UBCO

November 2024

2×2 Gen. 5 Technical Service Manual

Version 1.1

TABLE OF CONTENTS

UBCO

General Information

TECHNICAL SERVICE MANUAL

1.1 RELEASE HISTORY

TABLE 1: RELEASE HISTORY

VERSION	DESCRIPTION	DATE
1.0	Initial Release	October 2023
1.1	UPDATES; Loctite 273 Replaced with Loctite 243 - Page 12, Page 48, Page 50 SR Brake Fluid - Page 17 Brake Bleed Procedure - Page 24 Headlamp Beam Adjustment Procedure - Page 44 SYS 2 Brake Torques - Page 58, Page 60, Page 62, Page 64, Page 66 Brake Disk Torque & Loctite Variant - Page 55 Brake Caliper Torque - Page 56 Rear Brake Line Torque - Page 62 Brake Pad Torque - Page 68 Front Fork Torque - Page 84 Handlebar Process - Page 95 Front Console Cover Torque - Page 103 Front Console Rear Panel Torque - Page 105 Rear Console Rear Panel Torque - Page 109 Swing Arm Mudguard Torque - Page 114 Battery Grease - Page 124 Dash Torque - Page 137 Motor Controller Torque - Page 148	November 2024

1.2 GENERAL INFORMATION AND DISCLAIMERS

Please read this disclaimer carefully before using the technical repair manual. By accessing and utilizing this manual, you acknowledge and agree to the following terms and conditions:

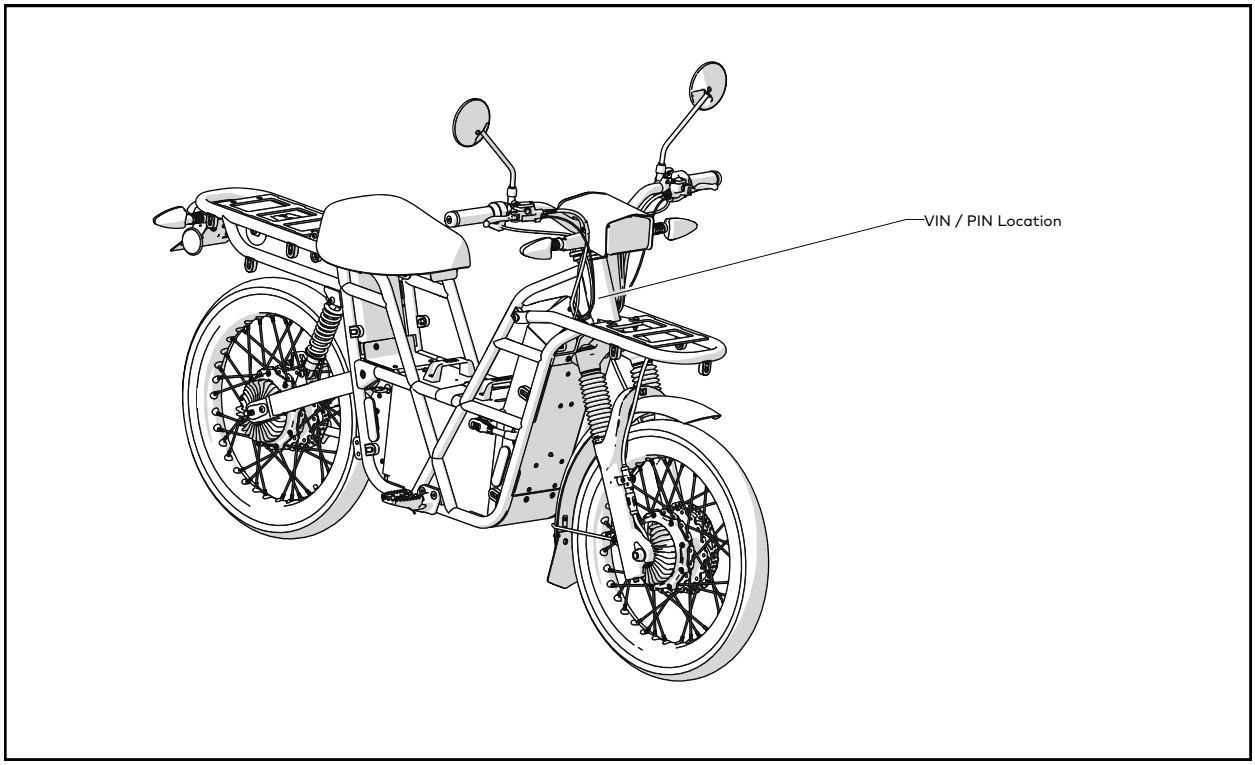
1. **USE AT YOUR OWN RISK**: This technical repair manual is provided for informational and educational purposes only. The information contained herein is intended for skilled technicians and professionals who have the necessary tools, equipment, and expertise to safely and accurately perform the repairs described. The use of this manual is entirely at your own risk, and the manual's publisher, authors, and contributors shall not be held liable for any damages or losses arising from its use.
2. **PROFESSIONAL GUIDANCE**: This manual is not a substitute for professional advice, diagnosis, or repair services. It is essential to consult with an UBCO certified technician or manufacturer-approved service personnel when dealing with complex technical repairs or maintenance tasks. The manual is meant to complement, not replace, professional expertise.
3. **APPLICABILITY:** The procedures and instructions in this manual are generic in nature and may not be suitable for all devices, equipment, or situations. Always refer to UBCO documentation or guidelines for device-specific repair instructions and specifications where available.
4. **SAFETY PRECAUTIONS:** Motorcycle repairs can be dangerous and may involve exposure to electrical hazards, moving parts, and other potential risks. Prior to attempting any repair, please ensure that you are adequately trained and equipped with the necessary safety gear. Follow all safety warnings provided by the manufacturer as well as industry health and safety guidelines.
5. **WARRANTY IMPLICATIONS:** Attempting repairs on a product covered by a warranty or service agreement may void such coverage. Always check UBCO's warranty terms and conditions before undertaking any repair work.
6. **COPYRIGHT AND INTELLECTUAL PROPERTY:** This technical repair manual is protected by copyright law. You may use it for personal, non-commercial purposes only. Reproduction, distribution, or modification of the manual's content for commercial use is prohibited without prior written consent from the copyright holder.
7. **ACCURACY AND UPDATES:** The information within this manual may become outdated over time due to evolving technology and product changes. The authors and publisher do not guarantee the accuracy, reliability, or completeness of the information. It is the user's responsibility to verify and cross-reference the information.

8. **LIMITATION OF LIABILITY:** In no event shall the manual's publisher, authors, or contributors be liable for any direct, indirect, special, punitive, incidental, or consequential damages arising from the use of this manual or any information contained within.

By using this technical repair manual, you agree to abide by these terms and conditions. If you do not agree to these terms, do not continue to use this manual. Your use of this manual constitutes your acceptance of these disclaimers and limitations.

1.3 BIKE IDENTIFICATION

UBCO ADV and WRK bikes are manufactured with a Vehicle Identification Number (VIN) and Product Identification Number (PIN) respectively. This identifier is located on the right hand side of the head tube of the frame.



1.4 BRAKE SYSTEM IDENTIFICATION

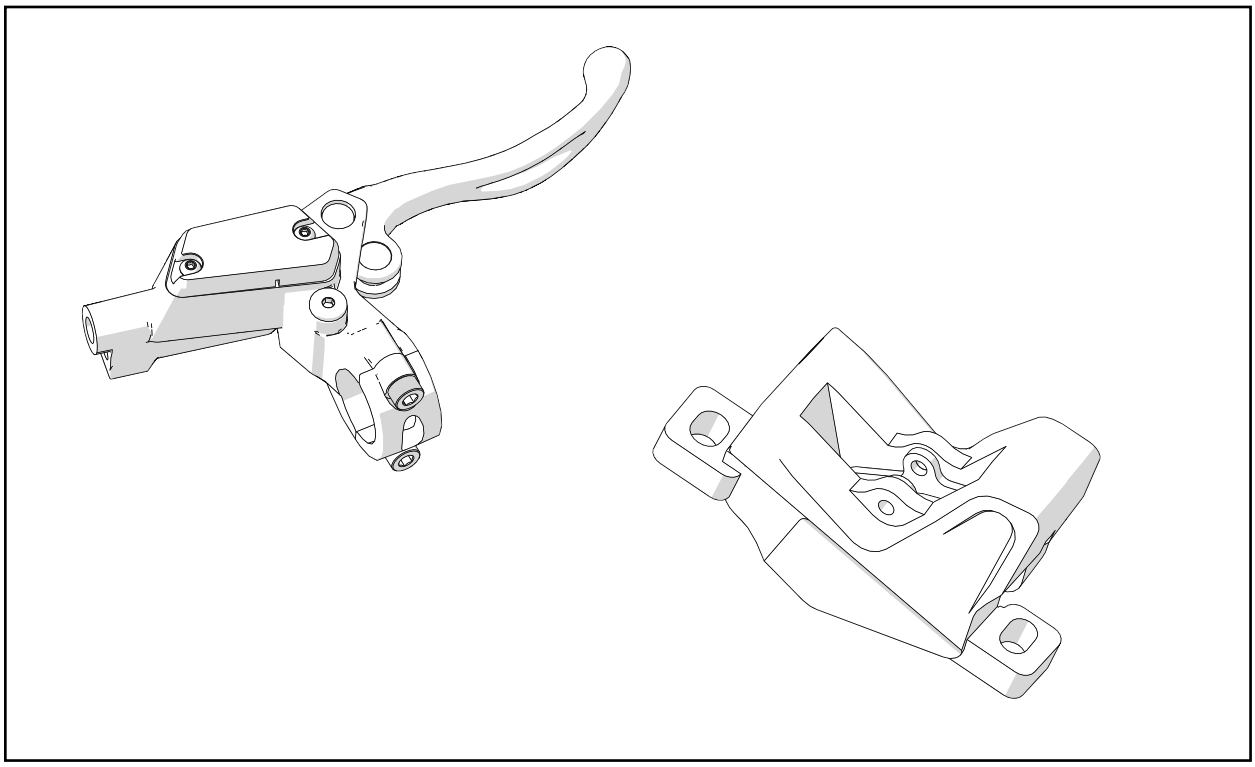
The UBCO 2x2 Gen 5 is available with different braking systems.

These are referred to as- "SR" or "SYS 2"

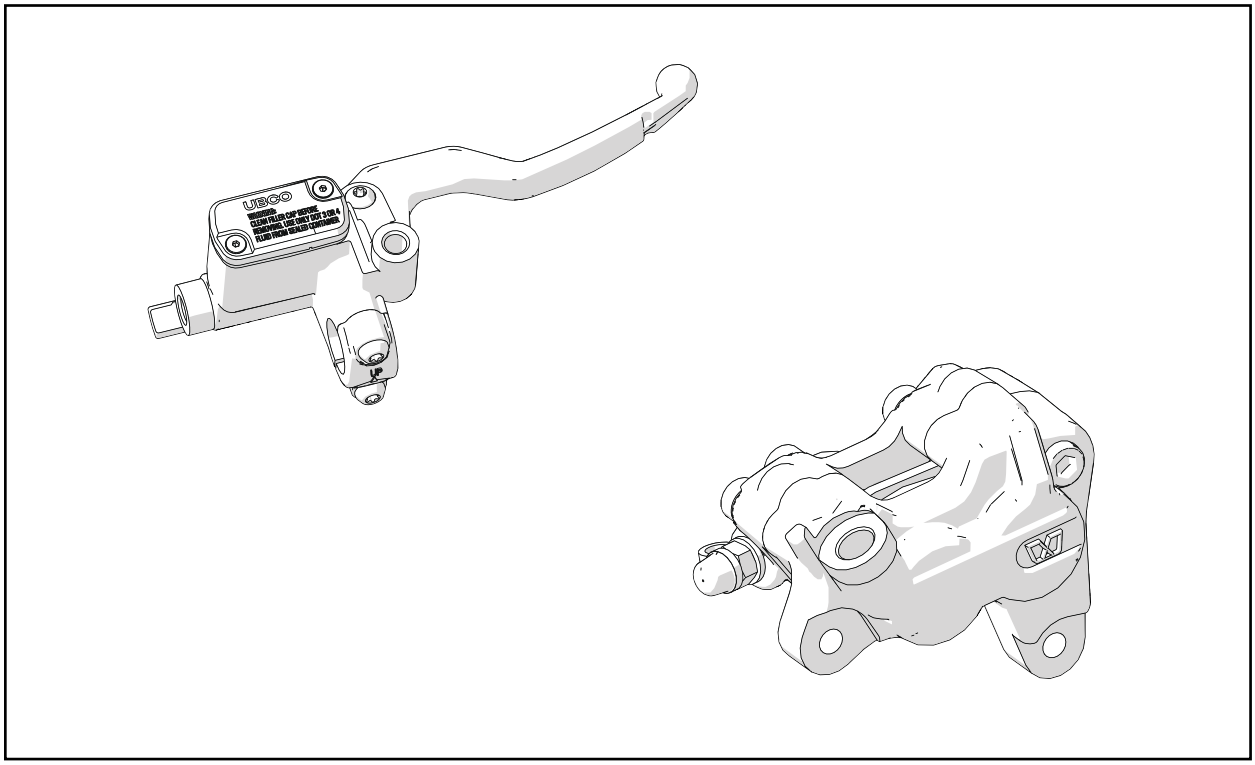
Where there are variations in processes due to these different brake systems, clear instructions for each system are provided.

These brake systems can be easily identified by component comparison with the below images.

SR



SYSTEM 2



1.5 REQUIRED TOOLS AND CONSUMABLES

The following basic hand tools are required for carrying out the processes defined within this manual.

ALLEN KEYS

- 2mm
- 2.5mm
- 3mm
- 4mm
- 5mm
- 6mm
- 7mm
- 8mm

ALLEN KEY SOCKETS

- 2.5mm
- 3mm
- 4mm
- 5mm
- 6mm
- 7mm
- 8mm

TORX KEYS

- T20
- T25
- T30

TORX SOCKETS

- T20
- T25
- T30

SCREWDRIVERS

- #1 Philips
- #2 Philips
- 5mm Flat

SOCKETS

- 8mm Crows Foot
- 10mm
- 17mm
- 21mm

SPANNERS

- 7mm
- 8mm
- 10mm
- 13mm
- 14mm
- 17mm
- 36mm

The following workshop equipment is required for carrying out the processes defined within this manual.

ITEM

- Micrometer
- Tyre Pressure Gauge
- Tread Depth Gauge
- Spoke Wrench
- Short Legged Bearing Puller
- External Circlip Pliers
- Flush Cutters
- Dial Gauge
- Breaker Bar
- Socket Driver
- Hammer
- Punch
- Rubber Hammer
- Heat Gun
- Brake Bleed Blocks

Note - Impact drivers should not be used at any point within the assembly or disassembly of components on the UBCO bike.

The following consumables are required for carrying out the processes defined within this manual.

LUBRICANTS

- Silicone Grease
- ROCOL FOODLUBE Premier 1, EP1
- Red Rubber Grease

FLUIDS

- DOT 4 - Brake Fluid
- Mineral Oil - Brake Fluid
- Isopropyl Alcohol

ADHESIVES

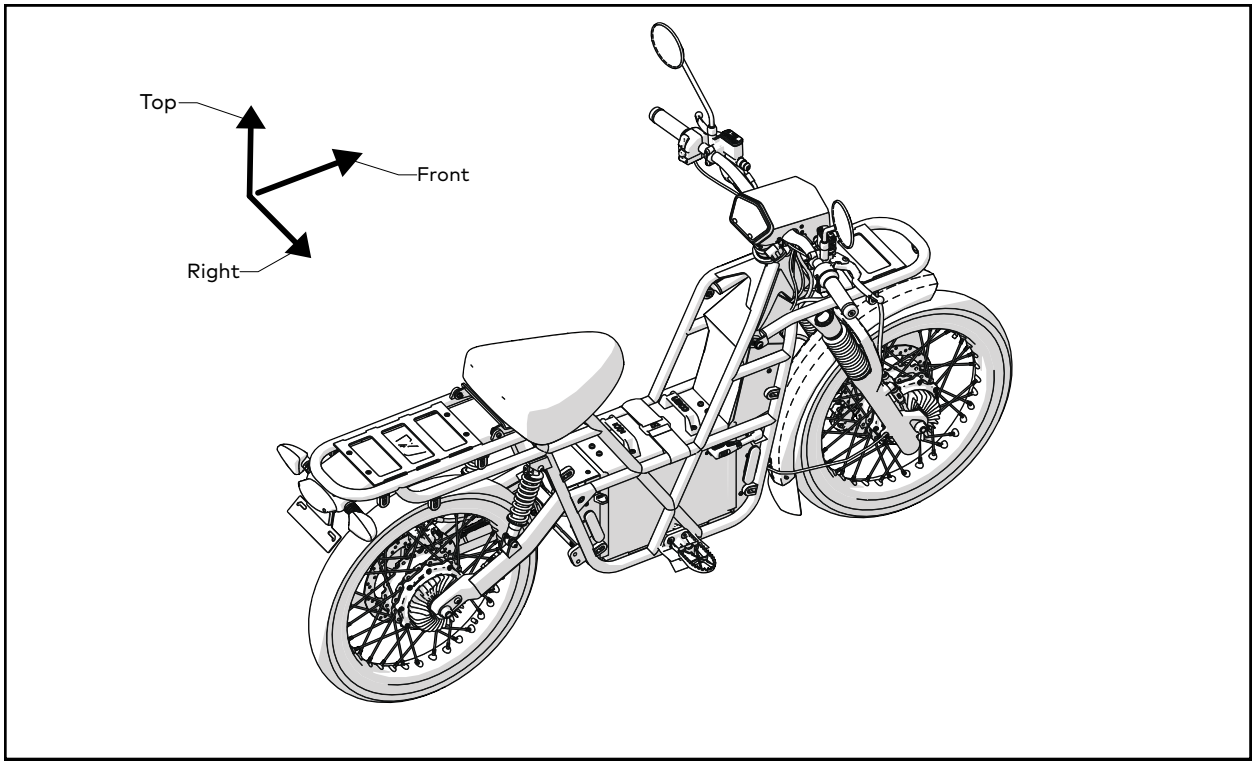
- Loctite 243
- Loctite 263

OTHER

- Cloth - Lint Free
- Cloth - Cleaning

1.6 BIKE ORIENTATION

Throughout this manual the bike orientation is to referred to from the rider position. For example, the right hand side refers to the right hand side of the vehicle when you are seated, facing the handlebars.



UBCO

Model Specifications

TECHNICAL SERVICE MANUAL

2.1 MODEL NAMING

Model. . . . . UBCO 2x2 ADV Gen 5 (2020 to Present)
. . . . . UBCO 2x2 WRK Gen 5 (2020 to Present)

2.2 DIMENSIONS

Length 1820mm
Width 820mm
Height 1040mm
Seat Height 815mm
Wheelbase 1215mm

2.3 MASS

Chassis Mass (No Battery)
Vehicle Mass (2.1kWh Battery) 66kg
Vehicle Mass (3.1kWh Battery) 71kg
Battery Mass (2.1kWh Battery). 13kg
Battery Mass (3.1kWh Battery). 18kg
Maximum Payload (including Rider) 150kg

2.4 FRONT AND REAR WHEEL

Rim Material . . . . . Aluminium
Spoke Type. . . . . 9 Gauge
Rim Size . . . . . 17" x 1.85"
Trueness Deflection Limit. 2mm

2.5 TYRES

Tyre Rim Size . . . . . 17" x 1.85"
Tyre Size . . . . . 17" x 2.75"
Tyre Type . . . . . Tubed
Tyre Intended Use Type. . . . . On Road, Mixed, Off Road
Minimum Tread Depth (On Road) . . . . . Refer to local authorities
Recommended Tyre Pressure (On Road). . . . . 207kPa / 30psi / 2.06 bar
Tyre Grip Limit (Mixed) . . . . . Refer to local authorities
Recommended Tyre Pressure (Mixed) . . . . . 207kPa / 30psi / 2.06 bar

Tyre Grip Limit (Off Road) 3mm
Recommended Tyre Pressure (Off Road) . . . . . 172kPa / 25psi / 1.72 bar

2.6 BRAKES - SYS 2

Brake Type . . . . . Single Disc Brake
Operation . . . . . .Hand Lever
Front Brake Disc Diameter. 240mm
Front Brake Disc Standard Thickness 2.7mm
Rear Brake Disc Minimum Thickness 2.4mm
Front Brake Disc Runout Limit 0.5mm
Rear Brake Disc Diameter 240mm
Rear Brake Disc Standard Thickness 2.7mm
Rear Brake Disc Minimum Thickness 2.4mm
Rear Brake Disc Runout Limit 0.5mm
Brake Pad Thickness (Friction Material Only) 3.2mm
Brake Pad Thickness Limit (Friction Material Only 0.5mm
Recommended Fluid. . . . . DOT 4

2.7 BRAKES - SR

Brake Type . . . . . Single Disc Brake
Operation . . . . . .Hand Lever
Front Brake Disc Diameter. 200mm
Front Brake Disc Thickness. 2.0mm
Front Brake Disc Thickness Limit 1.8mm
Front Brake Disc Runout Limit 0.5mm
Rear Brake Disc Diameter 200mm
Rear Brake Disc Standard Thickness 2.0mm
Rear Brake Disc Minimum Thickness 1.8mm
Rear Brake Disc Runout Limit 0.5mm
Brake Pad Thickness (Friction Material Only 2mm
Brake Pad Thickness Limit (Friction Material Only 0.5mm
Recommended Fluid. . . . . Mineral Oil

2.8 FRONT SUSPENSION

Type ..... Telescopic Fork
Spring / Shock Absorber Type ..... Coil Spring / Gas Damper
Fork Travel 130mm

2.9 REAR SUSPENSION

Type ..... Swingarm Linkage
Number 2
Spring / Shock Absorber Type .....Coil Spring / Oil Damper
Fork Travel 120mm

2.10 CHASSIS SPECIFICATIONS

Frame Type .....Tubular Aluminium
Caster Angle ..... 26°
Trail 95.7mm

2.11 BATTERY

Type .....UBCO Lithium Ion
Capacity 3.1kWh
Nominal Voltage 50.89V
Charger..... 100-240V 600W Wall or Bench Mount

UBCO

Service Information

TECHNICAL SERVICE MANUAL

3.1 COMPONENT REUSE

When carrying out procedures within this manual the guidance is to re use components. It should be noted that components like washers, circlips, o-rings and fasteners are easily damaged and should be replaced if signs of wear or tear are present.

3.2 CLEANING PROCEDURES

When a fastener (new or old) is to be used within a procedure outlined within this manual, it first requires cleaning. To clean a fastener follow the below process;

1. Prepare the threads using an appropriate aqueous or solvent based cleaner. Wipe the threads ensuring no corrosion inhibitor, dirt or debris remains.
2. If there is any stubborn debris use a fine wire brush to agitate, remove and then prepare the threads with an appropriate cleaner.
3. Assess the thread for signs of wear and tear and replace with new if required.

3.3 APPLICATION OF THREADLOCKER

This procedure should be followed for every use of threadlocker within this manual. Ideally refer to the manufacturers specifications for the application of threadlocker. If these are unavailable follow the below process;

1. Prepare the threads using an appropriate aqueous or solvent based cleaner. Wipe the threads ensuring no corrosion inhibitor, dirt or debris remains.
2. Allow the threads to dry after cleaning ensuring no trace of the cleaners used in the first stage remains.
3. Apply a few drops of threadlocker to the section of the bolt where the nut will sit.
4. Slowly fit the nut onto the bolt allowing the threadlocker to spread evenly.
5. Allow the threadlocker to cure for 24 hours. During this time movement of the assembly should be kept to a minimum. In cases where this is not possible, an accelerator may be used. Refer to the manufacturers specifications for process.

3.4 STANDARD TORQUE SETTINGS

This chart specifies tightening torques for standard metric ISO fasteners with a standard ISO thread pitch. Tightening torque specifications for special components or assemblies are provided for each chapter of this manual. To avoid warpage, tighten multi-fastener assemblies in a crisscross pattern and progressive stages until the specified tightening torque is reached. Unless otherwise specified, tightening torque specifications require clean, dry threads. Components should be at room temperature.

TABLE 2: STANDARD TORQUE SETTINGS

	TORQUE SETTING FOR UNLUBRICATED FASTENER GRADE (NM)	
FASTENER	STAINLESS STEEL CLASS 70	STEEL CLASS 10.9
M3	1	1.5
M4	2.5	3.5
M5	5	7
M6	9	12
M8	21	29
M10	44	57

3.5 USE OF CABLE TIES

Wherever used Cable Ties should be trimmed with no sharp edges. Where possible Cable Ties should be placed so that the final trimmed edge is least likely to come into contact with the user during normal use of the Bike.

3.6 BRAKE COMPONENT HANDLING

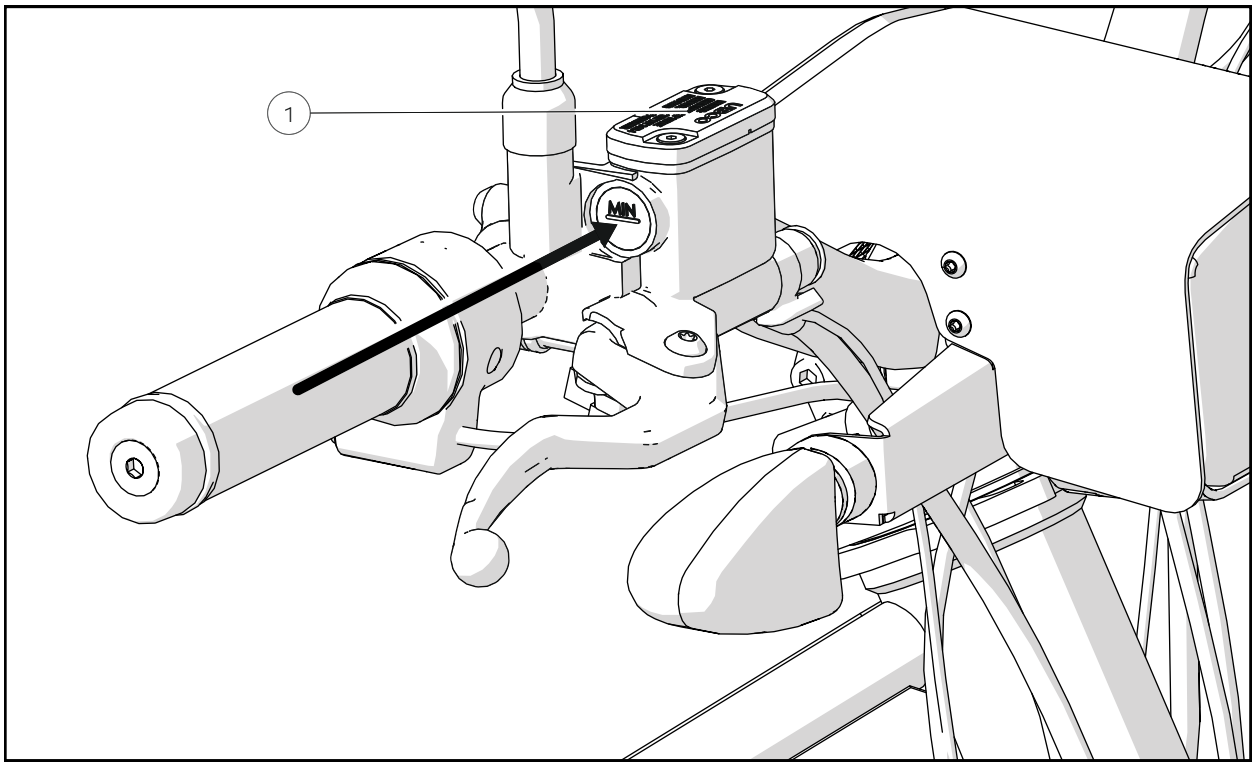
When handling brake pads and discs ensure that the active surfaces of the components do not come in contact with contaminants. Do not allow the brake pad surface or portion of brake disc that comes into contact with the brake pad to touch anything other than a clean, lint free cloth. If the brake pads or discs do become contaminated, attempt to clean with Isopropyl alcohol and discard if unsuccessful.

UBCO

Service Checks, Adjustments and Processes

TECHNICAL SERVICE MANUAL

4.1 SYS 2 - CHECKING BRAKE FLUID LEVEL



NUMBERED ITEMS

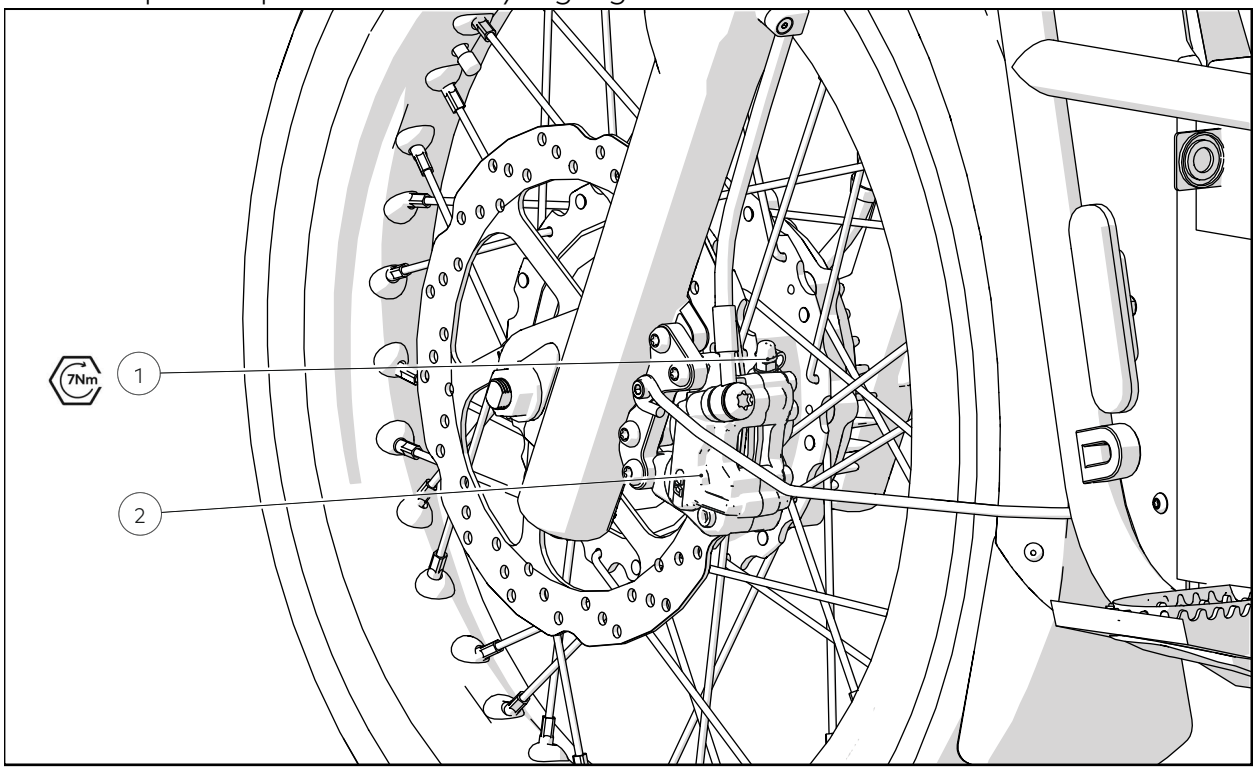
1. Master Cylinder Top Surface

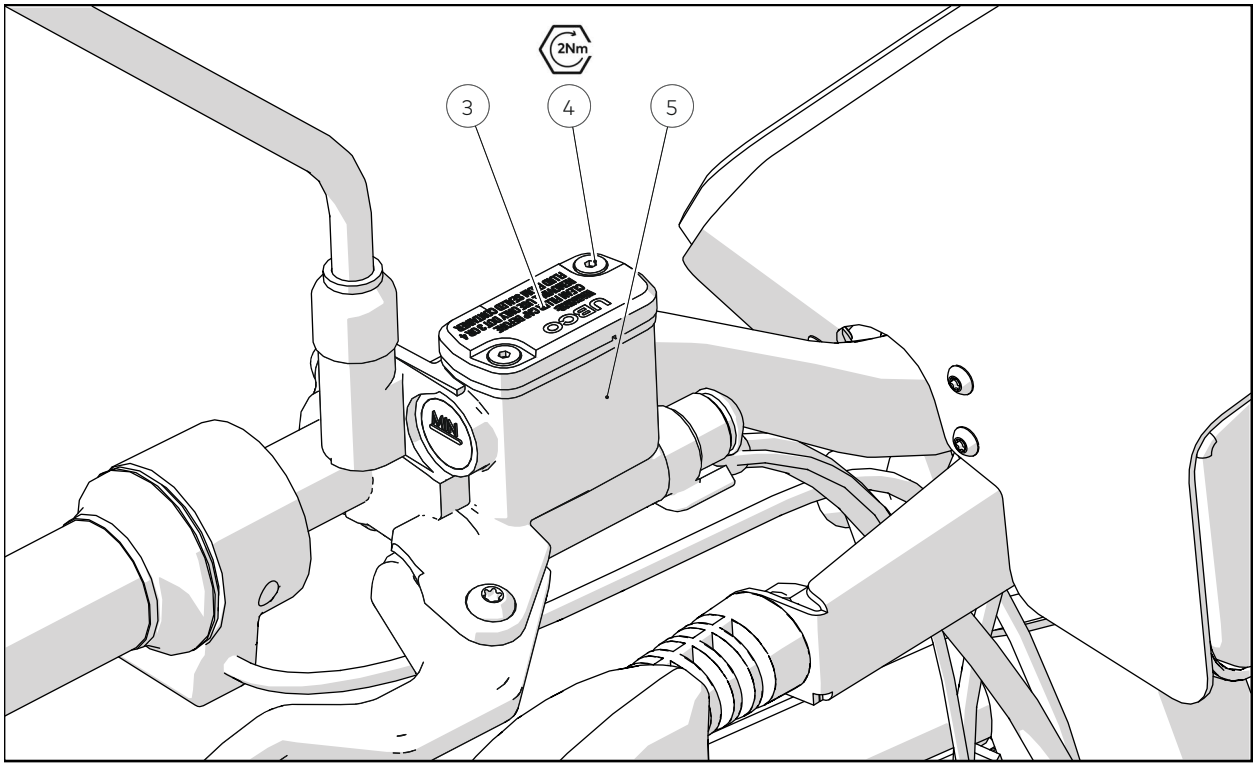
PROCESS STEPS

1. Ensure the Master Cylinder Top Surface is parallel to the ground
2. Looking horizontally at the level indicator ensure it is above the minimum line

4.2 SYS 2 - BLEEDING / REPLACING BRAKE FLUID

Follow the below processes to bleed the brakes. If replacing the brake fluid, carry out the optional processes clearly highlighted





NUMBERED ITEMS

1. Caliper Bleed Port
2. Caliper Assembly
3. Master Cylinder Cover
4. Master Cylinder Cover Fasteners
5. Master Cylinder Assembly

TOOLS / CONSUMABLES REQUIRED

- Bleed Kit Tubing
- DOT 4 Brake Fluid
- 8mm Spanner
- #2 Philips Head Screwdriver
- Isopropyl Alcohol
- Lint Free Cloth
- Brake Bleed Blocks

