Suspension System

GENERAL

SPECIFICATION E297B8BF

FRONT SUSPENSION

Item			Specification
Suspension type			Double wishbone
Shock absorber	Type		Gas pressurized
	I.D. cooler	Non-ECS	Red
		ECS	Yellow
Coil spring	Free height		356.4mm (14.03in.)
	I.D. color		Green-Yellow

REAR SUSPENSION

Item			Specification
Suspension type			Multi-link
Shock absorber	Type		Gas pressurized
	I.D. cooler	Non-ECS	Red
		ECS	Yellow
Coil spring	Free height		341.9mm (13.46in.)
	I.D. color		Blue-Yellow

WHEEL AND TIRE

Item		Specification
Tire		235/55 R17
Wheel		6.5J × 17
Tire pressure	Front	2.1kg/cm² (30psi)
	Rear	2.1kg/cm² (30psi)

WHEEL ALIGNMENT

Item		Front	Rear
Toe (Tire O.D. 635mm(25in.))		0±2mm (0±0.079in.)	2±2mm (0.079±0.079in.)
Camber angle		-30′ ±30′	-1°±30′
Caster angle	To ground	4°32′ ±45′	-
	To body	4°56′	-
King pin angle		9°43′	-

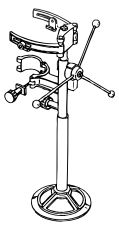
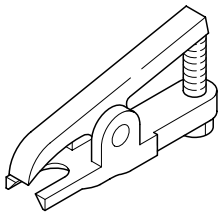
FRONT SUSPENSION

Item	Tightening toque		
	Nm	kgf.m	lb-ft
Hub nuts	90 ~ 110	9.0 ~ 11.0	65 ~ 80
Strut assembly to wheel housing panel bolts	45 ~ 60	4.5 ~ 6.0	33 ~ 43
Mounting fork to lower arm bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Strut assembly to mounting fork bolt	60 ~ 80	6.0 ~ 8.0	43 ~ 58
Strut assembly self-locking nut	2.0 ~ 2.5	2.0 ~ 2.5	14 ~ 18
Stabilizer link to strut assembly nut	10.0 ~12.0	10.0 ~12.0	72 ~ 87
Lower arm ball joint to knuckle bolts	10.0 ~12.0	10.0 ~12.0	72 ~ 87
Lower arm to sub-frame bolts	14.0 ~ 16.0	14.0 ~ 16.0	101 ~ 116
Lower arm ball joint castle nut	75 ~ 90	7.5 ~ 9.0	54 ~ 65
Upper arm to body bolts	55 ~ 65	5.5 ~ 6.5	40 ~ 47
Upper arm ball joint castle nut	35 ~ 45	3.5 ~ 4.5	25 ~ 33
Stabilizer link to stabilizer bar nut	100 ~ 120	10.0 ~ 12.0	72 ~ 87
Stabilizer bar bracket bolts	45 ~ 55	4.5 ~ 5.5	33 ~ 40
Sub-frame to body bolts & nuts	100 ~ 120	10.0 ~ 12.0	72 ~ 87
Sub-frame stay mounting bolts & nuts	45 ~ 55	4.5 ~ 5.5	33 ~ 40
Front & rear roll stopper to sub-frame bolts	50 ~ 65	5.0 ~ 6.5	40 ~ 47
Front & rear roll stopper through bolt & nut	50 ~ 65	5.0 ~ 6.5	40 ~ 47
Tie-rod end ball joint castle nut	24 ~ 34	2.4 ~ 3.4	19 ~ 31
Power steering pressure tube eye bolt	55 ~ 65	5.5 ~ 6.5	40 ~ 47
Universal joint to pinion of steering gear bolt	30 ~ 35	3.0 ~ 3.5	22 ~ 25

REAR SUSPENSION

Item	Tightening toque		
	Nm	kgf.m	lb-ft
Hub nuts	90 ~ 100	9.0 ~ 10.0	65 ~ 80
Shock absorber to housing panel bolts	50 ~ 65	5.0 ~ 6.5	40 ~ 47
Shock absorber to carrier bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Upper arm to carrier bolt & nut	80 ~ 90	8.0 ~ 9.0	58 ~ 65
Upper arm to cross member bolt & nut	100 ~ 120	10.0 ~ 12.0	72 ~ 87
Lower arm cam bolt & nut	100 ~ 120	10.0 ~ 12.0	72 ~ 87
Lower arm to carrier bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Assist arm cam bolt & nut	100 ~ 120	10.0 ~ 12.0	72 ~ 87
Assist arm to carrier bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Trailing arm to body bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Trailing arm to carrier bolt & nut	140 ~ 160	14.0 ~ 16.0	101 ~ 116
Stabilizer link to carrier nut	35 ~ 45	3.5 ~ 4.5	25 ~ 33
Stabilizer link to stabilizer bar nut	35 ~ 45	3.5 ~ 4.5	25 ~ 33
Stabilizer bar bracket bolts	45 ~ 55	4.5 ~ 5.5	33 ~ 40
Cross member to body bolts	140 ~ 160	14.0 ~ 16.0	101 ~ 116

SPECIAL SERVICE TOOLS E67D8AB8

Tool (Number and Name)	Illustration	Use
09546-26000 Strut spring compressor	 E4626000	Compression coil spring
09568-34000 Ball joint puller	 E6834000	Removal of ball joint

TROUBLESHOOTING EE28B557

VEHICLE INSPECTION

To assist the service advisor and the technician, check the suspension and wheel/tire condition with the questions listed below by filling them. It serves as a place to record information as well as data from the testing to be carried out. To begin a successful diagnosis, fill out the questions.

WHEEL/TIRE CHECK :

Tire Pressure Check **Yes/No**

Balance Check **Yes / No**

Maximum Runout Allowed :

Wheel : Radial _____ Lateral _____

Tire : Radial _____ Lateral _____

Measured Runout :

Tire/Wheel	Radial :	LF _____	LR _____	RF _____	RR _____
	Lateral :	LF _____	LR _____	RF _____	RR _____
Wheel Only	Radial :	LF _____	LR _____	RF _____	RR _____
	Lateral :	LF _____	LR _____	RF _____	RR _____

SUSPENSION INSPECTION :

Concerns Shimmy ☐ Clunk ☐ Squeak ☐ Harshness ☐

Suspension Bushing : Loose ☐ Worn ☐ Missing ☐ OK ☐

Front stabilizer ☐ Rear stabilizer (sway bar) ☐ Rear trailing arm ☐

Front lower arm ☐ Rear suspension front arm ☐ Rear suspension rear arm ☐

Other _____

Suspension/Components :	Loose	Worn	Missing	OK
Ball Joint ☐	Shock absorbers F/R ☐	Springs F/R ☐	The rod ends/sleeve ☐

SHDSS6502N

SYMPTOM CHART

Symptom	Suspect Area	Remedy
Squeak or grunt-noise from the front suspension, occurs more in cold ambient temperatures - more noticeable over rough roads or when turning	Front stabilizer bar	Under these conditions, the noise is acceptable.
Clunk - noise from the front suspension, occurs in and out of turns	Loose front struts or shocks	Inspect for loose nuts or bolts. Tighten to specifications.
Clunk - noise from the rear suspension, occurs when shifting from reverse to drive	Loose rear suspension components	Inspect for loose or damaged rear suspension components. Repair or install new components as necessary.
Click or pop - noise from the front suspension - more noticeable over rough roads or over bumps	Worn or damaged ball joints	Install new lower arm as necessary.
Click or pop - noise occurs when vehicle is turning	Worn or damaged ball joints	Install new lower arm as necessary.
Click or snap - occurs when accelerating around a corner	Damaged or worn Birfield joint	Repair or install a new Birfield joint as necessary. Refer to DS group - driveshaft.
Front suspension noise - A squeak, creak, or rattle noise - occurs mostly over bumps or rough roads	Steering components Loose or bent front struts or shock absorbers Damaged spring or spring mounts Damaged or worn arm bushings Worn or damaged stabilizer bar bushing or links	Go to detailed test A.
Groaning or grinding - noise from the front strut, occurs when driving on bumpy roads or turning the vehicle	Uneven seating surface between the insulator and panel by the burrs around the strut insulator mounting bolts and the insulator bolts mounting holes	Repair or install a new parts as necessary.
Rear suspension noise - a squeak, creak or rattle noise - occurs mostly over bumps or rough roads	Loose or bent rear shock absorbers Damaged spring or spring mounts Damaged or worn control arm bushings	Go to detailed test B.
Shudder - occurs during acceleration from a slow speed or stop	Rear axle assembly mis-positioned Damaged or worn front suspension components	Check the axle mounts and rear suspension for damage or wear. Repair as necessary. Check for a loose stabilizer bar, damaged or loose strut/strut bushings or loose or worn ball joints. Inspect the steering linkage for wear or damage. Repair or Install new components as necessary.
Shimmy - most noticeable on coast/deceleration - also hard steering condition	Excessive positive caster	Check the caster alignment angle. Correct as necessary.

Symptom	Suspect Area	Remedy
Tire noise - hum/moan at constant speeds	Abnormal wear patterns	Spin the tire and Check for tire wear. Install a new tire as necessary. Inspect for damaged/worn suspension components. Perform wheel alignment.
Tire noise - noise tone lowers as the vehicle speed is lowered	Out-of-balance tire	Balance the tire and road test. Install a new tire as necessary.
Tire noise - ticking noise, change with speed	Nail puncture or stone in tire tread	Inspect the tire. Repair or replace as necessary.
Wheel and tire - vibration and noise concern is directly related to vehicle speed and is not affected by acceleration, coasting or decelerating	Damaged or worn tire	Go to detailed test C.
Tire wobble or shudder - occurs at lower speeds	Damaged wheel bearings	Spin the tire and check for abnormal wheel bearing play or roughness. Adjust or Install new wheel bearings as necessary. Refer to DS group - front/rear axle.
	Damaged wheel	Inspect the wheel for damage. Install a new wheel as necessary.
	Damaged or worn suspension components	Inspect the suspension components for wear or damage. Repair as necessary.
	Loosen wheel nuts	Check the wheel nuts. Tighten to specification.
	Damaged or uneven tire wear	Spin the tire and Check for abnormal tire wear or damage. Install a new tire as necessary.
Tire shimmy or shake - occurs at lower speeds	Wheel/tire out of balance	Check for wheel balance.
	Uneven tire wear	Check for abnormal tire wear. Install a new tire as necessary.
	Excessive radial runout of wheel or tire	Perform a radial runout test of the wheel and tire. Install a new tire as necessary.
	Worn or damaged wheel studs or elongate stud holes	Inspect the wheel studs and wheels. Install new components as necessary.
	Excessive lateral runout of the wheel or tire	Perform a lateral runout test of the wheel and tire. Check the wheel, tire and hub. Repair or Install new components as necessary.
	Foreign materal between the brake disc and hub.	Clean the mounting surfaces of the brake disc and hub. Refer to DS group - front/rear axle.

Symptom	Suspect Area	Remedy
High speed shake or shimmy - occurs at high speeds	Excessive wheel hub runout Damaged or worn tires Damaged or worn wheel bearings Worn or damaged suspension or steering linkage Brake disc or drum imbalance	Go to detailed test D.
Drift left or right	Tires Steering linkage Alignment Base brake system	Go to detailed test E.
Steering wheel	Alignment Steering linkage Front lower arm ball joint	Go to detailed test F.
Tracks incorrectly	Rear suspension Caster	Go to detailed test G.
Rough ride	Front strut and spring assembly Rear shock absorber and spring assembly	Go to detailed test H.
Excessive noise	Front or rear stabilizer bar components Springs Suspension components Shock absorbers	Go to detailed test I.
Incorrect tire wear	Tire or unbalanced wheels Tire inflation Strut Alignment	Go to detailed test J.
Vibration	Wheel/tire Front wheel driveshaft(s) Steering system Strut and spring assembly Spring and strut mounting Front lower arm ball joint Front lower arm mounting bolt bushing Stabilizer bar bushings Wheel hubs and bearing Rear suspension arms and bushings	Go to detailed test K.
Vehicle leans	Tire/wheel Vehicle load Suspension components Incorrect ride height	Inflate tires to specification. Redistribute the load as necessary. Visually inspect the suspention system. Correct the ride height as necessary.
Poor steering returnability	High knuckle rotating torque Alignment	Go to detailed test E.

DETAILED TEST A : FRONT SUSPENSION NOISE

CONDITIONS	DETAILS/RESULTS/ACTIONS
A1 ROAD TEST THE VEHICLE	
	1. Test drive the vehicle. 2. During the road test, drive the vehicle over a rough road. Determine from which area/component the noise is originating. ● Is there a squeak, creak or rattle noise ? ⇒ **YES** Go to **A2.** ⇒ **NO** The suspension system is OK. Conduct a diagnosis on other suspect systems.
A2 INSPECT THE STEERING SYSTEM	
	1. Check the steering system for wear or damage. Perform a steering linkage test. Inspect the tire wear pattern. ● Are the steering components worn or damaged ? ⇒ **YES** Repair the steering system. Install new components as necessary. Test the system for normal operation. ⇒ **NO** Go to **A3.**
A3 FRONT SHOCK ABSORBER/STRUT CHECK	
	1. Check the front shock absorbers/strut mounts for loose bolts or nuts. 2. Check the front shock absorbers/struts for damage. Perform a shock absorber check. ● Are the front shock absorbers/struts loose or damaged ? ⇒ **YES** Tighten to specifications if loose. Install new front shock absorbers/struts if damaged. Test the system for normal operation. ⇒ **NO** Go to **A4.**
A4 CHECK THE FRONT SPRINGS	
	Check the front spring and front spring mounts/brackets for wear or damage. ● Are the front springs or spring mounts/brackets worn or damaged ? ⇒ **YES** Repair or Install new components as necessary. Test the system for normal operation. ⇒ **NO** Go to **A5.**

CONDITIONS	DETAILS/RESULTS/ACTIONS
A5 CHECK THE STABILIZER BAR	
	1. Check the stabilizer bar bushings and links for damage or wear. 2. Check the stabilizer bar for damage. 3. Check for loose or damaged stabilizer brackets. ● Are the stabilizer bar/track bar components loose, worn or damaged ? ⇒ **YES** Repair or Install new components as necessary. Test the system for normal operation. ⇒ **NO** Suspension system is OK. Conduct diagnosis on other suspect systems.

DETAILED TEST B : REAR SUSPENSION NOISE

CONDITIONS	DETAILS/RESULTS/ACTIONS
B1 ROAD TEST THE VEHICLE	
	1. Test drive the vehicle. 2. During the road test, drive the vehicle over a rough road. Determine from which area/component the noise is originating. ● Is there a squeak, creak or rattle noise ? ⇒ **YES** Go to **B2.** ⇒ **NO** The suspension system is OK. Conduct a diagnosis on other suspect systems.
B2 REAR SHOCK ABSORBER/STRUT CHECK	
	1. Raise and support the vehicle. Refer to GI group - lift support point. 2. Check the rear shock absorber/strut mounts for loose bolts or nuts. 3. Check the rear shock absorbers/strut for damage. Perform a shock absorber check. ● Are the rear shock absorbers/struts loose or damaged ? ⇒ **YES** Tighten to specifications if loose. Install new rear shock absorbers/struts if damaged. Test the system for normal operation. ⇒ **NO** Go to **B3.**
B3 CHECK THE REAR SPRINGS	
	Check the rear springs and rear spring mounts/brackets for wear or damage. ● Are the rear springs or spring mounts/brackets worn or damaged ? ⇒ **YES** Repair or Install new components as necessary. Test the system for normal operation. ⇒ **NO** Go to **B4.**

CONDITIONS	DETAILS/RESULTS/ACTIONS
B4 CHECK THE TRAILING ARMS	
	1. Inspect the trailing arm bushings for wear or damage. Check for loose trailing arm bolts. 2. Inspect for twisted or bent trailing arms. ● Are the trailing arms loose, damaged or worn ? ⇒ **YES** Repair or Install new components as necessary. Test the system for normal operation. ⇒ **NO** Suspension system is OK. Conduct diagnosis on other suspect systems.

DETAILED TEST C : WHEEL AND TIRE

CONDITIONS	DETAILS/RESULTS/ACTIONS
C1 ROAD TEST THE VEHICLE	
	NOTE *Wheel or tire vibrations felt in the steering wheel are most likely related to the front wheel or tire. Vibration felt through the seat are most likely related to the rear wheel or tire. This may not always be true, but it can help to isolate the problem to the front or rear of the vehicle. Test drive the vehicle at different speed ranges.* During the road test, if the vibration can be eliminated by placing the vehicle in neutral or is affected by the speed of the engine, the cause is not the wheels or tires. ● Is there a vibration and noise ? ⇒ **YES** Go to **C2.** ⇒ **NO** The wheel and tires are OK. Conduct a diagnosis on other suspect systems.
C2 CHECK THE FRONT WHEEL BEARINGS	
	Check the front wheel bearings. Refer to Wheel Bearing Check (Refer to DS group - front axle). ● Are the wheel bearings OK ? ⇒ **YES** Go to **C3.** ⇒ **NO** Inspect the wheel bearings. Adjust or Repair as necessary. Test the system for normal operation.

CONDITIONS	DETAILS/RESULTS/ACTIONS
C3 INSPECT THE TIRES	
	1. Check the tires for missing weights. 2. Check the wheels for damage. 3. Inspect the tire wear pattern. ● Do the tires have an abnormal wear pattern ? ⇒ **YES** Correct the condition that caused the abnormal wear. Install new tire(s). Test the system for normal operation. ⇒ **NO** Go to **C4.**
C4 TIRE ROTATION DIAGNOSIS	
	1. Spin the tires slowly and watch for signs of lateral runout. 2. Spin the tires slowly and watch for signs of radial runout. ● Are there signs of visual runout ? ⇒ **YES** Go to **C5.** ⇒ **NO** Check the wheel and tire balance. Correct as necessary. Test the system for normal operation.
C5 RADIAL RUNOUT CHECK ON THE TIRE	
	Measure the radial runout of the wheel and tire assembly. A typical specification for total radial runout is 1.15mm (0.059 inch). ● Is the radial runout within specifications ? ⇒ **YES** Go to **C8.** ⇒ **NO** Go to **C6.**
C6 RADIAL RUNOUT CHECK ON THE WHEEL	
	Measure the radial runout of the wheel. A typical specification for total radial runout is [Alloy 0.3mm (0.012in.), steel 1.0mm (0.39in.)]. ● Is the radial runout within specifications ? ⇒ **YES** Install a new tire. Test the system for normal operation. ⇒ **NO** Go to **C7.**

CONDITIONS	DETAILS/RESULTS/ACTIONS
C7 CHECK THE HUB/BRAKE DISC OR DRUM PILOT RUNOUT OR BOLT CIRCLE RUNOUT	
	Measure the pilot or bolt circle runout. A typical specification for radial runout is : ● pilot runout - less than 0.15mm (0.006 inch.) ● bolt circle runout - less than 0.38 mm (0.015 inch.) ● Is the radial runout within specification ? ⇒ **YES** Install a new wheel. Test the system for normal operation. ⇒ **NO** Repair or Install new components as necessary.
C8 LATERAL RUNOUT CHECK ON THE TIRE	
	Measure the lateral runout of the wheel and tire assembly. A typical specification for total lateral runout is 2.5mm (0.098 inch). ● Is the lateral runout within specifications ? ⇒ **YES** Wheel and tires are OK. Conduct diagnosis on other suspect systems. ⇒ **NO** Go to **C9.**
C9 LATERAL RUNOUT CHECK ON THE WHEEL	
	Measure the lateral runout of the wheel. A typical specification for total radial runout is 1.2mm (0.047 inch.) ● Is the lateral runout within specifications ? ⇒ **YES** Install a new tire. Test the system for normal operation. ⇒ **NO** Go to **C10.**
C10 CHECK THE FLANGE FACE LATERAL RUNOUT	
	Measure the flange face lateral runout. A typical specification for lateral runout is : ● hub/brake disc - less than 0.13mm (0.005 inch) ● Is the lateral runout within specifications ? ⇒ **YES** Install a new wheel. Test the system for normal operation. ⇒ **NO** Repair or Install new components as necessary.

