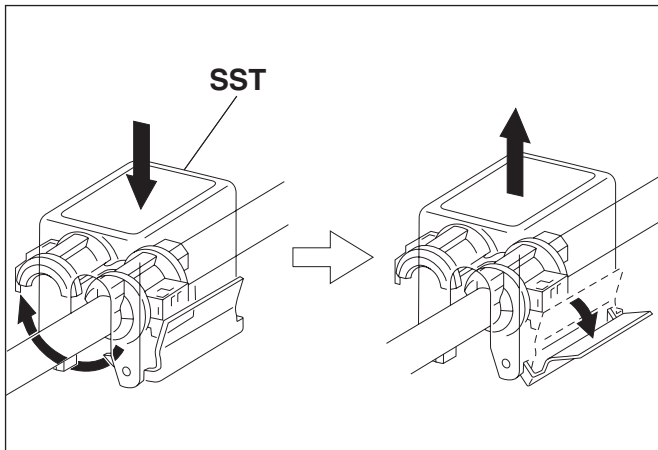
## 23. REMOVE A/C HIGH PRESSURE HOSE ON A/C COMPRESSOR SIDE.

**NOTICE:** Ensure that there is no refrigerant in the A/C system.

- Remove the 2 bolts from A/C high pressure hose clamps.  
R: 2 Bolts.
- Remove bolt and pull A/C high pressure hose from the A/C compressor.  
R: Bolt.

**NOTICE:** Close the connection of the A/C compressor to prevent dirt and humidity can enter the system.





#### 24. REMOVE A/C HIGH PRESSURE HOSE FIRE WALL SIDE.

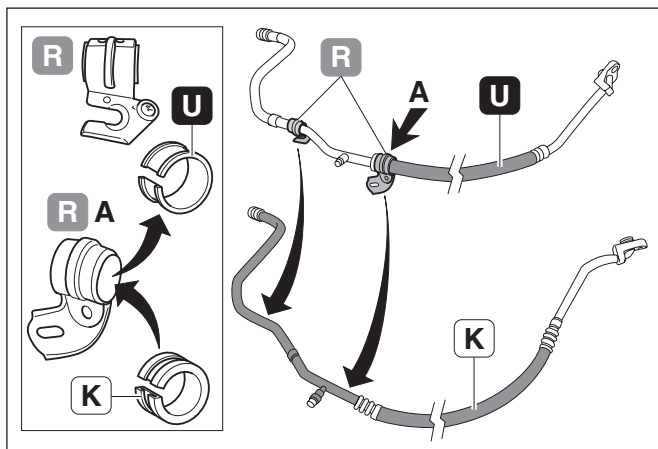
- (a) Use SST to remove A/C high pressure hose on fire wall side.

SST 09870-00015

**U**: A/C high pressure hose.

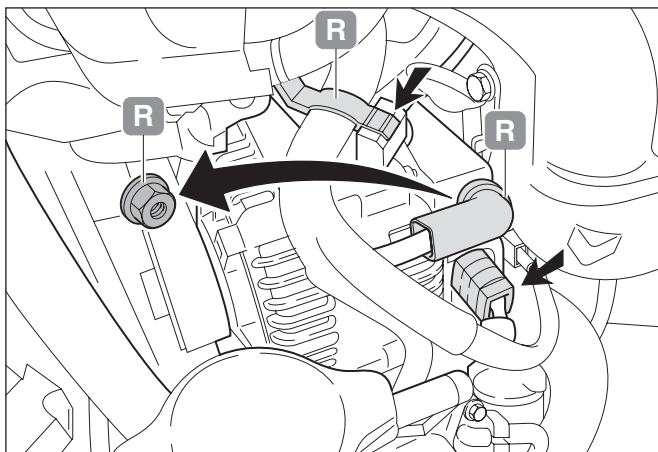
**NOTICE:** Close the connection fire wall side to prevent dirt and humidity can enter the system.

**NOTICE:** Confirm the direction of the piping clamp claw and SST using the illustration showing on the caution label.



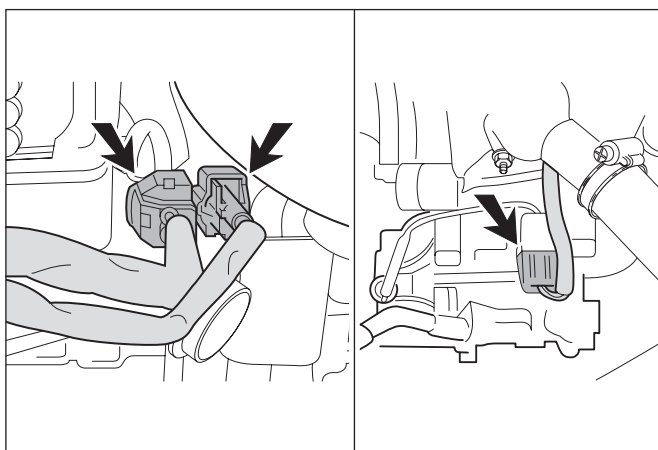
#### 25. PREPARATION A/C HIGH PRESSURE HOSE.

- (a) Remove the 2 hose clamps from the removed A/C high pressure hose.
- (b) Remove rubber spacer out hose clamp A.
- U**: Rubber spacer.
- (c) Install new rubber spacer
- K**: 10-h (Rubber A/C bracket)
- (d) Install the 2 hose clamps at the same position of the new A/C high pressure hose.
- K**: 10-a (A/C high pressure hose LHD).
- K**: 10-b (A/C high pressure hose RHD).



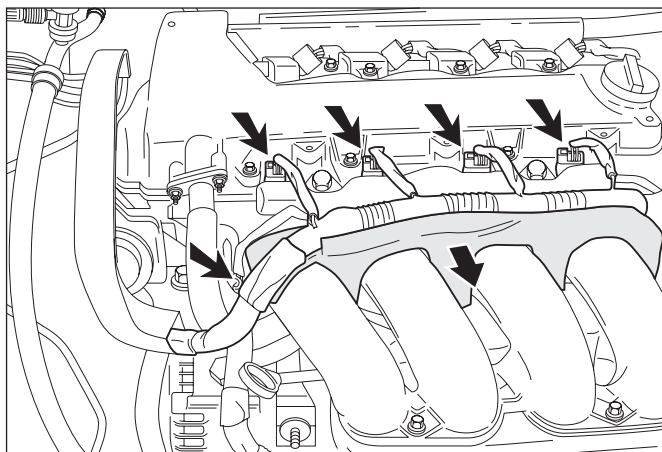
#### 26. LOOSEN ENGINE CABLE HARNESS.

- (a) Remove alternator B+ cover.
- R**: B+ cover.
- (b) Remove the nut and cable.
- R**: Nut.
- (c) Press locking and remove the alternator 3 pin connector.
- (d) Remove the clip from the cable harness.
- R**: Clip.



#### 27. LOOSEN ENGINE CABLE HARNESS.

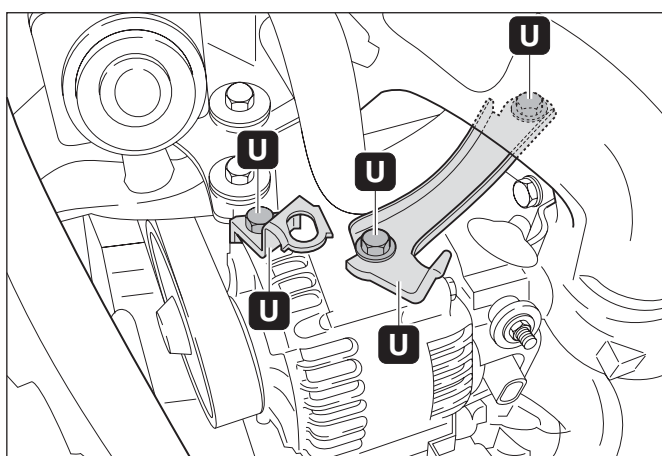
- (a) Press locking and remove the connectors from camshaft sensor and knock sensor (black and grey).
- (b) Press locking and remove the A/C connector (grey). Positioned below the alternator.



## 28. PLACE ENGINE CABLE HARNESS ASIDE.

- Press locking and remove the 4 injector connectors and camshaft control valve connector.
- Pull the cable harness out of the clips.
- Remove foam from the inlet manifold.

**U**: Foam inlet manifold.



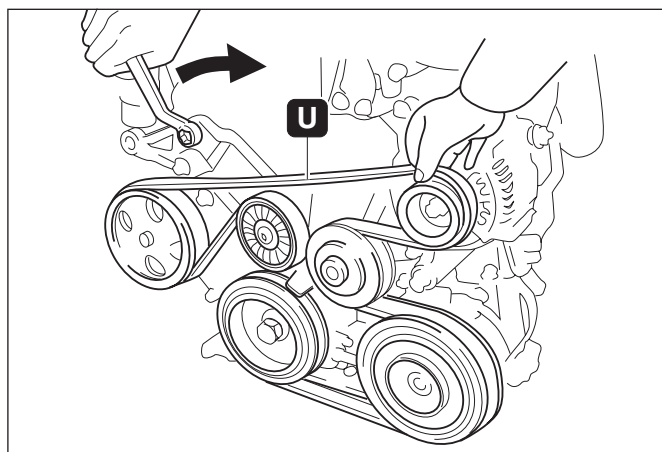
## 29. REMOVE BRACKETS.

- Remove the 2 bolts and remove alternator bracket.

**U**: 2 bolts and alternator bracket.

- Remove the bolt and cable harness bracket.

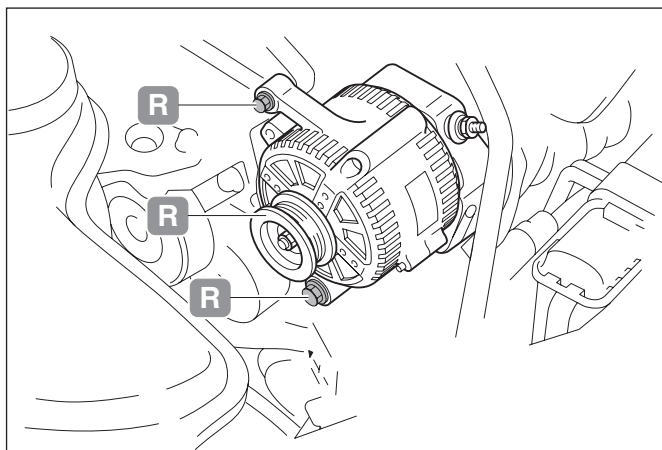
**U**: Bolt and cable harness bracket.



## 30. REMOVE POLY V-BELT.

- Turn the belt tensioner slowly as mentioned in the drawing.
- Remove the poly V-belt.
- Release the belt tensioner slowly until there is no tension any more.

**U**: Poly V-belt.



## 31. REMOVE ALTERNATOR.

- Remove upper connection bolt.

**R**: Bolt.

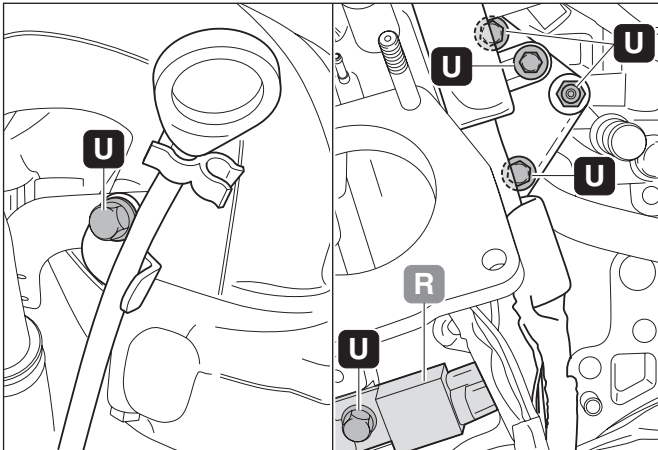
- Remove the lower connection bolt.

**R**: Bolt.

- Remove the complete alternator.

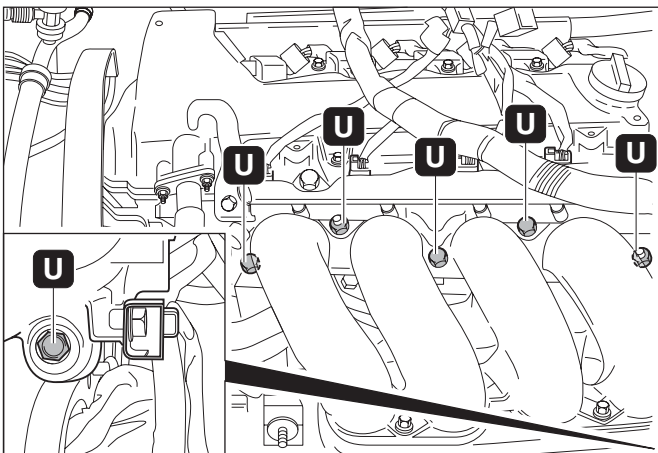
**R**: Alternator.





### 32. REMOVE INTAKE MANIFOLD BRACKET AND SUPPRESSOR.

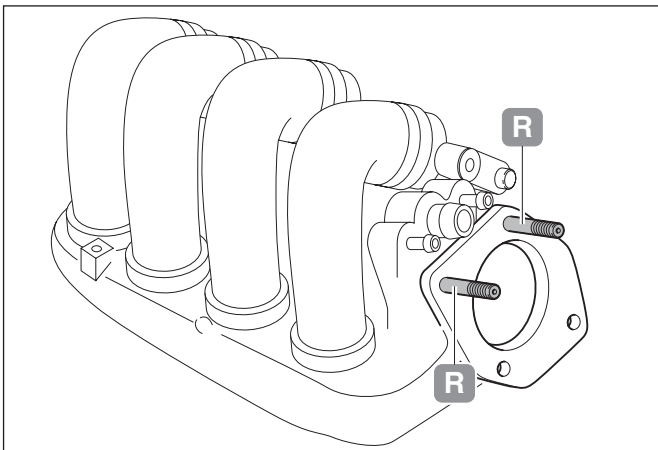
- (a) Remove the dipstick bolt.  
**U**: Bolt.
- (b) Remove the cable harness bolt.  
**U**: Bolt.
- (c) Remove the 2 bolts and nut.  
 Remove intake manifold bracket.  
**U**: 2 bolts and nut.  
**U**: Intake manifold bracket.
- (d) Remove the bolt and remove the suppressor.  
 Disconnect the suppressor connector (grey).  
**U**: Bolt.  
**R**: Suppressor.



### 33. REMOVE INTAKE MANIFOLD.

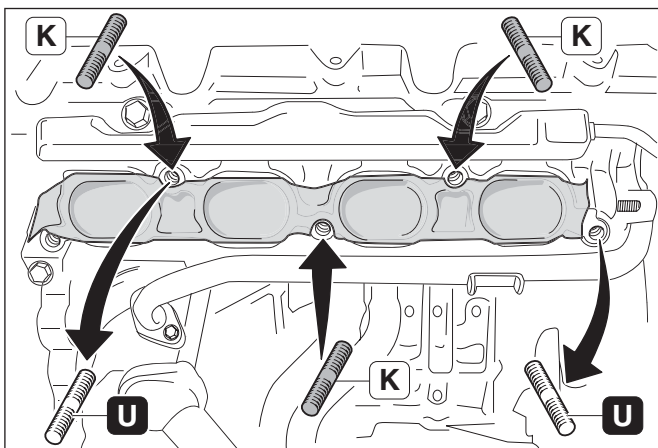
- (a) Remove the 4 bolts and 2 nuts.  
**U**: 4 bolts and 2 nuts.
- (b) Remove the complete intake manifold.  
 If needed loose the bolt of the camshaft control valve.  
**U**: Intake manifold.

**NOTICE:** Cover the cylinder head intake manifold connections to avoid parts from falling in.



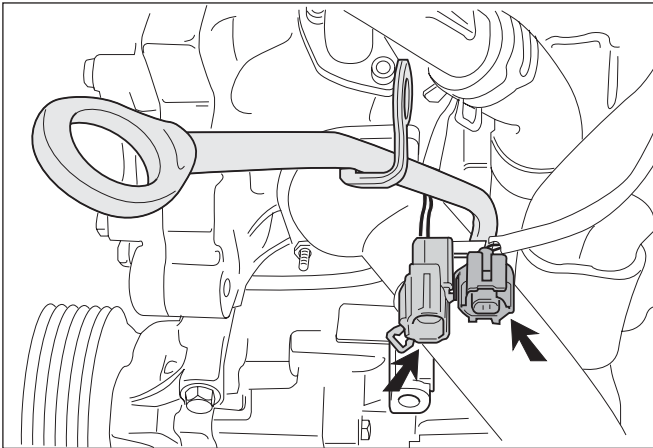
### 34. REMOVE STUDS FROM INTAKE MANIFOLD.

- (a) Remove the 2 studs.  
**R**: 2 studs.



### 35. INTAKE MANIFOLD CYLINDER HEAD STUDS.

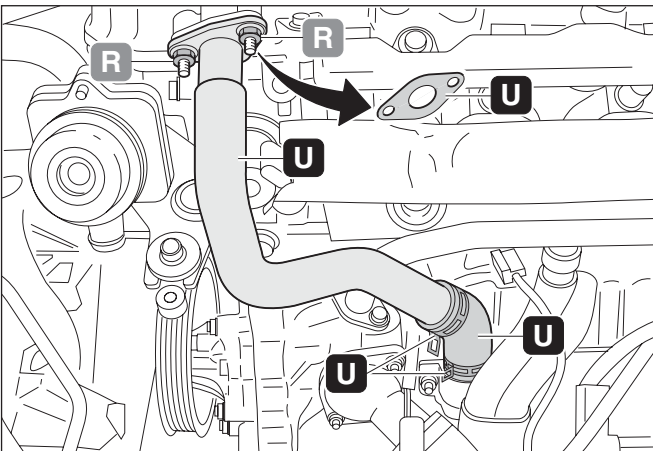
- (a) Remove the 2 studs.  
**U**: 2 studs.
- (b) Install the 3 new studs.  
**K**: 6-a (3 x stud).



### 36. REMOVE THE DIP STICK PIPE AND DIP STICK.

- (a) Remove connectors (black and grey).
- (b) Remove the dip stick pipe and dip stick.
  - U**: Dip stick pipe and dip stick.
  - U**: Rubber ring.

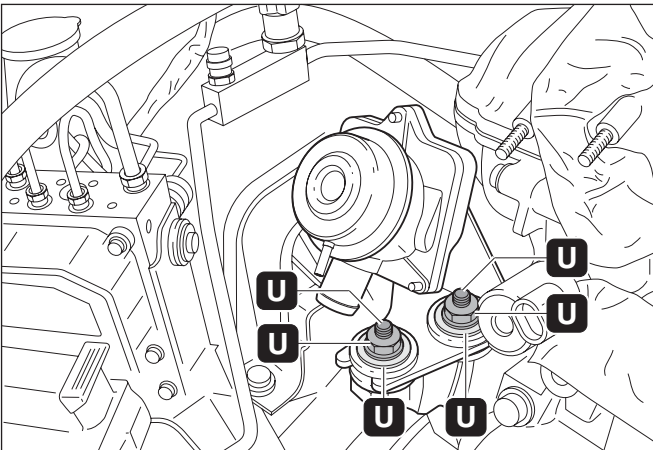
**NOTICE:** Cover the hole to avoid parts from falling in.



### 37. REMOVE OIL RETURN PIPE.

- (a) Remove the 2 nuts.
  - R**: 2 nuts.
- (b) Remove the lower hose connection.
- (c) Remove the complete oil return pipe with hose.
- (d) Remove gasket.
  - U**: 2 hose clamps.
  - U**: Gasket.
  - U**: Oil return pipe and hose.

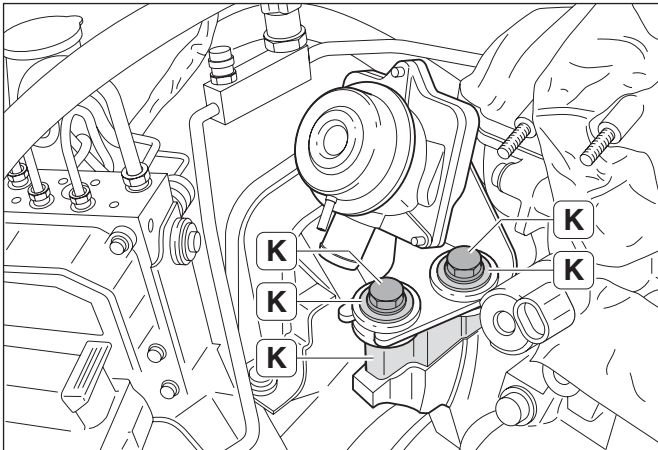
**NOTICE:** Cover the holes to avoid parts from falling in.



### 38. REMOVE SECONDARY-AIR VALVE AND STUDS.

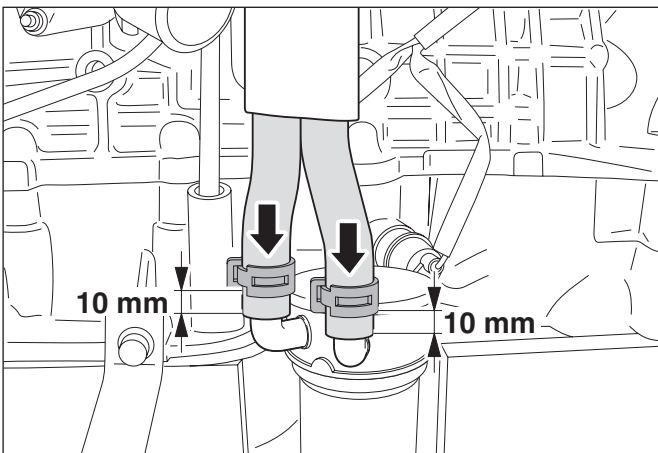
- (a) Remove the 2 nuts and 2 washers.
  - U**: 2 nuts and 2 washers.
- (b) Loosen the hose clamps and pull the valve from the bracket.
- (c) Remove the 2 studs.
  - U**: 2 studs.

### 3. Operation in engine compartment (Upper side installing parts)



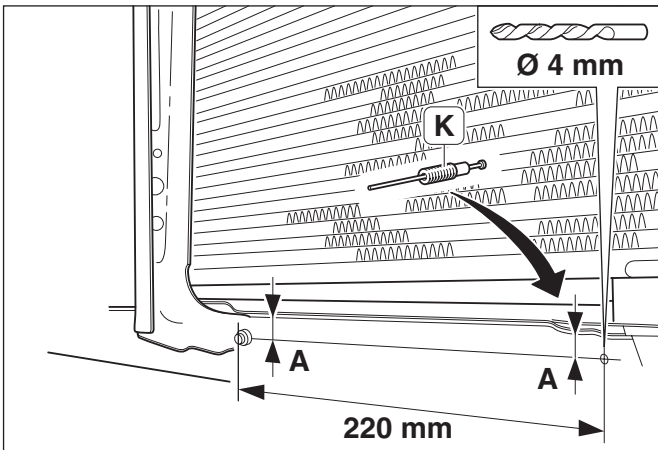
#### 1. INSTALL SPACER BETWEEN SECONDARY-AIR VALVE AND ENGINE MOUNTING.

- (a) Position spacer and valve.  
Install the 2 bolts and 2 washers.  
 (K): 11-a (spacer/bracket).  
 (K): 11-d (bolt M8 x 55).  
 (K): 11-c (bolt M8 x 50).  
 (K): 11-b (2 x washer).  
 Torque: 21 Nm (210 kgcm, 15 ft.lbf).
- (b) Reposition the hose over the steel pipes (length of overlap must be equal).  
Install hose clamps.



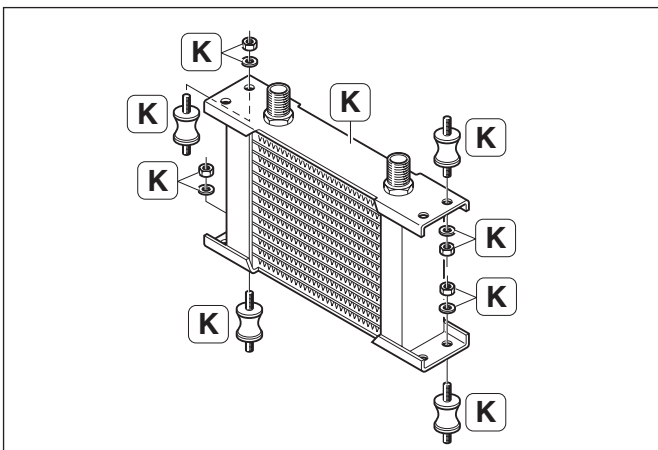
#### 2. REPOSITION WATER HOSES OIL COOLER.

- (a) Loosen the hose clamps and press the 2 hoses 10 mm over the oil cooler pipes.  
 (b) Install hose clamps.



#### 3. OIL COOLER FIXING POINTS PREPARATION.

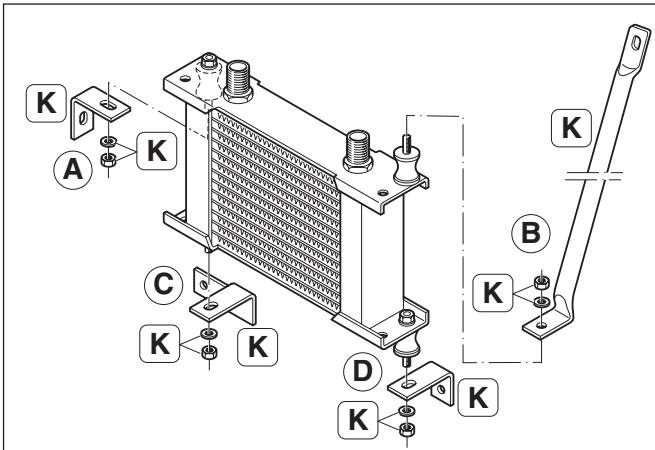
- (a) Mark the position where to drill.  
 (b) Drill  $\text{\O} 4 \text{ mm}$  (clean very carefully).  
 (c) Remove sharp edge and protect hole with paint.  
 (d) Install rivet stud with special tool.  
 (K): 20-m (rivet stud)



#### 4. OIL COOLER PREPARATION.

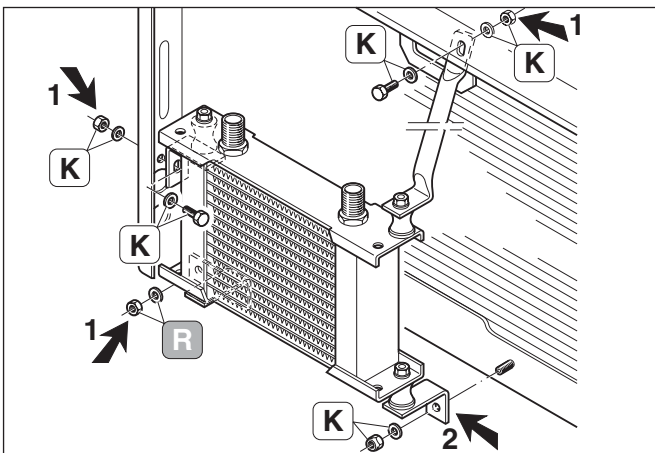
- (a) Position the silent blocks in oil cooler. Use a washer and nut.  
 (K): 20-j (4 x silent block).  
 (K): 20-o (4 x washer).  
 (K): 20-l (4 x nut).  
 (K): 20-c (oil cooler).  
 Torque: 10 Nm (100 kgcm, 7,4 ft.lbf)





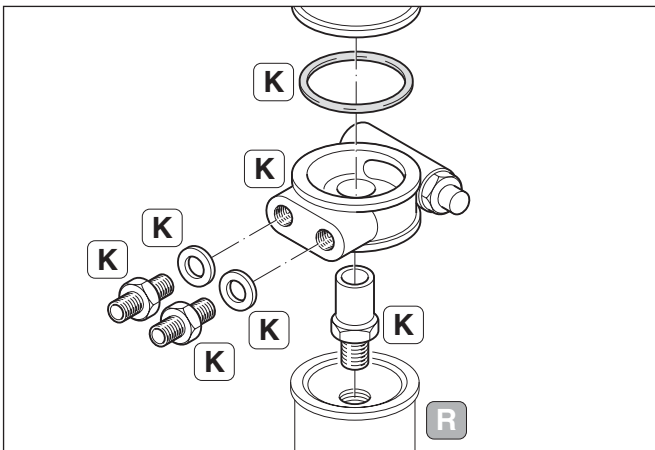
## 5. OIL COOLER BRACKETS.

- (a) Install upper bracket right (A) and upper bracket left (B) with washer and nut.
  - K**: 20-p (upper bracket right A).
  - K**: 20-s (upper bracket left B).
  - K**: 20-o (2 x washer).
  - K**: 20-l (2 x nut).
- (b) Install lower bracket right (C) and lower bracket left (D) with washer and nut.
  - K**: 20-q (lower bracket right C).
  - K**: 20-r (lower bracket left D).
  - K**: 20-o (2 x washer).
  - K**: 20-l (2 x nut).



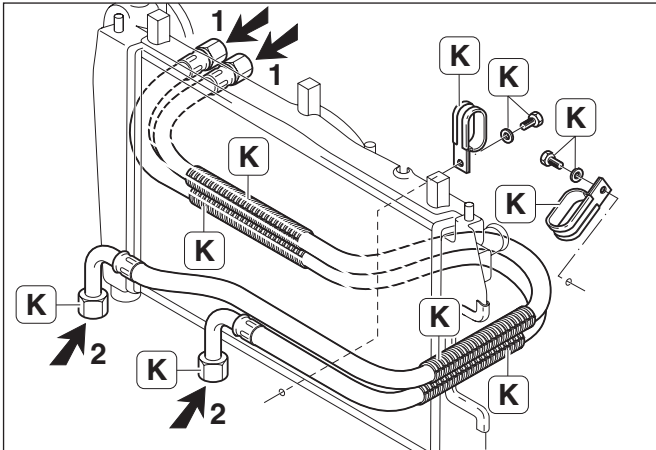
## 6. INSTALL OIL COOLER.

- (a) Remove nut and washer.
  - R**: Nut
  - R**: Washer
- (b) Position oil cooler, install upper bolts, washers and nuts.
  - K**: 20-n (2 x bolt).
  - K**: 20-o (4 x washer).
  - K**: 20-l (2 x nut)
- (c) Install lower nut and washer.
  - K**: 20-t (nut).
  - K**: 20-o (washer).
- (d) Tighten all oil cooler connections 1 and 2.
  - 1: Torque: 10 Nm (100 kgcm, 7.4 ft.lbf).
  - 2: Torque: 6 Nm (60 kgcm, 4.4 ft.lbf).



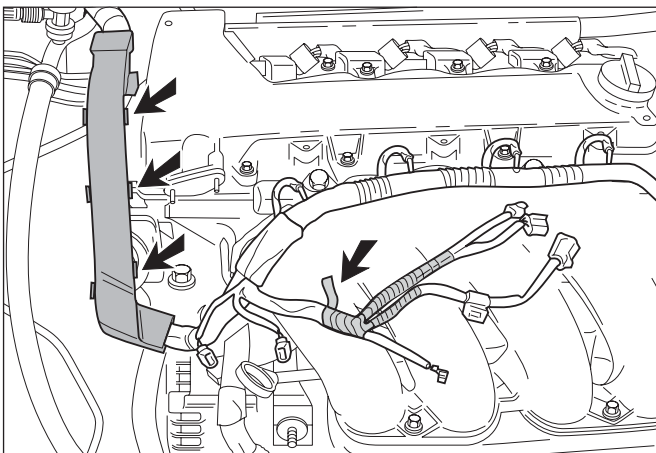
## 7. OIL FILTER PREPARATION.

- (a) Remove oil filter.  
SST 09228-06501
- (b) Position adapter plate with rubber ring (grease O-ring with some oil).
  - K**: 20-a (adapter plate).
  - K**: 20-b (adapter bolt).
  - Torque: 60 Nm (610 kgcm, 44 ft.lbf).
- (c) Install 2 washers (copper) and 2 adapters.
  - K**: 20-e (2 x washer copper).
  - K**: 20-d (2 x adapter).
  - Torque: 35 Nm (355 kgcm, 26 ft.lbf).
- (d) Grease O-ring with some oil.  
Turn oil filter until the o-ring touches the flange.  
Turn oil filter 270° by hand.



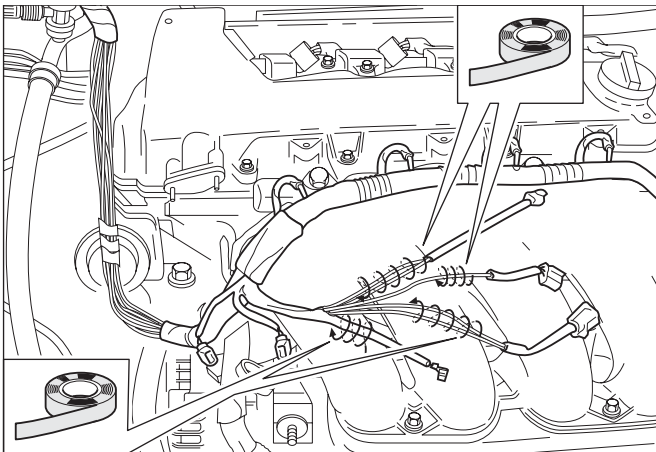
### 8. INSTALL OIL COOLER HOSES.

- (a) Position oil cooler hoses and connect the 4 nipples.
  - Ⓚ: 20-f (oil cooler hose 1125 mm).
  - Ⓚ: 20-g (oil cooler hose 1330 mm).
- (b) Position the 4 protection tubes and install the 2 fixation clamps with washers and bolts.
  - Ⓚ: 20-h (4 x protection).
  - Ⓚ: 20-i (2 x fixation clamp).
  - Ⓚ: 20-o (2 x washer).
  - Ⓚ: 20-n (2 x bolt).
- (c) Tighten oil cooler hose connections 1 and 2.
  - 1: Torque: 35 Nm (355 kgcm, 26 ft.lbf).
  - 2: Torque: 25 Nm (255 kgcm, 18 ft.lbf).