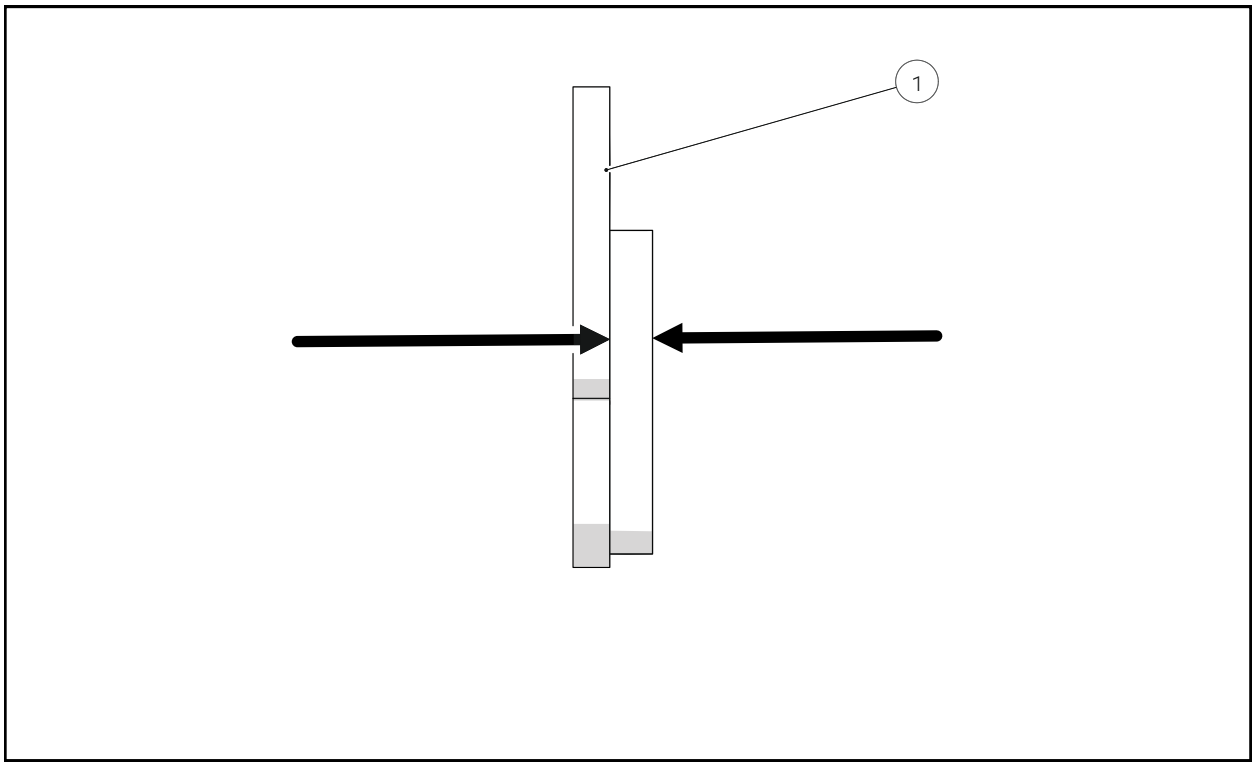
PRE-REQUISITES

Brake Pad Removal - Page 53

PROCESS STEPS

1. Install Brake Bleed Blocks in the space left by the Brake Pad Removal
2. Remove the Caliper Bleed Port Cover and install the Bleed Kit Tubing
3. Using a #2 Philips Head Screwdriver, remove the Master Cylinder Cover Fasteners
4. Remove the Master Cylinder Cover and Brake Reservoir Diaphragm
5. Using DOT 4 Brake Fluid, fill the Brake Reservoir to the top
6. Actuate the Brake Lever to build pressure
7. Using a 8mm Spanner, gently release then tighten the Caliper Bleed Port Fastener. Some fluid should be able to escape but all pressure shouldn't be lost
8. Check to ensure Brake Reservoir is still full, if low, repeat Step 4
9. Repeat Steps 5, 6 and 7 until the Brake Lever actuation feels firm
10. OPTIONAL - If replacing the Brake Fluid - Remove the fluid from the Brake Reservoir and then repeat steps 4, 5, 6, 7 and 8
11. Using an 8mm Spanner, tighten the Caliper Bleed Port Fastener
12. Check the Brake Reservoir Diaphragm for signs of wear or damage and replace if required. Install into the Brake Reservoir
13. Using a #2 Philips Head Screwdriver, tighten the Master Cylinder Cover Fasteners securing the Master Cylinder Cover
14. Using Isopropyl Alcohol and a Lint Free Cloth, clean both the Master Cylinder Assembly and Caliper Assembly
15. Remove the Brake Bleed Blocks

4.3 SYS 2 - INSPECTING BRAKE PADS



NUMBERED ITEMS

1. Brake Pad

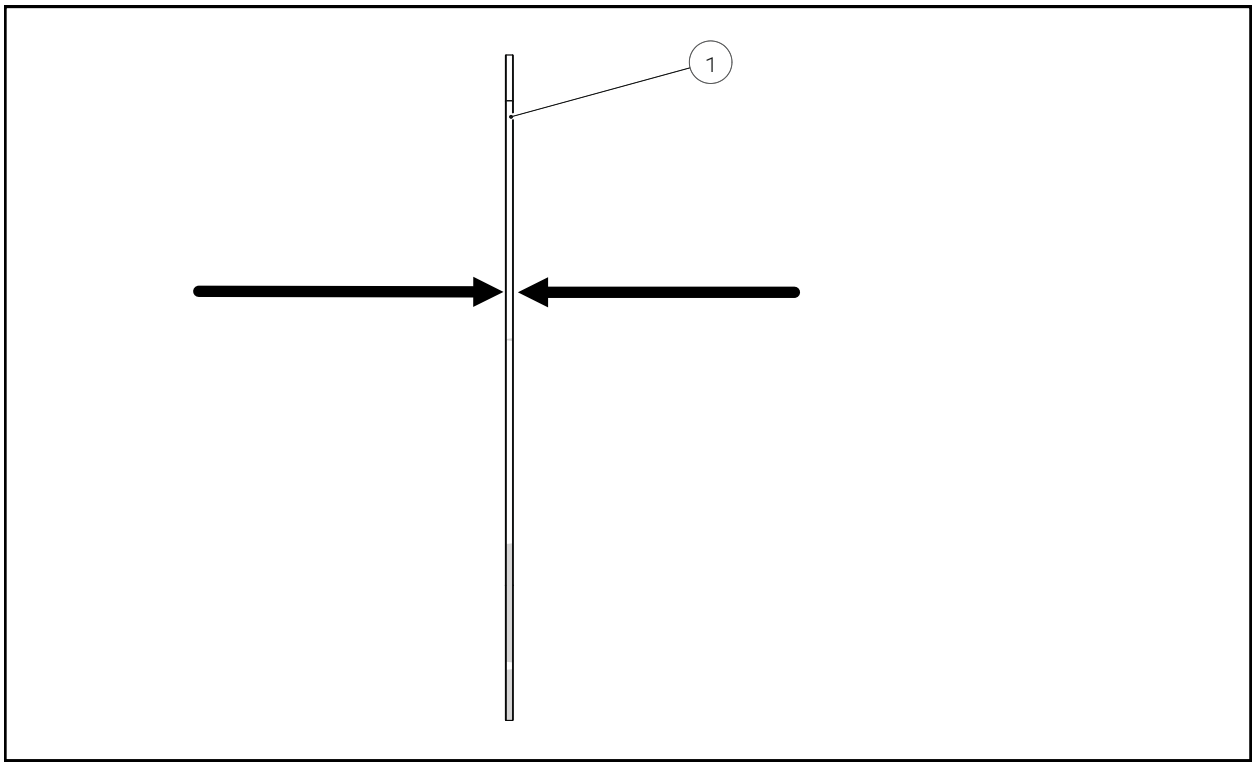
TOOLS / CONSUMABLES REQUIRED

- Micrometer

PROCESS STEPS

1. Remove the Brake Pads using the method outlined on Page 53
2. Inspect for signs of wear and damage. If present replace the Brake Pads using the method outlined on Page 53
3. Using a Micrometer, measure the Brake Pad Thickness. If below the limit outlined on Page 17 replace the Brake Pads using the method outlined on Page 53.

4.4 SYS 2 - INSPECTING BRAKE DISCS



NUMBERED ITEMS

1. Brake Disc

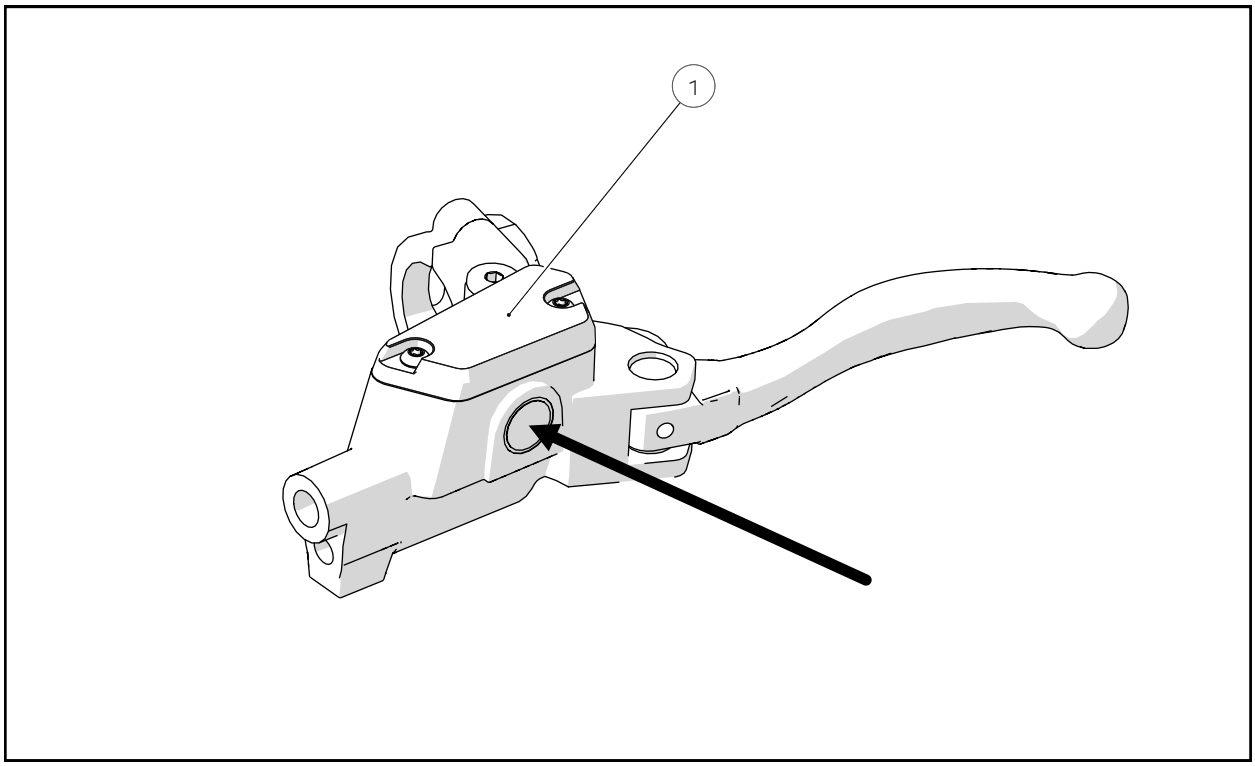
TOOLS / CONSUMABLES REQUIRED

- Dial Gauge
- Micrometer

PROCESS STEPS

1. With the Bike raised on a stand, rotate the Wheel
2. Looking directly through the Caliper space, check to ensure the Brake Disc is running true
3. If un-true, using a Dial Gauge, measure the runout of the Brake Disc
4. If the runout of the Brake Disc is above the limit outlined on Page 17 discard the Brake Disc and replace
5. Using a Micrometer measure the thickness the of the Brake Disc at 6 locations spaced evenly around the circumference of the Brake Disc
6. If the thickness of the Brake Disc is below the limit outlined on Page 17 discard the Brake Disc and replace

4.5 SR - CHECKING BRAKE FLUID LEVEL



NUMBERED ITEMS

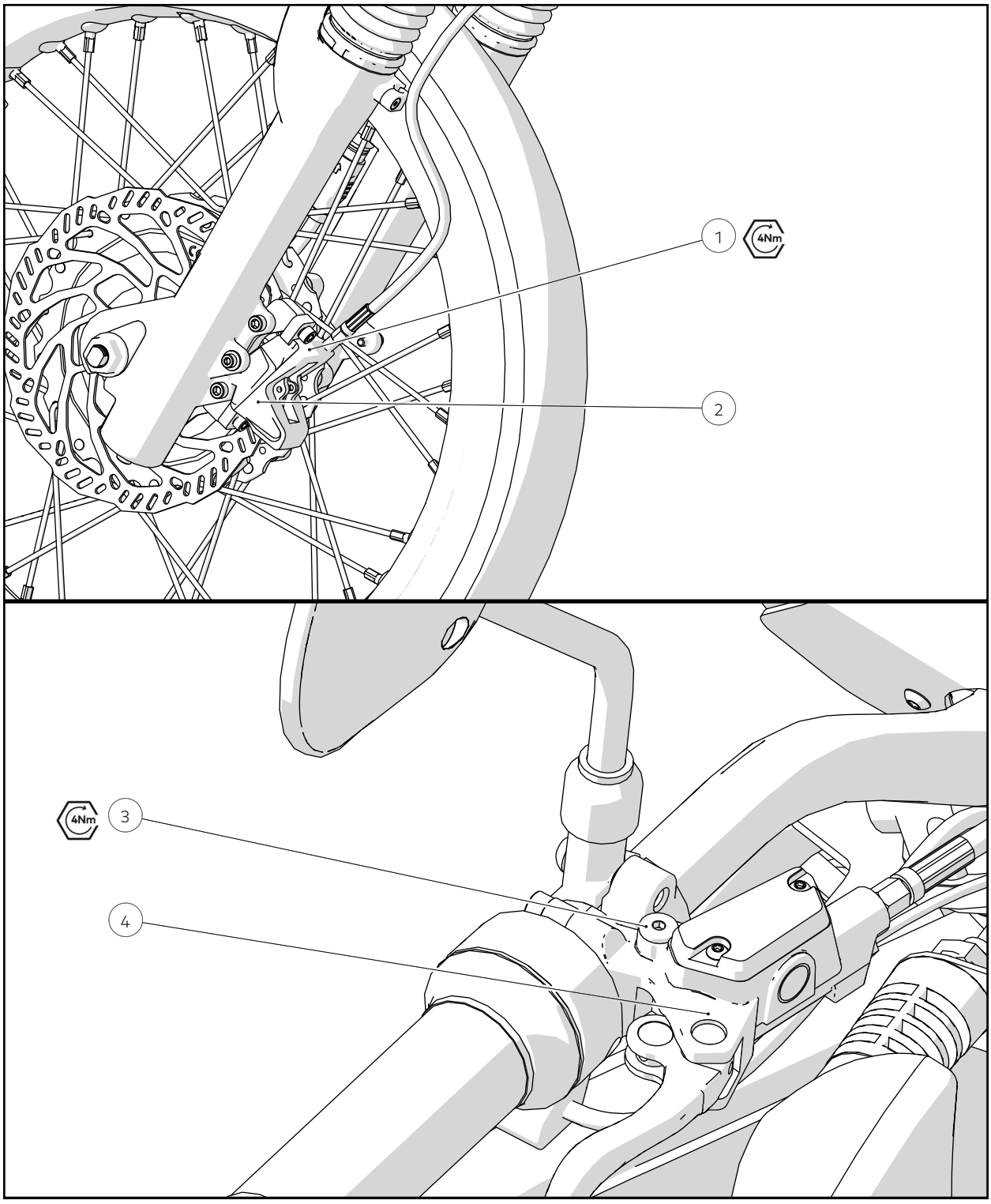
1. Master Cylinder Top Surface

PROCESS STEPS

1. Ensure the Master Cylinder top surface is parallel to the ground
2. Looking horizontally at the level indicator ensure the sight glass is full

4.6 SR - BLEEDING / REPLACING BRAKE FLUID

Follow the below processes to bleed the brakes. If replacing the brake fluid, carry out the optional processes clearly highlighted



NUMBERED ITEMS

1. Caliper Bleed Port
2. Caliper Assembly
3. Master Cylinder Bleed Port
4. Master Cylinder Assembly

TOOLS / CONSUMABLES REQUIRED

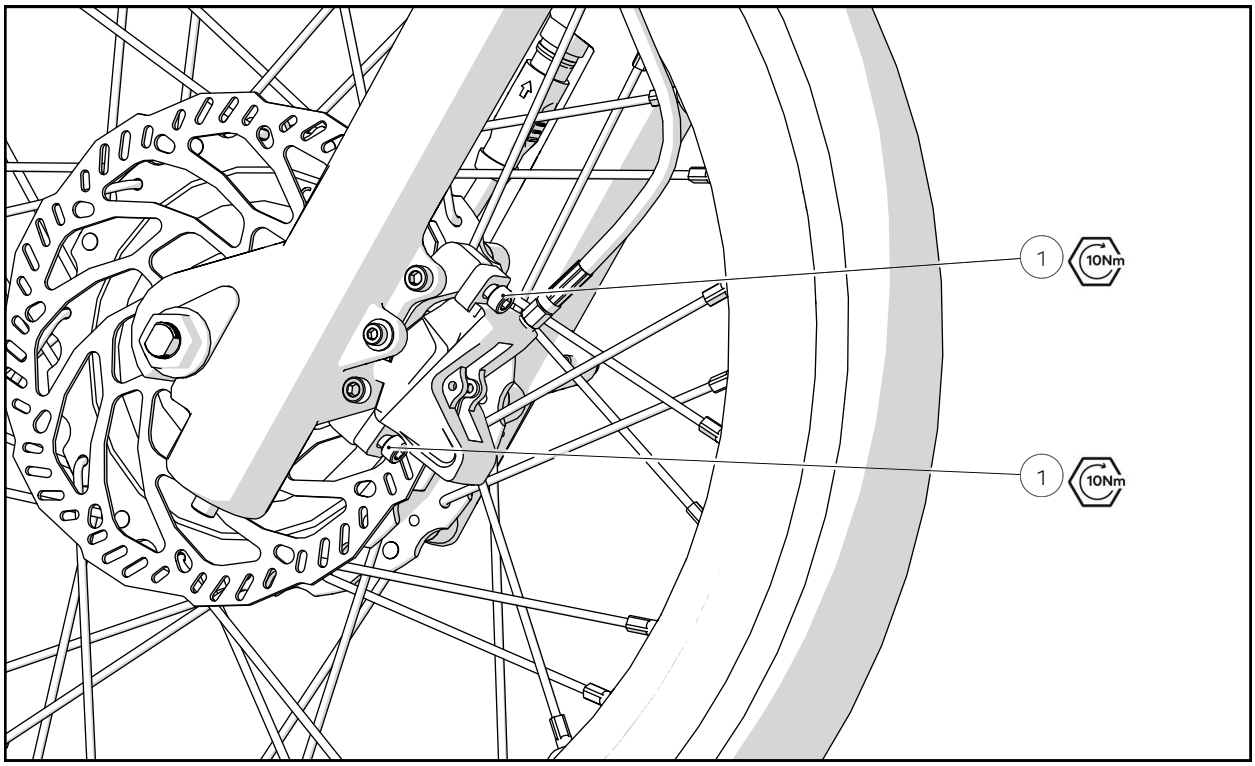
- Brake Bleed Block
- 3mm Allen Key
- 3mm Allen Key Socket
- Torque Wrench
- Bleed Port O-Ring
- Bleed Kit Funnel
- Mineral Oil
- Bleed Syringe
- Isopropyl Alcohol
- Lint Free Cloth

PROCESS STEPS

1. If installed, remove the Wheel from the Bike using the method outlined on Page 48 or Page 50
2. Using a suitable tool, gently return the old Brake Pads and Pistons to full retraction and adjust the Brake Lever Blades to the original position
3. Remove the Brake Pads and install the Brake Bleed Block - if it does not fit this may be due to the system being overfilled
4. Actuate the Brake Lever Blade 10 times to stabilise Piston position
5. Ensure the Caliper is the lowest part of the system and the Master Cylinder is the highest part of the system. Ensure that no kinks exist in the system where bubbles may become trapped.
6. Using a 3mm Allen Key (straight end only as the ball end can round the head), loosen and remove the Master Cylinder Bleed Port Screw and O-Ring
7. Install the Bleed Kit Funnel onto the Master Cylinder
8. Prepare a Syringe full of Mineral Oil. Hold the Syringe pointing upwards and remove all bubbles from the system.
9. Using a 3mm Allen Key (straight end only as the ball end can round the head), loosen and remove the Caliper Bleed Port Screw and O-Ring
10. Inspect the both Bleed Screw O-Rings and replace if signs of wear and tear are present
11. Install the Syringe onto the Caliper
12. Slowly press the Syringe until bubbles stop appearing in the Bleed Kit Funnel
13. If the fluid in the Bleed Kit Funnel is heavily discoloured it must be replaced

14. OPTIONAL - If replacing the Brake Fluid - Slowly press the syringe until the colour of the fluid in the Bleed Kit Funnel becomes slightly lighter. This means that all of the fluid has been replaced with the new fluid
15. Remove the Syringe from the Caliper
16. Using a 3mm Allen Key, lightly tighten the Caliper Bleed Screw
17. Actuate the Brake Lever Blade 10 times
18. Move the Handlebar into a position so the Master Cylinder is approximately horizontal
19. Actuate the Brake Lever Blade 10 times or until air bubbles stop being released into the Bleed Kit Funnel
20. Repeat Steps 6, 7, 8, 10, 11, 14 and 15
21. Actuate the Brake Lever Blade until resistance is firm. If this does not occur, repeat the whole process.
22. Using a 3mm Allen Key Socket and Torque Wrench, tighten the Caliper Bleed Screw
23. Remove the Bleed Kit Funnel and replace with the Master Cylinder Bleed Port Screw
24. Using a 3mm Allen Key Socket and Torque Wrench, tighten the Master Cylinder Bleed Port Screw
25. Using Isopropyl Alcohol and a Lint Free Cloth, clean both the Master Cylinder and Caliper thoroughly.
26. After re-installing the Brake Pads and Wheel the Caliper may need adjusted using the method outlined on Page 32

4.7 SR - ADJUSTING BRAKE CALIPERS



NUMBERED ITEMS

1. Caliper Fastener

TOOLS / CONSUMABLES REQUIRED

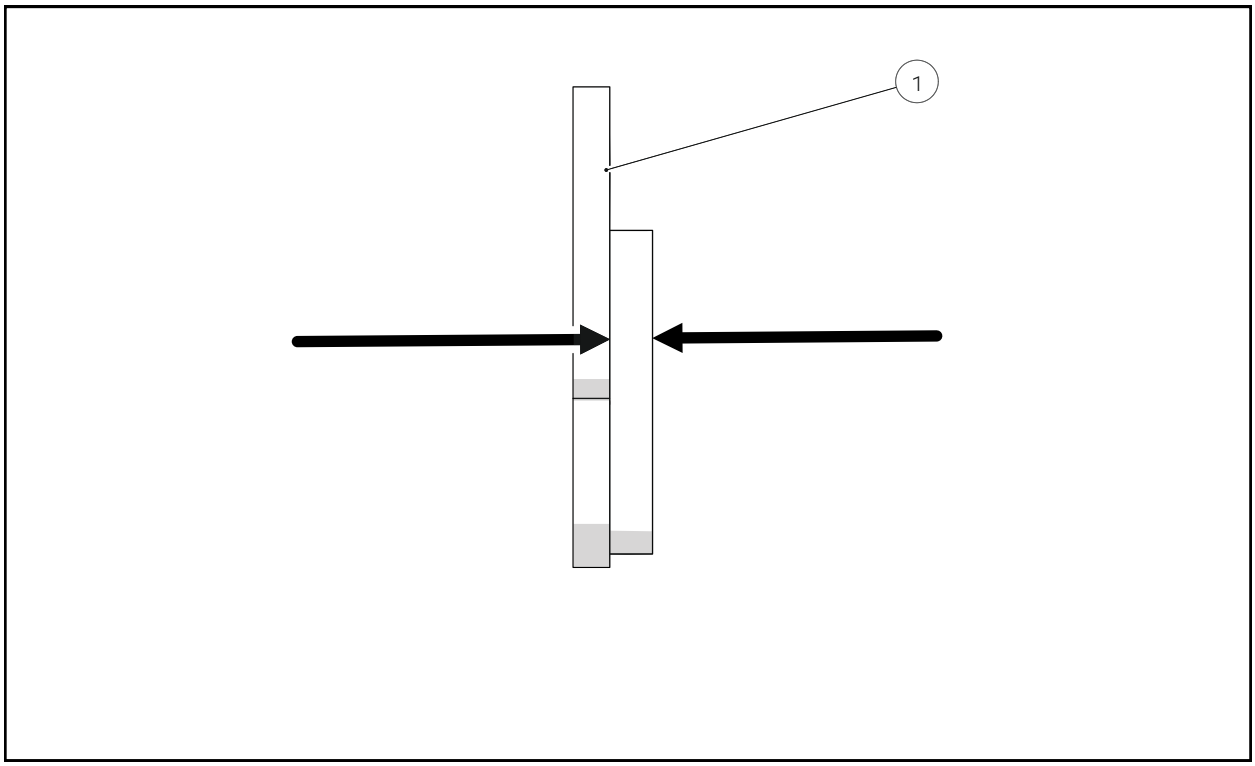
- 5mm Allen Key
- 5mm Allen Key Socket
- Torque Wrench

PROCESS STEPS

1. While the Bike is raised, turn the wheel and inspect the Brake Disc using the method outlined on Page 35
2. If there is a large quantity of lateral movement of the Brake Disc while turning the Wheel it may not be possible to adjust the Brake Caliper and the Brake Disc may need replacement.
3. Using a 5mm Allen Key, loosen the Caliper Fasteners until the Caliper is able to move side to side
4. Pull on the Brake Lever Blade and while pressure is still being applied, using a 5mm Allen Key, tighten the Caliper Fasteners
5. Release the Brake Lever Blade and test for Brake Pad rub by spinning the Wheel

6. If the Brake Pad is rubbing after adjustment, individually loosen the top and bottom fasteners and gently adjust the position of the Caliper until no rubbing occurs
7. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Caliper Fasteners

4.8 SR - INSPECTING FRONT OR REAR BRAKE PADS



NUMBERED ITEMS

1. Brake Pad

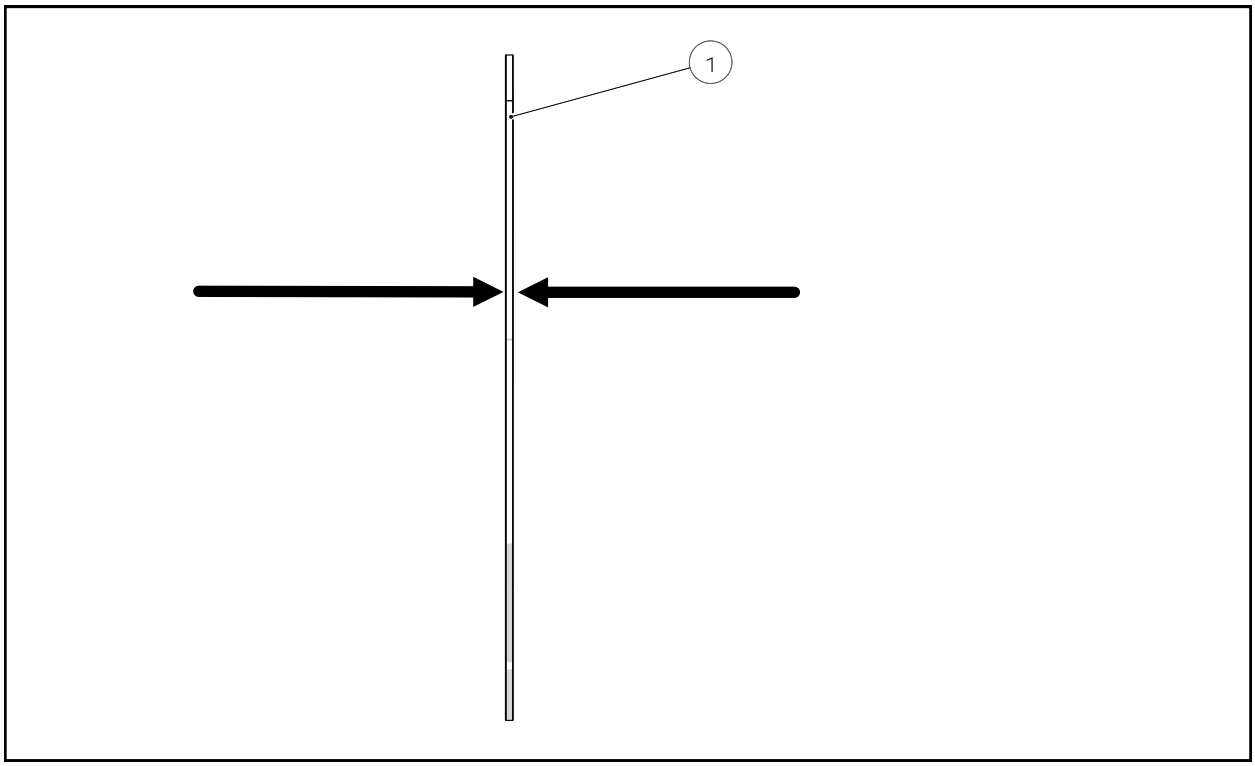
TOOLS / CONSUMABLES REQUIRED

- Micrometer

PROCESS STEPS

1. Remove the Brake Pads using the method outlined on Page 68
2. Inspect for signs of wear and damage. If present replace the Brake Pads using the method outlined on Page 68
3. Using a Micrometer, measure the Brake Pad Thickness. If below the limit outlined on Page 17 replace the Brake Pads using the method outlined on Page 68

4.9 SR - INSPECTING BRAKE DISCS



NUMBERED ITEMS

1. Brake Disc

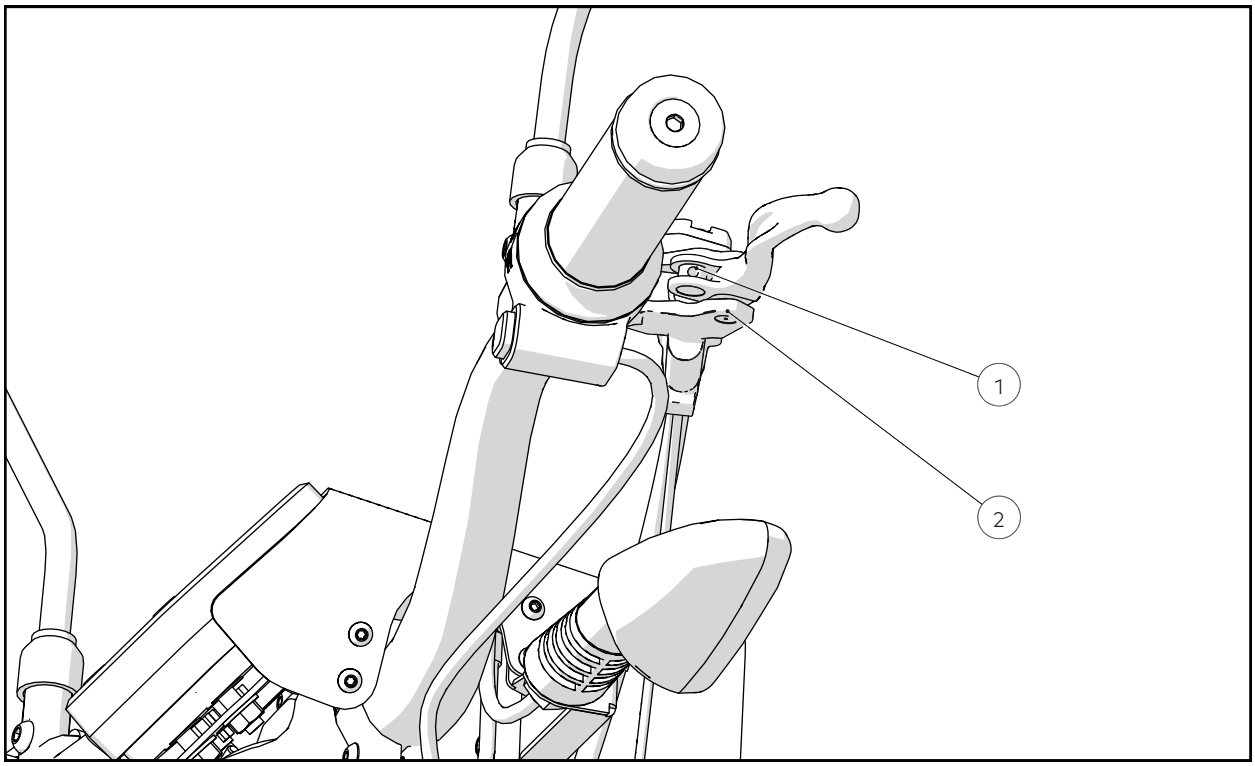
TOOLS / CONSUMABLES REQUIRED

- Dial Gauge
- Micrometer

PROCESS STEPS

1. With the Bike raised on a stand, rotate the Wheel
2. Looking directly through the Caliper space, check to ensure the Brake Disc is running true
3. If un-true, using a Dial Gauge, measure the runout of the Brake Disc
4. If the runout of the Brake Disc is above the limit outlined on Page 17 discard the Brake Disc and replace
5. Using a Micrometer measure the thickness the of the Brake Disc
6. If the thickness of the Brake Disc is below the limit outlined on Page 17 discard the Brake Disc and replace

4.10 SR - ADJUSTING LEVER BLADES



NUMBERED ITEMS

1. Adjustment Grub Screw
2. Brake Assembly

TOOLS / CONSUMABLES REQUIRED

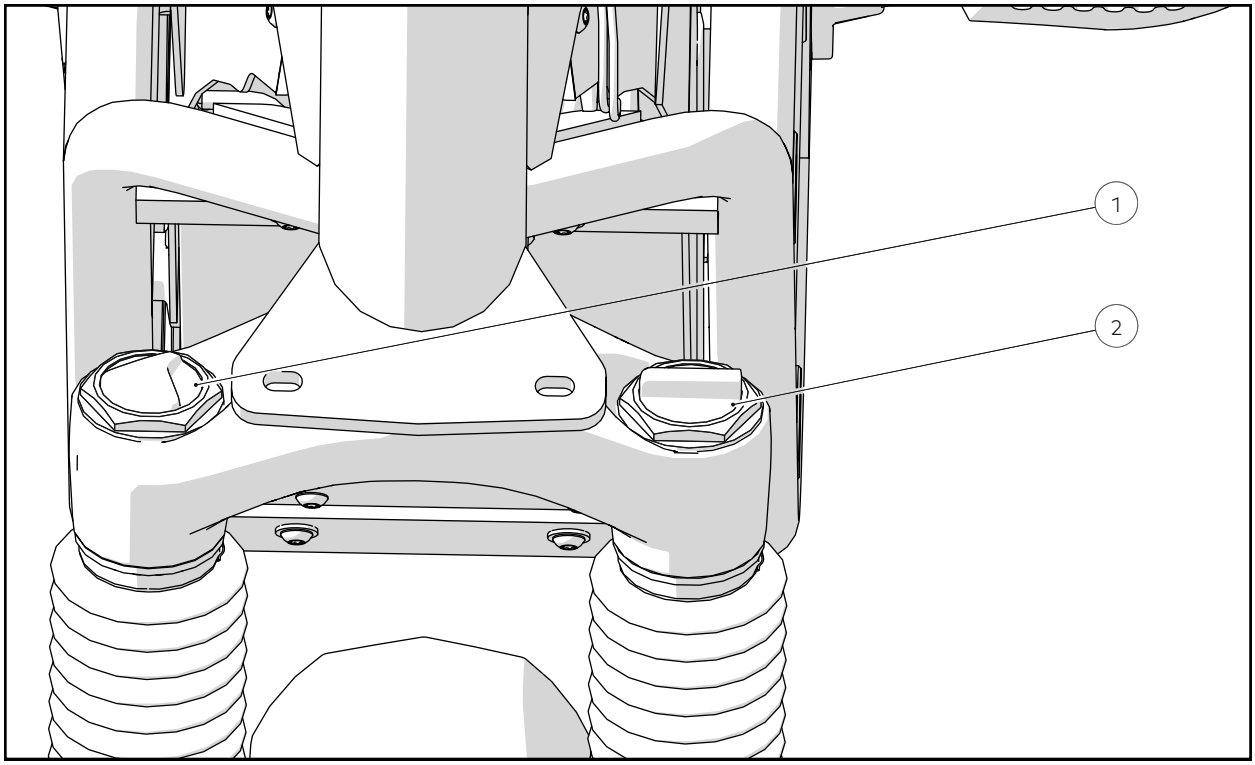
- 2mm Allen Key

PROCESS STEPS

1. Using a 2mm Allen Key, rotate the Adjustment Grub Screw anti-clockwise to bring the Lever Blade closer to the Grip / Throttle or clockwise to move the Lever Blade further away from the Grip / Throttle
2. After adjusting, ensure that when fully actuated the brakes give a firm stop approximately 10mm away from the Grip / Throttle

4.11 ADJUSTING FRONT SUSPENSION

Adjusting suspension settings may have an impact on the headlight beam direction. After carrying out the below process, adjust the headlight beam using the method outlined on Page 44.