DETAILED TEST D : HIGH SPEED SHAKE OR SHIMMY

CONDITIONS	DETAILS/RESULTS/ACTIONS
D1 CHECK FOR FRONT WHEEL BEARING ROUGHNESS	
	1. Raise and support the front end of the vehicle so that the front wheel and tire assemblies can spin. Refer to GI group - lift support point. 2. Spin the front tires by hand. ● Do the wheel bearings feel rough ? ⇒ **YES** Inspect the wheel bearings. Repair as necessary. Test the system for normal operation. ⇒ **NO** Go to **D2.**
D2 CHECK THE END PLAY OF THE FRONT WHEEL BEARINGS	
	Check the end play of the front wheel bearings. ● Is the end play OK ? ⇒ **YES** Go to **D3.** ⇒ **NO** Adjust or Repair as necessary. Test the system for normal operation.
D3 MEASURE THE LATERAL RUNOUT AND THE RADIAL RUNOUT OF THE FRONT WHEELS ON THE VEHICLE	
	Measure the lateral runout and the radial runout of the front wheels on the vehicle. Go to detailed test C. ● Are the measurements within specifications ? ⇒ **YES** Go to **D4.** ⇒ **NO** Install new wheels as necessary and Balance the assembly. Test the system for normal operation.
D4 MEASURE THE LATERAL RUNOUT OF THE FRONT TIRES ON THE VEHICLE	
	Measure the lateral runout of the front tires on the vehicle. Go to detailed test C. ● Is the runout within specifications ? ⇒ **YES** Go to **D5.** ⇒ **NO** Install new tires as necessary and Balance the assembly. Test the system for normal operation.

CONDITIONS	DETAILS/RESULTS/ACTIONS
D5 MEASURE THE RADIAL RUNOUT OF THE FRONT TIRES ON THE VEHICLE	
	Measure the radial runout of the front tires on the vehicle. Go to detailed test C. ● Is the runout within specifications ? ⇒ **YES** Balance the front wheel and tire assemblies. If any tire cannot be balanced, Install a new tire. Test the system for normal operation. ⇒ **NO** Go to **D6.**
D6 MATCH MOUNT THE TIRE AND WHEEL ASSEMBLY	
	Mark the high runout location on the tire and also on the wheel. Break the assembly down and rotate the tire 180 degrees (halfway around) on the wheel. Inflate the tire and measure the radial runout. ● Is the runout within specifications ? ⇒ **YES** Balance the assembly. Test the system for normal operation. ⇒ **NO** If the high spot is not within 101.6mm (4 inches) of the first high spot on the tire, Go to **D7.**
D7 MEASURE THE WHEEL FLANGE RUNOUT	
	Dismount the tire and mount the wheel on a wheel balancer. Measure the runout on both wheel flanges. Go to detailed test C ● Is the runout within specifications ? ⇒ **YES** Locate and Mark the low spot on the wheel. Install the tire, matching the high spot on the tire with the low spot on the wheel. Balance the assembly. Test the system for normal operation. If the condition persists, Go to **D8.** ⇒ **NO** Install a new wheel. Check the runout on the new wheel. If the new wheel is within limits, locate and Mark the low spot. Install the tire, matching the high spot on the tire with the low spot on the wheel. Balance the assembly. Test the system for normal operation. If the condition persists, Go to **D8.**
D8 CHECK FOR VIBRATION FROM THE FRONT OF THE VEHICLE	
	Spin the front wheel and tire assemblies with a wheel balancer while the vehicle is raised on a hoist. Feel for vibration in the front fender or while seated in the vehicle. ● Is the vibration present ? ⇒ **YES** Substitute known good wheel and tire assemblies as necessary. Test the system for normal operation. ⇒ **NO** Check the driveline components. Test the system for normal operation.

DETAILED TEST E : DRIFT LEFT OR RIGHT

CONDITIONS	DETAILS/RESULTS/ACTIONS
E1 CHECK THE TIRES	
	Inspect the tires for excessive wear or damage. ● Are the tires excessively worn or damaged ? ⇒ **YES** Install new tires. ⇒ **NO** Go to **E2.**
E2 CHECK THE STEERING LINKAGE	
	1. Raise and support the vehicle. 2. Check the steering components for indications of excessive wear or damage. Refer to ST group - specification. ● Is there an indication of excessive wear or damage ? ⇒ **YES** Repair or Install new components as necessary. ⇒ **NO** Go to **E3.**
E3 CHECK THE VEHICLE ALIGNMENT	
	1. Place the vehicle on an alignment rack. Check the vehicle alignmnt. ● Is the alignment within specification ? ⇒ **YES** Go to **E4.** ⇒ **NO** Adjust the alignment as necessary.
E4 BRAKE DRAG DIAGNOSIS	
	Apply the brakes while driving. ● Does drift or pull occur when the brakes are applied ? ⇒ **YES** Refer to BR group - specification. ⇒ **NO** If the steering wheel is in the center, the vehicle is OK. If the steering wheel is off-center, Go to Detailed Test **F.**

DETAILED TEST F : STEERING WHEEL OFF-CENTER

CONDITIONS	DETAILS/RESULTS/ACTIONS
F1 CHECK THE CLEAR VISION	
	Place the vehicle on an alignment rack. ● Is the clear vision within specification ? ⇒ **YES** Go to **F2.** ⇒ **NO** Adjust the clear vision to specification.
F2 INSPECT THE STEERING COMPONENTS	
	1. Raise and support the vehicle. 2. Inspect the steering components for excessive wear or damage. Refer to ST group - specification. ● Are the steering components excessively worn or damaged ? ⇒ **YES** Repair or Install new components as necessary. ⇒ **NO** If it tracks corectly, vehicle is OK. If it tracks incorrectly, Go to Detailed Test **G.**

DETAILED TEST G : TRACKS INCORRECTLY

CONDITIONS	DETAILS/RESULTS/ACTIONS
G1 CHECK THE CASTER	
	Place the vehicle on an alignment rack. ● Is the caster within specification ? ⇒ **YES** Go to **G2.** ⇒**NO** Replace bent or damaged parts.
G2 CHECK THE REAR SUSPENSION	
	1. Measure the vehicle wheel base for LH and RH. 2. Compare the measurements. ● Are the measurements the same ? ⇒ **YES** If the ride is smooth, vehicle is OK. If the ride is rough, Go to Detailed Test**H.** ⇒ **NO** Inspect the rear suspension components for wear or damage. Repair or Install new components as necessary.

DETAILED TEST H : ROUGH RIDE

CONDITIONS	DETAILS/RESULTS/ACTIONS
H1 CHECK THE FRONT SHOCK ABSORBER	
	1. Raise support the vehicle. 2. Inspect the front shock absorber for oil leaks or damage. ● Are the tires excessively worn or damaged ? ⇒ **YES** Install new front shock absorbers. ⇒ **NO** Go to **H2.**
H2 CHECK THE REAR SHOCK ABSORBERS	
	Inspect the rear shock absorbers for oil leaks or damage. ● Are the rear shock absorbers leaking ? ⇒ **YES** Install new rear shock absorbers. ⇒ **NO** The vehicle is OK. Go to **TROUBLESHOOTING.**

DETAILED TEST I : EXCESSIVE NOISE

CONDITIONS	DETAILS/RESULTS/ACTIONS
I1 INSPECT THE SUSPENSION	
	1. Raise and support the vehicle. 2. Inspect the shock absorber mounting bolts. ● Are the mounting bolts loose or broken ? ⇒ **YES** Tighten or Install new shock absorber mounting bolts. ⇒ **NO** Go to **I2.**
I2 INSPECT THE SPRING AND TORSION BARS	
	Inspect the springs and stabilizer bars for damage. ● Are the spring or stabilizer bars damaged ? ⇒ **YES** Install new spring and/or stabilizer bars. ⇒ **NO** Go to **I3.**
I3 INSPECT THE FRONT SUSPENSION	
	Inspect the front suspension components for excessive wear or damage. ● Are the front suspension components worn or damaged ? ⇒ **YES** Install new front suspension components. ⇒ **NO** The vehicle is OK. Go to **TROUBLESHOOTING.**

DETAILED TEST J : INCORRECT TIRE WEAR

CONDITIONS	DETAILS/RESULTS/ACTIONS
J1 INSPECT THE TIRES	
	1. Raise and support the vehicle. 2. Inspect the tires for uneven wear on the inner or outer shoulder. ● Is there uneven tire wear ? ⇒ **YES** Align the vehicle. Install new tires if badly worn. ⇒ **NO** Go to **J2.**
J2 UNEVEN TIRE WEAR	
	Inspect the tires for a feathering pattern. ● Do the tires have a feathering pattern ? ⇒ **YES** Align the vehicle. Install new tires if badly worn. ⇒ **NO** Go to **J3.**
J3 CHECK FOR CUPPED TIRE	
	Inspect the tires for cupping or dishing. ● Are the tires cupped or dished ? ⇒ **YES** Balance and Rotate the tires. ⇒ **NO** The vehicle is OK. Go to **TROUBLESHOOTING.**

DETAILED TEST K : VIBRATION

CONDITIONS	DETAILS/RESULTS/ACTIONS
K1 ROAD TEST	
	Accelerate the vehicle to the speed at which the customer indicated the vibration occured. ● Is the vibration present ? ⇒ **YES** Go to **K2.** ⇒ **NO** The vehicle is OK. Go to **TROUBLESHOOTING.**
K2 INSPECT THE TIRES	
	1. Raise and support the vehicle with a frame contact hoist. 2. Inspect the tires for extreme wear or damage, cupping, or flat spots. ● Are the tires OK ? ⇒ **YES** Go to **K3.** ⇒ **NO** Check the suspension components for misalignment, abnormal wear, or damage that may have contributed to the tire wear. Correct the suspension concerns and Install new tires.
K3 INSPECT THE WHEEL BEARINGS	
	Spin the tires by hand to check for wheel bearing rougness. ● Is the front wheel bearing OK ? ⇒ **YES** Go to **K4.** ⇒ **NO** Install new front wheel bearings as necessary. Refer to Ds group - front axle.
K4 TIRE/WHEEL BALANCE	
	Check the tire/wheel balance. ● Are the tires balanced ? ⇒ **YES** Go to **K5.** ⇒ **NO** Balance the tires and wheels as necessary.

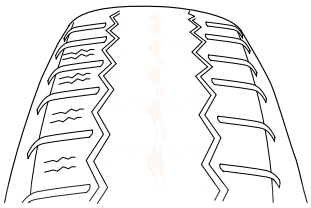
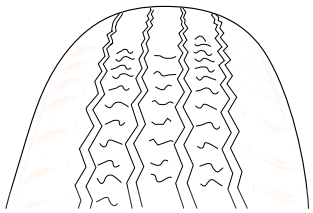
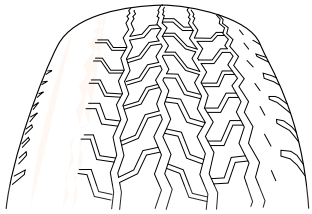
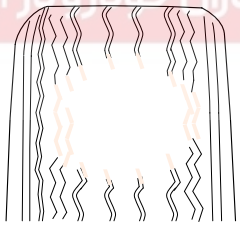
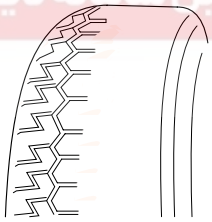
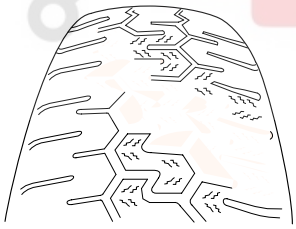
DETAILED TEST K : VIBRATION

K5 MEASURE THE RUNOUTS	
	For each wheel position measure, locate and mark the following items. - High point of the tire/wheel assembly total radial runout - High point of the wheel radial runout - High point of the wheel lateral runout ● Are the runouts as specified ? ⇒ **YES** Go to **K7.** ⇒ **NO** Go to **K6.**
K6 SUBSTITUTE THE WHEELS AND TIRE	
	1. Substitute a known good set of wheels and tires. 2. Perform a road test. 3. If the vehicle still exhibits a shake or vibration, note the vehicle speed and/or engine rpm which it occurs. ● Is the vibration felt ? ⇒ **YES** Engine/transmission imbalance. Refer to the specification of TR group, EM group, FL group and EC group. ⇒ **NO** Install the original tire/wheel assemblies one by one, Road testing at each step until the damaged tire(s)/wheel(s) as necessary. Test the system for normal operation.

Wheel /tire noise, vibration and harshness concerns are directly related to vehicle speed and are not generally affected by acceleration, coasting or decelerating. Also, out-of-balance wheel and tires can vibrate at more than one speed. A vibration that is affected by the engine rpm, or is eliminated by placing the transmission in Neutral is not related to the tire and wheel. As a general rule, tire and wheel vibrations felt in the steering wheel are related to the front tire and wheel assemblies. Vibrations felt in the seat or floor are related to the rear tire and wheel assemblies. This can initially isolate a concern to the front or rear.

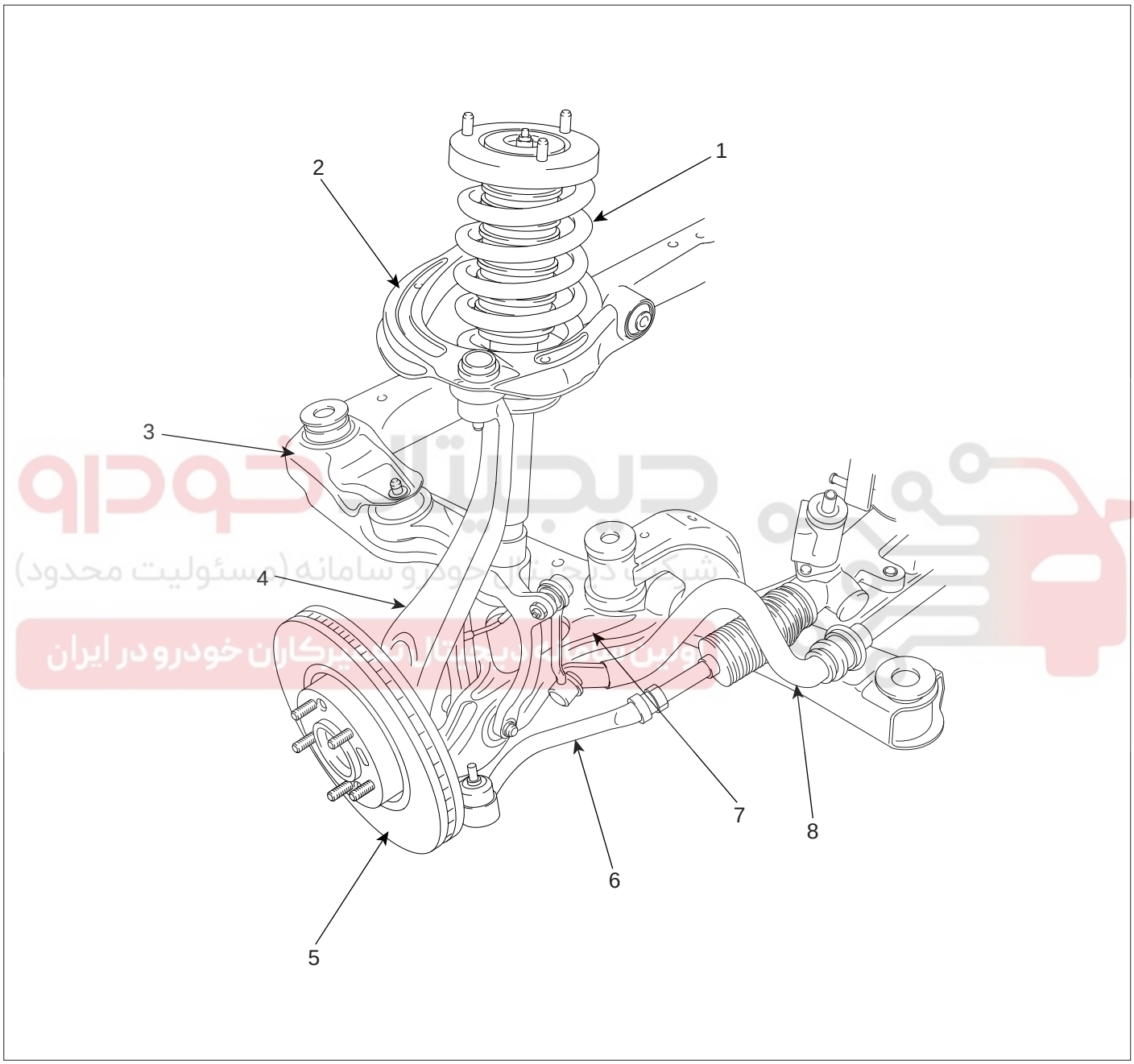
Careful attention must be paid to the tire and wheels. There are several symptoms that can be caused by damaged or worn tire and wheels. Perform a careful visual inspection of the tires and wheel assemblies. Spin the tires slowly and watch for signs of lateral or radial runout. Refer to the tire wear chart to determine the tire wear conditions and actions

WHEEL AND TIRE DIAGNOSIS

Rapid wear at the center	Rapid wear at both shoulders	Wear at one shoulder
 AHIE002A	 AHIE002B	 AHIE002C
• Center-tread down to fabric due to excessive over inflated tires • Lack of rotation • Excessive toe on drive wheels • Heavy acceleration on drive	• Under-inflated tires • Worn suspension components • Excessive cornering speeds • Lack of rotation	• Toe adjustment out of specification • Camber out of specification • Damaged strut • Damaged lower arm
Partial wear	Feathered edge	Wear pattern
 AHIE002D	 AHIE002F	 AHIE002G
• Caused by irregular burrs on brake drums	• Toe adjustment out of specification • Damaged or worn tie rods • Damaged knuckle	• Excessive toe on non-drive wheels • Lack of rotation

FRONT SUSPENSION SYSTEM

COMPONENTS EB52DD71

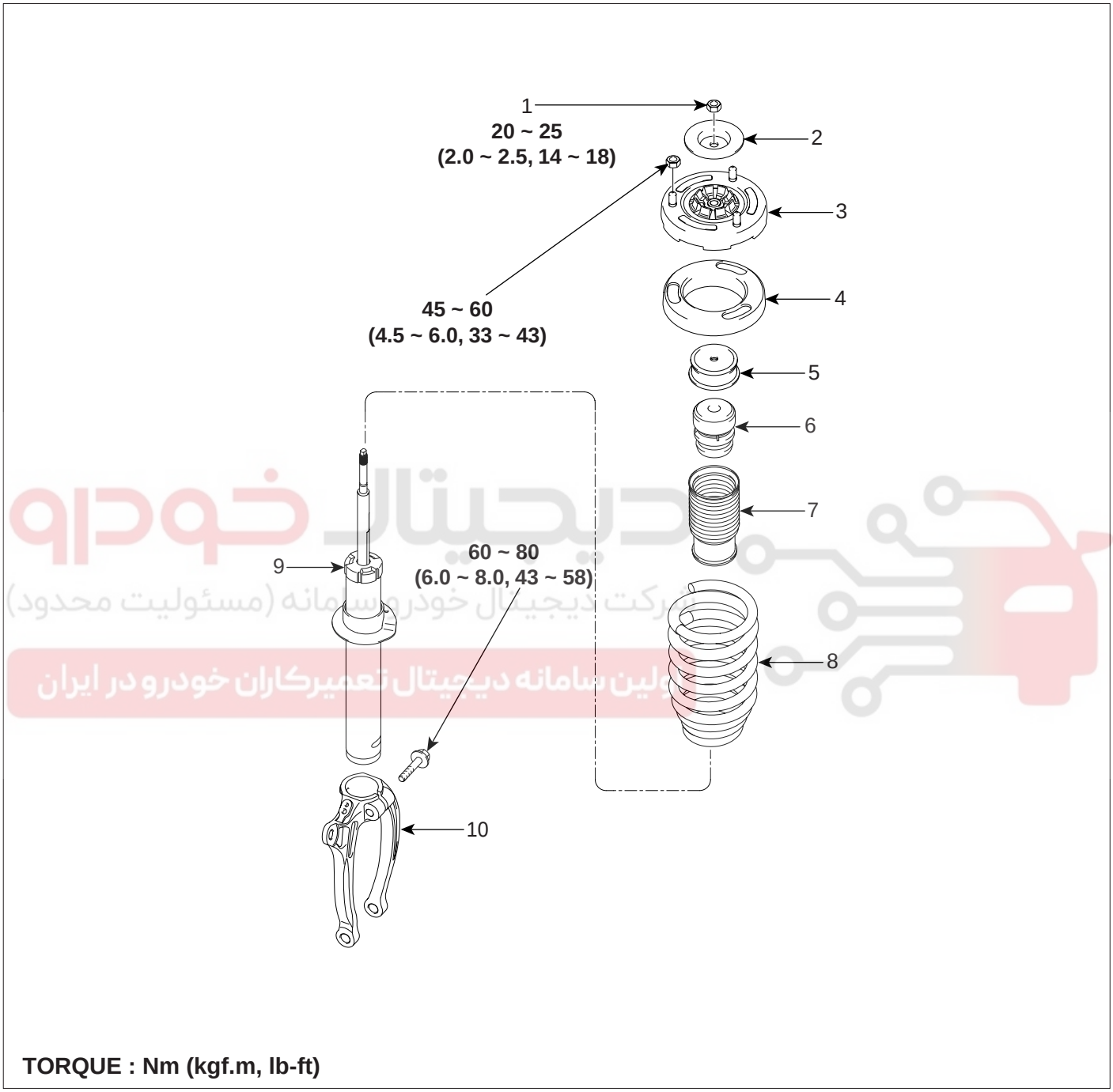


1. Front strut assembly
2. Front upper arm
3. Sub-frame
4. Front knuckle assembly
5. Front brake disc
6. Tie-rod end
7. Front lower arm
8. Front stabilizer bar

