Kandi 6P

SERVICE MANUAL

NOTICE

The KANDI GROUP produced this manual primarily for KANDI dealers and their qualified mechanics. This manual can only include some off knowledge of a mechanic, so it is assumed that anyone who uses this book to perform maintenance and repair KANDI vehicles could have a basic understanding of
vehicle repair. Repairs attempted by anyone without this knowledge are likely to render the vehicle safe and fit for use.

KANDI GROUP is continually striving to improve all its models. Therefore, modifications and significant changes in specifications or procedures will be forwarded to all authorized KANDI dealers and appear in future editions of this manual where applicable.

NOTE:
Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

Essential information is distinguished in this manual by the following notations.

⚠ The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING Failure to follow WARNING instructions could result in severe injury or death to the vehicle operator, passenger, bystander, or a person checking or repairing the vehicle.

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

NOTE: A NOTE provides essential information to make procedures more accessible.

CONTENTS

⚠ WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Severe burns can result from contact with skin, eyes, or clothing. Always keep alert and wear protection.

The crate of the GOLF and parts in the GOLF maybe have an edge. Always pay attention and wear protection.

CHAPTER 1 GENERAL INFORMATION

⚠ WARNING

The parts of different types/ variants/ versions may look interchangeable. So always refer to Parts Manual of each GOLF model for OEM parts information and service.

1.1 IMPORTANT INFORMATION

1.2 VIN AND MOTOR SERIAL NUMBER

1.3 VEHICLE DIMENSIONS

1.1 IMPORTANT INFORMATION

PREPARATION FOR REMOVAL PROCEDURES

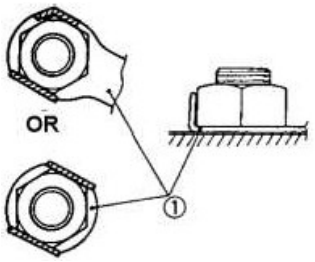
1. Remove all dirt, mud, dust, and foreign material before removal and disassembly.
2. Use proper tools and cleaning equipment.
3. When disassembling the machine, always keep parts together. The correct part must always be reused or replaced as an assembly.
4. During disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation on all parts.
5. Keep all parts away from any source of the fire.

REPLACEMENT PARTS

Use only genuine parts for all replacements.
Use recommended oil and grease for all lubrication jobs.
Other brands may be similar in function and appearance but could be better in quality.

LOCK WASHERS/PLATES AND COTTER PINS

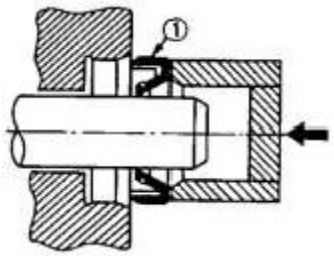
Replace all lock washers/plates and cotter pins after removal. Bend lock tabs along the bolt or nut flats after the bolt or nut has been tightened to specification.



BEARINGS AND OIL SEALS

Install bearings and oil seals to make the manufacturer's marks or numbers visible. When installing oil seals, apply a light coating of lightweight lithium base grease to the seal lips. Oil bearings liberally when installing, if appropriate.

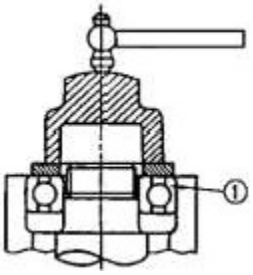
① oil seal



CAUTION:

Do not use compressed air to spin the bearings dry. This will damage the bearing surfaces.

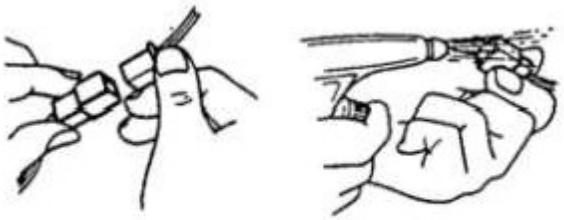
① Bearing



CHECKING OF CONNECTIONS

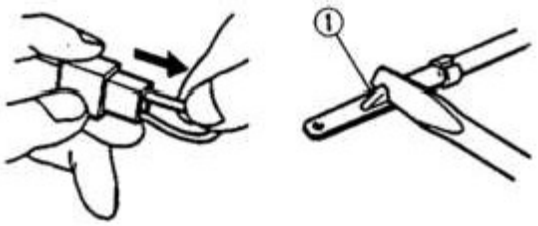
Dealing with stains, rust, moisture, etc., on the connector.

1. Disconnect the connector.
2. Dry each terminal with an air blower.
3. Connect and disconnect the connector two or three times.
4. Pull the lead to check that it will not come off.
5. If the terminal comes off, bend up the pin ①. reinsert the terminal into the connector.
6. Connect the connector.



NOTE:

The two connectors" click" together.



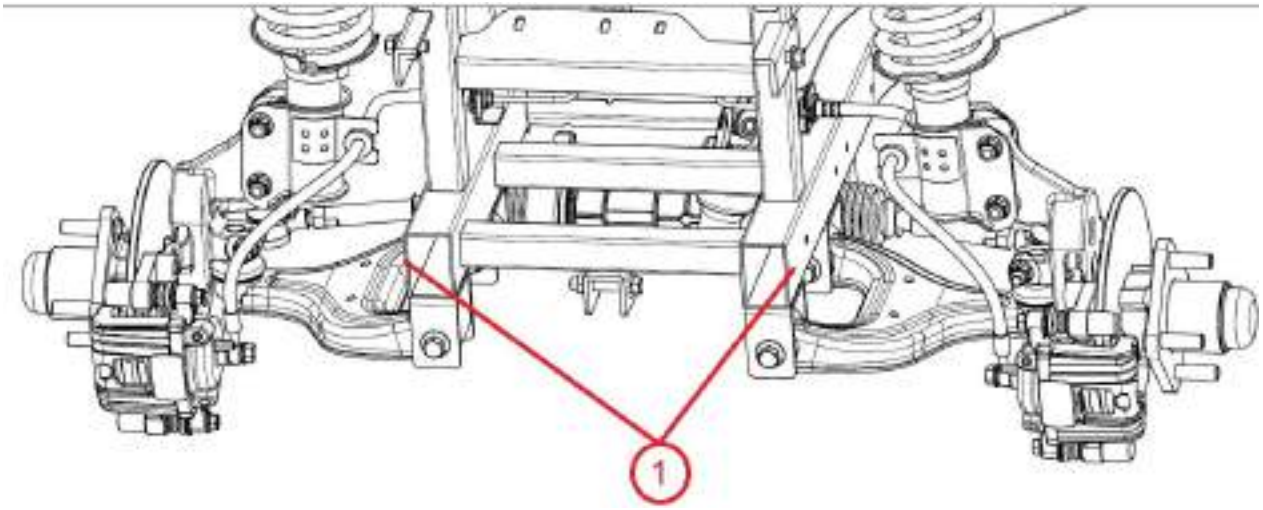
7. Check for continuity with a tester.

NOTE:

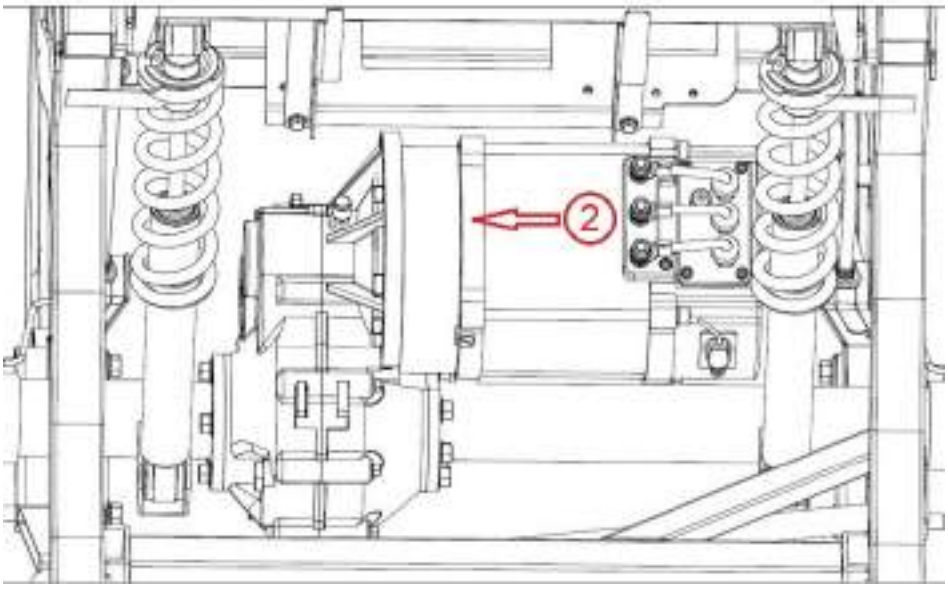
- If there is no continuity, clean the terminals.

1.2 VIN AND MOTOR SERIAL NUMBER

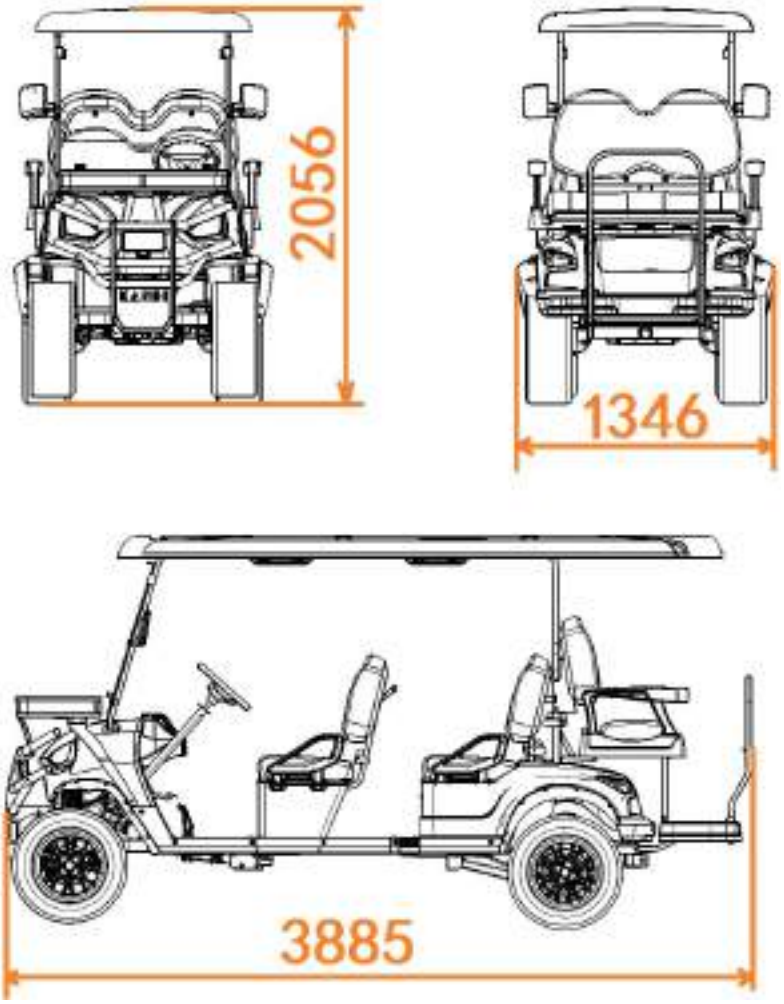
The VIN ① is stamped into the nameplates on both sides of the central stringer.