NUMBERED ITEMS

1. Rebound Adjustment Dial
2. Preload Adjustment Dial

REBOUND ADJUSTMENT

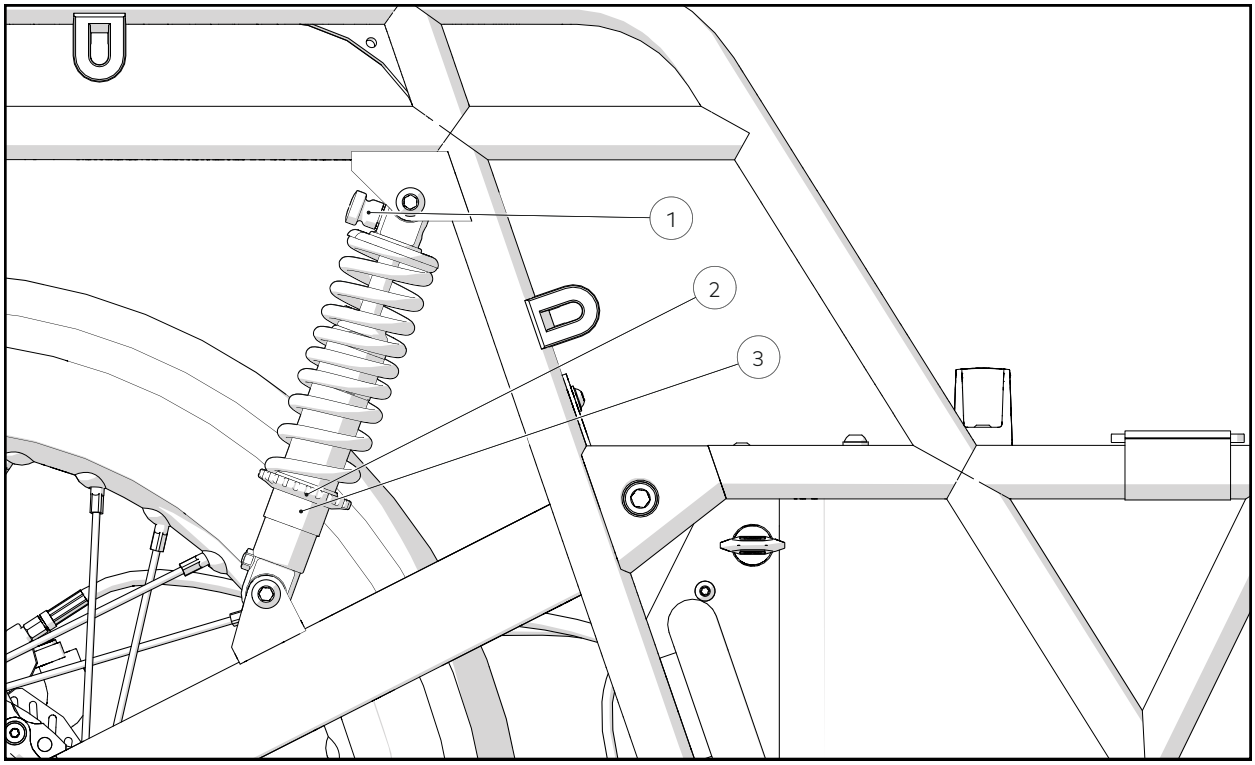
1. Rebound speed is adjusted on the right-hand side of the fork crown
2. Twist the dial clockwise to slow the rebound and anti-clockwise to speed it up

PRELOAD ADJUSTMENT

1. Spring preload is adjusted on the left side of the fork
2. Twist the dial clockwise to lessen the spring force and make the suspension softer and anti-clockwise to increase the spring force and make the suspension stiffer

4.12 ADJUSTING REAR SUSPENSION

Adjusting suspension settings may have an impact on the headlight beam direction. After carrying out the below process, adjust the headlight beam using the method outlined on Page 44.



NUMBERED ITEMS

1. Rebound Adjustment Dial
2. Preload Adjustment Disc
3. Adjustment Thread

REBOUND ADJUSTMENT

1. Rebound is adjusted using the dial at the top of the suspension unit
2. Turning the dial clockwise provides a faster rebound and anti-clockwise for a slower rebound
3. The rebound setting should be set equally on both sides of the bike

PRELOAD ADJUSTMENT

1. Preload is adjusted by winding the disc at the base of the spring

2. Twist the disc anti-clockwise to lessen the spring force and make the suspension softer and clockwise to increase the spring force and make the suspension stiffer
3. The preload setting should be set equally on both sides of the bike

4.13 RECOMMENDED SUSPENSION SETTINGS

The below table outlines recommended suspension settings for on and off road riding with varied total vehicle load (rider + load).

TABLE 3: RECOMMENDED SUSPENSION SETTINGS

RIDE TYPE / VEHICLE LOAD	FRONT REBOUND	FRONT PRELOAD	REAR REBOUND	REAR PRELOAD
On Road 90kg	Max Fast	Full Soft	Max Fast	20mm Thread
On Road 125kg	Max Fast	1 Full Turn to Hard	4 Clicks to Slow	20mm Thread
Off Road 90kg	Max Fast	Full Soft	2 Clicks to Slow	30mm Thread
Off Road 125kg	Max Fast	1 Full Turn to Hard	6 Clicks to Slow	30mm Thread

4.14 INSPECTING TYRES

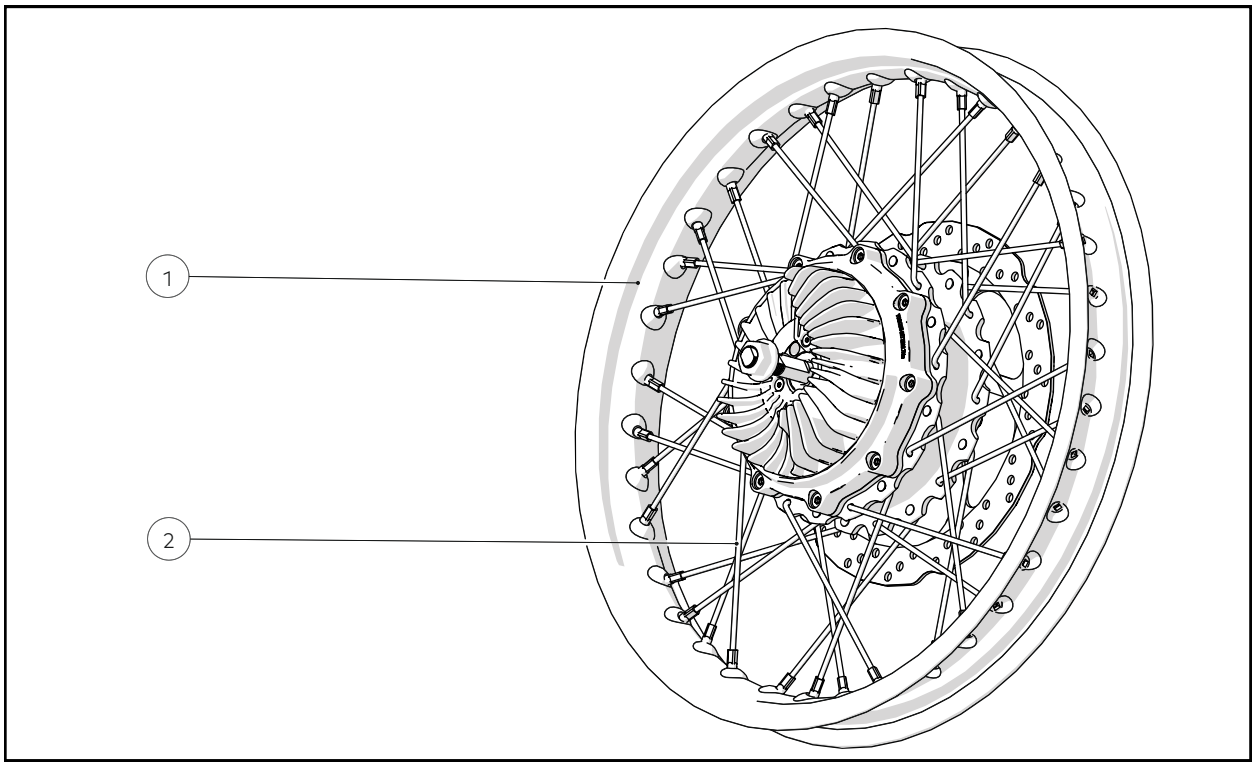
TOOLS / CONSUMABLES REQUIRED

- Tyre Pressure Gauge
- Tread depth Gauge

PROCESS STEPS

1. Visually check the Tyre surface and sidewall, if it is damaged, replace the Tyre
2. Using a Tread Depth Gauge, measure the Tyre tread. If it is below either the local legal limit (for On-Road registered vehicles) or the limit outlined on Page 16, replace the Tyre
3. Using a Tyre Pressure Gauge, measure the pressure of the Tyre. Note the Tyre's pressure should only be checked and regulated when the Tyre's temperature equals the ambient temperature
4. If the Tyre's pressure is outside the range specified within Page 16, inflate or deflate accordingly

4.15 INSPECTING & ADJUSTING WHEELS



NUMBERED ITEMS

1. Wheel Rim
2. Spoke

TOOLS / CONSUMABLES REQUIRED

- Dial Gauge
- Spoke Wrench

PROCESS STEPS

1. Visually check the Wheel Rim surface, if anything is damaged, replace the Wheel Rim and do not attempt repair
2. Visually check the Spokes, if any are damaged, replace. If any are loose, follow the below process for adjusting Spokes
3. Using a Dial Gauge, measure the Wheel trueness. If it is greater than the limit specified in Page 16 follow the below process for adjusting Spokes

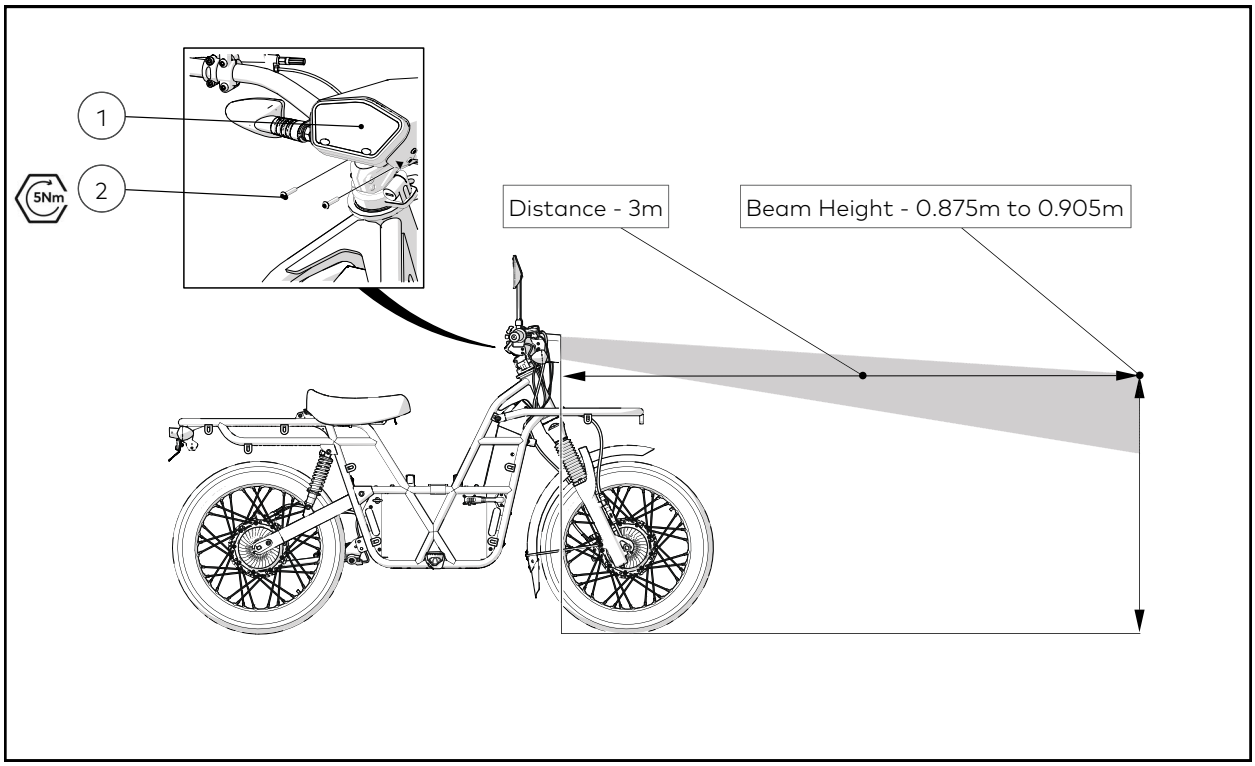
LOOSE SPOKE ADJUSTMENT PROCESS

1. Using a Spoke Wrench, tighten the loose spoke until the tension is equal to that of the rest of the Wheel, then carry on inspecting both the Spoke tension and trueness

OUT OF TRUE SPOKE ADJUSTMENT PROCESS

1. Using a Dial Gauge find the area of the Wheel Rim and the Spoke(s) responsible for the highest deflection
2. In that region, using a Spoke Wrench and small adjustments, tighten the Spoke(s) to pull the wheel into true. It is preferable to tighten a Spoke rather than loosen a spoke to achieve trueness
3. Repeat this process until the Wheel Rim is within the trueness range

4.16 ADJUSTING HEADLAMP BEAM



NUMBERED ITEMS

1. Headlamp and Display Assembly
2. Fastener

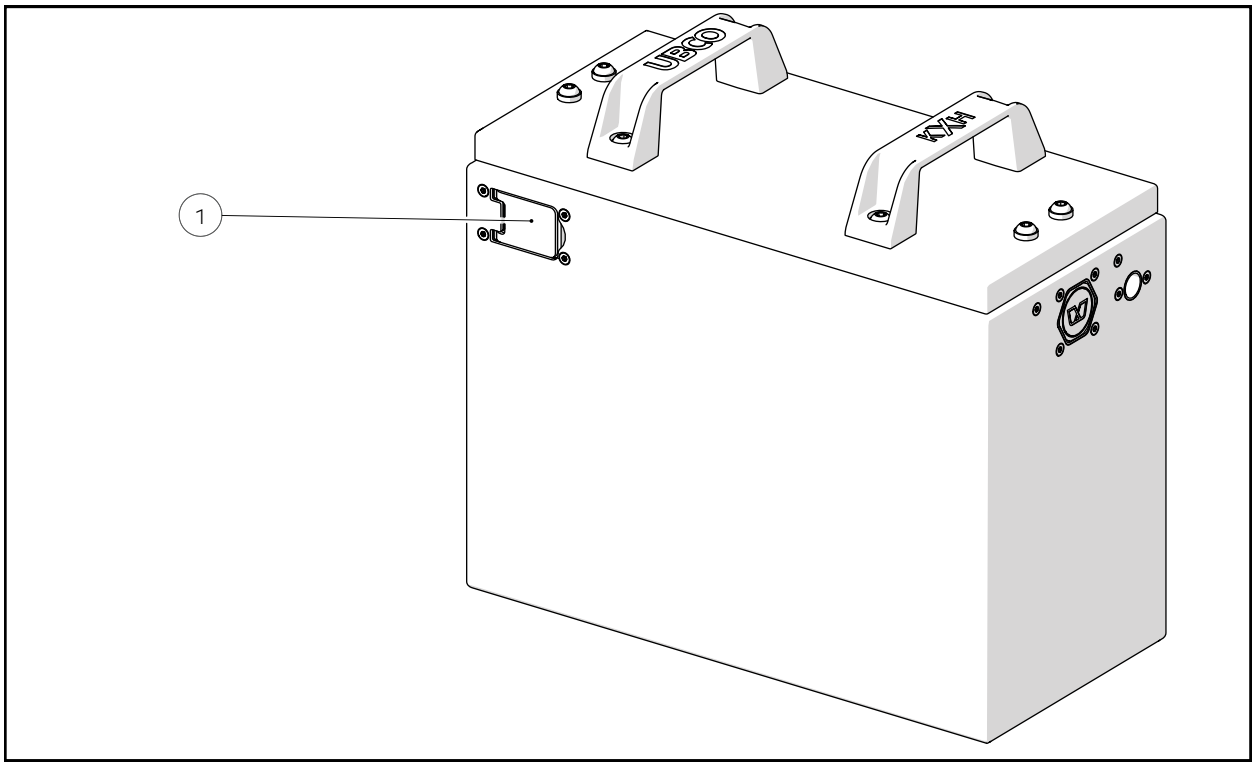
TOOLS/CONSUMABLES REQUIRED

- 3mm Allen Key
- 3mm Allen Key Socket
- Torque Wrench

PROCESS STEPS

1. Move the Bike 3m away from a wall on level ground
2. On the wall mark a point 0.875m to 0.905m from the floor
3. Chock the Wheel so the Headlamp is pointing directly at the wall and turn on the Headlamp Low Beam
4. Using a 3mm Allen Key, loosen the 2 Headlamp Assembly fasteners and adjust the Headlamp angle until the central point of highest intensity sits on the mark on the wall
5. Using a 3mm Allen Key Socket and Torque Wrench, tighten the 2 Headlamp Assembly fasteners

4.17 CHARGING THE BATTERY



NUMBERED ITEMS

1. Charge Port Cover

PROCESS STEPS

1. The Battery can be charged while either installed or uninstalled in the bike
2. Remove the Charge Port Cover and plug in the Charger ensuring the connector is rotated clockwise and clicks
3. To remove the Charger pull back the tab and then rotate the connector anticlockwise before pulling it outwards
4. Replace the charge port cover

UBCO

Removal and Replacement Operation

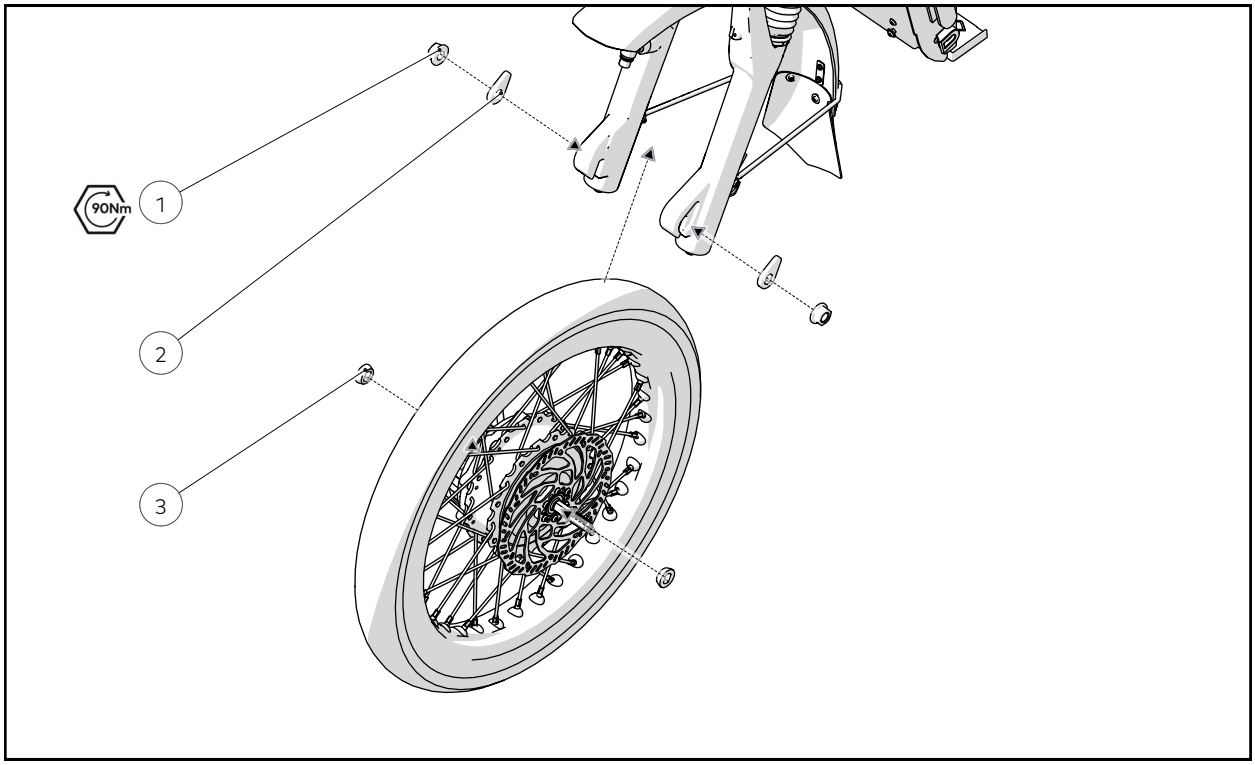
TECHNICAL SERVICE MANUAL

UBCO

Wheels

TECHNICAL SERVICE MANUAL

FRONT WHEEL



NUMBERED ITEMS

1. Axle Nut
2. Torque Arm
3. Front Axle Spacer

TOOLS & CONSUMABLES REQUIRED

- Loctite 263
- 21mm Socket
- Torque Wrench
- Breaker Bar
- Brake Pad Spacer

PRE-REQUISITE STEPS

Disconnect Battery - Page 45

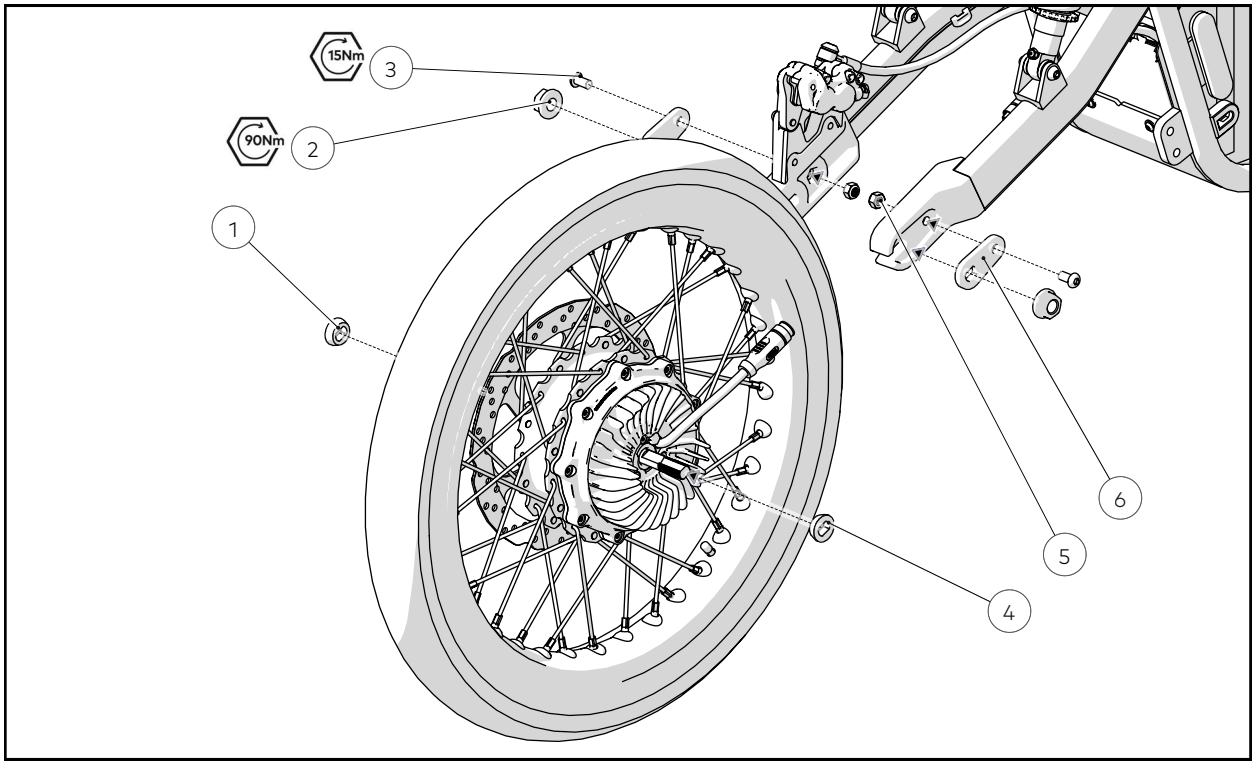
REMOVAL

1. Disconnect the Front Motor using the Double Twist Connector
2. Using a 21mm Socket and Breaker Bar, release and remove the 2 Axle Nuts
3. While supporting the weight of the Front Wheel remove the 2 Torque Arms from the Axle
4. Place a Brake Pad Spacer in the gap between the Brake Pads

REPLACE

1. If installed, remove the Brake Pad Spacer
2. Place the 2 Fork Spacers on to the Axle
3. Lift the Front Wheel into place and install both Torque Arms on the Axle and Fork
4. Using a 21mm Socket, Loctite 263 and Torque Wrench, tighten the 2 Axle Nuts
5. Connect the Front Motor using the Double Twist Connector

REAR WHEEL



NUMBERED ITEMS

1. Left Hand Side Rear Motor Spacer
2. Axle Nut
3. Torque Arm Retention Fastener
4. Right Hand Side Rear Motor Spacer
5. Torque Arm Retention Nut
6. Torque Arm

TOOLS & CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Hex Bit
- Loctite 263
- 21mm Socket
- Torque Wrench
- Breaker Bar
- Brake Pad Spacer

PRE-REQUISITE STEPS

Battery Removal - Page 124

REMOVAL

1. Disconnect the Rear Motor using the Double Twist Connector
2. Using a 5mm Allen Key, release and remove the 2 Torque Arm Retention Fasteners
3. Using a 21mm Socket and Breaker Bar, release and remove the 2 Axle Nuts

4. While supporting the weight of the Rear Wheel remove the 2 Torque Arms from the Axle
5. Place a Brake Pad Spacer in the gap between the Brake Pads

REPLACE

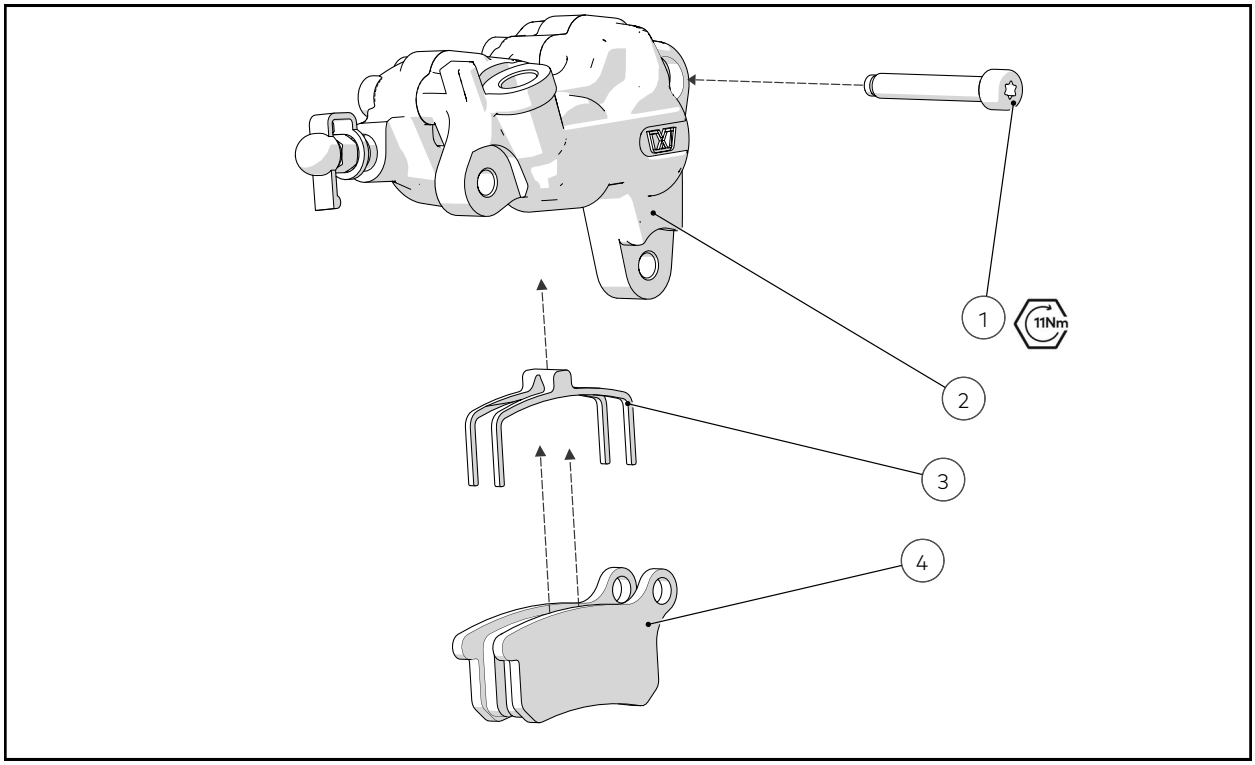
1. If installed, remove the Brake Pad Spacer
2. Lift the Rear Wheel into place and install both Torque Arms on the Axle and Swing Arm
3. Using a 21mm Socket, Loctite 263 and Torque Wrench, tighten the 2 Axle Nuts
4. Using a 5mm Hex Bit and Torque Wrench, tighten the 2 Torque Arm Retention Fasteners
5. Connect the Rear Motor using the Double Twist Connector

UBCO

Brakes

TECHNICAL SERVICE MANUAL

SYS 2 - BRAKE PADS



NUMBERED ITEMS

1. Brake Pad Fastener
2. Caliper Body
3. Spring Holder
4. Brake Pads

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Bit
- Torque Wrench
- Brake Pad Spacer
- Brake Pad Spring

PRE-REQUISITE STEPS

Caliper Removal - Page 56 - NOTE: Do not disconnect brake line

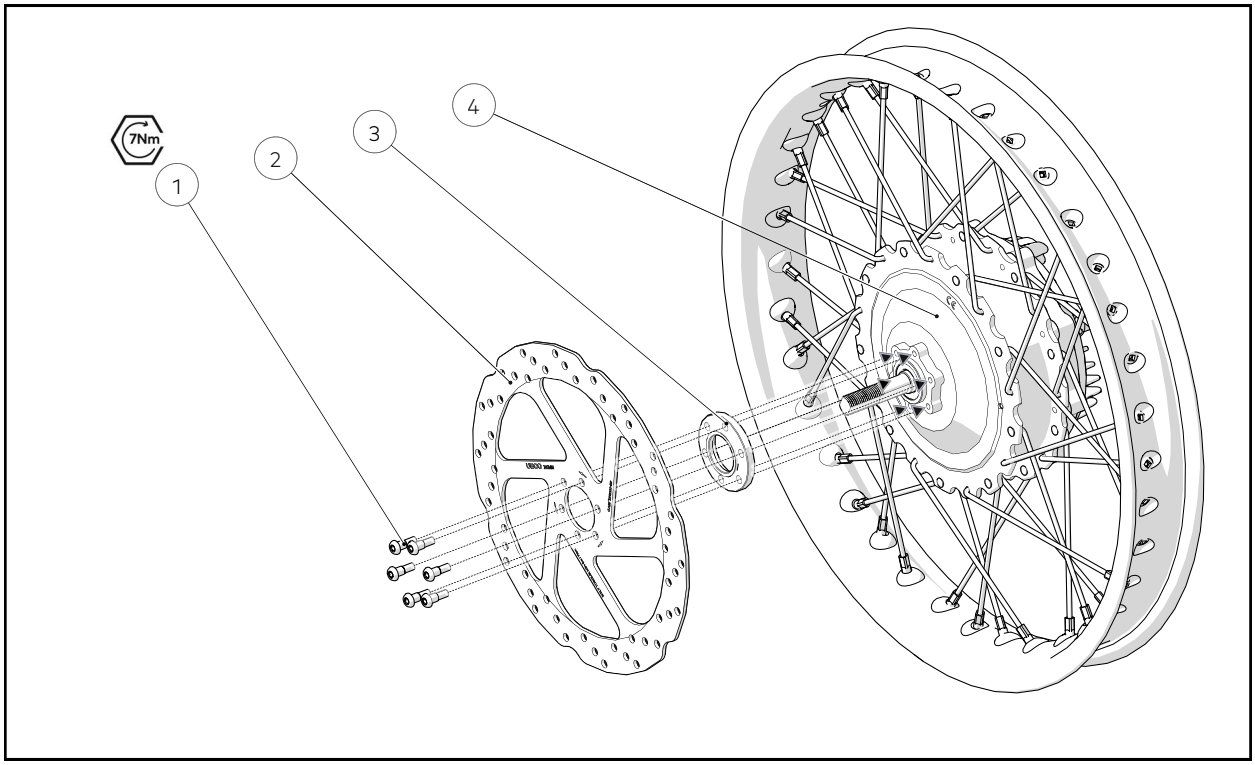
REMOVE

1. Using a suitable tool, gently return the old Brake Pads and Pistons to full retraction
2. Using a T25 Torx Key, release and remove the Brake Pad Fastener and circlip retaining the Brake Pads
3. Remove the Brake Pads while retaining the Brake Pad Spring
4. Place a Brake Pad Spacer in the gap between the two sides of the Caliper

REPLACE

1. If installed, remove the Brake Pad Spacer
2. Check the Brake Pad Spring for signs of wear and replace if required
3. Place replacement Brake Pad Spring and Brake Pads into the Caliper
4. Using a T25 Torx Bit and Torque Wrench, tighten the fastener and replace the circlip retaining the Brake Pads

SYS 2 - BRAKE DISC



NUMBERED ITEMS

1. Brake Disc Fastener
2. Brake Disc
3. Brake Disc Spacer
4. Motor Case

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Socket
- Torque Wrench
- T25 Torx Key
- Loctite 243

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

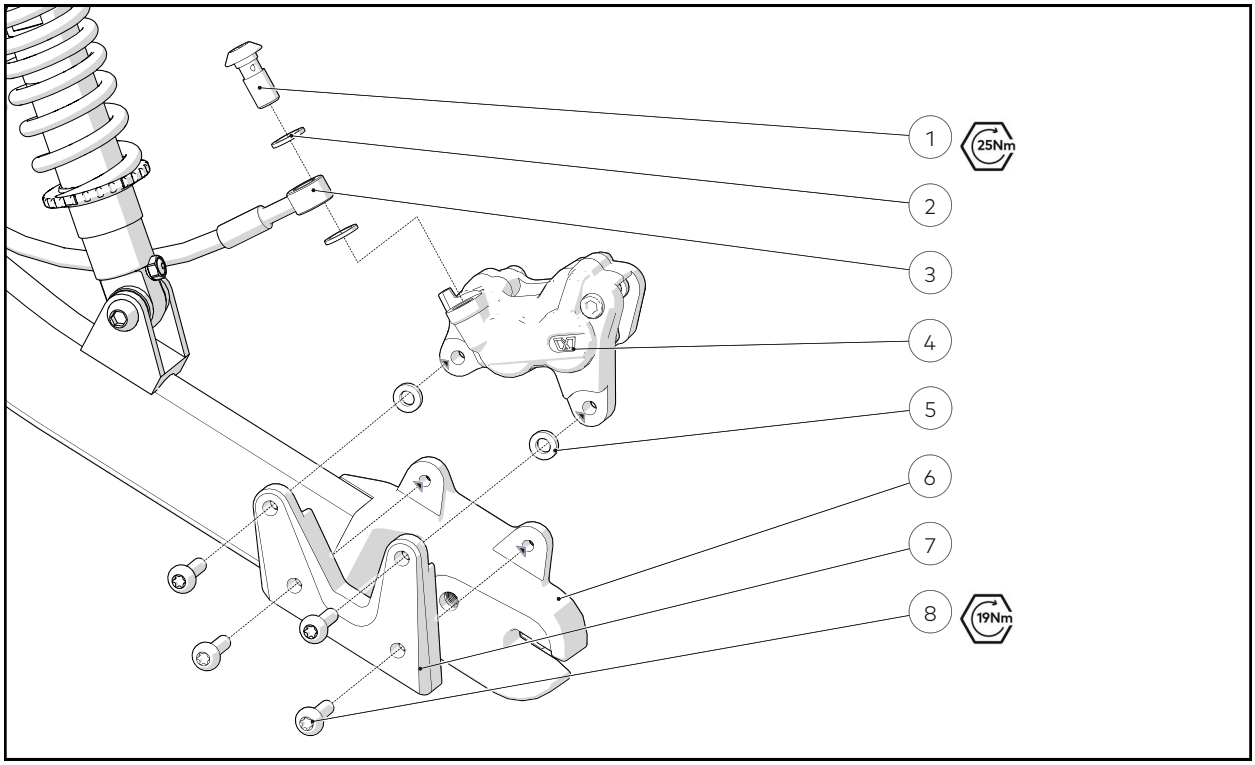
REMOVAL

1. Using a T25 Torx Key, release and remove the 6 fasteners attaching the Brake Disc to the Motor

REPLACE

1. Ensure the Brake Disc Spacer is replaced
2. Using a T25 Torx Socket, Torque Wrench and Loctite 243, tighten the 6 fasteners attaching the Brake Disc to the Motor in a star pattern

SYS 2 - BRAKE CALIPER



NUMBERED ITEMS

1. Banjo Fastener
2. Crush Washer
3. Brake Line Fitting
4. Caliper Assembly
5. Adjustment Shim (if required)
6. Swing Arm Assembly
7. Caliper Spacer
8. Caliper Fastener

TOOLS/CONSUMABLES REQUIRED

- T30 Torx Key
- T30 Torx Socket
- Torque Wrench
- Isopropyl Alcohol
- Lint Free Cloth
- Loctite 243

