

Royal Gazelle Repair and Maintenance Information Service handbook / Technical manual

CityZen Speed Powertube
VIN numbers starting with *XRG2xxxxxxxxxxxx*



Ride like the Dutch

ROYAL DUTCH
Gazelle



Introduction

This Repair Manual will help you to perform all the main maintenance and repair work correctly and efficiently. It should be consulted regularly by workshop personnel as an addition to the practical and theoretical knowledge obtained in courses. It is a contribution towards achieving a higher quality of service.

A new issue of this repair manual will be published if amendments or supplements are needed. The latest issue date is shown in the header. All information in both text and illustrations refer to speed pedelecs in standard condition or with genuine Gazelle accessories installed.

In some cases, repair instructions are also issued in the form of Service Information. This information will be incorporated into the next issue of the Repair and Maintenance Manual.

Royal Gazelle N.V.
After Sales

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1. Maintenance and general instructions

For general information about service and maintenance, refer to the Gazelle User Manual.

Dutch: www.gazelle.nl/media/gene-cms/a/l/algemene_gebruiksaanwijzing_gazelle_fietsen.pdf

English: www.gazellebikes.co.uk/media/6314/user-manual-gazelle.pdf

2. General work units for city bikes and E-bikes

TYRES	AVERAGE MINUTES	BRAKES	AVERAGE MINUTES	LIGHTING	AVERAGE MINUTES
Repairing front or rear inner tyre	15	Replacing or adjusting:		Replacing:	
Replacing of:		Anchor plate front drum brake	25	Front bulb	10
Inner or outer front tyre – ordinary hub	15	Anchor plate rear drum brake	35	Rear bulb	5
Inner or outer front tyre – drum hub	20	Front or rear brake pads rim brake or cantilever	10	Headlight	10
Inner or outer rear tyre	20	Mounting front and rear cantilever brake	25	Taillight	15
Inner or outer rear tyre – aluminum frame	30	Mounting front and rear hydraulic brakes	90	Dynamo	10
BAGGAGE		LOCKS		Hub dynamo	30
Replacing rear carrier (including light)	20	Replacing ring lock	15	Headlight cable (around frame)	5
Mounting basket rack on handlebar	20	Mounting carrier for U-lock or cable lock	10	Headlight cable (within handlebar)	15
Mounting carrier for buggy or briefcase	15	ART ring lock	25	Tail light cable (around frame)	10
Mounting cycle bags	10	REAR CARRIER STRAPS		Light clamp on head tube	15
COMPUTER		Replacing straps (on axis)	10	WHEELS	
Mounting computer	10	MUDGUARDS		Hub cleaning, adjusting, replacing traces of wear:	
Replacing computer and holder (e-bike)	30	Replacing front mudguard rod	15	Front wheel	25
FRAME		Replacing rear mudguard rods	20	Rear wheel - free-wheel or brake hub	35
Replacing	180	Completely replacing front mudguard	15	Rear wheel – gear hub	60

TYRES		AVERAGE MINUTES	BRAKES	AVERAGE MINUTES	LIGHTING	AVERAGE MINUTES
COAT GUARD			Completely replacing rear mudguard	35	Wheel weaving:	
Replacing (set)	5	STAND			Equal flange height	45
CABLES			Replacing	10	Unequal flange height	50
Replacing and adjusting:		HANDLEBAR			Eccentric	60
Front brake	10	Replacing and adjusting:			Mounting and demounting:	
Rear brake	15	Handlebar without handle grip, brake grip etc.	25	Front wheel		10
Gear hub	15	Handlebar with handle grip, brake grip etc.	45	Rear wheel (including chain guard)		20
CHAIN		Mounting brake grip		20	Rear wheel	10
Tightening and lubricating	15	Headset		50	Wheel calibration (e-bike)	15
Replacing, making fit, tightening – gear hub	30	Front fork		60	Adjusting hub gear	10
Replacing, making fit, tightening – derailleur	15	Handle grip		5	CHILD SEAT	
Replacing pinion or cassette	25	CRANKSHAFT			Mounting front child seat	10
CHAIN GUARD		Replacing:			Mounting rear child seat	20
Replacing:		Left crank		15	ELECTRIC MOTOR	
Varnished cloth	50	Right crank (incl. demounting chain guard)		35	Installing or removing electric motor	60
Closed chain guard – plastic	25	Crankshaft		45	Measuring and charging battery	10
Chain guard	20	Pedals (pair)		10	Installing or removing battery	60
Chain guard (e-bike)	25					

