Driveshaft and Axle

GENERAL

FRONT AXLE FRONT HUB / KNUCKLE

DRIVESHAFT

REAR AXLE

FRONT DRIVESHAFT ASSEMBLY FRONT DRIVESHAFT (DOJ-BJ TYPE) FRONT DRIVESHAFT (TJ-BJ TYPE) REAR HUB / CARRIER REAR HUB / AXLE

REAR DRIVRSHAFT ASSEMBLY REAR DRIVESHAFT (DOJ-BJ TYPE)

PROPELLER SHAFT ASSEMBLY PROPELLER SHAFT

DIFFERENTIAL CARRIER ASSEMBLY REAR DIFFERENTIAL CARRIER

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DRIVESHAFT AND AXLE

DS -2

GENERAL

SPECIFICATIONS EF1D5F2B

	Items		Specification	
			Inner side	Outer side
Front driveshaft	Joint type	2.0 GSL AT	T.J	B.J
		2.0 GSL MT, 2.0 DSL AT	T.J	B.J
		2.0 DSL MT	D.O.J	B.J
		2.7 GSL AT	S.F.J	B.J
	Max. permissible angle	2.0 GSL AT	23°	45.8°
		2.0 GSL MT, 2.0 DSL AT	23°	46°
		2.0 DSL MT	22°	46.5°
		2.7 GSL AT	23°	46°
Rear driveshaft	Joint type		D.O.J	B.J
	Max. permissible angle		22°	45°
Differential	Oil type 🖕		Hypoid gear oil	
	Oil capacity L		About 0.75 ~ 0	.80
	Reduction gear type		Hypoid gear	
ت محدود)	Reduction gear ratio		3.091	
	Final drive gear backlash mm(in.)		0.10 ~ 0.15 (0.0039 ~ 0.0059)	
	Differential gear backlash mm(in.)		0 ~ 0.076 (0 ~ 0.003)	

B.J : Birfield Joint D.O.J : Double Offset Joint T.J : Tripot Joint

GENERAL

TIGHTENING TORQUE E0439CF9

	Items	Nm	Kgf.cm	lbf.ft
Front hub	Wheel nut	90 ~ 110	900 ~ 1100	66.4 ~ 81.2
	Driveshaft castle nut	200 ~ 280	2000 ~ 2800	147.5 ~ 206.6
	Break caliper mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Lower arm mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
	Strut lower mounting bolt	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
	Tie rod end ball joint mounting nut	45 ~ 60	450 ~ 600	33.2 ~ 44.3
Rear	Wheel nut	90 ~ 110	900 ~ 1100	66.4 ~ 81.2
	Break caliper mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Break disc(drum) mounting screw	5 ~ 6	50 ~ 60	3.7 ~ 4.4
	Dust cover mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Strut lower mounting nut	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
	Trailing arm mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
	Hub bearing flange nut[2WD]	200 ~ 260	2000 ~ 2600	147.5 ~ 191.8
	Driveshaft castle nut[4WD]	200 ~ 280	2000 ~ 2800	147.5 ~ 206.6
	Suspension arm mounting nut[2WD]	160 ~ 180	1600 ~ 1800	118.0 ~ 132.8
	Suspension arm mounting nut[4WD]	140 ~ 160	1400 ~ 1600	103.3 ~ 118.0
Propeller shaft	Front propeller shaft mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
	Propeller shaft center bearing bracket mounting bolt	ول 40 ~ 50 Jg	400 ~ 500	29.5 ~ <mark>36.9</mark>
	Rear propeller shaft mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5
Differential	Rear differential mounting bolt	90 ~ 120	900 ~ 1200	66.4 ~ 88.5
	Differential cover mounting bolt	40 ~ 50	400 ~ 500	29.5 ~ 36.9

Replace self-locking nuts with new ones after removal.

DRIVESHAFT AND AXLE

DS -4

LUBRICANTS EC261DBD

Items	Recommended	Quantity
BJ92 - TJ92 type of	riveshaft (For 2.0 GSL AT)	
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	$115 \pm 6g$ Inside joint : $55 \pm 3g$ Inside boot : $60 \pm 3g$
TJ boot grease	KLK TJ 41-182 CASMOLY TJ ROLLUBE TJ Oneluber MK	$120 \pm 6g$ Inside joint : 75 ± 3g Inside boot : 45 ± 3g
BJ95 - TJ95 type d	Iriveshaft (For 2.0 GSL MT, 2.0 DSL AT)	
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	$120 \pm 6g$ Inside joint : $60 \pm 3g$ Inside boot : $45 \pm 3g$
TJ boot grease	KLK TJ 41-182 CASMOLY TJ ROLLUBE TJ Oneluber MK	$145 \pm 6g$ Inside joint : $100 \pm 3g$ Inside boot : $45 \pm 3g$
BJ100 - DOJ100 ty	p <mark>e</mark> drivesh <mark>aft</mark> (For 2.0 DSL MT)	

BJ100 - DOJ100 type	driveshaft (For 2.0 DSL MT)	
BJ boot grease	278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	$135 \pm 6g$ Inside joint : 70 ± 3g Inside boot : 65 ± 3g
DOJ boot grease	Ambly TA10/2A CASMOLY DOJ DURALUBE DOJ Variant SD-R2	$\frac{105 \pm 6g}{\text{Inside joint : } 65 \pm 3g}$ Inside boot : 40 ± 3g