The motor serial number ② is stamped into the upper side the of motor.



1.3 VEHICLE DIMENSIONS



Note

The on-road equipment (rear view mirror, turn lights, etc.) is not Standard Equipment for the USA

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CHAPTER 2 MAINTENANCE

⚠ WARNING

The parts of different types/ variants/ versions may need to be more interchangeable, even though some parts have the same appearance. So always refer to the Parts Manual of each GOLF model for OEM parts information and service.

2.1 PERIODIC MAINTENANCE

GENERAL

CAUTION

The Marks on the following chart

DL： Due to the nature of the adjustments marked with a DL on the following chart, it is recommended that an authorized dealer perform the service.

▲： Service/Inspect more frequently when operating in adverse conditions.

PERIODIC MAINTENANCE SCHEDULE

Careful periodic maintenance will help keep your vehicle in the safest, most reliable condition.

The following chart on the following pages explains the inspection, adjustment, and lubrication intervals essential components.

Maintenance intervals are based on average riding conditions and an average vehicle speed of approximately 16km/h (10 miles per hour). Vehicles subjected to severe use, such.

as operation in wet or dusty areas, should be inspected and serviced more frequently.

Inspect, clean, lubricate, adjust, or replace parts, as necessary.

NOTE:

Inspection may reveal the need for replacement parts. Always use genuine parts available from your dealer.

Service and adjustments are critical. If you need unfamiliar with safe service and adjustment procedures, have a qualified dealer perform these operations.

A = Adjust I = Inspect C = Clean L = Lubricate D = Drain R = Replace

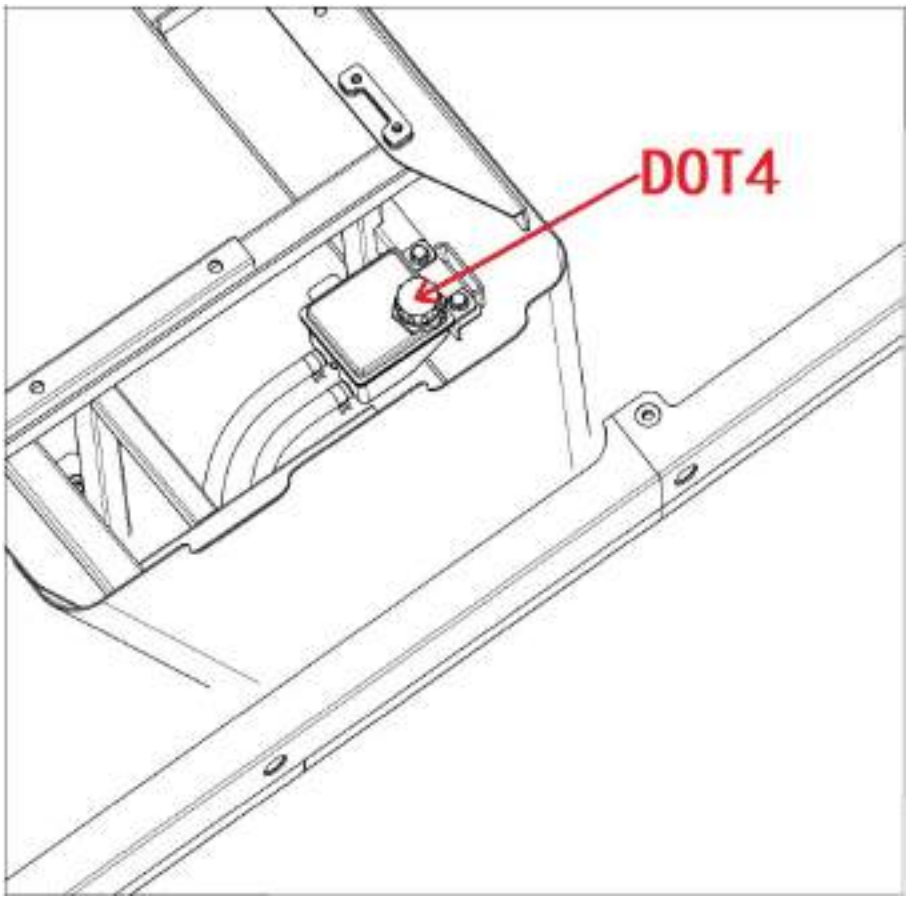
T =Tighten to Correct Torque

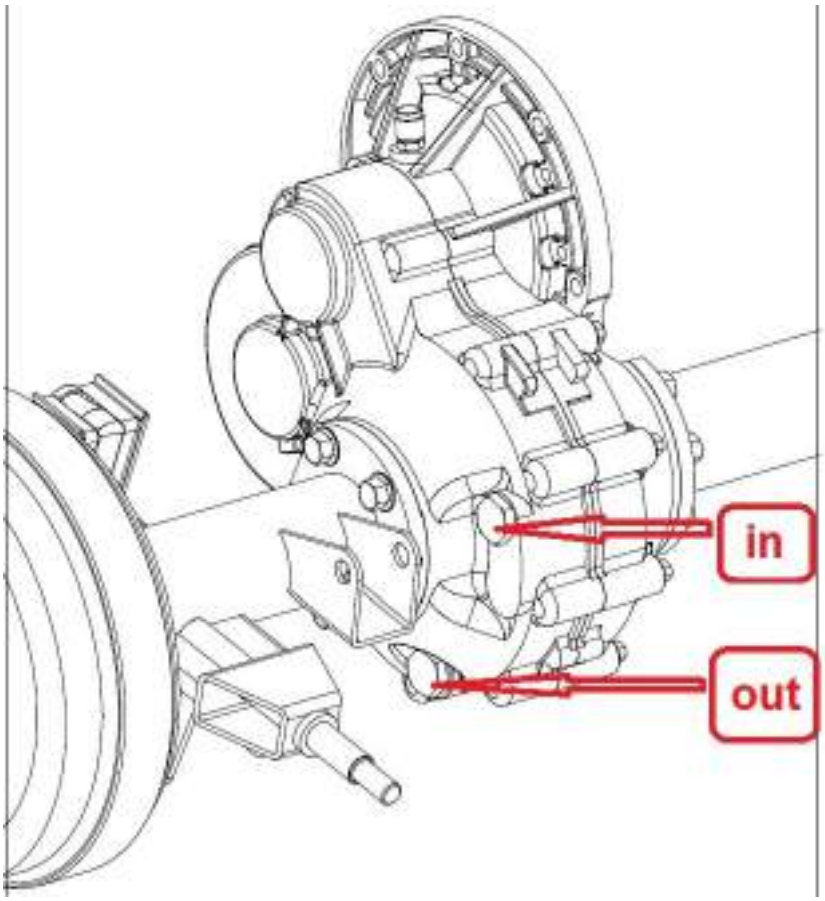
	Item	Hours	When	Remarks
	Service (Main) Brake System	/	Pre-ride	I
	Parking Brake	/	Pre-ride	I
	Tires	/	Pre-ride	I
	Wheels	/	Pre-ride	I
	Frame nuts, bolts fasteners	/	Pre-ride	I
	Brake fluid Level	/	Pre-ride	I
	Headlamp Inspection	/	Daily	C apply dielectric grease to the connector when replaced
	Tail lamp inspection	/	Daily	C apply dielectric grease to

▲	Transmission Oil Level	10	Monthly	I change annually
	Battery Terminals	10	Monthly	I C
DL	Brake pad wear	10	Monthly	I
▲	Steering	50 hrs.	Six months	I L T If necessary
▲	Front Suspension	50 hrs.	Six months	I L T If necessary
▲	Rear Suspension	50 hrs.	Six months	I T If necessary
	Brake fluid	200 hrs.	24 months	Change every two years
DL	Toe adjustment	/	As Required	Periodic inspection, adjust when parts are replaced.
	Headlight Aim	/	As Required	Adjust if necessary
▲ DL	Ball joint (A-arm- strut)	10 hrs.	monthly	I (for damage, wear, and play) R. Replace if necessary

LUBRICANT AND FLUID

	Item	Lube Rec	Method	Frequency
	Brake Fluid	DOT 4 Only	Maintain level Between fill lines.	As require, change every two years or 200 hours
	Transmission Oil	SEA 80W/90-GL5	.65L	Change annually or at 100 hours


DOT4


in
out

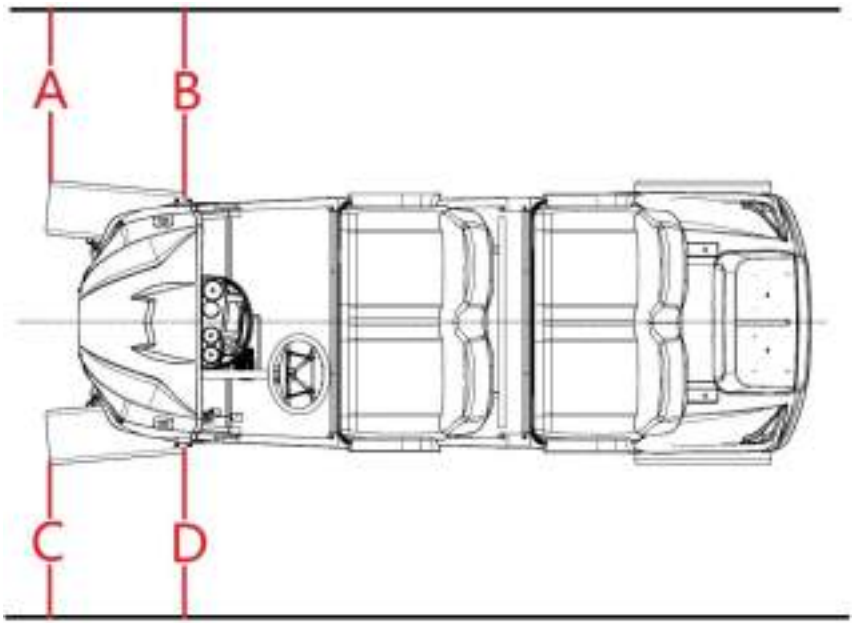
2.2 TOE ALIGNMENT

METHOD: STRAIGHTEDGE OR STRING

NOTE:

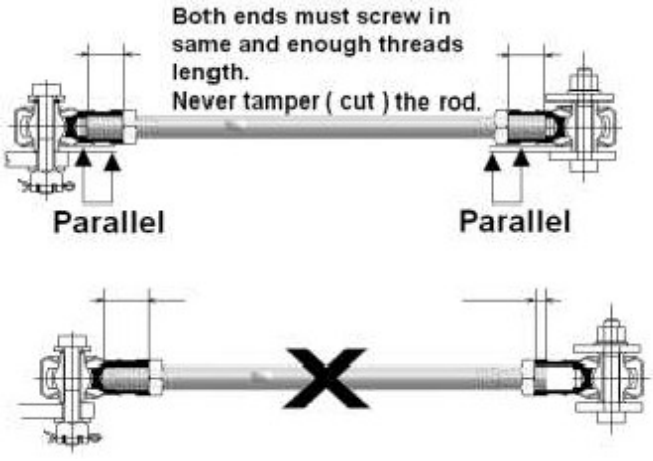
String should measure the middle surface of tires on both sides of GOLF. the recommended toe alignment is 1/8” to 1/4” (3 to 6mm) toe out.