3. General work units for ATB/race/hybrid

TYRES	AVERAGE MINUTES	BRAKES	AVERAGE MINUTES	CRANKSHAFT	AVERAGE MINUTES
Repairing front or rear inner tyre	15	Replacing and adjusting:		Mounting and adjusting cleats	15
Replacing front or rear tyre	15	Front or rear brake pads	10	Replacing:	
Rear tyre – aluminium frame	20	Mounting front or rear V Brake	20	Left crank	15
BAGGAGE		Mounting front or rear cantilever brake	25	Right crank – single blade	15
Replacing carrier (including light)	15	Mounting front and rear hydraulic brakes	90	Right crank – multiple blades	30
SHIFTERS		BRAKE GRIPS		Crankshaft	35
Replacing:		Replacing:		Pedals	10
Front derailleur (incl. cable mounting)	20	Common race (incl. handlebar tape)	40	LIGHTING	
Rear derailleur (incl. cable mounting)	30	Race with integrated gearing (incl. handlebar tape)	50	See work units ‘City bike / E-bike’	
COMPUTER		Common ATB	15		
Mounting computer	10	ATB with integrated gearing	25	WHEELS	
DERAILLEUR		LOCKS		Replacin and cleaning pinion or cassette (incl. replacing chain and (de)mounting rear wheel)	40
Replacing front or rear derailleur	25	Mounting lock or U-lock	10		
FRAME		ART ring lock	25	Replacing cassette body integrated in hub (incl. (de) mounting rear wheel	45
Replacing:		HANDLEBAR			
Frame (incl. milling)	120	Replacing and adjusting:		Hub cleaning, adjusting, replacing traces of wear:	
Frame with mudguards, carrier etc.	180	Straight handlebar	25	Front or rear wheel	30
CABLES		Race handlebar (incl. handlebar tape)	40	Wheel weaving:	
Replacing and adjusting:		Handlebar tape	15	Equal flange height	45
Inner cable V-brake	10	Mounting bar ends	15	Unequal flange height	50

TYRES	AVERAGE MINUTES	BRAKES	AVERAGE MINUTES	CRANKSHAFT	AVERAGE MINUTES
Inner cable cantilever brake	15	Mounting aerobar	25	Eccentric	60
Outer cable front or rear brake –	15	Headset (excl. milling)	30	Adjusting hub or derailleur	15
Straight handlebar		Front fork (incl. milling)	50	MUDGUARDS	
Outer cable front or rear brake – race	25	Suspension front fork	45	Press up system	15
Handlebar (incl. handlebar tape)		Stem	10	Regular mounting front and rear	30
Front or rear derailleur	15	Handle grip	5		
CHAIN					
Replacing, fitting, cleaning (incl. replacing pinion or cassette and mounting rear wheel)	40				

4. Torque table

If a torque is marked permanently on a component, this value must be used instead of the following values in the tables.