BJ95 - SFJ95 type di	riveshaft (For 2.7 GSL AT)	
BJ boot grease	278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	$120 \pm 6g$ Inside joint : $60 \pm 3g$ Inside boot : $60 \pm 3g$
SFJ boot grease	-	$175 \pm 6g$ Inside joint : $120 \pm 3g$ Inside boot : $55 \pm 3g$
BJ87 - DOJ87 type d	Iriveshaft (For rear)	
BJ boot grease	Centoplex 278M/136K CASMOLY BJ ROLLUBE BJ Sunlight SW-2	$95 \pm 6g$ Inside joint : $45 \pm 3g$ Inside boot : $50 \pm 3g$
DOJ boot grease	Amblygon TA10/2A CASMOLY DOJ DURALUBE DOJ Variant SD-R2	95 ± 6g Inside joint : 60 ± 3g Inside boot : 35 ± 3g

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GENERAL

SPECIAL TOOLS EE2EEBOD

DS -5

Tool(Number and Name)	Illustration	Use
09495-33000 Puller	D9533000	Removal of wheel bearing inner race from a hub.
09517-43101 Working base	E1743101	Support for the differential carrier
09517-43500 Adapter		
09568-34000 Ball joint puller	a să Jüçe o dialu o de Constante de la constante E6834000	Separation of a lower arm and a tie rod end ball joint.

DRIVESHAFT AND AXLE

TROUBLESHOOTING E883FEFB

DS -6

Trouble Symptom	Probable cause	See page
Vehicle pulls to one side	Scoring of driveshaft ball joint Wear, rattle or scoring of wheel bearing Defective front suspension and steering	DS-17,58 DS-11 -
Vibartion	Wear, damage or bending of driveshaft Driveshaft rattle and hub serration Wear, rattle or scratching of wheel bearing	DS-17,58 DS-11,17,41,52,58 DS-11
Shimmy	Defective wheel balance Defective front suspension and steering	-
Excessive noise	Wear, damage or bending of driveshaft Rattle of driveshaft and worn hub splines Wear, rattle or scoring of wheel bearing Loose hub nut Defective front suspension and steering	DS-17,58 DS-11,17,41,52,58 DS-11 DS-11,41,52 -

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FRONT AXLE

FRONT AXLE

FRONT HUB / KNUCKLE

COMPONENT LOCATION EF95D302



EIQE101A

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DRIVESHAFT AND AXLE

DS -8

COMPONENTS EGEF40AF



FRONT AXLE

ON-VEHICLE INSPECTION E1AAFB32

WHEEL BEARING PLAY INSPECTION

1. Inspection the play of the bearing while the vehicle is jacked up.



 If there is any play, loosen the wheel nuts slightly. Raise the front of the vehicle, and make sure it is securely supported. 3. Remove the front wheel and tire(A) from front hub(B).



KIQE100A

4.

Be careful not to damage the hub bolts(C) then remove the front wheel and tire(A).

Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.

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DS -10

DRIVESHAFT AND AXLE

- 5. Tighten the hub bearing nut by the following procedures.
 - a. Hub bearing nut must be fastened with torque 28kgf.m and front hub must be rotated above 3 times enough for secure placement of hub bearing.
 - b. Unfasten hub bearing nut until its tightening torque is 0kgf.m.
 - c. Hub bearing nut must be fastened again with torque 20kgf.m

Assemble split pin.

d.

e. If the direction of split pin is not in line with the hole of knuckle unfasten hub bearing nut within 30° and assemble sprit pin.





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KISE205D

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DS -11

FRONT AXLE

REMOVAL E09BE8BE

- Loosen the wheel nuts slightly. Raise the front of the vehicle, and make sure it is securely supported.
- 2. Remove the front wheel and tire(A) from front hub(B).



 Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.



KIQE105B

 Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.



KIQE100B

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DS -12

5. Remove the wheel speed sensor(B) from the knuckle(A).

DRIVESHAFT AND AXLE

 Disconnect the tie rod end ball joint(C) from the knuckle(D) using the special tool(09568-34000).



KIQE100E



Apply a few drops of oil to the special tool. (Boot contact part)

FRONT AXLE

7. Remove the lower arm ball joint mounting bolts(A).



INSPECTION EC57A035

- 1. Check the hub for cracks and the splines for wear.
- 2. Check the brake disc for scoring and damage.
- 3. Check the knuckle for cracks.
- 4. Check the bearing for cracks or damage.

KIQE100F

8. Remove the strut lower arm mounting bolts(A).





KIQE100G

9. Remove the hub and the knuckle assembly(B).

\Lambda CAUTION

Be careful not to damage the boot and rotor teeth.