1. Align the vehicle so that the middle line of the vehicle is flush with the measuring line.
2. Hold the steering wheel in the middle of the stroke.
3. Measure A and B, C and D, B-A = D-C, and adjust the tie rods so that the value is 1/16” to 1/8” (1.5 to 3mm).



⚠ WARNING

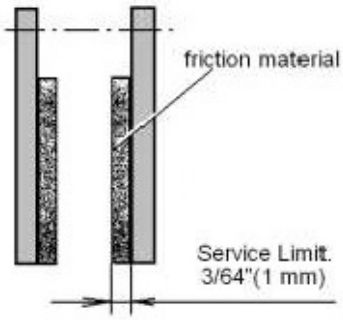
Always pay attention to tie rods assembly. Both ends must screw in the same and have enough threads length



2.3 BRAKING SYSTEM INSPECTION

The following checks are recommended to keep the braking system operating well. Service life the servicing system components depends on operating conditions.
Inspect brakes in accordance with the maintenance schedule and before each ride.

1. Keep the fluid level in the master cylinder reservoir to the indicated level the on reservoir.
2. Use DOT 4 brake fluid.
   NOTE:
   Use new brake fluid or brake fluid from a sealed container to avoid contamination of system.
3. Check the brake system for fluid leaks.
4. Check the brake for excessive travel or a spongy feel.
5. Check friction pads for wear, damage, and looseness.
6. Check the surface condition of the disc.



BRAKE PAD INSPECTION

Pads should be changed when.
The friction material is worn to 3/64" (1mm).

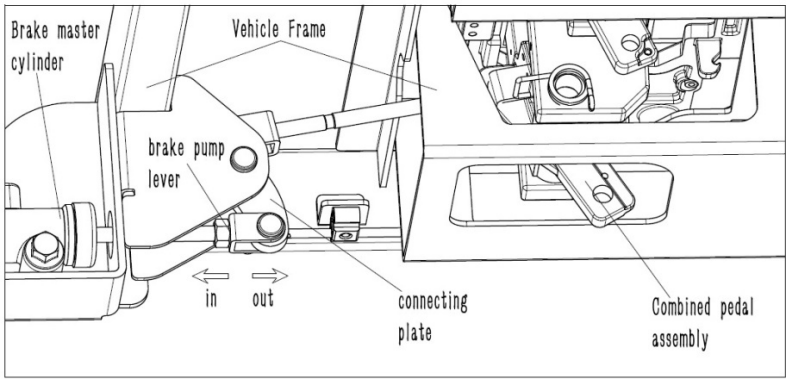
HOSE/FITTING INSPECTION

Check braking system hoses and fittings for cracks, deterioration, abrasion, and leaks.
Tighten any loose fittings and replace any worn or damaged parts.

ADJUSTING THE BRAKE PEDAL

Check the brake pedal free play. Free play should be 8 – 12mm.
Out of specification → Adjust.

1. Loosen the locknut.
2. Turn the brake pump lever in or out until the correct free play is obtained.
   Turning in: Free space is increased.
   Turning out: Free play is decreased.
3. Tighten the locknut.



ADJUSTING THE PARKING BRAKE

Although the parking brake has been adjusted at the factory,
the brake should be checked for proper operation.
The mechanical brake must be maintained to be fully functional.

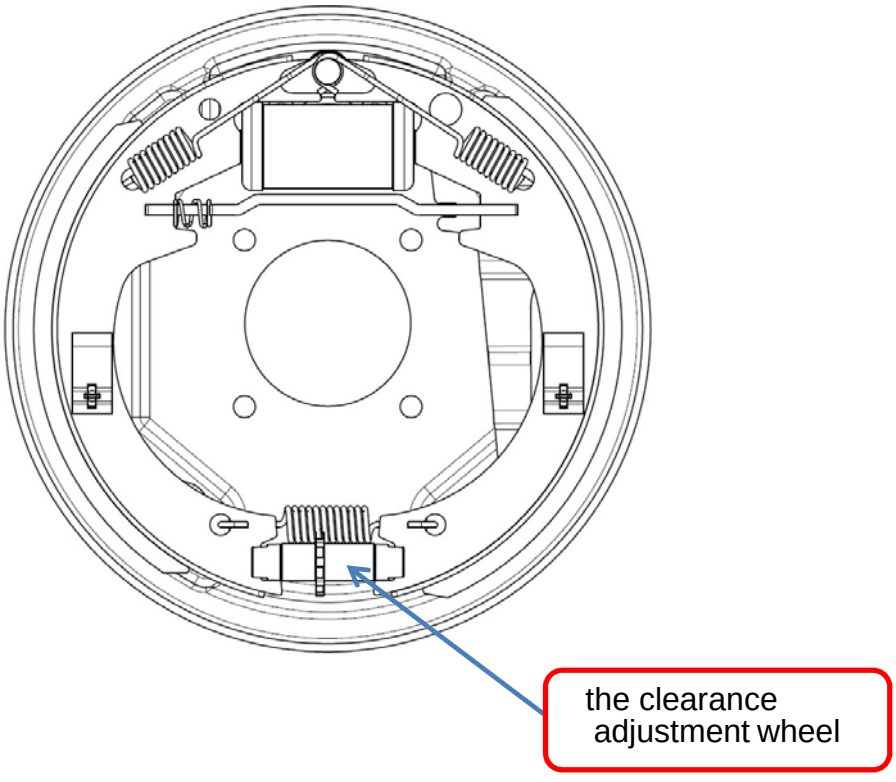
1. Press the parking pedal with the motor off, then attempt to move the GOLF.
2. If the rear wheels are locked, it is adjusted properly.
3. If the wheels are not locked, they must be adjusted.

To adjust (set up) the mechanical parking brake, use the following procedure.

1. Turn to “N” gear and turn off the motor.
2. Elevate and safely support the vehicle frame and remove the rear wheel(s).
3. Remove the brake drum and install the brake clearance controller on the brake.
4. Toggle the clearance adjustment wheel until the clearance is appropriate.
5. Remove the brake clearance controller and install the brake drum.
6. After both sides are adjusted, install the wheels.
7. Depress the parking brake pedal by 1 / 4 of the total travel (3 times of rattling)
8. Tighten the adjusting nut on the brake cable until the tire cannot rotate freely.
9. Release the parking pedal, and the tire should rotate freely,

Note:

If it cannot be rotated, loosen the adjusting nut for one turn and retest;
Until the result is met.



2.4 WHEELS

Inspect all wheels for runout or damage. Check wheel nuts and ensure they are tight.
Do not over-tighten the wheel nuts.

WHEEL REMOVAL

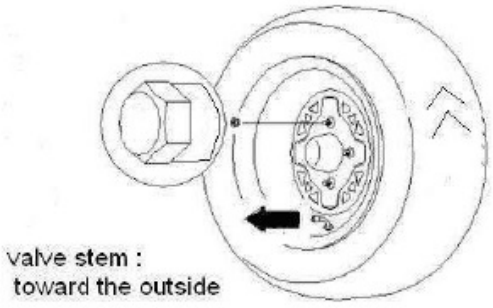
1. Turn to “N” gear, turn off the motor, and lock the parking brake.
2. Loosen the wheel nuts.
3. Place support at the proper position of the frame to lift the vehicle safely.
4. Remove the wheel nuts and remove the wheel.

WHEEL INSTALLATION

1. Place the wheel in the correct position on the wheel hub,
2. Install the wheel nut and tighten it with your fingers.

Note:
Ensure that the conical surface of the nut and
the mounting conical surface of the wheel fit each other.

3. Lower the vehicle to the ground.
4. Tighten the wheel nuts firmly to the
   torque listed in the torque table.



Front and rear

Wheel Nut Torque Specifications

	Bolt Size	Specification	
Front	M12X1.25	80Ft.Lbs	
Rear	M12X1.25	80Ft.Lbs	

CAUTION:
If wheels are improperly installed, it could affect Vehicle handling and tire wear.

2.5 TIRE

TIRE INSPECTION

CAUTION:

1. Maintain proper tire pressure. Refer to the warning tire pressure decal applied to the vehicle.
2. Improper tire inflation may affect GOLF maneuverability.
3. When replacing a tire, always use original equipment size and type.
4. The use of non- standard size or type tires may Affect GOLF handling and cause machine damage.

Tire Pressure	
Front	87kPa/12PSI
Rear	93kPa/14PSI

TIRE TREAD DEPTH

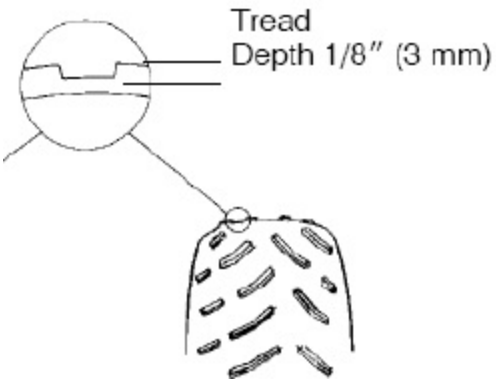
Always replace tires when tread depth is worn to 1/8" (3mm) or less.

⚠ WARNING

Operating a GOLF with worn tires will increase the possibility of the vehicle skidding easily with possible loss of control.

Worn tires can cause an accident.

Always replace tires when the tread depth measures 1/8" (3mm) or less.



2.6 NUTS, BOLTS, FASTENERS

Periodically inspect the tightness of all fasteners in accordance with the maintenance schedule.

Check that all cotter pins are in place.

Refer to specific fastener torques listed in each chapter.