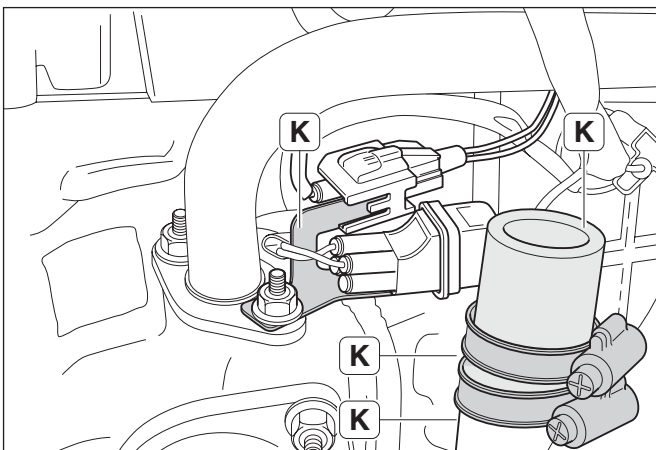


### 9. CABLE HARNESS PREPARATION.

- (a) Remove the upper and lower protecting cover.
  - Ⓚ: Upper and lower protecting cover.
- (b) Remove the tape and isolation covers.

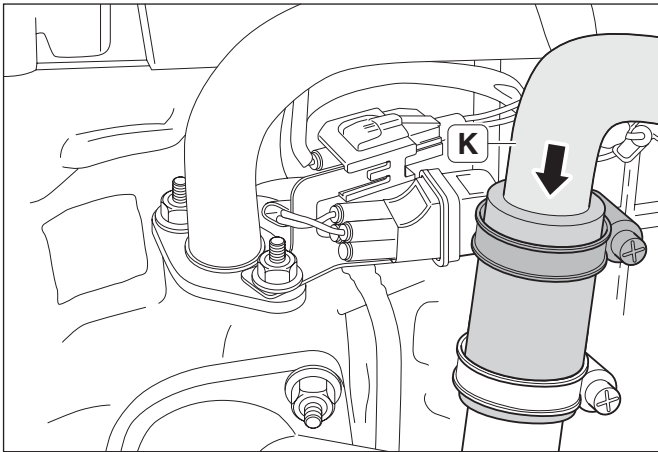


- (c) Update the engine cable harness as mentioned in the picture.



### 10. INSTALL LOWER OIL RETURN HOSE AND INSTALL CONNECTOR BRACKET.

- (a) Remove protecting cover and install lower connection hose with 2 hose clamps.
  - Tighten the lower hose clamp.
  - Ⓚ: 12-b (hose).
  - Ⓚ: 12-c (2 x hose clamp).
- (b) Remove nut and install the connector bracket.
  - Ⓚ: 15-n (connector bracket).
  - Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- (c) Connect connectors (black and grey) and position the connectors on the bracket.
  - Check locking of connectors.

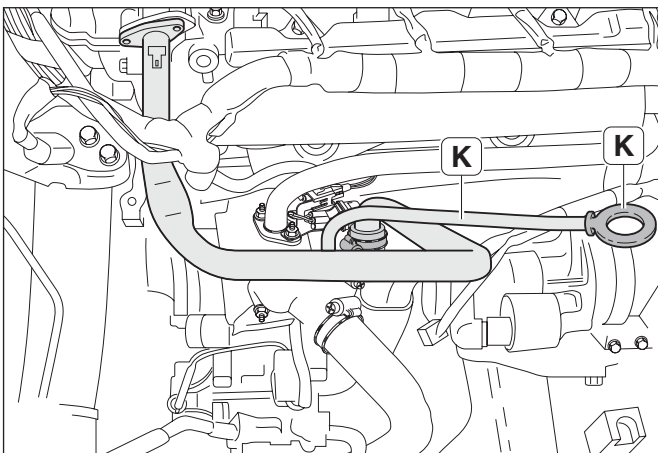


### 11. INSTALL OIL RETURN PIPE.

- (a) Press oil return pipe in lower connection hose.  
Hand tighten upper hose clamp.  
K: 12-a (oil return pipe).

**CAUTION:** Check interference between hose clamps and water hoses oil cooler.

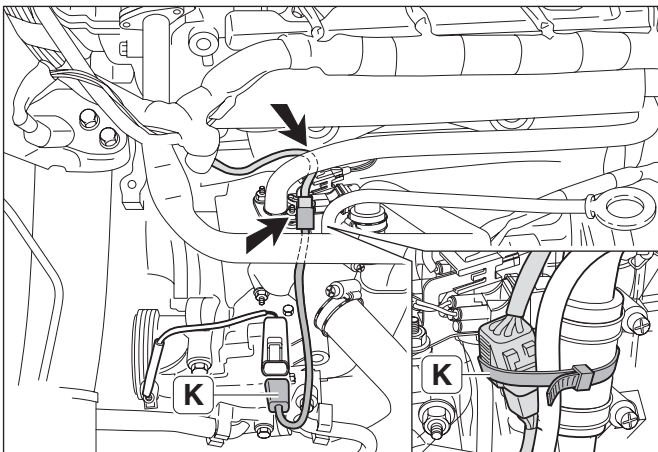
**Hint:** Oil return pipe connection with 2 nuts will follow after installing of compressor and intake manifold. See step 42.



### 12. INSTALL DIPSTICK PIPE.

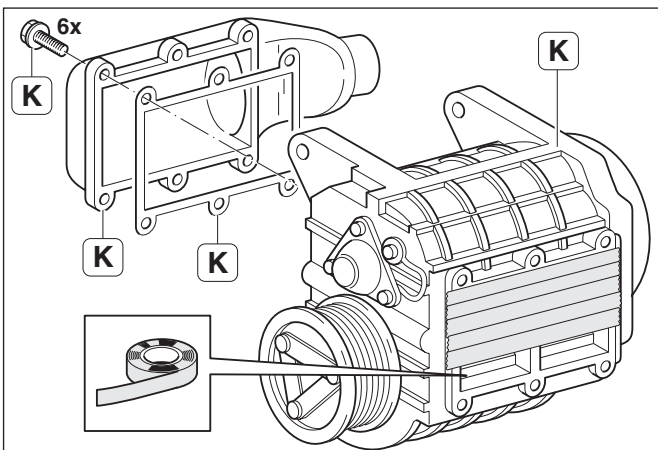
- (a) Remove protecting cover and position dipstick pipe with rubber ring.  
K: 14-b (dip stick pipe).  
K: 14-c (dip stick).

**Hint:** Dip stick bolt connection will follow after installing of compressor and intake manifold. See step 39.



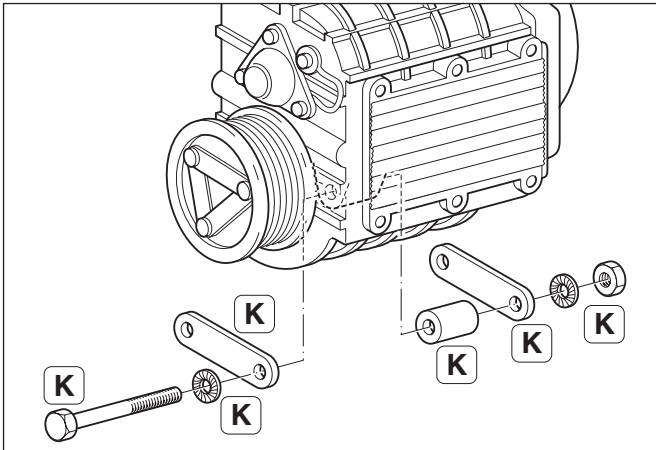
### 13. INSTALL EXTRA CABLE HARNESS A/C COMPRESSOR.

- (a) Position extra cable harness A/C compressor under thermostat house.  
Connect the connectors.  
K: 10-c (cable harness A/C compressor).  
(b) Secure connector on oil return hose with a cable tightener.  
K: 9-n (cable tightener).



### 14. PREPARATIONS COMPRESSOR.

- (a) Place tape over the compressor inlet side.  
**Hint:** Compressor inlet cover installation will follow after installing of the fan shroud. See step 40.  
(b) Position gasket and install compressor outlet cover with 6 bolts.  
K: 3-a (outlet cover).  
K: 1-e (gasket).  
K: 3-f (6 x bolt M6 x 20).  
K: 1-g (compressor).  
Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).

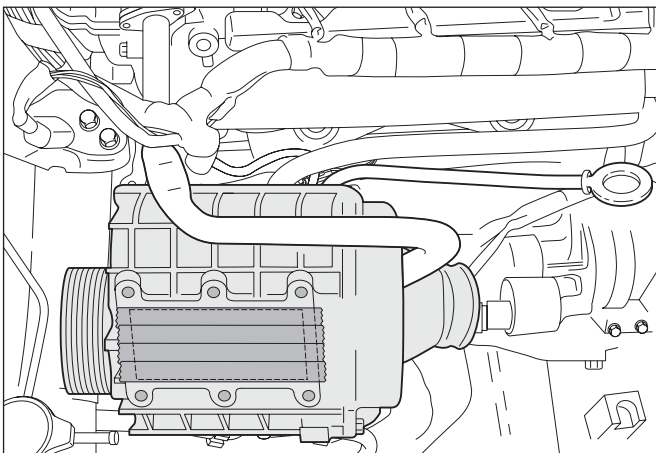


### 15. PREPARATION LOWER CONNECTION COMPRESSOR.

- (a) Position the 2 brackets with spacer, use bolt, washers and nut.

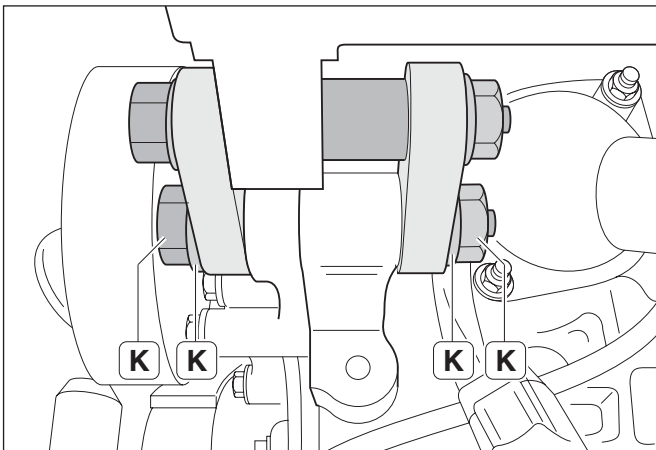
Hand tighten lower connection.

- Ⓚ: 5-f (2 x bracket).
- Ⓚ: 5-j (spacer).
- Ⓚ: 5-i (bolt M10 x 80).
- Ⓚ: 5-h (2 x washer).
- Ⓚ: 5-g (nut).



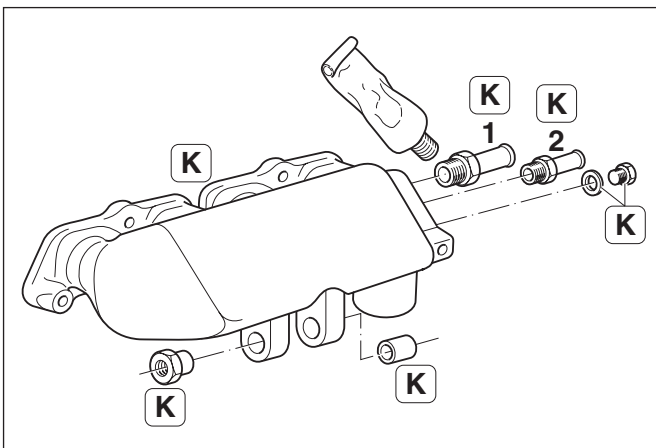
### 16. POSITION COMPRESSOR AND INSTALL LOWER CONNECTION BOLT.

- (a) Position compressor in engine compartment, install bolt, washers and nut.



- (b) Hand tighten lower connection.

- Ⓚ: 5-i (bolt M10 x 80).
- Ⓚ: 5-h (2 x washer).
- Ⓚ: 5-g (nut).



### 17. PREPARATIONS INTAKE MANIFOLD.

- (a) Install the 2 nipples with Locktite 270.

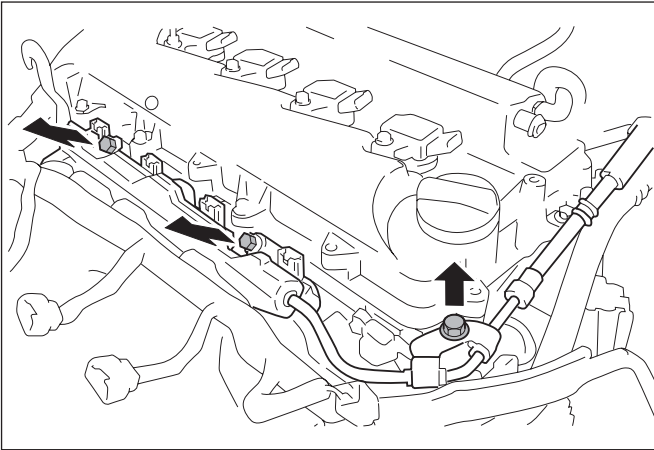
Install washer with bolt.

- Ⓚ: 3-b (intake manifold).
- Ⓚ: 6-g (nipple 1).
- Ⓚ: 6-f (nipple 2).
- Ⓚ: 6-e (bolt).
- Ⓚ: 6-h (washer).

- 1) Torque: 45 Nm (460 kgcm, 33 ft.lbf).
- 2) Torque: 32 Nm (325 kgcm, 24 ft.lbf).
- 3) Torque: 22 Nm (225 kgcm, 16 ft.lbf).

- (b) Install bushes in under side intake manifold.

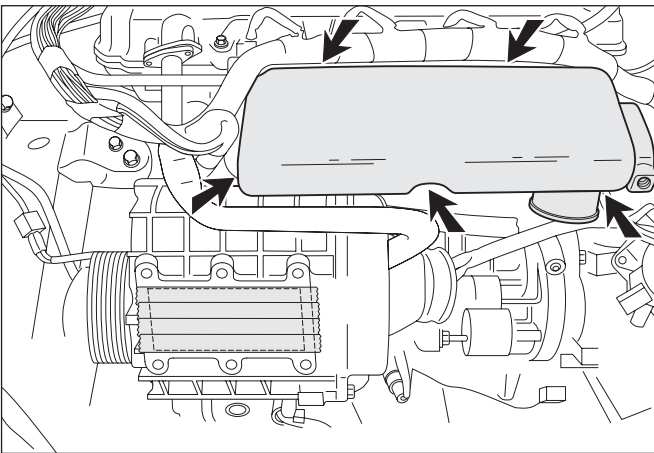
- Ⓚ: 5-a (headed bush).
- Ⓚ: 5-b (plain bush).



### 18. TURN FUEL RAIL ASIDE.

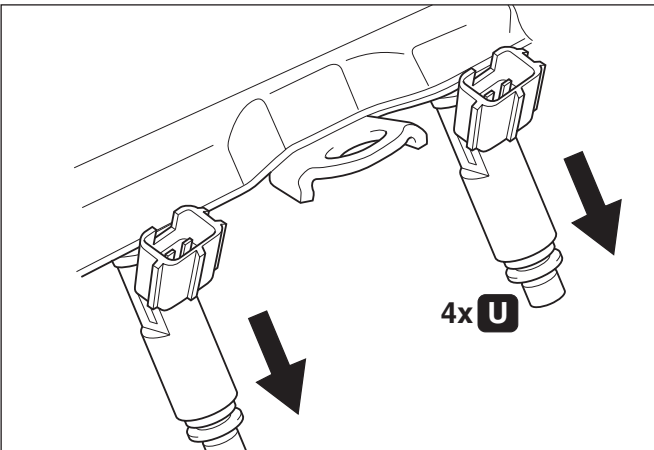
- (a) Remove the 2 fuel rail bolts.  
R: 2 bolts fuel rail.
- (b) Remove the fuel rail bracket bolt.  
R: Bolt fuel rail bracket.
- (c) Pull carefully the fuel rail with injectors from the cylinder head.
- (d) Remove the 2 spacers.  
R: 2 spacers.

**NOTICE:** Cover the holes to avoid parts from falling in.



### 19. INSTALLING INTAKE MANIFOLD.

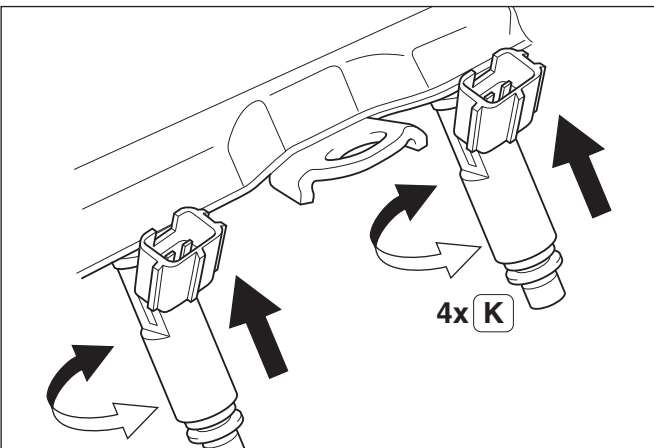
- (a) Install intake gasket.  
K: 1-c (intake gasket).
- (b) Position intake manifold and install the 3 nuts and 2 bolts.  
K: 6-c (3 x nut).  
K: 6-b (2 x bolt).  
 Torque: 34 Nm (345 kgcm, 25 ft.lbf).



### 20. REMOVE INJECTORS

**CAUTION:** Release fuel pressure from fuel rail.  
 Avoid long term skin contact with fuel.  
 Use gloves and eye protection.

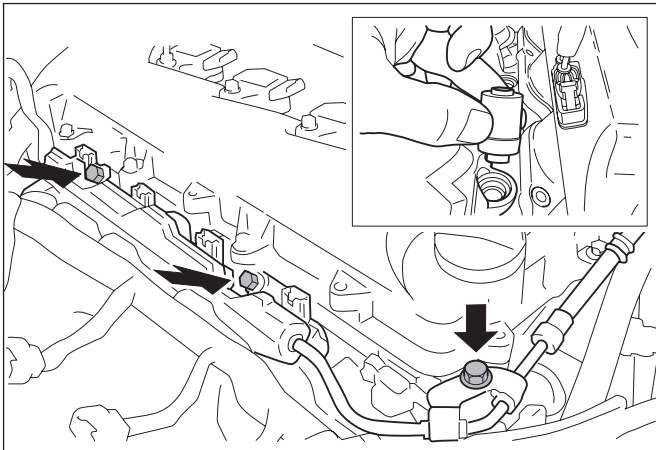
- (a) Clean the surface around the injectors.
- (b) Pull carefully the injectors of the fuel rail.  
 Collect spilled fuel.  
U: 4 x injector.



### 21. INSTALL INJECTORS

- (a) Use some fuel on the rubber injector rings.
- (b) Install the injectors.  
K: 1-i (4 x injector).

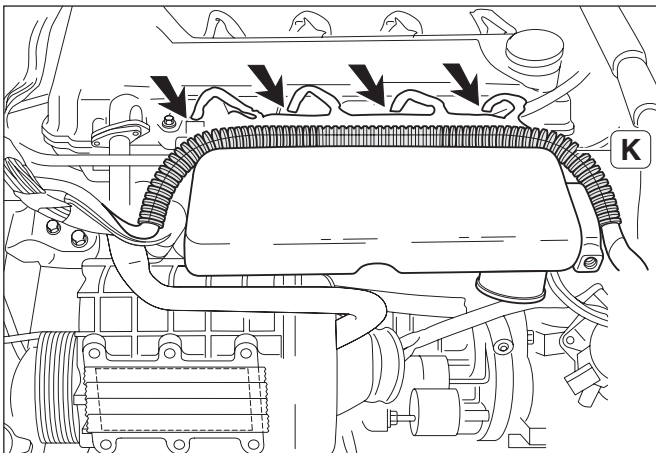




## 22. INSTALL FUEL RAIL.

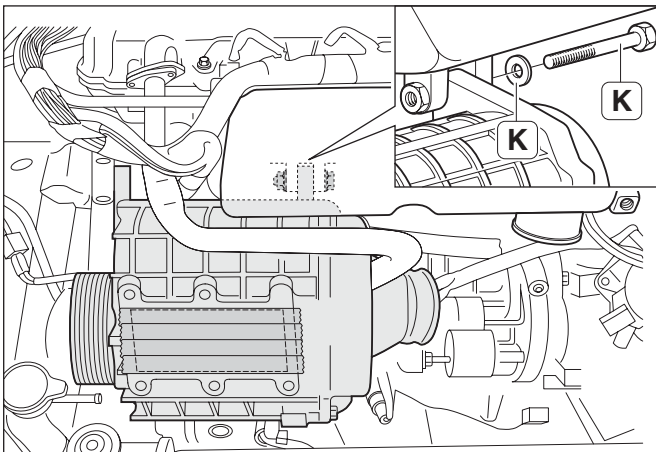
- (a) Remove protecting covers.
- (b) Install the 2 spacers.  
**Hint: Install spacers as mentioned in drawing.**
- (c) Use some fuel on the rubber injector rings.
- (d) Press the fuel rail in position and install the 2 bolts.  
**Hint: Check before tightening if all injectors can be turned without tension, if not replace the rubber rings.**
- (e) Install fuel rail bracket bolt.  
Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).

Torque: 29 Nm (295 kgcm, 21 ft.lbf).



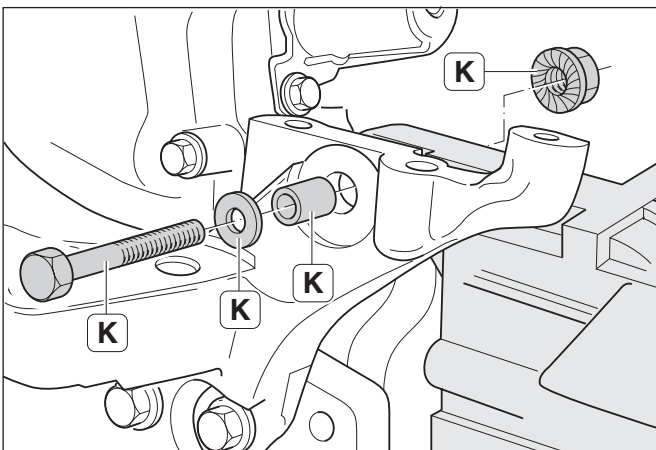
## 23. INSTALL INTAKE MANIFOLD FOAM AND PROTECTION CABLE HARNESS.

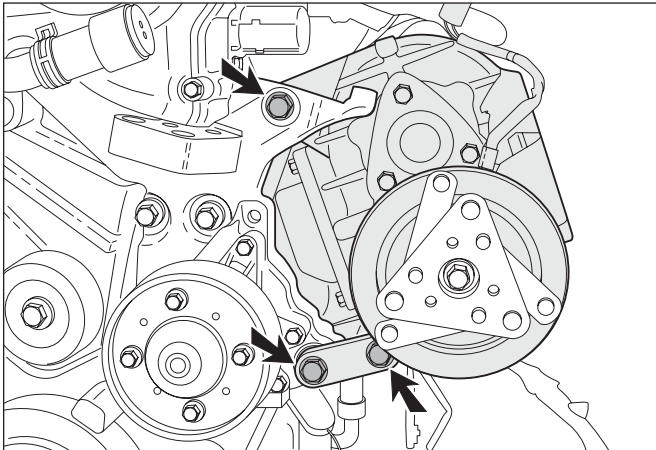
- (a) Position protection cable harness.  
**K**: 1-h (protection cable harness).
- (b) Install the 4 injector connectors and camshaft connector check locking.



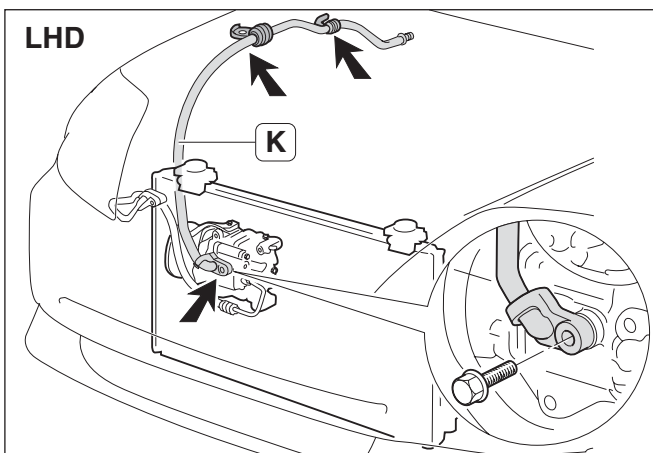
## 24. INSTALLING COMPRESSOR IN POSITION.

- (a) Turn the compressor to the engine.
- (b) Rear side compressor/intake manifold connection: install bolt and washer.  
**K**: 5-d (bolt M8 x 60).  
**K**: 5-e (washer).
- (c) Pulley side compressor: install bolt, washer, bush, and nut.  
**K**: 5-l (bolt M8 x 50).  
**K**: 5-e (washer).  
**K**: 5-k (bush L=16.6 mm).  
**K**: 5-m (nut).



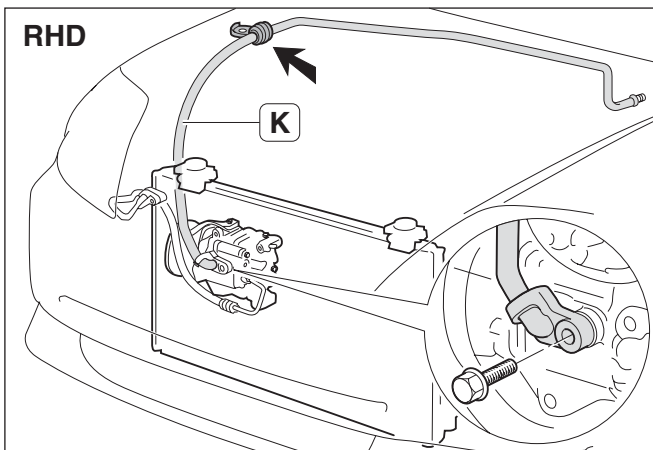


- (d) Tighten compressor fixation bolts.  
 M8 bolt: Torque: 32 Nm (325 kgcm, 24 ft.lbf).  
 M10 bolts: Torque: 45 Nm (460 kgcm, 33 ft.lbf).

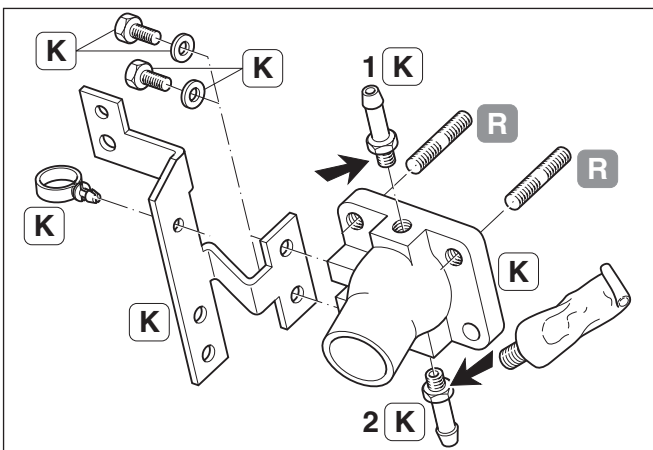


## 25. INSTALL A/C HIGH PRESSURE HOSE.

- (a) Fire wall side: remove protecting cover.  
 Check if rubber rings are present, use some R134a oil, press A/C high pressure hose in position.  
 Check locking.  
 ☐ K: 10-a (A/C high pressure hose LHD).  
 ☐ K: 10-b (A/C high pressure hose RHD).
- (b) A/C compressor side: remove protecting cover.  
 Check if rubber ring is present, use some R134a oil, position A/C high pressure hose, connect the bolt.  
 Torque: 9.8 Nm (100 kgcm, 7.2 ft.lbf).
- (c) Install the 2 bolts from A/C high pressure hose clamps.  
 Torque: 9.8 Nm (100 kgcm, 7.2 ft.lbf).

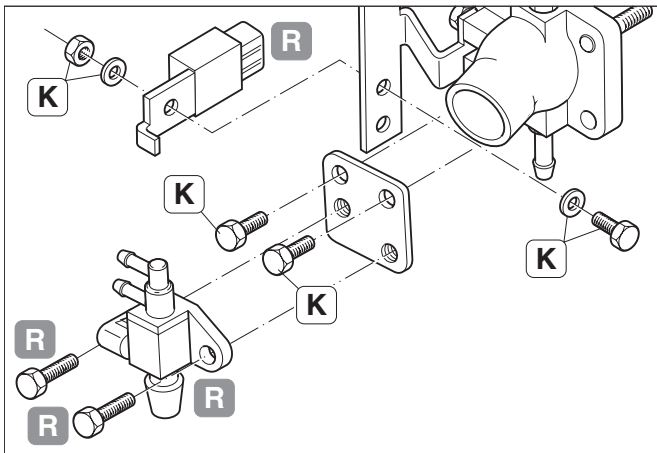


**Hint: Discharge A/C system and refill system with refrigerant R134a.**

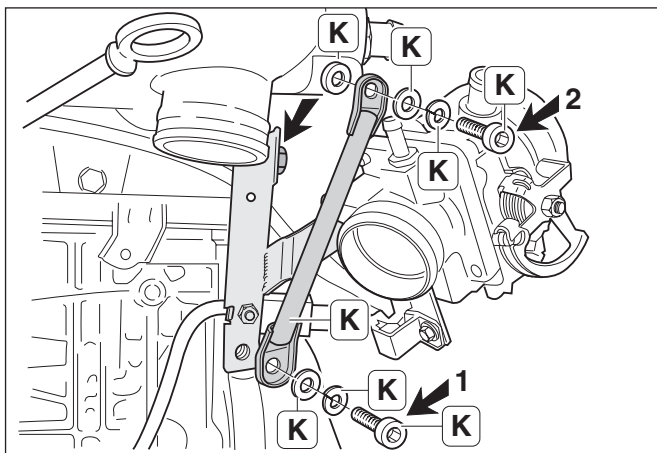


## 26. PREPARATION THROTTLE BODY CONNECTION.

- (a) Install the 2 studs in upper positions.  
 (b) Install the 2 nipples with Locktite 270.  
 ☐ K: 3-e (throttle body).  
 ☐ K: 8-d (nipple 1).  
 ☐ K: 8-c (nipple 2).  
 (1+2) Torque: 22 Nm (225 kgcm, 16 ft.lbf).
- (c) Install extra bracket with 2 bolts and 2 washers.  
 ☐ K: 7-a (bracket).  
 ☐ K: 7-d (2 x bolt).  
 ☐ K: 7-f (2 x washer).  
 Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- (d) Install hose clip.  
 ☐ K: 7-b (hose clip).

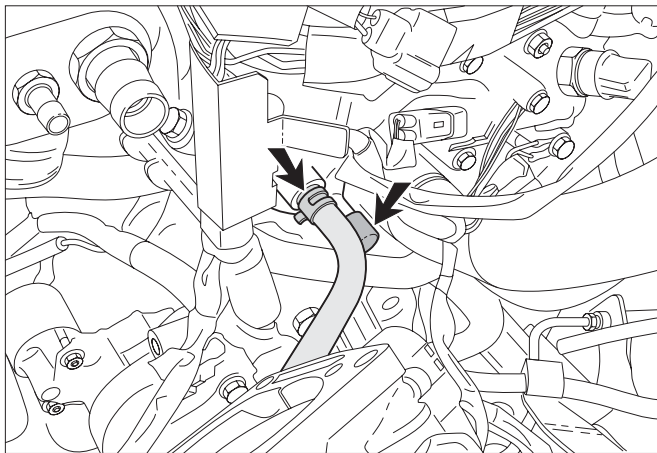


- (e) Install bracket with 2 bolts.  
 (K): 8-b (2 x bolt).  
 (K): 8-a (bracket)  
 Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- (f) Install secondary-air control valve with 2 bolts.  
 Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- (g) Install suppressor with bolt, 2 washers and nut.  
 (K): 7-c (bolt).  
 (K): 7-f (2 x washer).  
 (K): 7-e (nut)  
 Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).



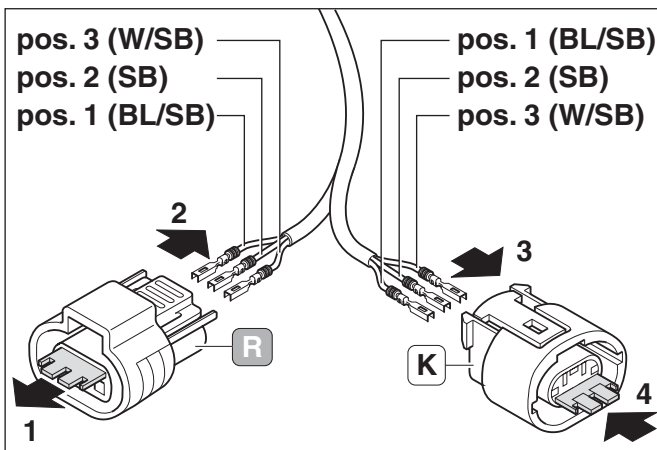
## 27. INSTALLING THROTTLE BODY CONNECTION AND EXTRA BRACKET INTAKE MANIFOLD.

- (a) Install upper nut hand tighten.
- (b) Position extra intake manifold bracket and install the 2 bolts.  
 (c) Tighten extra intake manifold bracket connection 1 and 2.  
 (K): 5-c (intake manifold bracket).  
 (K): 7-g (2 x bolt).  
 (K): 7-i (2 x washer).  
 (K): 7-h (2 x washer).  
 (K): 5-o (washer M10 x 7.6).  
 1: Torque: 32 Nm (325 kgcm, 24 ft.lbf).  
 2: Torque: 20 Nm (200 kgcm, 15 ft.lbf).