PRE-REQUISITE STEPS

Brake Fluid Removal - Page 24

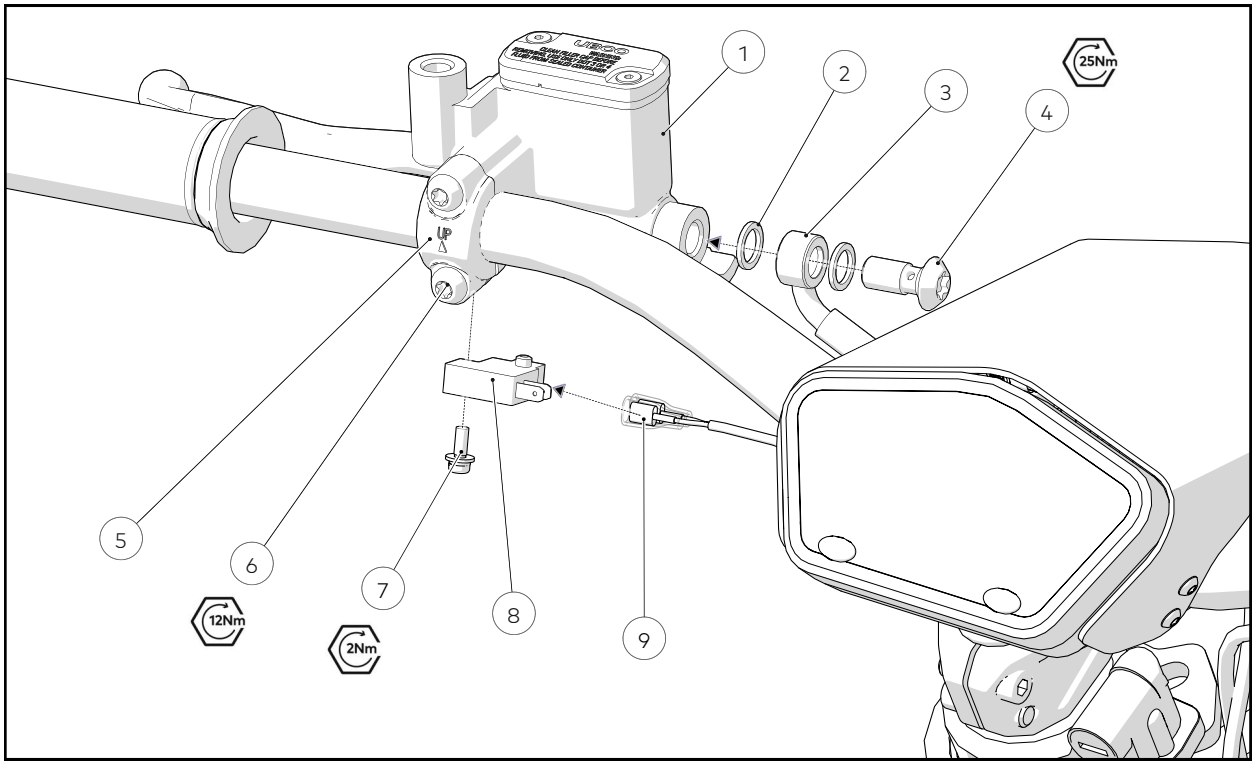
REMOVE

1. Using a T30 Torx Key, release and remove the Banjo Fastener
2. Using a T30 Torx Key, release and remove the Caliper Fasteners

REPLACE

1. Using a T30 Torx Socket and Torque Wrench, tighten the Banjo Fastener
2. Using a T30 Torx Socket, Torque Wrench and Loctite 243, tighten the Caliper Fasteners
3. Replace and bleed the Brake Fluid using the method outlined on Page 24
4. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper Assembly, Master Cylinder and Brake Line Fitting

SYS 2 - BRAKE MASTER CYLINDER



NUMBERED ITEMS

1. Master Cylinder Body
2. Crush Washer
3. Brake Line Fitting
4. Banjo Fastener
5. Handlebar Clamp
6. Handlebar Clamp Fastener
7. Brake Switch Fastener
8. Brake Switch Body
9. Brake Switch Connector

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen key
- 5mm Allen Key Socket
- T30 Torx Key
- T30 Torx Socket
- Torque Wrench
- #1 Philips Screwdriver
- Isopropyl Alcohol
- Lint Free Cloth

PRE-REQUISITE STEPS

Brake Fluid Removal - Page 24

Rear View Mirror Removal - Page 121

REMOVE

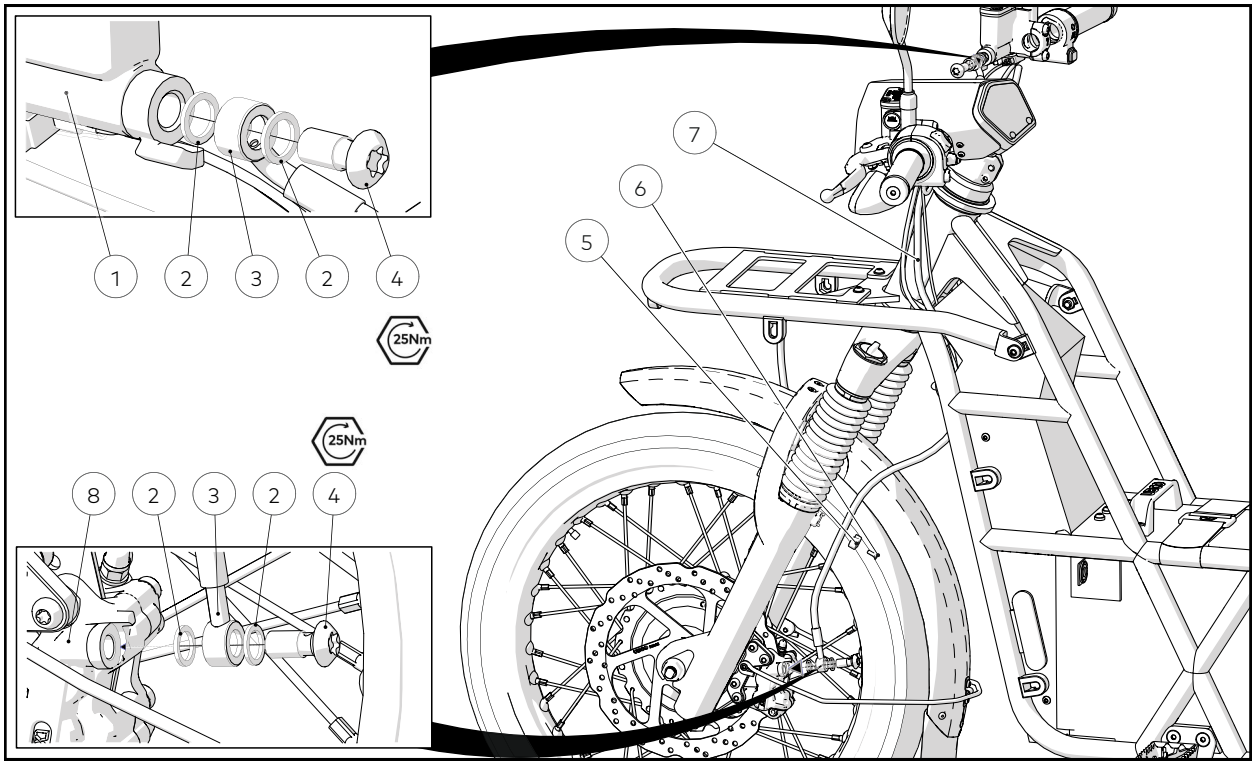
1. Using a T30 Torx Key, release and remove the Banjo Fastener

2. Disconnect the Brake Switch Connector from the Brake Switch Body
3. Using a #1 Philips Screwdriver, release and remove the Brake Switch Fastener
4. Using a 5mm Allen Key, release and remove the Handlebar Clamp Fasteners

REPLACE

1. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Handlebar Clamp Fasteners
2. Using a #1 Philips Screwdriver, release and remove the Brake Switch Fastener
3. Connect the Brake Switch Connector to the Brake Switch Body
4. Using a T30 Torx Key, tighten the Banjo Fastener
5. Replace and bleed the Brake Fluid using the method outlined on Page 24
6. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper Assembly, Master Cylinder and Brake Line Fitting

SYS 2 - FRONT BRAKE LINE



NUMBERED ITEMS

1. Master Cylinder Assembly
2. Crush Washer
3. Brake Line Fitting
4. Brake Line Banjo Bolt
5. Brake Line Clip
6. Fork Brake Clip Fastener
7. Front Brake Line
8. Caliper Assembly

TOOLS/CONSUMABLES REQUIRED

- 2.5mm Allen Key
- 2.5mm Allen Key Socket
- T30 Torx Key
- T30 Torx Socket
- Torque wrench
- Isopropyl Alcohol
- Lint Free Cloth
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Brake Fluid Removal - Page 24

REMOVE

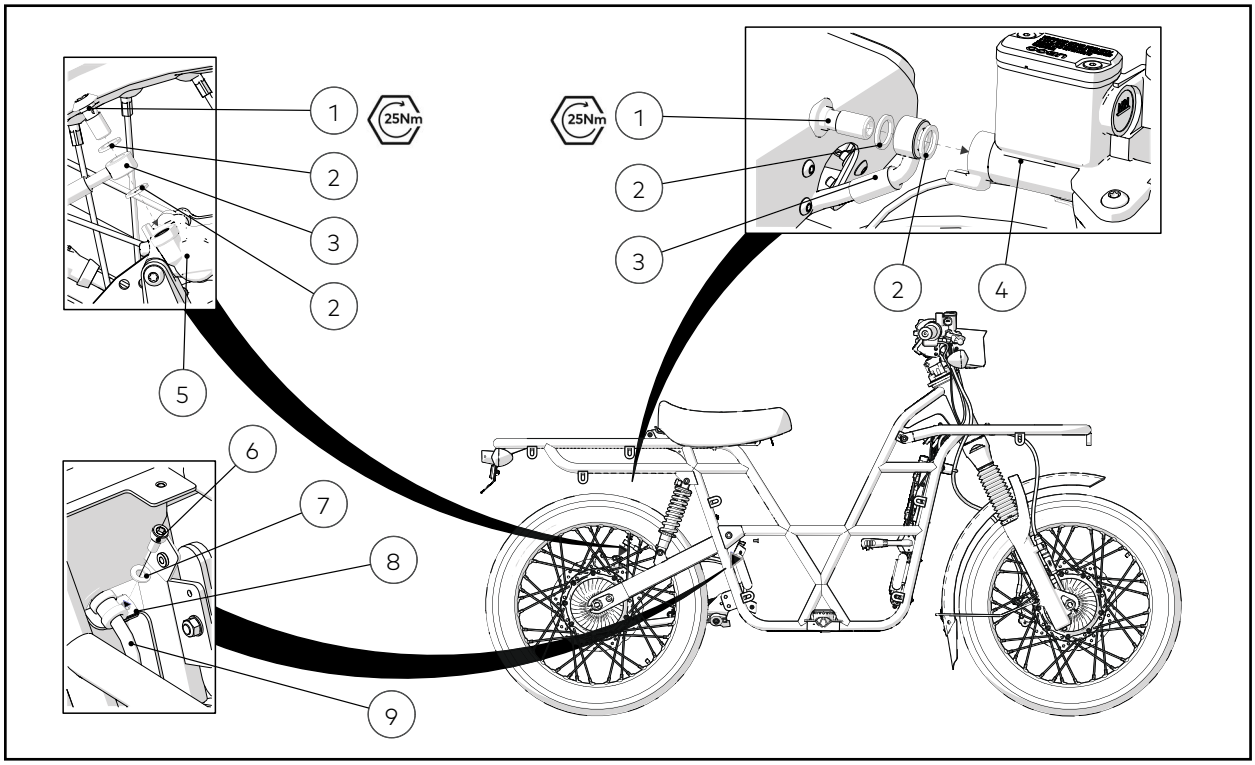
1. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the RH Cable Bundle

2. Using a 2.5mm Allen Key, release and remove the Fork Brake Clip Fastener
3. Using a T30 Torx Key, release and remove the Brake Line Banjo Bolts

REPLACE

1. Check the Crush Washers for signs of wear and damage and replace if required
2. Thread the brake line through the Front Console U-Bolt
3. Using a T30 Torx Socket and Torque Wrench, tighten the Brake Line Banjo Bolts
4. Replace the Brake Fluid, using the method outlined on Page 24
5. Using Cable Ties, retain the Brake Line to the RH Cable Bundle
6. Using a 2.5mm Allen Key Socket and Torque Wrench, tighten the Fork Brake Clip Fastener
7. Check and ensure Handlebar movement is not restricted
8. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SYS 2 - REAR BRAKE LINE



NUMBERED ITEMS

1. Brake Line Banjo Bolt
2. Brake Line Fitting
3. Crush Washer
4. Master Cylinder Assembly
5. Caliper Assembly
6. Tube Clamp Fastener
7. Tube Clamp Washer
8. Tube Clamp
9. Rear Brake Line

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- Torque wrench
- 8mm Spanner
- 8mm Crows Foot Socket
- Isopropyl Alcohol
- Lint Free Cloth
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Battery Removal - Page 124

Rear Console Cover - Page 107

Front Console Cover - Page 103

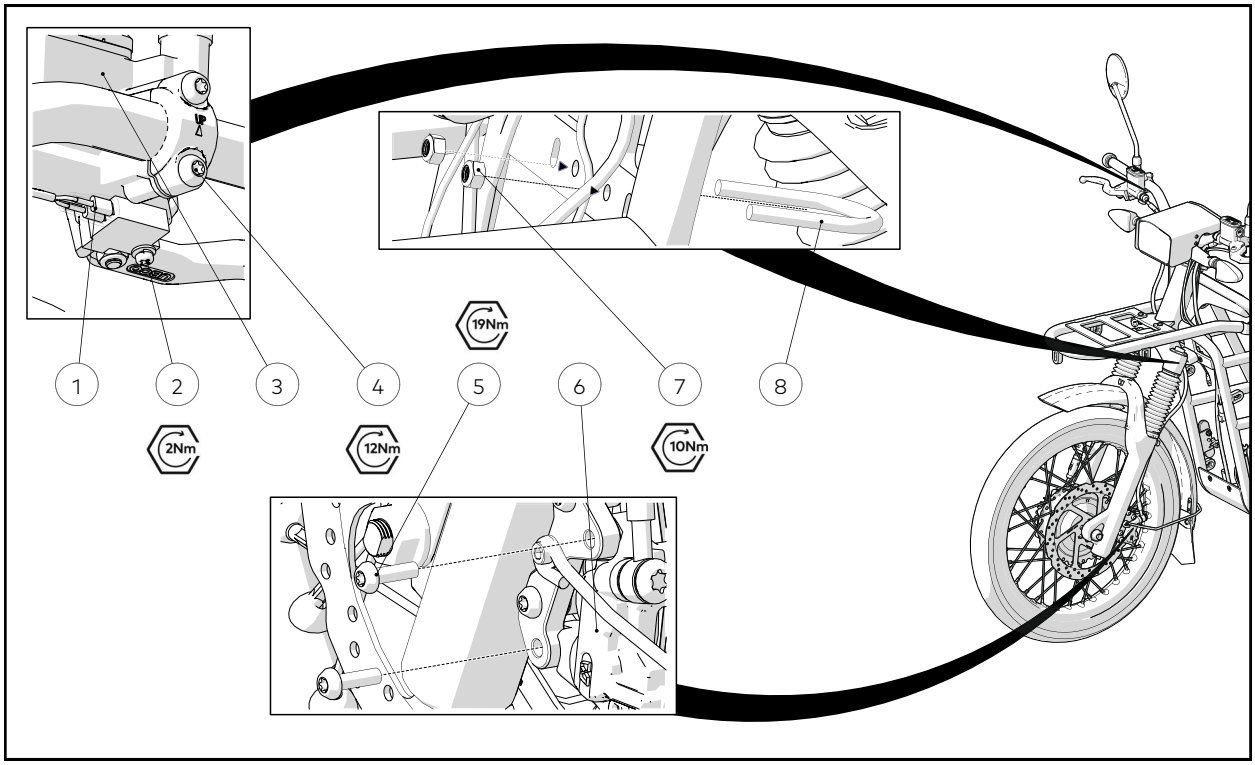
REMOVE

1. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the LH Cable Bundle and Swing arm
2. Using a 5mm Allen Key, release and remove the Tube Clamp Fastener
3. Using a T30 Torx Key, release and remove the Brake Line Banjo Bolts

REPLACE

1. Check the Crush Washers for signs of wear and damage and replace if required
2. Thread the brake line through the Front Console and Rear Console, replacing the Ducting
3. Using a T30 Torx Socket and Torque Wrench, tighten the Brake Line Banjo Bolts
4. Replace the Brake Fluid, using the method outlined on Page 24
5. Using Cable Ties, retain the Brake Line to the LH Cable Bundle and Swing arm
6. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Tube Clamp Fastener
7. Check and ensure Handlebar movement is not restricted
8. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SYS 2 - FRONT BRAKE SET



NUMBERED ITEMS

1. Brake Switch Connector
2. Brake Switch Fastener
3. Master Cylinder Assembly
4. Master Cylinder Fastener
5. Caliper Fastener
6. Caliper Assembly
7. U-Bolt Nut
8. U-Bolt

TOOLS/CONSUMABLES REQUIRED

- T30 Torx Key
- T30 Torx Bit
- 10mm Socket
- 5mm Hex Bit
- 5mm Allen Key
- Socket Driver
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Battery Removal - Page 124

Front Console Removal - Page 103 & Page 105

REMOVE

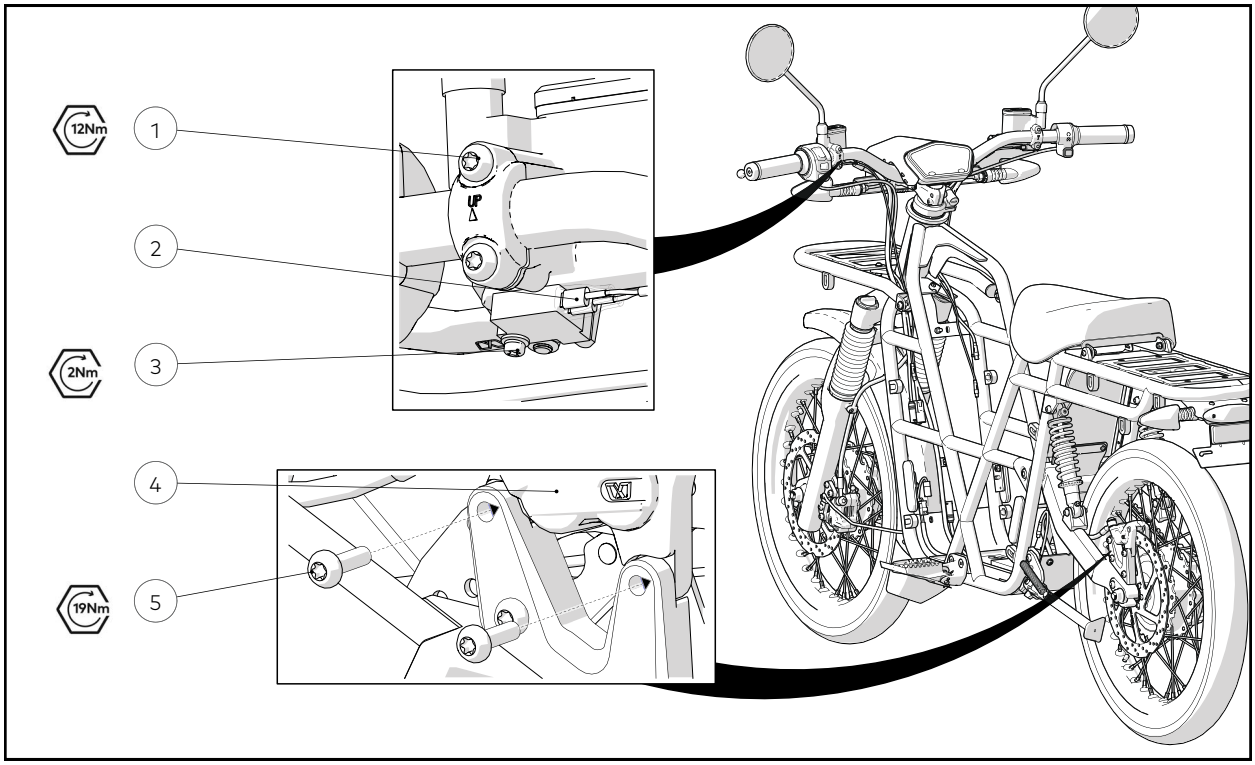
1. Disconnect the Brake Switch Connector

2. Using a T30 Torx Key, release and remove the Caliper Fasteners
3. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the RH Cable Bundle
4. Using a 10mm Socket and Socket Driver, release and remove the U-Bolt Nuts
5. Using a 5mm Allen Key, release and remove the Master Cylinder Fasteners
6. Thread the Front Brake Set through the Frame

REPLACE

1. Thread the Front Brake Set through the Frame
2. Using a 5mm Hex Bit and Torque Wrench, tighten the Master Cylinder Fasteners
3. Using a 10mm Socket and Torque Wrench, tighten the U-Bolt Nuts
4. Using a T30 Torx Socket and Torque Wrench, tighten the Caliper Fasteners
5. Using Cable Ties, retain the Brake Line to the RH Cable Bundle
6. Ensure the movement of the Handlebar is not restricted by the Brake Line
7. If required or if Brake Set is separated during installation, bleed the Brakes using the method outlined on Page 24
8. Connect the Brake Switch Connector and test function

SYS 2 - REAR BRAKE SET



NUMBERED ITEMS

1. Master Cylinder Fastener
2. Brake Switch Connector
3. Brake Switch Fastener
4. Caliper Assembly
5. Washer Fastener

TOOLS/CONSUMABLES REQUIRED

- T30 Torx Key
- T30 Torx Bit
- 5mm Allen Key
- 5mm Hex Bit
- 10mm Socket
- Socket Driver
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Battery Removal - Page 124

Front Console Removal - Page 103 & Page 105

Rear Console Removal - Page 107 & Page 109

REMOVE

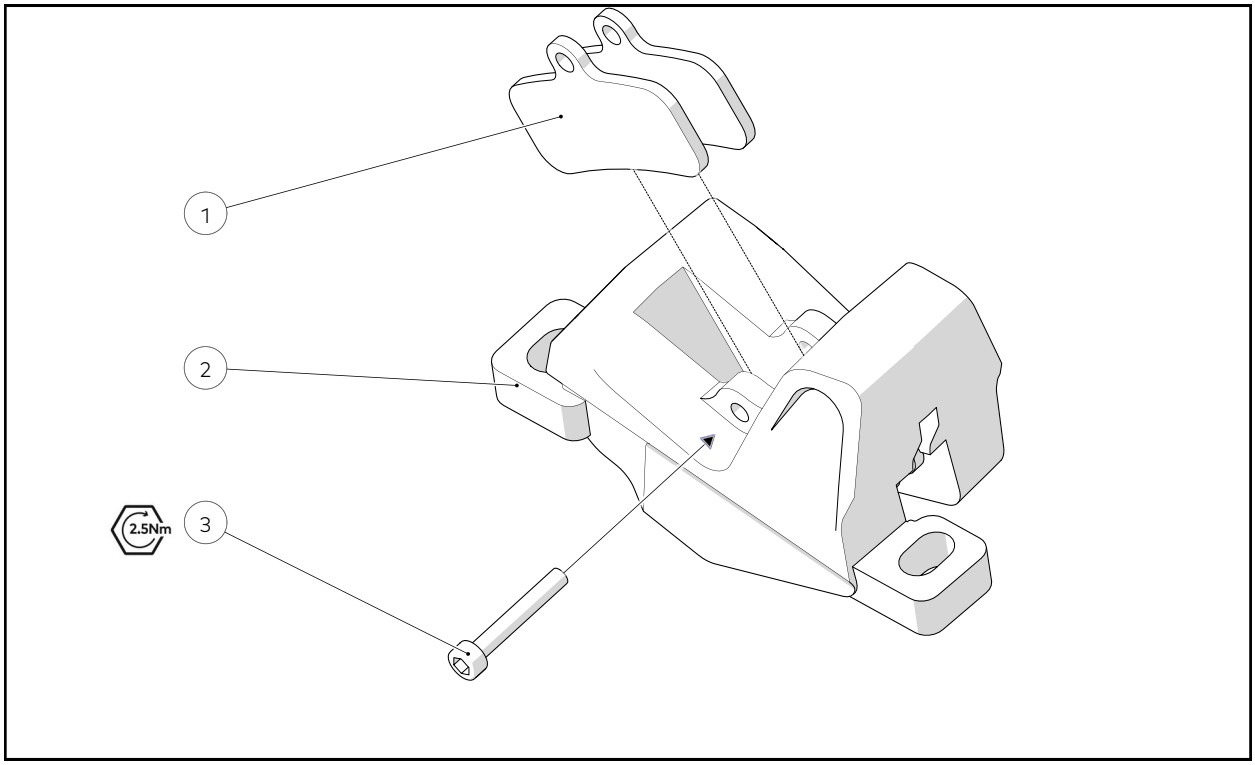
1. Disconnect the Brake Switch Connector

2. Using a T30 Torx Key, release and remove the Caliper Fasteners
3. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the LH Cable Bundle and Swing Arm
4. Using a 5mm Allen Key, release and remove the Tube Clamp Fastener from the Rear Console
5. Using a 5mm Allen Key, release and remove the Master Cylinder Fasteners
6. Thread the Rear Brake Set through the Frame

REPLACE

1. Thread the Rear Brake Set through the Frame
2. Using a 5mm Hex Bit and Torque Wrench, tighten the Master Cylinder Fasteners
3. Using a T30 Torx Socket and Torque Wrench, tighten the Caliper Fasteners
4. Using Cable Ties, retain the Brake Line to the LH Cable Bundle and Swing Arm
5. Ensure the movement of the Handlebar is not restricted by the Brake Line
6. If required or if Brake Set is separated during installation, bleed the Brakes using the method outlined on Page 24
7. Connect the Brake Switch Connector and test function

SR - BRAKE PADS



NUMBERED ITEMS

1. Brake Pads
2. Caliper Body
3. Brake Fastener

TOOLS/CONSUMABLES REQUIRED

- 3mm Allen Key
- 3mm Allen Key Socket
- Torque Wrench
- Brake Pad Spacer
- Brake Pad Spring

REMOVE

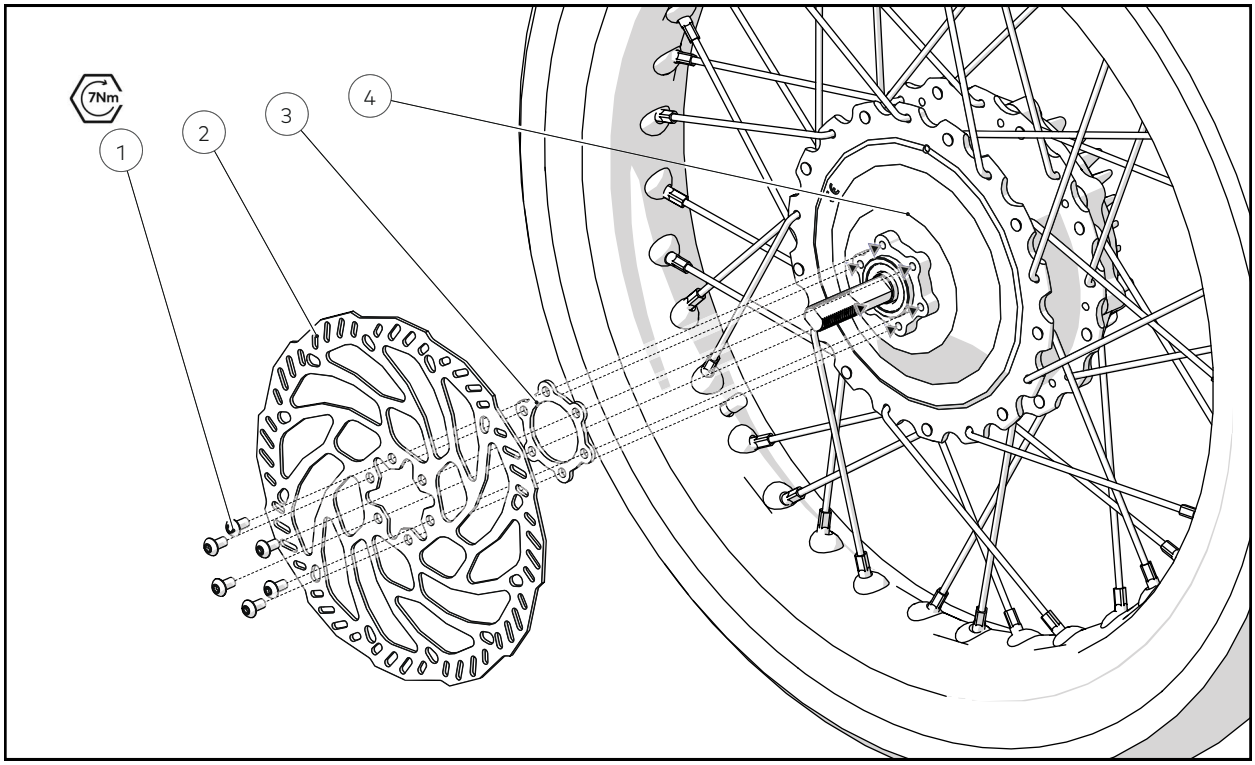
1. Using a 3mm Allen Key release and remove the fastener and circlip retaining the Brake Pads
2. Remove the Brake Pads while retaining the Brake Pad Spring
3. Using a suitable tool, gently return the Pistons to full retraction and adjust the Brake Lever Blades to the original position
4. Place a Brake Pad Spacer in the gap between the two sides of the Caliper

REPLACE

1. If installed, remove the Brake Pad Spacer
2. Check the Brake Pad Spring for signs of wear and replace if required

3. Place replacement Brake Pads into the Brake Pad Spring then into the Caliper
4. Using a 3mm Allen Key Socket and Torque Wrench, tighten the fastener and fit the circlip retaining the Brake Pads

SR - BRAKE DISC



NUMBERED ITEMS

1. Brake Disc Fastener
2. Brake Disc
3. Brake Disc Spacer
4. Motor Case

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Socket
- Torque Wrench
- T25 Torx Key
- Loctite 243

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

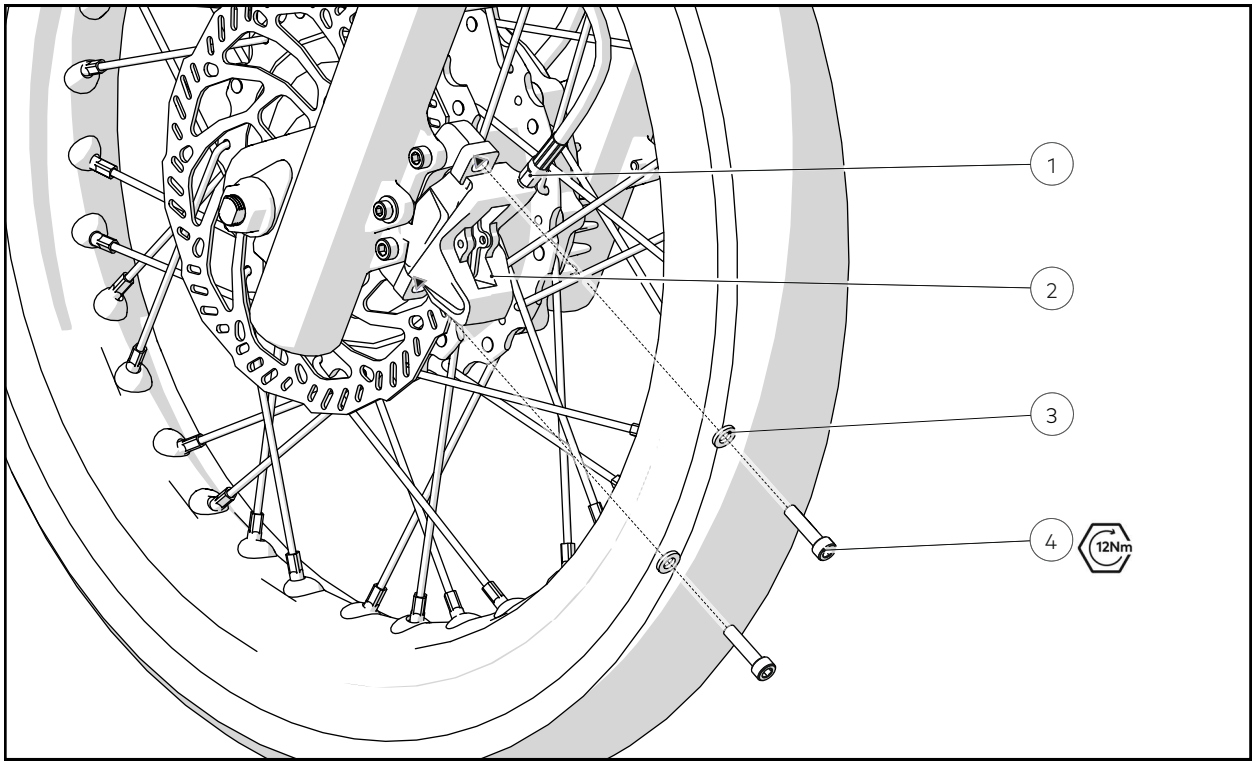
REMOVAL

1. Using a T25 Torx Key, release and remove the 6 fasteners attaching the Brake Disc to the Motor

REPLACE

1. If previously present, ensure the Brake Disc Spacer is replaced
2. Using a T25 Torx Socket, Torque Wrench and Loctite 243, tighten the 6 fasteners attaching the Brake Disc to the Motor in a star pattern

SR - FRONT OR REAR BRAKE CALIPER



NUMBERED ITEMS

1. Hose Connect Screw
2. Brake Caliper
3. Washer
4. Brake Caliper Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen key
- 5mm Allen Key Socket
- Torque Wrench
- 8mm Spanner
- 8mm Crows Foot Socket
- Isopropyl Alcohol
- Lint Free Cloth
- Loctite 243

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

Brake Pad Removal - Page 53

Brake Fluid Removal - Page 29

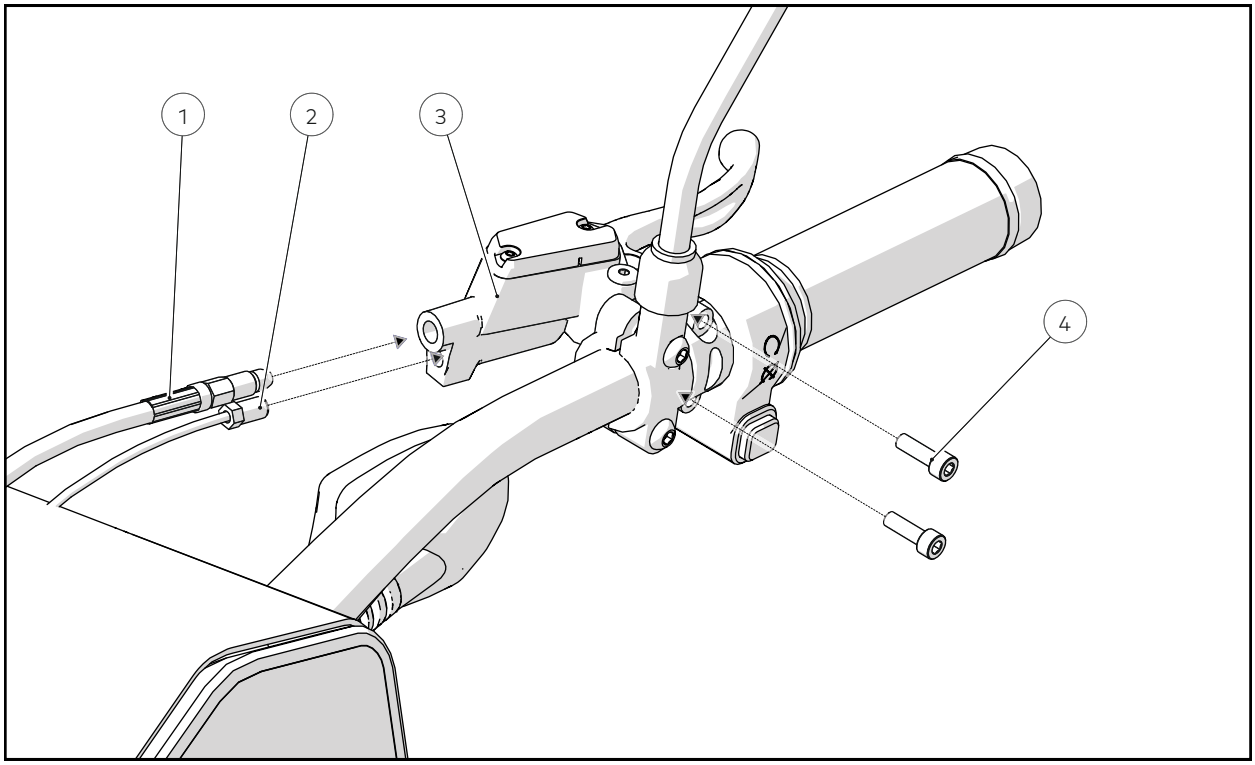
REMOVE

1. Using a 5mm Allen Key, release and remove the 2 fasteners holding the Caliper to the Brake Adapter
2. Using a 8mm Spanner, release and remove the Hose Connect Screw and fittings from the Caliper