Table 1: standard tightening torques (Nm):

	STEEL AND STAINLESS STEEL COMBINATION	STEEL OR STAINLESS STEEL IN COMBINATION WITH ALUMINIUM
	[NM]	[NM]
M4	1.5 - 2	1.5 - 2
M5	3 - 4	3 - 4
M6	6 - 7	5 - 6
M8	12 - 15	7 - 9
M10	30 - 35	10 - 12

Table 2: Torque overview for bike specific parts [Nm]

Rear derailleur fixation bolt M10x1	8 - 10
Rear derailleur cable clamp	5 - 7
Rear wheel nuts	30 - 45
Pedals	35 - 55
Front mudguard stay	1.5 - 1.7
Magura braking levers	3.5 - 4.5
Shifters on handlebar	2.2 - 2.7
Saddle bolts	7 - 8
Bosch motor bolts M8*60	25-30
Bosch motor plate M6*15 Torx T30	13-15
Chainring nut (left hand thread)	30
Crank arms	47-52
Bosch display + lamp bracket and remote control screws	1
Battery holders M5*25	5

5. Fork Maintenance guide

POST-MODERNE

UNICON™ Suspension Fork with PrµF™ Micro-Adjustment

UNICON™ - Concentric Uni-Shock Suspension Fork
with Patented

PrµF™ System - Precision Micro-adjustment Fork System



1. Introduction of the PrµF™ Micro-Adjustment Adjustment of the Play-Control

This document explains the simple but important steps to properly adjust this Post-Moderne suspension fork's side-play. It's important to carefully and properly adjust the side-play for these reasons:

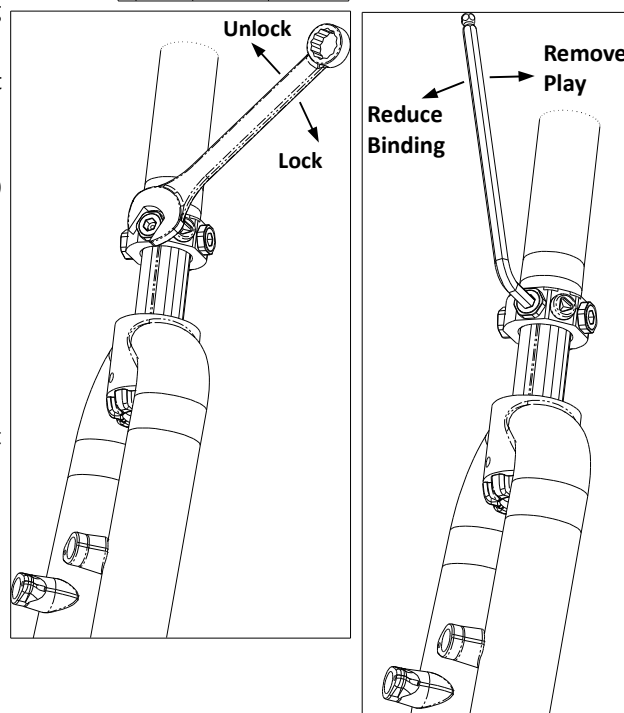
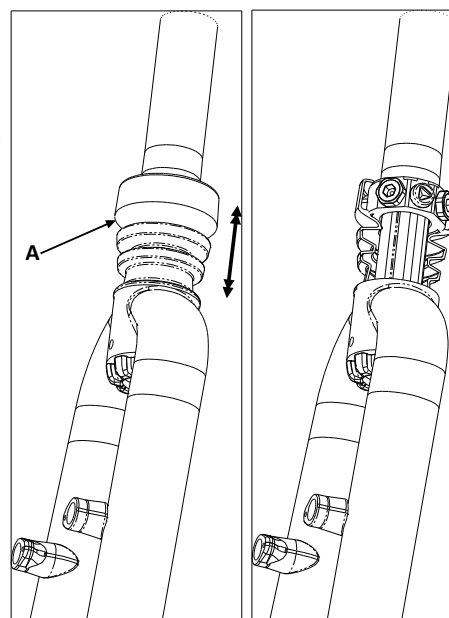
- Minimize the chance for fore/aft vibrations during braking.
- Ensure precise and accurate steering.
- Ensure the smooth up/down movement of the suspension

2. Step-by-Step Instructions.

⚠ Important: Read Carefully and Follow Each Instruction Step-By-Step

⚠ Warning: Failure to follow instructions may cause irreparable damage to the fork and to the rest of the bicycle. Failure to follow instructions may cause injury or death to the bicycle rider or people around the bicycle rider.