SGHSS6500N

FRONT STRUT ASSEMBLY

COMPONENTS E7727E5D



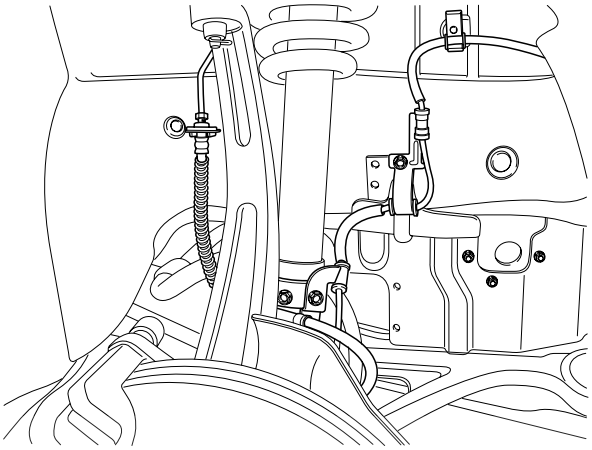
TORQUE : Nm (kgf.m, lb-ft)

1. Self locking nut
2. Washer
3. Insulator
4. Spring upper pad
5. Cup assembly
6. Urethane bumper
7. Dust cover
8. Coil spring
9. Shock absorber
10. Mounting fork

SGHSS6501N

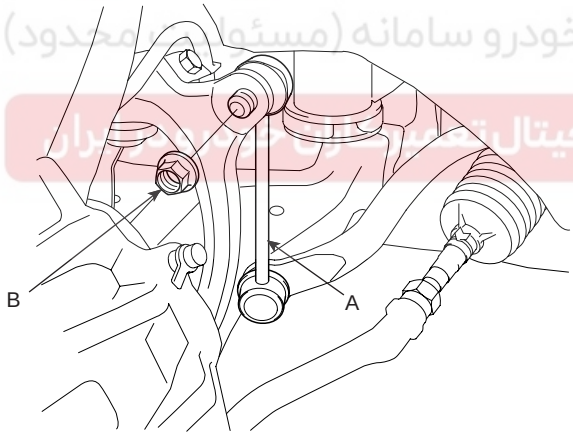
REMOVAL EC908258

1. Remove the front wheel & tire.
2. Remove the brake hose and the wheel speed sensor bracket from the front strut assembly by loosening the mounting bolts.



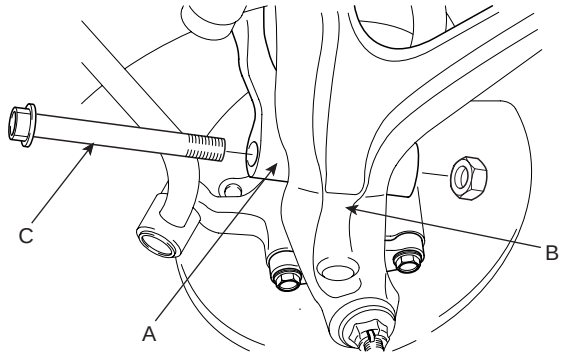
SGHSS6001D

3. Loosen the nut (B) and then disconnect the stabilizer link (A) with the mounting fork.



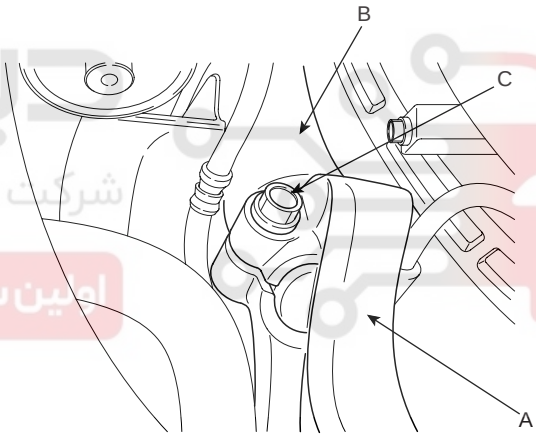
SGHSS6515N

4. Remove the through bolt (C) and nut and then disconnect the mounting fork (A) with the lower arm (B).



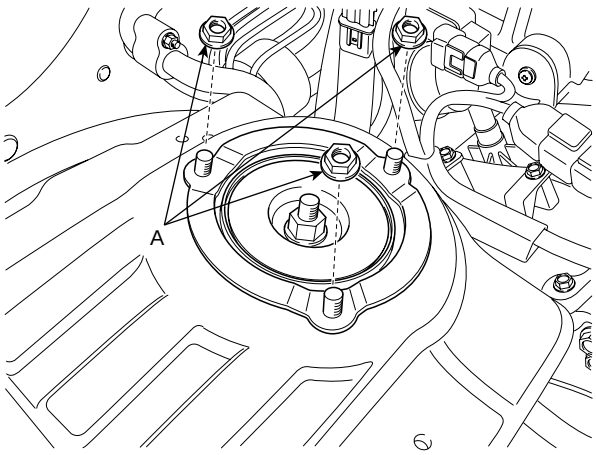
SGHSS6500D

5. Loosen the bolt (C) and then disconnect the strut assembly (B) with the mounting fork (A).



KHBF110D

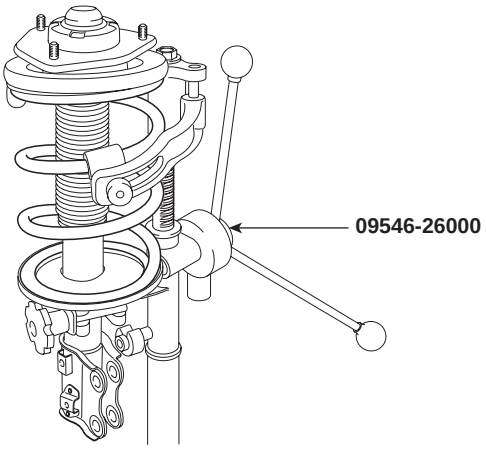
6. Remove the front strut assembly from the wheel housing panel by loosening the mounting nuts (A).



SGHSS6002D

DISASSEMBLY E6A6C8FD

1. Compress the coil spring with a SST (09546-26000). Do not compress the spring more than necessary.

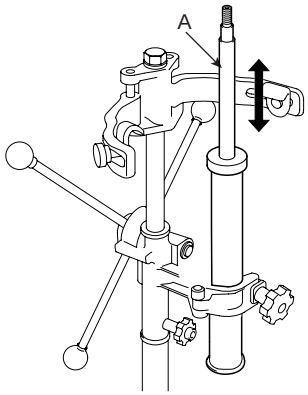


SUNSS6006D

2. Loosen the self locking nut.
3. Disassemble the components of front strut assembly in sequence. (Refer to Front strut assembly components)

INSPECTION EB2CC7D6

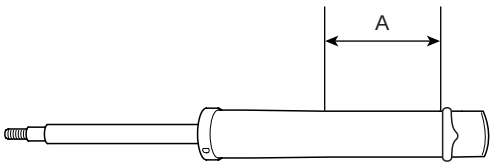
1. Check the components for damage or deformation.
2. Compress and extend the piston rod (A) and check that there is no abnormal resistance or unusual sound during operation.



KHRE112A

DISPOSAL E1C9F8BD

1. Fully extend the piston rod.
2. Drill a hole on the (A) section to discharge gas from the cylinder.



KHRE112B

CAUTION

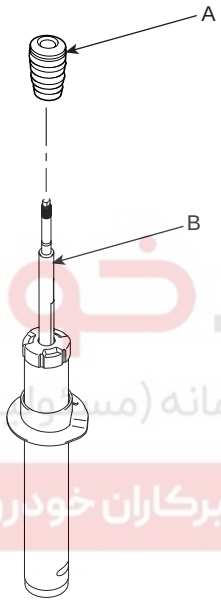
The gas coming out is harmless, but be careful of chips that may fly when drilling. Be sure to wear safety goggles or eye protection when performing this task.

REASSEMBLY E4B8A080

1. Install the front shock absorber to SST (09546-26000).
2. Assemble the components of the front strut assembly in sequence. (Refer to Front strut assembly components)

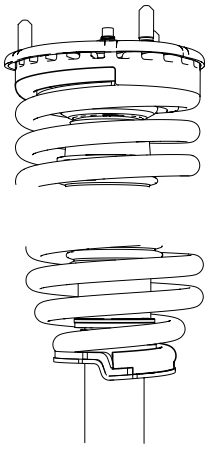
CAUTION

If replacing the urethane bumper (A) in the front strut for ECS with a new one, be sure to apply the grease to the inside of the urethane bumper before installing it to piston rod (B).



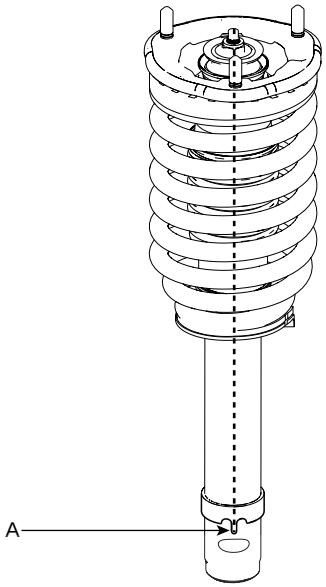
SGHSS7500L

After seating the upper and lower ends of the coil spring in the upper and lower spring seat grooves correctly, tighten new self-locking nut temporarily.



SGHSS6526D

Align the assembling mark and fork bracket protrusion (A) and then tighten the self-locking nut as illustration below.

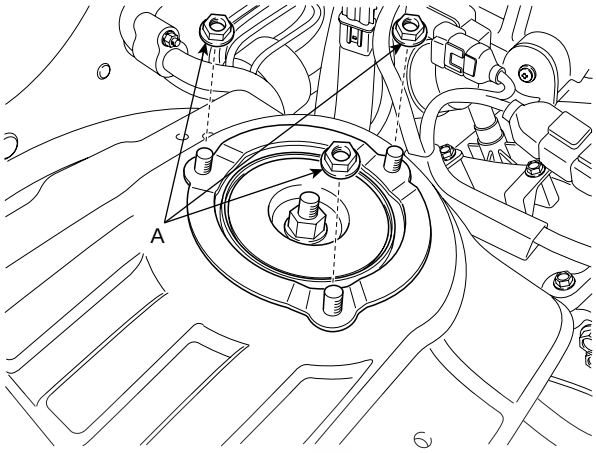


SGHSS6527D

INSTALLATION EC0AC804

1. Install the front strut assembly to the wheel housing panel by tightening the mounting nuts (A).

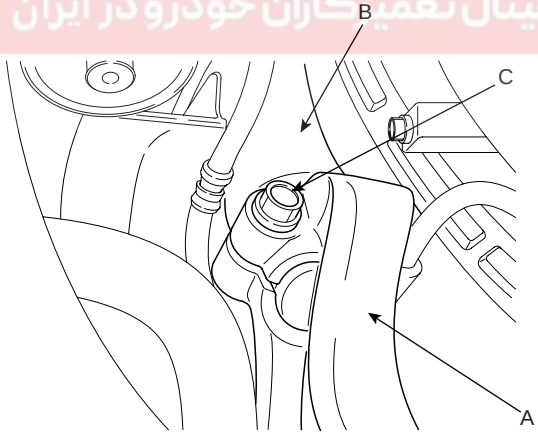
Tightening torque Nm (kgf.m, lb-ft):
45 ~ 60 (4.5 ~ 6.0, 33 ~ 43)



SGHSS6002D

2. Connect the strut assembly (B) with the mounting fork (A) and then tighten the bolt (C).

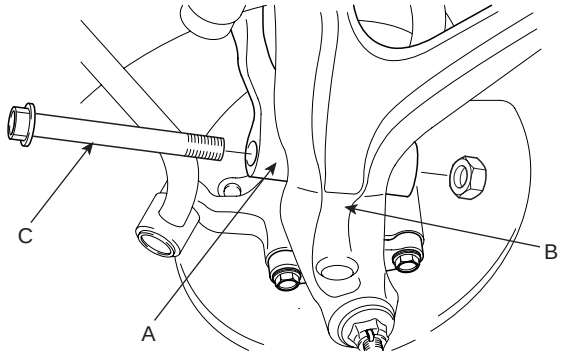
Tightening torque Nm (kgf.m, lb-ft):
60 ~ 80 (6.0 ~ 8.0, 43 ~ 58)



KHBF110D

3. Connect the mounting fork (A) with the lower arm (B) and tighten the through bolt (C) and nut.

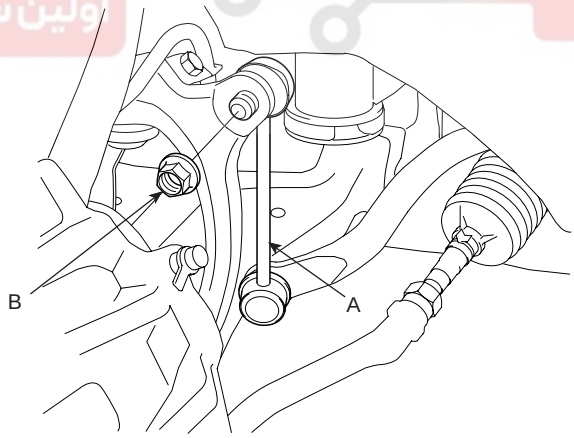
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6500D

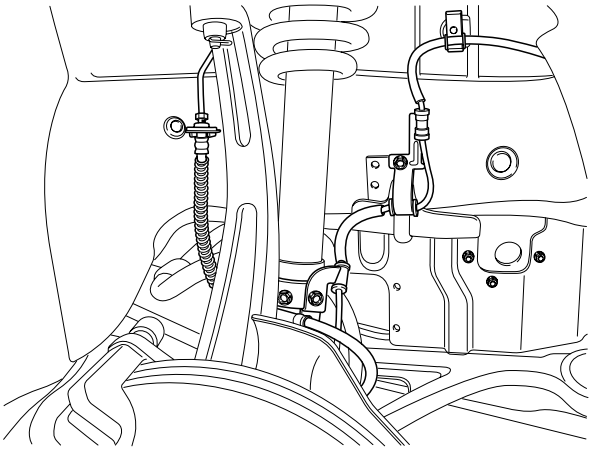
4. Connect the stabilizer link with the mounting fork (A) and tighten the nut (B).

Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 81)



SGHSS6515N

5. Install the brake hose and wheel speed sensor bracket to front strut assembly by tightening the mounting bolts.



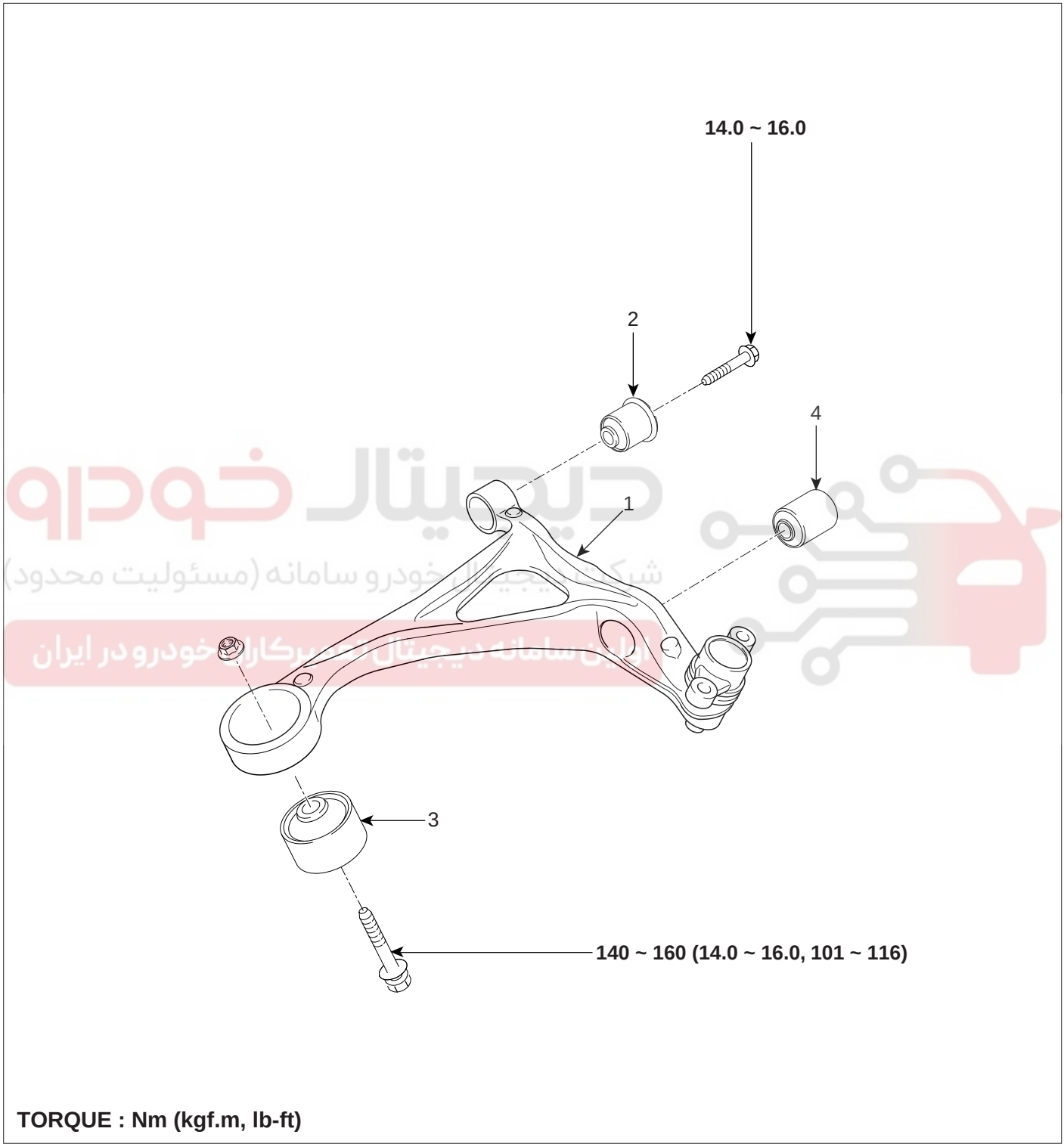
SGHSS6001D

6. Install the front wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

FRONT LOWER ARM

COMPONENTS E29AE2E7

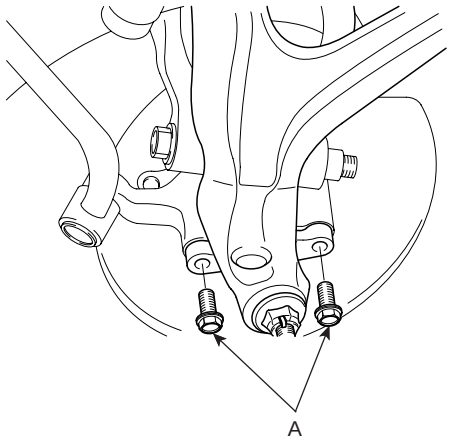


1. Front lower arm
2. Bushing (A)
3. Bushing (G)
4. Bushing

SGHSS6502N

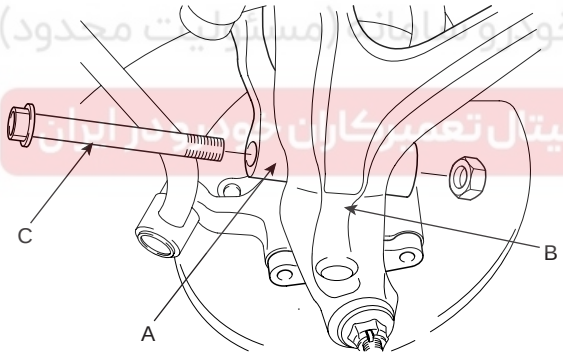
REMOVAL EE8BCC1B

1. Remove the front wheel & tire.
2. Disconnect the lower arm with knuckle by loosening the mounting bolts (A).



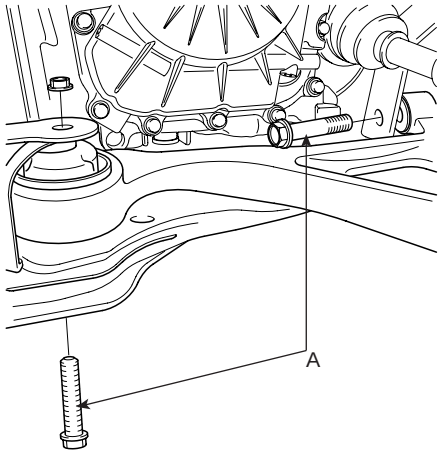
KHBF120A

3. Remove the through bolt (C) and nut and then disconnect the mounting fork (A) with the lower arm (B).



SGHSS6528D

4. Loosen the bolts (A) and remove the lower arm from the sub-frame.



SGHSS6516N

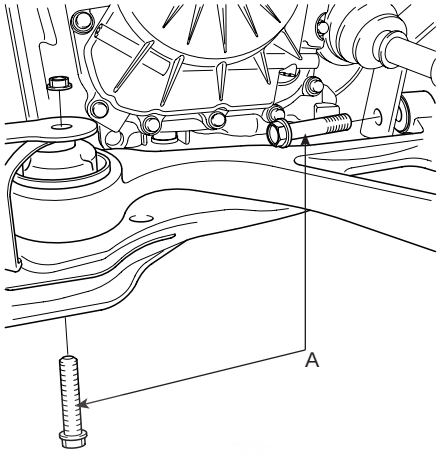
INSPECTION EB42C030

1. Check the bushing for wear and deterioration.
2. Check the lower arm for deformation.
3. Check the all bolts and nuts.