REPLACE

1. Using a 8mm Crow Foot Socket and Torque Wrench, tighten the Hose Connect Screw
2. Replace the Brake Pad in the Caliper using the method outlined on Page 53
3. Using a 5mm Allen Key Socket, Torque Wrench and Loctite 243, tighten the 2 fasteners attaching the Caliper to the Brake Adapter
4. Replace the Brake Fluid using the method outlined on Page 29
5. Bleed the Brake using the method outlined on Page 29
6. Adjust the Caliper position using the method outlined on Page 32
7. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SR - FRONT OR REAR BRAKE MASTER CYLINDER



NUMBERED ITEMS

1. Brake Line Fitting
2. Brake Reed Switch
3. Brake Caliper
4. Handlebar Clamp Fastener

TOOLS/CONSUMABLES REQUIRED

- 4mm Allen key
- 4mm Allen Key Socket
- Torque Wrench
- 7mm Spanner
- 8mm Spanner
- 8mm Crows Foot Socket
- Isopropyl Alcohol
- Lint Free Cloth

PRE-REQUISITE STEPS

Brake Fluid Removal - Page 29

REMOVE

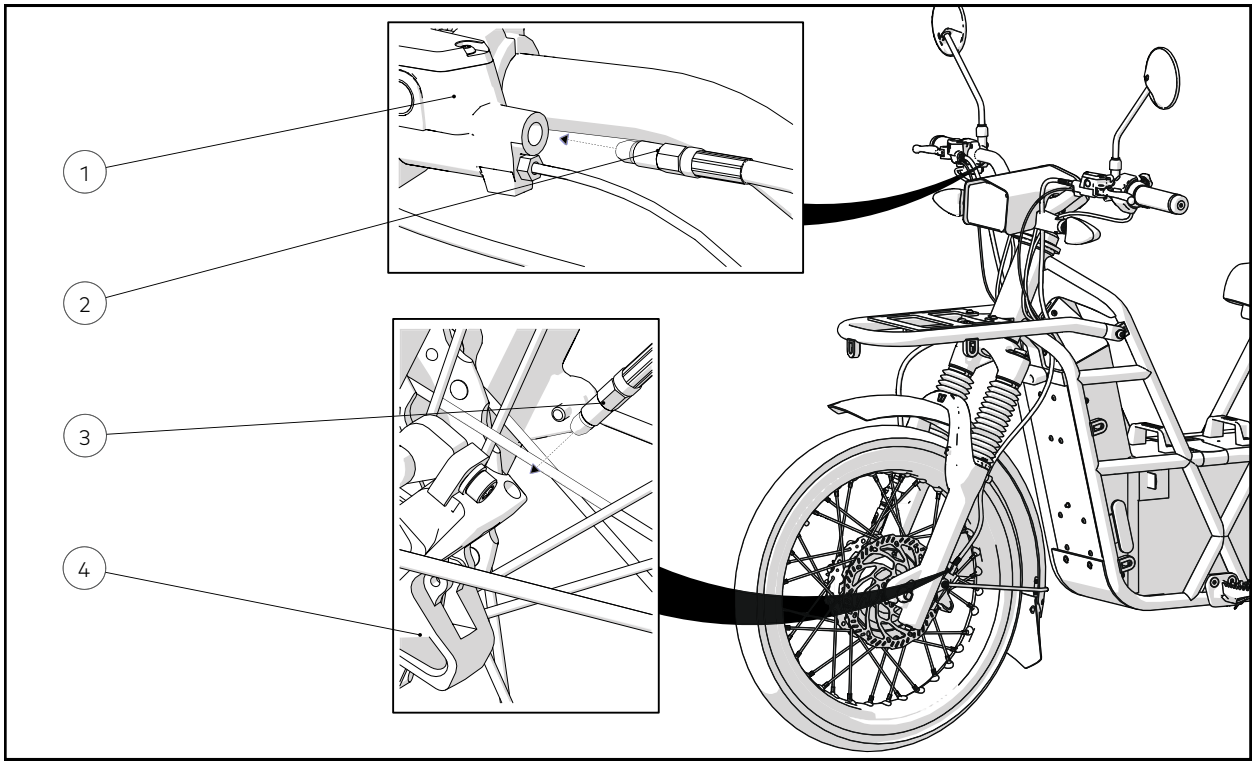
1. Using a 4mm Allen Key, release and remove the 2 fasteners holding the Master Cylinder Assembly to the Handlebar

2. Using a 8mm Spanner, release and remove the Hose Connect Screw and fittings from the Master Cylinder
3. Using a 7mm Spanner, release and remove the Brake Reed Switch from the Master Cylinder Assembly

REPLACE

1. Using a 8mm Crow Foot Socket and Torque Wrench, tighten the Hose Connect Screw
2. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners holding the Master Cylinder Assembly to the Handlebar
3. Replace the Brake Fluid using the method outlined on Page 29
4. Bleed the Brakes using the method outlined on Page 29
5. Adjust the Brake Lever Blades using the method outlined on Page 36
6. Using a 7mm Spanner, tighten the Brake Reed Switch. Adjust the position and ensure the switch activates with approximately 10 to 15mm Brake Lever actuation.
7. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SR - FRONT BRAKE LINE



NUMBERED ITEMS

1. Master Cylinder
2. Master Cylinder Hose Fitting
3. Caliper Hose Fitting
4. Caliper

TOOLS/CONSUMABLES REQUIRED

- Torque wrench
- 8mm Spanner
- 8mm Crows Foot Socket
- Isopropyl Alcohol
- Lint Free Cloth
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Brake Fluid Removal - Page 29

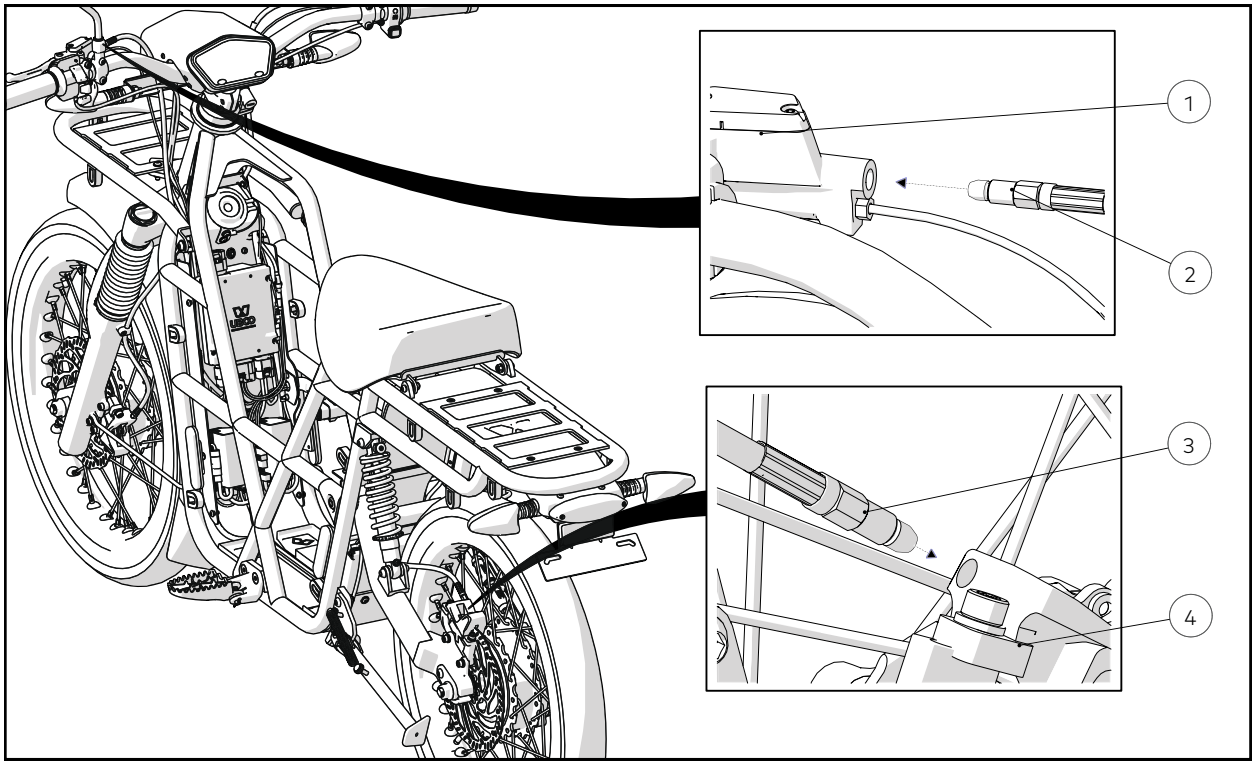
REMOVE

1. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the RH Cable Bundle
2. Using a 8mm Spanner, release and remove fittings the Hose Connect Screw and fittings from the Caliper and Master Cylinder

REPLACE

1. Thread the brake line through the frame
2. Using a 8mm Crow Foot Socket and Torque Wrench, tighten the Hose Connect Screws
3. Replace the Brake Fluid, using the method outlined on Page 29
4. Bleed the Brake using the method outlined on Page 29
5. Using Cable Ties, retain the Brake Line to the RH Cable Bundle
6. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SR - REAR BRAKE LINE



NUMBERED ITEMS

1. Master Cylinder
2. Master Cylinder Hose Fitting
3. Caliper Hose Fitting
4. Caliper

TOOLS/CONSUMABLES REQUIRED

- Torque wrench
- 8mm Spanner
- 8mm Crows Foot Socket
- Isopropyl Alcohol
- Lint Free Cloth
- Flush Cutters
- Cable Ties

PRE-REQUISITE STEPS

Battery Removal - Page 124

Rear Console Cover - Page 107

Front Console Cover - Page 103

REMOVE

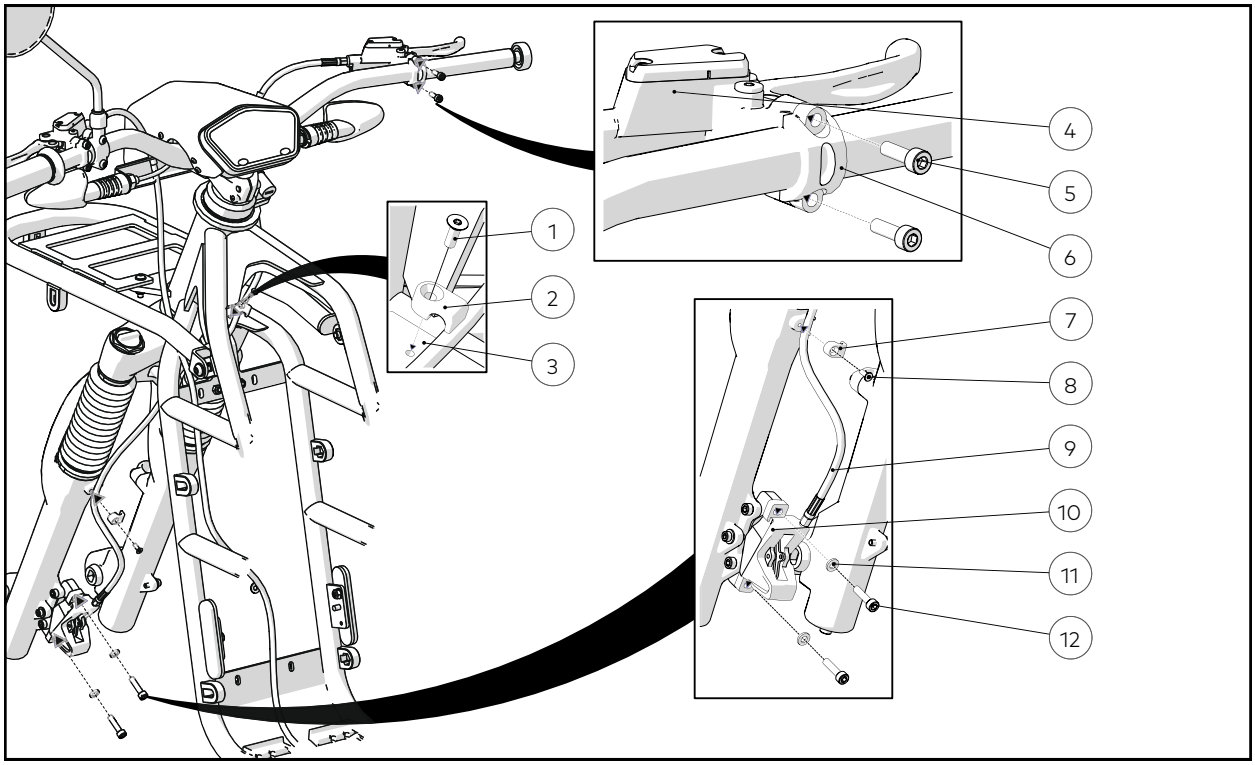
1. Using Flush Cutters, remove the Cable Ties attaching the Rear Brake Line from the LH Cable Bundle and Swing Arm

2. Remove the Brake Fluid from the Brake System using the method outlined on Page 29
3. Using a 8mm Spanner, release and remove the Hose Connect Screw and fittings from the Caliper and Master Cylinder

REPLACE

1. Thread the Brake Line through the Frame, Ducting and Rear Console
2. Using a 8mm Crow Foot Socket and Torque Wrench, tighten the Hose Connect Screws
3. Using Cable Ties, retain the Brake Line to the Swing Arm and LH Cable Bundle
4. Replace the Brake Fluid, using the method outlined on Page 29
5. Bleed the Brake using the method outlined on Page 29
6. Using Isopropyl Alcohol and a Lint Free Cloth, clean the Caliper, Master Cylinder and Brake Line

SR - FRONT BRAKE SET



NUMBERED ITEMS

1. Frame Clip Fastener
2. Frame Clip
3. Frame
4. Master Cylinder Assembly
5. Handlebar Clamp Fastener
6. Handlebar Clamp
7. Fork Clip
8. Fork Clip Fastener
9. Front Brake Line
10. Caliper Assembly
11. Washer
12. Caliper Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 4mm Allen key
- 4mm Allen Key Socket
- Torque wrench
- 7mm Spanner
- Flush Cutters
- Cable Ties
- Loctite 243

PRE-REQUISITE STEPS

Battery Removal - Page 124

Front Console Panel Removal - Page 103 & Page 105

Front Wheel Removal - Page 48

Brake Pad Removal - Page 53

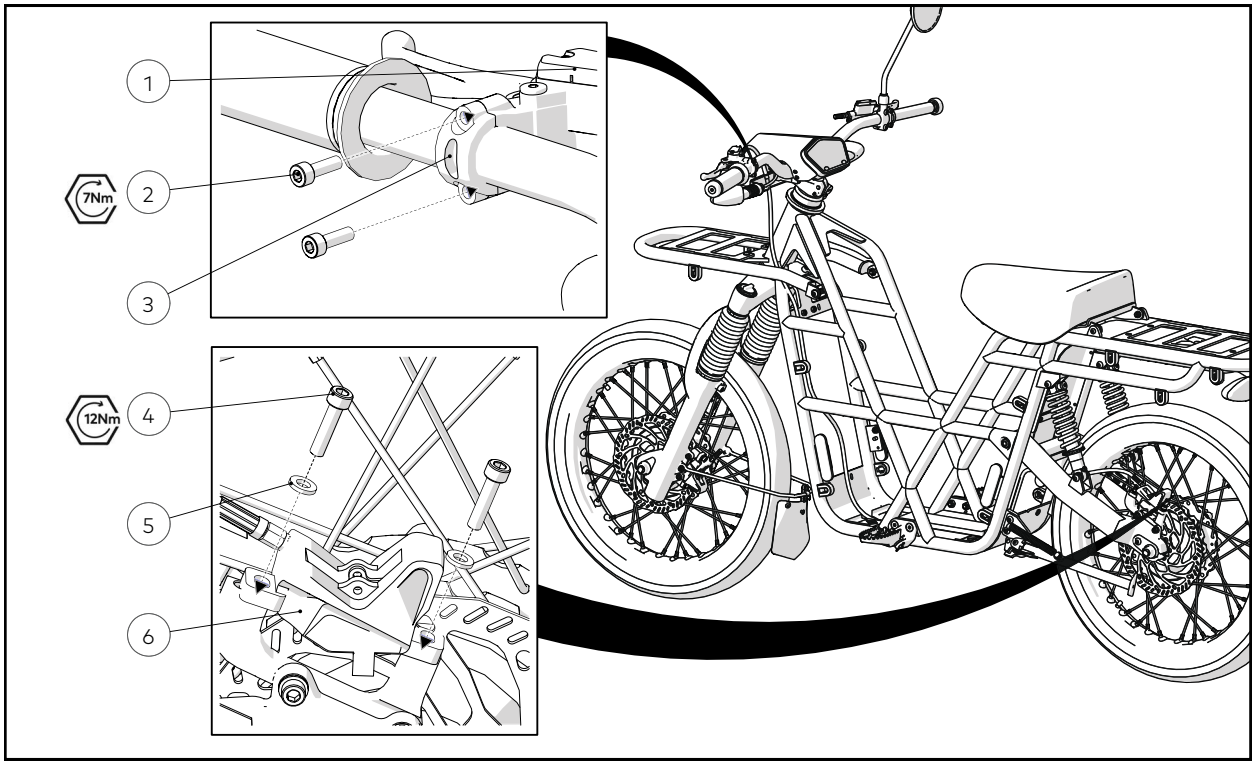
REMOVE

1. Using Flush Cutters, remove the Cable Ties attaching the Brake Line from the RH Cable Bundle
2. Using a 5mm Allen Key, release and remove the 2 fasteners holding the Caliper to the Brake Adapter
3. Using a 7mm Spanner, release and remove the Brake Reed Switch from the Master Cylinder Assembly
4. Using a 4mm Allen Key, release and remove the 2 fasteners holding the Master Cylinder Assembly to the Handlebar
5. Thread the Master Cylinder Assembly through the Frame

REPLACE

1. Thread the Master Cylinder Assembly through the Frame
2. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners holding the Master Cylinder Assembly to the Handlebar
3. Using a 5mm Allen Key Socket, Torque Wrench and Loctite 243, tighten the 2 fasteners attaching the Caliper to the Spacer
4. Using Cable Ties, retain the Brake Line to the Swing Arm and LH Cable Bundle
5. Bleed the Brakes using the method outlined on Page 29
6. Adjust the Brake Lever Blades using the method outlined on Page 36
7. Adjust the Caliper position using the method outlined on Page 32
8. Using a 7mm Spanner, tighten the Brake Reed Switch. Adjust the position and ensure the switch activates with approximately 10 to 15mm Brake Lever actuation.

SR - REAR BRAKE SET



NUMBERED ITEMS

1. Master Cylinder Assembly
2. Handlebar Clamp Fastener
3. Handlebar Clamp
4. Caliper Fastener
5. Washer
6. Caliper Assembly

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 4mm Allen key
- 4mm Allen Key Socket
- Torque Wrench
- 7mm Spanner
- Flush Cutters
- Cable Ties
- Loctite 243

PRE-REQUISITE STEPS

Battery Removal - Page 124

Front Console Panel Removal - Page 103 & Page 105

Rear Console Panel Removal - Page 107 & Page 109

REMOVE

1. Using Flush Cutters, remove the Cable Ties attaching the Rear Brake Line from the LH Cable Bundle and Swing Arm
2. Using a 5mm Allen Key, release and remove the 2 fasteners holding the Caliper to the Spacer
3. Using a 7mm Spanner, release and remove the Brake Reed Switch from the Master Cylinder Assembly
4. Using a 4mm Allen Key, release and remove the 2 fasteners holding the Master Cylinder Assembly to the Handlebar
5. Thread the Master Cylinder Assembly through the Frame and remove the Brake Set

REPLACE

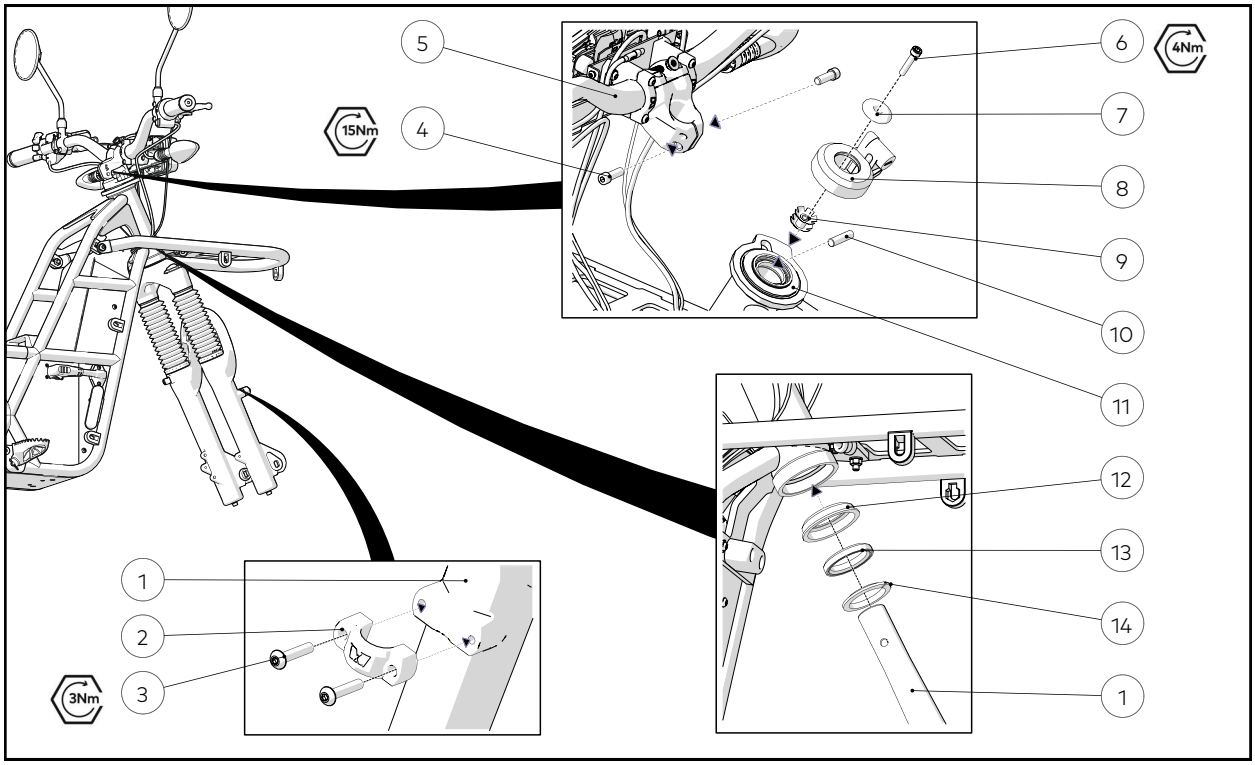
1. Thread the Master Cylinder Assembly through the Frame
2. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners holding the Master Cylinder Assembly to the Handlebar
3. Using a 5mm Allen Key Socket, Torque Wrench and Loctite 243, tighten the 2 fasteners attaching the Caliper to the Spacer
4. Using Cable Ties, retain the Brake Line to the Swing Arm and LH Cable Bundle
5. Bleed the Brakes using the method outlined on Page 29
6. Adjust the Brake Lever Blades using the method outlined on Page 36
7. Adjust the Caliper position using the method outlined on Page 32
8. Using a 7mm Spanner, tighten the Brake Reed Switch. Adjust the position and ensure the switch activates with approximately 10 to 15mm Brake Lever actuation.

UBCO

Steering and Suspension

TECHNICAL SERVICE MANUAL

FRONT FORK



NUMBERED ITEMS

1. Fork Assembly
2. Motor Cable Clamp
3. Motor Cable Clamp Fastener
4. Stem Fastener
5. Handlebar Assembly
6. Headset Fastener
7. Headset Cap
8. Steerer Lock
9. Star Nut
10. Fork Locking Pin
11. Upper Headset Crown Race
12. Lower Headset Bearing Cup
13. Lower Headset Bearing
14. Lower Headset Bearing Race

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- T25 Torx Key
- T25 Torx Socket
- Torque wrench
- Star Nut
- Hammer
- Punch
- Rubber Hammer

PRE-REQUISITE STEPS

Front Wheel Removal - Page 48

Front Mudguard Removal - Page 112

Front Caliper Removal - Page 56

Dash Removal - Page 137

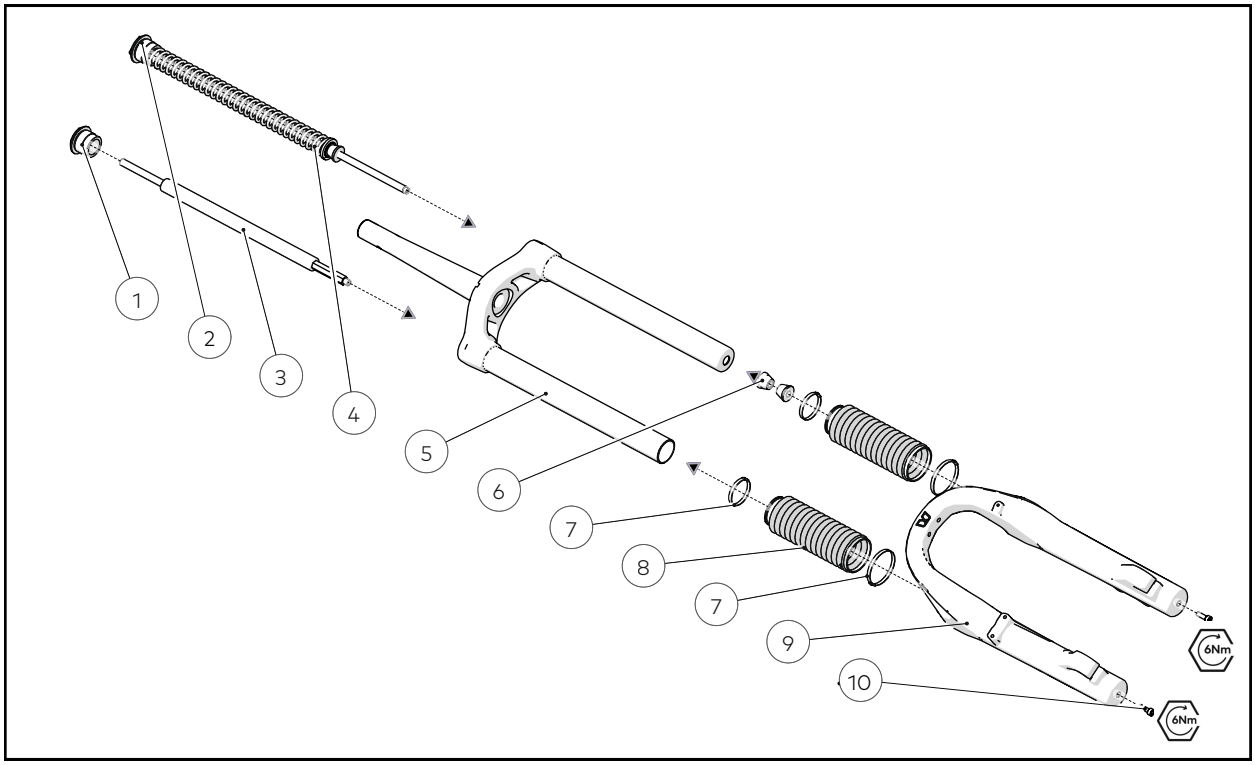
REMOVE

1. Using a 5mm Allen Key, release and remove the Headset Cap Fastener and Stem Fasteners
2. Using a Hammer and Punch, remove the Steerer Anti Spin Dowel
3. Slide the Headset Bearing Top Cap off the Steerer Tube
4. Remove the Headset Spacer (with or without lock) and Locking Pin from the Fork
5. Remove the Upper and Lower Headset Crown Races and inspect both Upper and Lower Bearings for signs of damage or wear

REPLACE

1. Seat the Lower Headset Bearing Cup into the Headtube
2. Seat the Fork into the Headtube, ensuring the Lower Crown Race and Lower Bearing are seated on the Fork
3. Assemble the Upper Bearing, Locking Pin, Headset Spacer, Split Ring and Headset Bearing Top Cap onto the Steerer Tube Upper Headset
4. Using a 5mm Allen Key, lightly tighten the Stem Fasteners
5. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Headset Cap Fastener
6. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Stem Fasteners

DISASSEMBLE FRONT FORK



NUMBERED ITEMS

1. Damper Adjustment Dial
2. Spring Adjustment Dial
3. Damper Rod
4. Spring Rod
5. Upper Fork
6. Rubber Stoppers
7. Fork Boot Retaining Clips
8. Fork Boot
9. Lower Fork
10. Lower Fork Fasteners

TOOLS/CONSUMABLES REQUIRED

- Flush Cutters
- 5mm Allen Key
- 5mm Allen Key Socket
- Torque Wrench
- 36mm Spanner
- Fork Boot Retaining Clips
- Red Rubber Grease
- Loctite 243

PRE-REQUISITE STEPS

Front Wheel Removal - Page 48

Front Fork Removal - Page 84

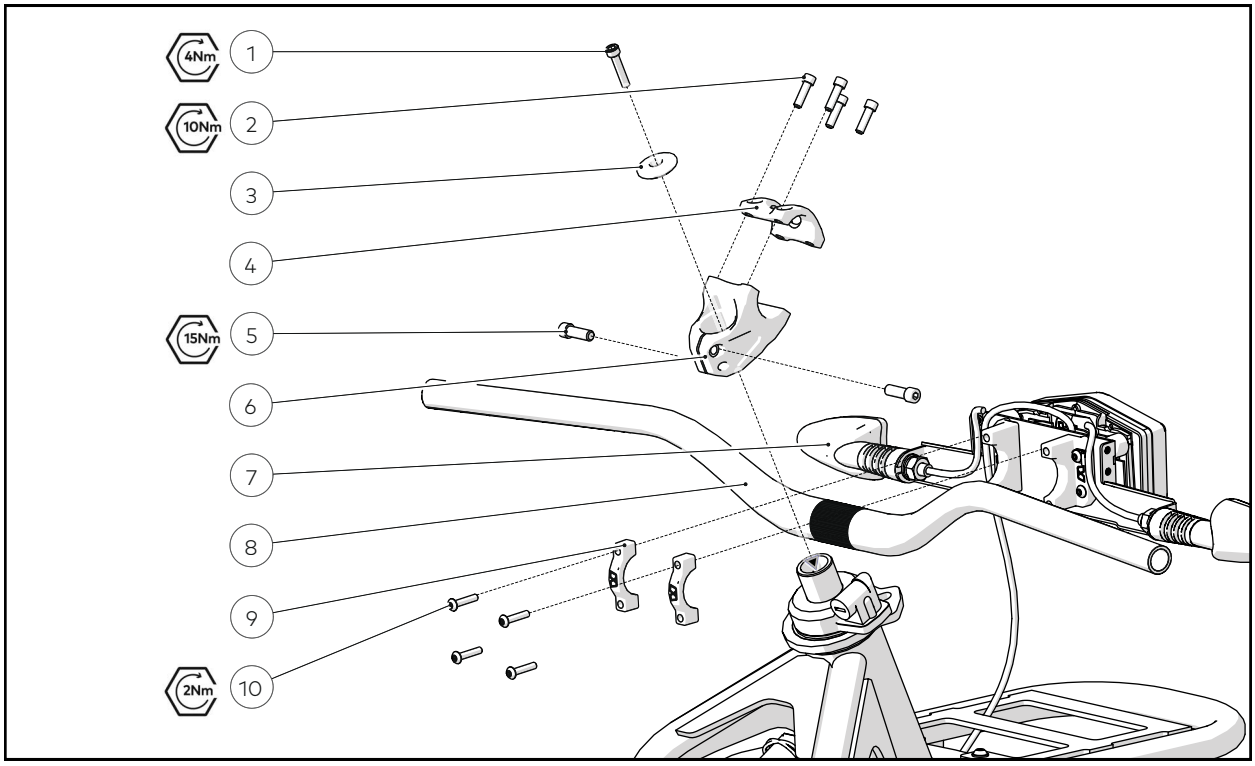
REMOVE

1. Using Flush Cutters, remove the Fork Boot Retaining Clips
2. Using 5mm Allen Key, remove the Lower Fork Fasteners
3. Remove the Lower Fork from the Upper Fork.
4. OPTIONAL - If replacing Fork Boots these can be removed and replaced at this step and following steps are not required
5. Remove the Rubber Stoppers from the Lower Spring Rod
6. Using an 36mm Spanner remove both the Spring Adjustment Dial and Damper Adjustment Dial

REPLACE

1. Assemble the Spring Rod through the Left Hand Stanchion onto the Rubber Stoppers
2. Using an 36mm Spanner, tighten the Spring Adjustment Dial and Damper Adjustment Dial
3. Assemble the Lower Fork onto the Upper Fork and apply Red Rubber Grease to the sealing surface of the Lower Fork Seal
4. Using a 5mm Allen Key Socket, Torque Wrench and Loctite 243, tighten the Lower Fork Fasteners. NOTE - The adjustment dial may need to be held while performing this operation
5. Tighten the Fork Boot Retaining Clips, ensuring the Fork Boot holes are facing outwards and away from the Tyre

STEM



NUMBERED ITEMS

1. Headset Cap Fastener
2. Handlebar Fasteners
3. Headset Cap
4. Stem Clamp Upper
5. Stem Fastener
6. Stem Clamp Lower
7. Headlight Clamp Assembly
8. Handlebar
9. Headlight Clamp Lower
10. Headlight Clamp Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- Torque Wrench

PRE-REQUISITE STEPS

Dash Removal - Page 137

Headlight Clamp Assembly - Page 135

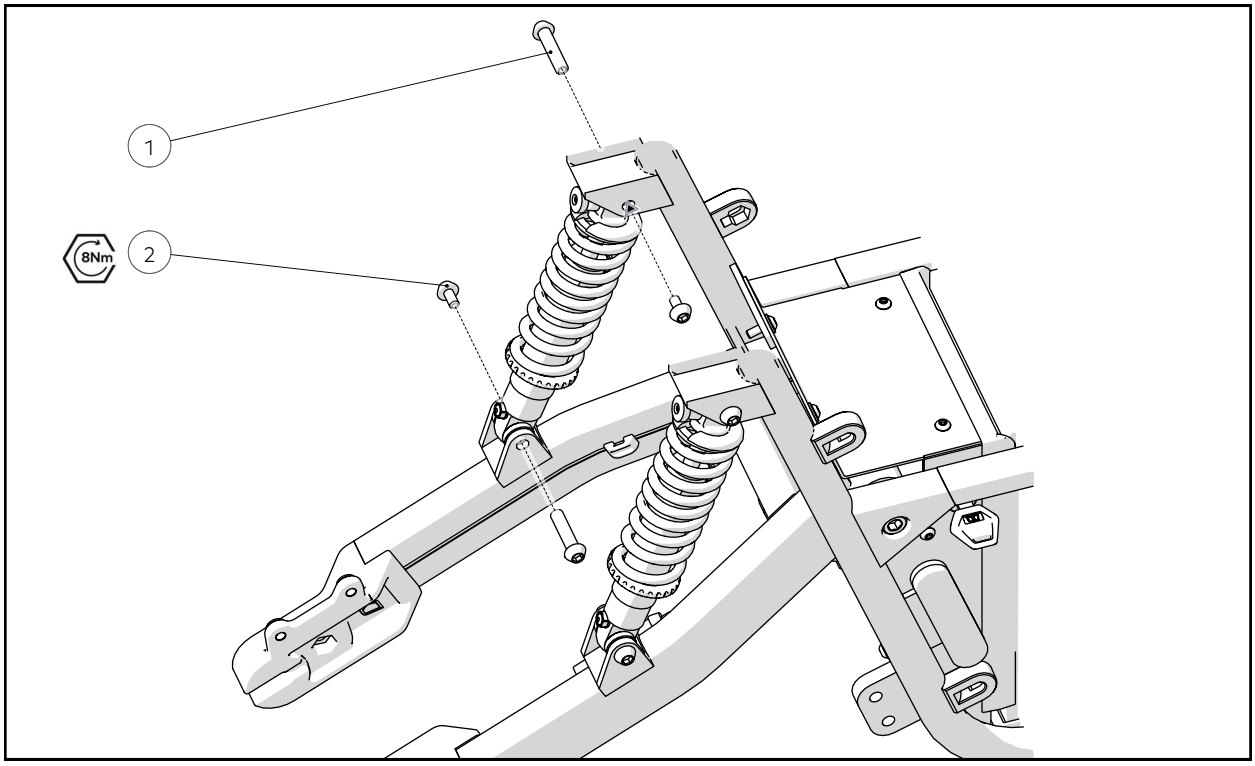
REMOVE

1. Using a 5mm Allen Key remove the 4 Handlebar Fasteners
2. Using a 5mm Allen Key, release and remove the Headset Cap Fastener and 2 Stem Fasteners