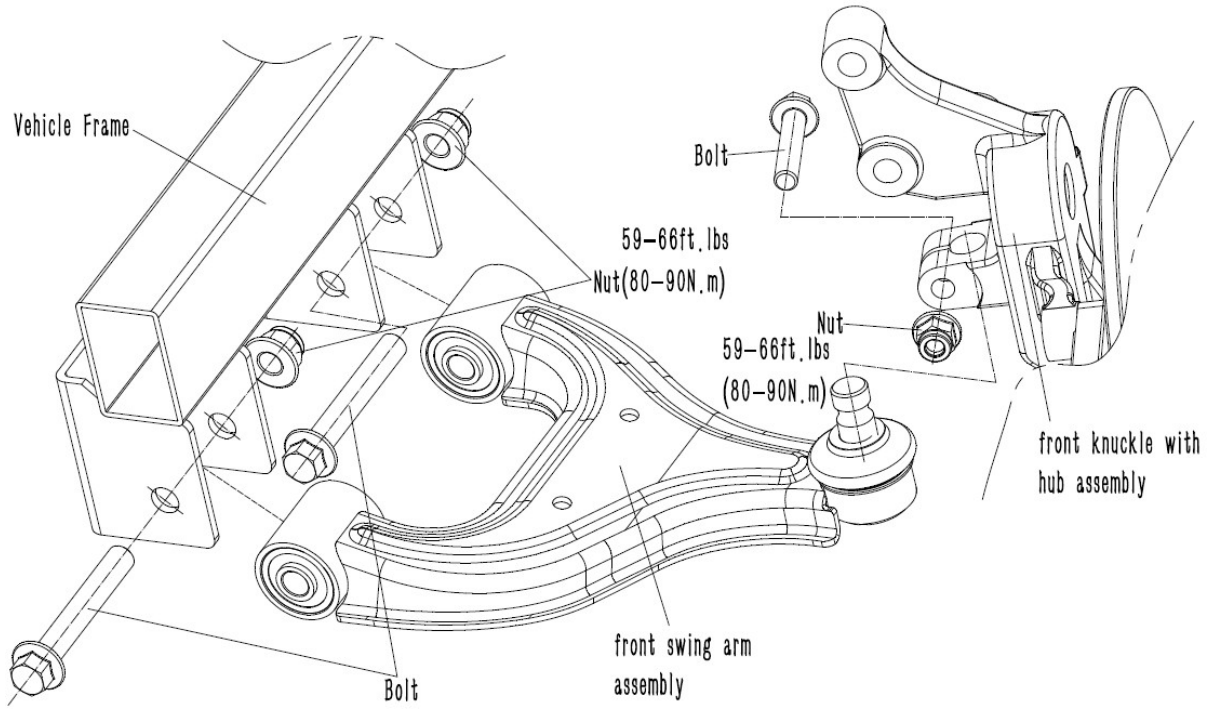
NOTES

CHAPTER 3 CHASSIS

WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each GOLF model for OEM parts information and service.

3.1 FRONT SWING ARM ASSEMBLY REPLACEMENT



1. Elevate and safely support vehicle frame, then remove the front wheel(s).
2. Loosen and remove the nut that lock the ball joint pin and steering knuckle.
3. Loosen and remove the nut that lock the front swing arm and vehicle frame.
4. Remove the bolts connecting the front swing arm and the frame,

then remove the bolt locking the ball joint pin and remove the front swing arm.

5. Check the bushing of front swing arm. Replace if worn or tore.
6. Install the new front swing arm assembly onto vehicle frame. Install new bolts and new nuts.

NOTE:

Tighten the nuts only finger-tighten at this time.

⚠ WARNING

DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

7. Insert the ball joint pin into the hole of the steering knuckle to appropriate depth；

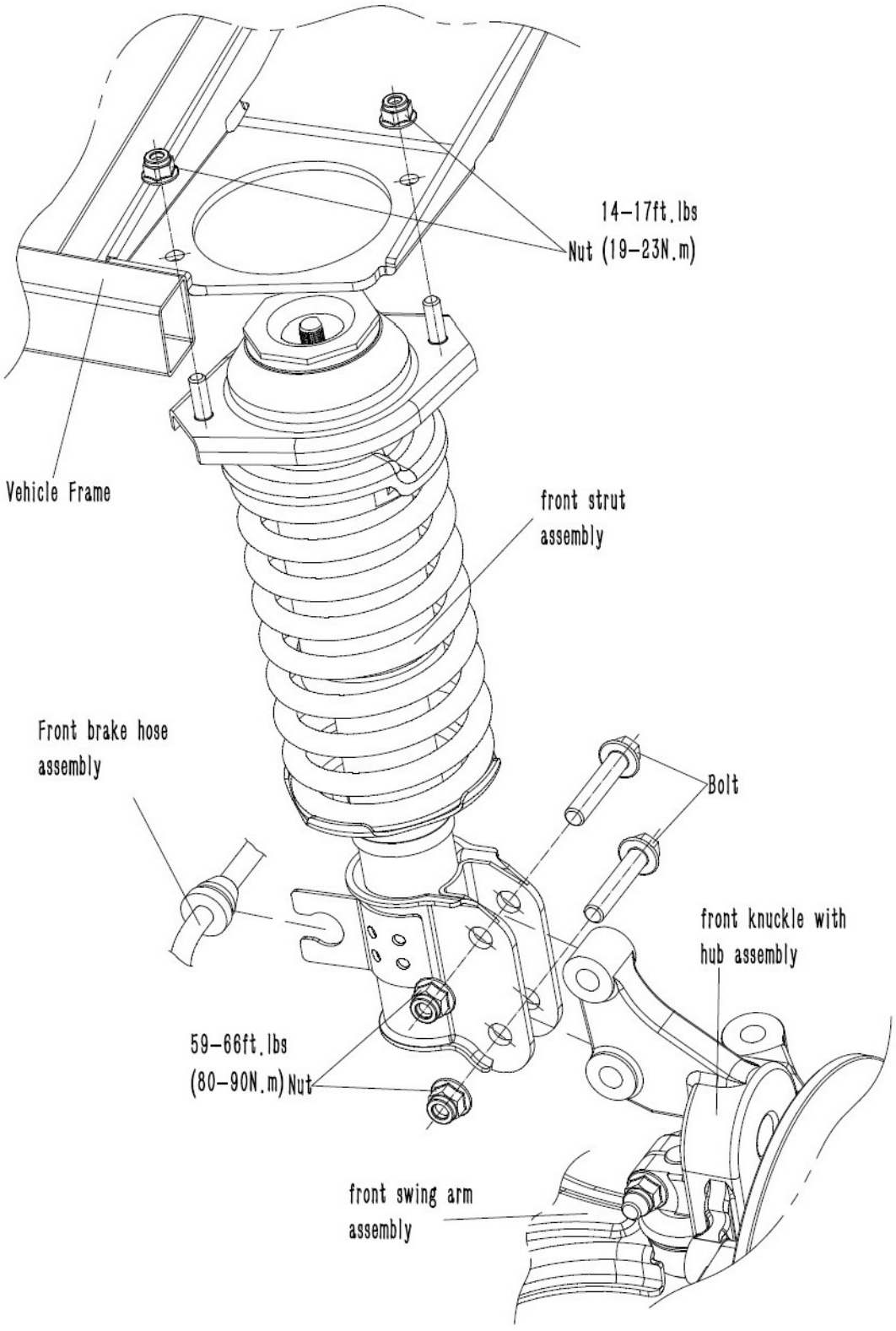
Install new bolt and nut and tighten them to 59-66ft.lbs (80-90N.m)

8. Tighten the bolts and nuts connecting the swing arm and the frame to 59-66ft.lbs (80-90N.m).

⚠ WARNING

Upon front swing arm installation completion, test vehicle at low speeds before putting into regular service.

3.2 FRONT STRUT ASSEAMBLY REPLACEMENT



1. Elevate and safely support vehicle frame, then remove the front wheel(s).
2. Remove the front brake hose from the front strut assembly.
3. Loosen the nuts locked the front strut assembly and the vehicle frame, until the top of the nut is flush with the bolts.

NOTE:
Do not remove the nut at this time.

4. Loosen and remove the bolts and nuts connecting the front strut assembly and the steering knuckle.
5. Remove the nuts locked the front strut assembly and the vehicle frame and remove the front strut assembly.
6. Check the front strut assembly. Replace if damaged.
7. Install the new front strut assembly on the vehicle frame and install new nuts.

NOTE:
Tighten the nuts to 6-7.5ft.lbs (8-10N.m) at this time.

⚠ WARNING

DO NOT reuse old nuts. Serious injury or death could result if fasteners come loose during operation.

8. Assemble the front strut assembly and steering knuckle together and install new bolts and nuts.

NOTE:
Install the following bolts and nuts first.

⚠ WARNING

DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

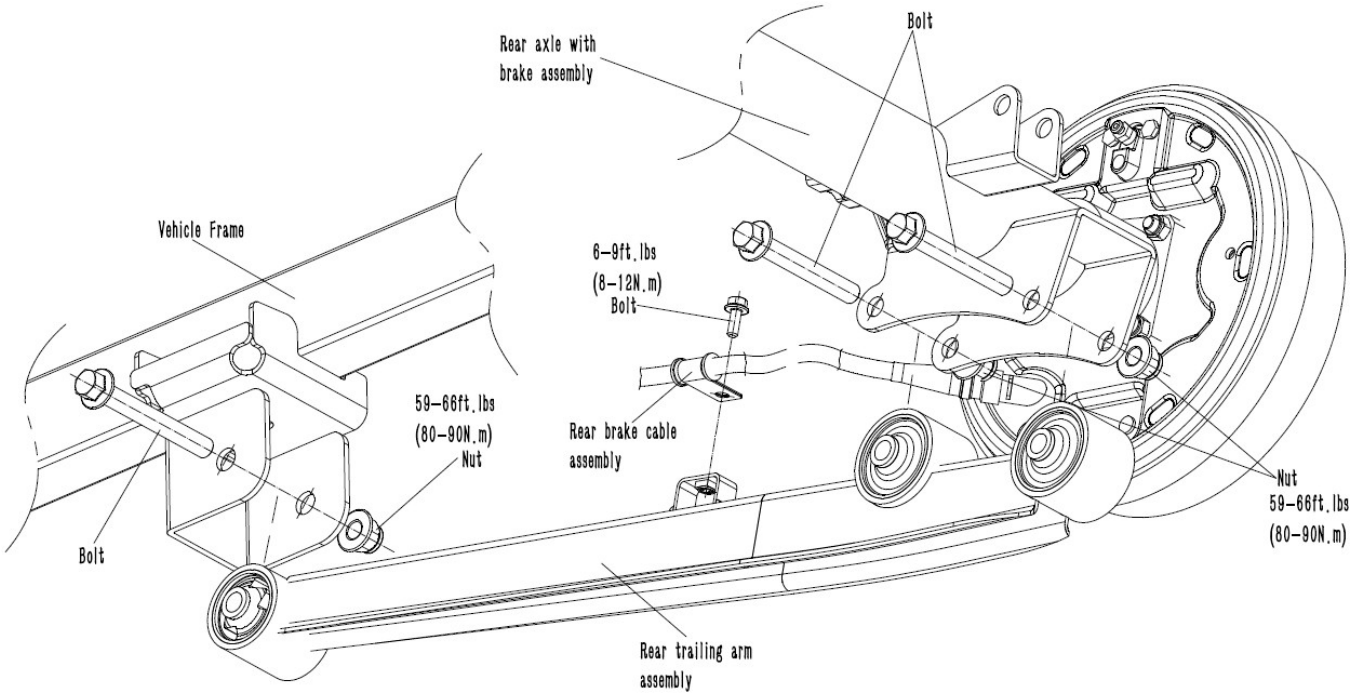
9. Tighten the nuts that lock the front strut and frame to 14-17ft.lbs (19-23N.m).
10. Tighten the nuts that lock the front strut and steering knuckle to 59-66ft.lbs (80-90N.m).