1. Remove the rubber-boot (A) by peeling away from the Unicon mechanism to expose the Micro-adjustment system.
2. Release the locking-nuts (B) with a 14 mm spanner (wrench) before starting the micro-adjustment.
3. Tighten the 4 screws (C) with a 6 mm allen-key to remove any play or looseness.
4. Tighten each opposing pair of screws (C) together. For example, tighten pair X-X, then pair Z-Z. Repeat as necessary.
5. Alternately, loosen the screws (C) to remove any binding or stiction.
6. The fork is correctly adjusted when there is no play but the fork moves through it's travel smoothly.
7. Make sure to tighten all 4 screws (C) evenly.
8. Re-tighten each of the locking-nuts (B) to 60 kgf-cm (5.9 N-m) to prevent loosening of the yellow bolts.
9. Replace the rubber-boot (A) to seal the fork.
10. Check the fork movement
 - a. up-and-down travel is smooth
 - b. has no front-to-back play
 - c. has no side-to-side or twisting play
11. If the fork does not pass the No. 10 checklist, then repeat points 1. to 10. until it passes 10.



6. List of interchangeable parts

Guidelines for replacement of speed e-bike/pedelec parts up to a pedal assist of 45 km/h (28 mph)

CATEGORY 1 Important basic information	CATEGORY 2 Components which may only be replaced upon presentation of valid test report (parts approval (ABE*, EC, ECE) or part certificate
<ul style="list-style-type: none"> - Speed e-bikes with a motor assistance of up to 45 km/h (27 mph) are considered motor vehicles and subject to EU Directive 2002/24/EC or EU Regulation No. 168/2013. - Depending on the vehicle there may be different requirements which must be strictly observed when replacing a component. Therefore, always check the indications given in the vehicle documents prior to doing any work on the vehicles. - Note: At present, vehicles with an individual operating licence are mainly subject to the regulations of the EU Directive 2002/24/EC. - All components which are not included in the list may only be replaced by original spare parts of the vehicle and/or component manufacturer. 	<p>Handlebar-stem unit Provided that there is no need to change the lengths of cables and/or hoses, modification of the seating position to suit the user should be possible within the original cable lengths. Any further modification results in a significantly changed load distribution on the bicycle and entails potentially critical steering properties.</p> <p>Seat post Provided that the offset to the rear does not exceed 20 mm with regard to the series/original field of use, note that a modified load distribution beyond the intended setting range may possibly lead to critical steering properties. The length of the saddle rails at the saddle structure as well as the saddle shape are also important.</p> <p>Headlight With valid type approval, identical mounting position as well as EMC proof only.</p> <p>Rear light with brake light and licence plate light, if applicable With valid type approval and identical mounting position only, if tested in accordance with ECE-R 50 as well as EMC proof.</p> <p>Reflector With valid type approval only.</p> <p>Rear view mirror Only if tested in accordance with ECE-R 81 and identical mounting position.</p> <p>Acoustic signalling device (horn) Only if tested in accordance with ECE-R 28 and identical mounting position.</p> <p>Pedals Vehicles with 168/2013 approval.</p> <p style="text-align: right;"><i>*ABE: general type approval</i></p>

CATEGORY 3

Components which may be replaced under the conditions described below

Pedals

Including approved reflectors, provided the pedal is not wider than the series/original pedal (vehicle with 2002/24/EC approval).

Tyres

As specified in vehicle documents, either in accordance with ECE-R 75 or with approval of tyre manufacturer.

Grips with screw clamps

In this case, the vehicle width must not be modified.

Headset**Bottom bracket****Rear and front derailleur**

All gear change parts must be suitable for the number of gears and mutually compatible.