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DS -14

INSTALLATION E5A3B522

1. Install the hub and the knuckle assembly(B).



4. Install the tie rod end ball joint(C) from the knuckle.

Tightening torque

45 ~ 60Nm (450 ~ 600Kgf.cm, 33.2 ~ 44.3lbf.ft)



KIQE100F

FRONT AXLE

6. Install the brake caliper(B), and then tighten the mounting bolts(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)

8. Install the front wheel and tire(A) on the front hub(B).

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Tightening torque
90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)
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KIQE105B

DRIVESHAFT AND AXLE

DRIVESHAFT

FRONT DRIVESHAFT ASSEMBLY

COMPONENT LOCATION E02373C7



EIQE201A

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DS -17

DRIVESHAFT

REMOVAL E3E09AC0

- Loosen the wheel nuts slightly. Raise the front of the vehicle, and make sure it is securely supported.
- 2. Remove the front wheel and tire(A) from front hub(B).
- Remove the split pin(A), then remove castle nut(B) and washer(C) from the front hub under applying the break.



KIQE100C

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DRIVESHAFT AND AXLE

DS -18

a.

5. Disconnect the tie rod end ball joint(C) from the knuckle(D) using the special tool(09568-34000).

С

B ٠A

KIQE100D



Remove the lower arm ball joint mounting bolts(A).

KIQE100F

Using a plastic hammer(A), disconnect the drive-7. shaft(C) from the axle hub(C).



6.

KIQE200B

8. Push the axle hub(B) outward and separate the driveshaft(C) from the axle hub(B).

KIQE100E

Apply a few drops of oil to the special tool.(Boot contact part)

EIKD019A

DRIVESHAFT

9. Insert a pry bar(A) between the transaxle case(B) and joint case(C), and separate the driveshaft(D) from the transaxle case.



INSPECTION E6C15557

- 1. Check the driveshaft boots for damage and deterioration.
- 2. Check the ball joint for wear and damage.
- 3. Check the splines for wear and damage.
- 4. Check the dynamic damper for cracks, wear and position



CAUTION

 Use a pry bar(A) being careful not to damage the transaxle and joint.

KIQE200C

- Do not insert the pry bar(A) too deep, as this may cause damage to the oil seal.(max. depth : 7mm(0.28in.)
- Do not pull the driveshaft by excessive force it may cause components inside the BJ or TJ(or DOJ) joint kit to dislodge resulting in a torn boot or a damaged bearing.
- Plug the hole of the transaxle case with the oil seal cap to prevent contamination.
- Support the driveshaft properly.
- Replace the retainer ring whenever the driveshaft is removed from the transaxle case.

5. Check the driveshaft for cracks and wears.

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DS -20

INSTALLATION E1BA08CB

1. Apply gear oil on the driveshaft oil seal case contacting surface(B) and transaxle case splines(A).

[2WD]



KIQE240A

- Before installing the driveshaft(C), set the opening side of the circlip(D) facing downward.
- 3. After installation, check that the driveshaft cannot be removed by hand.

EIKD010A

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С

В

DRIVESHAFT AND AXLE

- 4. Install the BJ. Into the knuckle.
- 5. Install the lower arm mounting bolts(A).

Tightening torque	
100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5I	bf.ft)

DRIVESHAFT

7. Install the front wheel and tire(A) on the front hub(B).

Tightening torque 90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)



DS -21

DRIVESHAFT AND AXLE

FRONT DRIVESHAFT (DOJ-BJ TYPE)

COMPONENTS E8ABC35C



EIQE102A

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DRIVESHAFT



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DRIVESHAFT AND AXLE

DS -24

DISASSEMBLY ED7530D0

DRIVESHAFT (RH)

🗥 CAUTION

- Do not disassemble the BJ assembly.
- · Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.
- Remove the DOJ. boot bands and pull the DOJ. boot 1. from the DOJ. outer race.
 - Using a plier or flat-tipped (-) screwdriver, remove a. the LH boot band and LH DOJ. boot band from the driveshaft.
 - b. Remove RH boot band and RH DOJ. boot band.

2. Remove the circlip(B) with a flat-tipped (-) screwdriver (A).



KIKD251B



KIKD251C

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DRIVESHAFT

5. Clean the inner race, cage and balls without disassembling.

Remove the BJ. boot bands and pull out the DOJ. boot and BJ. boot.

$\underline{}^{}$ CAUTION

If the boot(A) is to be reused, wrap tape(B) around the driveshaft splines(C) to protect the boot(A).

INSPECTION E909EF79

- 1. Check the DOJ. outer race, inner race, cage and balls for rust or damage.
- 2. Check splines for wear.
- 3. Check for water, foreign matter, or rust in the BJ. boot.

clean the BJ. assembly(A) and replace grease.



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DRIVESHAFT AND AXLE

Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the

Use the grease included in the repair kit.

DS -26

REASSEMBLY E4BF15E4

- 1. Wrap tape around the driveshaft splines (DOJ. side) to prevent damage to the boots.
- Apply grease to the driveshaft and install the boots. (See page DS - 4)
- 3. To install the dynamic damper, keep the BJ. and driveshaft in a straight line and secure the dynamic damper with the dynamic damper band.
 - with the dynamic damper band. Standard value mm(in.) : 515⁺²₀ (20.3^{+0.079}) EIGEBOOA EIGEBOOA EIGEBOOA EIGEBOOA S. Apply the specified grease to the cage and fit the balls into the cage.

4.

/1

race as shown.