NOTE:
Tighten the following bolts and nuts first.

⚠ WARNING

Upon front strut assembly installation completion, test vehicle at low speeds before putting into regular service.

3.3 REAR TRAILING ARM ASSEMBLY REPLACEMENT



1. Elevate and safely support vehicle frame and remove the rear wheel(s).
2. Loosen and remove the bolt that lock the rear brake cable.
3. Loosen and remove the nuts that lock the rear trailing arm.

NOTE:
ONLY remove the nuts

4. Push a lifting cart under the rear axle to lift and support the rear axle.
5. Remove the bolts that lock the rear trailing arm, then remove the arm.
6. Check the bushing of rear trailing arm. Replace if worn or tore.
7. Install the new rear trailing arm assembly. Install new bolts and new nuts.

NOTE:
Tighten the nuts to 59-66ft.lbs (80-90N.m).

⚠ WARNING

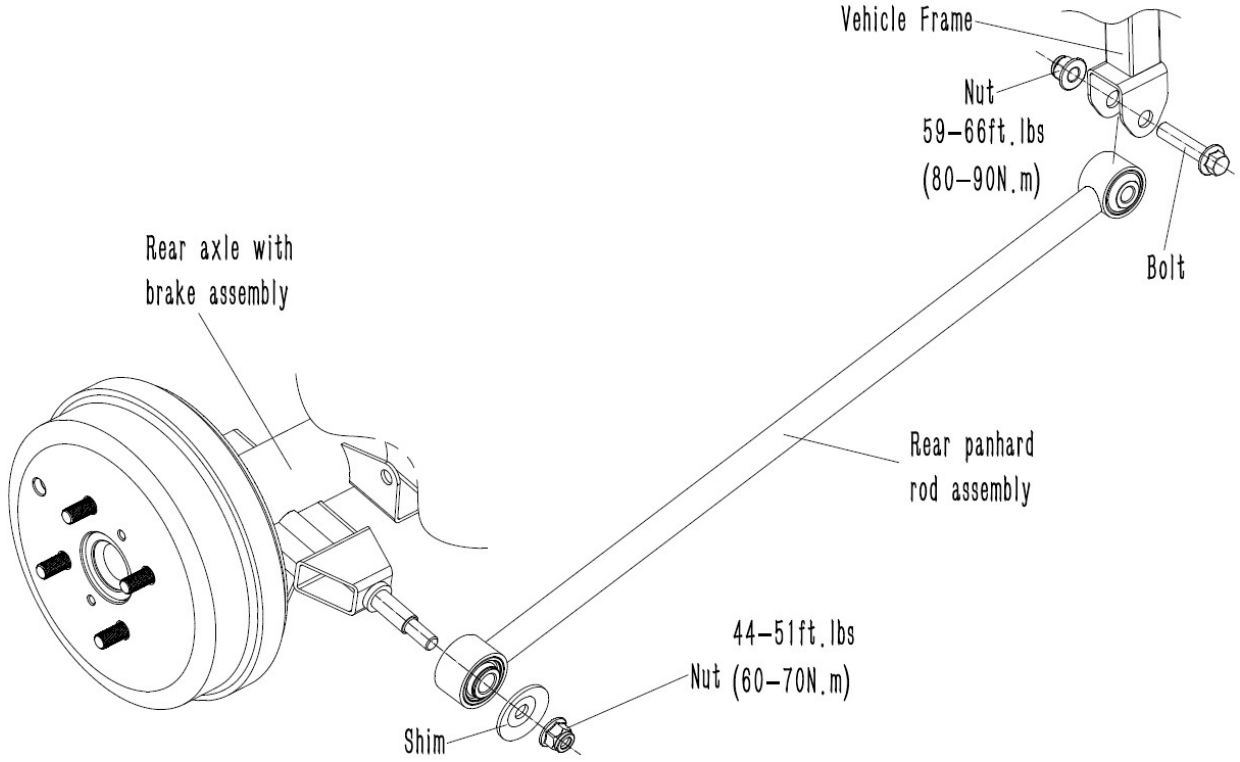
DO NOT reuse old bolts. Serious injury or death could result if fasteners come loose during operation.

8. Lock the rear brake cable to the rear trailing arm with new bolt, tighten the bolt to 8ft.fls (10N.m)

⚠ WARNING

Upon rear trailing arm assembly installation completion, test vehicle at low speeds before putting into regular service.

3.4 FRONT STRUT REPLACEMENT



1. Elevate and safely support vehicle frame and removed the rear wheel(s).
2. Push a lifting cart under the rear axle to lift and support the rear axle.
3. Loosen and remove the nut and bolt that lock the rear panhard rod to the frame.
4. Loosen and remove the nut that lock the rear panhard rod to the rear axle.
5. Remove the shim and remove the rear panhard rod assembly.
6. Check the bushing of rear panhard rod. Replace if worn or torn.
7. Install the new rear panhard rod assembly to the rear axle, install the shim and nut in turn.

NOTE:

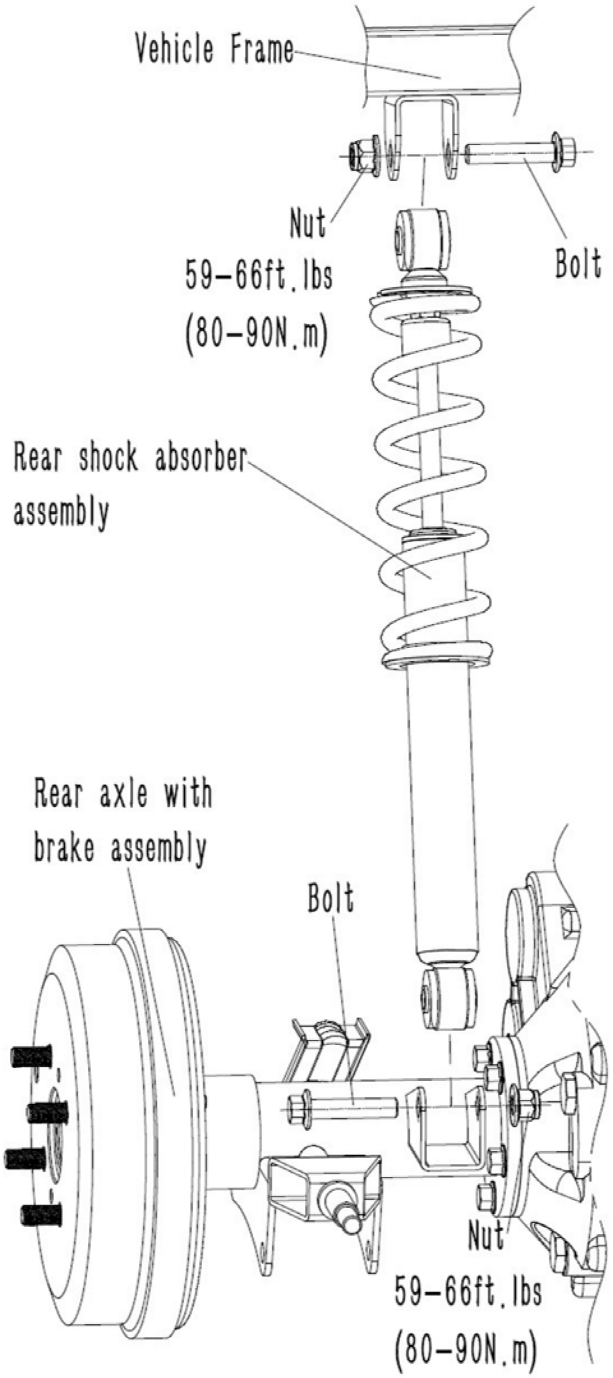
Tighten the nuts only finger-tighten at this time.

8. Link up the panhard rod and the frame together with new bolt, install new nut. Tighten the nut to 59-66ft.lbs (80-90N.m)
9. Tighten the nut that lock the panhard rod to the rear axle to 44-51ft.lbs (60-70N.m).

⚠ WARNING

Upon rear panhard rod assembly installation completion, test vehicle at low speeds before putting into regular service.

3.5 REAR SHOCK ABSORBER REPLACEMENT



1. Elevate and safely support vehicle frame and removed the rear wheel(s).
2. Push a lifting cart under the rear axle to lift and support the rear axle.
3. Loosen and remove the nuts that lock the rear shock absorber.

NOTE:

ONLY remove the nuts

4. Lift the rear axle to a proper position with the lifting cart, remove the bolts and take out the shock absorber.
5. Check the rear shock absorber assembly. Replace if damaged.
6. Link up the new shock absorber to the frame with new bolts and nuts.