Shift levers / Twist grip

Provided that the position on the handlebar remains unchanged.

Cables and housings**Chain wheels / Belt sprockets / Cassette sprocket**

Provided that the number of teeth and the diameter is identical to the series/original field of use.

Chain guard

Provided that it is free of sharp outer edges and complies with the Delegated Regulation No.44/2014, Annex VIII. The clearance to the tyre, which should be 10mm at least, must also be taken into account.

Spokes

Provided that the dimensions correspond to the original part.

Inner tube

Provided that the dimensions correspond to the original part.

Crank arm

Provided that the length and the dimensions, e.g. crank arms/ frame centre (Q-factor) are observed.

CATEGORY 4

Special notes for mounting accessories

- Additional battery/rechargeable battery-operated headlights are not permissible.
- Trailers are only permissible, if a trailer load is entered under no.17 of the certificate of conformity and a coupling device under no. 43.1. Note: The maximum permissible trailer load is 50% of the tractor vehicle's empty weight (without batteries). There are only 50mm ball coupling devices possible.
- Transporting children in a trailer is forbidden in general.
- For safety reasons, it is strongly recommended not to mount child seats.
- Due to the undefined load and load distribution, it is strongly recommended not to use baskets.
- Bags without permanent attachment are considered cargo and permissible. However, an adequate load distribution must be observed in this case.
- Top cases on the luggage carrier are permissible, provided that the luggage carrier's bearing load is observed.

CATEGORY 3

Components which may be replaced in consideration of the conditions described below

CATEGORY 4

Special notes for mounting accessories

Chain / Toothed belt

Provided that the original width is observed.