## 28. REPOSITIONING WATER HOSE THROTTLE BODY.

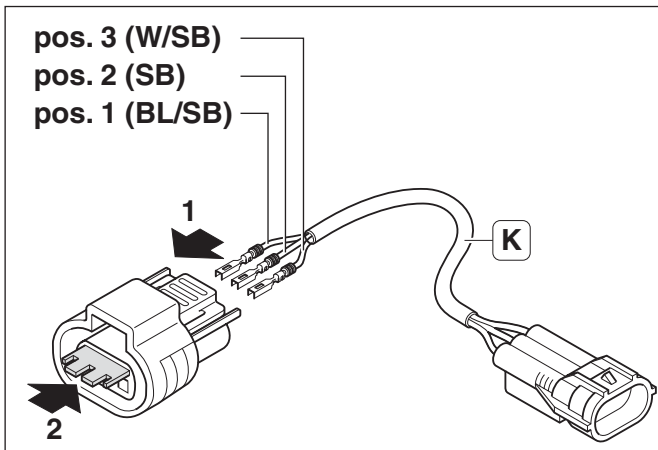
- (a) Loosen the clamps.  
 (b) Swap the water hose with the rubber coverage.  
 (c) Install hose clamps.



## 29. REPLACING CONNECTOR ISC VALVE.

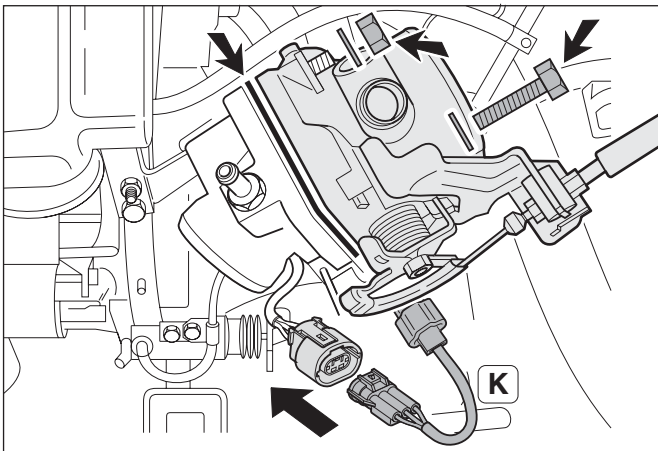
- (a) Remove locking and remove the 3 wires.  
 pos. 1 Blue/Black (BL/SB) pos. 2 Black (SB)  
 pos. 3 White/Black (W/SB).  
 (R): Connector.
- (b) Install the new connector.  
 pos. 1 Blue/Black (BL/SB) pos. 2 Black (SB)  
 pos. 3 White/Black (W/SB).  
 Install locking.  
 (K): 8-e (ISC valve cable harness).





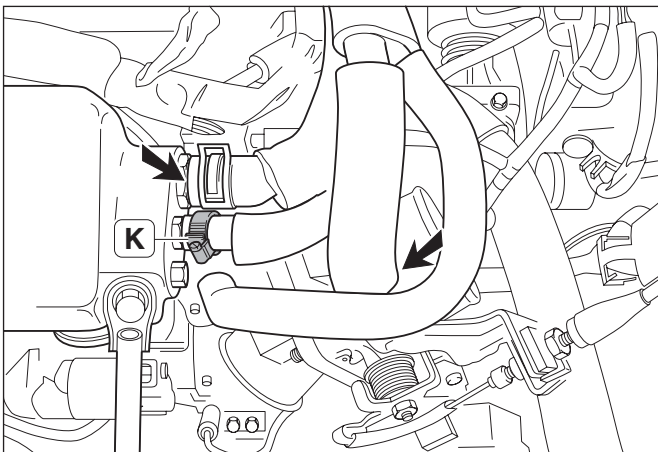
### 30. PREPERATION EXTRA CABLE HARNESS ISC VALVE.

- Press 3 wires in the ISC connector.  
pos. 1 Blue/Black (BL/SB) pos. 2 Black (SB)  
pos. 3 White/Black (W/SB).  
K: 8-e (ISC valve cable harness).
- Install locking.



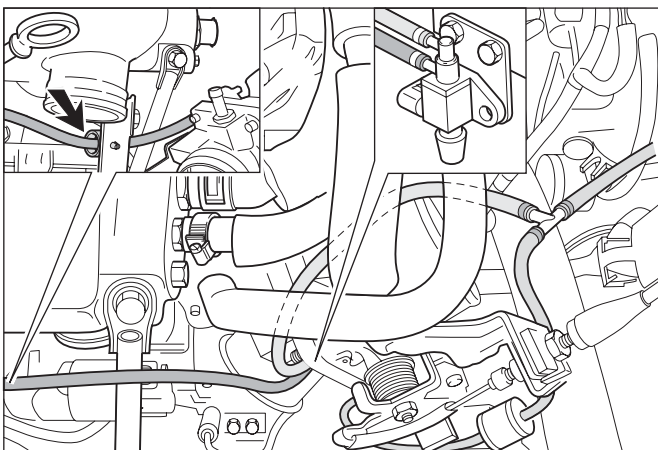
### 31. INSTALLING THROTTLE BODY.

- Install gasket.
- Position throttle body and install the 2 nuts and 2 bolts.  
Torque: 22 Nm (225 kgcm, 16 ft.lbf).
- Install the ISC valve connector.



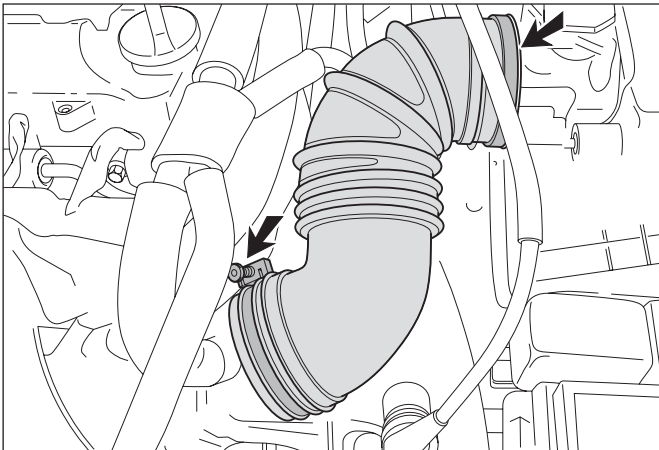
### 32. INSTALL THE HOSES ON THE INTAKE MANIFOLD AND THROTTLE BODY.

- Install the 2 hoses on the intake manifold and 2 hoses on throttle body.  
K: 6-d (hose clamp).



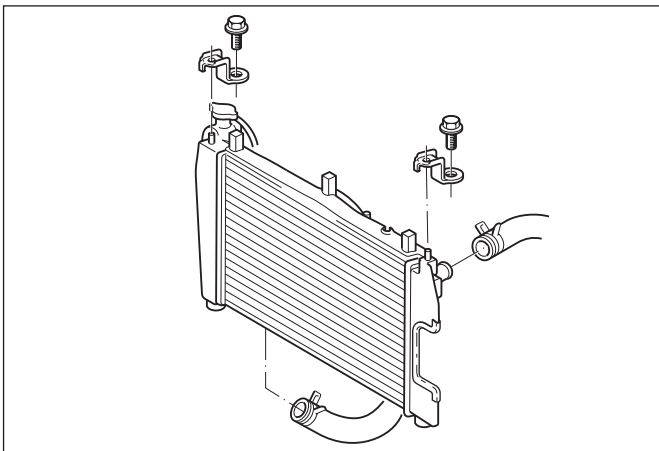
### 33. INSTALL THE HOSES OF THE SECONDARY-AIR CONTROL VALVE.

- Install the 2 hoses of the secondary-air control valve (one on valve and one on T hose).
- Install secondary-air control valve connector.
- Install the suppressor connector mounted on the bracket.



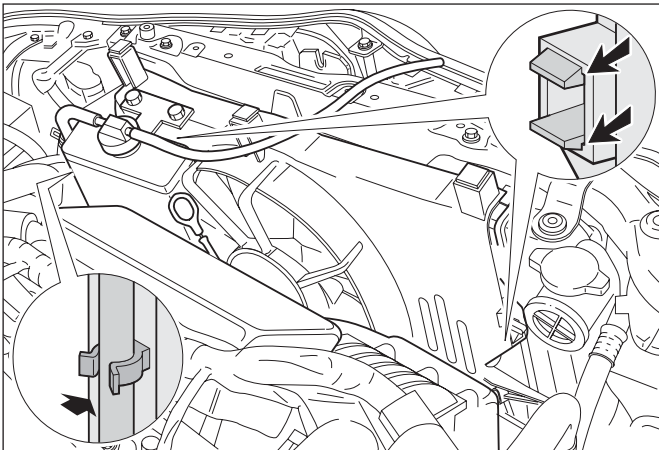
#### 34. INSTALL INLET HOSE BETWEEN AIR FILTER AND THROTTLE BODY.

- (a) Position inlet hose with 2 hose clamps.
- (b) Tighten hose clamps.



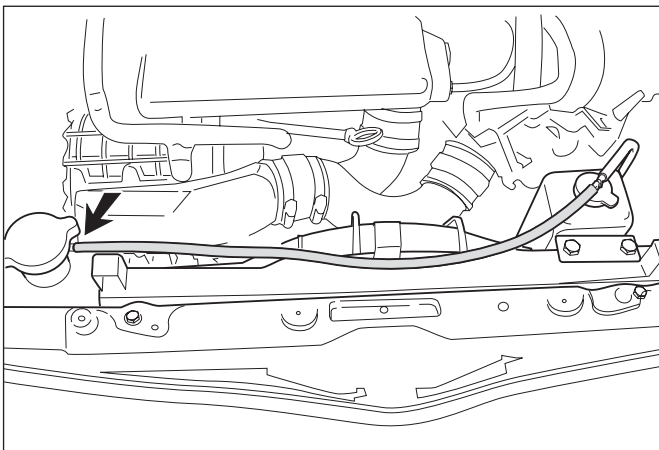
#### 35. INSTALL RADIATOR.

- (a) Remove plastic plate condenser.
- (b) Position radiator and install upper brackets and bolts.  
Torque: 19 Nm (194 kgcm, ft.lbf).
- (c) Install lower and upper radiator hose.
- (d) Install connector.



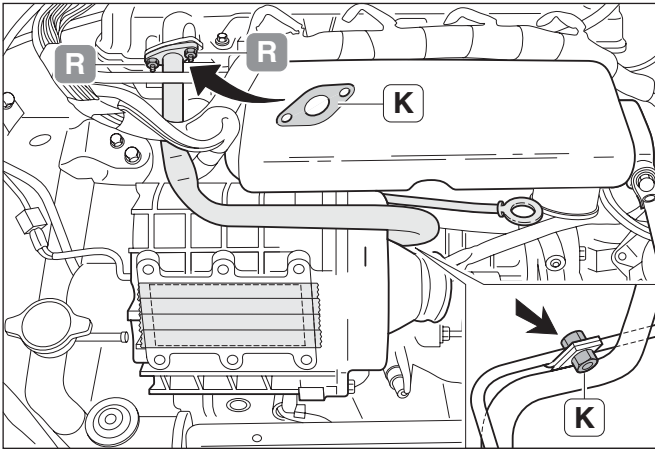
#### 36. INSTALL COOLING FAN ASSEMBLY.

- (a) Position cooling fan assembly and connect electric cooling fan connector (grey).
- (b) Press 2 cable clips in fan shroud.
- (c) Slide fan shroud in lower radiator connections.
- (d) Press fan shroud in upper radiator connections.
- (e) Press secondary-air hose in lower fan shroud clip.
- (f) Fill-up radiator and coolant reservoir (bleed system).



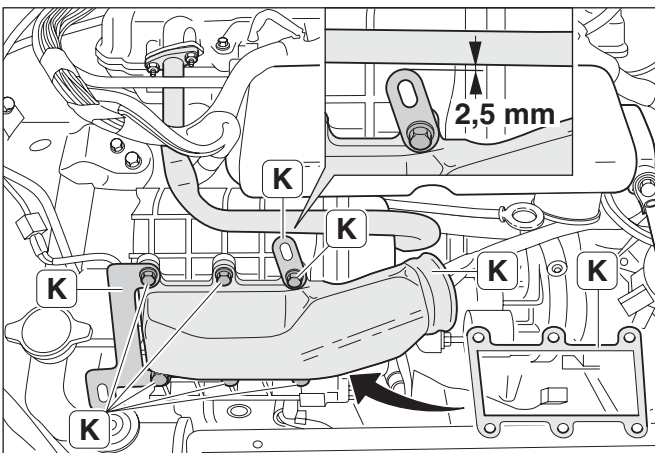
#### 37. INSTALL BREEDER HOSE.

- (a) Install breeder hose.



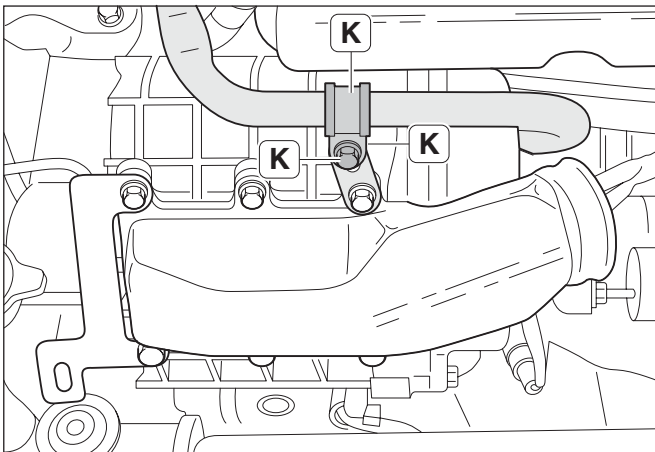
### 38. INSTALLING OIL RETURN PIPE AND OIL DIP STICK.

- (a) Remove protecting cover and install gasket and oil return pipe with 2 nuts.
  - Ⓚ: 12-d (gasket).
  - Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- (b) Install dip stick pipe bolt and nut.
  - Ⓚ: 14-a (bolt).
  - Ⓚ: 14-d (nut).
  - Torque: 10 Nm (100 kgcm, 7.4 ft.lbf).



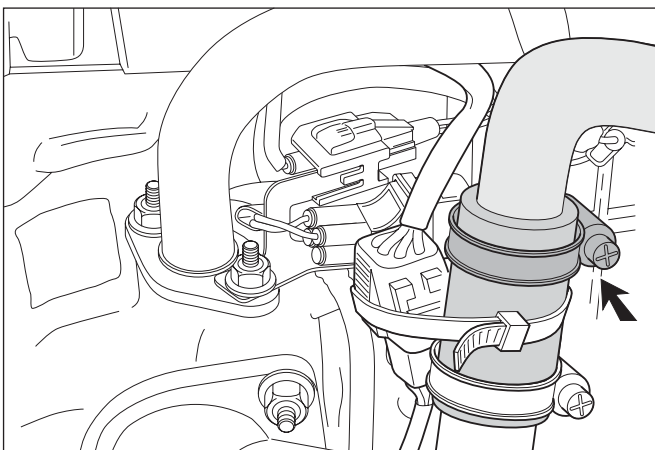
### 39. INSTALLING COMPRESSOR INLET COVER.

- (a) Remove the tape.
- (b) Install gasket, compressor inlet cover, bracket oil return pipe and bracket A/C hose with 6 bolts (oil return pipe bolt is 5 mm longer)
  - Ⓚ: 3-f (5 x bolt M6 x 20).
  - Ⓚ: 3-g (1 x bolt M6 x 25).
  - Ⓚ: 3-a (inlet cover).
  - Ⓚ: 1-e (gasket).
  - Ⓚ: 12-f (bracket oil return pipe).
  - Ⓚ: 10-d (bracket A/C hose).
  - Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).



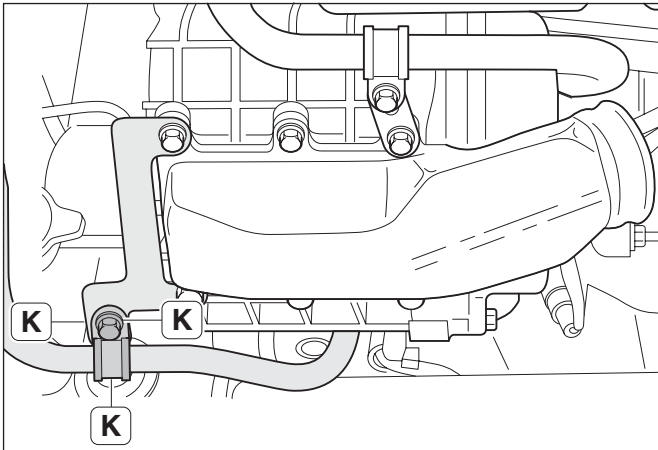
### 40. TIGHTEN OIL RETURN CONNECTION.

- (a) Position clamp and install the bolt and nut hand tighten.
  - Ⓚ: 12-e (bracket oil return pipe)).
  - Ⓚ: 12-g (bolt).
  - Ⓚ: 12-n (nut).
- (b) Check before tightening that there is no touching condition between the bracket and oil pipe.
  - Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).



### 41. TIGHTEN LOWER OIL RETURN CONNECTION.

- (a) Tighten hose clamp from lower connection the oil return pipe.



#### 42. TIGHTEN A/C HIGH PRESSURE HOSE.

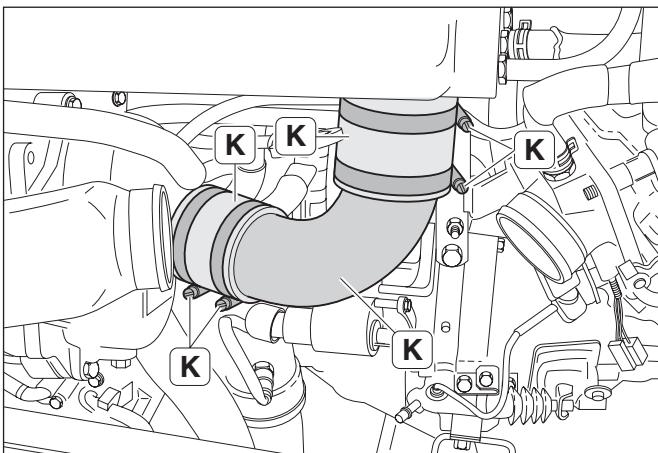
- (a) Position clamp and install bolt and nut.

**K**: 10-e (clamp A/C pipe).

**K**: 10-f (bolt).

**K**: 10-g (nut).

Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).



#### 43. INSTALLING OUTLET PIPE BETWEEN OUTLET COMPRESSOR AND INTAKE MANIFOLD.

- (a) Position outlet pipe, 2 hoses and 4 hose clamps.

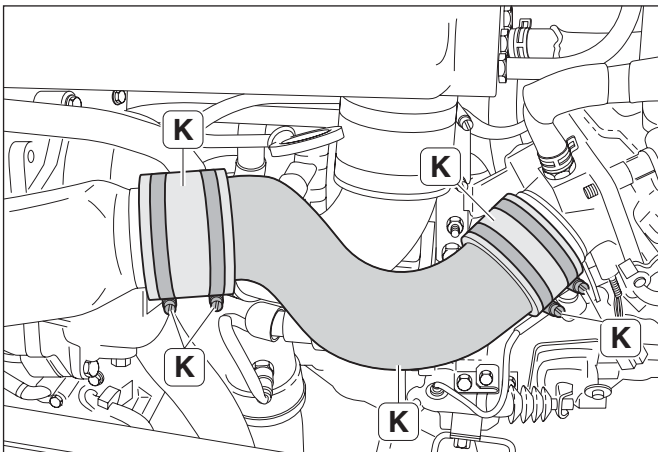
**K**: 3-c (outlet pipe).

**K**: 4-a (2 x hose).

**K**: 4-b (4 x hose clamp).

- (b) Tighten hose clamps on compressor outlet side and intake manifold side.

- (c) Pull outlet pipe 5 mm out of the hose on both sides and tighten hose clamps.



#### 44. INSTALLING INLET PIPE BETWEEN COMPRESSOR INLET AND THROTTLE BODY.

- (a) Position inlet pipe, 2 hoses and 4 hose clamps.

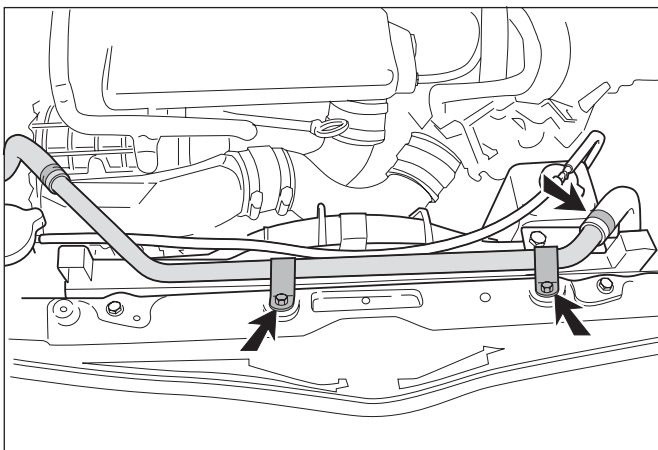
**K**: 3-d (inlet pipe).

**K**: 4-a (2 x hose).

**K**: 4-b (4 x hose clamp).

- (b) Tighten hose clamps on compressor inlet side and throttle body side.

- (c) Pull inlet pipe 5 mm out of the hose on both sides and tighten hose clamps.



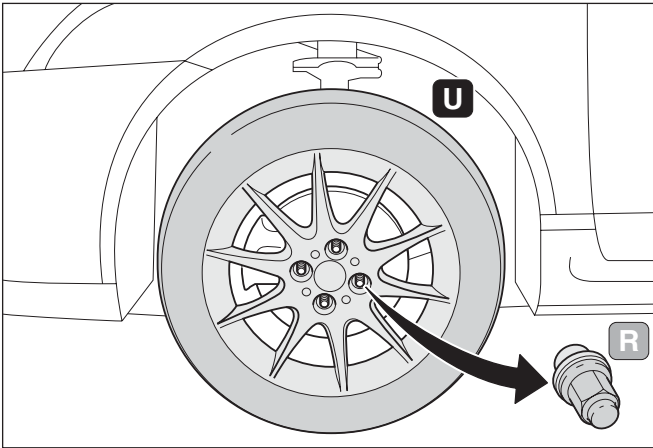
#### 45. INSTALLING SECONDARY-AIR VALVE PIPE.

- (a) Position the pipe and install the 2 bolts.

Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).

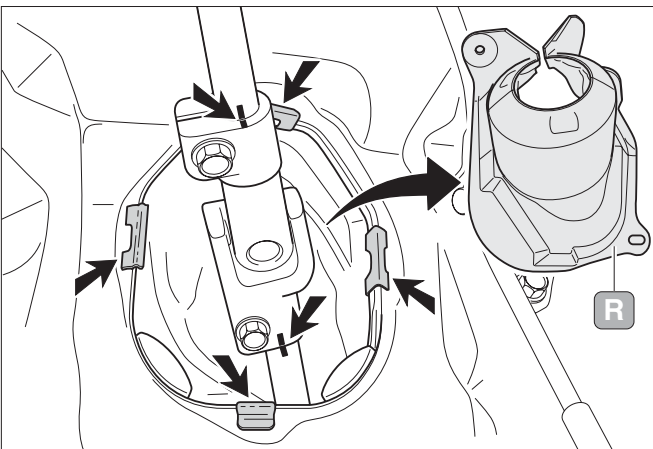
- (b) Install the 2 hoses and position hose clamps.

#### 4. Operation in engine compartment (Under side removing parts)



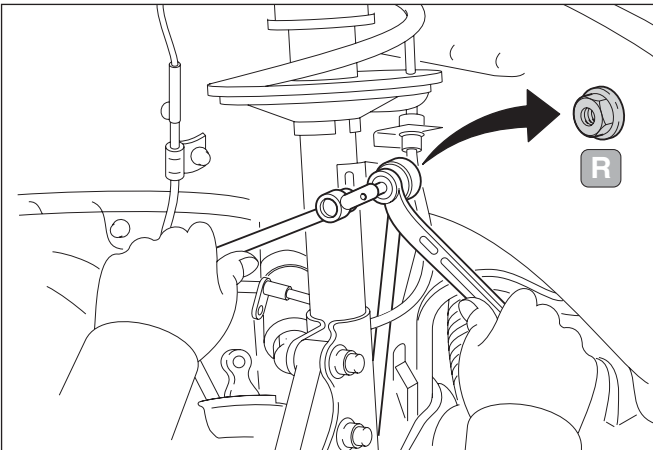
##### 1. REMOVE WHEELS.

- (a) Remove the wheel nuts and remove the front and rear wheels.  
**R**: Wheel nuts.  
**U**: Wheels.



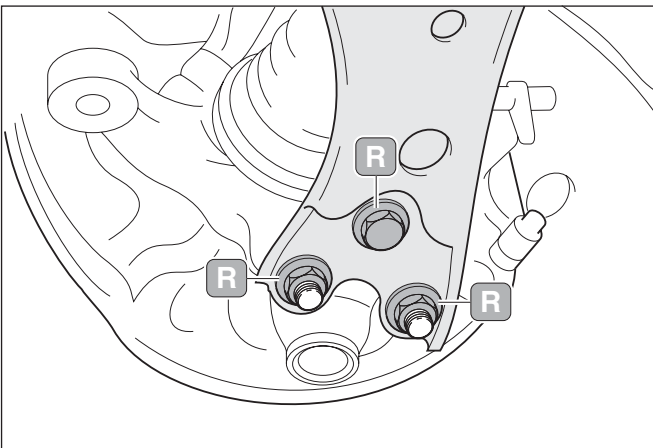
##### 2. REMOVE STEERING COLUMN CONNECTION.

- (a) Remove protecting cover.  
**R**: Protecting cover.  
 (b) Mark the position.  
 (c) Loosen the bolts and slide the universal joint upwards.  
 (d) Unlock clips from rubber grommet.



##### 3. REMOVE ANTI ROLL BAR LINK LEFT AND RIGHT.

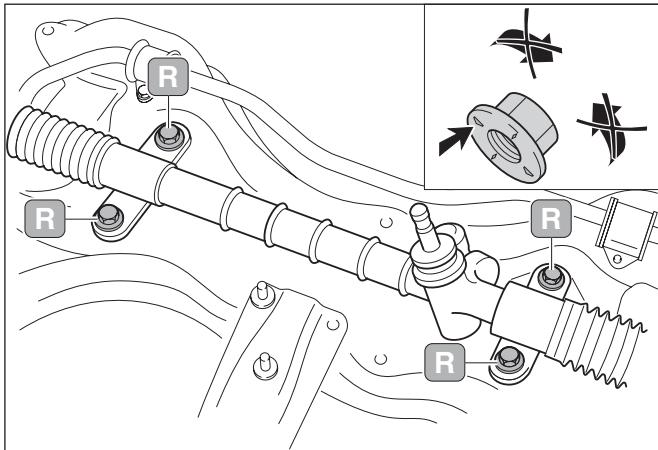
- (a) Use 5 mm inner hexagon socket key and remove the nut.  
**R**: Nut.



##### 4. REMOVE LOWER BALL JOINTS LEFT AND RIGHT.

- (a) Remove the 2 nuts and 1 bolt.  
**R**: 2 nuts.  
**R**: 1 bolt.  
 (b) Remove ball joint from lower control arm.

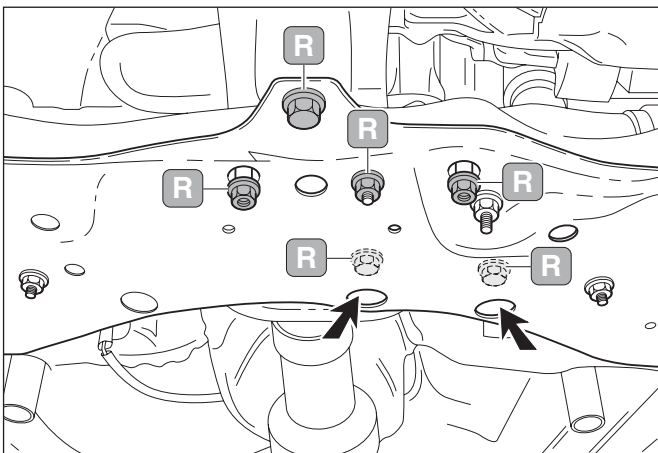




### 5. REMOVE STEERING GEAR BOLTS AND NUTS.

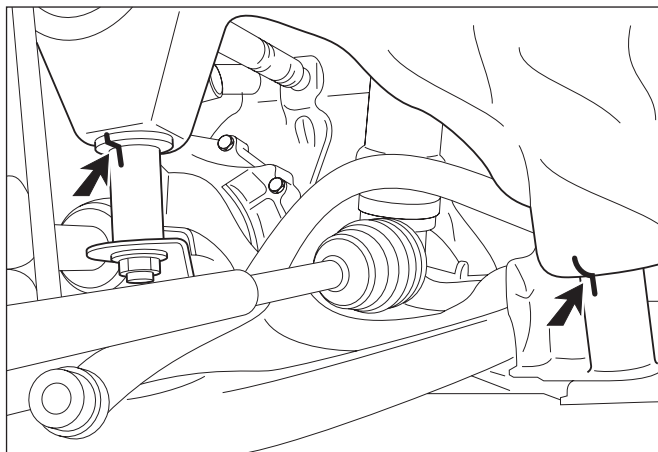
**Hint: To loosen the steering gear bolt connections the first 3 turns must be from the upper side. This is to prevent that the special steering gear nuts can damage the sub frame connection.**

- (a) Remove the 4 bolt connection from the steering gear.  
 R: 4 bolts.  
 R: 4 nuts.



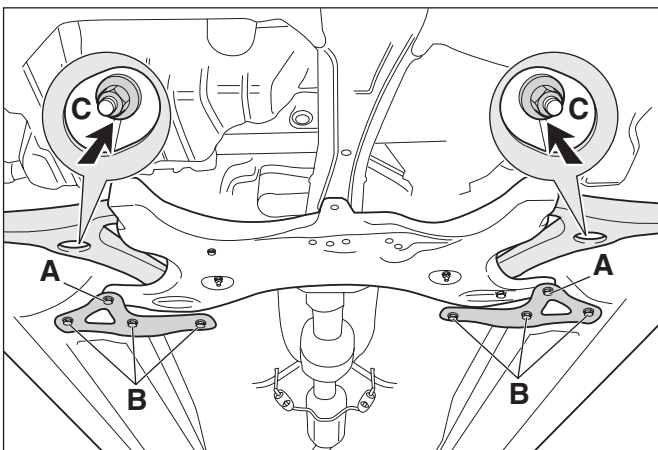
### 6. REMOVE CENTRE MEMBER AND ENGINE MOUNT CONNECTION.

- (a) Remove the 3 nuts and 1 bolt.  
 R: 3 nuts.  
 R: 1 bolt.  
 (b) Remove the 2 bolts centre member.  
 R: 2 bolts.



### 7. MARK SUB FRAME POSITION.

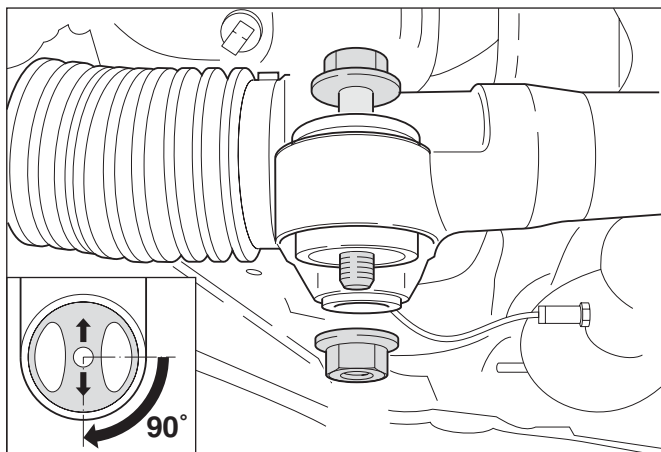
- (a) Mark the position of the sub frame connections left and right.



### 8. REMOVE SUB FRAME COMPLETE.

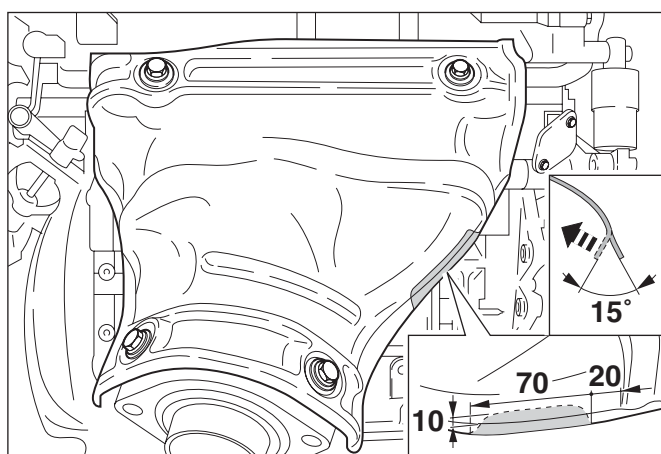
- (a) Position lifting jack underneath the sub frame.  
 (b) Remove the 8 bolts (A and B) and the 2 extra sub frame reinforcement brackets.  
 R: 8 bolts.  
 R: 2 reinforcement brackets.  
 (c) Remove the 2 nuts (C) on the front side.  
 R: 2 nuts.  
 (d) Turn the anti roll bar during lowering of the complete sub frame.

**NOTICE: Do not lower the steering gear.**



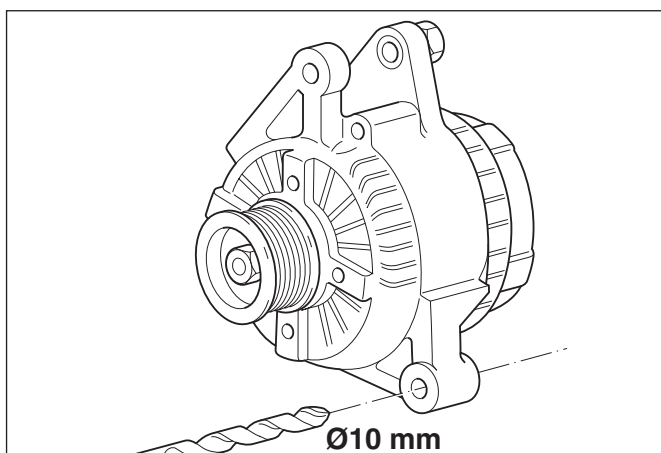
### 9. TURN STEERING GEAR RUBBERS.