REPLACE

1. Using a 5mm Allen Key Socket and Torque Wrench, tighten the 2 Stem Fasteners
2. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Headset Cap Fastener
3. Using a 5mm Allen Key Socket and Torque Wrench, tighten the 4 Headlight Clamp Assembly Fasteners

REAR SHOCK ABSORBER



NUMBERED ITEMS

1. Barrel Nut
2. Fastener

TOOLS/CONSUMABLES REQUIRED

- 2 x 6mm Allen Key
- 6mm Allen Key Socket
- Torque Wrench
- Loctite 243

PRE-REQUISITE STEPS

1. Rear Wheel Removal - Page 50

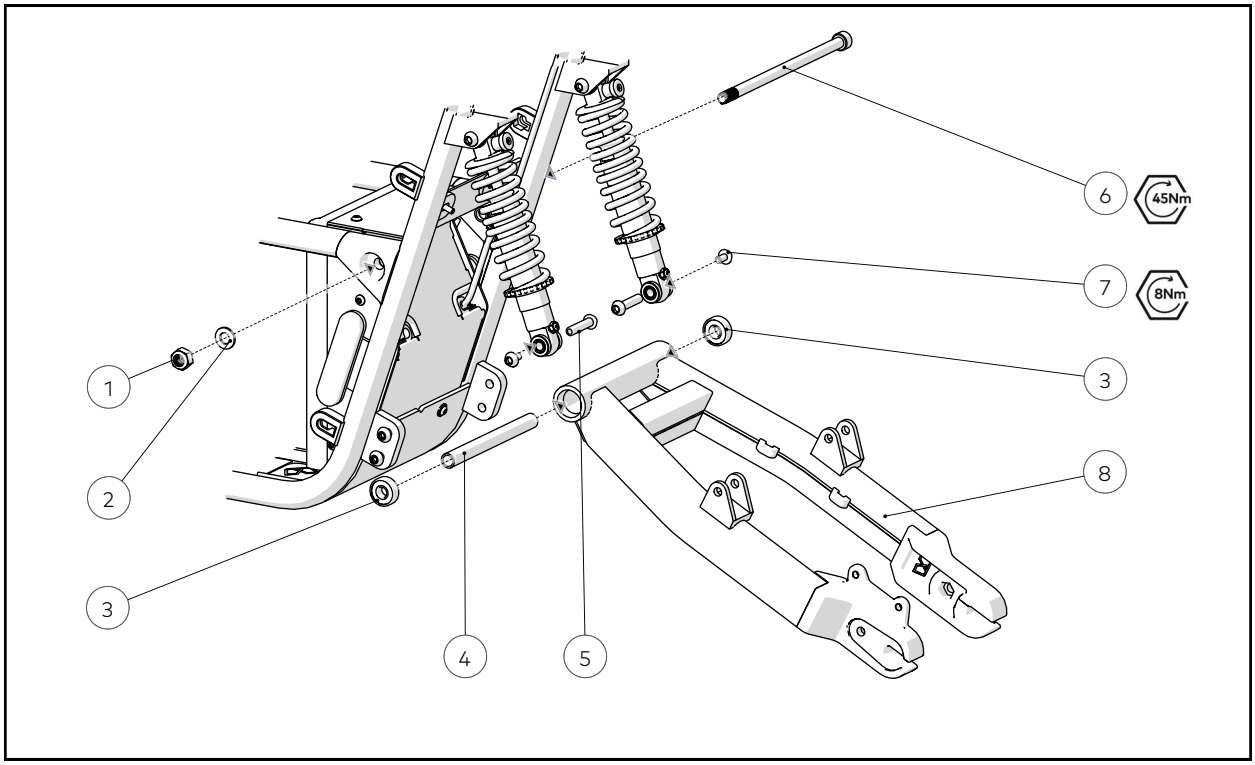
REMOVE

1. Using 2 x 6mm Allen Keys, remove the 4 Barrel Nuts attaching the Rear Shock Absorbers to the Swing Arm and Bike

REPLACE

1. Using a 6mm Allen Key Socket, Torque Wrench, 6mm Allen Key and Loctite 243 tighten the 4 Barrel Nuts attaching the Rear Shock Absorbers to the Swing Arm

SWING ARM



NUMBERED ITEMS

1. Nut
2. Washer
3. Swing Arm Bearing
4. Swing Arm Bearing Spacer
5. Barrel Nut
6. Swing Arm Fastener
7. Barrel Nut Fastener
8. Swing Arm

TOOLS/CONSUMABLES REQUIRED

- 2 x 6mm Allen Key
- 6mm Allen Key Socket
- 8mm Allen Key
- 8mm Allen Key Socket
- Breaker Bar
- 17mm Socket
- Torque Wrench
- Flush Cutters
- Cable Ties
- Loctite 243

PRE-REQUISITE STEPS

Rear Wheel Removal - Page 50

Swing Arm Mud Flap Removal - Page 114

Rear Brake Caliper Removal (note the Brake Line should remain attached for this operation) - Page 56

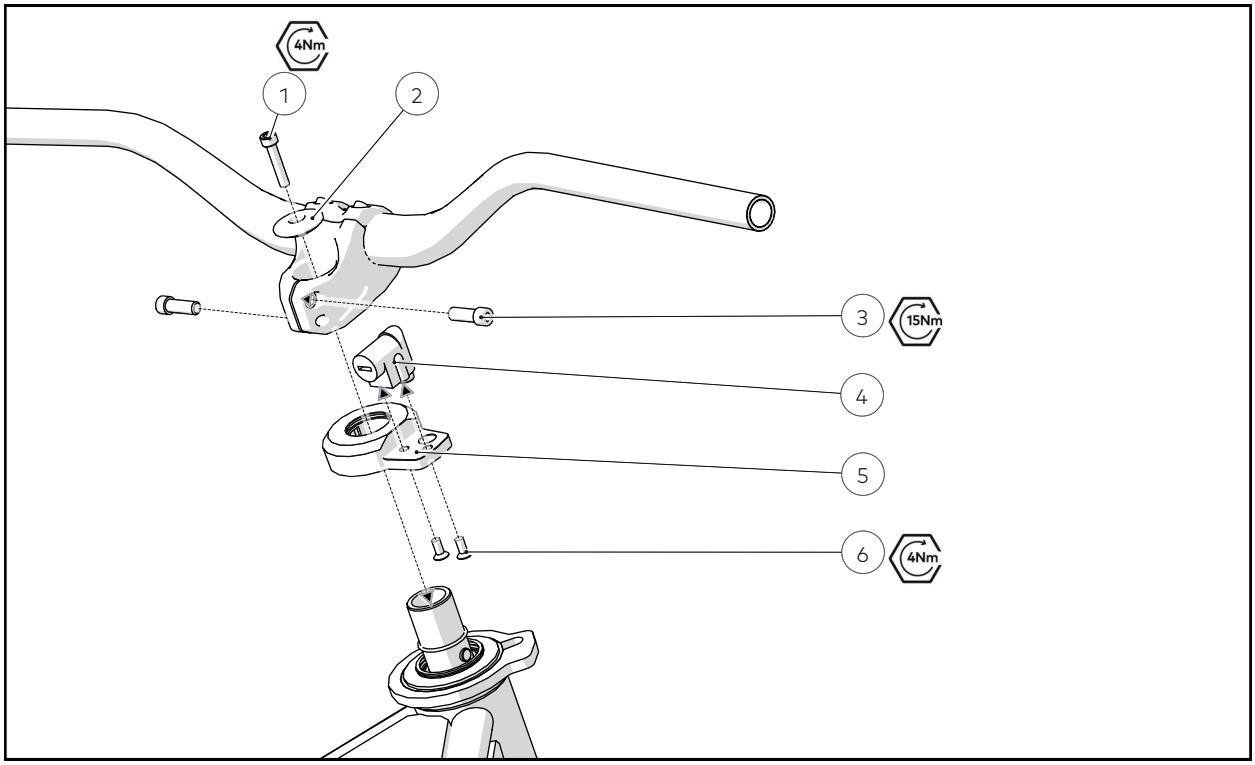
REMOVE

1. Using Flush Cutters, remove any Cable Ties retaining the Rear Brake Line and Rear Motor Cable to the Swing Arm
2. Using 2 x 6mm Allen Keys, remove the 2 Barrel Nuts attaching the Rear Shock Absorbers to the Swing Arm
3. Using a 8mm Allen Key and 17mm Socket with Breaker bar, remove the Swing Arm fastener.

REPLACE

1. Using a 8mm Allen Key Socket with Torque Wrench and 17mm Socket with Breaker Bar, tighten the Swing Arm fastener
2. Using a 6mm Allen Key Socket, Torque Wrench, 6mm Allen Key and Loctite 243 tighten the 2 Barrel Nuts attaching the Rear Shock Absorbers to the Swing Arm
3. Using Cable Ties, retain the Rear Brake Line and Rear Motor Cable to the Swing Arm

STEERING LOCK



NUMBERED ITEMS

1. Headset Cap Fastener
2. Headset Cap
3. Stem Fastener
4. Steering Lock Mechanism
5. Headset Top Cap
6. Steering Lock Mechanism Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITE STEPS

Dash Removal - Page 137

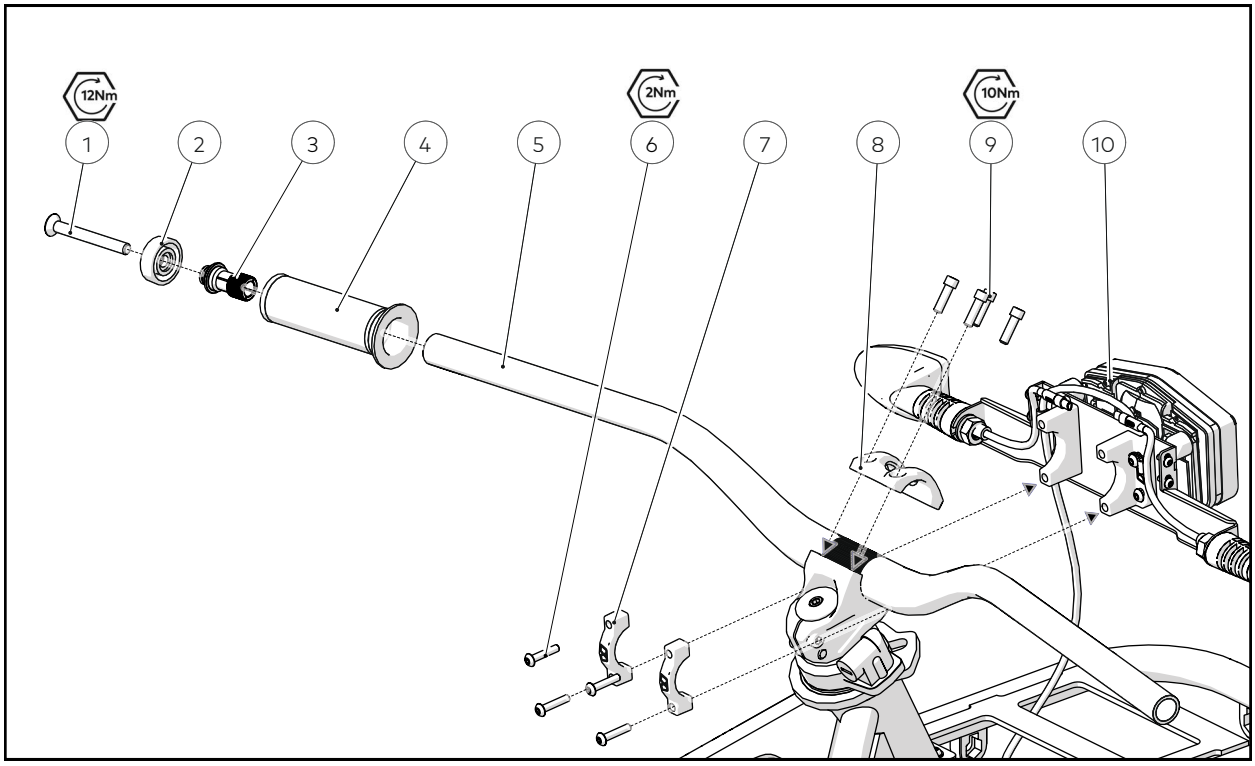
REMOVE

1. Using a 5mm Allen Key, release and remove the Headset Cap fastener and Stem fasteners
2. Slide the Headset Bearing Top Cap and Handlebar Assembly off the Steerer Tube
3. Using a T25 Torx Key, release and remove the 2 fasteners holding the Steering Lock to the Headset Top Cap

REPLACE

1. Using a T25 Torx Socket and Torque Wrench tighten the 2 fasteners attaching the Steering Lock to the Headset Top Cap
2. Clean and inspect the Bearing Top Cap Seal and O-Ring and replace if damaged or signs of wear are present
3. Assemble the Headset Bearing Top Cap, Stem and Headset Cap onto the Steerer Tub
4. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Headset Cap fastener to the Star Nut
5. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Stem fastener

HANDLEBAR



NUMBERED ITEMS

1. Bar Clamp Fastener
2. Bar End Cap
3. Spreader
4. Grip
5. Handlebar
6. Headlight Fastener
7. Headlight Clamp
8. Stem Clamp
9. Stem Fastener
10. Headlight Assembly

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 3mm Allen Key
- 3mm Allen Key Socket
- M8 Spring Washer
- Torque wrench

PRE-REQUISITE STEPS

Dash Removal - Page 137

Mirror Removal - Page 121

Master Cylinder Removal (note the Brake Line should remain attached for this operation) - Page 58

Lever Guard Removal - Page 98

Bar Controller Removal (do not detach or disconnect the Controller from the Main Harness) - Page 131

Throttle Body Removal (do not detach or disconnect the Controller from the Main Harness) - Page 133

REMOVE

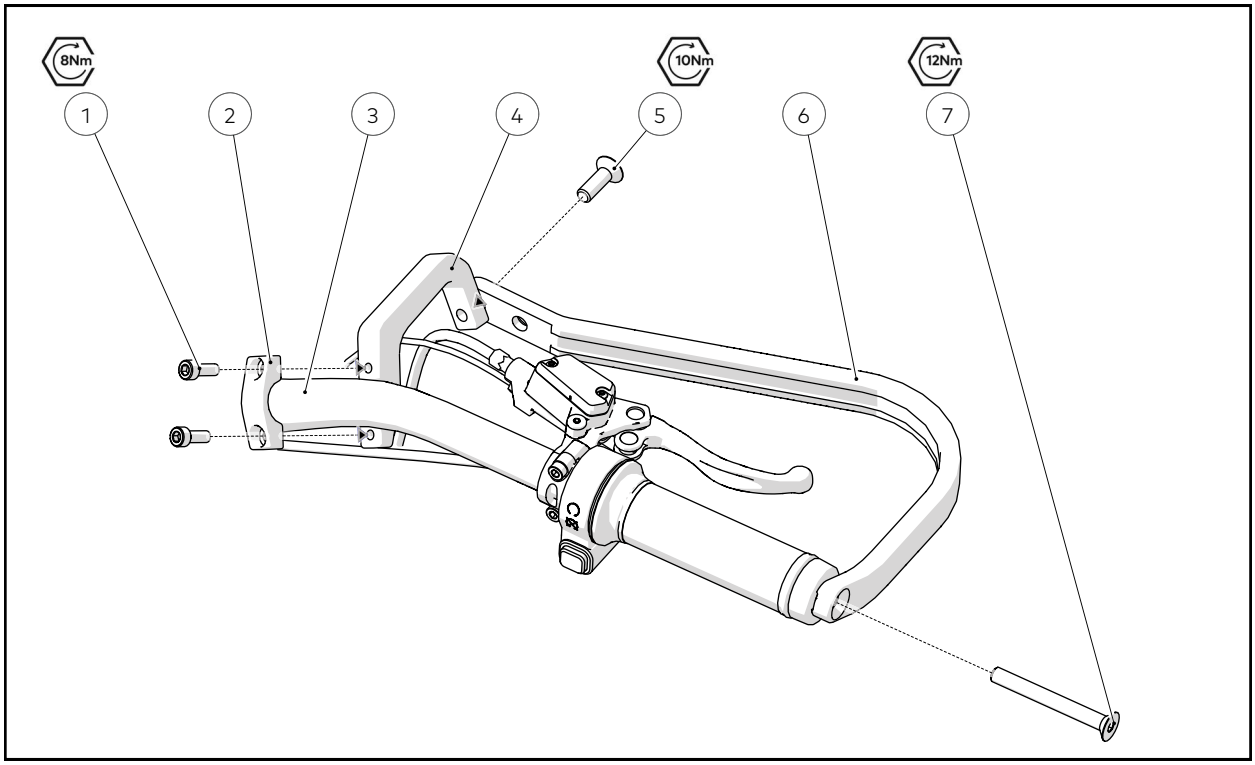
1. Using a 3mm Allen Key, release and remove the 4 Headlight Clamp Fasteners from the Handlebar
2. Using a 5mm Allen Key, release and remove the Handlebar End Cap and Bar Clamp Fasteners
3. If installed, remove the Grip from the Handlebar
4. Remove the Spreader Spacers from the Handlebar
5. Using a 5mm Allen Key, release and remove the 4 Stem Fasteners from the Handlebar

REPLACE

1. Using a 5mm Allen Key Socket and Torque Wrench, tighten the 4 Stem Fasteners
2. Insert the Spreader Spacers into the Handlebar
3. Attach the Throttle Body to the Handlebar using the method outlined on Page 133
4. Attach the Bar Controller to the Handlebar using the method outlined on Page 131
5. Slide the Grip onto the left hand side of the Handlebar
6. Attach the Master Cylinders to the Handlebar using the method outlined on Page 58
7. Attach the Mirrors to the Handlebar using the method outlined on Page 121
8. If previously fitted, attach the Lever Guards to the Handlebar using the method outlined on Page 98
9. Using a 5mm Allen Key Socket and Torque Wrench, tighten the 2 Bar Clamp Fasteners.
10. Attach the Headlight to the Handlebar using the method outlined on Page 135
11. Attach the Dash to the Handlebar using the method outlined on Page 137

12. Using a 3mm Hex Bit and Torque Wrench, tighten the 4 Headlight Assembly Fasteners, aligning the Headlamp Beam using the method outlined on Page 44

LEVER GUARDS



NUMBERED ITEMS

1. Bar Clamp Fastener
2. Bar Clamp Upper
3. Handlebar
4. Bar Clamp Lower
5. Lever Guard Body Fastener
6. Lever Guard Body
7. Bar End Cap Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 3mm Allen Key
- M8 Spring Washer
- Torque Wrench

REMOVE

1. Using a 5mm Allen Key, release and remove the Handlebar End Cap and Bar Clamp fasteners
2. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Handlebar End Cap fastener

REPLACE

1. Using a 5mm Allen Key, loosely tighten the Lever Guard Bar Clamps on the Handlebar

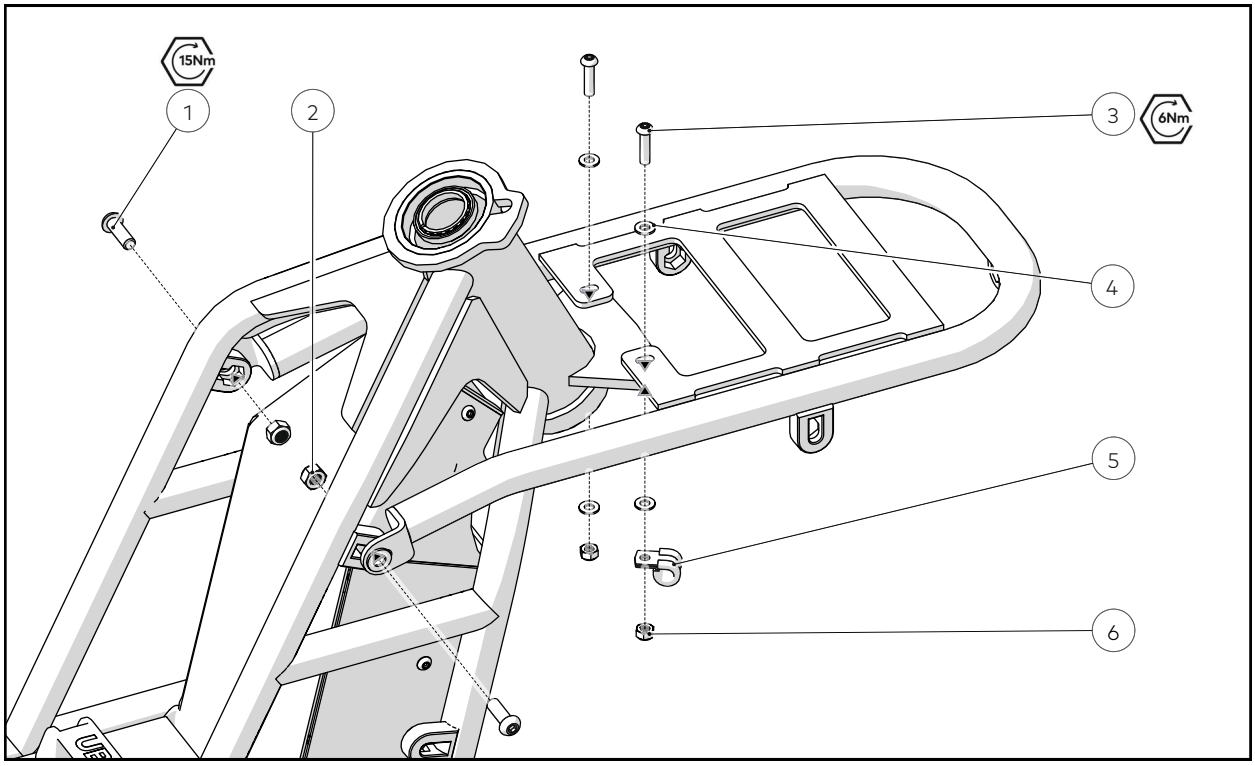
2. Using a 5mm Allen Key, loosely tighten the Handlebar End Cap fastener, attaching the Lever Guard to the Handlebar while ensuring the Lever Guard is angled as shown.
3. Using a 5mm Allen Key, loosely tighten the fastener connecting the Lever Guard to the Bar Clamp
4. Using a 5mm Allen Key Socket and Torque Wrench, first set the angle of the Lever Guard to the desired position then tighten the Handlebar End Cap fastener
5. Using a 5mm Allen Key Socket and Torque Wrench, first tighten the fastener attaching the Lever Guard to the Bar Clamp then the Bar Clamp to the Handlebar
6. Test to ensure the Throttle turns and releases freely, if this does not occur follow the steps below;
7. Using a 3mm Allen Key, release and loosen the Throttle Grub Screw and move the Throttle approximately 2-3mm axially towards the Dash. Tighten the Throttle Grub Screw.
8. If the Throttle is still not moving freely, undo this process to step 2, installing a M8 Spring Washer between the End Cap and Handlebar

UBCO

Body

TECHNICAL SERVICE MANUAL

FRONT CARRIER



NUMBERED ITEMS

1. Front Carrier Frame Fastener
2. Front Carrier Frame Nut
3. Front Carrier Flange Fastener
4. Front Carrier Flange Washer
5. Front Carrier P Clip
6. Front Carrier Nut

TOOLS/CONSUMABLES REQUIRED

- 4mm Allen Key
- 5mm Allen Key
- 10mm Spanner

REMOVE

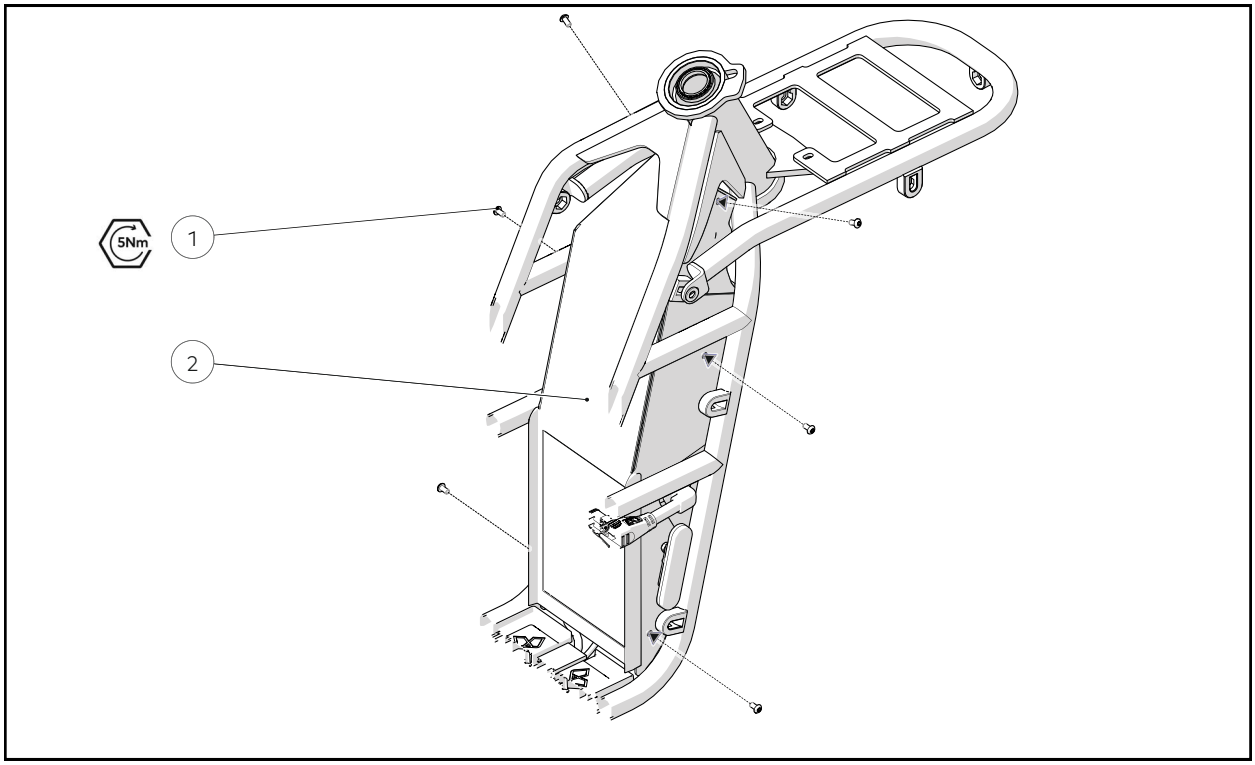
1. Using a 4mm Allen Key and 10mm Spanner, release and remove the 2 nuts/fasteners attaching the Front Carrier to the Steerer Tube Flange
2. Using a 5mm Allen Key, release and remove the 2 nuts/fasteners attaching the Front Carrier to the Frame Down Tube

REPLACE

1. Using a 4mm Allen Key and 10mm Spanner, tighten the 2 nuts/fasteners attaching the Front Carrier to the Steerer Tube Flange. Ensure the Brake Hose P-Clip and Brake Hose are attached.

2. Using a 5mm Allen Key, tighten the 2 nuts/fasteners attaching the Front Carrier to the Frame Down Tube

FRONT CONSOLE COVER



NUMBERED ITEMS

1. Fastener
2. Front Console Cover

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITE STEPS

Battery Removal - Page 124

REMOVE

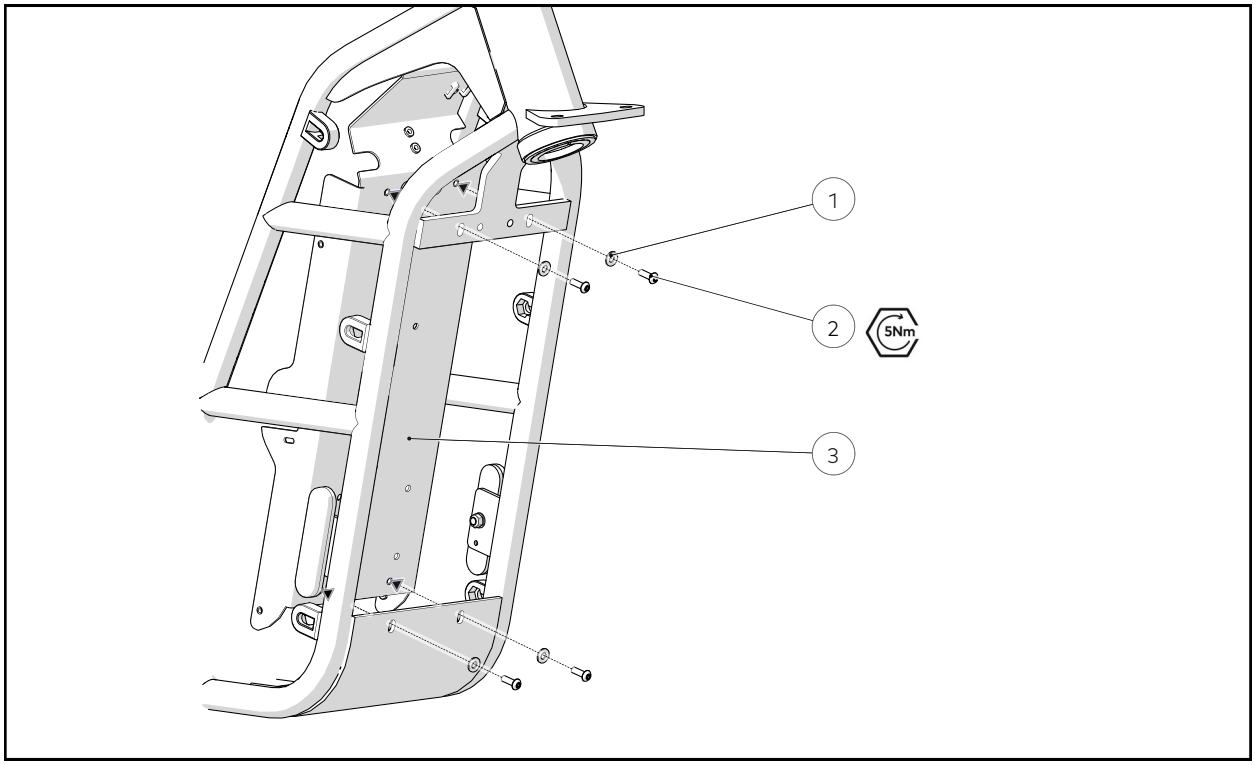
1. Using a T25 Torx Key, remove the 6 fasteners attaching the Front Console Cover to the Front Console Rear Panel
2. Lifting and rotating the upper portion of the Front Console Front Cover towards the rear of the Bike, remove the component

REPLACE

1. Ensure all cables are correctly aligned within the console and will not become pinched when replacing the Cover
2. Align the bottom section of the Front Console, then lift and rotate the top section into place

3. Using a T25 Torx Key lightly tighten the 6 fasteners attaching the Front Console Cover to the Front Console Rear Panel
4. To align the Front Console Cover, install the Battery within the Bike using the method outlined on Page 124
5. Using a T25 Torx Socket and Torque Wrench, tighten the 6 fasteners attaching the Front Console Cover to the Front Console Rear Panel

FRONT CONSOLE REAR PANEL



NUMBERED ITEMS

1. Washer
2. Fastener
3. Front Console

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Driver
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITE STEPS

Battery Removal - Page 124

Front Console Cover Removal - Page 103

Motor Controllers Removal - Page 148

Main Harness Removal - Page 129

Battery Plug Harness Removal - Page 126

VMS Removal - Page 146

Horn Removal - Page 144

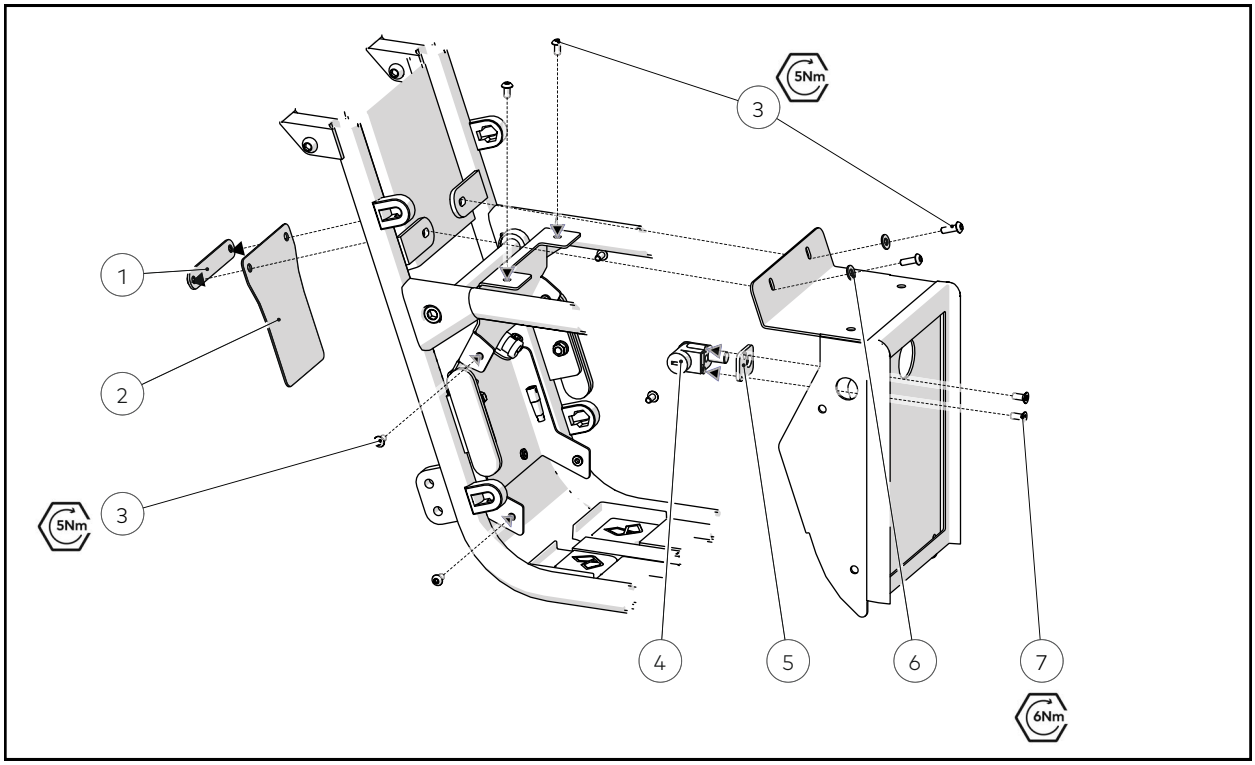
REMOVE

1. Using a T25 Torx Key, remove the 4 fasteners attaching the Front Console Rear Panel to the Frame

REPLACE

1. Ensure all cables and brake line are correctly aligned within the console and will not become pinched when replacing the cover
2. Using a T25 Torx Socket and Torque Wrench, tighten the 4 fasteners attaching the Front Console Rear Panel to the Frame

REAR CONSOLE COVER



NUMBERED ITEMS

1. Swing Arm Mudflap Plate
2. Swing Arm Mudflap
3. Console Fastener
4. Battery Lock
5. Battery Lock Spacer Plate
6. Washer
7. Battery Lock Fastener