CAUTION

KIQE110A

DRIVESHAFT

- 6. Position the chamfered side(A) as shown in the illustration. Install the inner race on the driveshaft(B), and then the snap ring.

В





- 10. Add the specified grease to the BJ. as much as wiped away at inspection.
- 11. Install the boots.
- 12. Tighten the BJ. boot bands.
- 13. To control the air in the DOJ. boot, keep the specified distance between the boot bands when they are tightened.

DRIVESHAFT AND AXLE

FRONT DRIVESHAFT (TJ-BJ TYPE)

COMPONENTS EAAE8BFC



EIQE103A

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DRIVESHAFT



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DS -30

DISASSEMBLY ECDCOA8E

DRIVESHAFT (RH)

M CAUTION

- Do not disassemble the BJ. assembly.
- Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.

KXDDE07A

1. Remove the circlip(B) from driveshaft splines(A) of the transaxle side TJ. case.

DRIVESHAFT AND AXLE

- 2. Remove the both boot clamps from the transaxle side TJ. case.
 - a. Using a plier or flat-tipped (-) screwdriver, remove the both clamps(TJ. boot band(B), boot band(A)) of the transaxle side.

KXDDE09A

В

KXDDE08A



DS -31

DRIVESHAFT

- 3. Pull out the boot from the transaxle side joint(TJ).
- While dividing joint(TJ) boot(A) of the transaxle side, wipe the grease in TJ. case(B) and collect them respectively.
- 5. Using a plier or flat-tipped (-)screwdriver, remove the circlip(A).



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DRIVESHAFT AND AXLE

DS -32

- 7. Clean the trunion assembly.
- 8. Remove the boot(A) of the transaxle side joint(TJ).

$\underline{}^{}$ CAUTION

For reusing the boot(A), wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



9. Using a plier or flat-tipped (-) screwdriver, remove the both side of clamp(B) of the dynamic damper(A).



10. Fix the driveshaft(A) with a vice(B) as illustrated.

KXDDE16A

- 11. Apply soap powder on the shaft to prevent being damaged between the shaft spline and the dynamic damper when the dynamic damper is removed.
- 12. Saperate the dynamic damper(A) from the shaft(B) carefully.





KIQE150B

KIQE150A

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DS -33

DRIVESHAFT

13. Using a plier or flat-tipped (-) screwdriver, remove the clamp on the side of wheel.

INSPECTION EEFECF9E

- 1. Check the driveshaft spline for wear or damage.
- 2. Check that there is no water or foreign material in the BJ.
- 3. Check the trunion assembly for roller rotation, wear or corrosion.
- 4. Check the groove inside the TJ. case for wear or corrosion.
- 5. Check the dynamic damper for damage or cracks.

KIQE160A

14. Pull out the joint(BJ) on the side of wheel into the transaxle direction. Be carefull not to damage the boot.

EIKD025B





021- 62 99 92 92

DS -34

REASSEMBLY EB97FD9B

- 1. Wrap tape around the driveshaft splines (TJ. side) to prevent damage to the boots.
- 2. Apply grease to the driveshaft and install the boots. (See page DS 4)
- 3. Install the clamps to both boots.

DRIVESHAFT AND AXLE

- 5. Install the TJ. boot bands and TJ. boot.
- Install the trunion assembly(A) and the circlip(E) to the spline(C) on the drivershaft. At this time align the marks(D) each other.



KIQE151A

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DRIVESHAFT

- 7. Add the specified grease to the TJ. as mush as wiped away at inspection.
- 8. Install the boots.
- 9. Tighten the TJ. boot bands.
- 10. To control the air in the T.J. boot, keep the specified distance between the boot bands when they are tight-ened.



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REAR AXLE

REAR HUB / CARRIER

COMPONENT LOCATION E8704F44



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REAR AXLE

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DS -37

COMPONENTS E3FAF6D9 [TYPE DISK BRAKE] 5 C 3 AR CC. 10 9 8 0 6 0 0 1. Disc 2. Hub cap 3. Castle nut 4. Washer 5. Hub 6. Hub bolt 7. Dust cover mounting bolt 8. Rear parking brake assembly 9. Axle carrier 10. Bushing EIQE351B

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DRIVESHAFT AND AXLE



EIQE301B

DS -39

REAR AXLE

ON-VEHICLE INSPECTION EAFDF875

WHEEL BEARING PLAY INSPECTION

1. Inspection the play of the bearing while the vehicle is jacked up.



2. If there is any play, loosen the wheel nuts slightly. Raise the rear of the vehicle, and make sure it is securely supported. 3. Remove the rear wheel and tire(A) from rear hub(B).



KIQE300A

4.

Be careful not to damage the hub bolts(C) then remove the rear wheel and tire(A).

Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.



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DS -40

- 5. Tighten the hub bearing nut by the following procedures.
 - a. Hub bearing nut must be fastened with torque 28kgf.m and rear hub must be rotated above 3 times enough for secure placement of hub bearing.
 - b. Unfasten hub bearing nut until its tightening torque is 0Kgf.m
 - c. Hub bearing nut must be fastened again with torque 20Kgf.m

DRIVESHAFT AND AXLE

Assemble split pin.

d.