INSTALLATION E93C021A

1. Install the front lower arm to the sub-frame and then tighten the bolts (A).

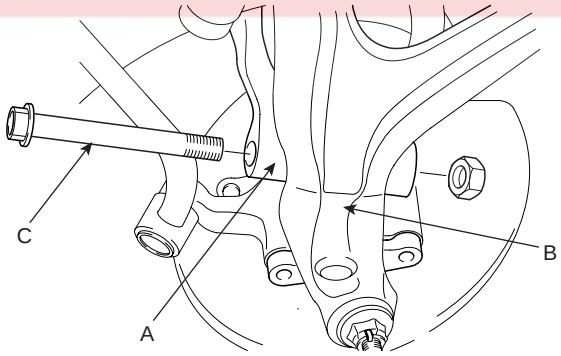
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6516N

2. Connect the mounting fork (A) with the lower arm (B) and tighten the through bolt and nut (C).

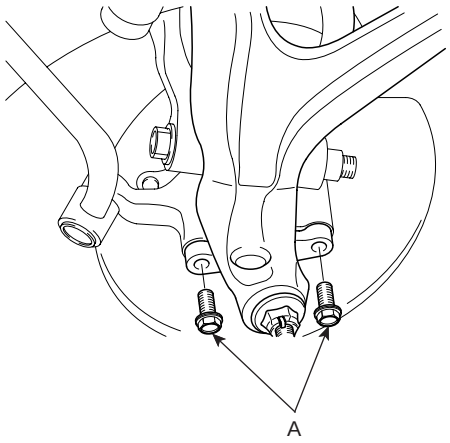
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6528D

3. Connect the lower arm with the knuckle by tightening the bolts (A).

Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



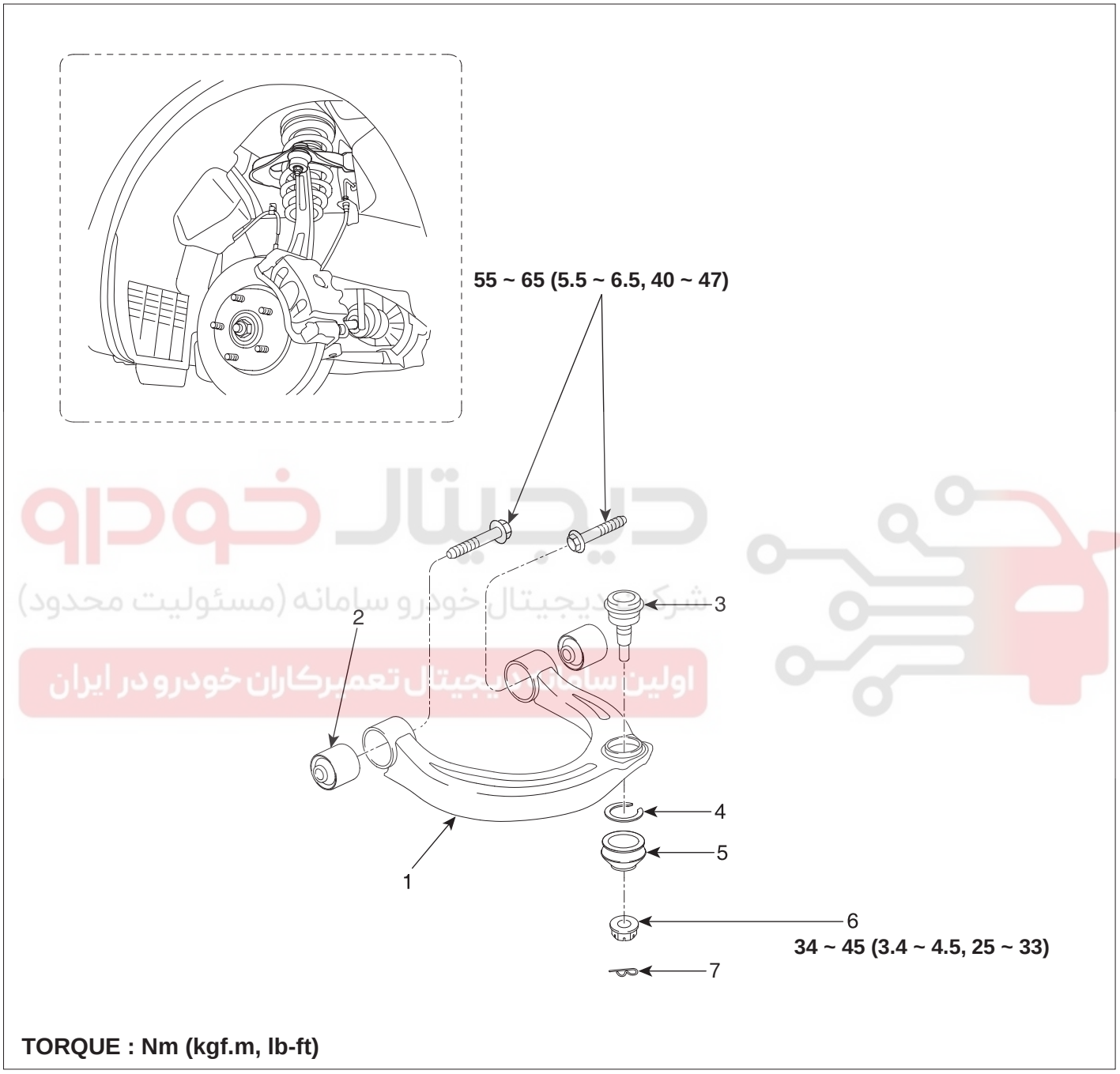
KHBF120A

4. Install the front wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

FRONT UPPER ARM

COMPONENTS E0160D53



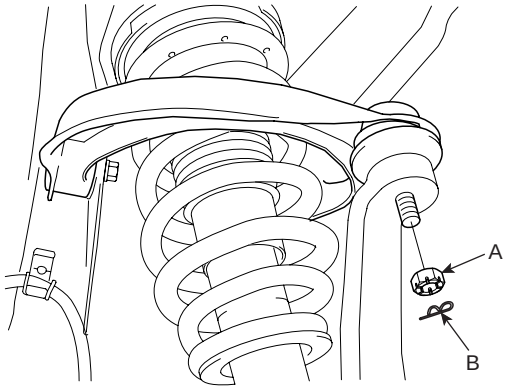
TORQUE : Nm (kgf.m, lb-ft)

1. Front upper arm
2. Bushing
3. Ball joint
4. Snap ring
5. Boot
6. Castle nut
7. Snap pin

SGHSS6503N

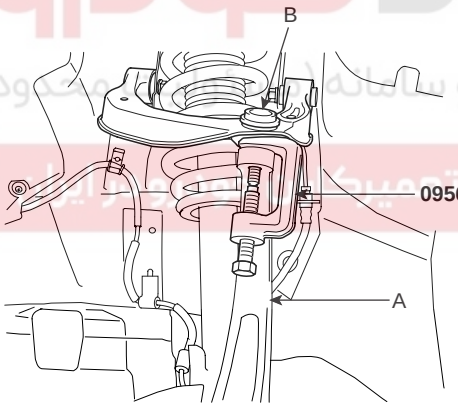
REMOVAL E8B04364

1. Remove the front wheel & tire.
2. Remove the snap pin (B) and castle nut (A).



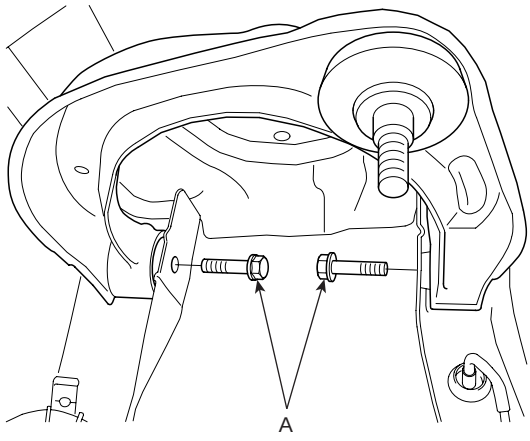
KHBF130A

3. Disconnect the upper arm ball joint (B) with the knuckle (A) by using SST (09568-4A000).



KHBF130B

4. Remove the front strut assembly. (Refer to Front strut assembly)
5. Loosen the bolts (A) and then remove the upper arm from the body.



KHRE130C

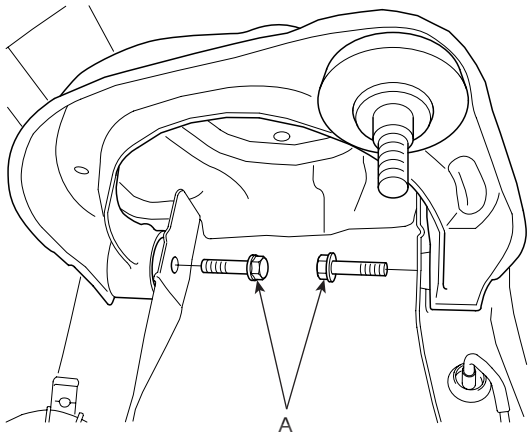
INSPECTION EC9803BB

1. Check the bushing for wear and deterioration.
2. Check the upper arm for deformation.
3. Check the all bolts and nuts.

INSTALLATION E5442B7C

1. Install the upper arm to body and tighten the bolts (A).

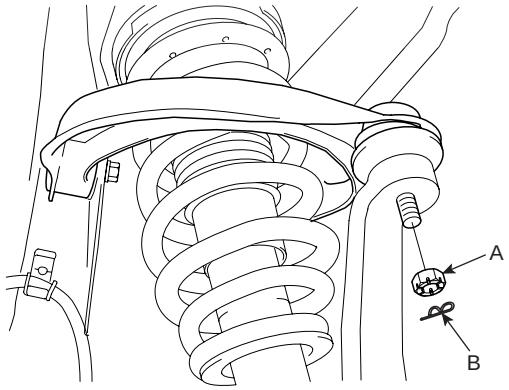
Tightening torque Nm (kgf.m, lb-ft):
55 ~ 65 (5.5 ~ 6.5, 40 ~ 47)



KHRE130C

2. Install the front strut assembly. (Refer to Front strut assembly)
3. Connect the upper arm ball joint with the knuckle and then install the castle nut (A) and snap pin (B).

Tightening torque Nm (kgf.m, lb-ft):
34 ~ 45 (3.4 ~ 4.5, 25 ~ 33)



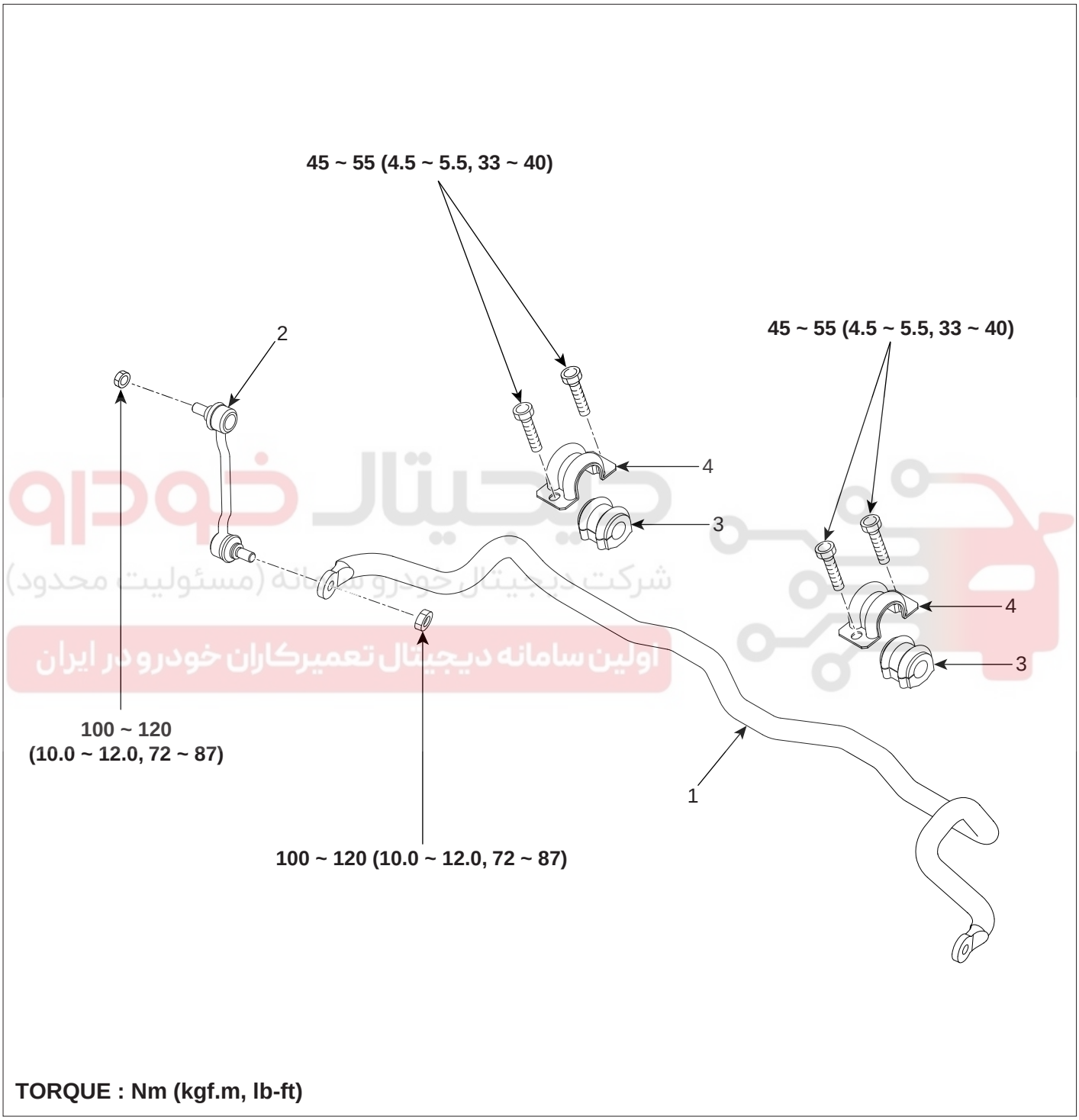
KHBF130A

4. Install the front wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

FRONT STABILIZER BAR

COMPONENTS EE5F299B

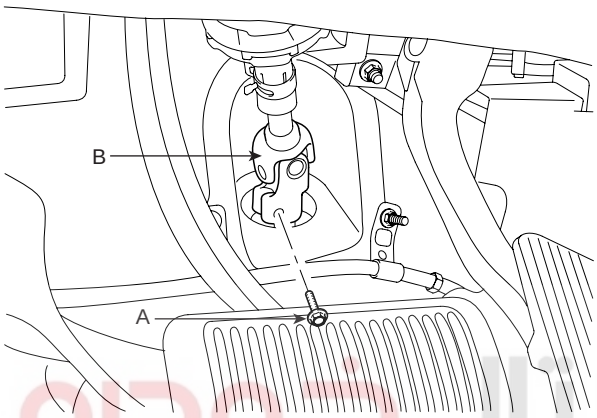


1. Front stabilizer bar
2. Front stabilizer link
3. Bushing
4. Mounting bracket

SGHSS6504N

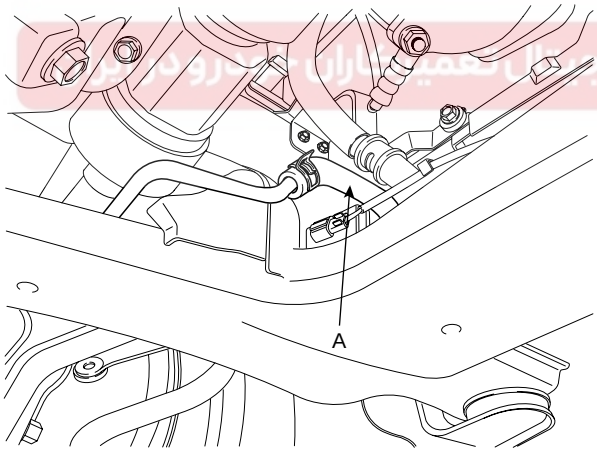
REMOVAL E5451BEC

1. Remove the front wheel & tire.
2. Disconnect the power steering pressure tube from the pump by loosening the eye bolt and loosen pressure hose bracket bolt.
3. Loosen the bolt (A) and then disconnect the universal joint assembly (B) from the pinion of the steering gear box.