- Install a bolt (M10 x 60 mm) and nut (M10).  
Torque: 29 Nm (295 kgcm, 21 ft.lbf).  
**Hint: Bolt and nut will not be supplied in the compressor kit.**
- Turn all 4 steering gear rubber connections 90 degrees.
- Check if the arrows pointing to the wheel side of the car.



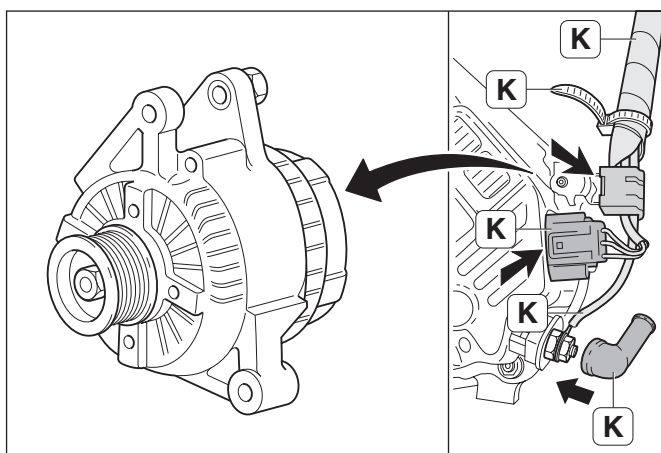
### 10. PREPARATION EXHAUST HEAT SHIELD.

- Bend part as mentioned in the drawing.
- Ensure that there are no sharp edges.



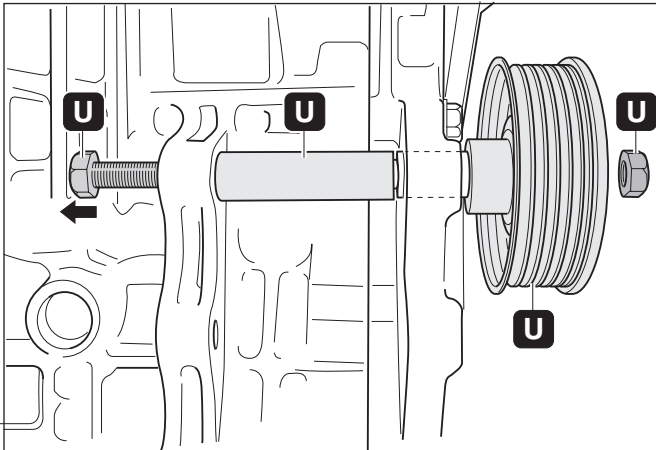
### 11. PREPARATION ALTERNATOR.

- Enlarge the alternator fixation connection, use a  $\varnothing 10$  mm drill.



### 12. PREPARATION ALTERNATOR CABLE HARNESS.

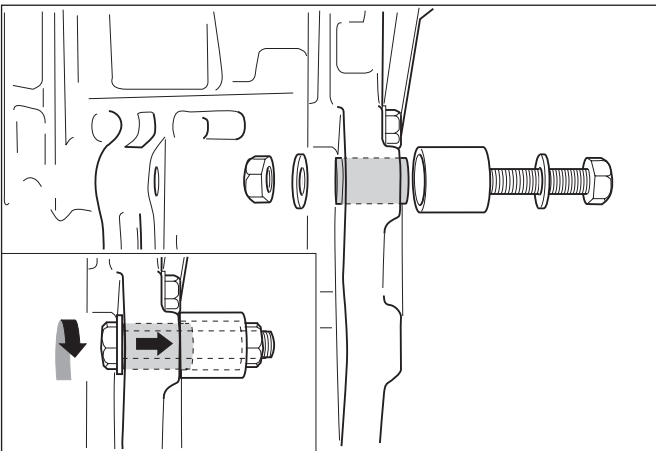
- Install the 3 pin connector.  
K: 9-p (cable, extension alternator).
- Install the B+ cable and nut.  
K: 9-o (cable, extension alternator B+)  
Torque: 8 Nm (80 kgcm, 5.9 ft.lbf).
- Install the B+ cable cover.
- Install the cable clip.  
Install protection hose and cable tightener.  
K: 9-t (protection hose).  
K: 9-n (cable tightener).



### 13. REMOVE FREE-WHEEL POLY V-BELT.

- (a) Remove nut, free-wheel, bolt and bush.

R: Nut.  
R: Free-wheel.  
R: Bolt.  
R: Bush.



### 14. REPOSITION UPPER SLIDING SLEEVE (IF NEEDED).

**Hint: Position alternator bracket (9-a):**

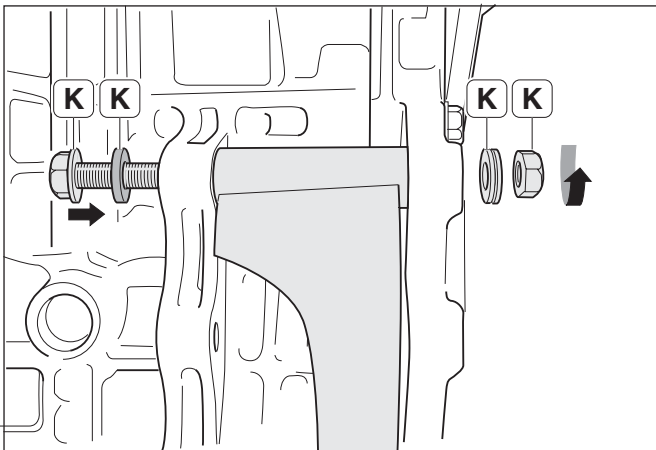
**If not possible, reposition the sliding bush as mentioned in this step.**

**If possible install alternator bracket, see next step.**

- (a) Install a bolt (M10 x 60 mm), bush, washer and nut (M10).

**Hint: Bolt, bush, washer and nut will not be supplied in the compressor kit.**

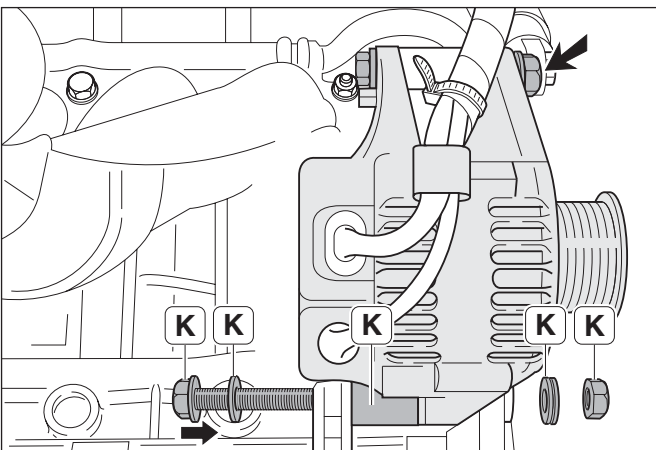
- (b) During tightening of bolt/nut connection the sliding sleeve will slid to the outer side.  
 (c) Remove nut, washer, bush and bolt.



### 15. POSITION UPPER ALTERNATOR BRACKET.

- (a) Position alternator bracket and install bolt (M10 x 120 mm), washer (3.8 mm) and nut, hand tighten.

K: 9-a (alternator bracket).  
K: 9-c (bolt M10 x 120 mm).  
K: 9-g (washer 3.8 mm).  
K: 9-e (washer).  
K: 9-i (nut M10).



### 16. INSTALL ALTERNATOR.

- (a) Position alternator.  
 (b) Upper alternator connection: install the bolt.  
 (c) Lower alternator connection: position bush and install bolt (M10 x 120 mm) with washer (M10). Install washer and nut.

K: 9-b (bush).  
K: 9-c (bolt M10 x 120 mm).  
K: 9-d (washer M10).  
K: 9-e (washer M10).  
K: 9-i (nut M10).

Upper alternator connection:

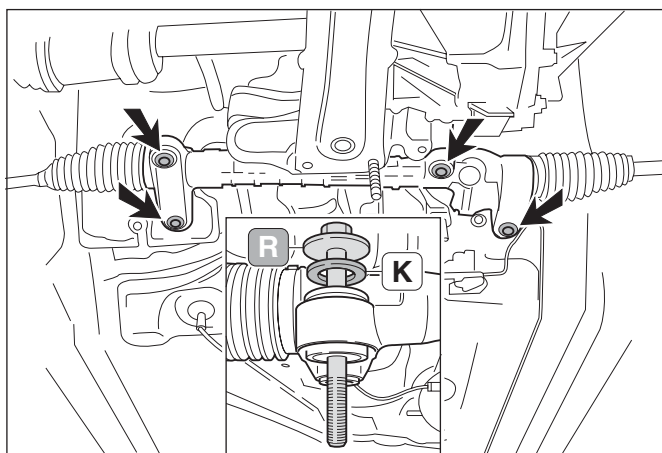
Torque: 25 Nm (255 kgcm, 18 ft.lbf).

Lower alternator connection:

Torque: 58 Nm (590 kgcm, 43 ft.lbf).



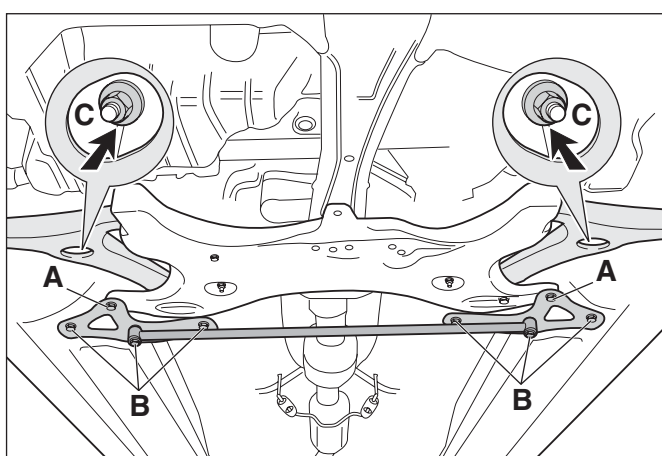
## 5. Operation in engine compartment (Under side installing parts)



### 1. EXTRA WASHER STEERING GEAR.

- (a) Position the 4 bolts and 4 extra washers.  
 (K): 22-d (4 x washer).

**NOTICE:** The extra washers are needed to increase the pressure on the 4 steering gear rubber connections.



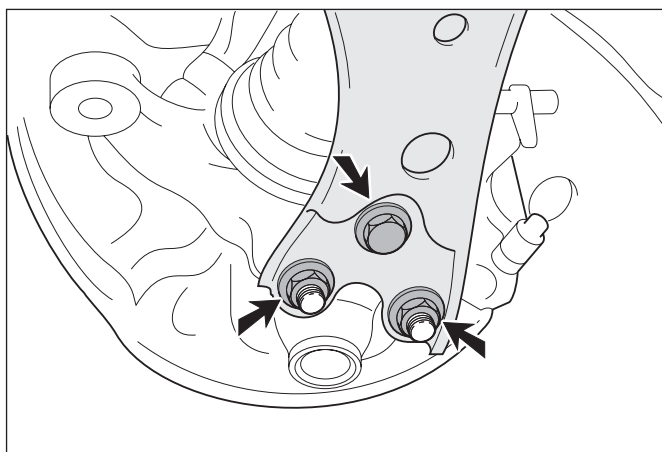
### 2. INSTALL SUB FRAME AND REINFORCEMENT ENGINE MEMBER.

- (a) Re-position sub frame with a lifting jack.  
 (b) Position the 2 sub frame reinforcement brackets and extra reinforcement engine member.  
 Position the 8 bolts (A and B) hand tighten.  
 (K): 19-d (reinforcement engine member).  
 (c) Install the 2 nuts (C) front side sub frame.  
 (d) Check the marking of the sub frame connection left and right.

Bolt A: Torque: 133 Nm (1355 kgcm, 98 ft.lbf).

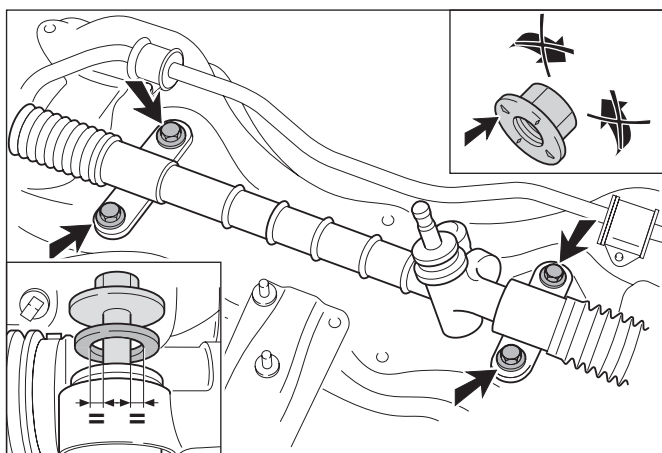
Bolt B: Torque: 80 Nm (815 kgcm, 59 ft.lbf).

Nut C: Torque: 133 Nm (1355 kgcm, 98 ft.lbf).



### 3. INSTALL LOWER BALL JOINTS LEFT AND RIGHT.

- (a) Position ball joint with 2 nuts and 1 bolt.  
 Torque: 89 Nm (905 kgcm, 66 ft.lbf).

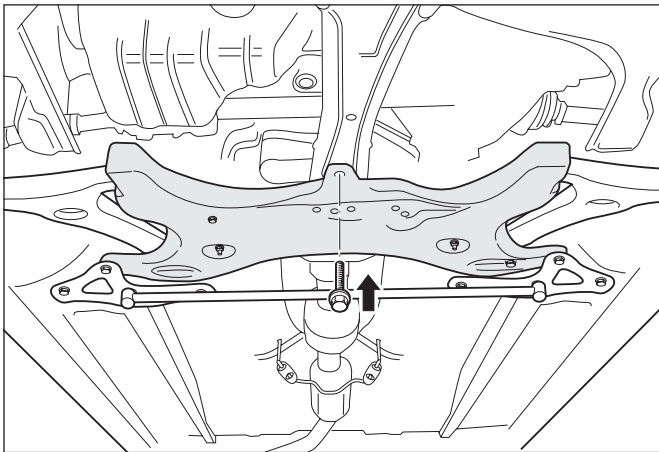


### 4. INSTALL STEERING GEAR.

**NOTICE:** Tightening of steering gear bolts is only possible from the upper side steering gear.

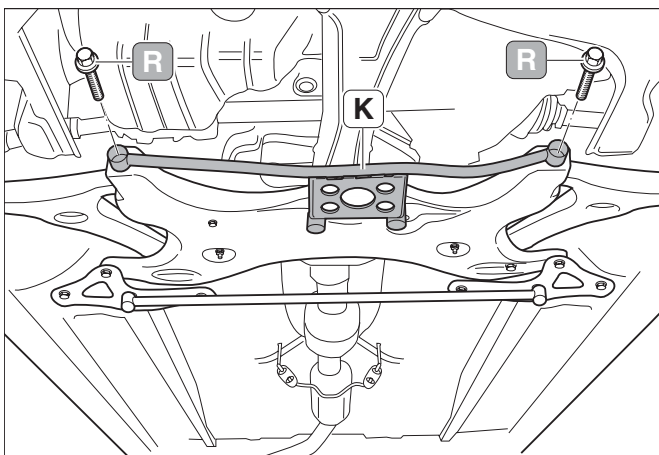
- (a) Install 4 nuts.  
 Torque: 49 Nm (500 kgcm, 36 ft.lbf).

**NOTICE:** Ensure that the 4 extra washers are correctly positioned in the middle position after tightening.



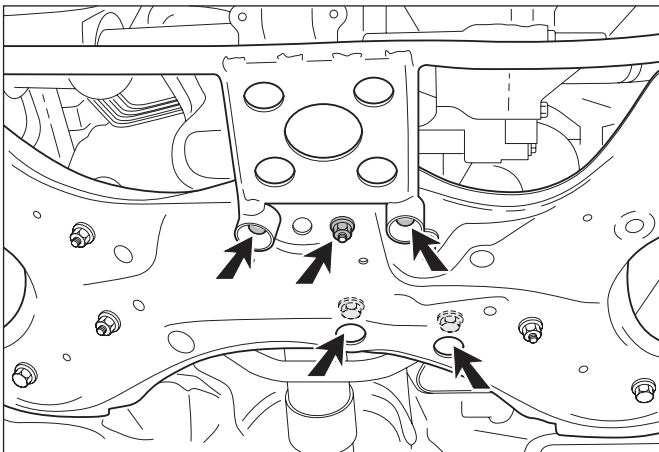
### 5. INSTALL CENTRE MEMBER BOLT.

- (a) Install the centre member bolt.  
Torque: 52 Nm (530 kgcm, 38 ft.lbf).



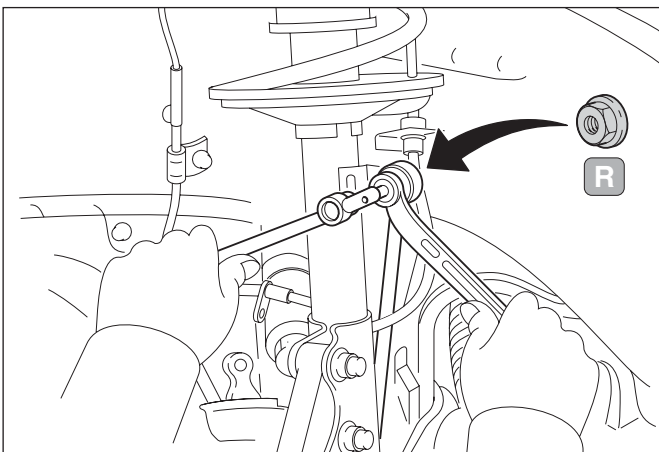
### 6. INSTALLATION OF LOWER REINFORCEMENT ENGINE MEMBER (FRONT).

- (a) Remove the front lower control arm bolt left and right.  
**R**: 2 bolts.
- (b) Install the reinforcement engine member with the control arm bolts.  
**K**: 19-e (reinforcement engine member).  
Torque: 137 Nm (1400 kgcm, 101 ft.lbf).



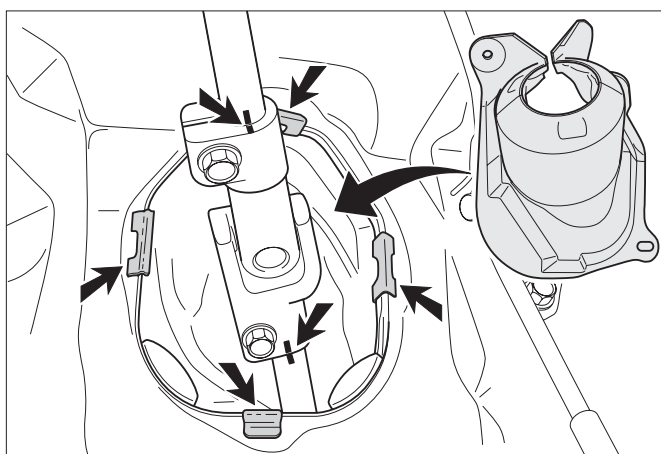
### 7. INSTALL CENTRE MEMBER AND ENGINE MOUNT CONNECTION.

- (a) Install the 3 nuts and 2 bolts.  
Torque: 52 Nm (530 kgcm, 38 ft.lbf).



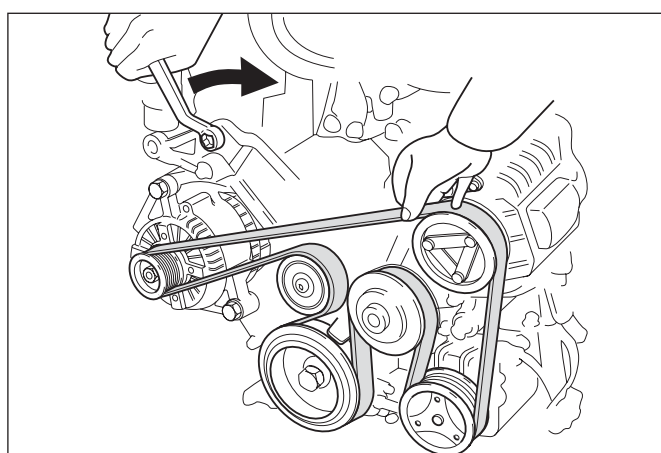
### 8. INSTALL ANTI ROLL BAR LINK LEFT AND RIGHT.

- (a) If the front shock absorber is already replaced install the anti roll bar link.  
Use 5 mm inner hexagon socket key and install nut.  
Torque: 44 Nm (450 kgcm, 32 ft.lbf).



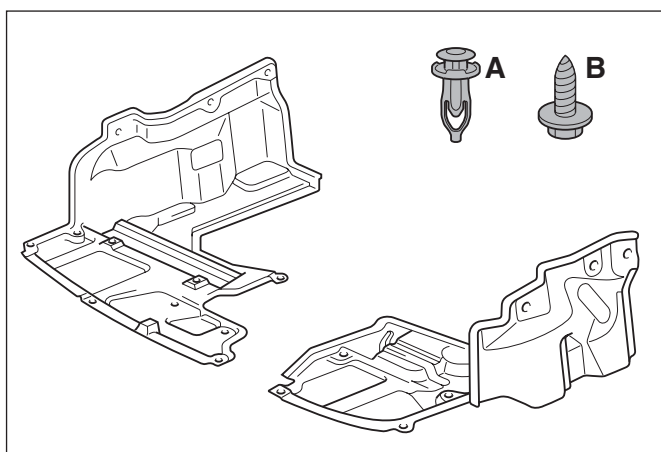
### 9. INSTALL STEERING COLUMN CONNECTION.

- Position rubber grommet clips.
- Position universal joint and check markings.
- Tighten the bolts.  
Torque: 35 Nm (360 kgcm, 26 ft.lbf).
- Install protecting cover.



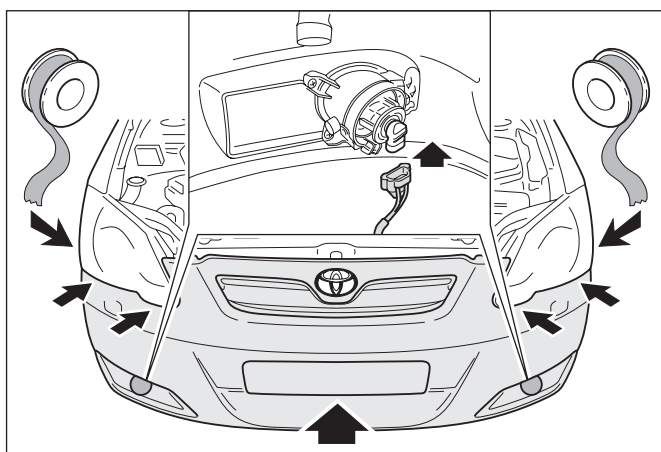
### 10. INSTALL POLY V-BELT.

- Turn the belt tensioner slowly as mentioned in the drawing.
- Position poly V-belt.  
K: 1-b (poly V-belt).
- Release the belt tensioner slowly until there is no tension left.
- Check if the poly V-belt is in line.



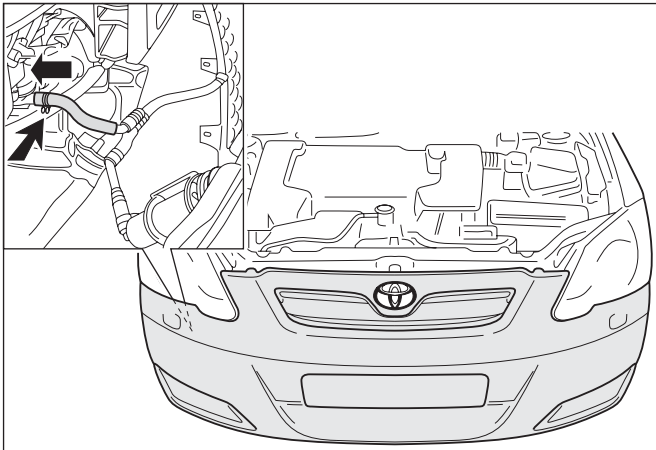
### 11. INSTALL SPLASH SHIELD LEFT AND RIGHT.

- Position splash shield left and right.
- Install clips (A) and screws (B).

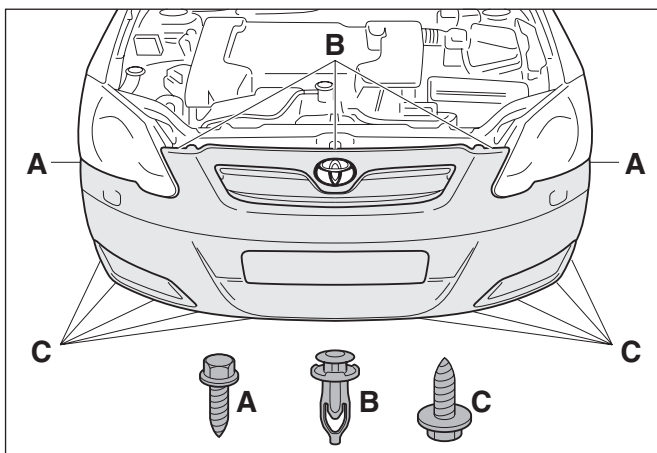


### 12. INSTALL FRONT BUMPERS AND FOG LAMP CONNECTORS.

- Position tape to avoid damage on front fenders.
- Position front bumper and press carefully the front bumper in the fixation clips.
- Install the foglamp connectors.

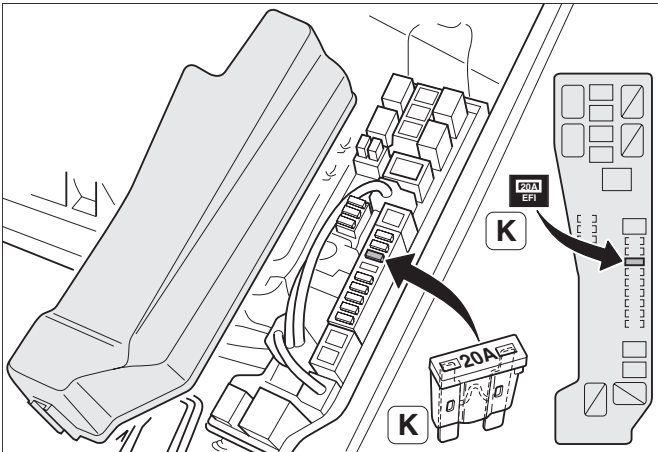
**13. INSTALL HEAD LAMP WASHER HOSE.**

- (a) Install head lamp washer hose if present.

**14. INSTALL FRONT BUMPER CONNECTION.**

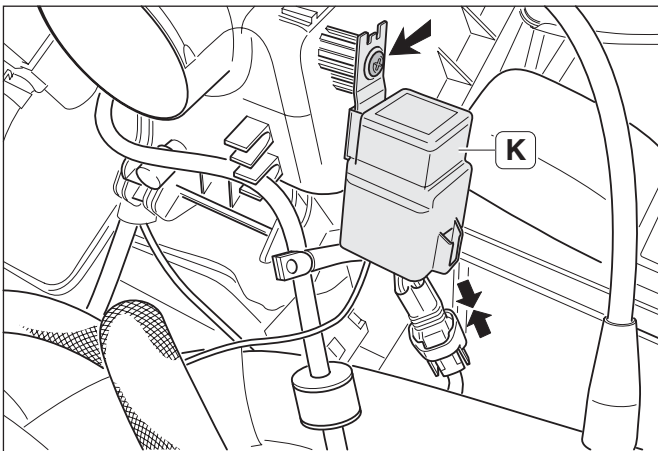
- (a) Install the lower screws (C).  
(b) Install the upper 3 clips (B).  
(c) Install the screws (A) left and right.  
(d) Remove front fender tape.

## 6. Operation in engine compartment and dashboard (Compressor wiring and electronic components)



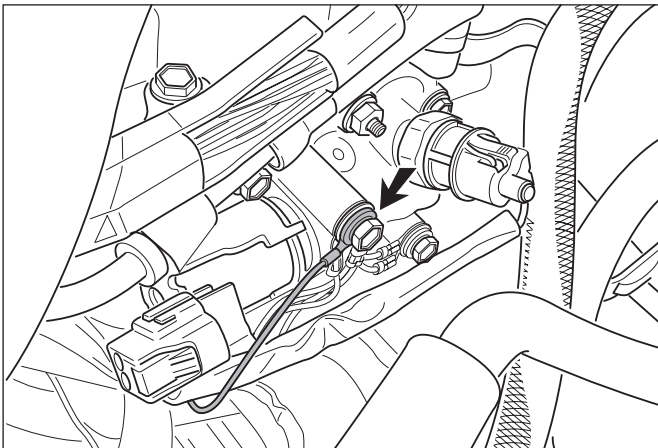
### 1. REPLACE FUSE EFI.

- Open fuse box cover and remove the 15 A EFI fuse.
- Install 20 A fuse.  
 K: 15-c (20 A fuse).
- Glue the 20 A EFI sticker.  
 K: 15-b (sticker 20 A EFI).
- Install fuse box cover.



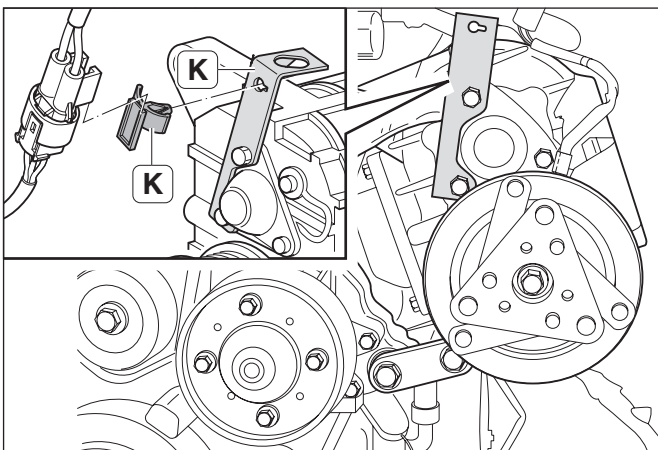
### 2. INSTALL COMPRESSOR RELAY AND CABLE HARNESS.

- Press relay on cable harness connector.  
 K: 15-b (compressor relay and cable harness)
- Position relay and install screw.
- Connect the 2 pin connector.  
 Check locking.



### 3. INSTALL COMPRESSOR EARTH CONNECTION.

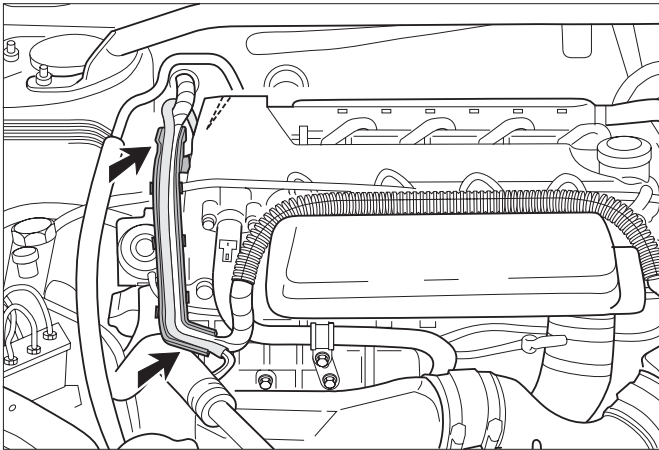
- Route the compressor cable harness aside the existing engine cable harness.
- Install earth connection.



### 4. INSTALL COMPRESSOR CONNECTOR.

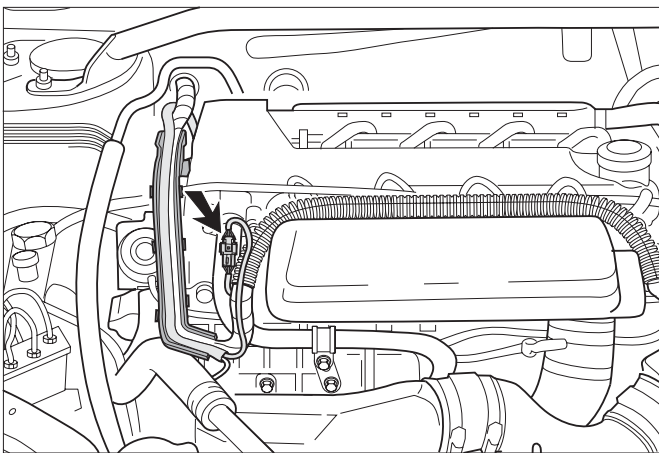
- Position compressor bracket.  
 K: 1-d (bracket).  
 Torque 8 Nm (80 kgcm, 5.9 ft.lbf).
- Connect the compressor connectors and press in position.  
 K: 15-d (clip).





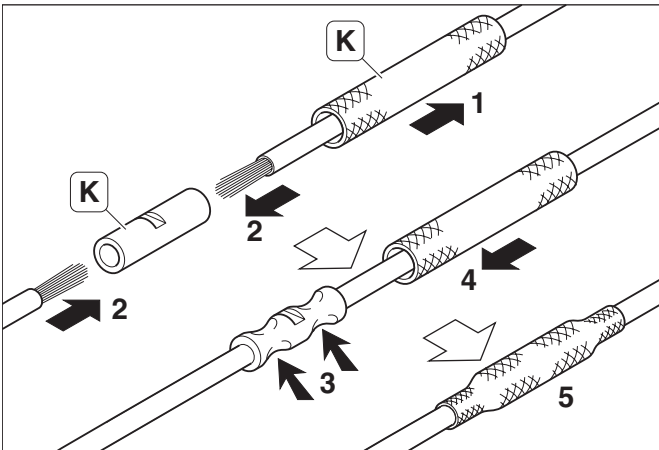
### 5. POSITION ALTERNATOR CABLE HARNESES.

- (a) Position lower protecting cover
- (b) Route engine cable harness and alternator cable harnesses in protecting cover.



### 6. CONNECT ALTERNATOR CABLE HARNESS.

- (a) Connect the 3 pin alternator connector and slide connector on the oil return pipe.