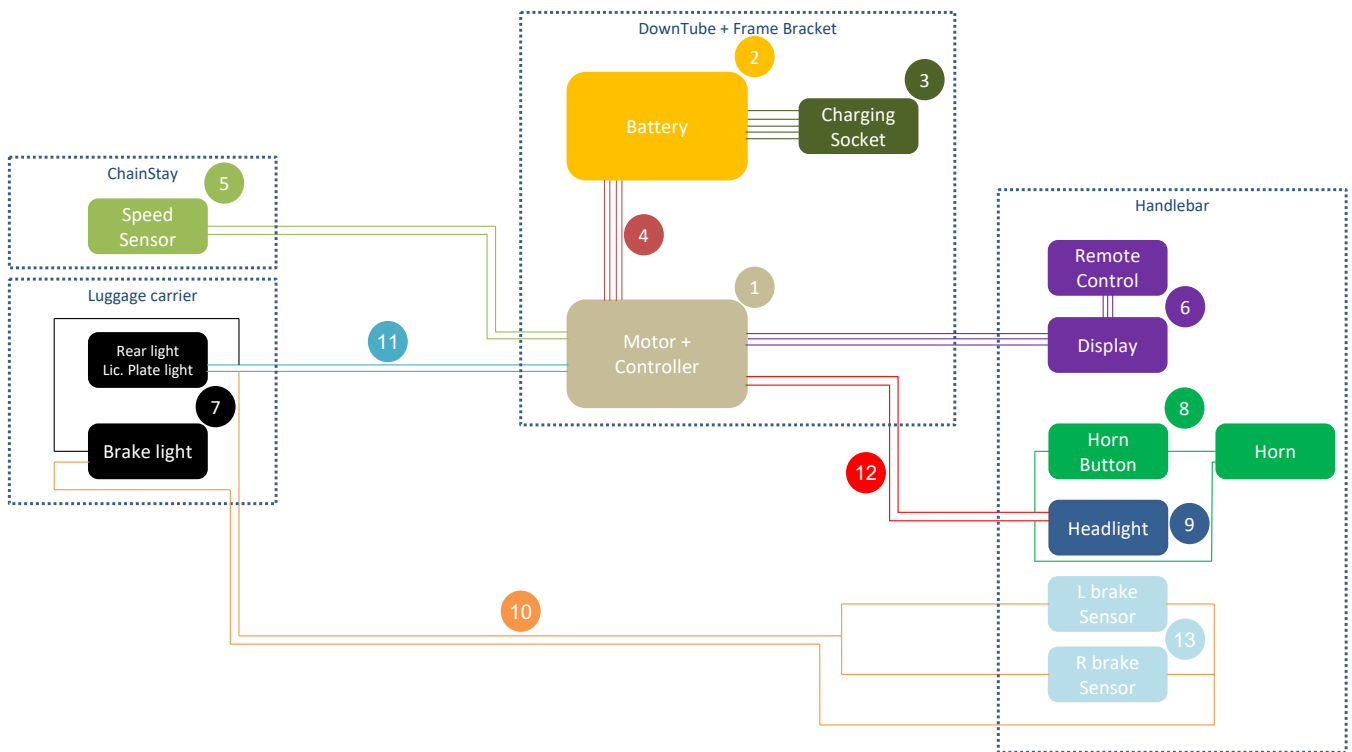
Rim tape

Rim tapes and rims must be compatible. Modified combinations may result in rim tape shifting and thus defective inner tubes.

Saddle

Provided that the offset to the rear does not exceed 20 mm with regard to the series/original field of use, note that a modified load distribution beyond the intended setting range may possibly lead to critical steering properties. The length of the saddle rails at the saddle structure as well as the saddle shape are also important.

7. Wiring diagrams



Number	Description	Gazelle Article numbers
1	Bosch Performance Line Speed Drive Unit <small>Bosch : 0275.007.041</small>	998702500
2	PowerTube 500 Vertical Black <small>Bosch : 0275.007.540</small>	998610000
3	Plug in Charging Socket 100mm <small>Bosch : 1270.016.509</small>	998610400 <small>kit Bosch 0275.007.442</small>
4	PowerTube Cable 820mm w/o Charging Socket <small>Bosch : 1270.016.507</small>	998610300
5	Speed Sensor Cable 415mm <small>Bosch : 1270.020.802</small>	998200100
6	Intuvia Performance Line Anthracite (Kit; Cable 1500mm) <small>Bosch : 0275.007.813</small>	998607000
7	Kit including Rear light, brake light and licence plate light <small>Approval E1 50R 003427 and E1 50R 003982</small>	447188200
8	Kit including Horn and Horn Button <small>Approval E1 000740</small>	444409600 <small>Kit Headlight + Horn + Button</small>
9	Headlight Busch and Müller IQ-X E <small>Approval E1 014416</small>	444409600 <small>Kit Headlight + Horn + Button</small>
10	ySplit cable with two double female Mini B Higo connectors	596406400 <small>brakes with short brake sensor cable (BSC) Or 596406200</small>
11	Light Cable Rear 1400mm <small>Bosch : 1270.020.324</small>	998101300
12	Light Cable Front 1400mm <small>Bosch : 1270.020.322</small>	Included in 44409600 <small>Headlight kit</small>
13	Brake sensors on Magura MT4e brake levers with double male mini B Higo connectors	Front : 448324200 <small>(Short BSC)</small> 448325100 <small>(Long BSC)</small> Rear : 448324300 <small>(Short BSC)</small> 448325200 <small>(Long BSC)</small>

8. Component & diagnostic information

Diagnostic information is available after training at one of the Bosch training facilities. Dealers in Germany, Switzerland, Denmark, Finland, Norway, Sweden, Belgium, the Netherlands, Italy, the UK, Spain, France and Austria can register for training sessions via their service partner's web shop at www.bosch-ebike.com/webshop (all countries except Switzerland) and www.bosch-ebike.ch/webshop (Switzerland).