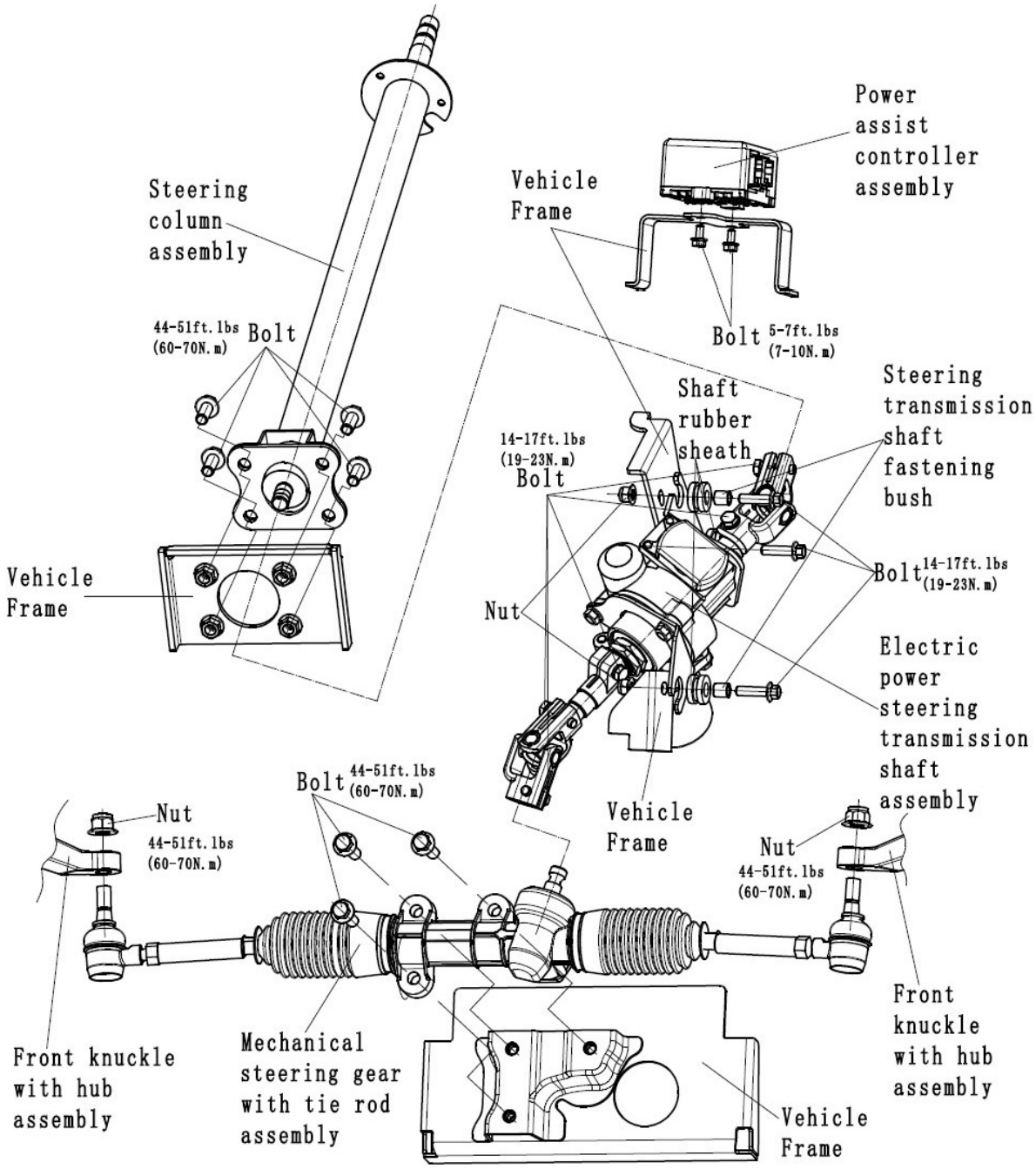
NOTE:

Tighten the nuts only finger-tighten currently.

7. Adjust the height of the rear axle with the lifting cart and link up the rear shock absorber and the rear axle together with new bolt and nut.
8. Tighten the nuts to 59-66ft.lbs (80-90N.m).

⚠ WARNING

Upon rear shock absorber assembly installation completion, test vehicle at low speeds



before putting into regular service.

3.6 STEERING ASSEMBLY REPLACEMENT

1. Elevate and safely support vehicle frame and removed the front wheel(s).
2. Disconnect the three connectors on the power assist controller.
   Loosen and remove the locking bolts and remove the power assist controller.
3. Loosen the three bolts and nuts that lock the steering transmission shaft and the frame and then remove the bolts & nuts the fastening bush and the shaft rubber sheath.
4. Loosen the five bolts on the electric power steering transmission shaft, and then remove the transmission shaft.
5. Loosen and remove the locking bolts of the steering column and remove the steering column.
6. Loosen the nut that locks the steering ball joint pin and steering knuckle, until the top of the nut is flush with the top of the ball pin.
7. Tap the top surface of the ball pin with a rubber hammer to loosen the ball pin.
8. Remove the nuts and take out the ball pin from the steering knuckle.
9. Loosen and remove the locking bolts of the steering gear with tie rod assembly and remove the steering gear.
10. Check all parts of the steering assembly. Replace if damaged.
11. Install new steering gear with tie rod assembly onto the frame, install new bolts and tighten bolts to 44-51ft.fls (60-70N.m).
12. Install the steering ball joint pin into the conical hole of the steering knuckle, install a new nut and tighten it to 44-51ft.fls (60-70N.m)
13. Install the steering column onto the frame, install new bolts, and tighten the bolts to 44-51ft.fls (60-70N.m).
14. Connect the steering shaft with the steering gear and steering column, install the bolts of shaft. Tighten the bolts to 14-17ft.lbs (19-23N.m)
15. Install the fastening bush and the shaft rubber sheath to the corresponding positions, install the bolts and nuts and tighten them to 14-17ft.lbs (19-23N.m)
16. Install the power assist controller, install the bolts, and tighten them to 5-7ft.lbs (7-10N.m).
17. Connect the three connectors on the power assist controller.

⚠ WARNING

Upon steering assembly installation completion, test vehicle at low speeds before putting into regular service.

CHAPTER 4 BRAKES

WARNING

The parts of different types/ variants/ versions maybe un-interchangeable, even some parts have almost same appearance. Always refer to Parts Manual of each GOLF model for OEM parts information and service.

NOTE: Also See Chapter 2 for Maintenance Information.

4.1 SPECIFICATIONS

Front Brake		
Item	**Standard**	**Service Limit**
Friction material thickness	0.354"/ 9mm	0.157"/ 4mm
Brake Disc Thickness	0.236"/ 6mm	0.157"/ 4mm
Rear Brake		
Item	**Standard**	**Service Limit**
Friction material thickness	0.236"/ 6mm	0.118"/ 3mm
Brake Drum Thickness	0.236"/ 6mm	0.157"/ 4mm

4.2 TORQUE

Item	Torque (ft. lbs.)	Torque (Nm.)
Front Caliper Mounting Bolts	36.0	50
Front Brake Disc	18.0	25

4.3 BRAKE SYSTEM SERVICE NOTES

1. Always change the caliper the master cylinder as assembly.
   The parts inside maybe not interchangeable due to different brake manufactures and (or) different brake type.
2. Do not over–fill the brake fluid reservoir.
3. Make sure the brake pedal returns freely and completely.
4. Check and adjust master cylinder reservoir fluid level after brake pads service.
5. Make sure atmospheric vent on reservoir is unobstructed.
6. Adjust parking brake after rear friction pad service.
7. Test for brake drag after any brake system service and investigate cause if brake drag is evident.
8. Make sure caliper moves freely on guide pins (if applicable).
9. Perform a brake burnishing procedure after installing new blocks(pads) to maximize service life.

⚠ WARNING

DO NOT lubricate or clean the brake components with aerosol or petroleum products.
Use only approved brake cleaning products.

4.4 BURNISHING PROCEDURE

The brake friction blocks (pads) has been burnished at the factory;
Check whether the brake works normally before burnishing procedure.
Brake friction blocks (pads) must be burnished to achieve full braking effectiveness.

To properly burnish the brake pads, use the following procedure.

1. Choose an area that large enough to safely accelerate the GOLF to 24mph and to brake to a stop.
2. Accelerate 24 mph; then compress brake pedal to decelerate to 0-5mph.
3. Repeat procedure 20 times until brake pads are burnished.
4. Adjust the parking brake (if necessary).
5. Verify that the brake light illuminates when the brake pedal is depressed.

⚠ WARNING

Failure to properly burnish the brake pads could lead to premature brake pad wear or brake loss. Brake loss can result in severe injury.

4.5 BRAKE BLEEDING-FLUID CHANGE

NOTE:

When bleeding the brakes or replacing the fluid always start with the caliper farthest from the master cylinder.

CAUTION:

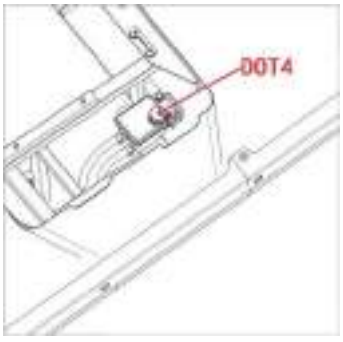
Always wear safety glasses.

CAUTION:

Brake fluid is highly corrosive. Do not spill brake fluid on any surface of the vehicle.

⚠ WARNING

This procedure should be used to change the fluid or bleed brakes during regular maintenance.



1. Clean the reservoir cover thoroughly.
2. Remove the cover of the reservoir.
3. If changing fluid, remove old fluid from the reservoir with a brake fluid pump or similar tool.
4. Add brake fluid up to the indicated MAX level. on the reservoir.

   DOT 4 Brake Fluid
5. Begin the bleeding procedure with the caliper farthest from the master cylinder. Install a box end wrench on the caliper bleeder screw. Attach a clean, clear hose to the fitting and place the other end in a clean container. Be sure the hose fits tightly on the fitting.
6. Slowly pump the foot pedal until pressure builds and holds.

7. Hold the brake pedal to maintain pressure and open the bleeder screw.
   Close the bleeder screw and release the foot pedal.

NOTE:

Do not release the pedal before the bleeder screw is tight or air may be drawn into master cylinder.

8. Repeat procedure until clean fluid appears in bleeder hose and all air has been purged.
   Add fluid as necessary to maintain level in reservoir.

CAUTION:

Maintain at least 1/2 "(13mm) of brake fluid in the reservoir to prevent air from entering the master cylinder.

9. Tighten bleeder screw securely and remove bleeder hose.
10. Repeat procedure steps 5- 9 for the remaining calipers.
11. Add brake fluid to MAX level inside reservoir.

NOTE:

Master Cylinder Fluid Level
Between the MIN line and the MAX line of reservoir.

12. Install master cylinder reservoir cover.
13. Check brake system for fluid leaks and inspect all hoses and lines for wear or abrasion.
    Replace hose if wear or abrasion is found.
14. Test the vehicle at low speed before putting into service.
    Check whether the braking effect of the vehicle is sufficient
    Check for proper braking action and pedal reserve.
    With pedal firmly applied, pedal reserve should be no less than 1/2 " (1.3cm).