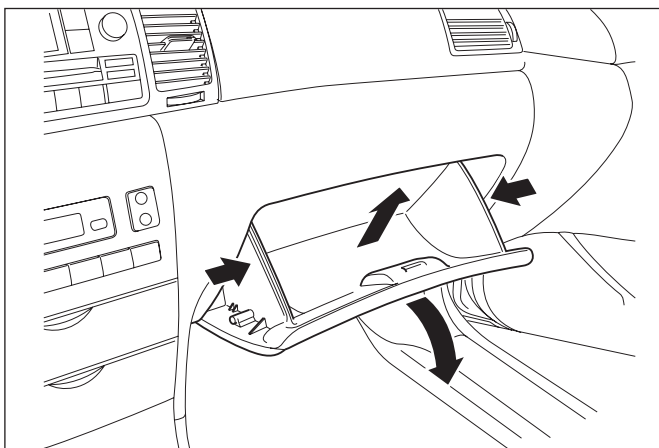


### 7. CONNECT ALTERNATOR B+ CABLE HARNESS.

- (a) Cut the existing alternator B+ cable to the correct length.
- (b) Slide shrink fit over B+ cable.  
K: 9-s (shrink fit).
- (c) Remove B+ isolation and install butt splice with special tool.  
K: 9-q (butt splice).

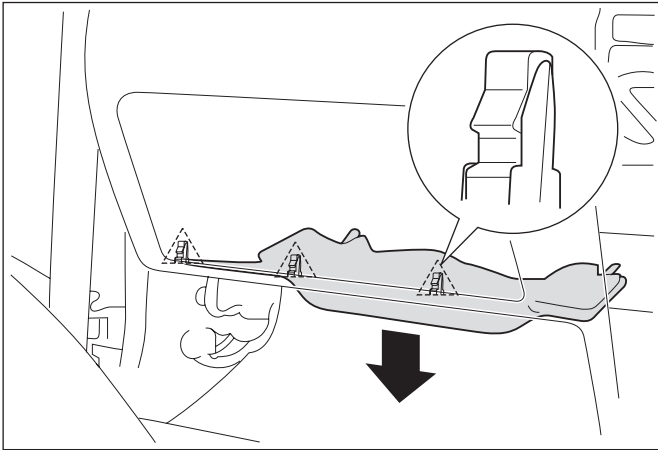
**NOTICE: Check butt splice connection very carefully.**

- (d) Slide shrink fit over butt splice and heat up until it shrinks.
- (e) Position upper protecting cover.



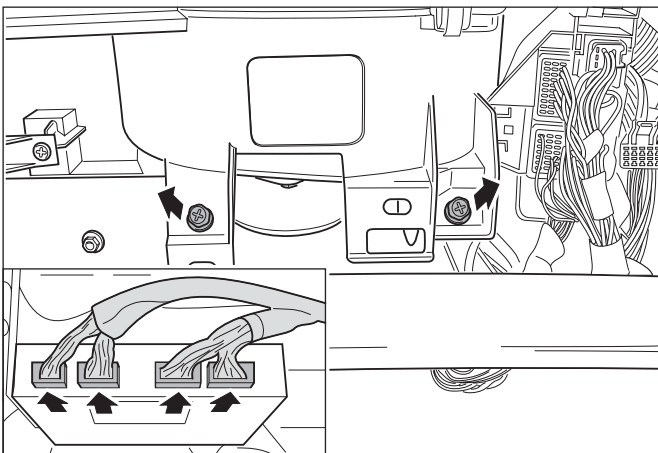
### 8. REMOVE GLOVE BOX.

- (a) Open the glove box.
- (b) Push both sides in and open glove box.
- (c) Remove glove box damper from fixation.
- (d) Remove the complete glove box.



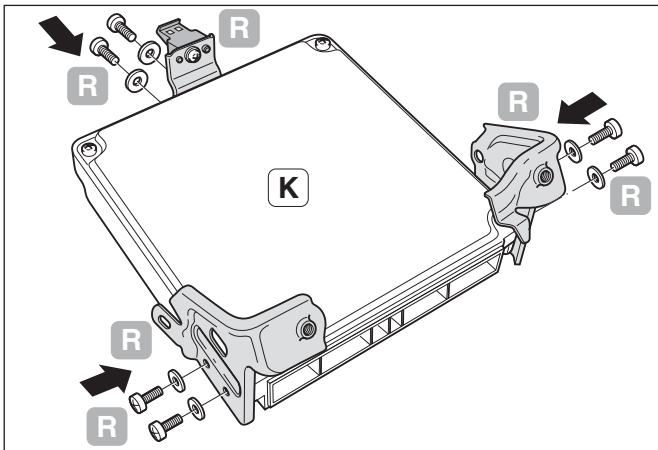
### 9. REMOVE LOWER PANEL.

- (a) Remove the 3 clips.
- (b) Remove lower panel.



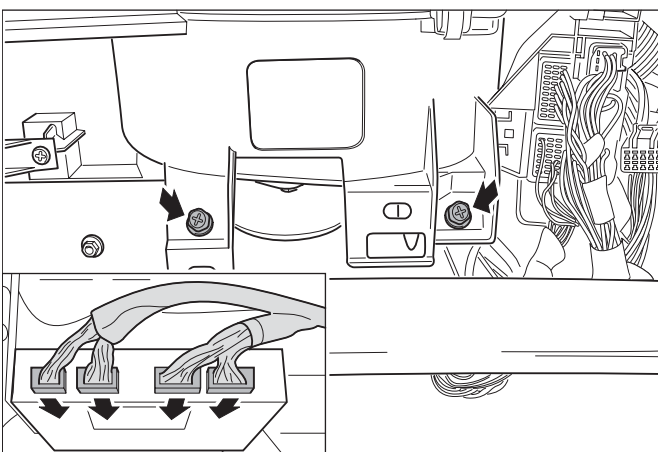
### 10. REMOVE ECU.

- (a) Press locking and remove the 4 connectors.
- (b) Remove the 2 bolts and pull ECU out of fixation.  
R: 2 bolts.



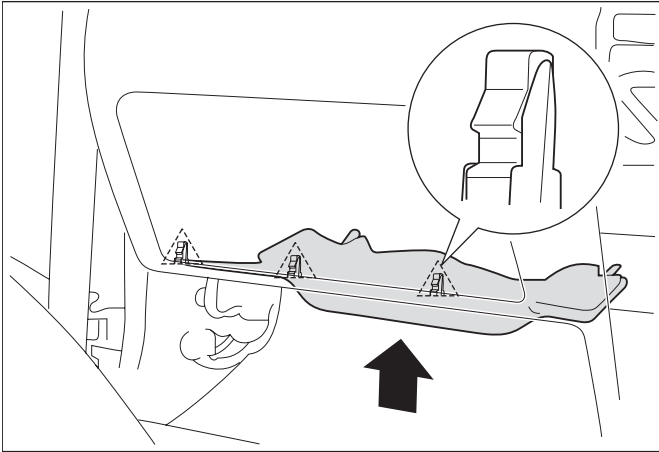
### 11. PREPARATION ECU.

- (a) Remove the 3 brackets.
- (b) Install the 3 brackets on the new ECU.  
K: 15-a (ECU).  
 Torque 5 Nm (50 kgcm, 3.7 ft.lbf).



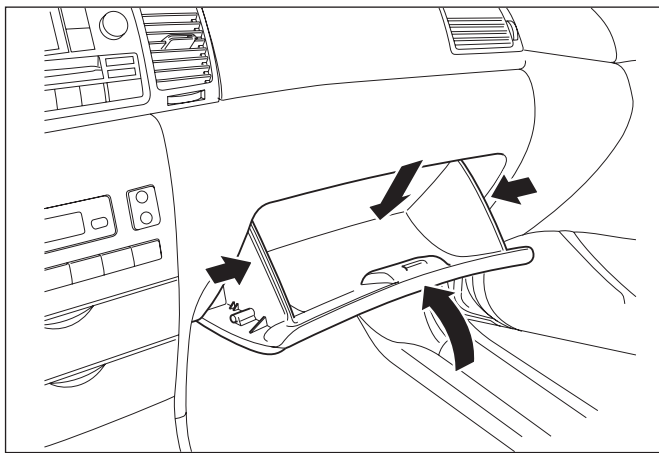
### 12. INSTALL ECU.

- (a) Press ECU in position and install the 2 bolts.  
 Torque 5 Nm (50 kgcm, 3.7 ft.lbf).
- (b) Connect the 4 connectors and check locking.



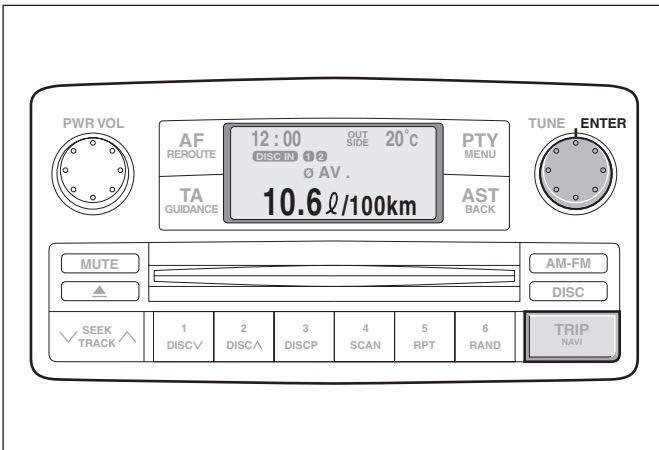
### 13. INSTALL LOWER PANEL.

- (a) Position lower panel and install the 3 clips.



### 14. INSTALL GLOVE BOX.

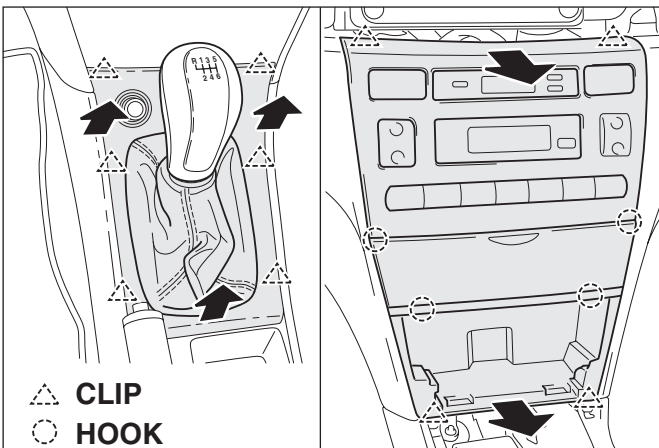
- (a) Hook in glove box.  
 (b) Install glove box damper.  
 (c) Push both sides in and close glove box.



### 15. RADIO WITH MULTI-INFORMATION DISPLAY.

**NOTICE:** If the car is equipped with a multi-information display the 20 pins connector on the rear side must be updated.  
**Reason of update:** After installation of the new injectors the average/instantaneous fuel consumption information to the multi-information display is incorrect.

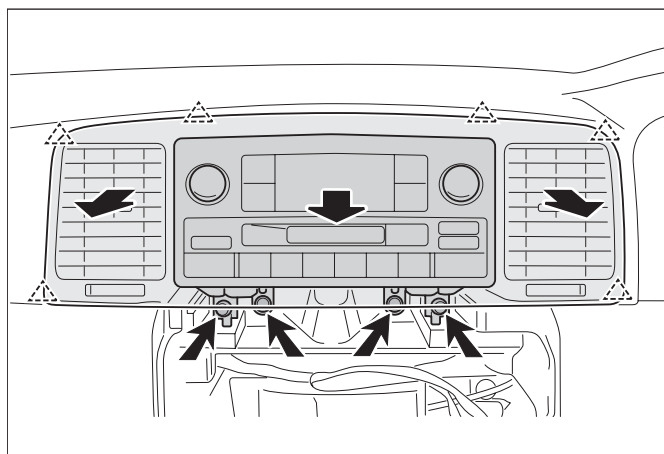
- (a) Cars **with** multi-information display follow step 16-20  
 Cars **without** multi-information display go to step 21



### 16. REMOVE GEAR LEVER PANEL AND MIDDLE CONSOLE PANEL.

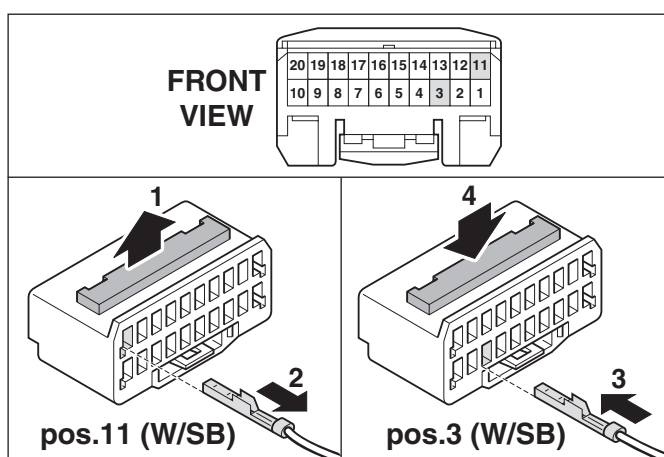
- (a) Pull gear lever panel upwards.  
 Remove connector if needed.  
 (b) Pull middle console panel out fixation clips.  
 (c) Disconnect the connectors.





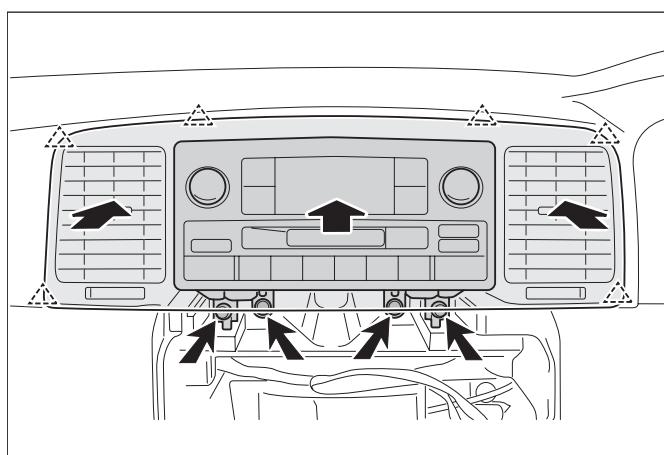
### 17. REMOVE RADIO WITH PANEL.

- Remove the 4 screws.
- Pull radio with panel out fixation clips.
- Disconnect the connectors.



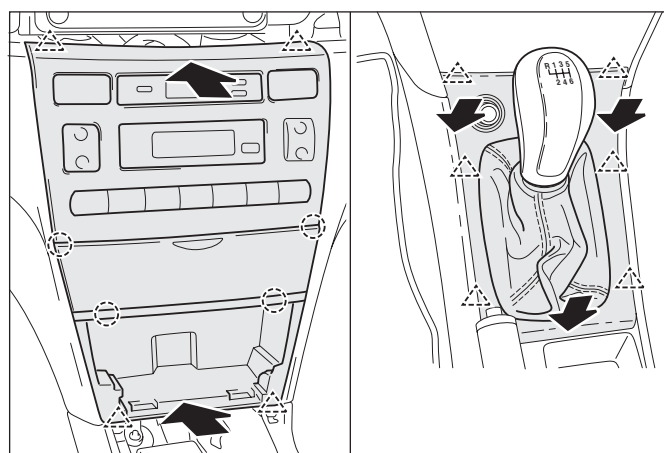
### 18. PREPARATION RADIO CONNECTOR.

- Open locking of the 20 pin connector.
- Insert special tool and remove wire pos. 11 White/Black (W/SB).
- Press wire White/Black (W/SB) pos. 3. Close locking.



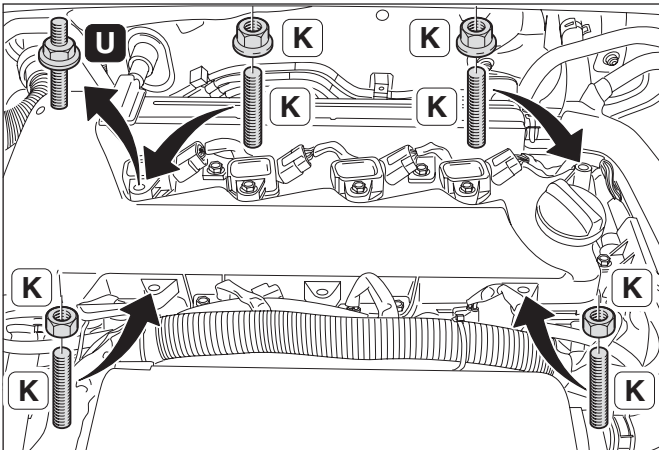
### 19. INSTALL RADIO WITH PANEL.

- Connect the connectors and press radio in position.
- Install the 4 screws.



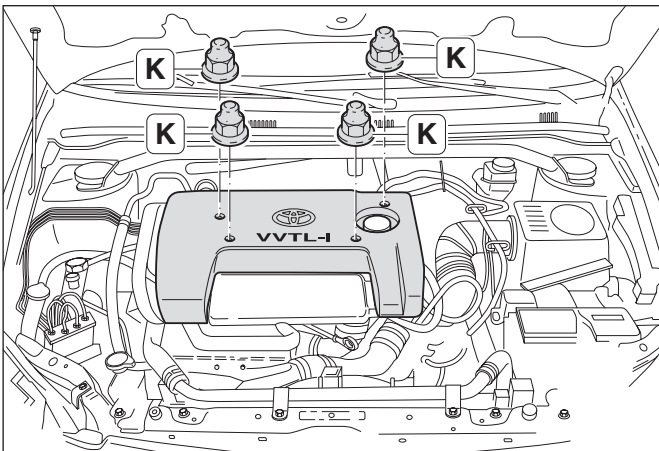
### 20. INSTALL MIDDLE CONSOLE PANEL AND GEAR LEVER PANEL.

- Connect the connectors and press middle console in position.
- Connect the connectors and press gear lever panel in position.



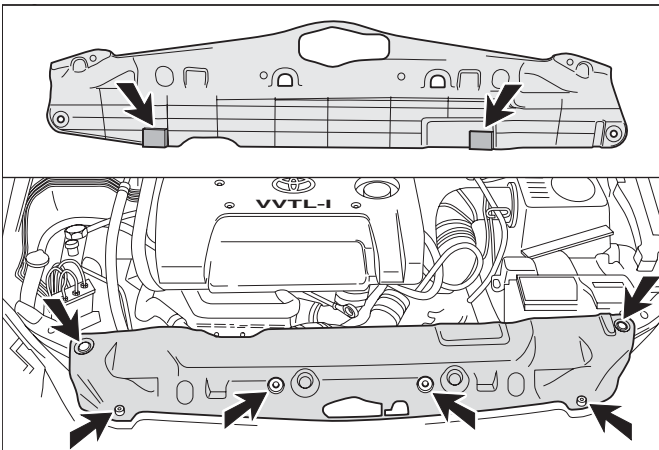
### 21. INSTALL ENGINE COVER STUDS.

- (a) Remove the bolt of the ignition coil.  
**U**: bolt.
- (b) Install the stud and nut.  
**K**: 2-d (stud M5 x 50).  
**K**: 2-e (M6 nut).  
 Torque: 9 Nm (90 kgcm, 6.6 ft.lbf).
- (c) Install the 3 studs and 3 nuts.  
**K**: 2-c (3 x stud M5 x 40).  
**K**: 2-f (2 x nut M6).  
**K**: 2-e (M6 nut).  
 Torque: 10 Nm (100 kgcm, 7.4 ft.lbf).



### 22. INSTALL ENGINE COVER.

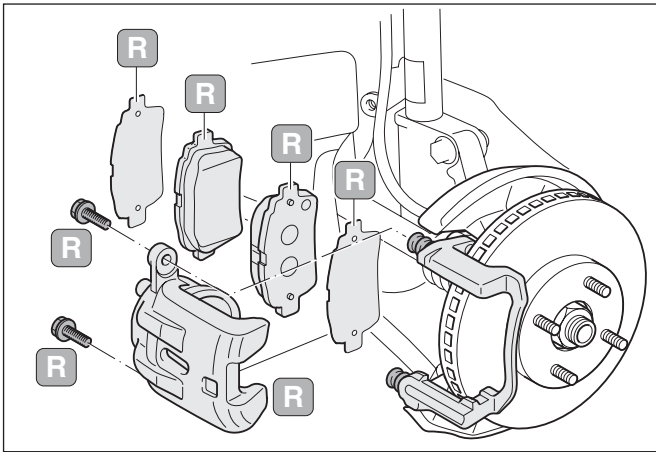
- (a) Position engine cover install the 4 nuts (black).  
**K**: 2-a (engine cover).  
**K**: 2-b (M6 nut).  
 Torque: 7 Nm (71 kgcm, 5.2 ft.lbf).



### 23. INSTALL RADIATOR COVER.

- (a) Position foam blocks.
- (b) Position radiator cover.
- (c) Install the 4 clips and 2 screws.

## 7. Operation brake system



### 1. REMOVE BRAKE CALLIPER AND BRAKE PADS.

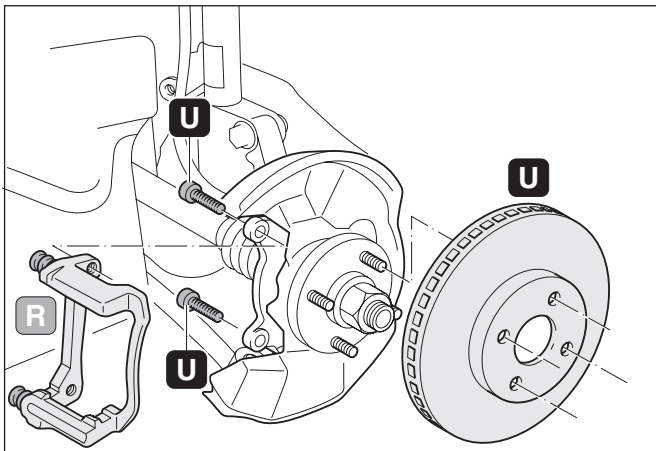
- (a) Remove the 2 bolts and remove brake calliper and brake pads.

**R**: Brake calliper.

**R**: 2 bolts.

**R**: Brake pad anti noise plates.

**R**: Brake pads.



### 2. REMOVE BRAKE CALLIPER BRACKET AND BRAKE DISC.

- (a) Remove the 2 bolts and remove brake calliper bracket.

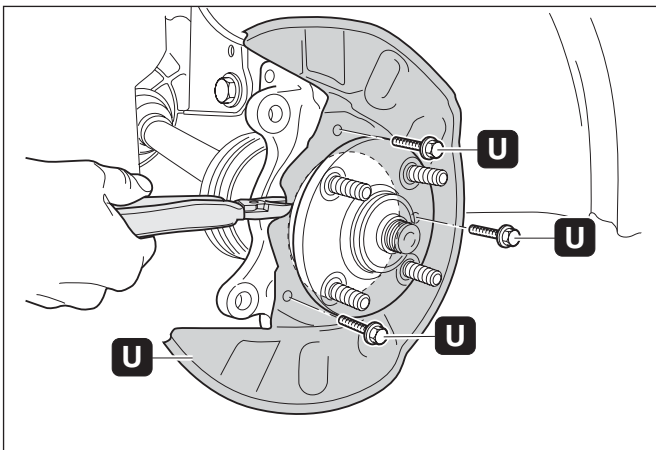
**U**: 2 bolts.

**R**: Brake calliper bracket.

- (b) Remove the brake disc use SST tool.  
SST 09950-50100

**U**: Brake disc.

- (c) Clean the brake disc contact surface on the wheel hub.



### 3. REMOVE BRAKE DISC COVER.

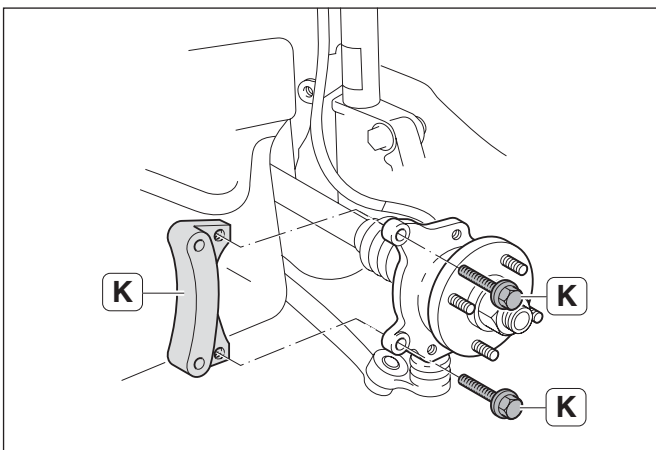
- (a) Remove the 3 bolts.

**U**: 3 bolts.

- (b) Cut brake disc cover as mentioned in the picture.

- (c) Remove the brake disc cover by bending.

**U**: Brake disc cover.



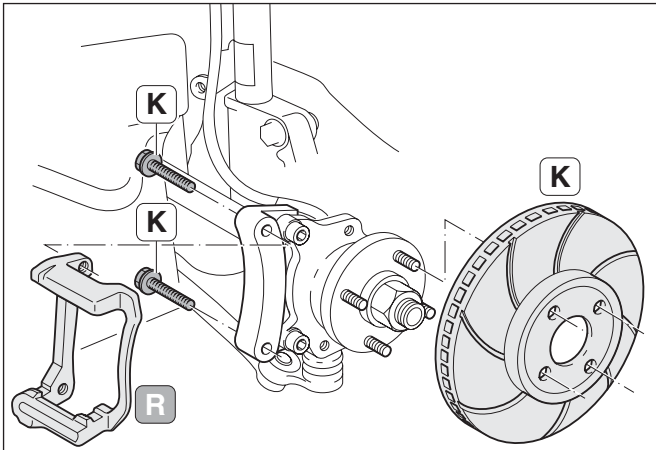
### 4. INSTALL THE EXTENSION BRACKET.

- (a) Position extension bracket and install the 2 bolts.

**K**: 16-a (extension bracket).

**K**: 16-e (2 x bolt).

Torque: 107 Nm (1090 kgcm, 79 ft.lbf).

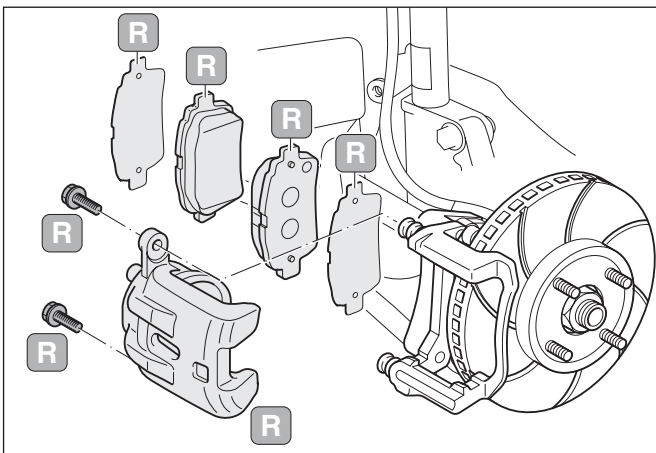


## 5. INSTALL BRAKE DISC AND BRAKE CALLIPER BRACKET.

- (a) Install brake disc  
 □K: 16-b (brake disc LH).  
 □K: 16-c (brake disc RH).

**Hint: Inside of the brake disc is mentioned LH (left side) or RH (right side).**

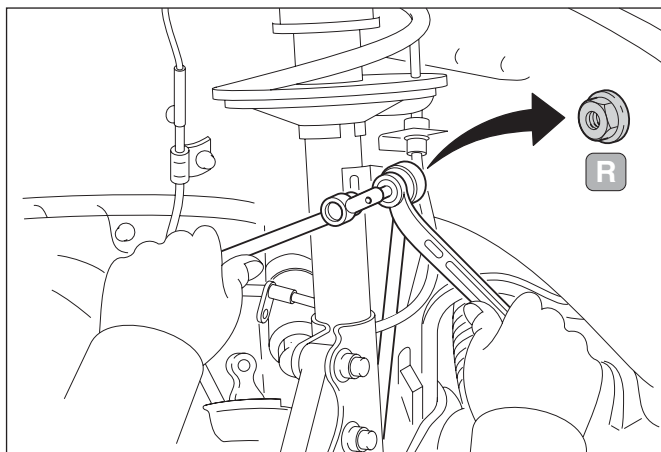
- (b) Position brake calliper bracket and install the 2 bolts.  
 □K: 16-f (2 x bolt).  
 Torque: 107 Nm (1090 kgcm, 79 ft.lbf).



## 6. INSTALL BRAKE PADS AND BRAKE CALLIPER.

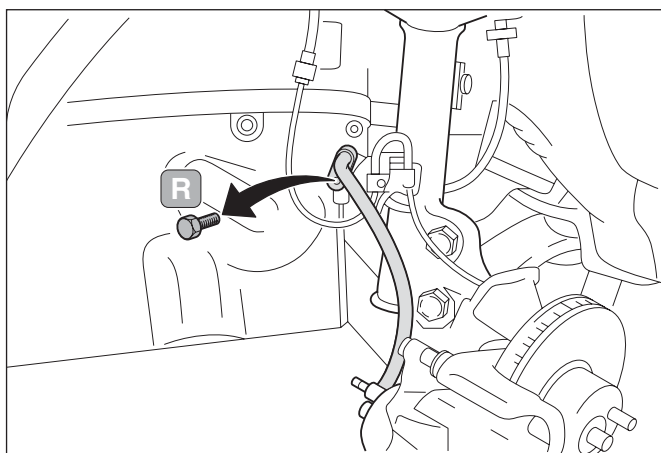
- (a) Install the brake pads with brake pad anti noise plates.  
 (b) Install the brake calliper with 2 bolts.  
 Torque: 34 Nm (350 kgcm, 25 ft.lbf).  
 (c) Start the operation on the right side.  
 Follow above mentioned methods (step 1-6).

## 8. Shock absorber front



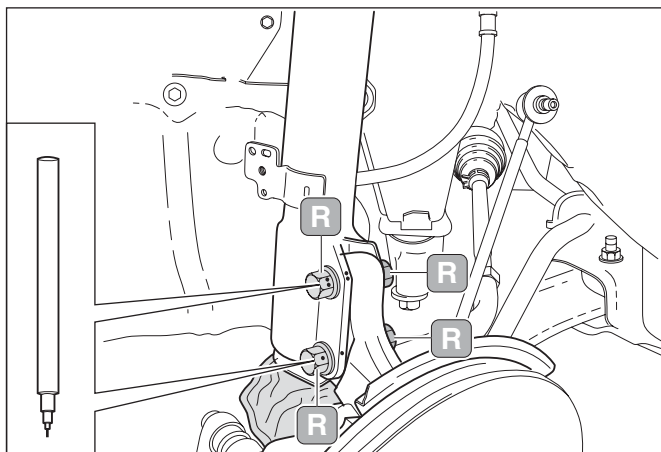
### 1. REMOVE ANTI ROLL BAR LINK.

- (a) Use 5 mm inner hexagon socket key and remove the nut.  
**R**: Nut.



### 2. REMOVE BRAKE HOSE AND ABS CABLE BRACKET FROM SHOCK ABSORBER.

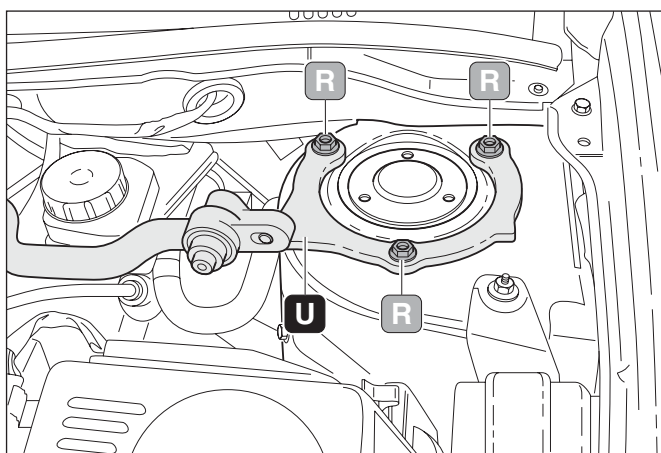
- (a) Remove the bolt.  
**R**: Bolt.  
 (b) Remove brake hose and ABS cable bracket from shock absorber.



### 3. REMOVE LOWER SHOCK ABSORBER CONNECTION.

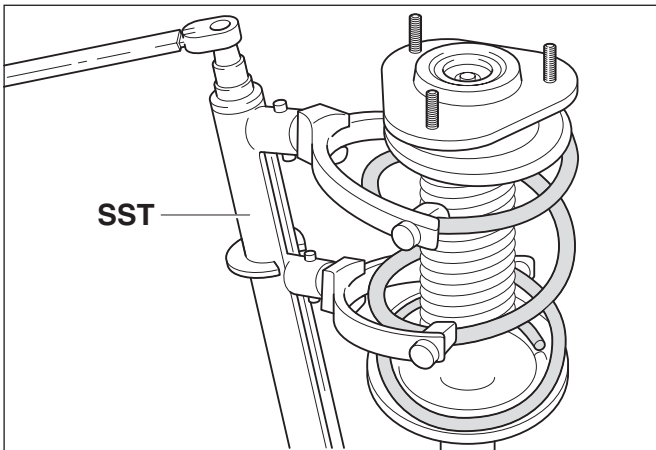
- (a) Mark the position and remove the 2 nuts and 2 bolts from the lower shock absorber connection.  
**R**: 2 bolts.  
**R**: 2 nuts

**NOTICE:** Protect drive shaft bellow with a cloth to prevent damage during removing of the front strut.



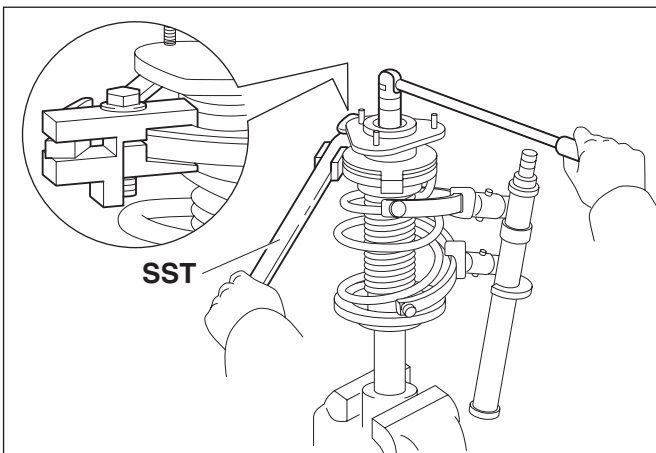
### 4. REMOVE UPPER STRUT CONNECTION.