For more information about the Bosch system and diagnostic information see Bosch manual www.gazellebikes.co.uk/media/6942/gaz_bosch_uk_171_v01.pdf

9. Diagnostic fault-codes

For more information about Bosch diagnostic fault codes see Bosch manual: www.gazellebikes.co.uk/media/6942/gaz_bosch_uk_171_v01.pdf

10. Software versions

For more information about the Bosch software versions see: www.bosch-ebike.com/en/service/software-update/

11. Special tools and equipment

Special diagnostic software and equipment can be applied for after the training by Bosch has been followed. See paragraph 3.

12. Customer technical support

For customer technical support call:

The Netherlands	0900 - 707 07 07
Belgium	+32 (0)3 480 06 49
Germany	+49 (0)2 161 91 833 18
Denmark	+45 (0)3 688 01 52
Austria	+43 (0)7 208 80 615
France	+33 (0)8 050 841 99
Swiss:	+41 (0)41 748 55 55

13. Royal Gazelle Maintenance schedule

CUSTOMER NAME	VIN NUMBER
ORDER NUMBER	DEALER SIGNATURE

Gazelle

	BEFORE EVERY RIDE	EACH 250-500KM	EACH 3000 OR ONCE A YEAR
Check tyre pressures & add air if needed. The tyre pressure should at all time be in the range indicated on the tyre. Tyre pressure can influence the electric support range and the riding comfort	x		
Check the tyre tread for wear and embedded debris that could cause a flat. A replacement tyre should be of the ETRTO dimension that is mentioned in the certificate of compliance (COC) for the vehicle.	x		
Check safety-related accessories: horn, headlight, rear light, brake light, reflectors	x		
Check that the wheel quick releases are tight and that the wheels are secure	x		
Spin wheels looking for wobbles	x		
Test brakes to make sure they are gripping and check to see that the brake pads are in good condition. If the brake pads are worn, they should be replaced with original spare parts.	x		
Check chain & grease if it looks dry	x		
Compress and release the suspension to check that it's working properly.		x	
Check for chain, cassette cog and chain ring wear and replace worn parts as required. Replacement parts should be compatible with the drive train and have the same number of teeth as those fitted originally.		x	
Clean the drive train (chain, chain rings, cassette, sprocket, rear derailleurs, chain tensioner) and regrease		x	
Check the wheels for loose spokes		x	
Clean the bike and inspect the frame and components for signs of wear such as cracks		x	

	BEFORE EVERY RIDE	EACH 250-500KM	EACH 3000 OR ONCE A YEAR
Use a torque wrench to check the tightness of the: motor bolts, crank arm bolts, pedals, chain ring bolts, saddle bolts, seat post bolts, stem bolts, handlebar bolts and all accessory mounting bolts/screws. Refer to the tightening torque table for the correct tightening torques			x
Grease the cables to prevent binding and check the cables for fraying and rusting and replace if necessary			x
Maintain and grease your suspension components: Hold the front wheel blocked with the brakes and push the vehicle forwards and backwards to ensure there is no excessive play in the front fork. If needed, adjust the front fork play as described in the fork maintenance guide			x
Check all bearing systems: hubs, headset and pedals: adjust and/or overhaul as needed			x
Clean and check wheels carefully for signs of wear or cracks at the spoke nipples			x

14. Royal Gazelle Maintenance Record

CUSTOMER NAME	VIN NUMBER
ORDER NUMBER	DEALER SIGNATURE

Service/repair date: _____ km: _____ Type of service: maintenance / repair Work done, parts replaced: _____ _____ _____ Dealer/service operator stamp & signature:	Service/repair date: _____ km: _____ Type of service: maintenance / repair Work done, parts replaced: _____ _____ _____ Dealer/service operator stamp & signature:
Service/repair date: _____ km: _____ Type of service: maintenance / repair Work done, parts replaced: _____ _____ _____ Dealer/service operator stamp & signature:	Service/repair date: _____ km: _____ Type of service: maintenance / repair Work done, parts replaced: _____ _____ _____ Dealer/service operator stamp & signature:
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ROYAL DUTCH Gazelle N.V.

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ROYAL DUTCH
Gazelle