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

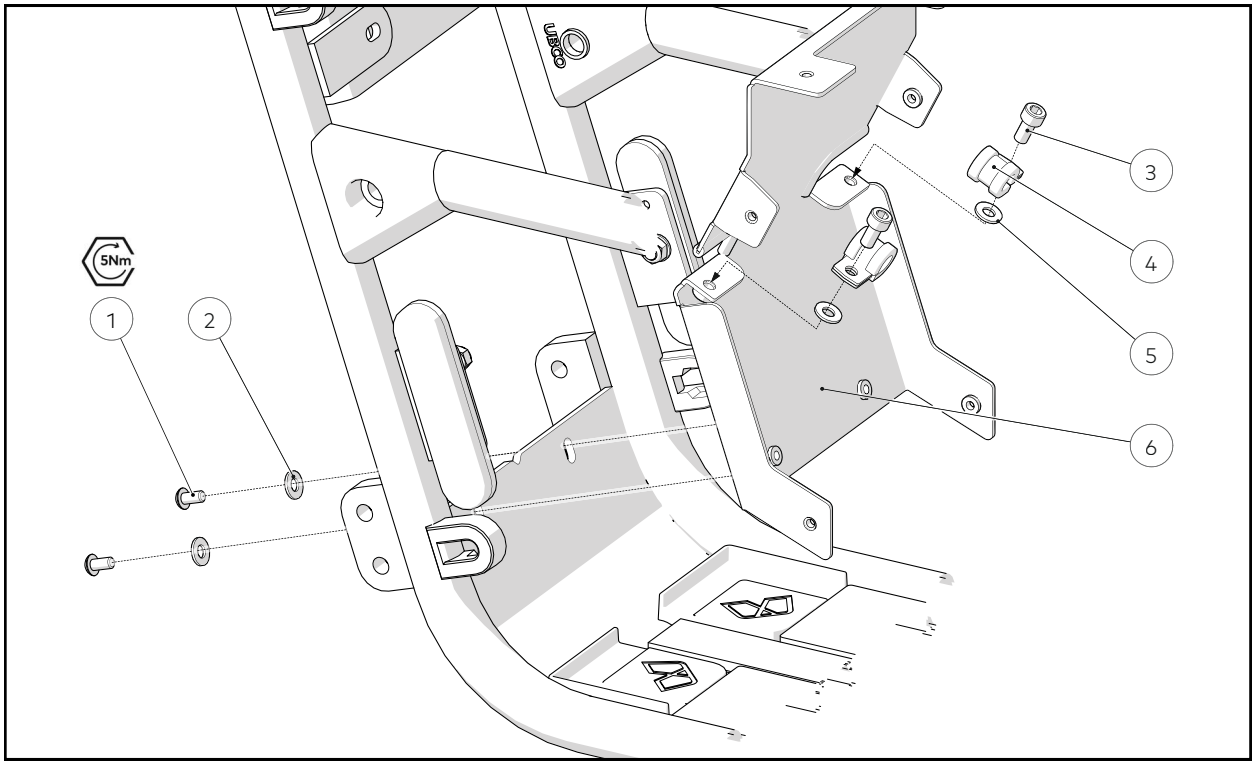
REMOVE

1. Using a T25 Torx Key, remove the 8 fasteners attaching the Rear Console Cover to the Rear Panel and Frame
2. Using a T25 Torx Key, remove the 2 fasteners attaching the Battery Lock to the Front Panel

REPLACE

1. Ensure all cables are correctly aligned within the Rear Console and will not become pinched when replacing the Front Panel
2. Using a T25 Torx Socket and Torque Wrench, tighten the two fasteners attaching the Battery Lock to the Front Panel
3. Using a T25 Torx Key lightly tighten the 8 fasteners attaching the Rear Console Cover to the Rear Panel and Frame
4. To align the Rear Console Cover, install the Battery within the bike using the method outlined on Page 124
5. Using a T25 Torx Socket and Torque Wrench, tighten the two fasteners attaching the Rear Console Cover to the Rear Panel and Frame

REAR CONSOLE REAR PANEL



NUMBERED ITEMS

1. Rear Console Fastener
2. Rear Console Washer
3. P Clip Fastener
4. P Clip[1]
5. P Clip Washer
6. Rear Console Rear Panel

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Rear Console Cover - Page 107

REMOVE

1. If installed, using a 5mm Allen Key, remove the 2 fasteners retaining the P Clips to the Rear Panel

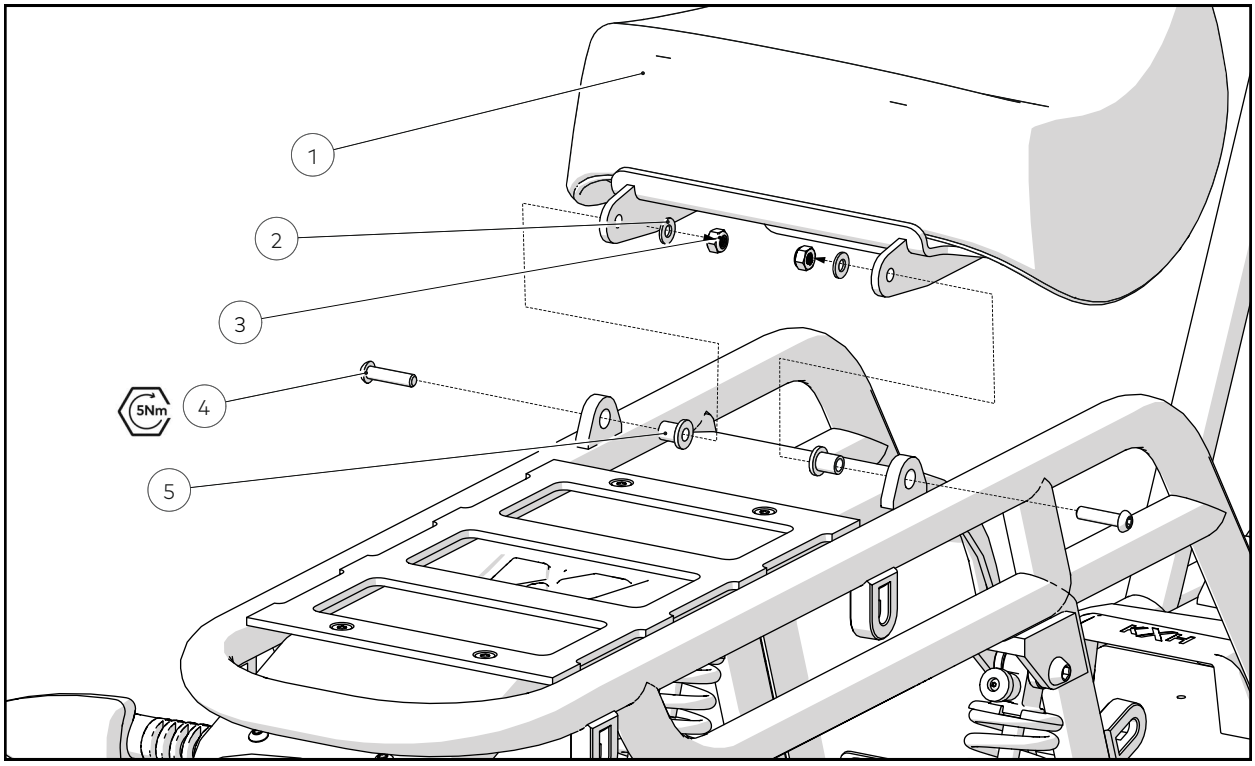
1.ONLY PRESENT ON SOME MODELS

2. Using a T25 Torx Key, remove the 2 fasteners retaining the Rear Console Rear Panel to the Frame

REPLACE

1. Ensure all cables are correctly aligned and will not become pinched when replacing the Rear Panel
2. Using a T25 Torx Socket and Torque Wrench, tighten the 2 fasteners retaining the Rear Console Rear Panel to the Frame
3. Using a 5mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners retaining the P Clips to the Rear Panel

SEAT



NUMBERED ITEMS

1. Seat
2. Washer
3. Nut
4. Fastener
5. Bush

TOOLS/CONSUMABLES REQUIRED

- 4mm Allen Key
- 4mm Allen Key Socket
- Torque Wrench
- 10mm Spanner

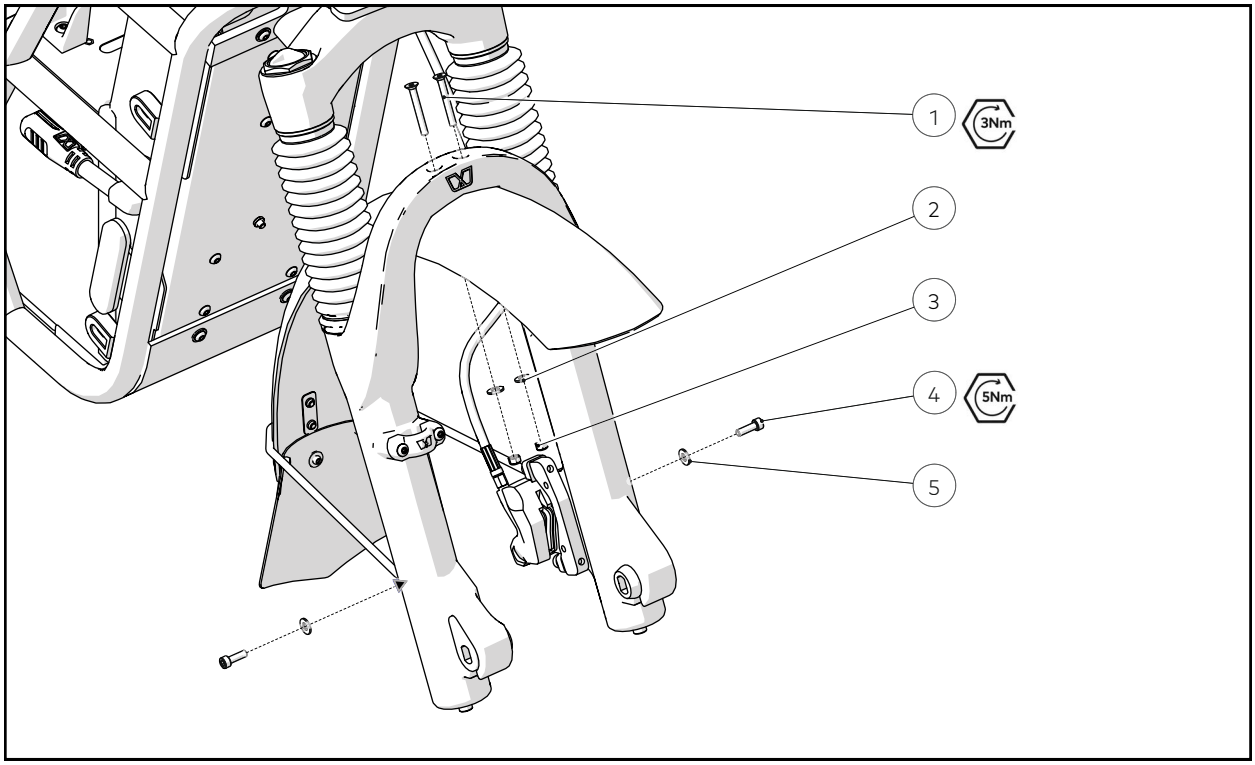
REMOVE

Using a 4mm Allen Key and 10mm Spanner, release and remove the 2 fasteners attaching the Seat to the Frame

REPLACE

Using a 4mm Allen Key Socket, Torque Wrench and 10mm Spanner, tighten the 2 fasteners attaching the Seat to the Frame

FRONT MUDGUARD



NUMBERED ITEMS

1. Mudguard Top Fastener
2. Mudguard Top Washer
3. Nut
4. Mudguard Stay Fastener
5. Mudguard Stay Washer

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- 4mm Allen Key
- 4mm Allen Key Socket
- Torque Wrench
- 8mm Spanner

PRE-REQUISITES

Front Wheel Removal - Page 48

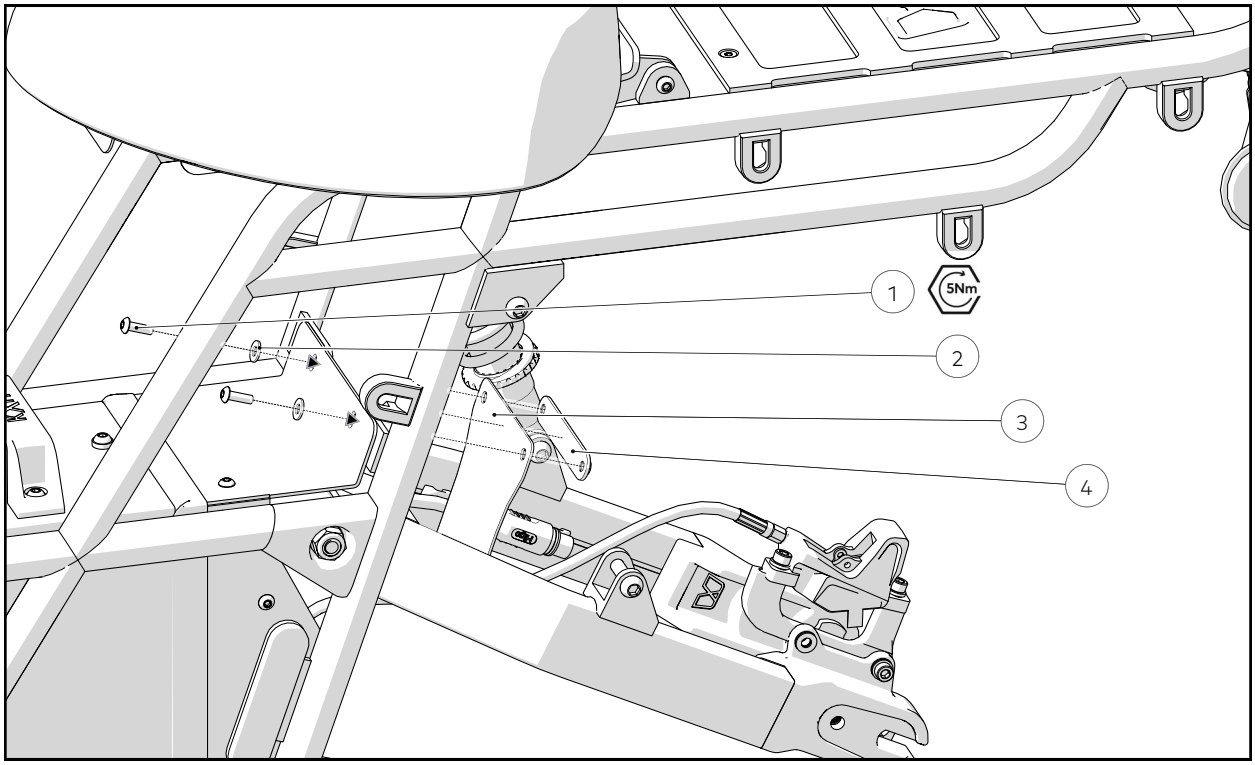
REMOVE

1. Using a 4mm Allen Key and 8mm Spanner, remove the 2 fasteners attaching the Upper Mudguard to the Fork
2. Using a T25 Torx Key, remove the 2 fasteners attaching the Mudguard Stay to the Fork

REPLACE

1. Using a T25 Torx Socket and Torque Wrench, tighten the 2 fasteners attaching the Mudguard Stay to the Fork
2. Using a 4mm Allen Key Socket, Torque Wrench and 8mm Spanner, tighten the 2 fasteners attaching the Upper Mudguard to the Fork

SWING ARM MUDGUARD



NUMBERED ITEMS

1. Fastener
2. Washer
3. Mud Flap
4. Mud Flap Retention Plate

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

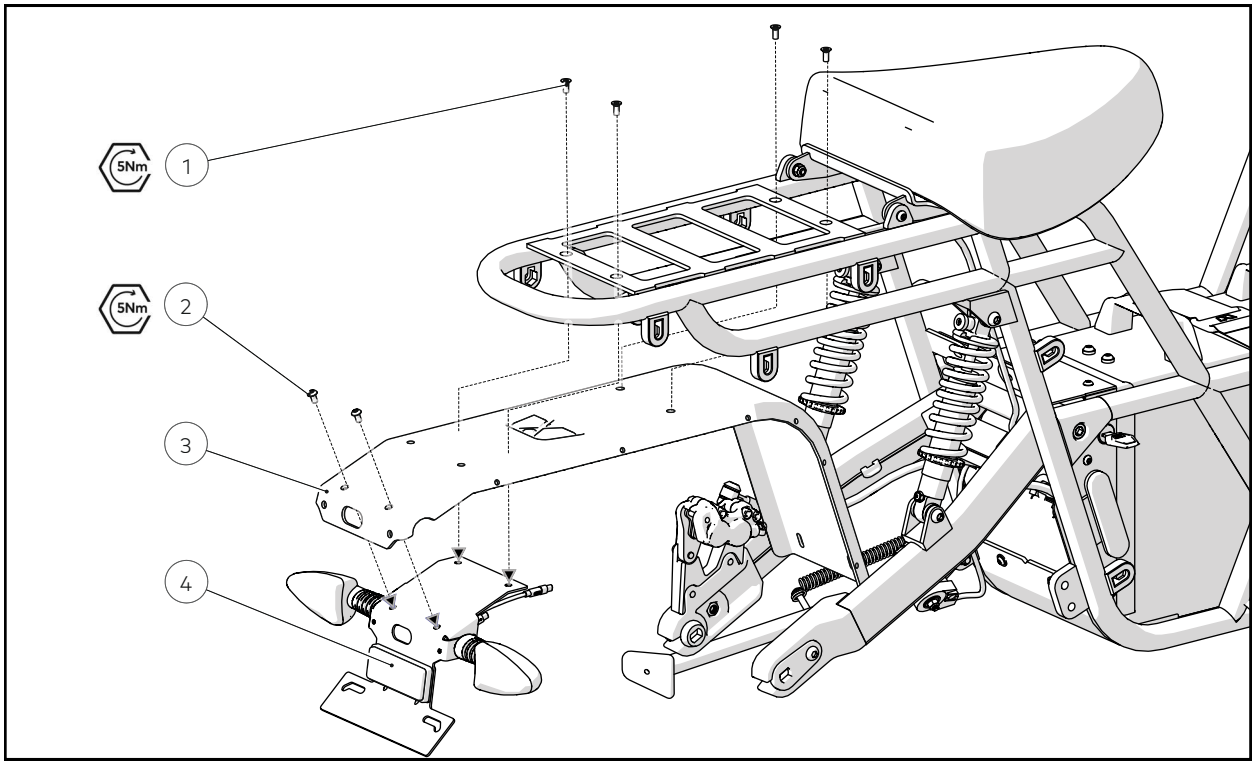
REMOVE

1. Using a T20 Torx Key, remove the 2 fasteners attaching the Swing Arm Mud Flap to the Bike

REPLACE

1. Using a T20 Torx Socket and Torque Wrench, tighten the 2 fasteners attaching the Swing Arm Mud Flap to the Bike

REAR MUDGUARD



NUMBERED ITEMS

1. Countersunk Fastener
2. Button Fastener
3. Mudguard
4. Taillight Assembly

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench
- Flush Cutters
- Cable Ties

PRE-REQUISITES

Rear Wheel Removal - Page 50

Swing Arm Mud Flap Removal - Page 114

Taillight Removal - Page 143

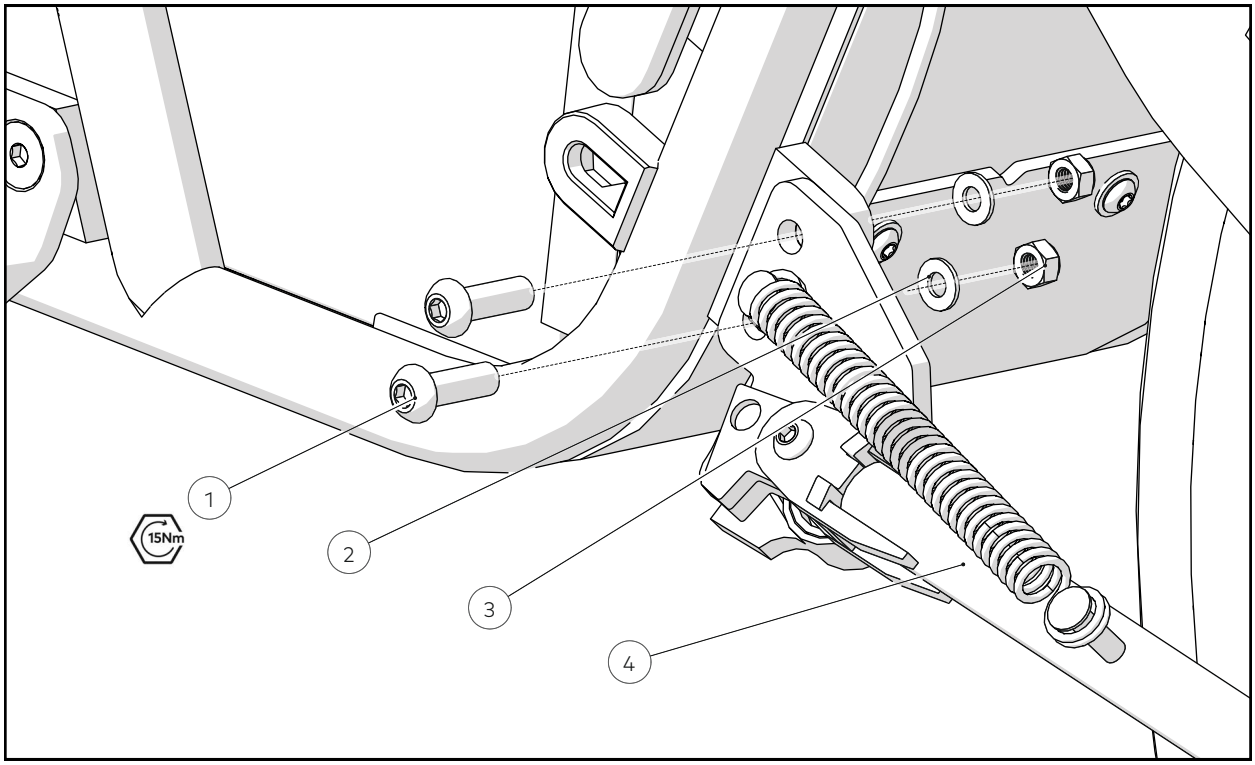
REMOVE

1. Using Flush Cutters, remove any Cable Ties retaining the Rear Light Harness and any connected cables to the Mudguard
2. Using a T25 Torx Key, remove the 6 fasteners attaching the Mudguard to the Bike and Taillight Assembly

REPLACE

1. Using a T25 Torx Socket and Torque Wrench, tighten the 8 fasteners attaching the Mudguard to the Bike
2. Connect the Taillight to the Rear Light Harness
3. Using a #1 Philips Head Screwdriver, tighten the 2 fasteners attaching the Rear Light to the Mudguard
4. Using Cable Ties, retain the Rear Light Harness and any connected cables to the Mudguard

KICKSTAND



NUMBERED ITEMS

1. Fastener
2. Washer
3. Nut
4. Kickstand

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 13mm Spanner
- Torque Wrench
- Loctite 243

PRE-REQUISITE STEPS

Battery Removal - Page 124

Rear Console Cover Removal - Page 107

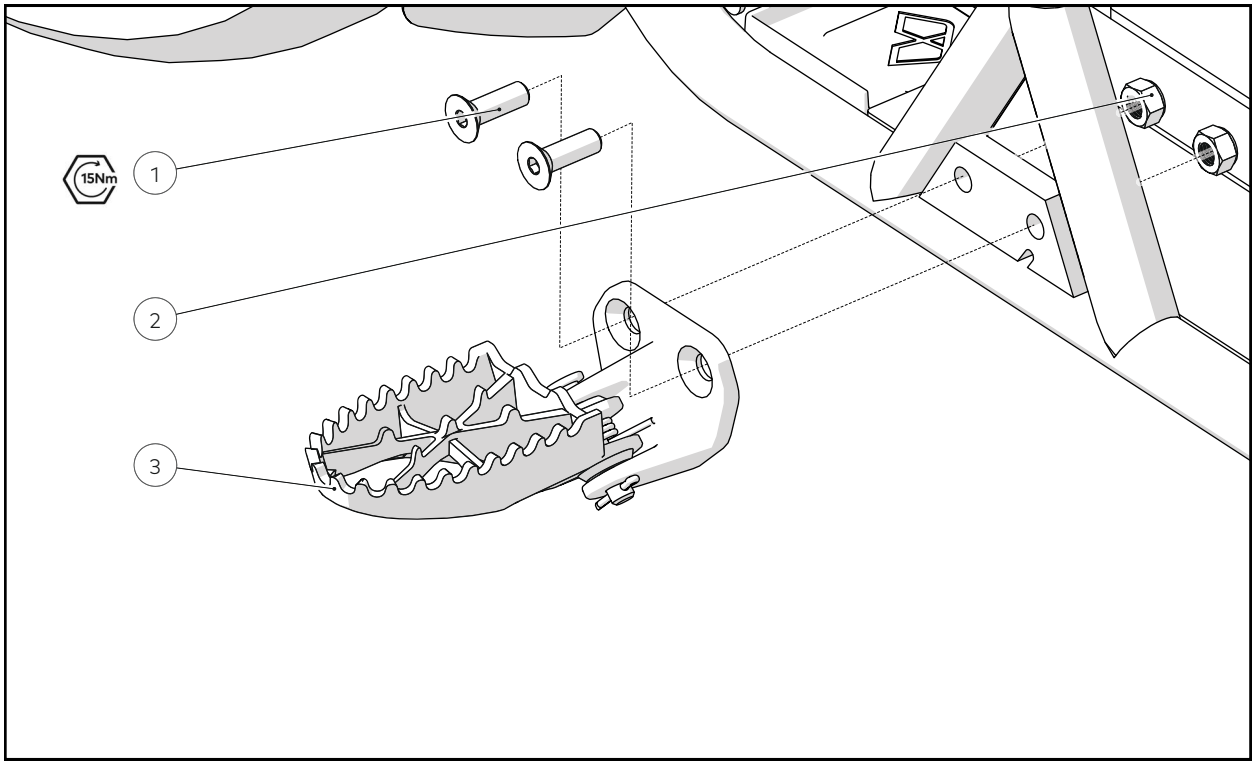
REMOVE

1. If installed, unplug the Kickstand Switch connector from the On Road Harness inside the Rear Console
2. Using a 5mm Allen Key and 13mm Spanner, release and remove the 2 fasteners attaching the Kickstand to the Bike

REPLACE

1. Using a 5mm Allen Key Socket, Torque Wrench, 13mm Spanner and Loctite 243, tighten the 2 fasteners attaching the Kickstand to the Bike
2. If installed, plug the Kickstand Switch connector into the On Road Harness

FOOTPEGS



NUMBERED ITEMS

1. Fastener
2. Nut
3. Footpeg

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 13mm Spanner
- Torque Wrench
- Loctite 243

PRE-REQUISITES

Battery Removal - Page 124

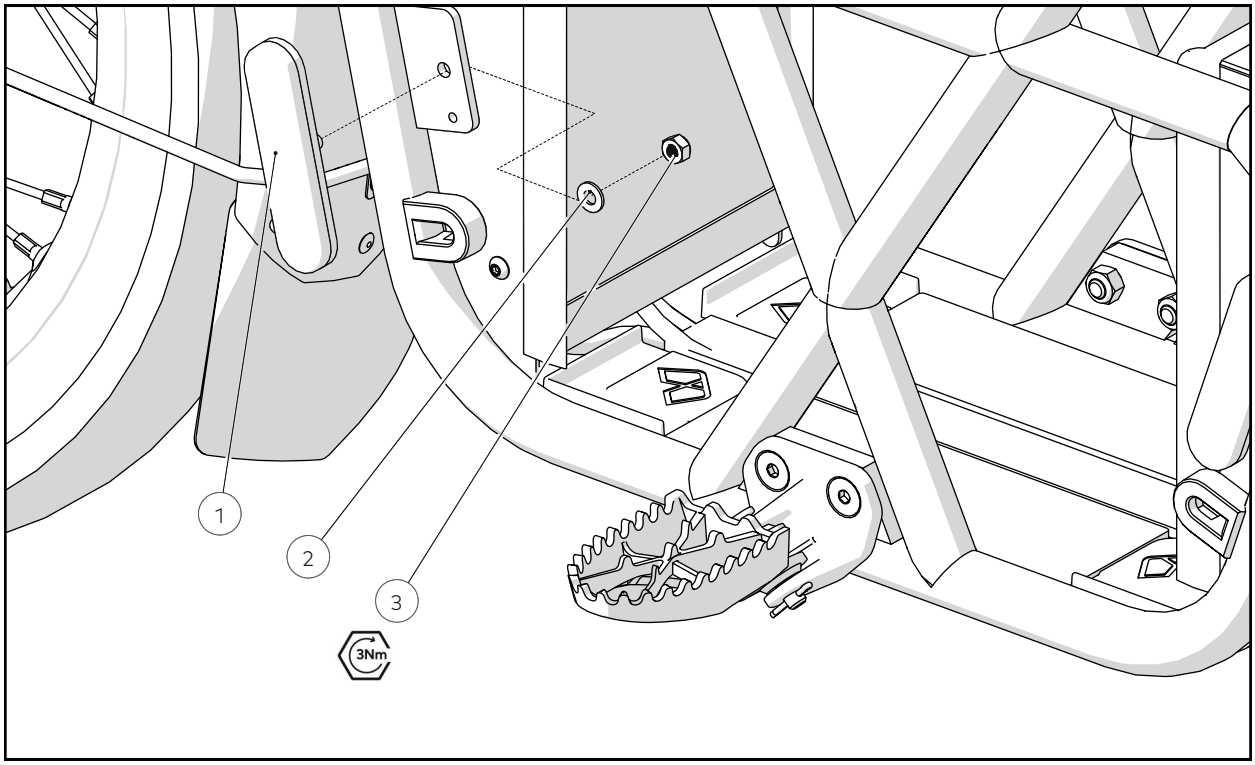
REMOVE

1. Using a 5mm Allen Key and 13mm Spanner, remove the 2 fasteners attaching the Footpeg to the Bike

REPLACE

1. Using a 5mm Allen Key Socket, Loctite 243, Torque Wrench and 13mm Spanner tighten the 2 fasteners attaching the Footpeg to the Bike

REFLECTORS



NUMBERED ITEMS

1. Reflector
2. Washer
3. Nut

TOOLS/CONSUMABLES REQUIRED

- 10mm Spanner

PRE-REQUISITES

Battery Removal - Page 124

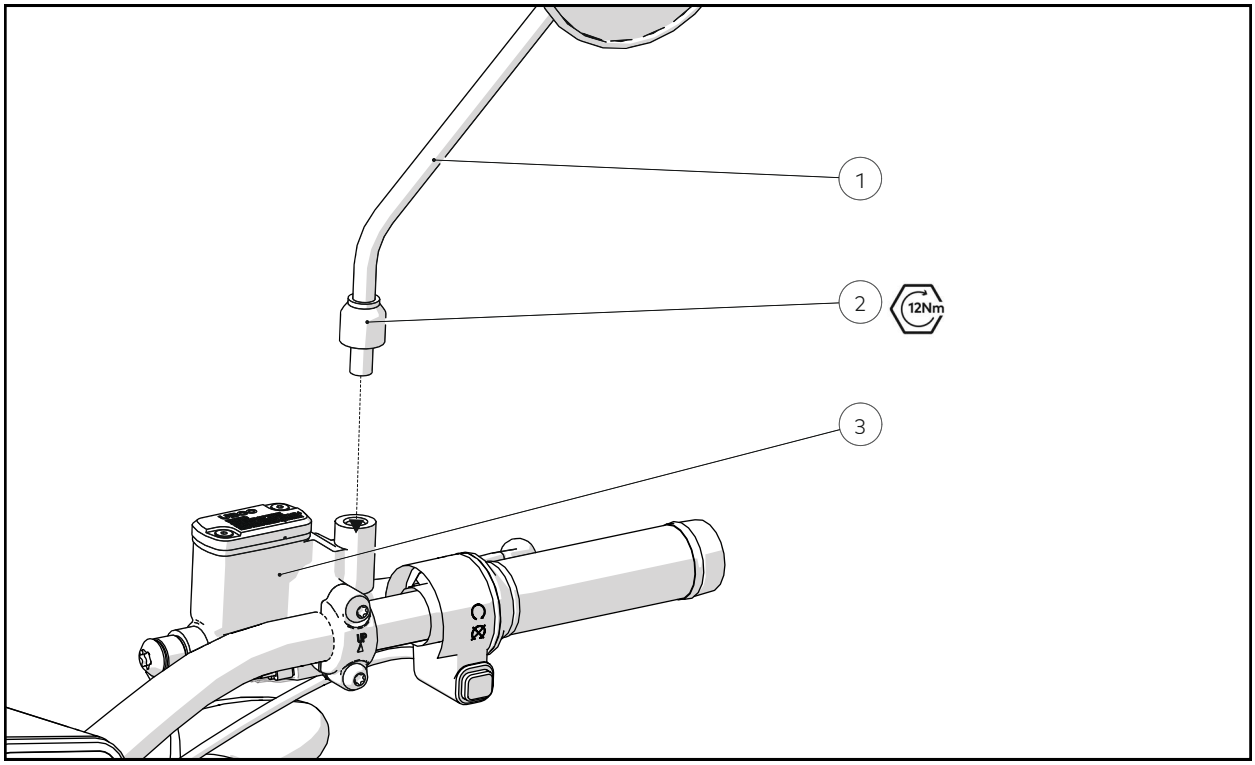
REMOVE

1. If installed, remove the Battery from the Bike using the method outlined on Page 124
2. Using a 10mm Spanner, remove the nuts from the Reflectors.