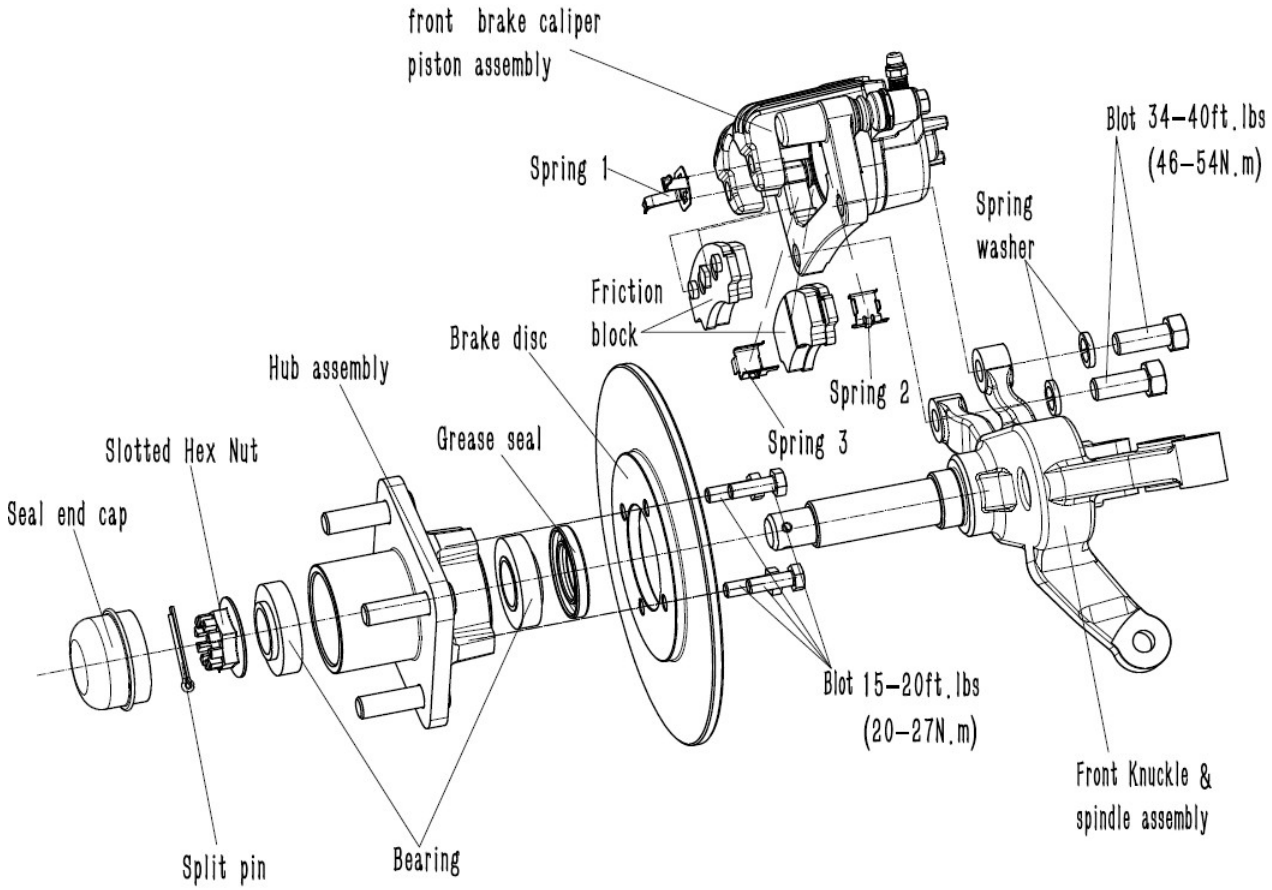
CAUTION:

If the braking efficiency and pedal action are not satisfied,
repeat steps 5-10 to remove the air until it is confirmed that there is no residual air.

⚠ WARNING

The brake fluid is corrosive.
The waste brake fluid cannot be discarded at will,
but shall be specially treated according to local requirements.

4.6 FRONT BRAKE INSPECTION / REMOVAL / REPLACEMENT



Front Brake Caliper Replacement

1. Make sure that the connector of the front brake hose has been removed and kept properly.

⚠ WARNING

The brake fluid flowing out is corrosive. Operators should wear protective clothing.

2. Loosen and remove the bolts that lock the caliper and steering knuckle and remove the caliper assembly.
3. Check the removed caliper assembly.
   If there is obvious deformation, crack, and leakage, replace it.
4. Install the new front caliper assembly and connect the caliper with the steering knuckle with new bolts.

NOTE:

Do not omit the spring washer.
Apply Thread fastening glue to the bolts before connecting.

5. Tighten the bolts to 34-40ft.lbs.
6. Connect the front brake hose connector into the caliper as it is.
7. Remove the air from the front caliper, and then test the vehicle to ensure good braking efficiency before putting it into use.

Front Brake Pads Replacement

1. Loosen and remove the bolts that lock the caliper and steering knuckle and take out the caliper assembly.

NOTE:

The caliper is still connected with the front hose at this time, and the caliper cannot be loosened.

2. Loosen and remove the bolts that lock the caliper and steering knuckle and remove the caliper assembly.
3. Carefully remove the spring 3 fixing the brake pads with a slotted screwdriver, and then remove the Brake Pads.
4. Measure the thickness of the Brake Pads. If the wear exceeds the limit value, replace it.
5. Install the new Brake Pads as it is. Install the spring 3 to lock the Brake Pads
6. Install the caliper assembly and lock the bolts.
7. Carry out the polishing procedure and put it into use after testing good braking efficiency.

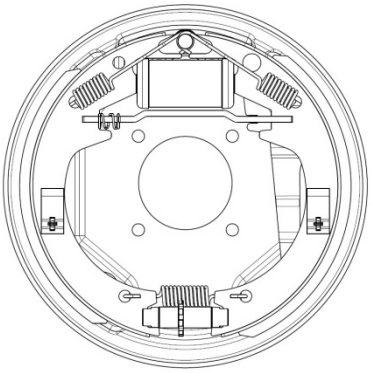
Front Brake Disc Replacement

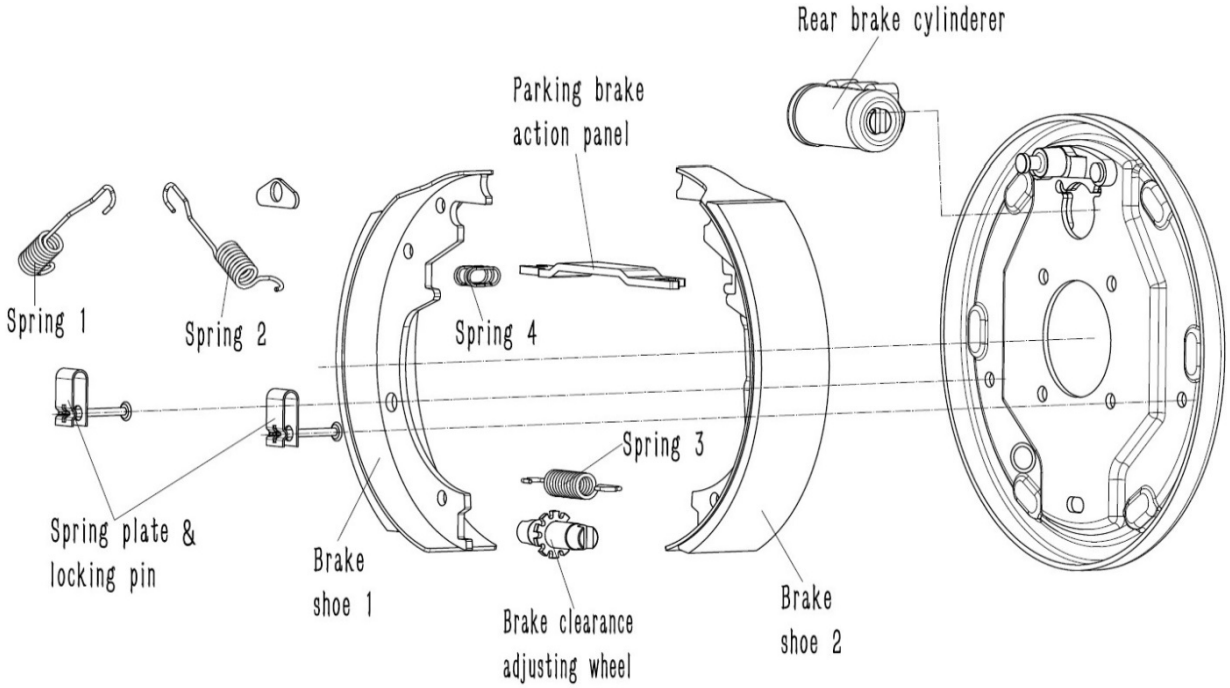
1. Remove the seal end cap.
2. Align the cotter pin's open end and remove the cotter pin.
3. Loosen and remove the slotted nut.
4. Loosen and remove the bolts that lock the caliper and steering knuckle and remove the caliper assembly.
5. Pull out the wheel hub and brake disc assembly with the special tool.
6. Loosen the bolts that lock the brake disc and remove the brake disc.
7. Measure the thickness of the brake at eight points. If the wear exceeds the limit, replace it.
8. Install the new brake disc as it is, install the new bolts, and tighten to 20-24ft. lbs.
9. Install the hub with brake disc assembly onto the spindle, screw on the slotted nut, and squeeze the bearing into place.
10. Install the caliper assembly, connect the caliper with the steering knuckle with bolts, and tighten to 34-40ft.lbs.
11. Tighten the slotted nut to 3 ft lbs., insert a new cotter pin, separate the open end of the cotter pin and stick it close to the nut surface.
12. Install the seal end cap.
13. Put into use after testing that the braking efficiency is good.

4.7 REAR BRAKE INSPECTION / REMOVAL / REPLACEMENT

Rear Brake Inspection

1. Raise the vehicle until the rear wheels are securely supported off the ground.
2. Ensure the parking pedal is released and the motor is off.
3. Rotate the rear wheel. At this time, the wheel can rotate easily.
   If it is hard to spin or there are other abnormal noises,
   disassemble and check.
4. Press the parking pedal (three or four times), turn
   the wheel. If the wheels do not rotate easily, adjust
   the brake clearance.
5. Remove the wheel and carefully check the rear brake.
   for cracks and leakage, if any, replace the corresponding parts





Brake shoe Replacement

1. Raise the vehicle until the rear wheels are securely supported off the ground.
2. Ensure the parking pedal is released and the motor is off.
   Remove the wheel and remove the brake drum.
3. Remove the brake cable; Remove spring one and spring 2.
4. Remove the spring plates and locking pins.
5. Pull the brake shoe 1 and 2 to both sides to leave the rear brake cylinder.
6. Remove the brake action plate, remove the spring 3.
   and the brake clearance adjusting wheel and separate the two shoes.

7. Check the condition of the Brake Pads on the shoes.
   If the wear exceeds the limit, replace them.

NOTE:
The brake shoes should be replaced as a set.

8. Install the brake shoes in the reverse order of disassembly.
9. Adjust the braking clearance and put the vehicle into use
   after checking that the braking efficiency is good.

Rear Brake shoe Cylinder Replacement

1. Raise the vehicle until the rear wheels are securely supported off the ground.
2. Ensure the parking pedal is released and the motor is off.
   Remove the wheel and remove the brake drum.
3. Remove the brake shoes.
4. Remove the bolts that lock the brake cylinder and remove the brake cylinder.
5. Check the brake cylinder for cracks and leakage and replace it if any.
6. Install the brake cylinder in the reverse order of disassembly.

CHAPTER 5 ELECTRICAL

WARNING

The parts of different types/ variants/ versions may be uninterruptable, even though some parts appear almost the same. Always refer to the Parts Manual of each GOLF model for OEM parts information and service.