- (a) Remove the 3 nuts and take the complete strut carefully out.  
**R**: 3 nuts.  
 (b) Remove the complete tower bar.  
**U**: Tower bar.  
 (c) RHD only: Remove throttle cable out of the tower bar clip.



### 5. POSITION STRUT IN SPRING COMPRESSOR.

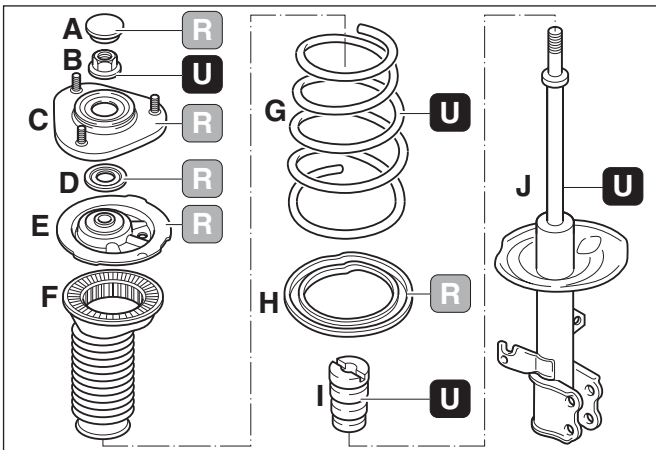
- (a) Position strut in the spring compressor  
SST 09727-30021
- (b) Hook the hooks on the tool over as many spring spirals as possible. Ensure the correct positioning of the spring in the catches. Compress the spring until it is released.
- (c) Mark the position of the components. This will make installation easier.



### 6. DISASSEMBLE FRONT STRUT.

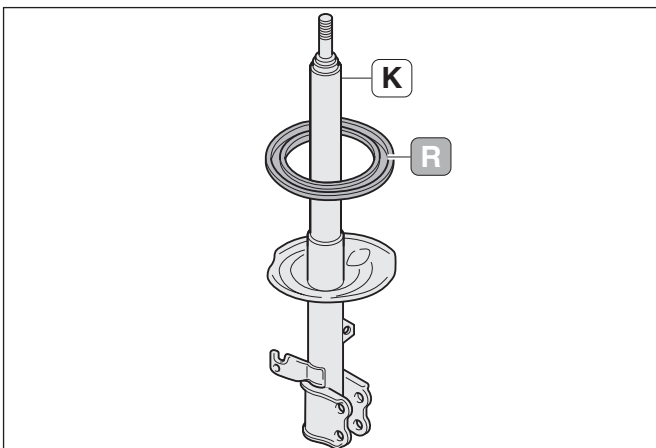
- (a) Remove cover.  
R: Cover.
- (b) Hold upper spring plate with SST tool and loosen shock absorber nut.  
SST 09729-22031

**CAUTION: Do not loosen nut before compressing the spring.**



### 7. REMOVE PARTS.

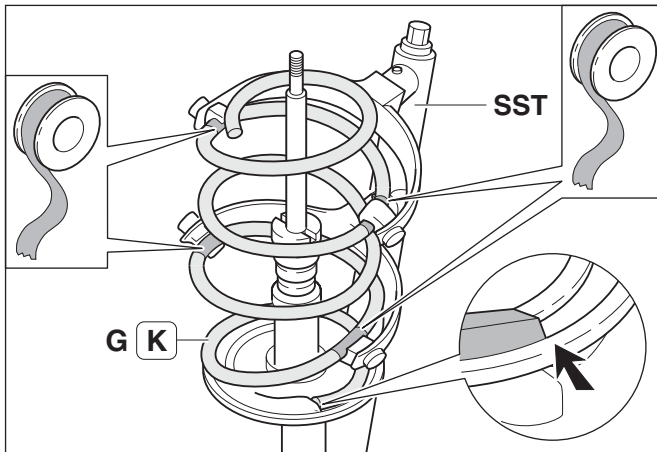
- (a) Remove nut (B), upper mounting (C), dust cover (D), spring plate (E), upper rubber (F), spring (G), lower rubber (H), bump stop (I) and shock absorber (J).  
R: Upper mounting (C).  
R: Dust cover (D).  
R: Spring plate (E).  
R: Upper rubber (F).  
R: Lower rubber (H).  
U: Nut (B).  
U: Spring (G).  
U: Bump stop (I).  
U: Shock absorber (J).



### 8. POSITION LOWER SHOCK ABSORBER RUBBER.

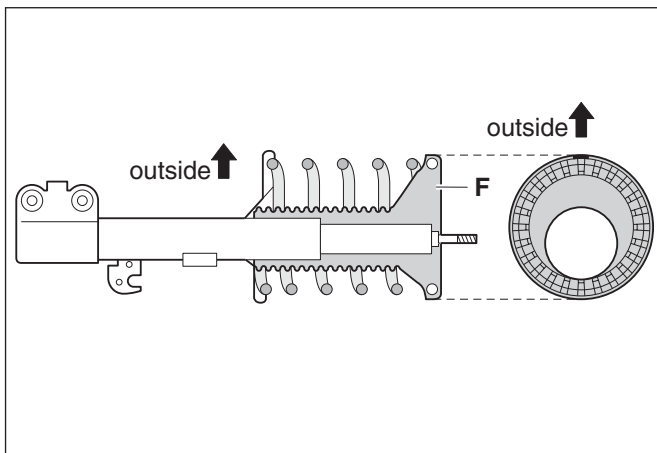
- (a) Position lower rubber.  
K: 17-a (shock absorber LH).  
K: 17-b (shock absorber RH).





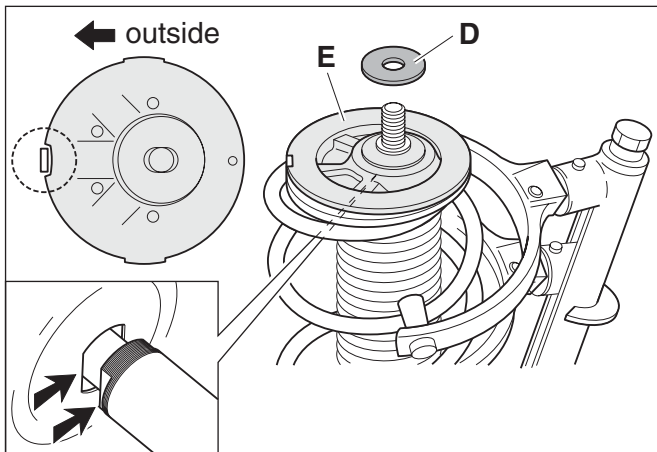
### 9. POSITION SHOCK ABSORBER AND SPRING.

- Position spring (G) in the spring compressor.  
 [K]: 17-c (spring).  
 SST 09727-30021
- Ensure the correct positioning of the spring in the catches. Compress the spring.
- Position the shock absorber.
- Check spring position in lower shock absorber.



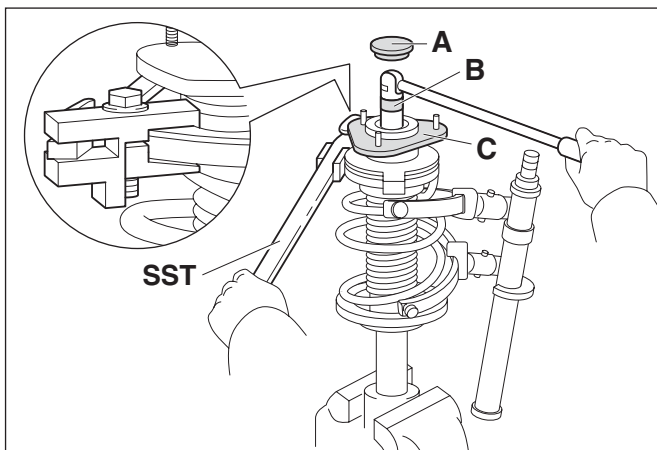
### 10. POSITION UPPER SPRING RUBBER.

- Position the upper rubber (F) as mentioned in the drawing.



### 11. POSITION SPRING PLATE.

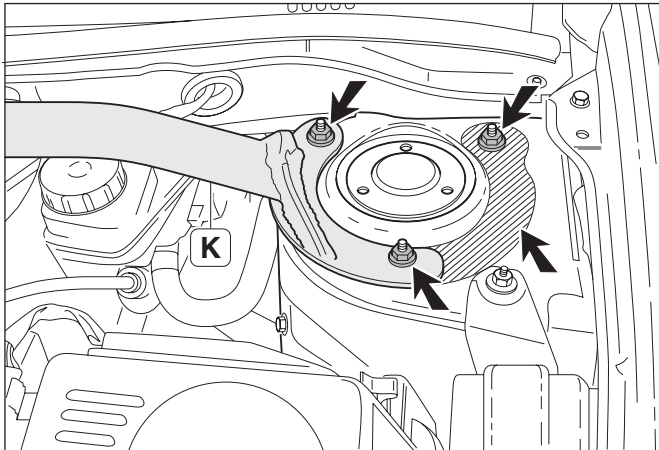
- Position spring plate (E). Check if marking is pointing to the outer side.
- Position dust cover (D).



### 12. POSITION UPPER MOUNTING AND TIGHTEN NUT.

- Position upper mounting (C) and install nut (B) hand tighten.
- Hold upper spring plate with SST tool and tighten shock absorber nut (B).  
 SST 09729-22031  
 [K]: Nut will be supplied with shock absorber.  
 Torque: 47 Nm (480 kgcm, 35 ft.lbf).
- Install cover (A).
- Release spring compressor carefully and check spring position in spring seats.

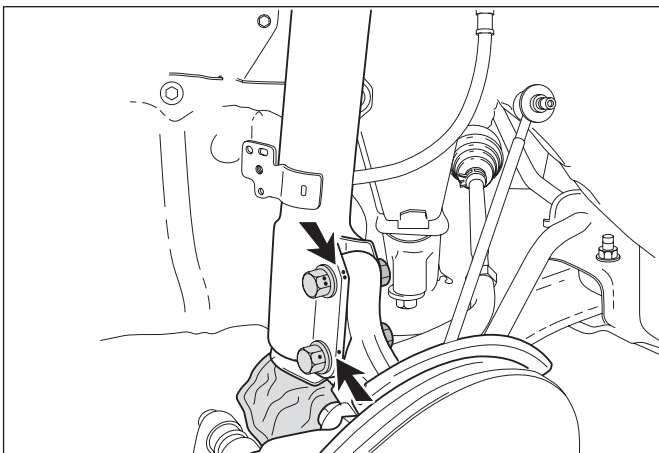




### 13. INSTALL TOWER BAR AND STRUT.

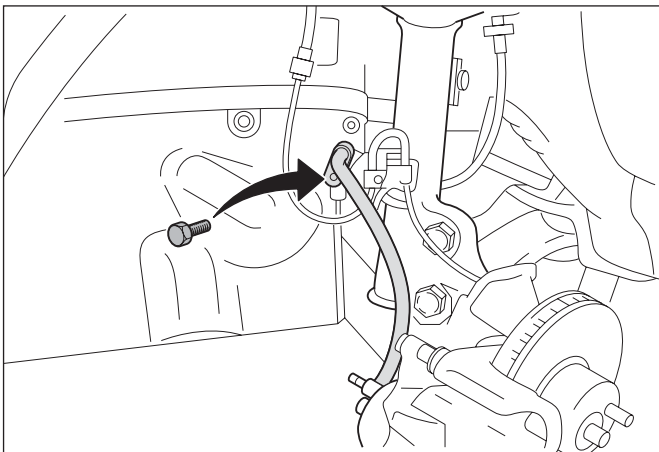
**NOTICE: Clean the contact surface of the tower bar (left and right)**

- (a) Position tower bar.
  - Ⓚ: 19-a (tower bar LHD).
  - Ⓚ: 19-b (tower bar RHD).
- (b) Position the complete strut and install the 3 nuts.  
Torque: 39 Nm (400 kgcm, 29 ft.lbf).



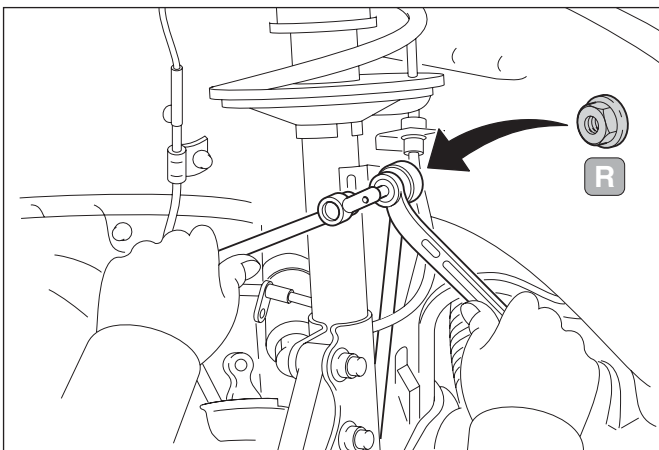
### 14. INSTALL LOWER STRUT CONNECTION.

- (a) Install the 2 bolts and 2 nuts from the lower shock absorber connection.  
Torque: 153 Nm (1550 kgcm, 113ft.lbf).



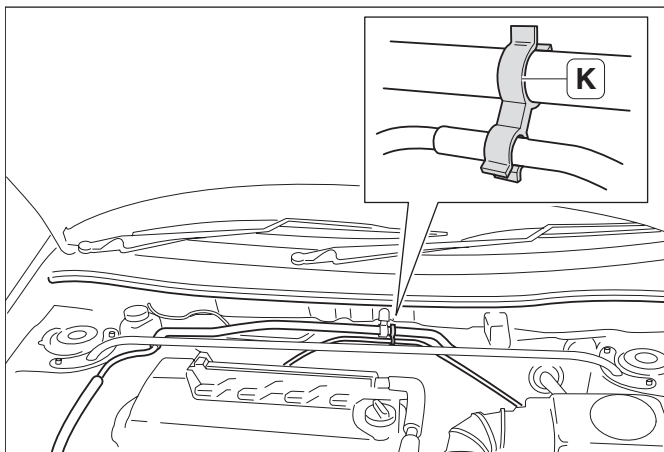
### 15. INSTALL ABS CABLE BRACKET AND BRAKE HOSE.

- (a) Position ABS cable bracket and brake hose.
- (b) Install the bolt.  
Torque: 29 Nm (300 kgcm, 21 ft.lbf).



### 16. INSTALL ANTI ROLL BAR LINK.

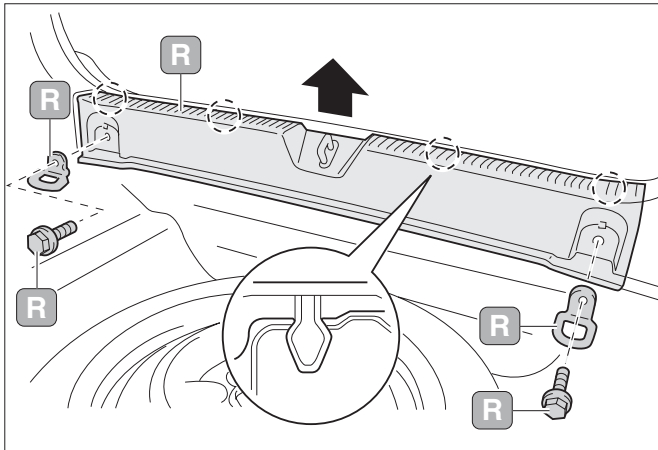
- (a) Use 5 mm inner hexagon socket key and tighten the nut.  
Torque: 44 Nm (450 kgcm, 33 ft.lbf).
- (b) Start the operation on the right side, using the above mentioned method (step 1-16).

**17. RHD ONLY: INSTALL THROTTLE CABLE CLIP.**

- (a) Press throttle cable clip on A/C high pressure hose.
- (b) Install throttle cable.

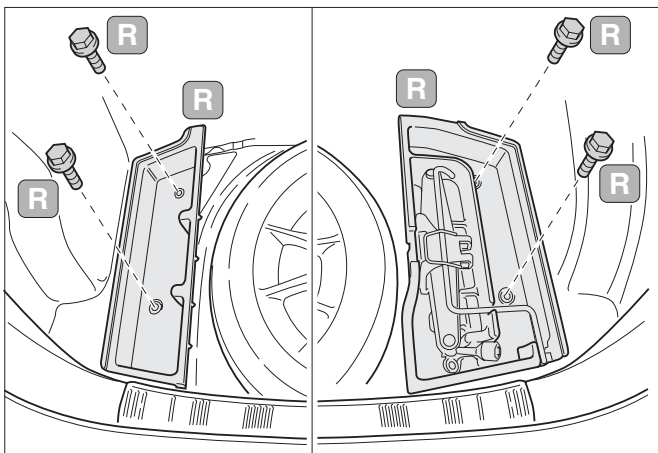
**K**: 19-c (clip throttle cable).

## 9. Shock absorber rear



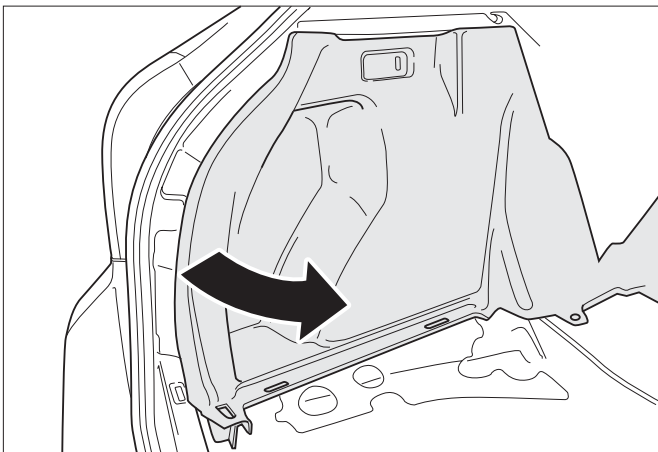
### 1. REMOVE REAR TRUNK PANEL.

- (a) Remove trunk mat.  
R: Trunk mat.
- (b) Remove the 2 bolts and luggage hooks.  
R: 2 bolts.  
R: Luggage hooks.
- (c) Remove panel upwards.  
R: Panel.



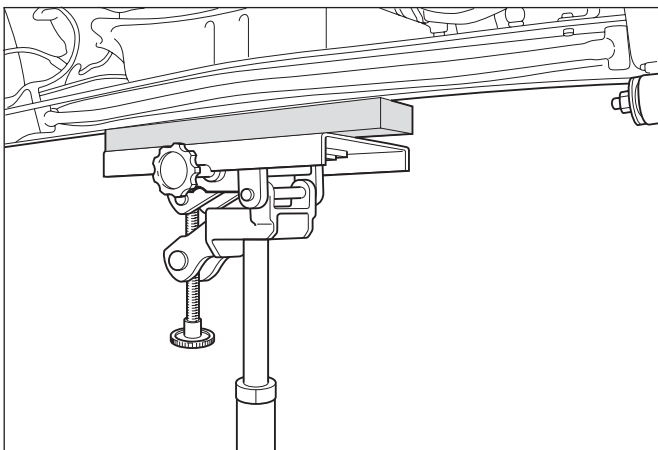
### 2. REMOVE STORAGE BOXES.

- (a) Remove 4 screws and remove storage boxes left and right.  
R: 4 screws.  
R: Storage box left.  
R: Storage box right.



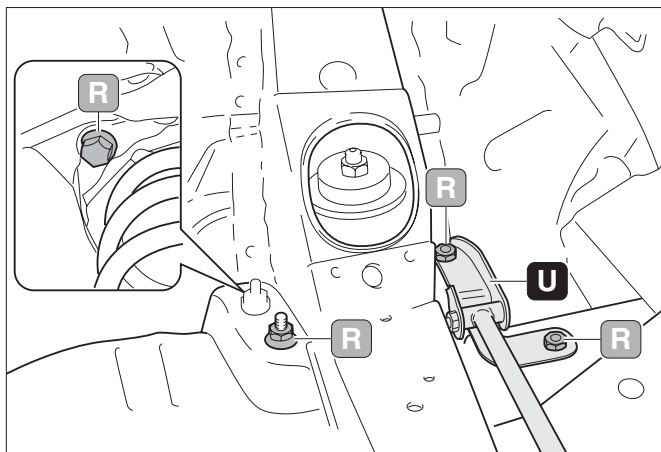
### 3. TRUNK PANEL LEFT AND RIGHT.

- (a) Turn trunk panel left and right inwards.



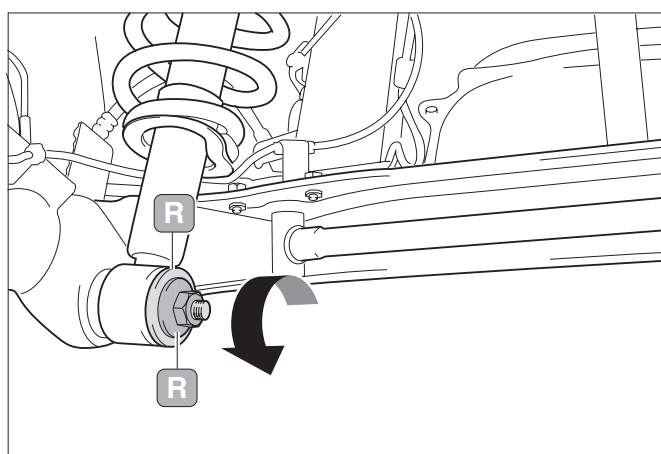
### 4. POSITION LIFTING JACK.

- (a) Position lifting jack underneath rear axle.



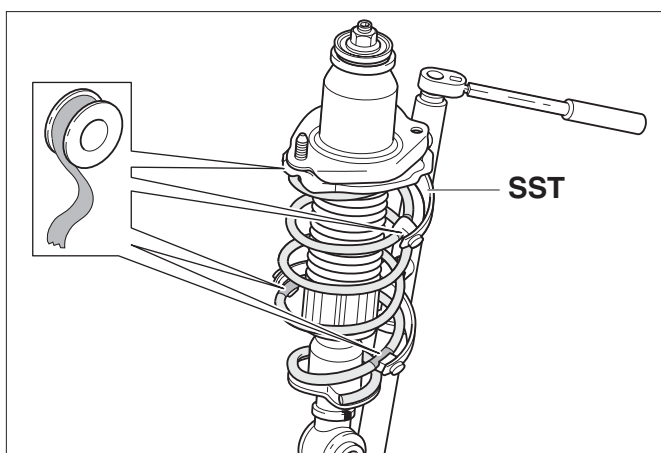
### 5. REMOVE UPPER SHOCK ABSORBER CONNECTION.

- (a) Remove the 2 nuts and remove complete tower bar.
  - U**: Tower bar.
  - R**: 2 nuts.
- (b) Remove nut upper side and bolt lower side.
  - R**: 1 nut.
  - R**: 1 bolt.



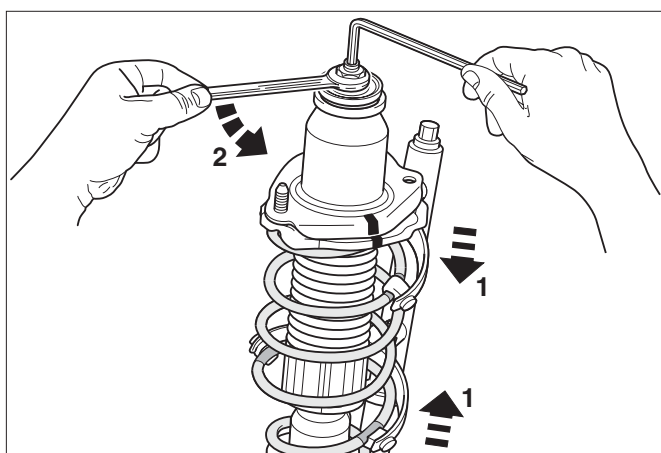
### 6. REMOVE LOWER SHOCK ABSORBER CONNECTION.

- (a) Remove the lower shock absorber nut and washer. Remove the complete shock absorber carefully.
  - R**: 1 nut.
  - R**: 1 washer.



### 7. POSITION SHOCK ABSORBER IN SPRING COMPRESSOR.

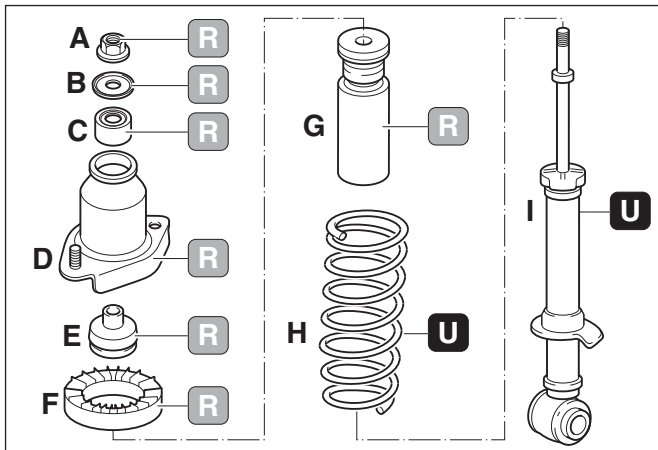
- (a) Position strut in spring compressor. SST 09727-30021
- (b) Hook the hooks on the tool over as many spring spirals as possible. Ensure the correct positioning of the spring in the catches. Compress the spring until it is released.
- (c) Mark the position of the components. This will make installation easier.



### 8. LOOSEN SHOCK ABSORBER NUT.










- (a) Hold the shock absorber rod with a 6 mm inner hexagon socket key.
- (b) Loosen the nut.

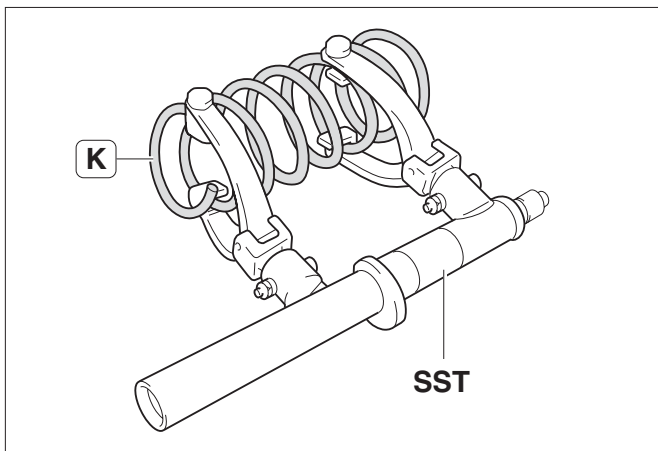
**CAUTION: Do not loosen nut before compressing the spring.**



### 9. REMOVE PARTS.


- (a) Remove nut (A), washer (B), damper ring (C), upper mounting (D), upper mounting bearing (E), upper spring rubber (F), dust cover (G), spring (H) and shock absorber (I).

- : Nut (A).
- : Washer (B)
- : Damper ring (C).
- : Upper mounting (D).
- : Upper mounting bearing (E).
- : Upper spring rubber (F).
- : Dust cover (G).
- : Spring (H).
- : Shock absorber (I).

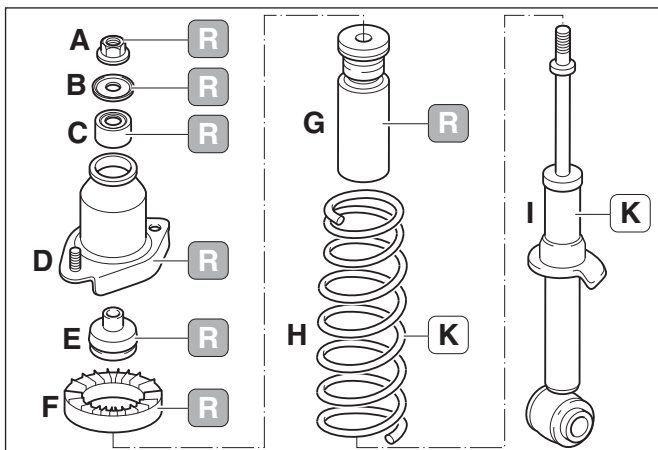


### 10. POSITION SPRING.

- (a) Position spring in the spring compressor.



- : 17-e (spring).
- SST 09727-30021

- (b) Ensure the correct positioning of the spring in the catches. Compress the spring.

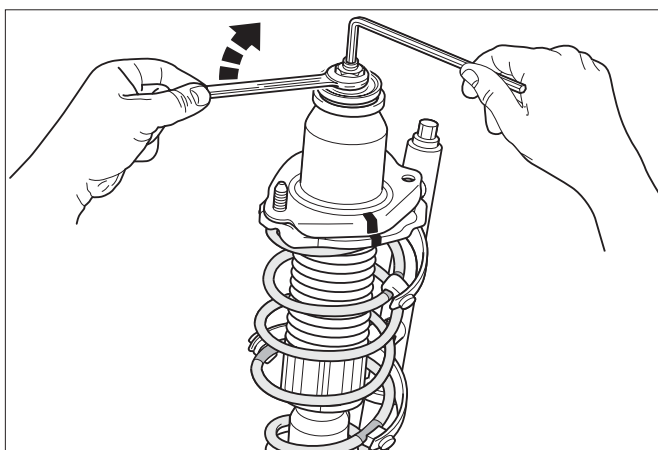


### 11. INSTALL PARTS.

- (a) Install shock absorber (I), spring (H), dust cover (G), upper spring rubber (F), upper mounting bearing (E), upper mounting (D), damper ring (C), washer (B) and nut (A) hand tighten.

- : 17-e (spring (H)).
- : 17-d (shock absorber (I)).

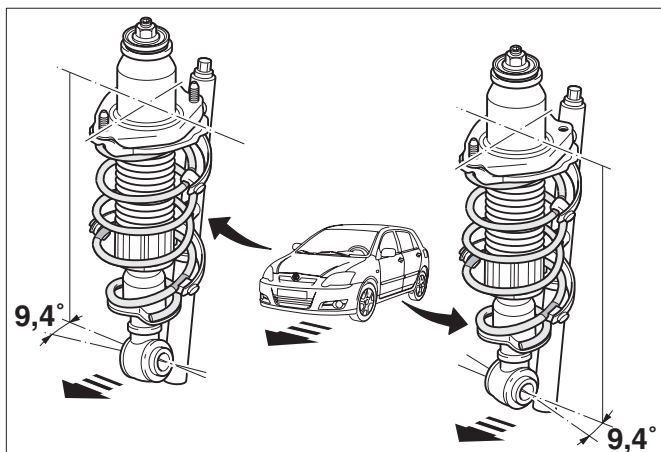
- (a) Release spring compressor carefully and check spring position in spring seats.



### 12. INSTALL REAR SHOCK ABSORBER NUT.

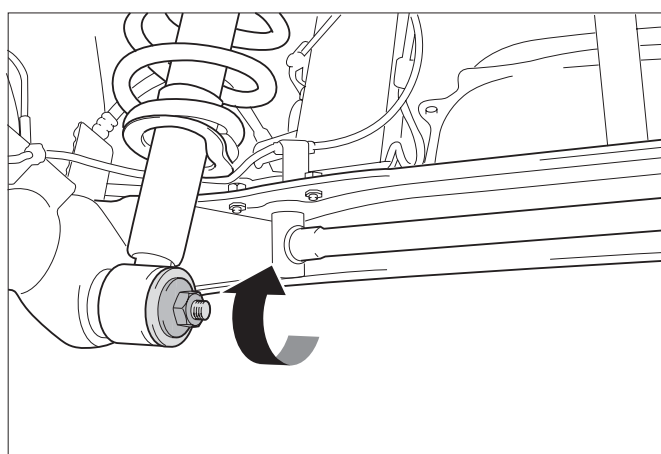
- (a) Hold the shock absorber rod with a torx 40 inner key and tighten shock absorber nut.

Torque: 56 Nm (570 kgcm, 41 ft.lbf).



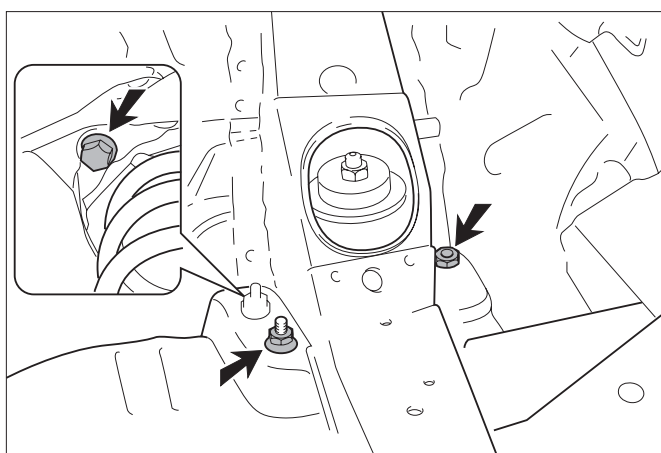
### 13. CHECK POSITION OF SHOCK ABSORBER.

- (a) Release spring compressor carefully and check shock absorber and spring position.



### 14. INSTALL LOWER SHOCK ABSORBER CONNECTION.

- (a) Position shock absorber and install the lower shock absorber washer and nut.  
Torque: 80 Nm (815 kgcm, 59 ft.lbf).