KISE205C

 e. If the direction of split pin is not in line with the hole of knuckle unfasten hub bearing nut within 30° and assemble split pin





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DS -41

REAR AXLE

REMOVAL EF886CDA

[TYPE DISC BRAKE]

- 1. Loosen the wheel nuts slightly Raise the rear of the vehicle, and make sure it is securely supported.
- 2. Remove the rear wheel and tire(A) from rear hub(B).
- Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.



KIQE300C

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DS -42

5. Loosen the brake disc mounting screw(A), and then remove the brake disc(C) from the hub(B).

DRIVESHAFT AND AXLE

- 7. Remove the hub bearing flange nut(A).
 - a. Using a flat-tipped (-)screwdriver, spread out the groove(B) on the flange nut(A)
 - b. Loosen the hub bearing flange nut(A).



KIQE300H

DS -43

REAR AXLE

AUTION

- Be careful not disassembly the rear hub assembly.
- For vehicles equipped with ABS.



- Care must be taken not to scratch or damage
- Care must be taken not to scratch or damage the teeth of the rotor.
 - The rotor must never be dropped.
 - If the teeth of the rotor are chipped, it results
 - in deformation of the rotor. It will make it impossible to detect the wheel rotation speed accurately and to operate the system normally.

9. Loosen the rear dust cover mounting bolts(A) and then remove the rear parking brake assembly(B).



KIQE300J

- 10. Remove the rear axle carrier(A).
 - a. Remove the trailing arm mounting bolt(B).
 - b. Remove the suspension arm mounting nut(C).
 - c. Remove the strut mounting nuts(D).



KIQE300K

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DS -44

[TYPE DRUM BRAKE]

- Loosen the wheel nuts slightly. Raise the rear of the vehicle, and make sure it is securely supported.
- 2. Remove the rear wheel and tire(A) from rear hub(B).

- DRIVESHAFT AND AXLE
- 3. Loosen the brake drum mounting screw(A), and then remove the brake drum(C) from the hub(B).



KIQE305C

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021-62999292

REAR AXLE

DS -45

- 5. Remove the hub bearing flange nut(A).
 - a. Using a flat-tipped (-) screwdriver, spread out the groove(B) on the flange nut(A).
 - b. Loosen the hub bearing flange nut(A).
- 7. Loosen the rear dust cover mounting bolts(A) and then remove the drum brake assembly(B).



KIQE305E

KIQE300K

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DS -46

INSPECTION ED0EC57A

[TYPE DISC BRAKE]

- 1. Check the hub bearing for wear or damage.
- 2. Check the rotor for chipped teeth.
- 3. Check the carrier for cracks.

[TYPE DRUM BRAKE]

- 1. Check the hub bearing for wear or damage.
- 2. Check the brake shoe for wear or cracks.
- 3. Check the brake drum for wear or cracks.
- 4. Check the carrier for cracks.

DRIVESHAFT AND AXLE

INSTALLATION E6DBDA66

[TYPE DISC BRAKE]

Install the rear axle carrier(A).
 a. Install the strut mounting nuts(D).

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118.0lbf.ft)

b. Install the suspension arm mounting nut(C).

Tightening torque

160 ~ 180Nm (1600 ~ 1800Kgf.cm, 118.0 ~ 132.8lbf.ft)

c. Install the trailing arm mounting bolt(B).

Tightening torque 100 ~ 120Nm (1000 ~ 1200, 73.8 ~ 88.5lbf.ft)



KIQE300K



Replace the self-locking nut with new ones after removal.

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DS -47

- **REAR AXLE**
- 2. Install the rear dust cover(B) and then tighten the mounting bolts(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



KIQE300H

 After tightening the hub bearing flange nut(A), caulk the concave portion(B) of the spindle by crimping the nut.

Tightening torque

200 ~ 260Nm (2000 ~ 2600Kgf.cm, 147.5 ~ 191.8lbf.ft)



Replace the flange nut with new ones after re-

5. Install the hub cap(A).



KIQE300F

CAUTION Replace the hub cap with new ones after removal.

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DS -48

6. Installation of the rear speed sensor(A).(For vehicles equipped with ABS):

Insert a feeler gauge(C) into the space between the pole piece of the speed sensor(A) and the rotor teeth(B) surface, and then tighten the speed sensors(A) at the position where the clearance at all places is within the standard value.

Standard value

Clearance : 0.5 ~ 1.5mm (0.02 ~ 0.06in.)

- DRIVESHAFT AND AXLE
- Install the brake caliper(B), then tighten the mounting 8. bolt(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



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DS -49

REAR AXLE

[TYPE DRUM BRAKE]

- Install the rear axle carrier(A). 1.
 - Install the strut mounting nuts(D). a.

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118.0lbf.ft)

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

2. Install the rear dust cover(B), then tighten the mounting bolt(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



KIQE305E

0)

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DS -50

DRIVESHAFT AND AXLE

 After tightening the hub bearing flange nut(A), caulk the concave portion(B) of the spindle by crimping the nut.