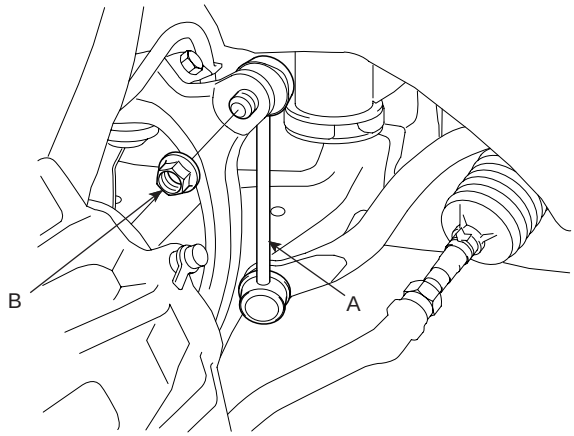
SGHST6006D

4. Disconnect the power steering return hose (A).



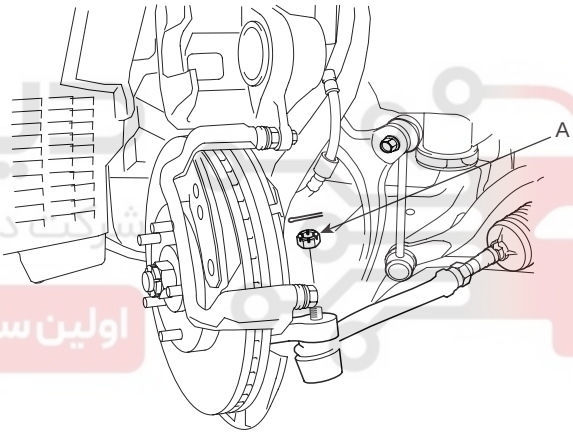
SGHSS6517N

5. Loosen the nut (B) and then disconnect the stabilizer link (A) with the mounting fork.



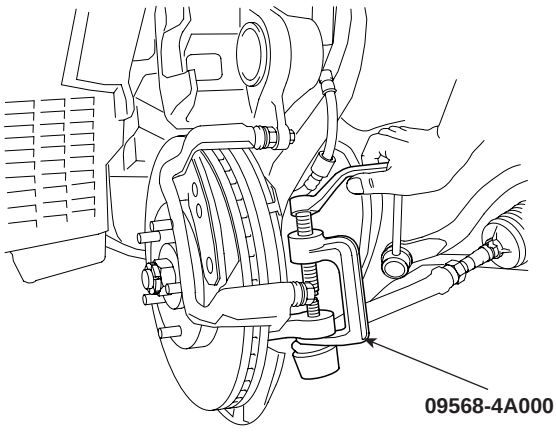
SGHSS6515N

6. Remove the split pin and castle nut (A).



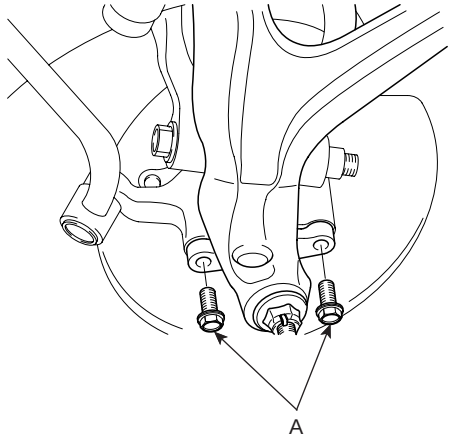
KHBF140G

7. Disconnect the tie-rod end from the knuckle by using SST (09568-34000).



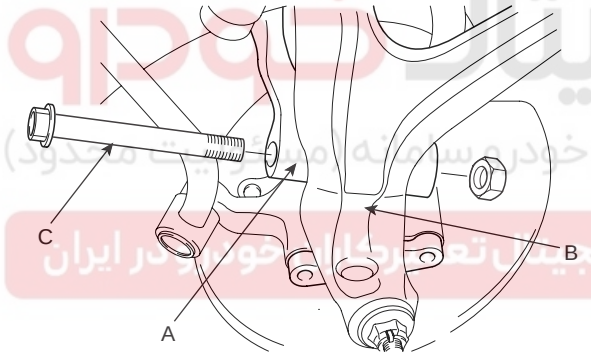
KHBF105B

8. Disconnect the lower arm with knuckle by loosening the mounting bolts (A).



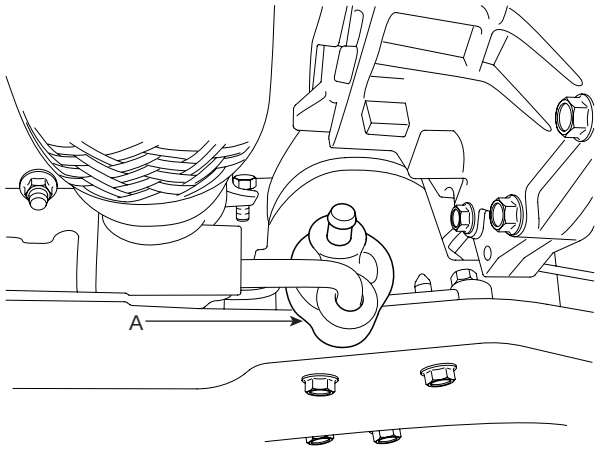
KHBF120A

9. Remove the through bolt (C) and nut and then disconnect the mounting fork (A) with the lower arm (B).



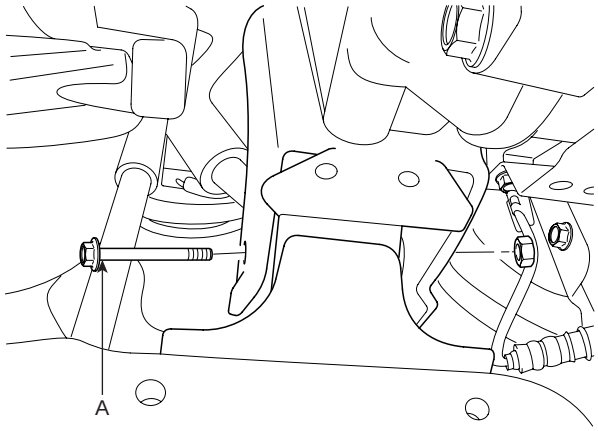
SGHSS6528D

10. Remove the muffler rubber hanger (A).



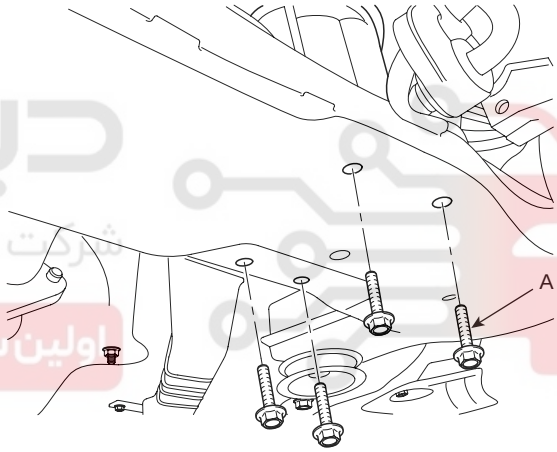
SGHST6008D

11. Remove the front roll stopper through bolt (A) and nut.



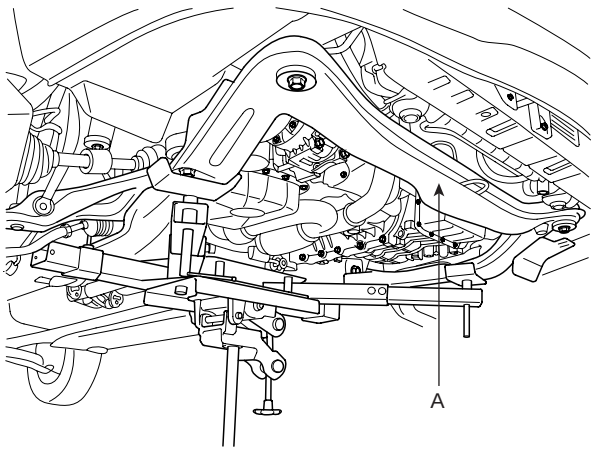
SGHSS6518N

12. Loosen the rear roll stopper mounting bolts (A).



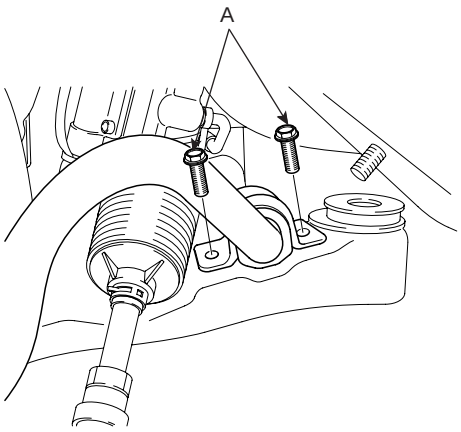
SGHSS6519N

13. Remove the sub-frame (A) from the body by loosening the mounting bolts and nuts.



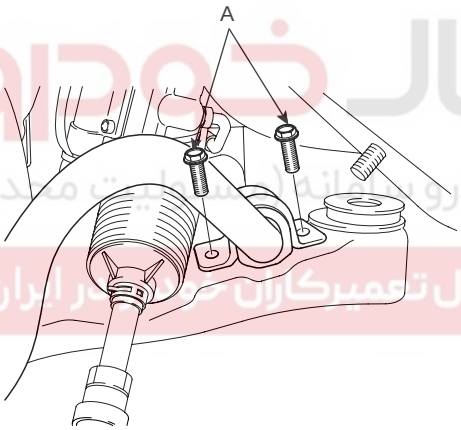
SGHST6011D

14. Remove stabilizer from the sub-frame by loosening the bracket mounting bolts (A).



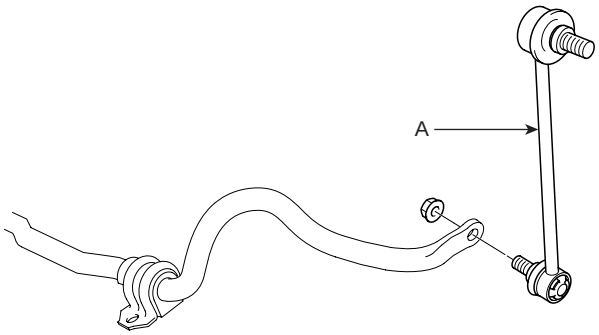
SGHSS6520N

15. Disconnect the stabilizer link (A) with the stabilizer bar by loosening the nut.



SGHSS6520N

16. Remove the bushing (A) and the bracket (B) from the stabilizer bar.



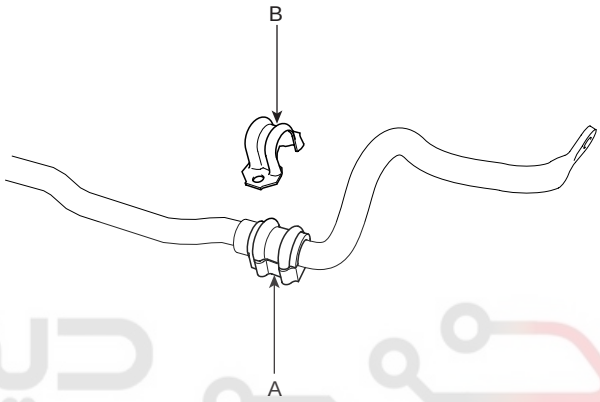
SHDSS6002D

INSPECTION E7567B05

1. Check the bushing for wear and deterioration.
2. Check the front stabilizer bar for deformation.
3. Check the front stabilizer link ball joint for damage.

INSTALLATION E592C53B

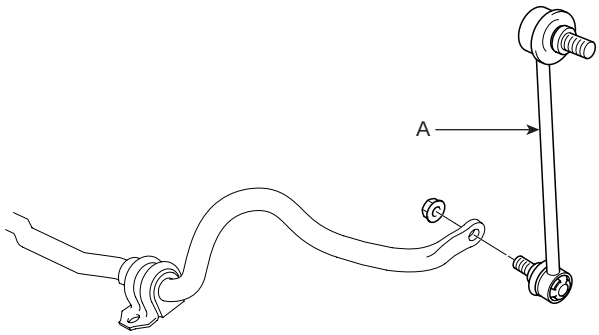
1. Install the bushing (A) and the bracket (B) to the stabilizer bar.



SHDSS6003D

2. Connect the stabilizer link (A) with the stabilizer bar by tightening the nut.

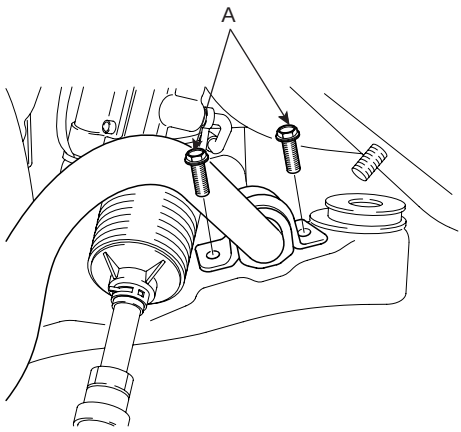
Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



SHDSS6002D

3. Install the stabilizer to the sub-frame by tightening the bracket mounting bolts (A).

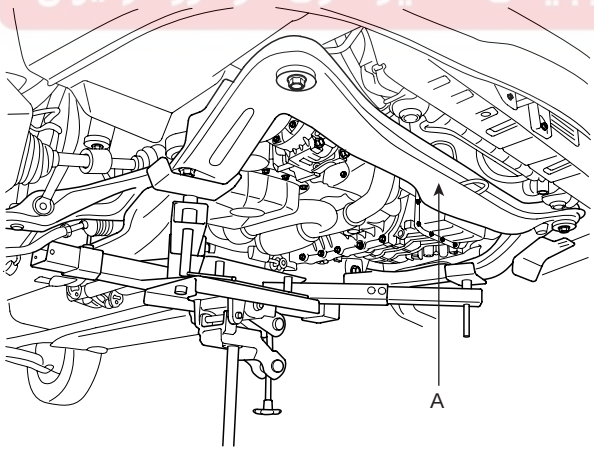
Tightening torque Nm (kgf.m, lb-ft):
45 ~ 55 (4.5 ~ 5.5, 33 ~ 40)



SGHSS6520N

4. Install the-sub frame (A) and the sub-frame stay by tightening the mounting bolts and nuts.

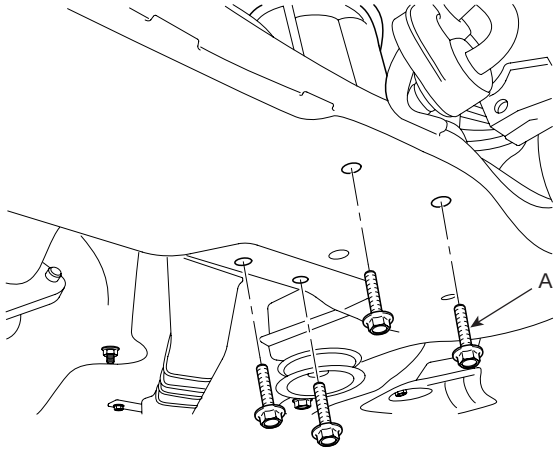
Tightening torque Nm (kgf.m, lb-ft):
Sub-frame mounting bolts:
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)
Sub-frame stay mounting bolt & nut:
45 ~ 55 (4.5 ~ 5.5, 33 ~ 40)



SGHST6011D

5. Tighten the rear roll stopper mounting bolts (A).

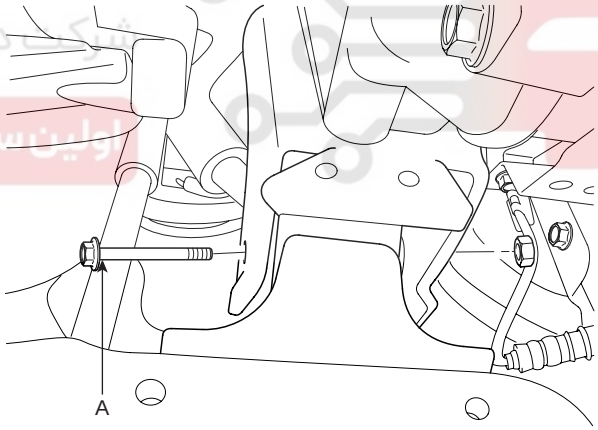
Tightening torque Nm (kgf.m, lb-ft):
50 ~ 65 (5.0 ~ 6.5, 40 ~ 47)



SGHSS6519N

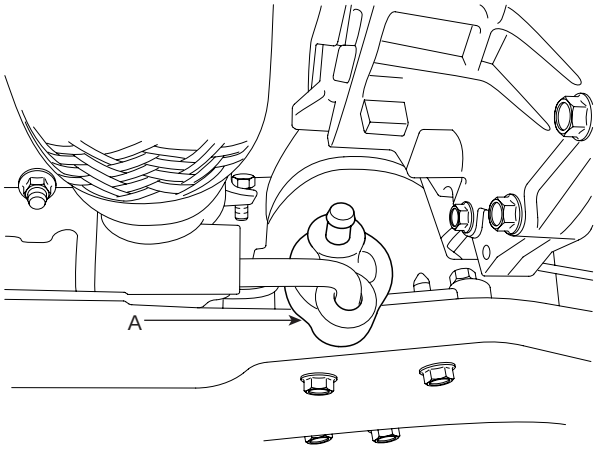
6. Install the front roll stopper through bolt (A) and nut.

Tightening torque Nm (kgf.m, lb-ft):
50 ~ 65 (5.0 ~ 6.5, 40 ~ 47)



SGHSS6518N

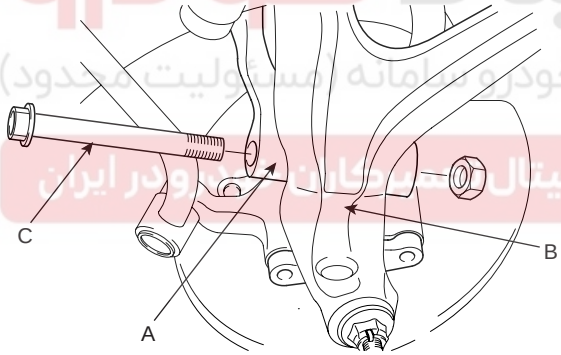
7. Install the muffler rubber hanger (A).



SGHST6008D

8. Connect the mounting fork (A) with the lower arm (B) and tighten the through bolt (C) and nut.

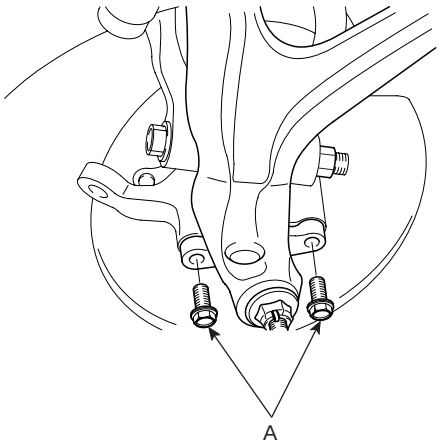
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6528D

9. Connect the lower arm with the knuckle by tightening the bolts (A).

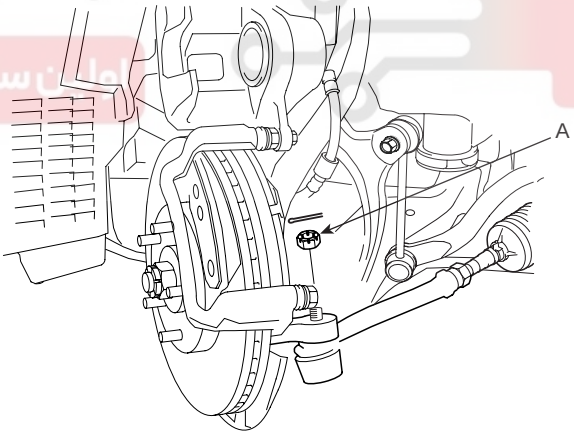
Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



KHBF140D

10. Connect the tie-rod end with the knuckle and then install the castle nut (A) and split pin.

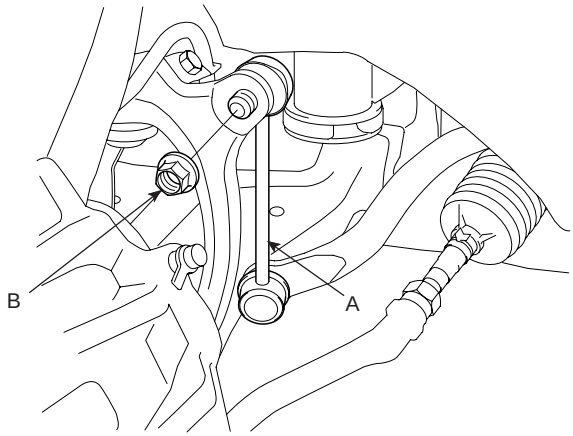
Tightening torque Nm (kgf.m, lb-ft):
24 ~ 34 (2.4 ~ 3.4, 19 ~ 31)



KHBF140G

11. Connect the stabilizer link (A) with the mounting fork and tighten the nut (B).

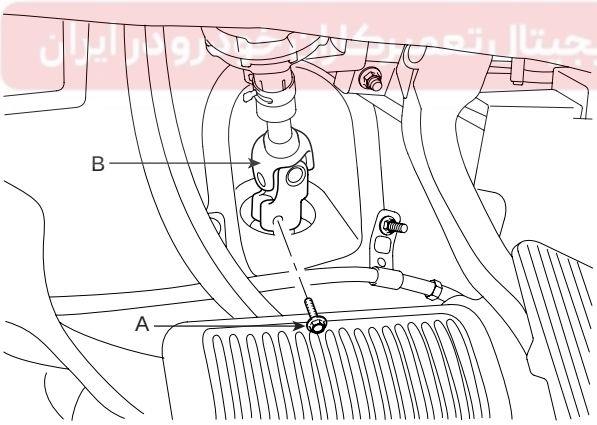
Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



SGHSS6515N

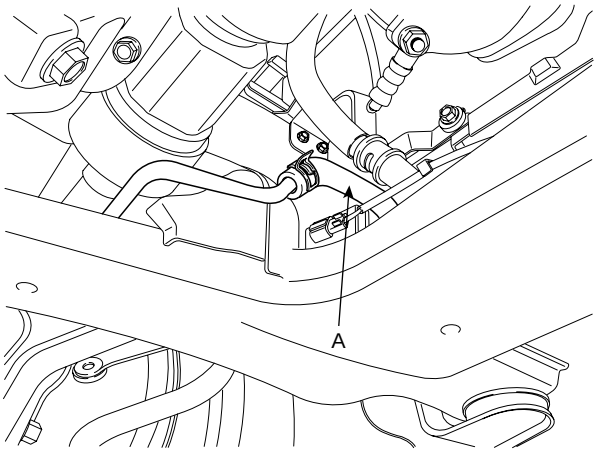
12. Connect the universal joint assembly (B) with the pinion of the steering gear box and then tighten the bolt (A).