### 15. INSTALL UPPER SHOCK ABSORBER CONNECTION.

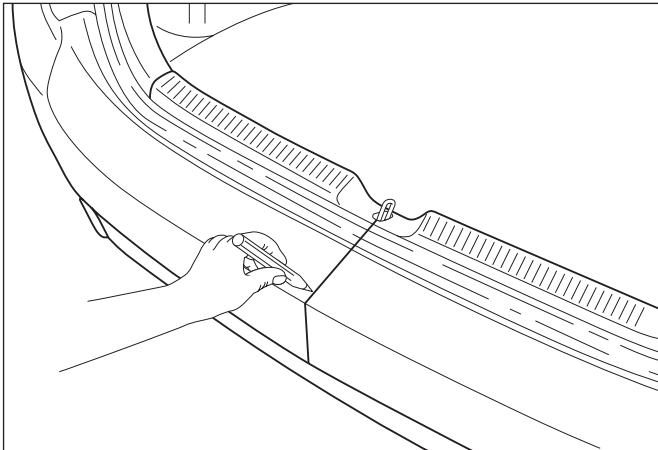
- (a) Install 2 nuts and 1 bolt.  
Torque: 80 Nm (815 kgcm, 59 ft.lbf).  
(b) Start the operation on the right side use above mentioned method (step 5-15).

### 16. INSTALL TRUNK PANELS.

- (a) If rear spoiler and rear bumper brace are installed, mount all trunk panels in position.

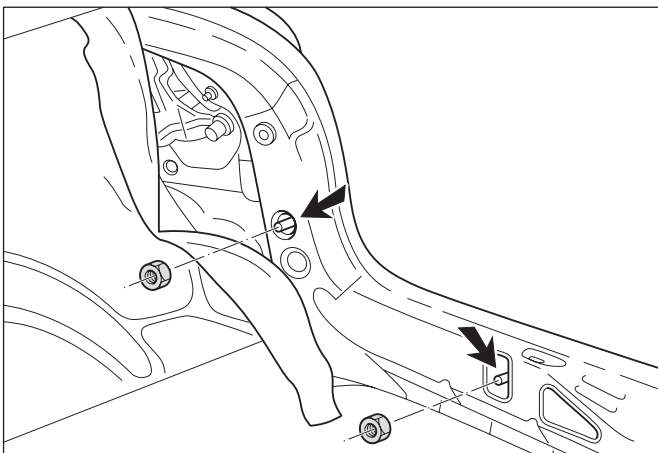


## 10. Rear skirt



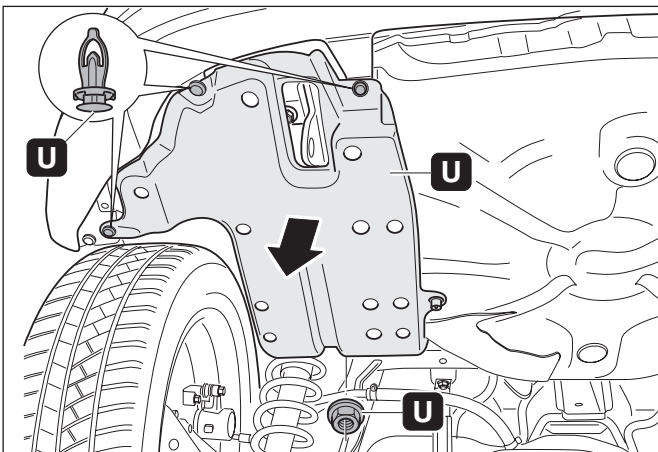
### 1. MARK MIDDLE LINE REAR BUMPER.

- (a) Mark the middle line of the rear bumper.



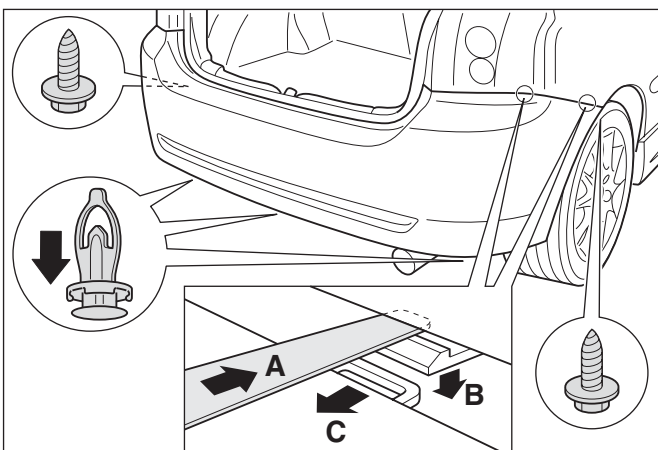
### 2. REMOVE REAR BUMPER NUTS.

- (a) Remove floor mat, storage boxes and trunk panels see step 1-3 in chapter 9.  
 (b) Remove the 4 nuts.  
**R**: 4 nuts.



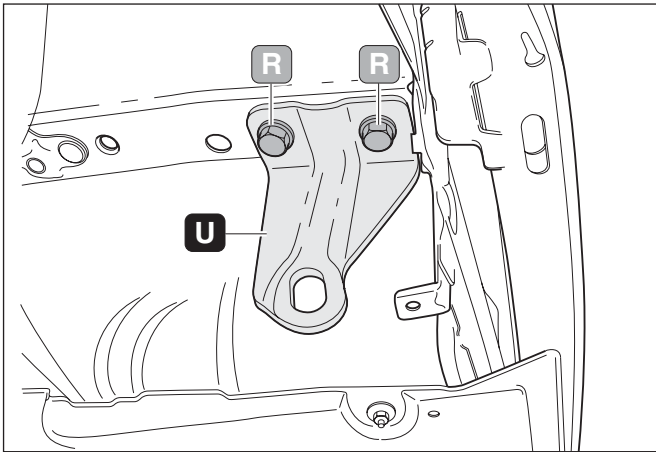
### 3. REMOVE LOWER PROTECTION COVER.

- (a) Remove the 3 clips.  
**U**: 3 clips.  
 (b) Remove the nut.  
**U**: Nut.  
 (c) Remove protection cover.  
**U**: Protection cover.



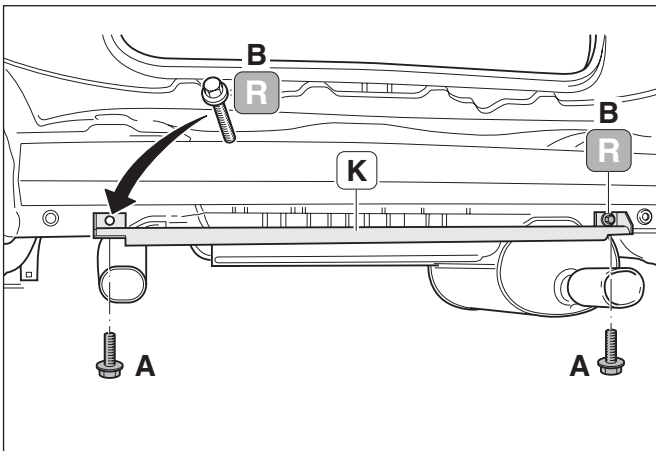
### 4. REMOVE REAR BUMPER.

- (a) Remove the clips on the under side.  
**R**: Clips.  
 (b) Remove the 2 screws  
**R**: 2 screws.  
 (c) Lift the bumper skin carefully with a plastic strip over the locking pin out of fixation.  
 (d) Remove rear bumper complete.  
**R**: Rear bumper.



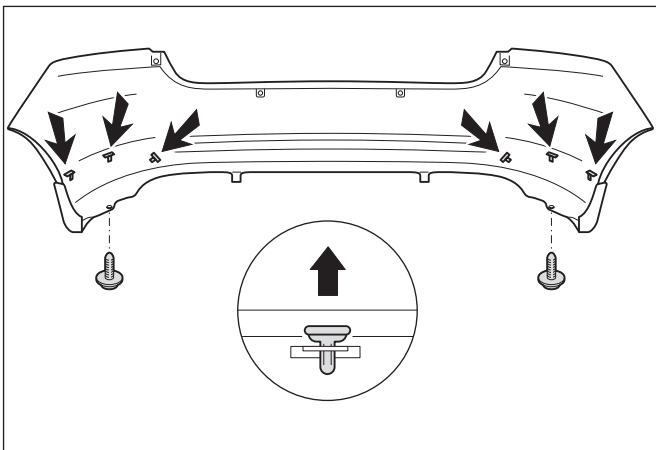
### 5. REMOVE REAR TOWING BRACKET.

- (a) Remove the 2 bolts and towing bracket.  
**R**: 2 bolts.  
**U**: Towing bracket.



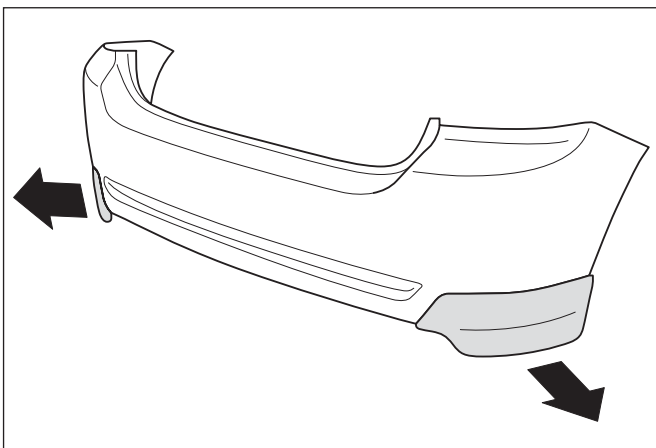
### 6. INSTALL REAR BUMPER BRACE.

- (a) Remove 2 bolts (B).  
**R**: 2 bolts.  
 (a) Position rear bumper brace and install the 2 bolts (A) and 2 bolts (B).  
**K**: 19-f (rear bumper brace).  
 Bolt A: Torque: 42 Nm (430 kgcm, 24 ft.lbf).  
 Bolt B: Torque: 20 Nm (200 kgcm, 15 ft.lbf).



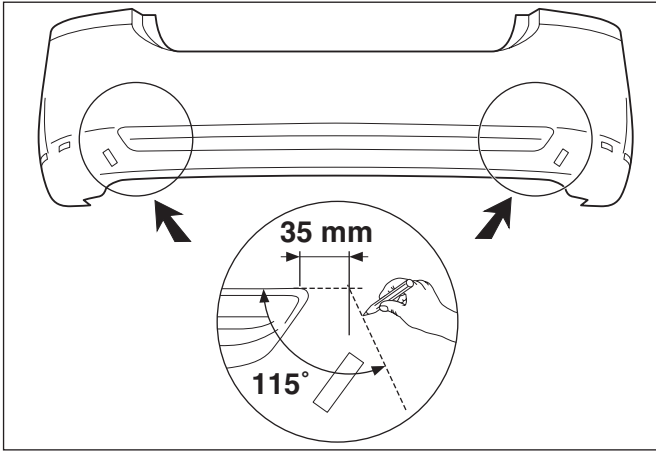
### 7. REMOVE REAR BUMPER SKIRTS.

- (a) Remove 6 clips and 2 screws.  
**U**: 6 clips.  
**U**: 2 screws.



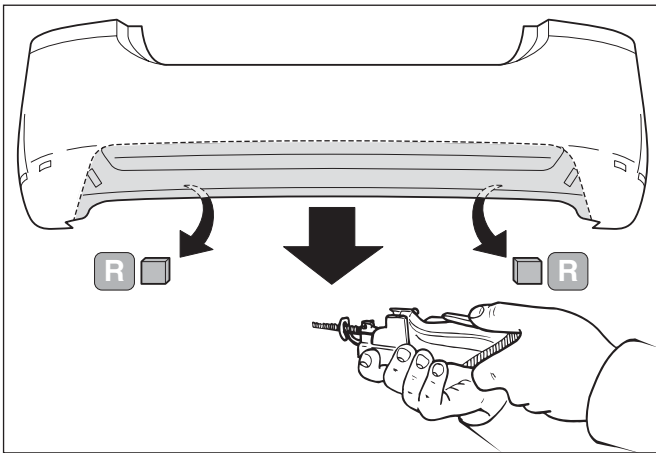
### 8. REMOVE REAR SKIRT LEFT AND RIGHT.

- (a) Remove the rear skirt left and right.  
**U**: Rear skirt left.  
**U**: Rear skirt right.



### 9. MARK POSITION WHERE TO CUT.

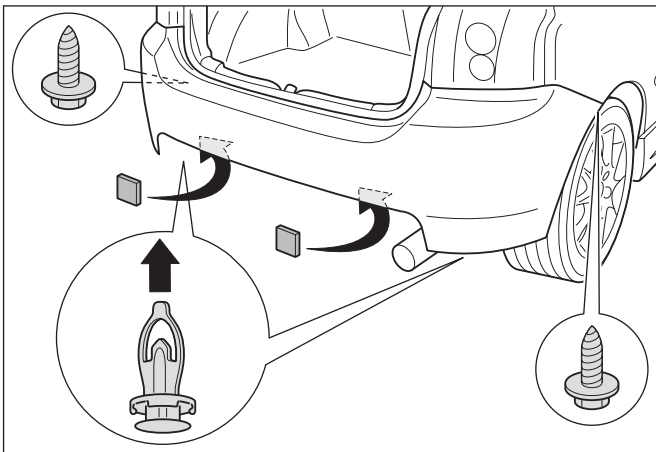
- (a) Mark the position left and right where to cut.



### 10. REMOVE MARKED PART.

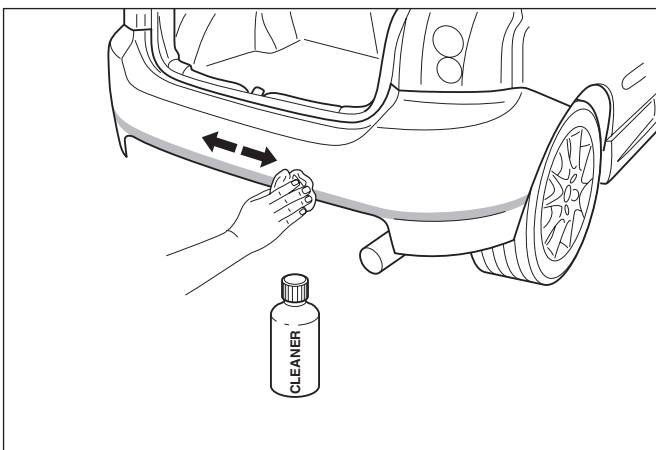
- (a) Remove the marked part, use an air driven saw.  
 (b) Remove sharp edges with sand paper.  
 (c) Remove foam blocks.

**R**: Foam blocks.



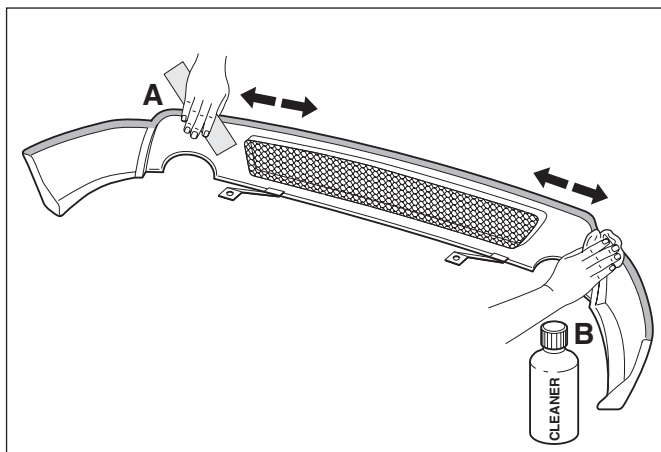
### 11. INSTALL REAR BUMPER.

- (a) Position the rear bumper and install the 4 nuts (inside trunk), 2 screws and lower clips.  
 (b) Position foam blocks.



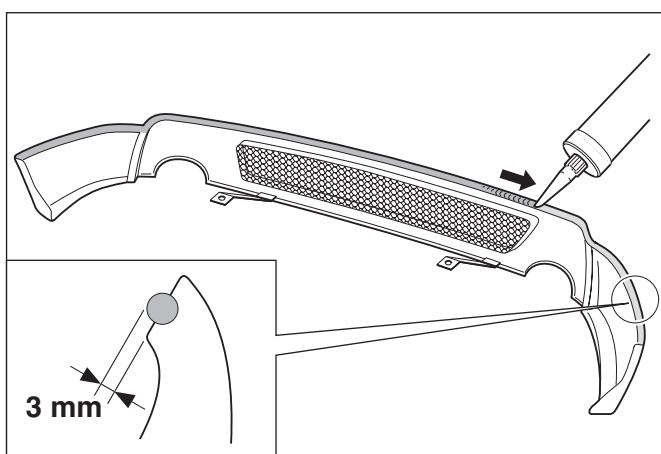
### 12. CLEAN REAR BUMPER.

- (a) Clean the rear bumper as mentioned in the drawing.



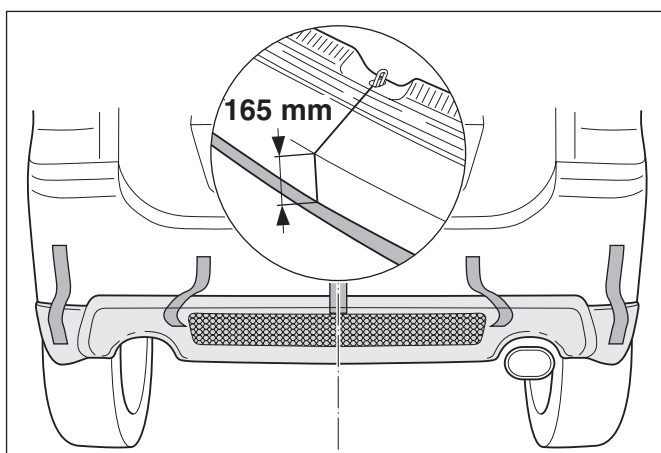
### 13. CLEAN REAR SKIRT.

- (a) Clean the rear skirt contact surface with sand paper.
- (b) Clean the rear skirt contact surface with special cleaner.



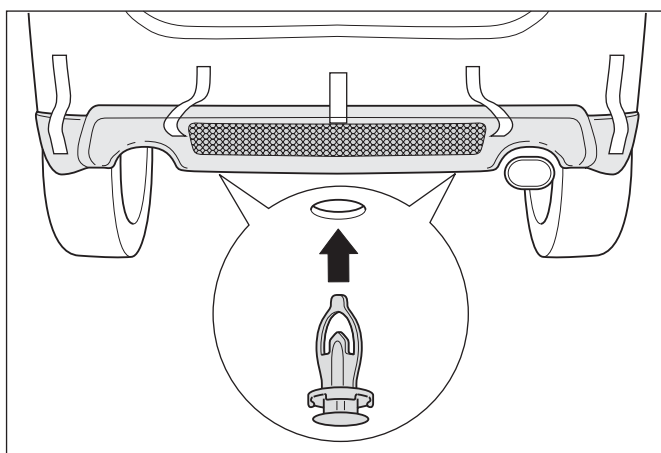
### 14. PREPARATION REAR SKIRT WITH KIT.

- (a) Install kit on the contact surface from the rear skirt.



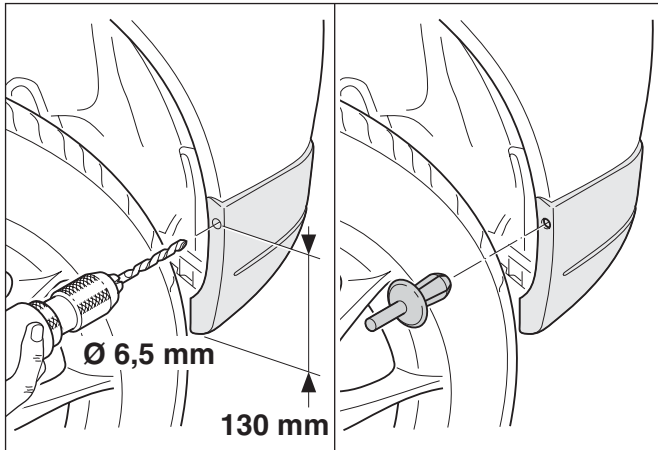
### 15. INSTALL REAR SKIRT.

- (a) Measure 165 mm and position rear skirt on the rear bumper.
- (b) Check if there are no gaps.
- (c) Fixate the rear skirt with tape.

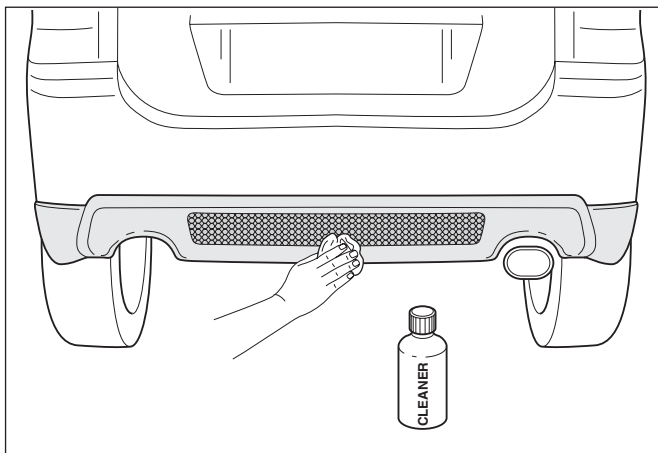


### 16. INSTALL LOWER CLIPS.

- (a) Install the lower rear bumper clips.

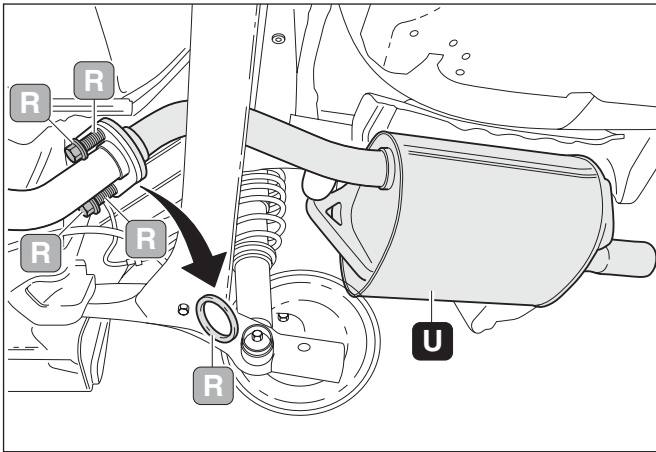
**17. INSTALL EXTRA CLIPS.**

- (a) Check position of drill mark.
- (b) Drill a hole of Ø 6.5 mm left and right.
- (c) Install clip left and right.

**18. CHECK REAR SKIRT OPERATION.**

- (a) Check position of rear skirt.
- (b) Clean rear skirt and bumper from kit.
- (c) Install the trunk panel, storage boxes and floor mat.

## 11. Exhaust system

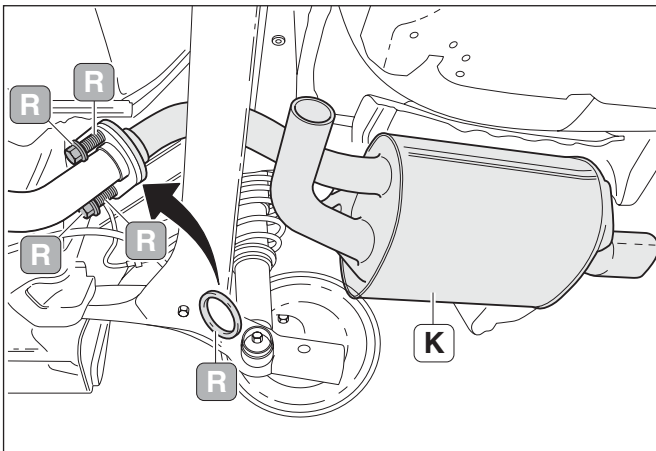


### 1. REMOVE REAR MUFFLER.

**Hint: Before installing of the exhaust system the rear skirt must be installed.**

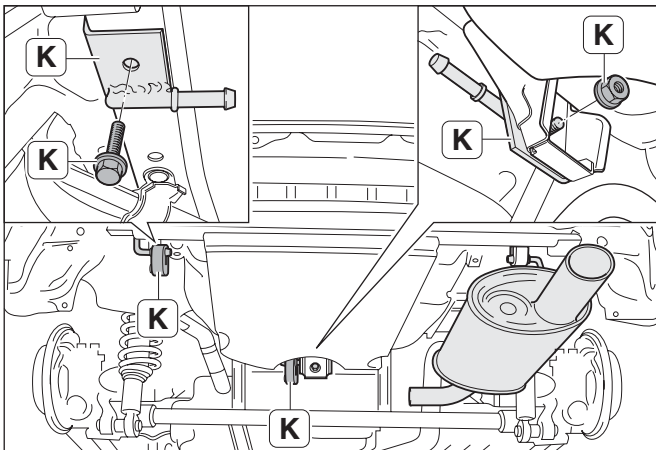
- (a) Remove the 2 bolts, 2 springs and gasket.
  - R**: 2 bolts.
  - R**: 2 springs.
  - R**: Gasket.
- (b) Pull main muffler out of the 2 rubber mountings.
  - U**: Rear muffler.

**Hint: Grease rubbers mountings before removing.**



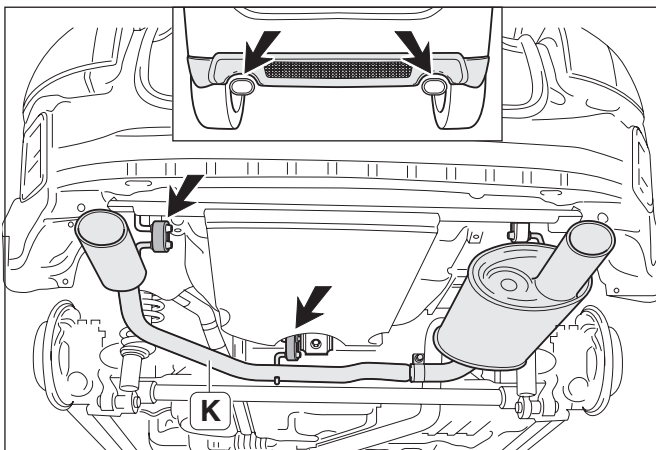
### 2. INSTALL REAR MUFFLER.

- (a) Position main muffler in the 2 rubber mountings.
  - K**: 18-a (main muffler).
- (b) Position gasket and install the 2 springs and 2 bolts.
  - Torque: 44 Nm (450 kgcm, 32 ft.lbf).



### 3. INSTALL EXTRA BRACKETS.

- (a) Chassis member left: Position bracket and install bolt. Press rubber mounting on the bracket.
  - K**: 18-d (bracket).
  - K**: 18-f (bolt).
  - K**: 18-c (rubber mounting).
  - Torque: 80 Nm (815 kgcm, 59 ft.lbf).
- (b) Spare wheel: Position bracket and install nut. Press rubber mounting on the bracket.
  - K**: 18-e (bracket).
  - K**: 18-g (nut).
  - K**: 18-c (rubber mounting).
  - Torque: 44 Nm (450 kgcm, 32 ft.lbf).

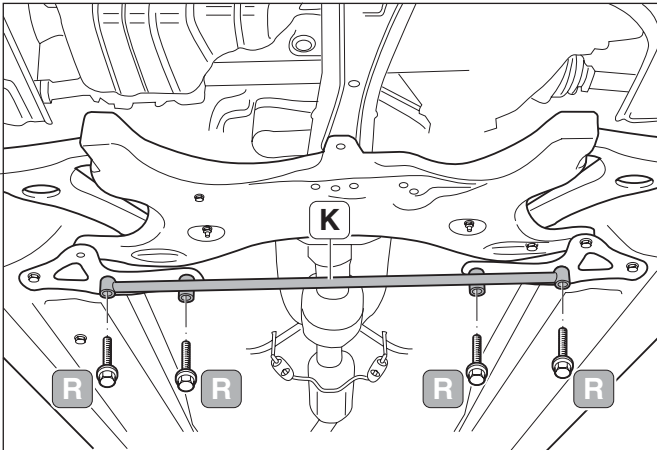


### 4. INSTALL EXHAUST PIPE.

- (a) Position the exhaust pipe in the 2 rubber mountings.
  - K**: 18-b (exhaust pipe).
- (b) Check the position in the rear skirt and tighten the clamp.
  - Torque: 25 Nm (250 kgcm, 18 ft.lbf).



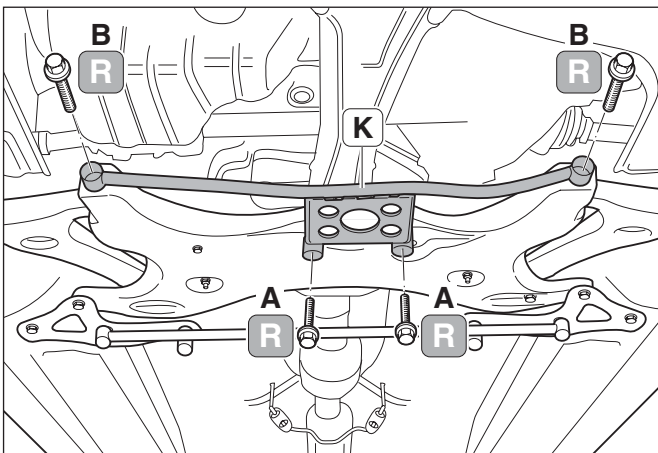
## 12. Reinforcement bars front



### 1. INSTALLATION OF LOWER REINFORCEMENT ENGINE MEMBER. (REAR)

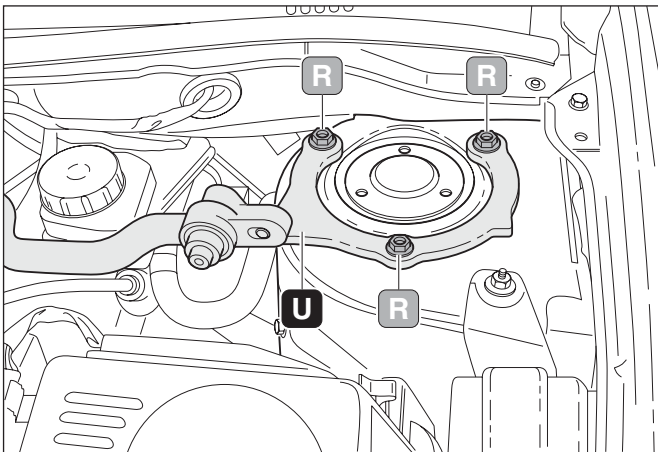
**Hint: If not installed in chapter 5. Operation in engine compartment (Under side installing parts): install the lower reinforcement engine member as mentioned in step 1 and 2.**

- Remove the 4 bolts of the sub frame brackets.  
**R**: 4 bolts.
- Position reinforcement engine member and install 4 bolts.  
**K**: 19-d (reinforcement engine member).  
 Torque: 80 Nm (815 kgcm, 59 ft.lbf).



### 2. INSTALLATION OF LOWER REINFORCEMENT ENGINE MEMBER. (FRONT)

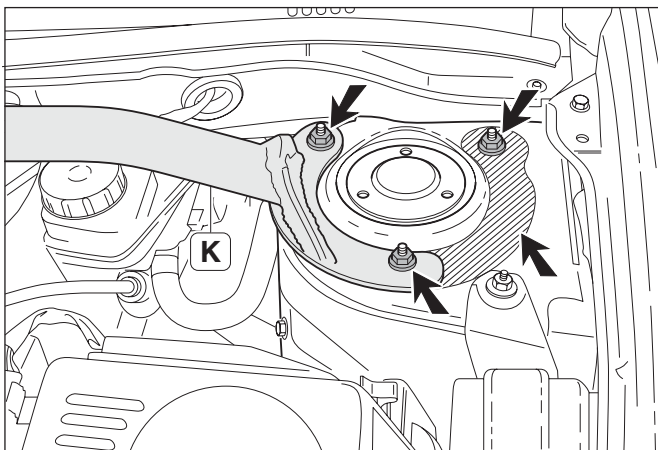
- Remove the 2 bolts (A) of the sub frame.  
**R**: 2 bolts.
- Remove the lower control arm bolt (B) left and right.  
**R**: 2 bolts.
- Position the reinforcement engine member with the 4 bolts.  
**K**: 19-e (reinforcement engine member).  
 Bolt A: Torque: 52 Nm (530 kgcm, 38 ft.lbf).  
 Bolt B: Torque: 137 Nm (1400 kgcm, 101 ft.lbf).



### 3. REMOVE TOWER BAR.

**Hint: If not installed: install the tower bar as mentioned in step 3 and 4.**

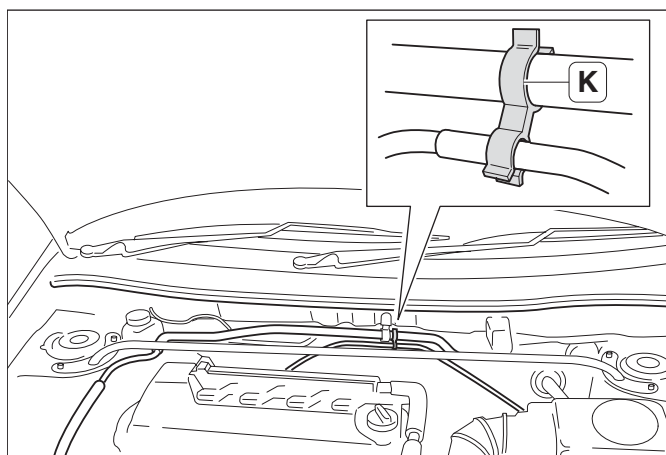
- Remove the 6 nuts and remove the tower bar.  
**U**: Tower bar.  
**R**: 6 nuts.
- RHD only: Remove throttle cable out of the tower bar clip.



### 4. INSTALL TOWER BAR.

**NOTICE: Clean the contact surface of the tower bar (left and right).**

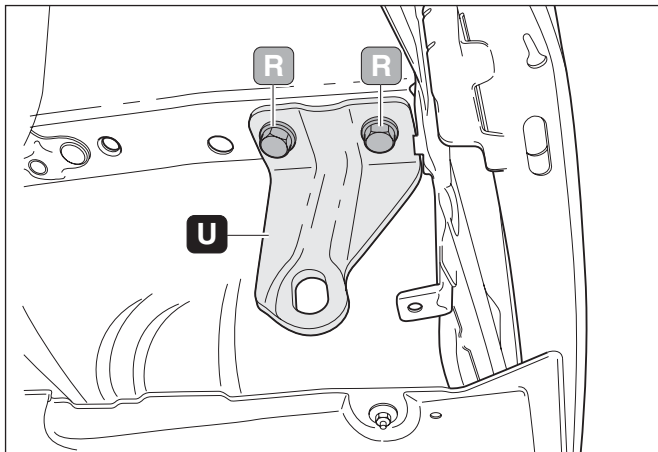
- Position strut and install the 6 nuts.  
**K**: 19-a (tower bar LHD).  
**K**: 19-b (tower bar RHD).  
 Torque: 39 Nm (398 kgcm, 29 ft.lbf).