Tightening torque

200 ~ 260Nm (2000 ~ 26000Kgf.cm, 147.5 ~ 191.8lbf.ft)

6. Install the brake drum(C) from the hub(B), then tighten the brake drum mounting screw(A).

Tightening torque

5 ~ 6Nm (50 ~ 60Kgf.cm, 3.7 ~ 4.4lbf.ft)







KIQE305A

KIQE305C

Be careful not to damage the hub bolts(C) then install the rear wheel and tire(A).

CAUTION Replace the hub cap with new ones after removal.

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REAR AXLE

REAR HUB / AXLE

COMPONENT LOCATION EE6D3387



EIQE351A

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DS -52

REMOVAL E540B0FC

- Loosen the wheel nuts slightly. Raise the rear of the vehicle, and make sure it is securely supported.
- 2. Remove the rear wheel and tire(A) from rear hub(B).

remove the rear wheel and tire(A).

 CAUTION

 Careful not to damage the hub bolts(C) then

- **DRIVESHAFT AND AXLE**
- Remove the wheel speed sensor(B) from the axle carrier(A).



KIQE350B

Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.

KIQE350C

REAR AXLE

5. Remove the caliper mounting bolts(A), and hang the caliper assembly(B) to one side. To prevent damage to the caliper assembly or brake hose, use a short piece of wire to hang the caliper from the undercarriage.

INSPECTION ECE405A7

- 1. Check the hub bearing for wear or damage.
- 2. Check the carrier for cracks.





KIQE350E

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DS -54

INSTALLATION EF7458FB

- 1. Install the rear axle assembly(A).
 - a. Install the strut mounting nuts(D).

Tightening torque

- 140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lbf.ft)
 - b. Install the suspension arm mounting nuts(C).

Tightening torque

140 ~ 160Nm (1400 ~ 1600Kgf.cm, 103.3 ~ 118lbf.ft)

c. Install the trailing arm mounting bolt(B).

Tightening torque

100 ~ 120Nm (1000 ~ 1200Kgf.cm, 73.8 ~ 88.5lbf.ft)

KIQE350E



KIQE350C

DRIVESHAFT AND AXLE

2. Install the brake caliper(B), then tighten the mounting bolt(A).

Tightening torque

50 ~ 60Nm (500 ~ 600Kgf.cm, 36.9 ~ 44.3lbf.ft)



KIQE350D

3. Install the washer(C), castle nut(B) and split pin(A) from the rear hub.

 Tightening
 torque

 200 ~ 280Nm
 2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)

REAR AXLE

Install the wheel speed sensor(B) from the axle car-4. rier(A).





Install the rear wheel and tire(A) on the rear hub(B). 5.

Tightening torque 90 ~ 110Nm (900 ~ 1100Kgf.cm, 66.4 ~ 81.2lbf.ft)



KIQE300A

KIQE350B

Be careful not to damage the hub bolts(C) then install the rear wheel and tire(A).

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DRIVESHAFT AND AXLE

REAR DRIVRSHAFT ASSEMBLY

REAR DRIVESHAFT (DOJ-BJ TYPE)

COMPONENT LOCATION EOEB7BA8



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REAR DRIVRSHAFT ASSEMBLY

COMPONENTS EB2F9111



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DS -58

REMOVAL E1E99E23

- Loosen the wheel nuts slightly. Raise the rear of the vehicle, and make sure it is securely supported.
- 2. Remove the rear wheel and tire(A) from rear hub(B).
 - Image: Control of the second secon

- DRIVESHAFT AND AXLE
- Remove the wheel speed sensor(B) from the axle carrier(A).



KIQE350B

Remove the split pin(A), then remove castle nut(B) and washer(C) from the rear hub under applying the break.

KIQE350C

remove the rear wheel and tire(A).

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DS -59

REAR DRIVRSHAFT ASSEMBLY

5. Remove the trailing arm mounting bolt(B) from the knuckle(A).



8.

KIQE400A

Remove the suspension arm mounting nuts(C). 6.

B

Push the axle hub(B) outward and separate the drive-7. shaft(C) from the axle hub(B).



CAUTION

- Use a pry bar(A) being careful not to damage the transaxle and joint.
- Do not insert the pry bar(A) too deep, as this may cause damage to the oil seal.(max. depth : 7mm(0.28in.).
- So not pull the driveshaft by excessive force it may cause components inside the BJ or DOJ joint kit to dislodge resulting in a torn boot or a damaged bearing.
- Plug the hole of the transaxle case with the oil seal cap to prevent contamination.
- Support the driveshaft properly.
- · Replace the retainer ring whenever the driveshaft is removed from the transaxle case.

KIQE400B

the differential case.



Insert a pry bar(A) between the differential case(B)

and joint case(C), and separate the driveshaft(D) from

KIQE400C

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DS -60

INSPECTION E850CCBD

- 1. Check the driveshaft boots for damage and deterioration.
- 2. Check the ball joint for wear and damage.
- 3. Check the splines for wear and damage.
- 4. Check the dynamic damper for cracks, wear and position.

DRIVESHAFT AND AXLE

DISASSEMBLY EDCC3AC1

DRIVESHAFT (RH)

- Do not disassemble the BJ assembly.
- Special grease must be applied to the driveshaft joint. Do not substitute with another type of grease.
- The boot band should be replaced with a new one.
- 1. Remove the DOJ. boot bands and pull the DOJ. boot from the DOJ. outer race.
 - a. Using a plier or flat-tipped (-) screwdriver, remove the LH boot band and LH DOJ. boot band from the driveshaft
 - b. Remove RH boot band and RH DOJ. boot band in the same way of LH removal procedure.