Tightening torque Nm (kgf.m, lb-ft):
30 ~ 35 (3.0 ~ 3.5, 22 ~ 25)



SGHST6006D

13. Connect the power steering return hose (A).



SGHSS6517N

14. Connect the power steering pressure tube with the power steering pump by tightening the eye bolt.

Tightening torque Nm (kgf.m, lb-ft):
55 ~ 65 (5.5 ~ 6.5, 40 ~ 47)

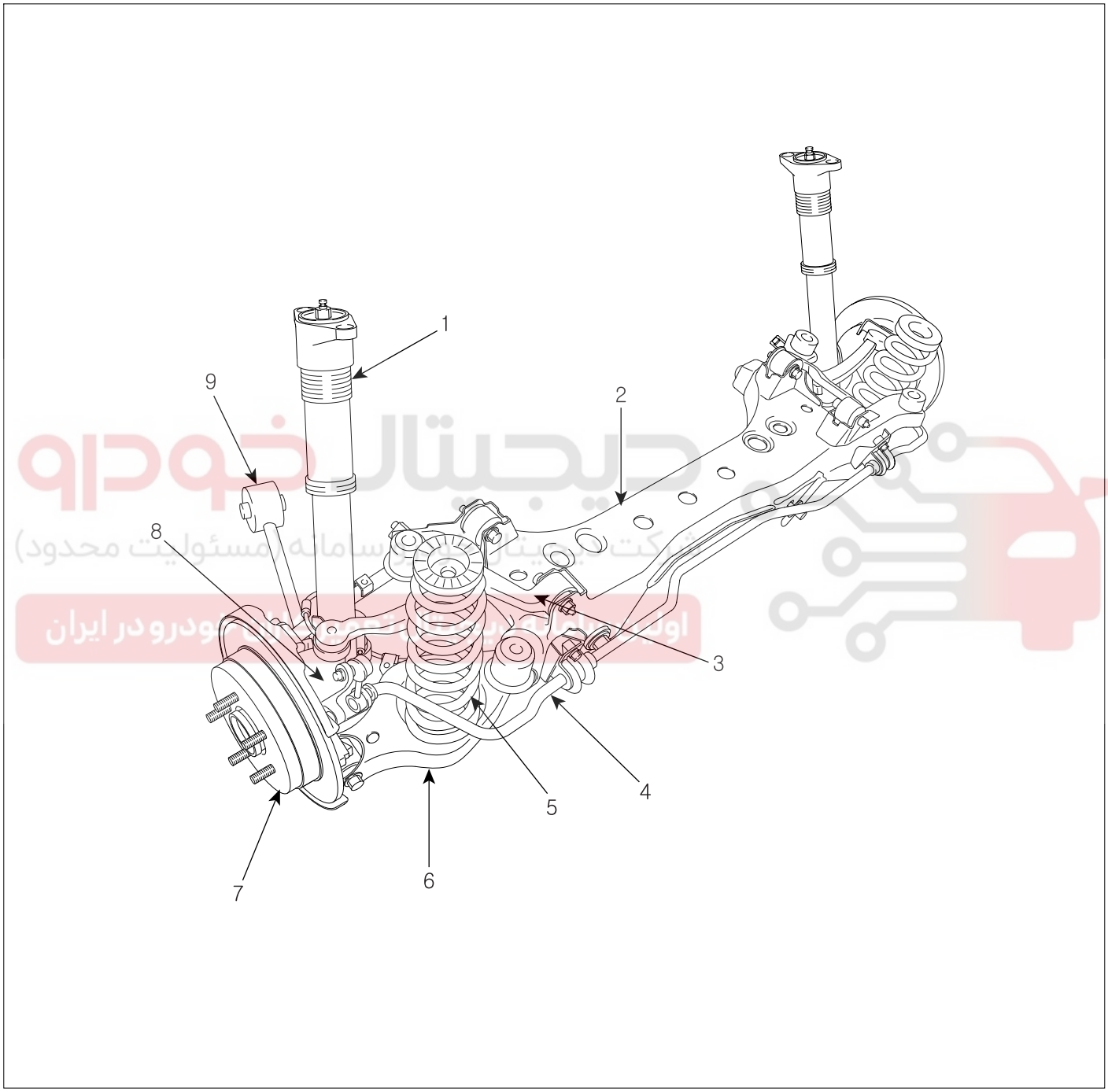
15. Install the front wheel & tire

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

16. Bleed power steering system. (Refer to ST group)

REAR SUSPENSION SYSTEM

COMPONENTS E4F347BB

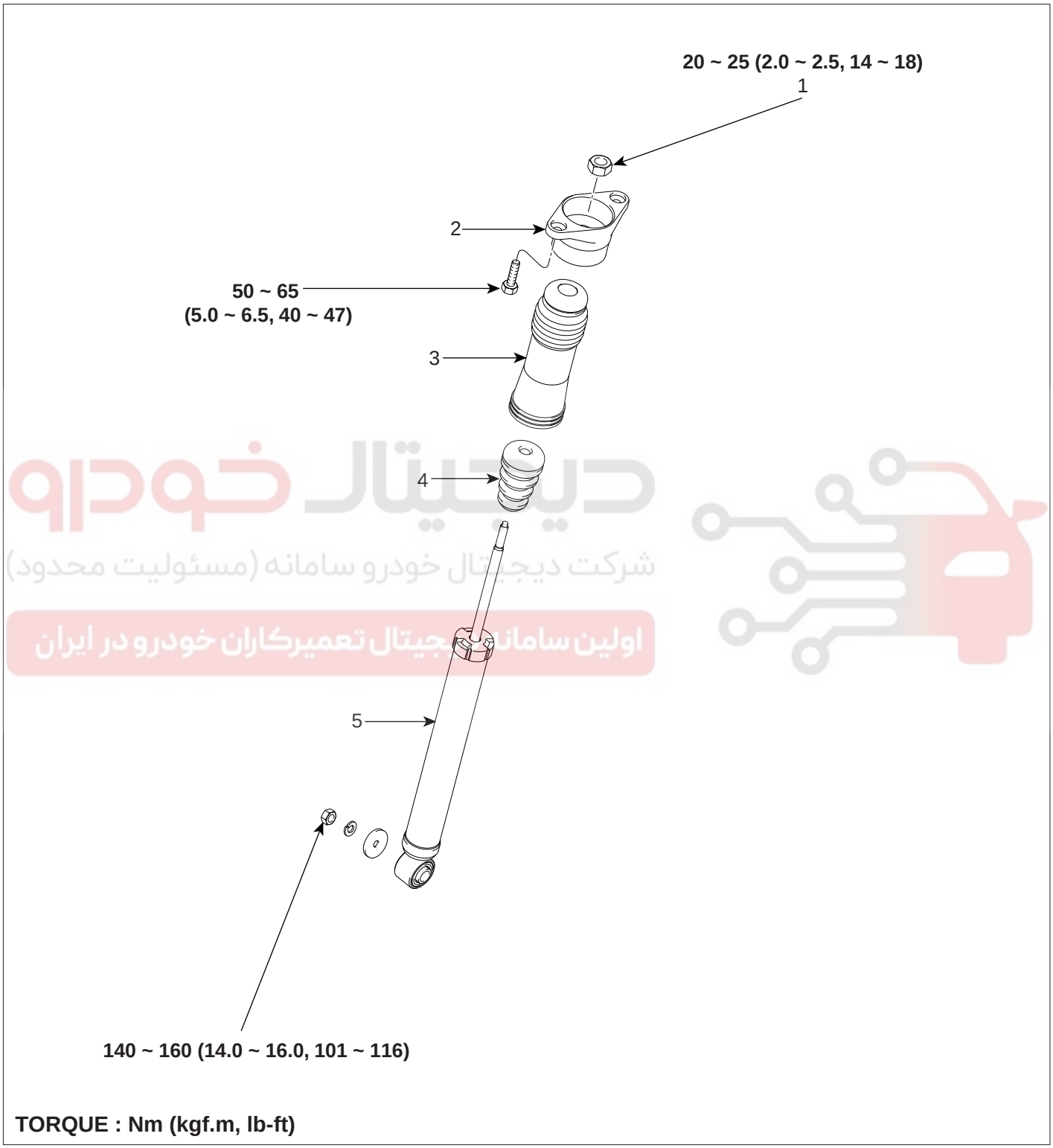


1. Rear shock absorber
2. Rear cross member
3. Rear upper arm
4. Rear stabilizer bar
5. Coil spring
6. Rear lower arm
7. Rear brake disc
8. Carrier assembly
9. Trailing arm

SGHSS6505N

REAR SHOCK ABSORBER

COMPONENTS E45BDE62

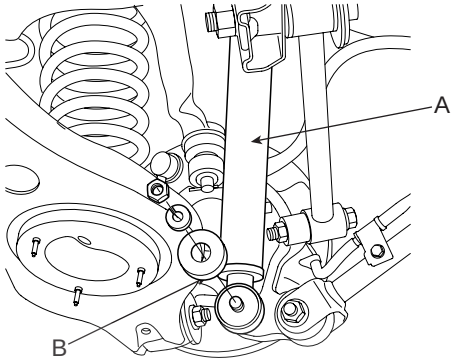


1. Self-locking nut
2. Upper bracket assembly
3. Dust cover
4. Urethane bumper
5. Shock absorber

SGHSS6506N

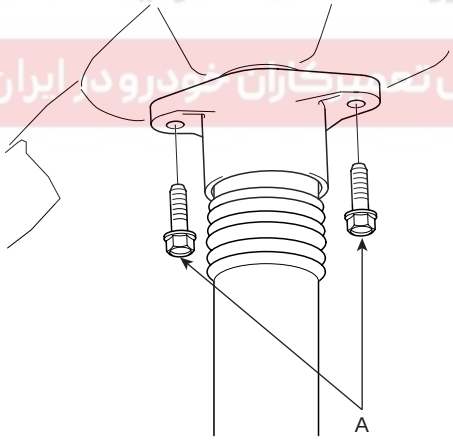
REMOVAL E5908669

1. Remove the rear wheel & tire.
2. Support the lower portion of the rear lower arm with the jack.
3. Remove the bolt & nut (B) holding the rear shock absorber (A) to the carrier assembly.



SGHSS6521N

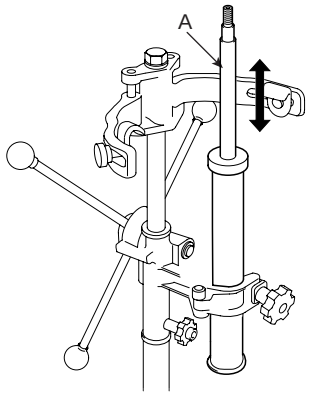
4. Remove the rear shock absorber from the wheel housing by loosening the mounting bolts (A).



KHRE210A

INSPECTION EBABC865

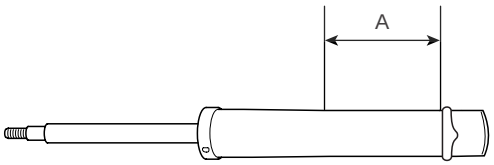
1. Check the rubber parts for wear and deterioration.
2. Compress and extend the piston rod (A) and check that there is no abnormal resistance or unusual sound during operation.



KHRE112A

DISPOSAL EE94661A

1. Fully extend the piston rod.
2. Drill a hole on the (A) section to discharge gas from the cylinder.



KHRE112B

CAUTION

The gas coming out is harmless, but be careful of chips that may fly when drilling. Be sure to wear safety goggles or eye protection when performing this task.

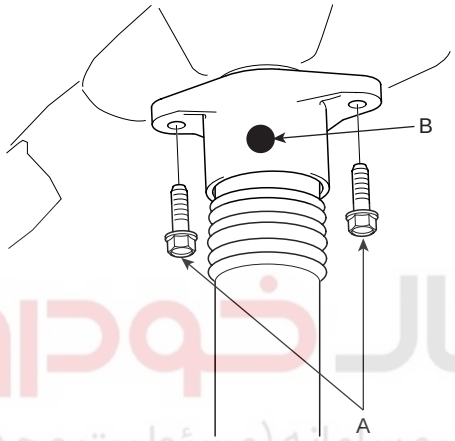
INSTALLATION E5C26B80

1. Install the rear shock absorber to the wheel housing penal by tightening the bracket mounting bolts (A).

Tightening torque Nm (kgf.m, lb-ft):
50 ~ 65 (5.0 ~ 6.5, 40 ~ 47)

CAUTION

Use caution so that identification mark (B) on the rear shock absorber bracket can face the wheel when installing the rear shock absorber.