5.1 BATTERY

To ensure the safety of personnel and equipment, operators should observe the following considerations:

1. The battery must be replaced and maintained by specially trained personnel.
2. Goggles, rubber gloves, rubber shoes, and rubber work aprons should be worn during operation.
3. To prevent the battery short circuit, conductive items cannot be placed on the battery, and no impurities are allowed to fall into the battery.
4. The surface of the battery should be kept clean and dry. Use the battery cleaner and tap water to clean up the dust that falls on the outer surface of the battery, the connecting wire, the bolts, and the electrolyte that drips on the battery cover during the measurement process to ensure that the battery insulation performance is good.
5. When the battery is in use, it should avoid over-discharge and long-term high-current discharge. Otherwise, it will affect its service life.
6. Under normal circumstances, the battery should be fully charged in time after discharge, and overcharge should be avoided when charging. Otherwise, it will affect its life.
7. During the charging process, the electrolyte temperature should be manageable. Otherwise, it should try to cool down or reduce the charging current. If the temperature still does not drop, you should pause charging and continue after the temperature drops.
8. During the battery charging process, flammable and explosive gases will be generated, so the charging area should be well-ventilated and open flames are strictly prohibited to ensure safety.
9. Regularly check whether the wiring is loose or damaged, adjust or replace it in time, and apply di-electric grease in the connection part.
10. In inspecting and measuring the battery, stepping on or colliding with the battery cover, injection cover, and other parts is strictly forbidden to prevent the battery from being damaged.
11. Do not frequently deep discharge, but if the shallow discharge is frequent, it is recommended to do a deep discharge once a month to avoid reducing battery capacity due to battery passivation.
12. Do not mixed-use new and old batteries and batteries from different models or manufacturers.

Battery maintenance knowledge:

1. The battery is prohibited from being stored at a loss of electricity. If it is recharged after being idle for a few days, the electrode plate is prone to sulfation, and the capacity decreases. Battery stored at a loss of electricity will seriously affect the service life; if the idle time is longer, the more severe battery damage.
2. Regular inspection: If there is a severe reduction in capacity within three months, you can use a multimeter to check the single voltage of the battery at this time. If one

If the battery voltages are significantly lower than other voltages, the battery may be short-circuited inside the single cell. At this time should be checked at the maintenance station to avoid damaging the rest of the battery, followed by the electrical charging parameters should also be checked.

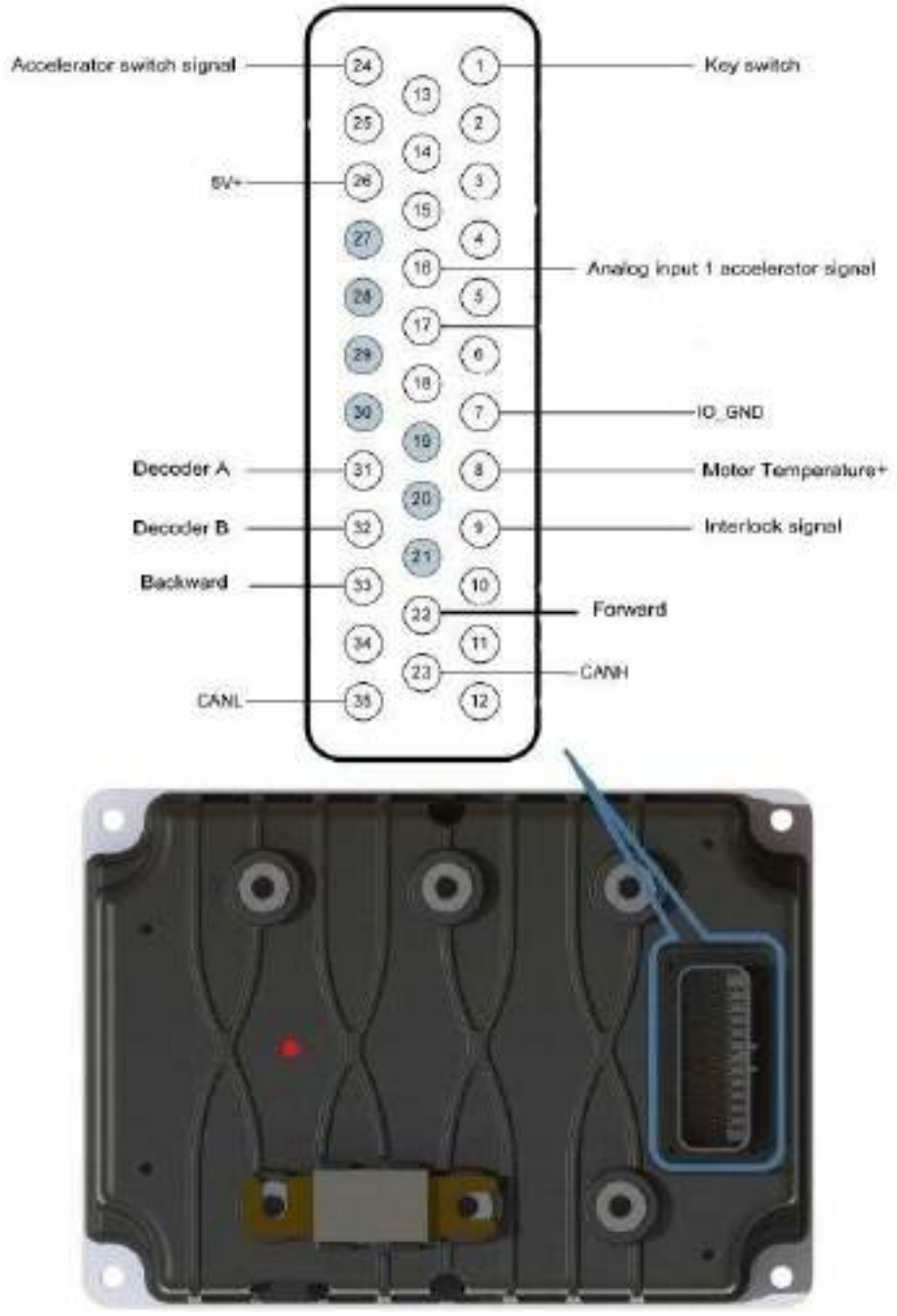
3. Winter battery capacity decreases by a decrease in temperature, this is a normal phenomenon, to 25 degrees Celsius as the standard, generally at -15℃,
   the battery capacity is 65%.
4. Keep the battery surface clean for a long time, and the vehicle should be parked in a cool, ventilated, dry place.
5. When the vehicle needs to be placed for a long time, the battery must first be fully charged, and the battery must be replenished once every month.
6. Choose a charger that matches the battery of this model, high temperature and humidity should be avoided when charging, water should not be allowed to go into the charger, to prevent the occurrence of short circuits.

5.2 MOTOR

Maintenance of motors

1. Strictly forbidden to a long-time overload and block the rotation of the motor.
2. Clean the dirty or corrosive materials on the surface of the motor frequently, especially the dirt on the motor heat dissipation window and the lead line, so as not to affect its heat dissipation.
3. Strictly forbidden to let water and other dust come in, spanning over 15cm of stagnant water. It will make the motor waterlogged, which may permanently damage the motor.
4. Avoid starting and stopping the motor frequently, which will damage the motor.
5. If an abnormality is found, the motor should stop working immediately; after the fault is cleared, the motor can resume work.
6. Check the motor at least once every six months.

5.3 CONTROLLER



FAULT LIST

No.	Name	Alarm mode	Treatment	Fault solutions
1	High pedal failure	Lights on constantly	Stop running	Check the pedals and return to the position

2	Pre-charge fault	One long and two short	Stop running	Check the power board for apparent damage and check whether the wiring between the power board and the control board is reliably connected.
3	Overcurrent	One long and three short	Shut down	The first step is to adjust the control parameters; the second is to change the output torque; if the problem cannot be solved, return it to the factory for maintenance.
4	Controller overheating	One long and four short	Shut down	Check whether the fan usually works and whether the air duct is smooth.
5	Power failure of the primary circuit	One long and five short	Shut down	Check primary loop safety, contactors, emergency stop switches, etc.
6	Current sampling circuit fault	One long and six short	Shut down	Return to the factory for maintenance.
7	Encoder failed	One long and seven short	Shut down	Check the encoder harness to see whether the encoder is damaged.
8	BMS fault	One long and eight short	Shut down	BMS failure or battery pack abnormality.
9	Battery pack undervoltage	One long and nine short	Shut down	Charges are required.
10	Battery pack overvoltage	One long and ten shorts	Shut down	Check whether the battery is normal and reduce the energy feedback appropriately.
11	Motor overheating	One long and eleven short	Shut down	Stop the machine for cooling or increase the motor heat dissipation method.
13	Accelerator failure	One long thirteen short	Shut down	Check the accelerator line whether is connected properly. It must be returned to the factory for repair if it is damaged.

5.4 CHARGER

AC Input Voltage Range: 85~270VAC；50/60Hz

AC Input Max Current: 11.5A @120VAC； 11.0A @220VAC

Pilot lamp status ("-" stands for pause for 1s)	Fault indication	Solutions
Red-green, red-green, red, green	No load	Check whether the charger is rigidly connected to the battery, whether the battery is connected reversely, and whether the battery voltage is too low.
Red-green, red———	Overvoltage (current) fault	If the error occurs again after the restart, it must be returned to the factory for maintenance.
Red, green, red, green——	Ambient temperature too high or too low	Check whether the ambient temperature of the charger is too high, whether the surrounding ventilation is smooth, the battery temperature, and the probe's position.
Green, red——	Charger overheating	Check whether the ambient temperature of the charger is too high and whether the surrounding ventilation is smooth.
Red and green——	Output Undervoltage	Return to the factory for maintenance.
Red-green, red, green, red—	Input AC abnormal	Check whether the input voltage meets the requirements, and the plug has poor contact.
Green, red, green———	After the above error is repeated five times, the error status is displayed.	Power on again, observe which of the above indication is consistent with the quality of the pilot lamp, and solve it according to its remark's method.

5.5 METER

1. Voltage
2. Mileage indication (hour meter)
3. Speed indication
4. Right turn indication.
5. Brake lamp
6. Back lamp
7. High beam lamp
8. Low beam lamp
9. Left turn indication.
10. Electric quantity

5.6 DC-DC CONVERTER

Port definition：

Port No.	Color	Function
1	Yellow	Input positive
2	Orange	Control wire (connection switch)
3	Red	Positive output
4	Black	Input / output common ground

Technical parameters:

1. Input voltage: 48-72v

2. Input current: < 8A (48V) (at maximum load)

3. Output voltage: 13.0v ± 0.2V

4. Output current: maximum 25A

5. Working temperature: -30℃～ +55℃

5.7 ELECTRICAL SCHEMATIC DIAGRAM