2.

Be careful not to damage the boot.

B

Remove the circlip(B) with a flat-tipped (-)screwdriver(A).



KIKD251B

3. Pull out the driveshaft from the DOJ. outer race.



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DS -61

REAR DRIVRSHAFT ASSEMBLY

4. Remove the snap ring(A) and take out the inner race(B), cage(C) and balls(D) as an assembly.



- 1. Check the DOJ. outer race, inner race, cage and balls for rust or damage.
- 2. Check splines for wear.
- 3. Check for water, foreign matter, or rust in the BJ. boot.





KIKD251C

- 5. Clean the inner race, cage and balls without disassembling.
- 6. Remove the BJ. boot bands and pull out the DOJ. boot and BJ. boot.

If the boot(A) is to be reused, wrap tape(B) around the driveshaft splines(C) to protect the boot(A).



When the BJ. assembly(A) is to be reused, do not wipe away the grease. Check that there are no foreign substances in the grease. If necessary, clean the BJ. assembly(A) and replace grease.



KXDDE14A

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EIKD020A

DS -62

4.

into the cage.

REASSEMBLY EC7E155D

- 1. Wrap tape around the driveshaft splines (DOJ. side) to prevent damage to the boots.
- 2. Apply grease to the driveshaft and install the boots.
- 3. Apply the specified grease to the inner race(A) and cage(B). Install the cage(B) so that it is offset on the race as shown.

Apply the specified grease to the cage and fit the balls

A CAUTION

Use the grease included in the repair kit.

DRIVESHAFT AND AXLE

5. Position the chamfered side(A) as shown in the illustration. Install the inner race on the driveshaft(B), and then the snap ring.



- Apply the specified grease to the outer race and install the BJ. outer race onto the driveshaft. (See page DS - 4)
- Apply the specified grease into the DOJ. boot and install the boot with a clip. (See page DS 4)

Tighten the DOJ. boot bands.

- 9. Add the specified grease to the BJ. as much as wiped away at inspection.
- 10. Install the boots.

6.

7.

8.

EIKD023A

- 11. Tighten the BJ. boot bands.
- 12. To control the air in the DOJ. boot, keep the specified distance between the boot bands when they are tight-ened.

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Install the suspension arm mounting nuts(C) and trailing arm mounting bolt(B) from the knuckle(B).

REAR DRIVRSHAFT ASSEMBLY

DS -63

INSTALLATION E690CDB8

1. Apply gear oil on the driveshaft differential case(B) contacting surface(B) and driveshaft(A) splines.



5.

Tightening torque

Tightening torque 200 ~ 280Nm (2000 ~ 2800Kgf.cm, 147.5 ~ 206.6lbf.ft)



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DS -64

DRIVESHAFT AND AXLE

7. Install the wheel speed sensor(B) from the knuckle(A).





KIQE300A

Be careful not to damage the hub bolts(C) then install the rear wheel and tire(A).

PROPELLER SHAFT ASSEMBLY

PROPELLER SHAFT ASSEMBLY

PROPELLER SHAFT

COMPONENT LOCATION EAE58355



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DRIVESHAFT AND AXLE

DS -66

COMPONENTS E31291DF

3 2 Ø Jø^o 0 11 10 9 5 17 14 15 12 16 13 6. Spring washer 16. Rubber coupling 1. Flange yoke 11. Companion flange 2. Universal joint assembly 7. VL joint 12. Center bearing 17. Bolt 3. Front tube 8. Sealing 13. Rear tube 4. Snap ring(VL) 9. Nut 14. Plain washer 5. LJ boot 10. Spring washer 15. Center device EIQE501B

PROPELLER SHAFT ASSEMBLY

INSPECTION EE45B86E

VJ JOINT AND BOOTS

- Shift the transmission to Neutral. 1.
- Raise the vehicle off the ground, and support it witj 2. safety stands in the proper locations.
- Check the center support bearing for excessives play 3. or rattle and rubber for rent. If the center support has excessive play or rattle and rubber has rent, replace the propeller shaft assembly.

PROPELLER SHAFT RUNOUT

- 1. Install a dial indicator with its needle on the center of front propeller shaft or rear propeller shaft.
- Turn the other propeller shaft slowly and check the 2. runout. Repear this procedure for the other propeller shaft.

Front Propeller Shaft Runout : 0.3mm (0.012in.)



KIQE505A

- Check the VJ joint boots for damage and deteriora-4. tion. If the boots are damaged or deteriored. replace the propeller shaft assembly.
- Check the VJ joints for excessive play or rattle. 5. If the universal joints have excessive play or rattle, replace the propeller shaft assembly.



KIQE505C

3. If the runout on either propeller shaft exceeds the service limit, replace the propeller shaft assembly.

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DS -68

REMOVAL EBD6F6EB

 After making a match mark(C) on the rubber coupling(A) and rear differential companion(B), remove the propeler shaft mounting bolts(D).