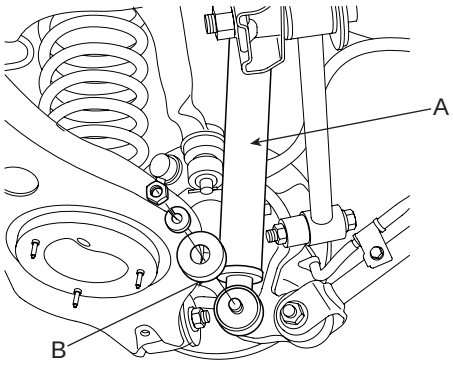


SGHSS7501L

2. Adjust height of the jack to place the bolt holding shock absorber and carrier assembly through the mating holes.

3. Connect the rear shock absorber (A) with the carrier assembly by tightening the bolt & nut (B).

Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



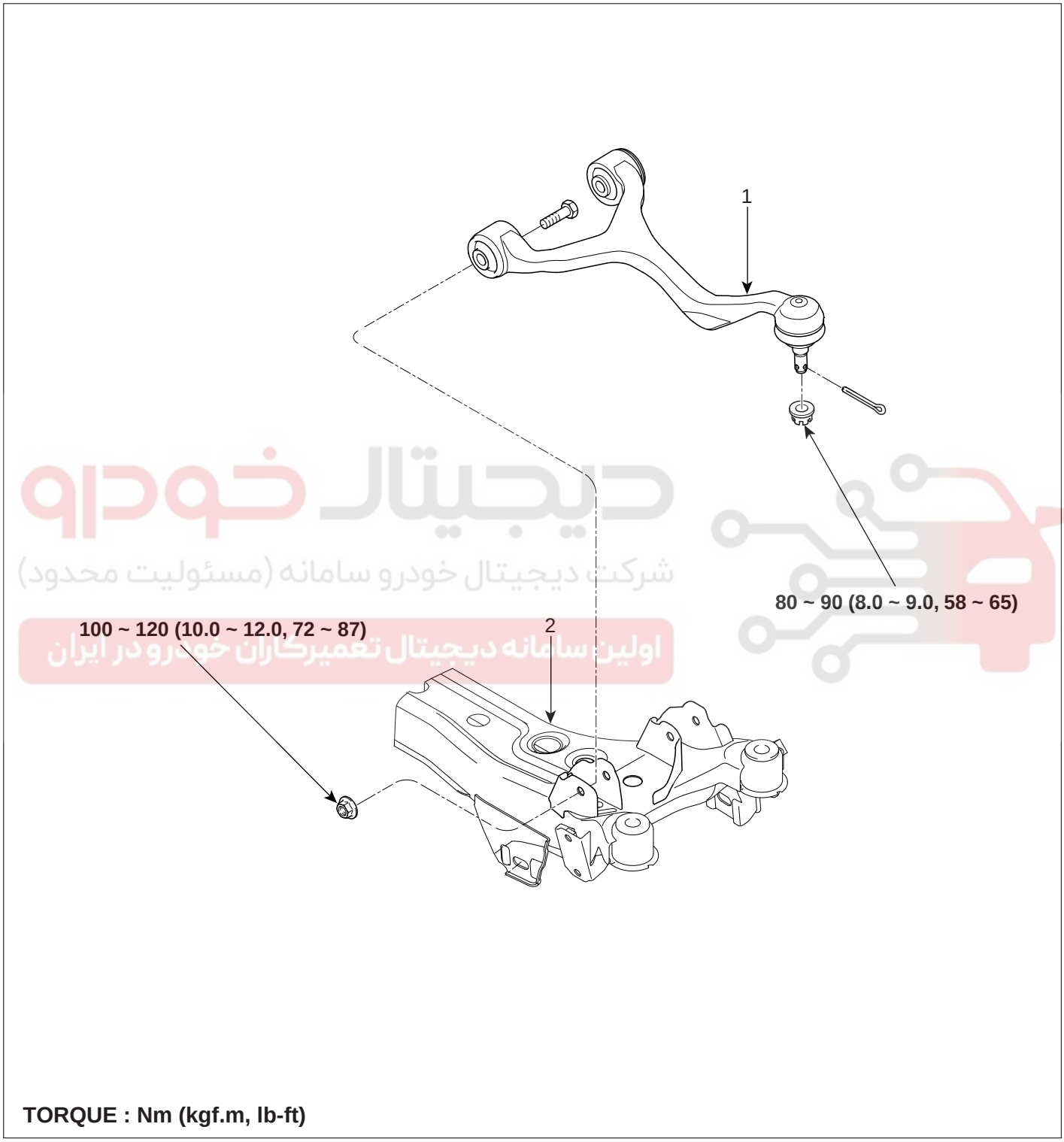
SGHSS6521N

4. Install the rear wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

REAR UPPER ARM

COMPONENTS EFBB885D

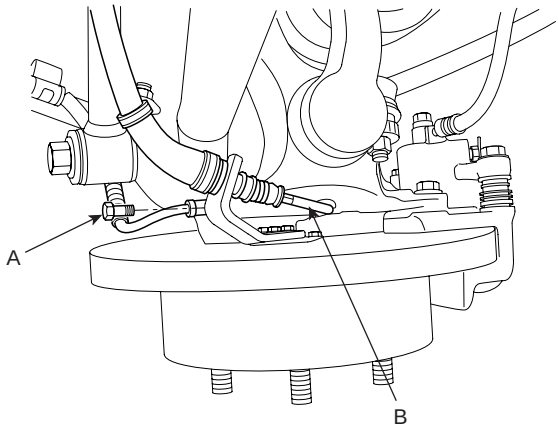


1. Rear upper arm
2. Rear cross member

SGHSS6507N

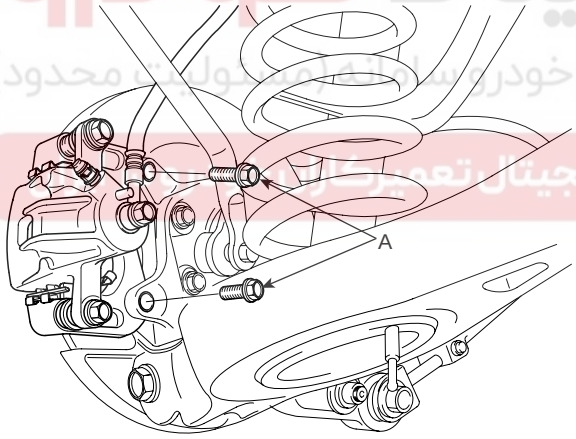
REMOVAL E6A60D28

1. Remove the rear wheel & tire.
2. Remove the parking brake cable (B) and wheel speed sensor mounting bolt (A).

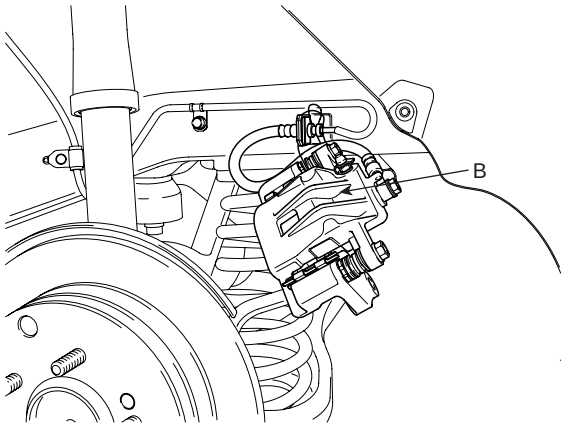


KHBF220A

3. Remove the caliper (B) from the carrier by loosening the mounting bolts (A) and then suspend it with wire.

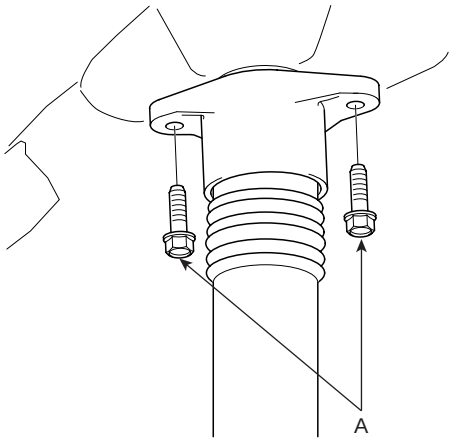


KHBF220F



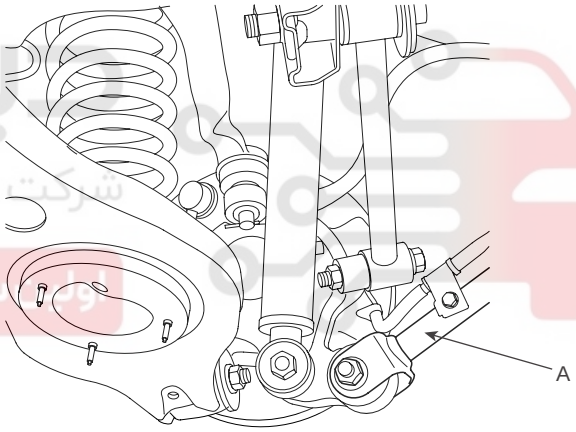
KHBF220G

4. Remove the rear shock absorber bracket mounting bolts (A).



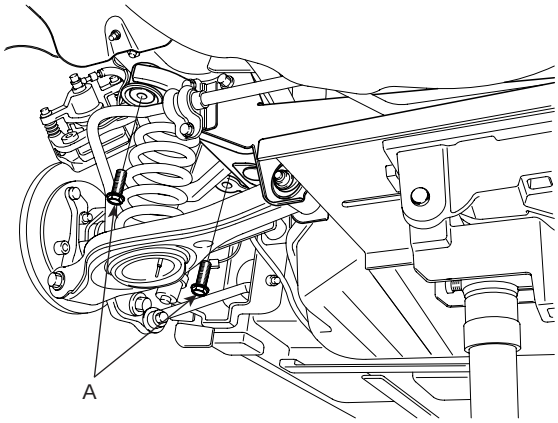
KHRE210A

5. Disconnect the trailing arm (A) with carrier by loosening the bolt and nut.



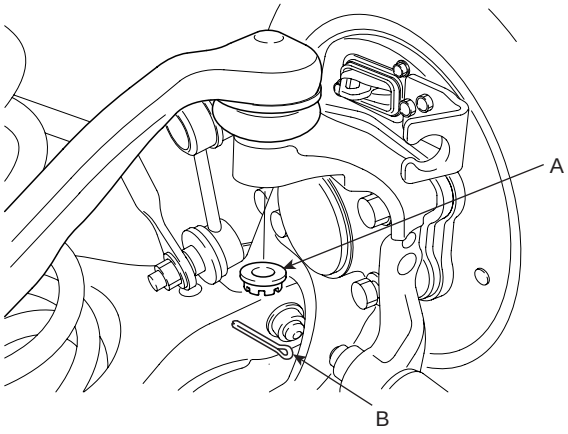
SGHSS6508N

6. Remove the center and main muffler.
7. Remove the rear cross member from the body by loosening the mounting bolts (A).



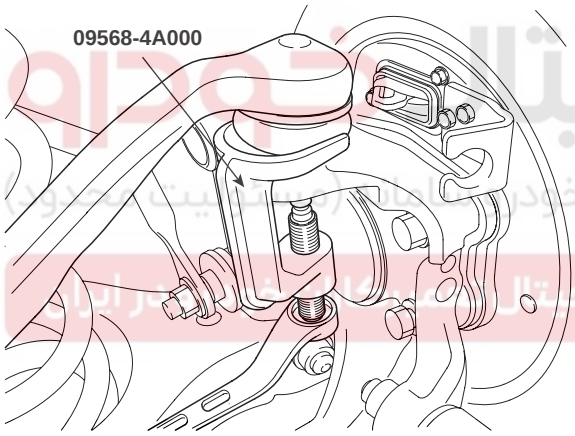
SGHSS6517D

8. Remove the split pin (B) and castle nut (A) from the rear upper arm ball joint.



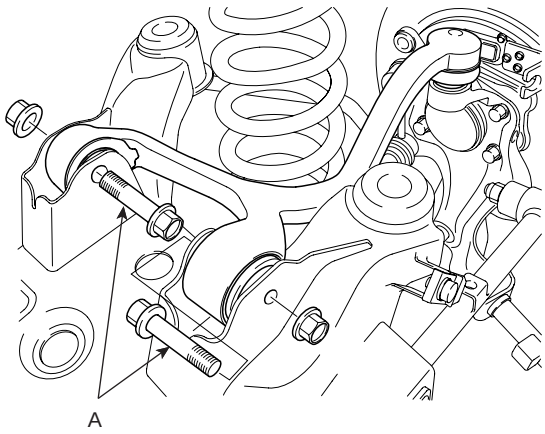
KHBF220D

9. Disconnect the upper arm ball joint with the carrier by using SST (09568-4A000 or 09568-34000).



SGHSS6518D

10. Remove the upper arm from the rear cross member by loosening the bolts (A) and nut.



SGHSS6522N

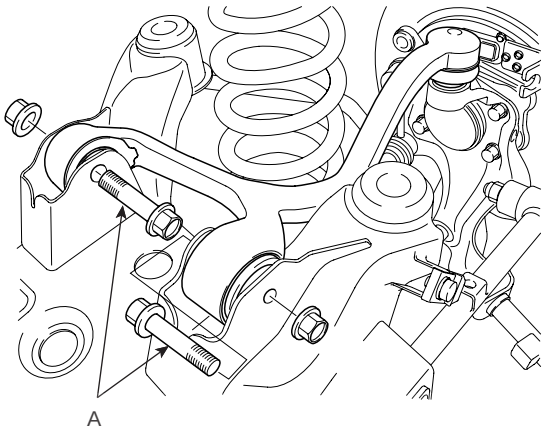
INSPECTION E74EDFB6

1. Check the bushing for wear and deterioration.
2. Check the rear upper arm or damage and formation.
3. Check for all bolts and nut.

INSTALLATION E72BC742

1. Install the rear upper arm to rear cross member and tighten the bolts (A) and nuts.

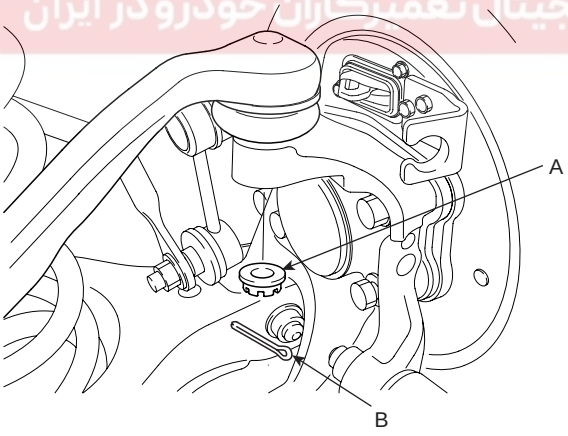
Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



SGHSS6522N

2. Connect the rear upper arm ball joint with carrier and then install the castle nut (A) and split pin (B).

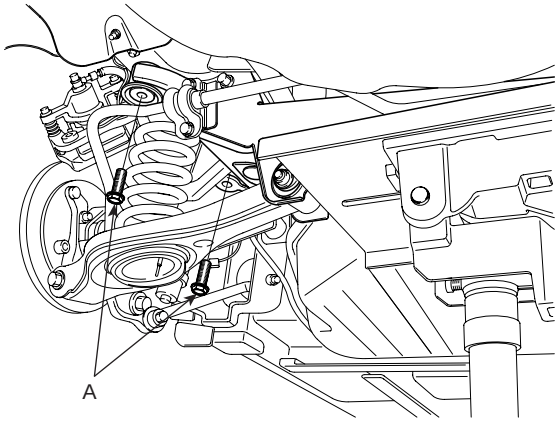
Tightening torque Nm (kgf.m, lb-ft):
80 ~ 90 (8.0 ~ 9.0, 58 ~ 65)



KHBF220D

3. Install the rear cross member to body by tightening the mounting bolts (A).

Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)

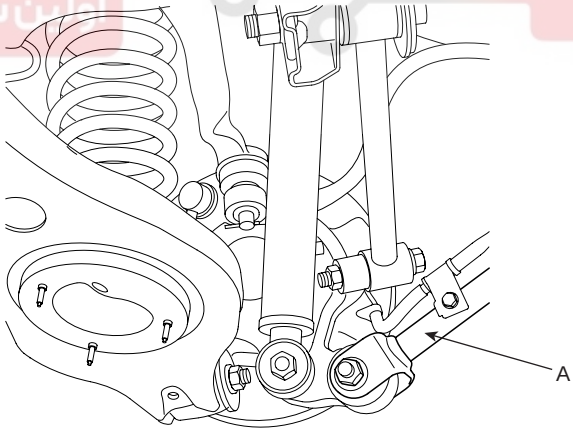


SGHSS6517D

4. Install the center and main muffler.

5. Connect the trailing arm (A) with carrier and then tighten the bolt and nut.

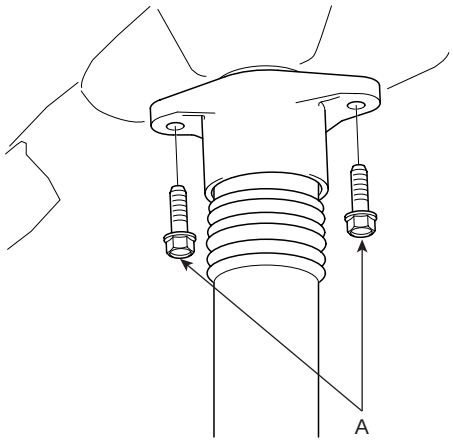
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6508N

6. Install the rear shock absorber bracket to body and tighten the mounting bolts (A).

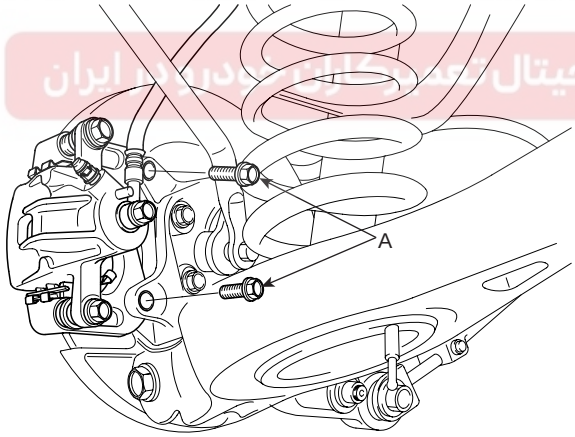
Tightening torque Nm (kgf.m, lb-ft):
50 ~ 65 (5.0 ~ 6.5, 40 ~ 47)



KHRE210A

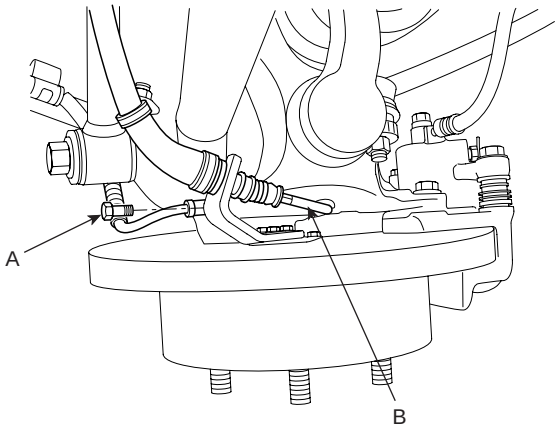
7. Install the rear caliper to carrier by tightening the mounting bolts (A).

Tightening torque Nm (kgf.m, lb-ft):
50 ~ 65 (5.0 ~ 6.5, 40 ~ 47)



KHBF220F

8. Install the parking brake cable (B) assembly and wheel speed sensor (A).



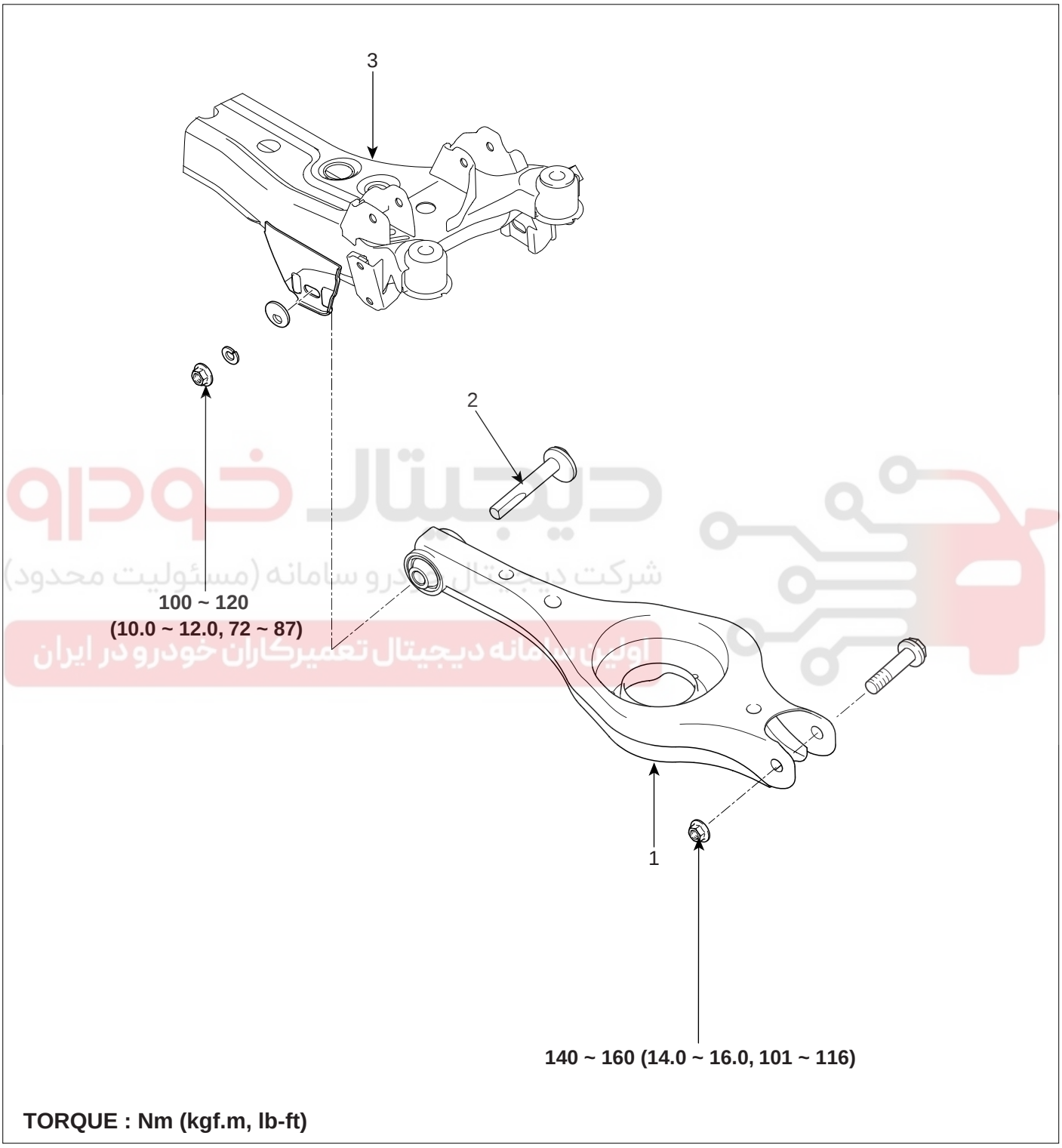
KHBF220A

9. Install the rear wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

REAR LOWER ARM

COMPONENTS E882D553

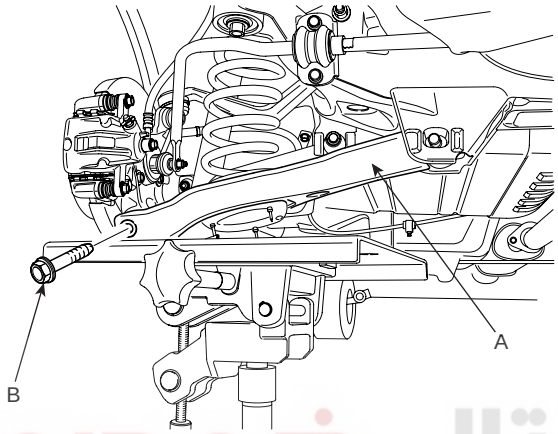


1. Rear lower arm
2. Cam bolt
3. Rear cross member

SGHSS6509N

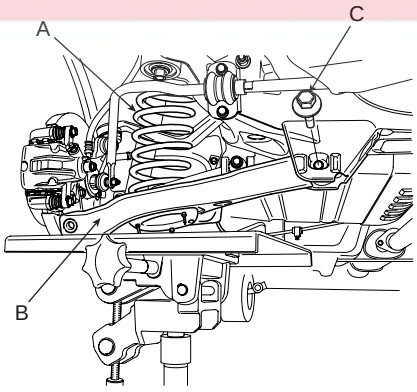
REMOVAL E824CA0A

1. Remove the rear wheel & tire.
2. Support the lower portion of the rear lower arm with a jack.
3. Remove the bolt (B) holding the carrier to the rear lower arm (A).



SGHSS6524D

4. Remove the cam bolt (C) holding the rear cross member to rear lower arm.
5. Remove the coil spring (A) and rear lower arm (B).



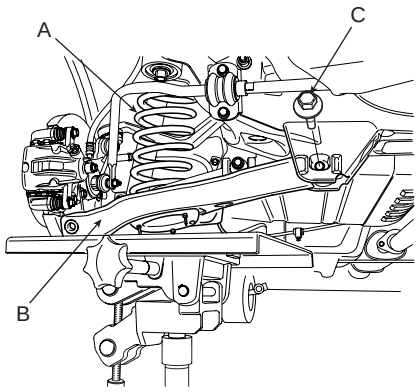
SGHSS6520D

INSPECTION E4C3ABA5

1. Check the bushing for wear and deterioration.
2. Check the rear lower arm for deformation.
3. Check the coil spring and spring pad for deterioration and deformation.
4. Check for all bolts and nut.