**5. RHD ONLY: INSTALL THROTTLE CABLE CLIP.**

- (a) Press throttle cable clip on A/C high pressure hose.
- (b) Install throttle cable.

**K**: 19-c (clip throttle cable).

### 13. Rear bumper brace



#### 1. REMOVE REAR TOWING BRACKET.

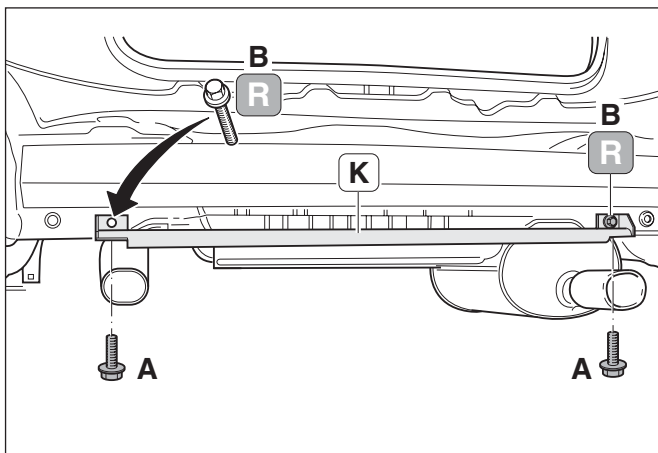
**Hint:** Installing of the rear bumper brace, the rear bumper must be removed.

**Hint:** Install rear bumper brace during the installation of the rear skirt mentioned in chapter 10. Rear skirt.

- (a) Remove the 2 bolts and towing bracket.

**R**: 2 bolts.

**U**: Towing bracket.



#### 2. INSTALL REAR BUMPER BRACE.

- (a) Remove 2 bolts (B).

**R**: 2 bolts.

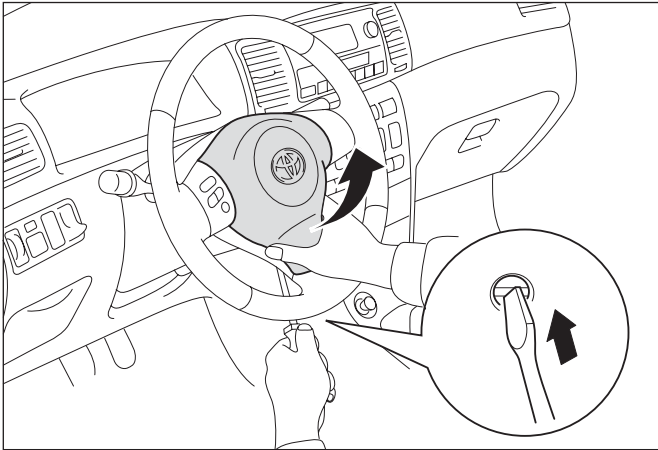
- (a) Position rear bumper brace and install the 2 bolts (A) and 2 bolts (B).

**K**: 19-f (rear bumper brace).

Bolt A: Torque: 42 Nm (430 kgcm, 24 ft.lbf).

Bolt B: Torque: 25 Nm (250 kgcm, 18 ft.lbf).

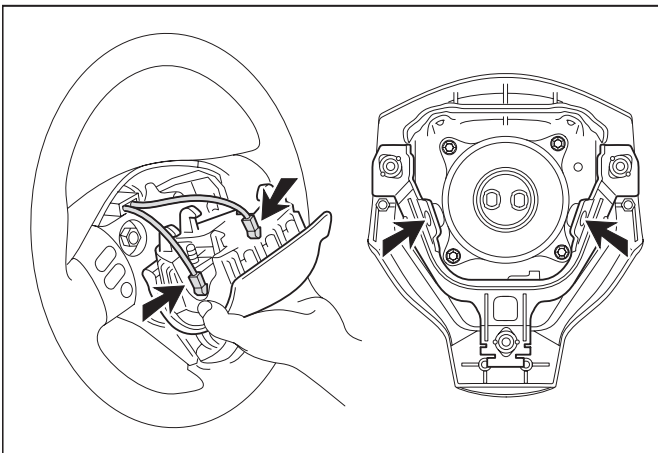
## 14. Interior parts installation



### 1. REMOVE DRIVER'S AIRBAG.

**CAUTION:** Ensure that the battery negative lead is disconnected.

- Position the steering wheel straight ahead.
- Insert a screw driver under the vertical spoke.
- Press on lower side on the driver's airbag. At the same time press-in the clip on the underside. Remove driver's airbag out of steering wheel.

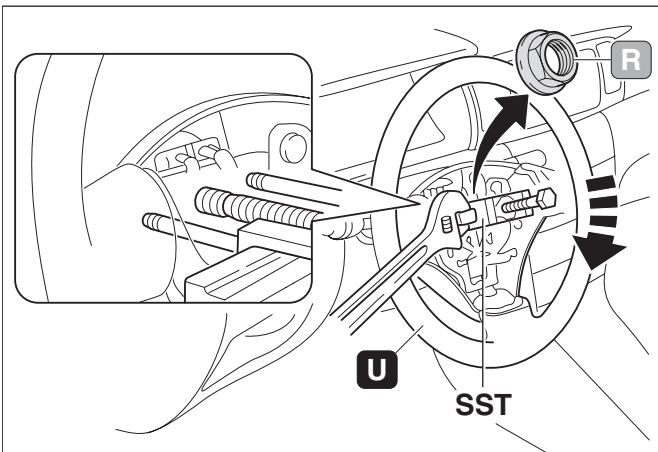


### 2. REMOVE DRIVER'S AIRBAG CONNECTORS.

**NOTICE:** Do not use tools to disconnect the connectors.

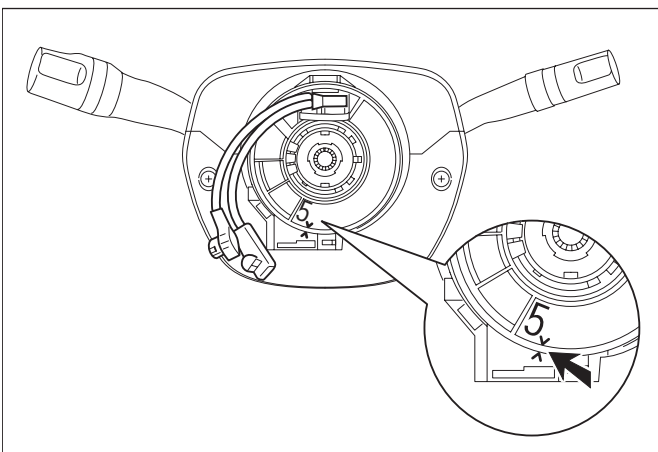
- Carefully press the locking pins and remove the connectors.
- Remove the driver's airbag.

**CAUTION:** The driver's airbag must be stored in a safe place with the connector side (reverse) facing down.



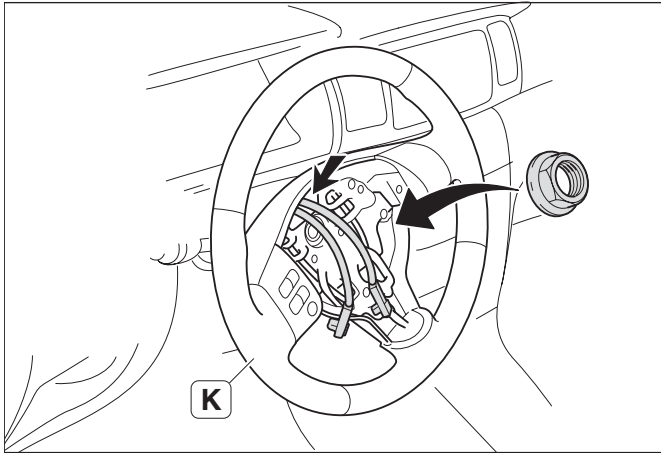
### 3. REMOVE STEERING WHEEL.

- Remove the center nut.  
R: Center nut.
- Remove steering wheel use SST tool.  
 SST 09950-50013  
U: Steering wheel.



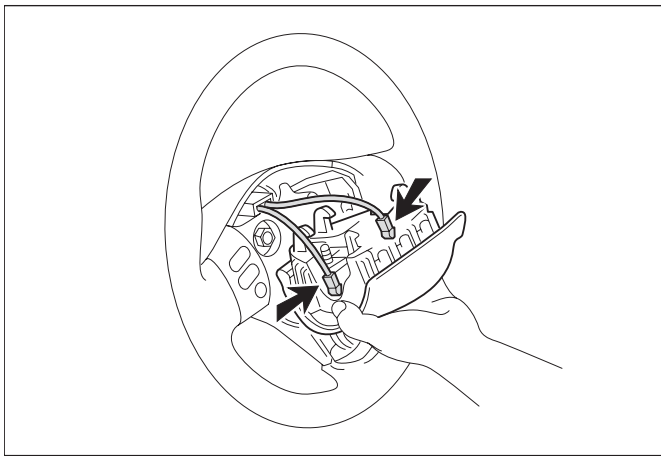
### 4. CHECK CORRECT POSITION AIRBAG CONNECTORS.

- Check position of arrows.



### 5. INSTALL STEERING WHEEL.

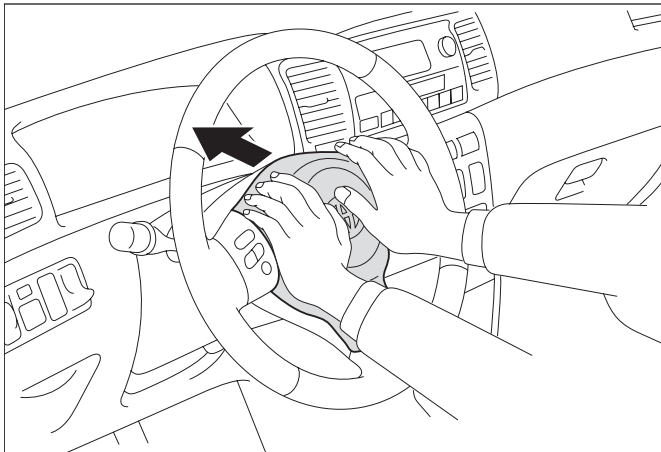
- (a) Route the wiring for the driver's airbag through the hole in the steering wheel.  
**K**: 23-a (steering wheel).
- (b) Position steering wheel.
- (c) Install the center nut.  
 Tighten: 50 Nm (510 kgcm, 41 ft.lbf).



### 6. INSTALL DRIVER'S AIRBAG CONNECTORS.

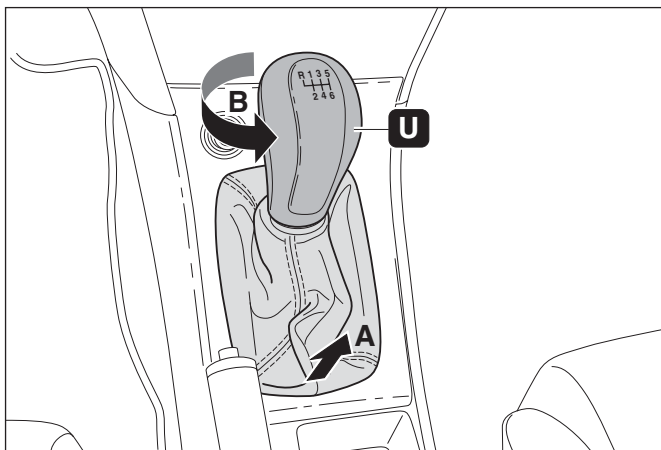
- (a) Install connectors, check locking.

**CAUTION:** Ensure that the wiring is not trapped or damaged during installation.



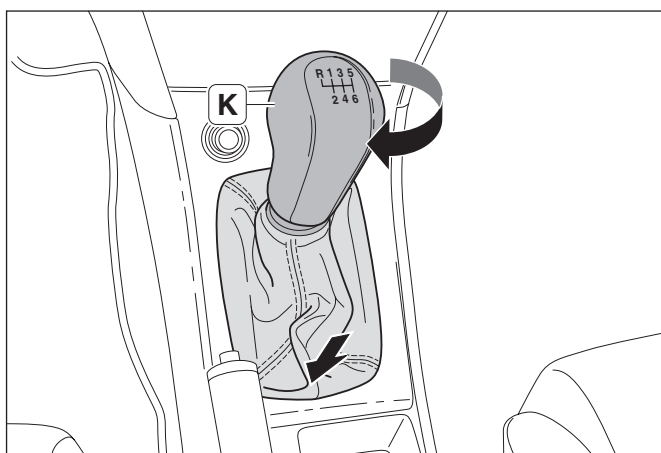
### 7. INSTALL DRIVER'S AIRBAG.

- (a) Position driver's airbag in steering wheel.
- (b) Press the driver's airbag in position.  
 Check if driver's airbag is locked.  
 Ensure that no wiring is trapped.
- (c) Check if steering wheel can be turned easily.



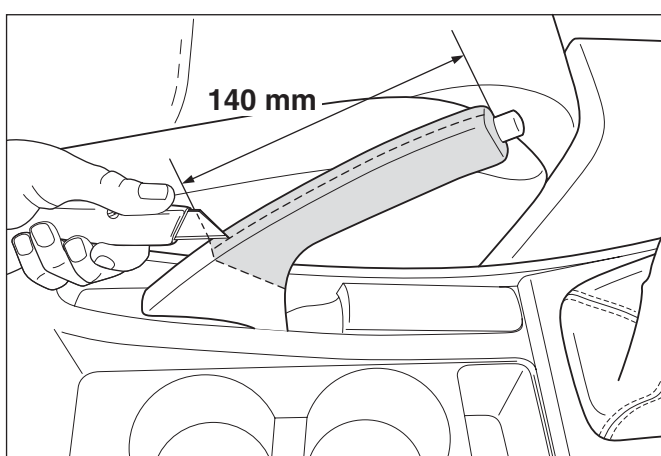
### 8. REMOVE GEAR LEVER KNOB.

- (a) Pull gear lever cover upwards.
- (b) Remove gear lever knob by turning it counter-clockwise.  
**U**: Gear lever knob.



### 9. INSTALL GEAR LEVER KNOB.

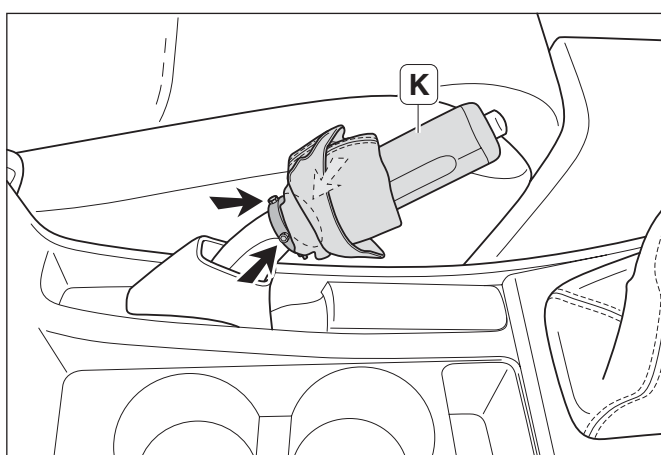
- (a) Turn gear lever knob clockwise and press gear lever knob cover in position.
  - Ⓚ: 23-b (gear lever knob).



### 10. HAND BRAKE LEVER, MARK CUTTING POSITION.

- (a) Mark the position.
- (b) Remove plastic part with a knife.

**NOTICE:** Protect hand brake lever knob for damage.

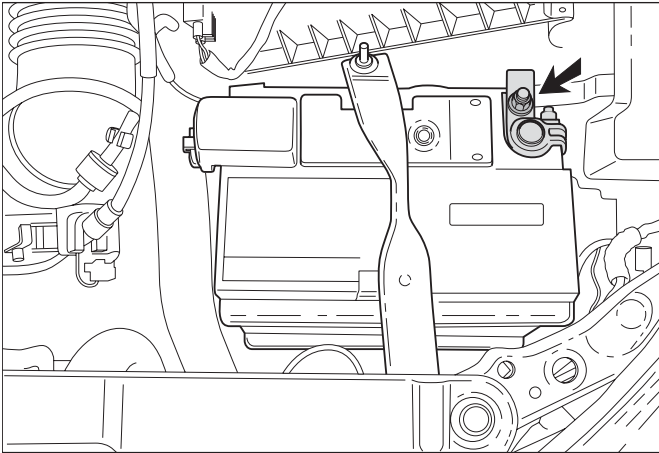


### 11. INSTALL HAND BRAKE LEVER.

- (a) Position hand brake lever and tighten the inner hexagon screws.
  - Ⓚ: 23-c (hand brake lever).
- (b) Position hand brake lever cover.
- (c) Check hand brake lever function.

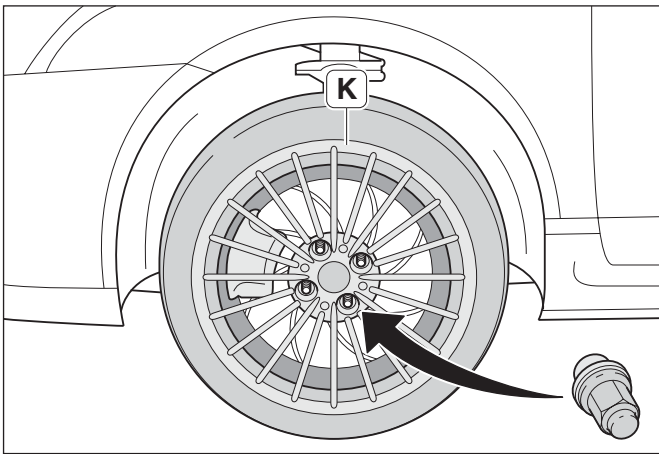


## 15. General Inspection



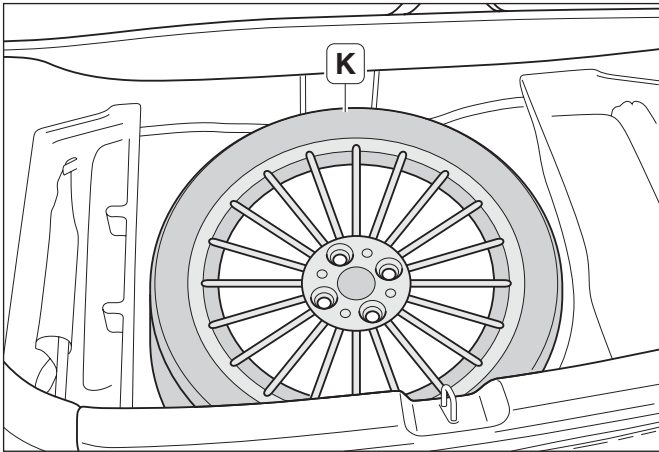
### 1. INSTALL BATTERY NEGATIVE LEAD.

- (a) Install the negative lead and tighten the nut.
- (b) Set the clock on the correct time.
- (c) Registration of existing transponder keys to the new engine ECU. See last page of this instruction.



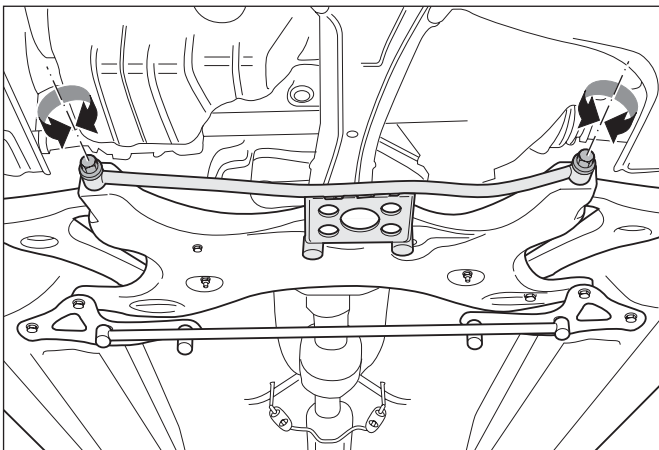
### 2. CHECKING.

- (a) Check radiator and coolant reservoir, fill up if needed.
- (b) Check exhaust system for leakage.
- (c) Check engine manifold / compressor for leakage.
- (d) Check A/C system, function.
- (e) Install the 4 wheels.
  - K**: 22-a (4 x wheel)
  - Torque: 103 Nm (1050 kgcm, 76 ft.lbf).
- (f) Check tire pressure.



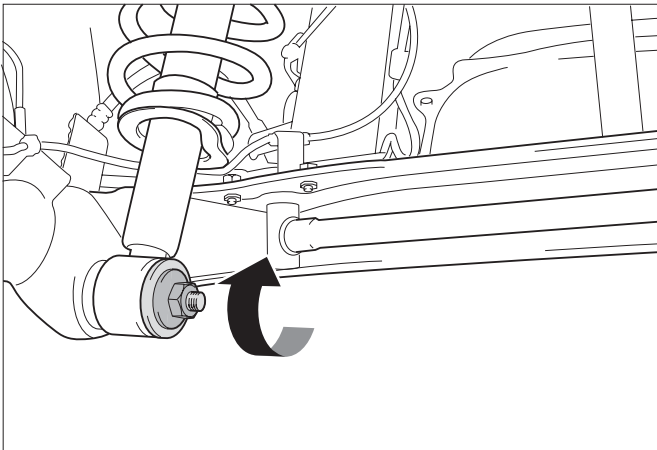
### 3. INSTALL SPARE WHEEL.

- (a) Remove spare wheel.
  - U**: Spare wheel.
- (b) Position new spare wheel.
  - K**: 22-a (wheels).

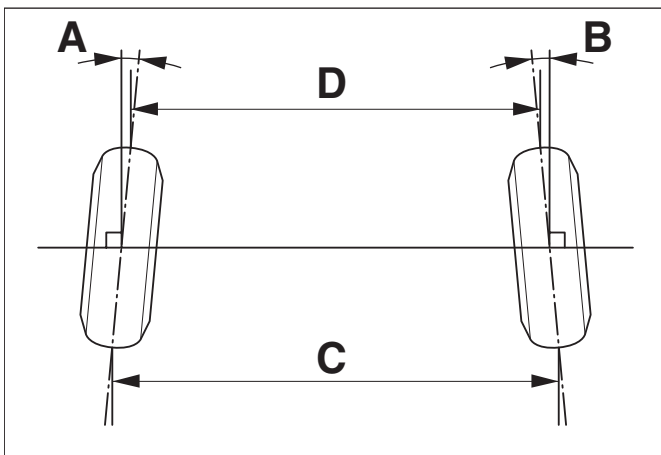


### 4. CHECKING/ADJUSTING WHEEL ALIGNMENT.

- (a) Position car on a flat surface and loosen and re-tighten the front lower control arm bolt (left and right) to avoid stress in the lower control arm rubber.
  - Torque: 137 Nm (1400 kgcm, 101 ft.lbf).



- (b) Position car on a flat surface and loosen and re-tighten the lower rear shock absorber bolts to avoid stresses in the lower shock absorber rubber.  
Torque: 80 Nm (815 kgcm, 59 ft.lbf).

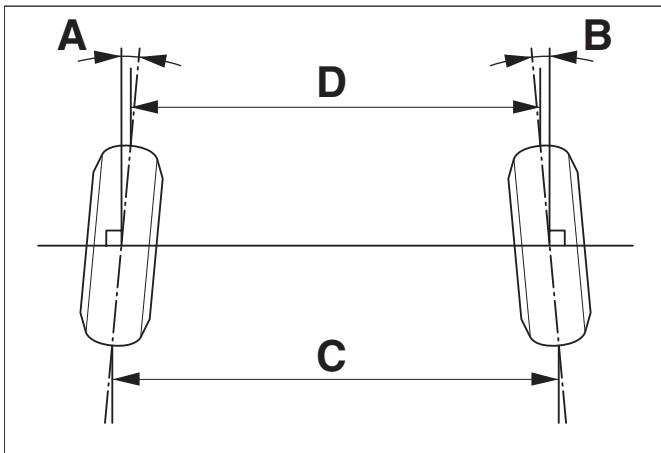


- (c) Front side wheel alignment.

**NOTICE: All measurements must be made using four wheel alignment equipment.**  
**NOTICE: Only toe-in front can be adjusted.**  
**Other settings must be checked.**

Toe-in (both wheels)	A+B: $6' \pm 12'$ ( $0,1^\circ \pm 0,2^\circ$ ) C-D: $1 \pm 2$ mm
Camber	$-0^\circ, 42' \pm 45'$ ( $-0,70^\circ \pm 0,75^\circ$ )

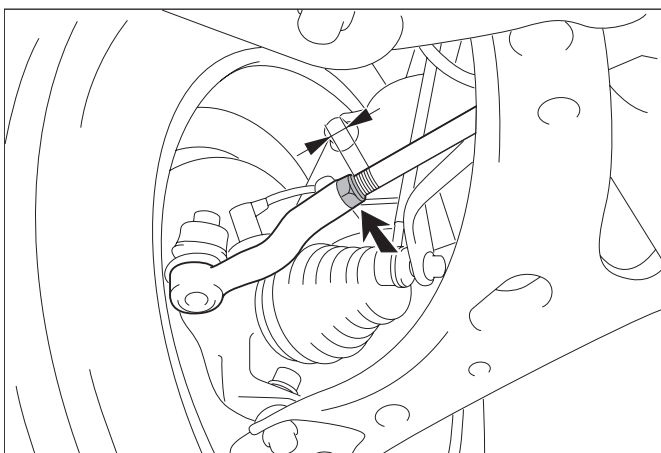
The maximum permitted difference between left and right is  $45'$  ( $0,75^\circ$ ).



- (d) Rear side wheel alignment.

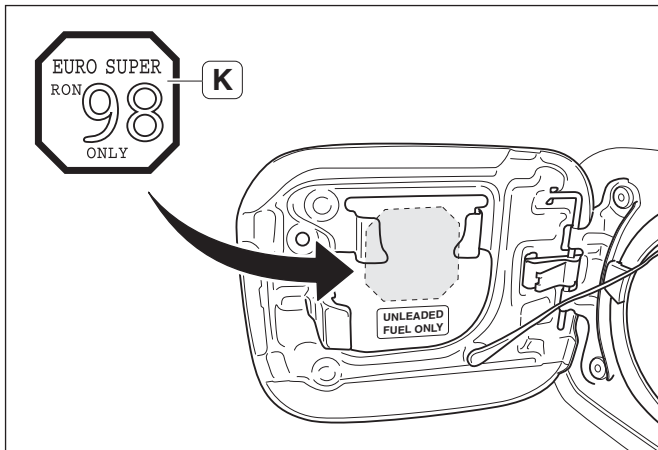
Toe-in (both wheels)	A+B: $0^\circ, 22' \pm 14'$ ( $0,37^\circ \pm 0,23^\circ$ ) C-D: $4 \pm 2,5$ mm
Camber	$-1^\circ, 30' \pm 30'$ ( $-1,50^\circ \pm 0,50^\circ$ )

The maximum permitted difference between left and right is  $30'$  ( $0,5^\circ$ ).



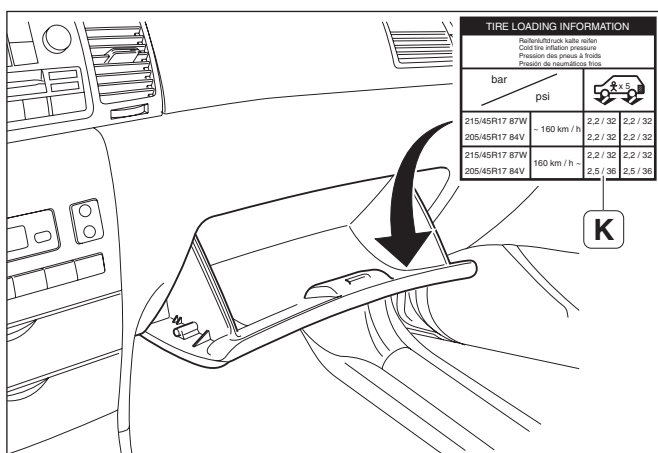
- (e) Front side toe-in adjustment.  
Use retainer and loosen steering axle nuts left and right. Adjust the toe-in by turning the steering axle until the correct value is obtained.  
Torque: 74 Nm (755 kgcm, 55 ft.lbf)  
Ensure after adjusting that the bellows are not turned.

**NOTICE: The maximum permitted difference in length between the two track rods is 1,5 mm. Measure between the lock nut and the edge of thread.**



### 5. POSITION FUEL OCTANE LABEL.

- (a) Remove existing RON 95 Label
  - (b) Clean contact surface.
  - (c) Position fuel octane label.
- K**: 22-b (label Euro Super RON 98).



### 6. POSITION TIRE PRESSURE LABEL.

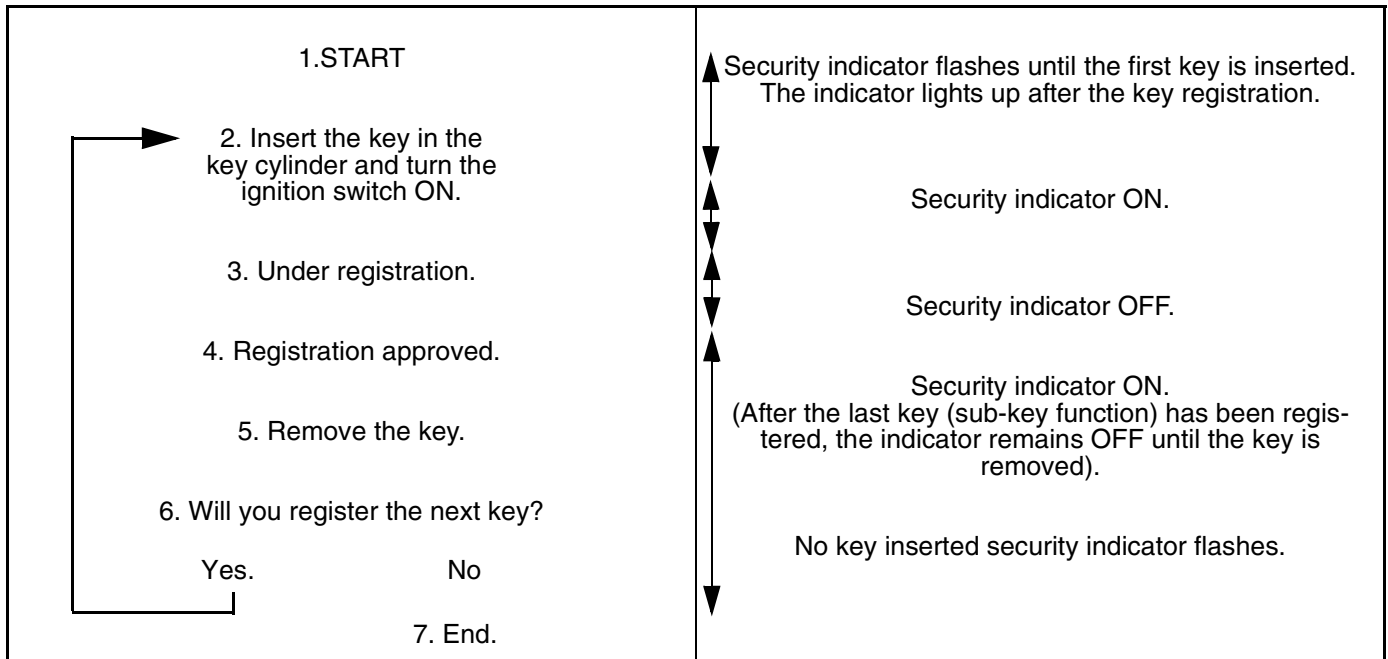
- (a) Clean contact surface.
  - (b) Position new tire pressure label over existing label.
- K**: 22-c (label tire pressure).

## KEY REGISTRATION IN NEW ENGINE ECU

### 1. REGISTRATION OF EXISTING TRANSPONDER KEYS TO THE NEW INSTALLED ENGINE ECU.

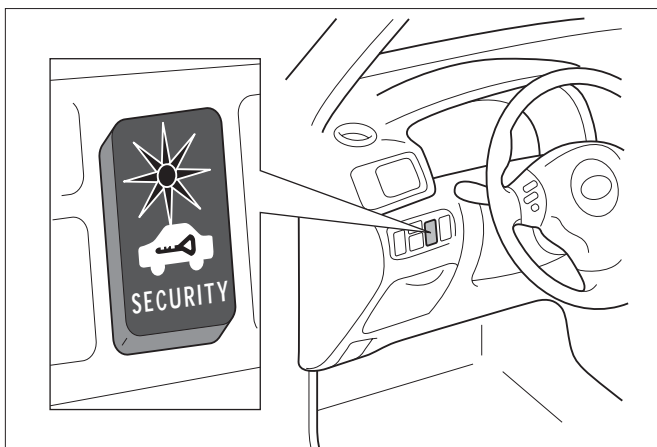
**Hint:**

- Ensure that battery negative and positive leads are connected.
- This method of key registration is only possible after installing of new engine ECU.
- After the first time the ignition is turned on, the new engine ECU will start the automatic key code registration mode.
- Maximum 2 master keys and 1 sub-key can be registered.
- In the automatic registration mode, the last registered key becomes the sub-key function.



**Hint:**

- If the registration of the existing key is not approved the security indicator light will be on.
- When the immobilizer system operates normally and the key will be removed, the security indicator light flashes.
- When the key code registration could not be performed in the automatic registration mode, code 2-1 will be given from the security indicator light.
- When during the key code registration the key already exist, code 2-2 will be given from the security indicator light.



### 2. REGISTRATION OF ADDITIONAL TRANSPONDER KEYS.

- (a) If existing transponder key needs to be replaced follow the next steps.
- (b) Insert the existing transponder key and turn the ignition on.
- (c) Depress and release the brake pedal more than 5 times within 15 seconds.
- (d) Remove existing transponder key and insert new transponder key, turn ignition on.
- (e) Remove new transponder key.
- (f) Start engine and check if security indicator light goes off.