- DRIVESHAFT AND AXLE
- After making a match mark(C) on the flange yoke(A) and transaxle companion(B), remove the propeller shaft mounting bolts(D).



KIQE510B

PROPELLER SHAFT ASSEMBLY

INSTALLATION E9CCDCE3

Installation is the reverse of the removal procedures Install according to match mark of transaxle companion (or rear differential companion) and propeller shaft.

Items	Nm	Kgf.cm	lbf.ft
Front propeller shaft mounting bolt	50 ~ 60	500 ~ 600	36.9 ~ 44.3
Center bearing bracket mounting bolt	40 ~ 50	400 ~ 500	29.5 ~ 36.9
Rear propeller shaft mounting bolt	100 ~ 120	1000 ~ 1200	73.8 ~ 88.5



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DRIVESHAFT AND AXLE

DIFFERENTIAL CARRIER ASSEMBLY

REAR DIFFERENTIAL CARRIER

COMPONENTS EDB74A99



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DIFFERENTIAL CARRIER ASSEMBLY

REMOVAL EOD1EE98

5.

- 1. Drain the differential gear oil.
- 2. Remove the rear drive shaft. (See page DS 58)
- 3. Remove the propeller shaft. (See page DS 68)
- 4. Support the differential assembly(B) with the jack(A).
- 6. After loosen the differential mounting bolts(A), and remove the differential(B).



KIQE600C

Disconnect the coupling control connector(A).

KIQE600A

KIQE600B

7. After loosen the cover bolts(A), and remove the differential cover(B).

Δ

KIQE600D

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DRIVESHAFT AND AXLE

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INSPECTION E9BCC1B0

Install the differential carrier assembly(A) with the special tools(09517-43101 & 09517-43500). Then carry out the following inspection.

2. Check the drive gear back-face lash by the following procedure.

Standard value : 0 ~ 0.076mm (0 ~ 0.003in.)

Place a dial gauge on the back-face of the drive a. gear and measure the runout.

Limit mm(in.) : : 0.05 (0.002)



Measure at 4 points on the gear periphery.

Standard value : 0.10 ~ 0.15mm (0.0039 ~ 0.0059in.)



KIQE610B

Insert a brass rod between the differential carrier

and the differential case, and then rotate the com-

panion flange by hand (once in the normal direc-

tion, and then once in the reverse direction) while applying a load to the drive gear so that some

DIFFERENTIAL CARRIER ASSEMBLY

DS -73



Take the measurements at two places on the pinion gear.



b.

- 4. Check the tooth contact of the final drive gear by the following procedure.
 - a. Apply the same amount of machine blue slightly to both surfaces of the drive gear teeth.

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KIQE610D

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DRIVESHAFT AND AXLE

c. Check the tooth contact pattern.

Tooth contact	Contact state	Solution	
Standard contact	KISE610H		
Heal contact	KISE650A	Increase the thickness of the pinion height adjusting shim, and position the drive pinion closer to the center of the drive gear. Also, for backlash adjustment, reposition the drive gear further from	
Face contact	D KISE650B	the drive pinion.	KISE630A
ان خودرو در ایران Toe contact	KISE650C	Decrease the thickness of the pinion height adjusting shim, and position the drive pinion further from the center of the drive gear. Also, for backlash adjustment, reposition the drive gear closer to	
Flank contact	KISE650D	the drive pinion.	KISE630B

🚺 NOTE

- Tooth contact pattern is a method for judging the result of the adjustment of drive pinion height and final drive gear backlash. The adjustment of drive pinion height and final drive gear backlash should be repeated until the tooth contact patterns are similar to the standard tooth contact pattern.
- When you cannot obtain a correct pattern, the drive gear and drive pinion have exceeded their limits. Both gears should be replaced as a set.

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DIFFERENTIAL CARRIER ASSEMBLY

- 5. Check the oil leaks and the lip part for chew or wear.
- 6. Check the bearings for wear or discoloration..
- 7. Check the gear carrier for cracks.
- 8. Check the drive pinion and drive gear for wear or cracks.
- 9. Check the side gears, pinion gears and pinion shaft for wear or damage.
- 10. Check the side gear spline for wear or damage.

INSTALLATION ECBDECAF

1. After apply liquid gasket, install the differential cover(B), and install the mounting bolts(A).

A

Tightening torque

в

вI

40 ~ 50Nm (400 ~ 500Kgf.cm, 29.5 ~ 36.9lbf.ft)

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KIQE600D

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DRIVESHAFT AND AXLE

DS -76

2. After install the differential(B), and install the mounting bolts(A).

Tightening torque

90 ~ 120Nm (900 ~ 1200Kgf.cm, 66.4 ~ 88.5lbf.ft)



3. Using the transaxle jack(B), install the differential assembly(A).

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KIQE600B

- 5. Install the propeller shaft. (See page DS 69)
- 6. Install the rear drive shaft. (See page DS 63)
- 7. Fill the gear oil.

4.

Specified lubricant Hypoid gear oil (GL-5, 80W / SAE 90) Oil quantity : Fill the reservoir to the plug hold (About 0.75 ~ 0.80L)



KIQE600A

KIQE640A