INSTALLATION E28BE70F

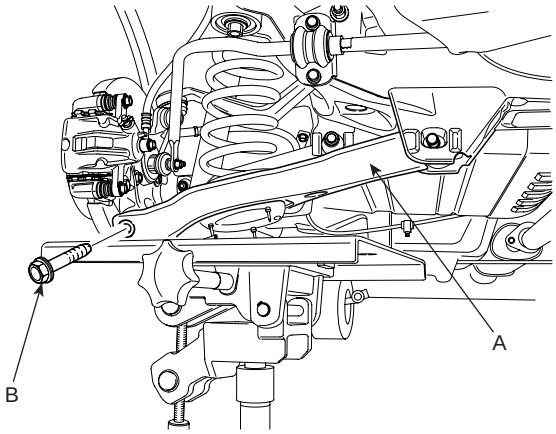
1. Connect the rear lower arm with rear cross member with the cam bolt (C) and then temporarily tighten the nut.
2. Install the coil spring (A) and support the lower portion of the rear lower arm (B) with a jack.



SGHSS6520D

3. Adjust height of the jack to place the bolt (B) holding rear lower arm and carrier assembly through the mating holes.
4. Tighten the bolt and nut to the specified torque.

Tightening torque Nm (kgf.m, lb-ft)
Rear lower arm to cross member:
140 ~ 160 (14.0 ~ 16.0, 101 ~116)
Rear lower arm to carrier:
100 ~ 120 (10.0 ~ 12.0, 72 ~ 87)



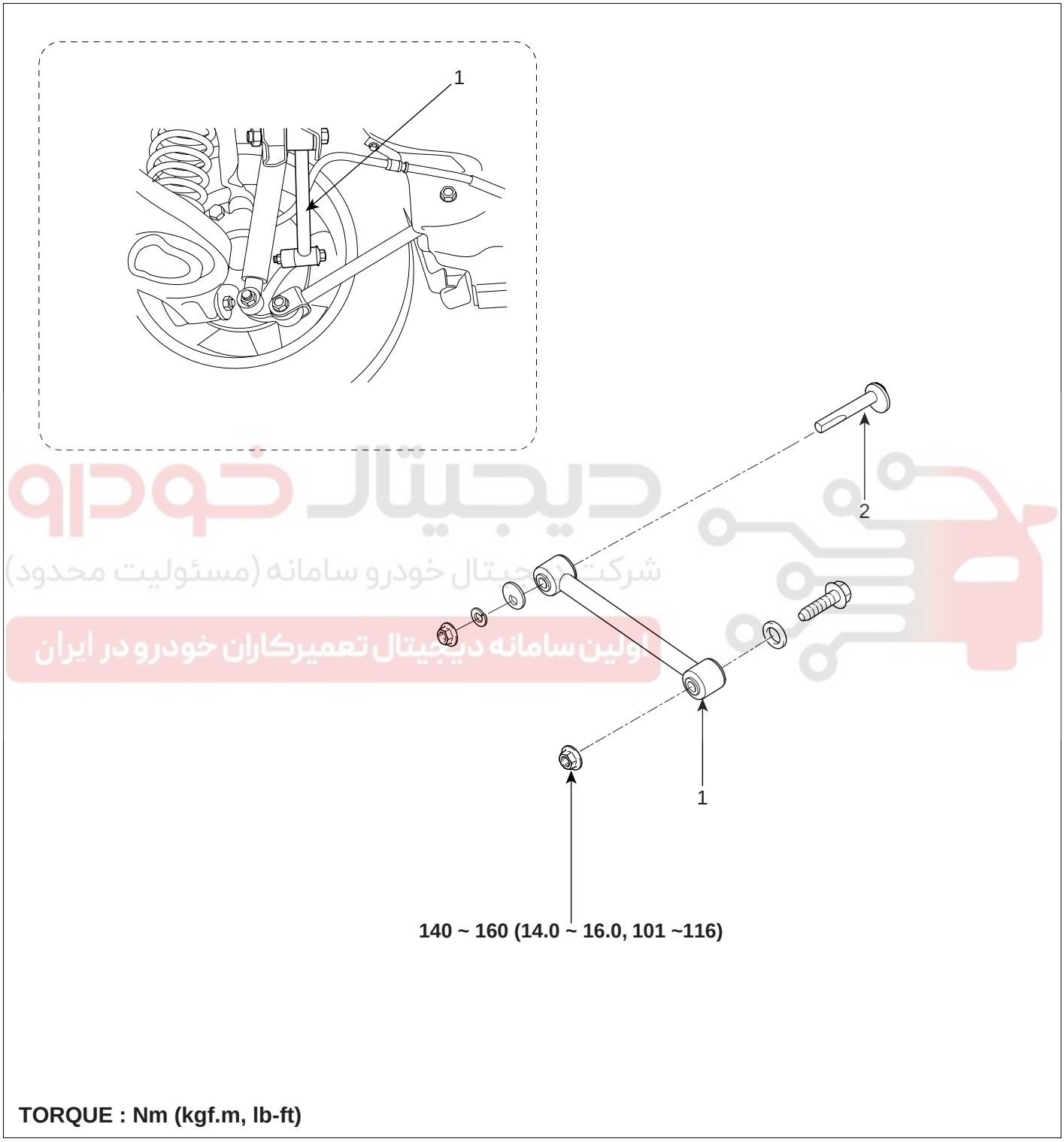
KHBF221F

5. Install the rear wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

REAR ASSIST ARM

COMPONENTS E684B011

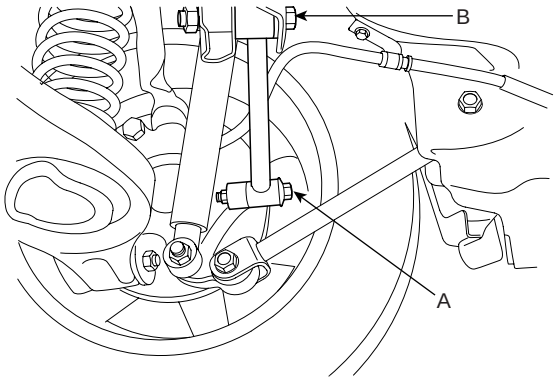


1. Rear assist arm
2. Cam bolt

SGHSS6510N

REMOVAL EAF07DC8

1. Remove the rear wheel & tire.
2. Remove the bolt (A) holding carrier to rear assist arm.
3. Remove the cam bolt (B) and assist arm by loosening the nut.



SGHSS6511N

INSPECTION E1F038C4

1. Check the bushing for wear and deterioration.
2. Check the rear assist arm for deformation.
3. Check the ball joint for damage.
4. Check for the all bolts, nuts, and washer.

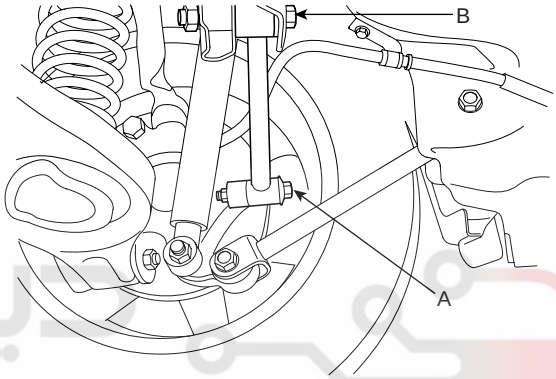
INSTALLATION E1B4B5FA

1. Install the rear assist arm and cab bolt (B) to the cross member and tighten the nut.

Tightening torque Nm (kgf.m, lb-ft):
100 ~ 120 (10.0 ~ 120, 72 ~ 87)

2. Connect the rear assist arm with the carrier and tighten the bolt (A) and nut.

Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



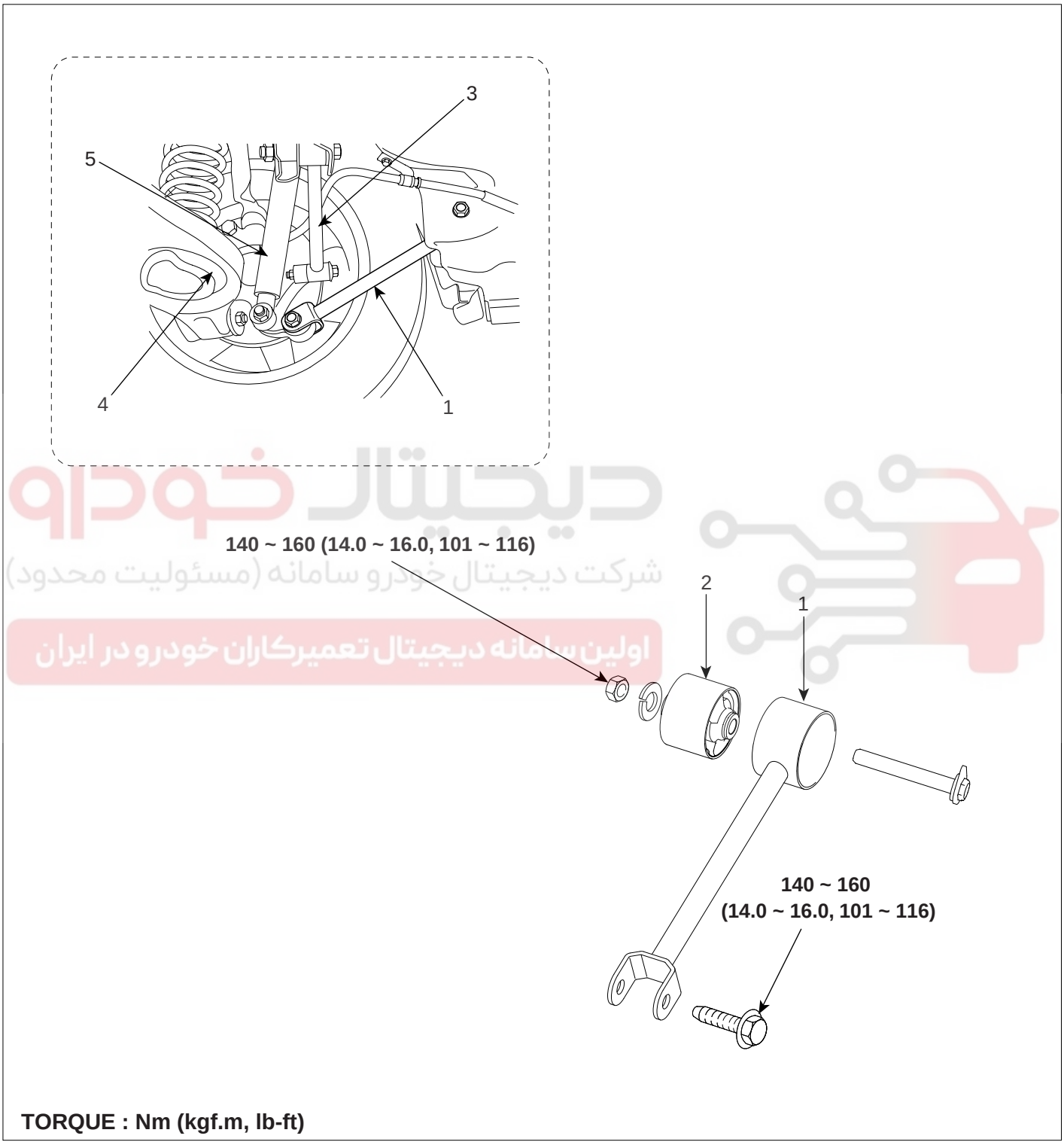
SGHSS6511N

3. Install the rear wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 80)

TRAILING ARM

COMPONENTS E918A320

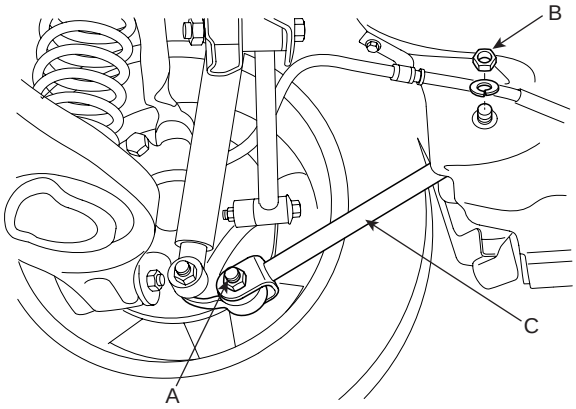


1. Trailing arm
2. Bushing
3. Rear assist arm
4. Rear lower arm
5. Rear shock absorber

SGHSS6512N

REMOVAL E354746E

1. Remove the bolt (A) holding the trailing arm to carrier.
2. Remove the cam bolt and trailing arm (C) by loosening the nut (B).



SGHSS6513N

INSPECTION E6E55F02

1. Check the bushing for wear and deterioration.
2. Check the rear trailing arm for deformation.
3. Check for all bolts and nuts.

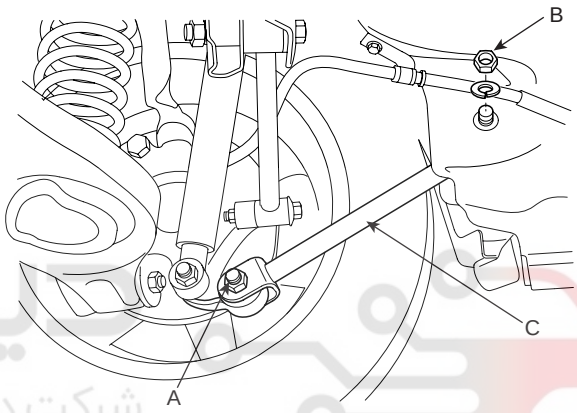
INSTALLATION EE6B12EE

1. Install the trailing arm (C) to body and tighten the bolt and nut (B).

Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)

2. Connect the trailing arm (C) with the carrier and then tighten the bolt (A).

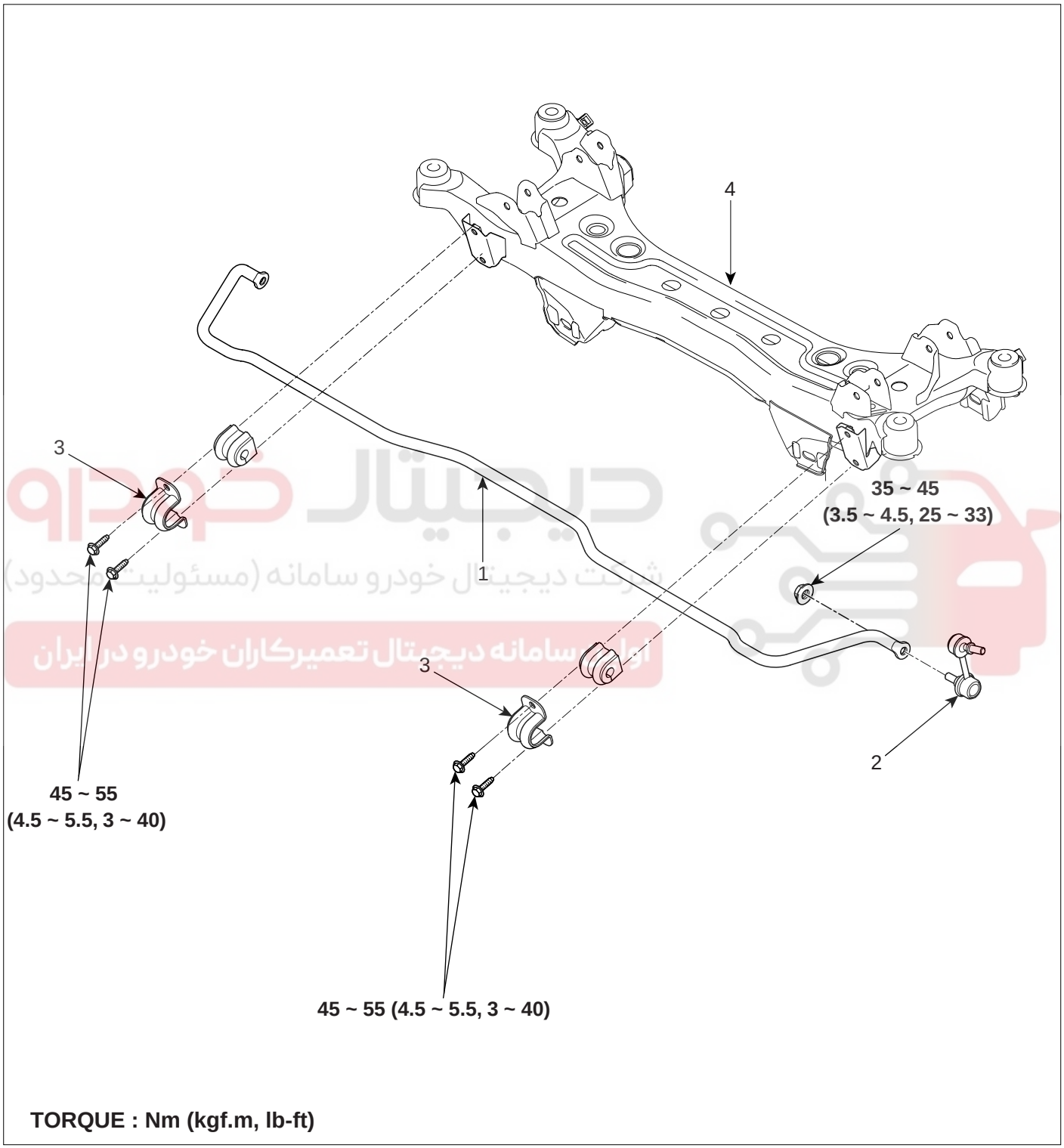
Tightening torque Nm (kgf.m, lb-ft):
140 ~ 160 (14.0 ~ 16.0, 101 ~ 116)



SGHSS6513N

REAR STABILIZER BAR

COMPONENTS E41D46E5

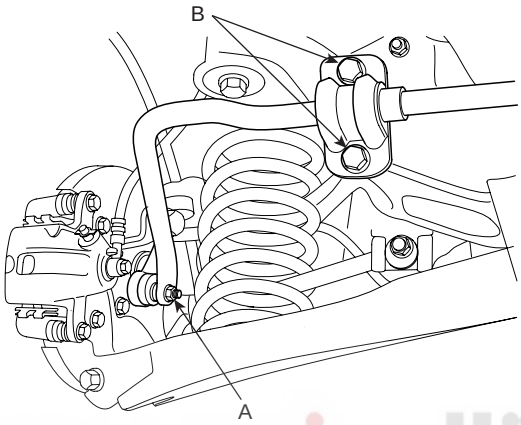


1. Rear stabilizer bar
2. Rear stabilizer link
3. Mounting bracket
4. Rear cross member

SGHSS6514N

REMOVAL E0D5DFBF

1. Remove the rear wheel & tire.
2. Disconnect the rear stabilizer bar with link by loosening the nut (A).
3. Remove the rear stabilizer bar from the rear cross member by loosening the bracket mounting bolts (B).



KHRE260A

INSPECTION E9B11C9D

1. Check the rear stabilizer bar for deformation.
2. Check the rear stabilizer link ball joint for damage.

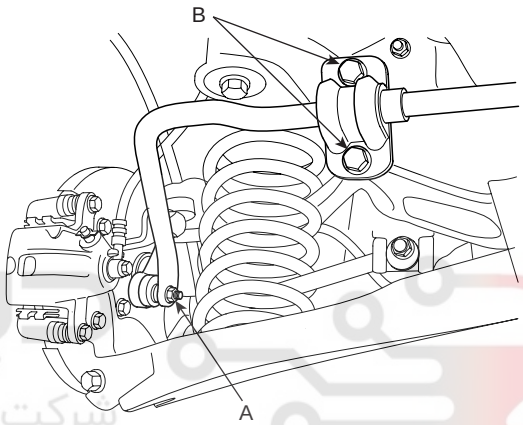
INSTALLATION E6A49665

1. Install the rear stabilizer bar to the rear cross member by tightening the bracket mounting bolts (B).

Tightening torque Nm (kgf.m, lb-ft):
45 ~ 55 (4.5 ~ 5.5, 3 ~ 40)

2. Connect the rear stabilizer bar with link and tighten the nut (A).

Tightening torque Nm (kgf.m, lb-ft):
35 ~ 45 (3.5 ~ 4.5, 25 ~ 33)



KHRE260A

3. Install the rear wheel & tire.

Tightening torque Nm (kgf.m, lb-ft):
90 ~ 110 (9.0 ~ 11.0, 65 ~ 8)