REPLACE

1. Using a 10mm Spanner, tighten the nuts on the Reflectors ensuring the locating pin of the Reflector matches the Mount Panel

SYS 2 - MIRRORS



NUMBERED ITEMS

1. Rear View Mirror Assembly
2. Rear View Mirror Boot & Nut
3. Master Cylinder Assembly

TOOLS/CONSUMABLES REQUIRED

- 14mm Spanner

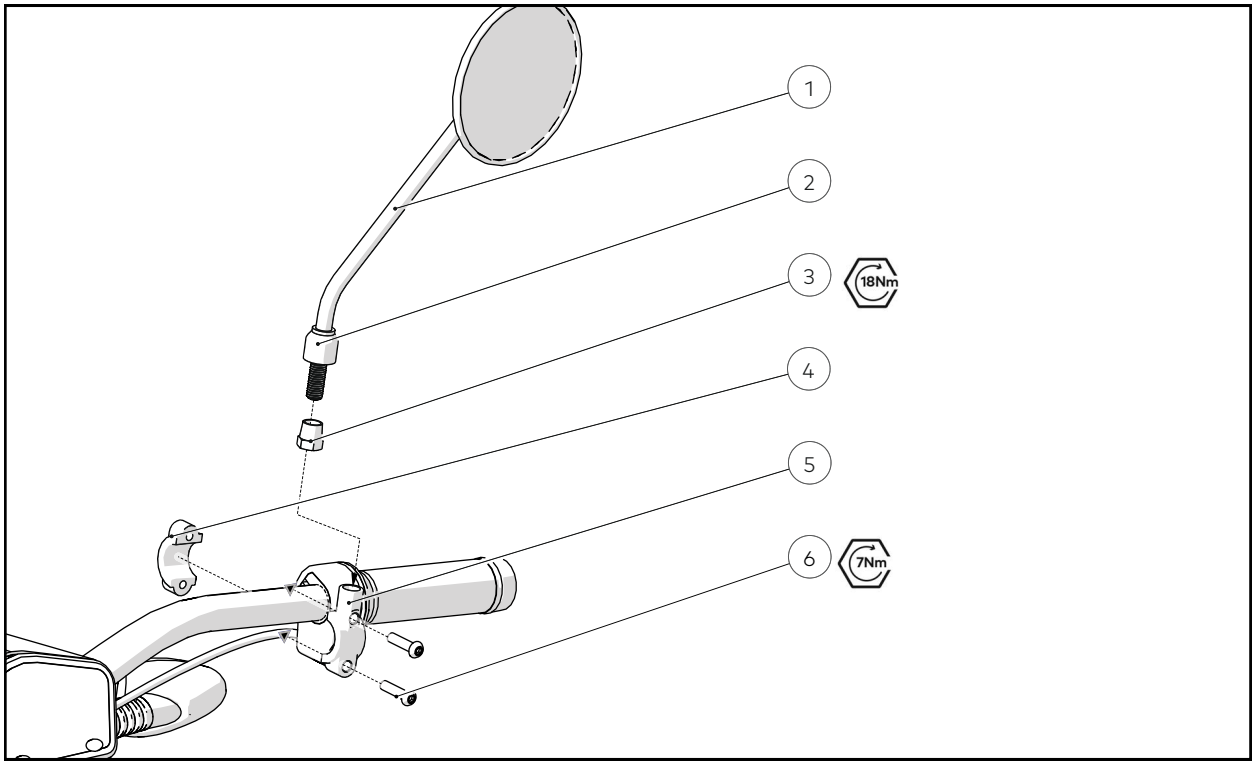
REMOVE

1. Using a 14mm Spanner, release the Rear View Mirror Nut and remove the Mirror

REPLACE

1. Thread the Mirror Assembly into the correct position for the rider
2. Using a 14mm Spanner, tighten the Rear View Mirror Nut

SR - MIRRORS



NUMBERED ITEMS

1. Rear View Mirror
2. Rear View Mirror Boot
3. Rear View Mirror Nut
4. Mirror Clamp A
5. Mirror Clamp B
6. Fastener

TOOLS/CONSUMABLES REQUIRED

- 4mm Allen Key
- 4mm Allen Key Socket
- 14mm Spanner
- Torque Wrench

REMOVE

1. Using a 14mm Spanner, release the Rear View Mirror Fastening Nut and remove the Mirror
2. Using a 4mm Allen Key, release and remove the 2 fasteners attaching the Mirror Clamp to the Handlebar

REPLACE

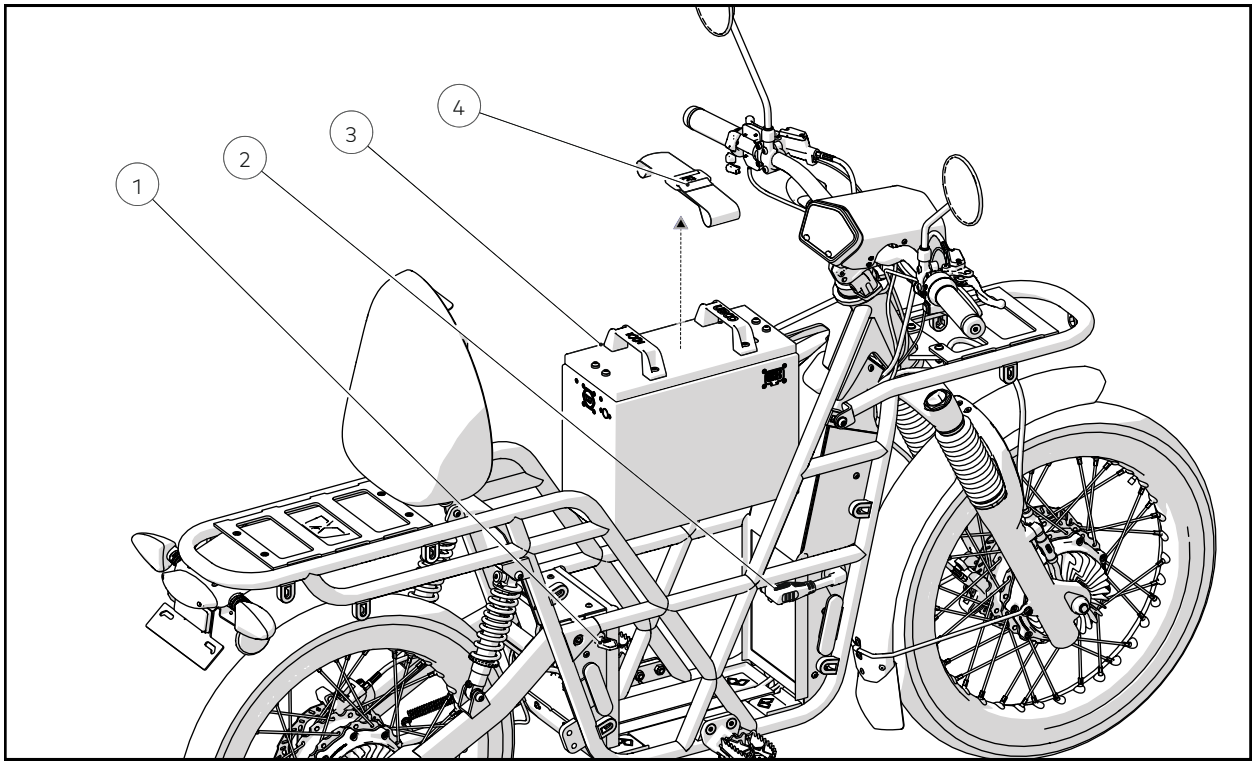
1. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners
2. Thread the Mirror Arm into the correct position for the rider
3. Using a 14mm Spanner, tighten the Rear View Mirror Fastening Nut

UBCO

Electronics and Controls

TECHNICAL SERVICE MANUAL

KXH BATTERY



NUMBERED ITEMS

1. Battery Lock
2. Battery Plug
3. Battery
4. Battery Strap

TOOLS/CONSUMABLES REQUIRED

- Di-Electric Grease

REMOVE

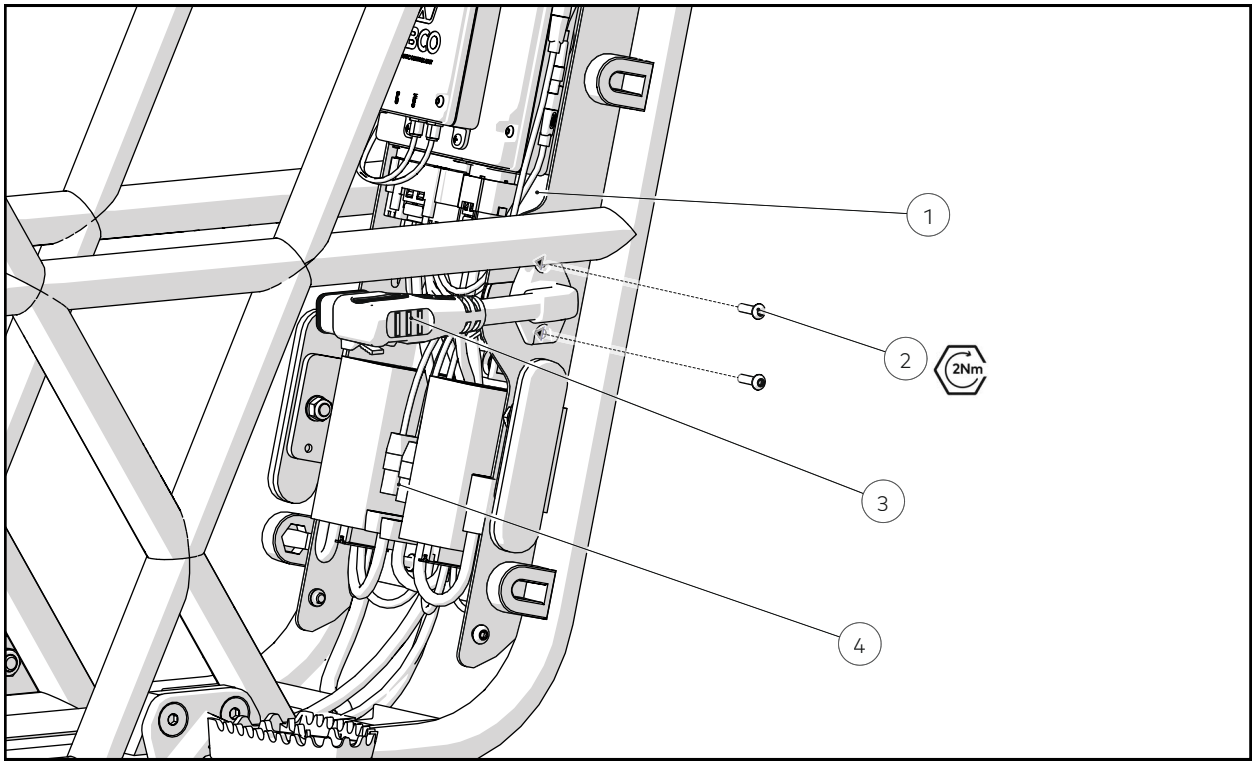
1. If charging, unplug the Charger
2. Ensure the Charge Port Cover is securely installed in the Charge Port
3. If the Battery Plug is plugged in to the Battery, unplug the Battery
4. If the Bike has a Battery Lock unlock the Battery
5. Remove the Battery Retention Strap

REPLACE

1. Apply Di-Electric Grease to Battery Plug Seal
2. Ensure there is nothing in the chassis space where the Battery will enter
3. Ensure the Charge Port Cover is securely installed in the Charge Port

4. Install and secure the Battery by applying tension using the Battery Retention Strap
5. Connect the Battery Plug into the Battery Plug Socket

BATTERY PLUG HARNESS



NUMBERED ITEMS

1. VMS Connector
2. Fastener
3. Battery Plug Harness Assembly
4. Motor Controller Connector

TOOLS/CONSUMABLES REQUIRED

- T20 Torx Key
- T20 Torx Socket
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover - Page 103

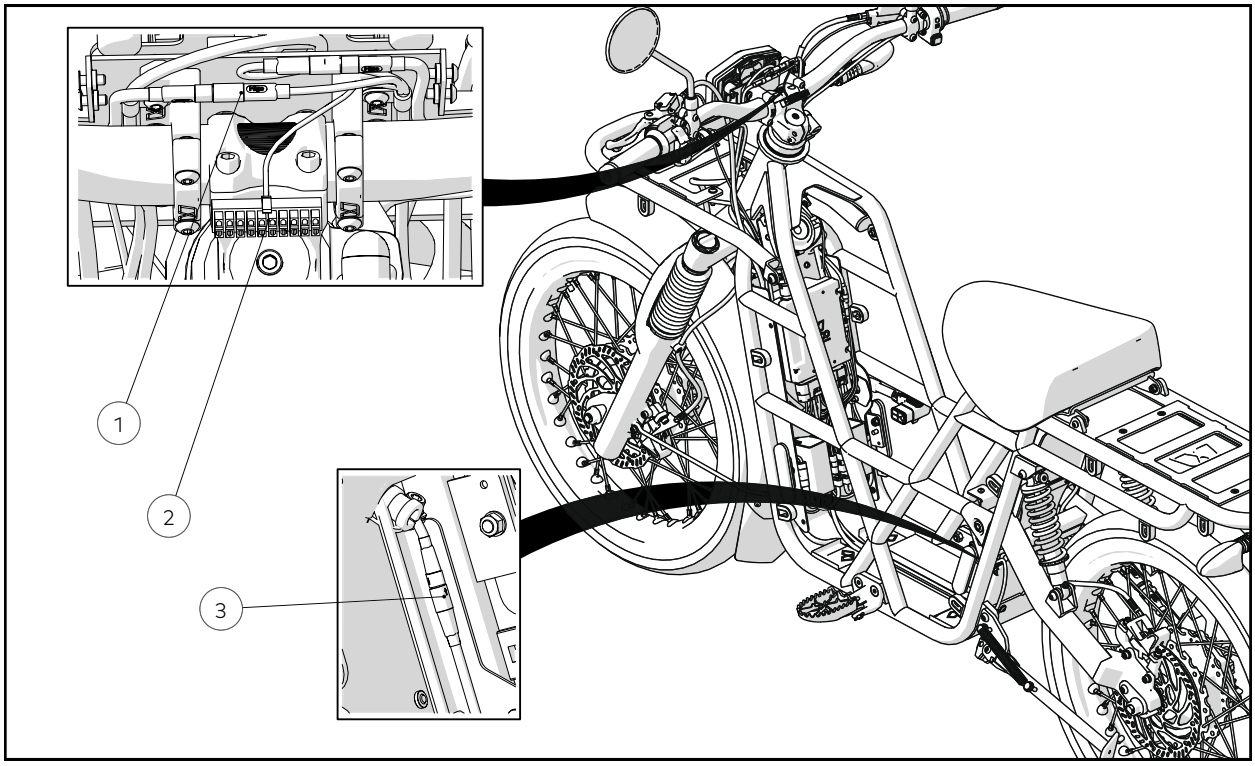
REMOVE

1. Disconnect the VMS and Motor Controllers from the Battery Plug Harness
2. Using a T20 Torx Key, remove the 2 fasteners attaching the Battery Plug Harness to the Front Console Rear Panel

REPLACE

1. Using a T20 Torx Socket and Torque Wrench, tighten the 2 fasteners
2. Connect the VMS and Motor Controllers to the Battery Plug Harness

ON ROAD HARNESS



NUMBERED ITEMS

1. Indicator Connector
2. Dash Connector
3. Kickstand Kill Switch Connector

TOOLS/CONSUMABLES REQUIRED

- Flush Cutters
- Cable Ties

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover - Page 103

Rear Console Cover - Page 107

Dash Removal - Page 137

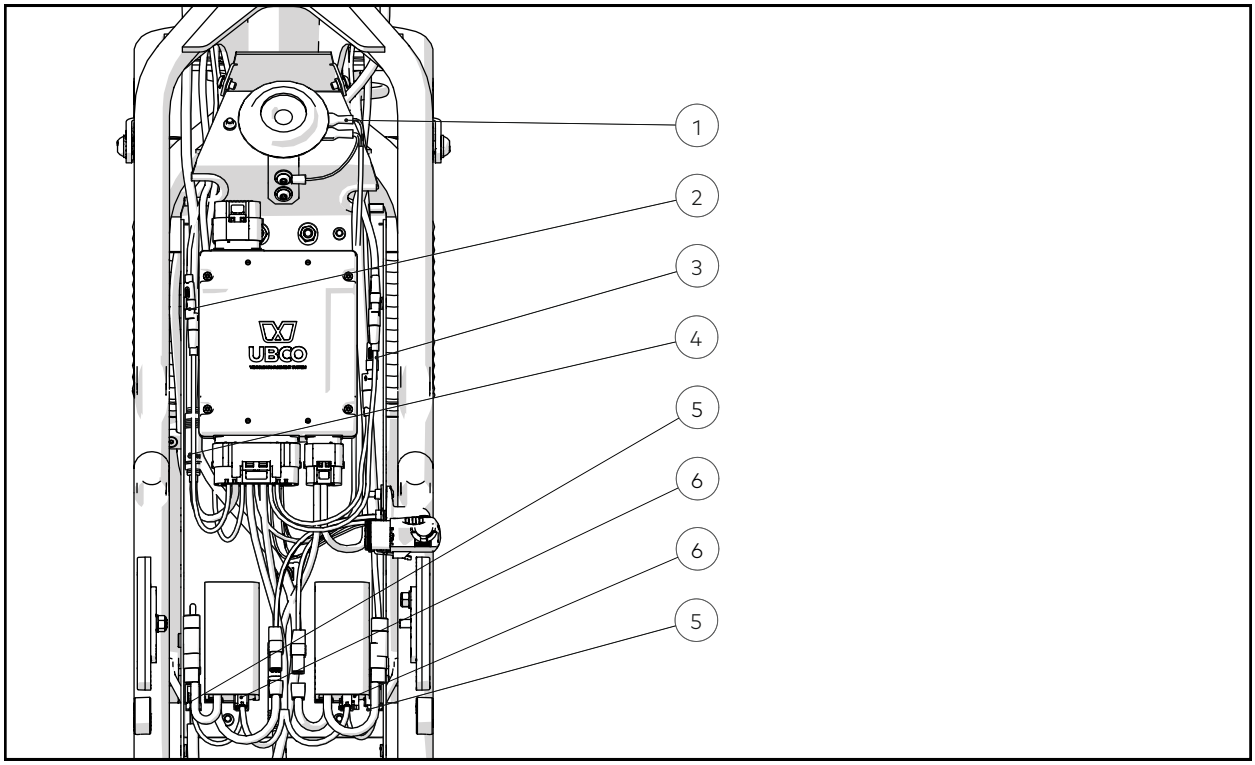
REMOVE

1. Using Flush Cutters remove any Cable Ties retaining the On Road Harness
2. Remove the Cable Duct from the Bike
3. Disconnect the Front Indicators from the On Road Harness
4. Disconnect the Kickstand Kill Switch from the On Road Harness
5. Disconnect the Dash from the On Road Harness

REPLACE

1. Connect the Dash to the On Road Harness
2. Connect the Kickstand Kill Switch to the On Road Harness
3. Connect the Front Indicators to the On Road Harness
4. Install the Cable Duct onto the Bike
5. Using Cable Ties retain the On Road Harness to the RH Cable Bundle

MAIN HARNESS



NUMBERED ITEMS

1. Horn Connector
2. Headlamp Connector
3. Throttle Connector
4. LH Bar Controller Connector
5. Motor Connector
6. Motor Controller Connector

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench
- Flush Cutters
- Cable Ties

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

Rear Console Cover Removal - Page 107

Dash Removal - Page 137

REMOVE

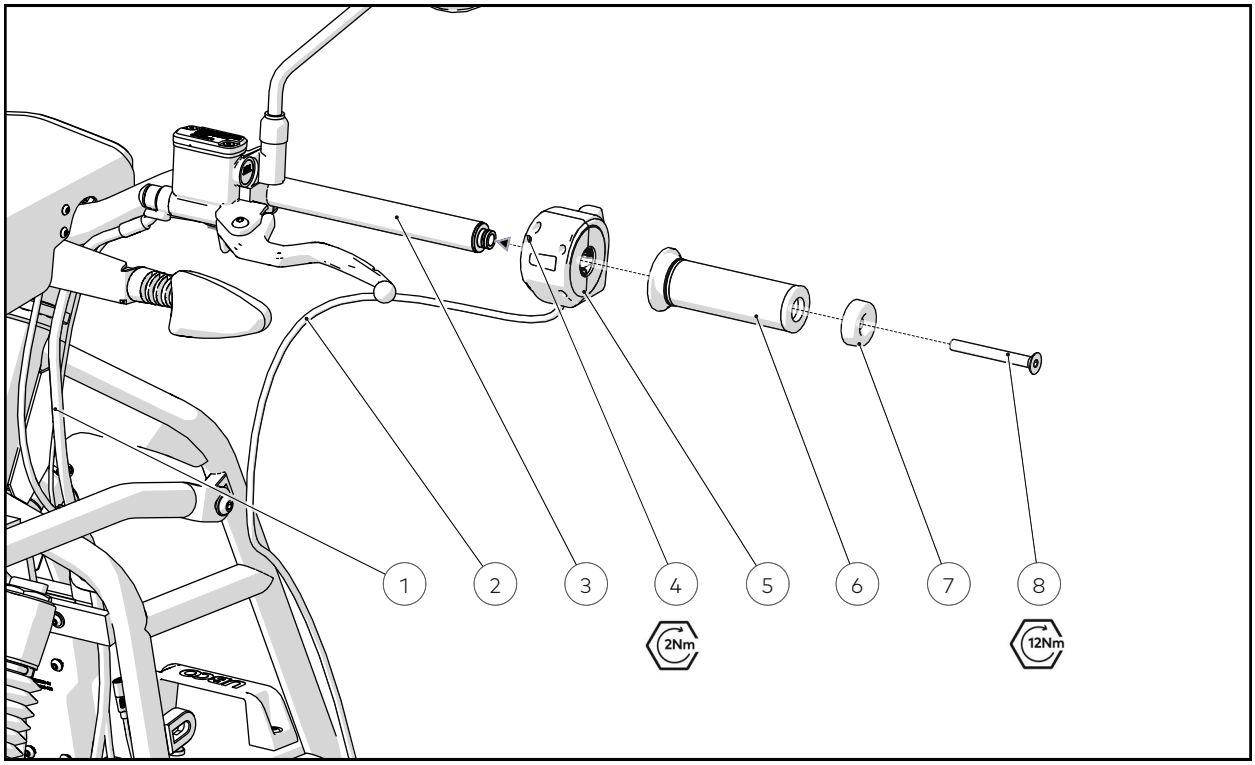
1. Using a T25 Torx Key, remove the fastener retaining the P Clip on the back side of the Headlamp

2. Disconnect the On Road Harness from the VMS, Dash, Front Indicators and Kickstand
3. Using Flush Cutters, remove any Cable Ties holding the On Road Harness to the RH Cable Bundle

REPLACE

1. Connect the On Road Harness to the VMS, Dash, Front Indicators and Kickstand
2. Using a T25 Torx Key, tighten the fastener retaining the P Clip on the back side of the Headlamp
3. Using Cable Ties, gather the bundle of cables released within the remove stage and Cable Ties together
4. Test to ensure the motion of the Handlebar is not restricted in any way by the Cable Bundle

LEFT HAND SWITCH BLOCK



NUMBERED ITEMS

1. Left Hand Cable Bundle
2. Left Hand Switch Block Cable
3. Handlebar
4. Switch Block Clamp Fastener
5. Left Hand Switch Block
6. Grip
7. Handlebar End Cap
8. Bar Clamp Fastener

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- 3mm Allen Key
- 3mm Allen Key Socket
- Torque Wrench
- Flush Cutters
- Cable Ties

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

REMOVE

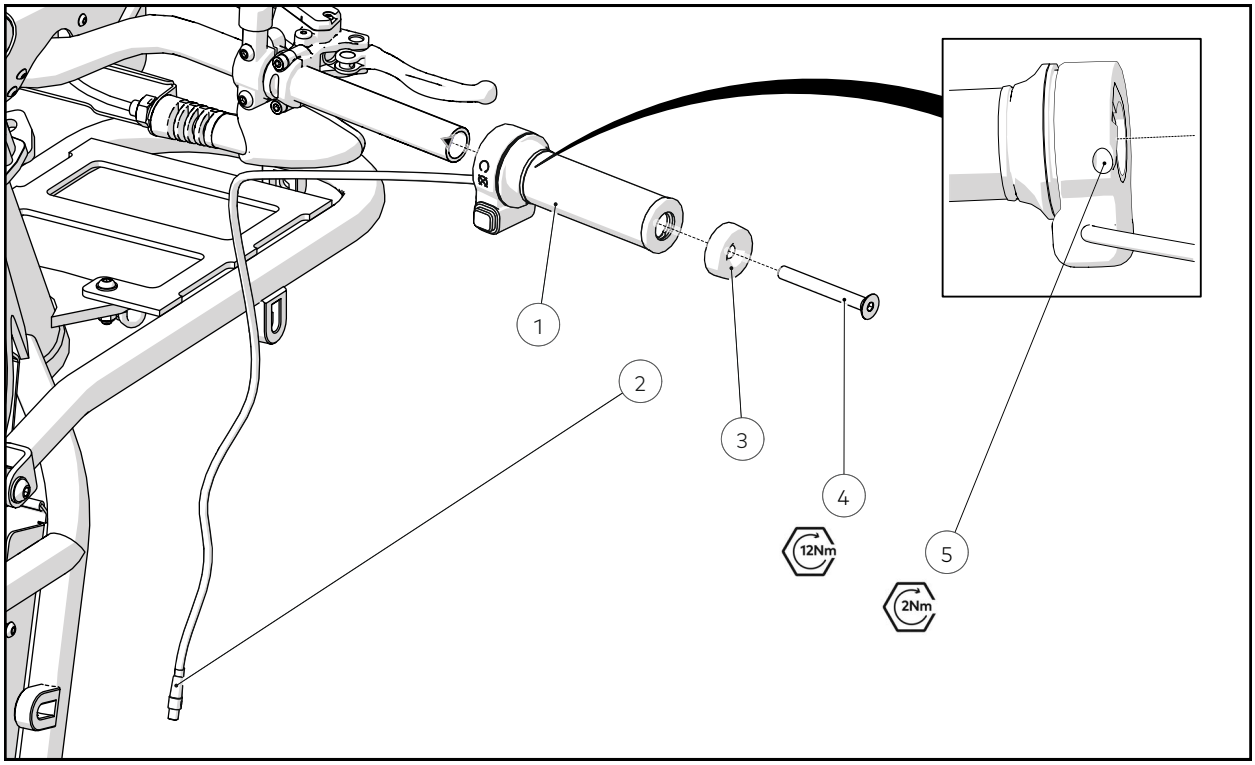
1. Disconnect the Left Hand Switch Block from the Main Harness

2. Using Flush Cutters, remove any Cable Ties retaining the Left Hand Switch Block Cable to the Left Hand Cable Bundle
3. Using a 5mm Allen Key, release and remove the Handlebar End Cap and Bar Clamp Fastener
4. If installed, remove the Grip from the Handlebar
5. Using a 3mm Allen Key, loosen the Switch Block Clamp Fastener and remove the Left Hand Switch Block

REPLACE

1. Connect the Left Hand Switch Block to the Main Harness
2. Place the Left Hand Switch Block and Grip onto the Handlebar
3. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Bar Clamp Fastener
4. Using a 3mm Allen Key Socket and Torque Wrench, tighten the Switch Block Clamp Fastener
5. Using Cable Ties, retain the Left Hand Switch Block Cable to the Left Hand Cable Bundle

E-THROTTLE/KILL SWITCH



NUMBERED ITEMS

1. E-Throttle / Kill Switch Body
2. Connector
3. Bar End Cap
4. Fastener
5. Throttle Grub Screw

TOOLS/CONSUMABLES REQUIRED

- 3mm Allen Key
- 3mm Allen Key Socket
- 5mm Allen Key
- 5mm Allen Key Socket
- Flush Cutters
- Cable Ties
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

REMOVE

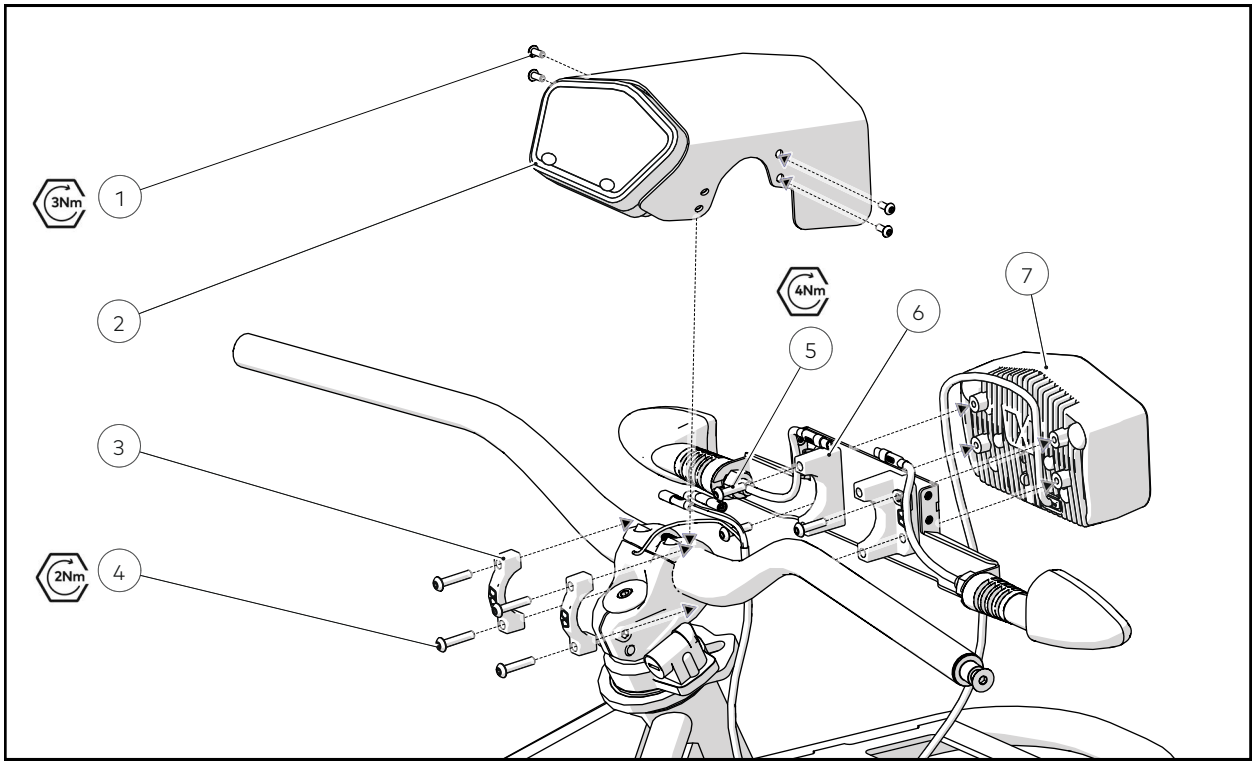
1. Disconnect the E-Throttle/Kill Switch from the Main Vehicle Harness
2. Using a 3mm Allen Key, release and loosen the Throttle Grub Screw

3. Using a 5mm Allen Key, release and remove the fastener attaching the Bar End Cap to the Handlebar
4. Using Flush Cutters, remove any Cable Ties holding the E-Throttle/Kill Switch Cable to the RH Cable Bundle

REPLACE

1. Using a 5mm Allen Key Socket and Torque Wrench, tighten the fastener attaching the Bar End Cap to the Handlebar
2. Using a 3mm Allen Key Socket and Torque Wrench, tighten the E-Throttle/Kill Switch Grub Screw
3. Test to make sure the E-Throttle can turn freely both when being applied and released
4. Connect the E-Throttle/Kill Switch connector to the Main Vehicle Harness
5. Using Cable Ties, retain the RH Cable Bundle released within the remove sta-gen
6. Test to ensure the motion of the Handlebar is not restricted in any way by the Cable Bundle

HEADLAMP



NUMBERED ITEMS

1. Dash Cover Fastener
2. Dash Cover Assembly
3. Headlamp Assembly Clamp
4. Headlamp Assembly Fastener
5. Headlamp Fastener
6. Headlamp Assembly
7. Headlamp

TOOLS/CONSUMABLES REQUIRED

- T20 Torx Key
- T20 Torx Key Socket
- 4mm Allen Key
- 4mm Allen Key Socket
- Torque Wrench
- Flush Cutters
- Cable Ties

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

REMOVE

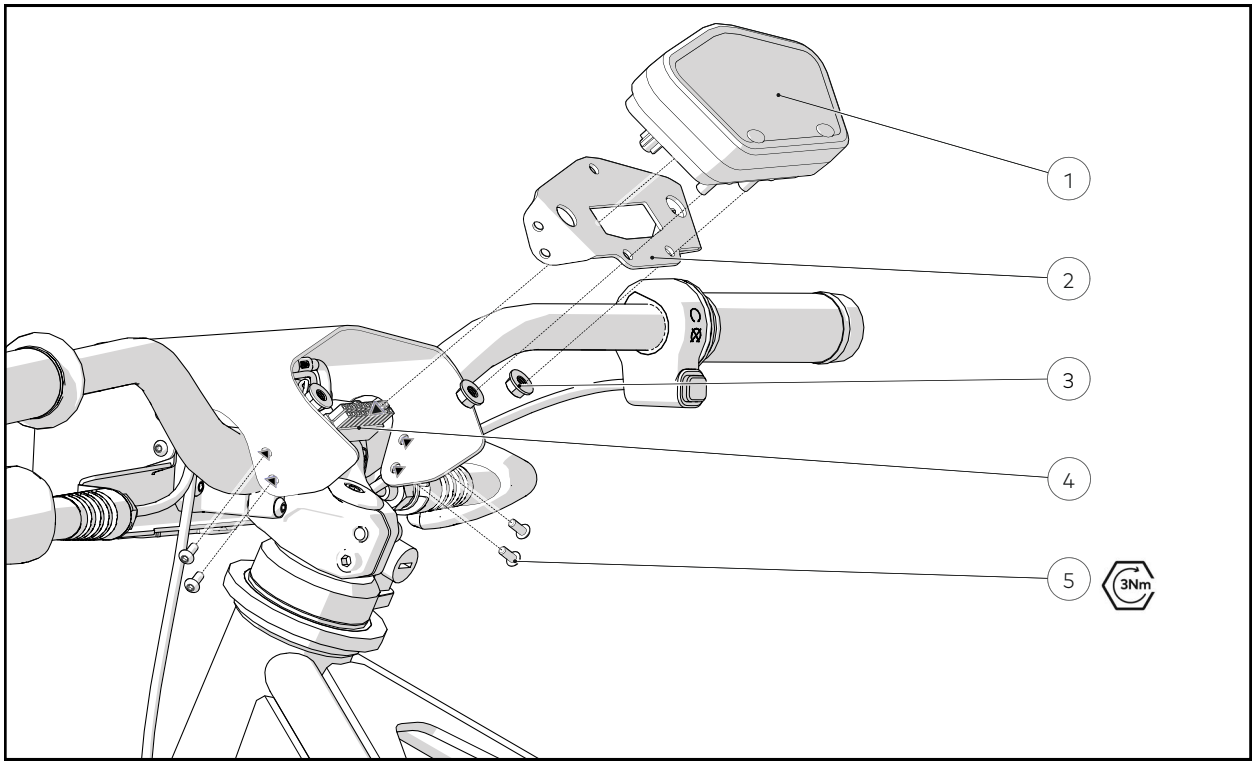
1. Using Flush Cutters, remove any Cable Ties retaining the Headlamp Cable to the Left Hand Cable Bundle
2. Disconnect the Headlamp from the Main Harness

3. Using a T20 Torx Key, remove the 4 fasteners attaching the Dash Cover to the Bike
4. Using a 4mm Allen Key, remove the 4 fasteners attaching the Headlight Clamp to the Bike
5. Using a 4mm Allen Key, remove the 4 fasteners attaching the Headlight to the Headlight Clamp

REPLACE

1. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 4 fasteners attaching the Headlight to the Headlight Clamp ensuring the Headlight Cable is threaded through the Headlight Clamp P-Clip
2. Using a 4mm Allen Socket and Torque Wrench, tighten the 4 fasteners attaching the Headlight Clamp to the Bike
3. Connect the Headlamp to the Main Harness
4. Adjust the Headlamp Beam using the method outlined on Page 44
5. Using a T20 Torx Key Socket and Torque Wrench, tighten the 4 fasteners attaching the Dash Cover to the Bike
6. Using Cable Ties, retain the RH Cable Bundle released within the remove sta-gen
7. Test to ensure the motion of the Handlebar is not restricted in any way by the cable bundle.

DASH



NUMBERED ITEMS

1. Dash
2. Dash Mount Plate
3. Nut
4. Dash Connector
5. Fastener

TOOLS/CONSUMABLES REQUIRED

- T20 Torx Key
- T20 Torx Socket
- Torque Wrench
- 10mm Spanner

REMOVE

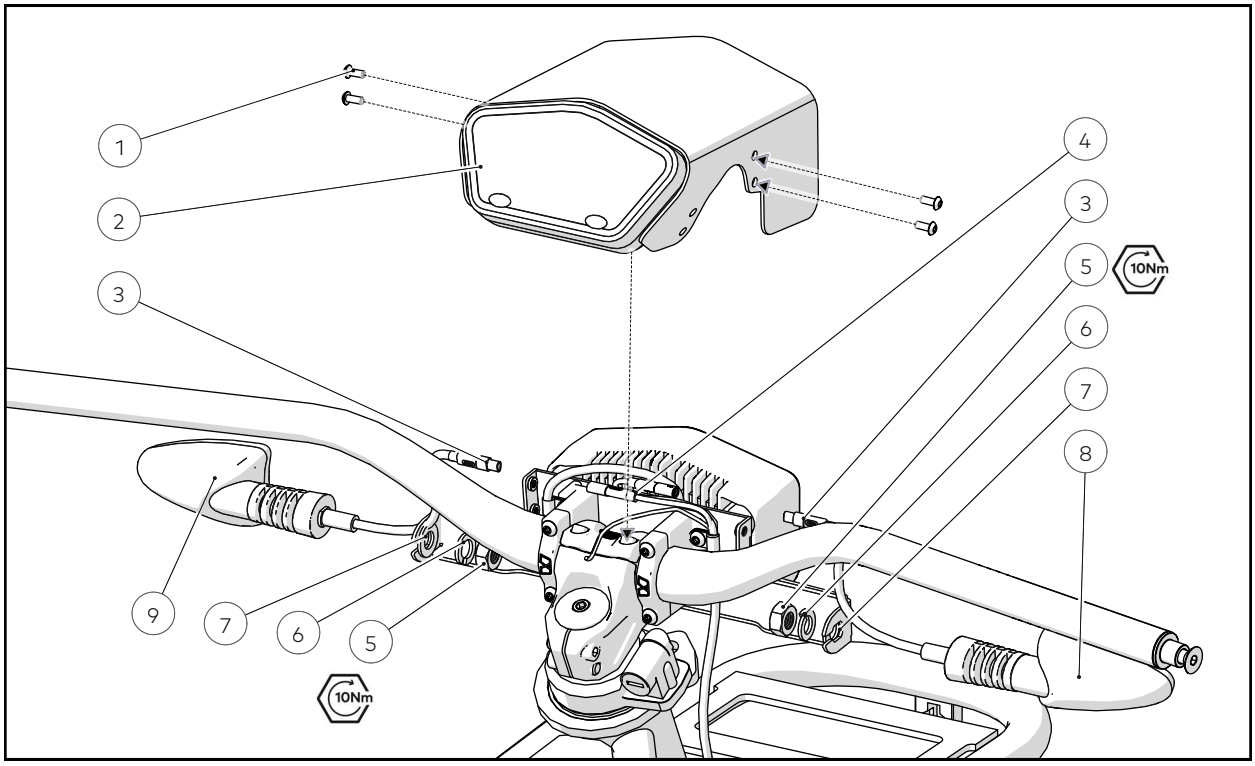
1. Using a T20 Torx Key, remove the 4 fasteners attaching the Dash Mount Plate to the Dash Cover
2. Using a T20 Torx Key, remove the 4 fasteners attaching the Dash Cover to the Bike
3. Disconnect the Dash from the On Road Harness
4. Using a 10mm Spanner, remove the 3 nuts attaching the Dash to the Dash Mount Plate

REPLACE

1. Connect the Dash to the On Road Harness

2. Using a 10mm Spanner, tighten the 3 nuts attaching the Dash to the Dash Mount Plate
3. Using a T20 Torx Socket and Torque Wrench, tighten the 4 fasteners attaching the Dash Mount Plate to the Dash Cover
4. Using a T20 Torx Socket and Torque Wrench, tighten the 4 fasteners attaching the Dash Cover to the Bike

FRONT INDICATORS



NUMBERED ITEMS

1. Fastener
2. Dash Cover Assembly
3. Indicator Plug
4. Indicator Connector
5. Nut
6. Spring Washer
7. Washer
8. Right Indicator
9. Left Indicator

TOOLS/CONSUMABLES REQUIRED

- T20 Torx Key
- T20 Torx Socket
- Torque Wrench
- 17mm Spanner

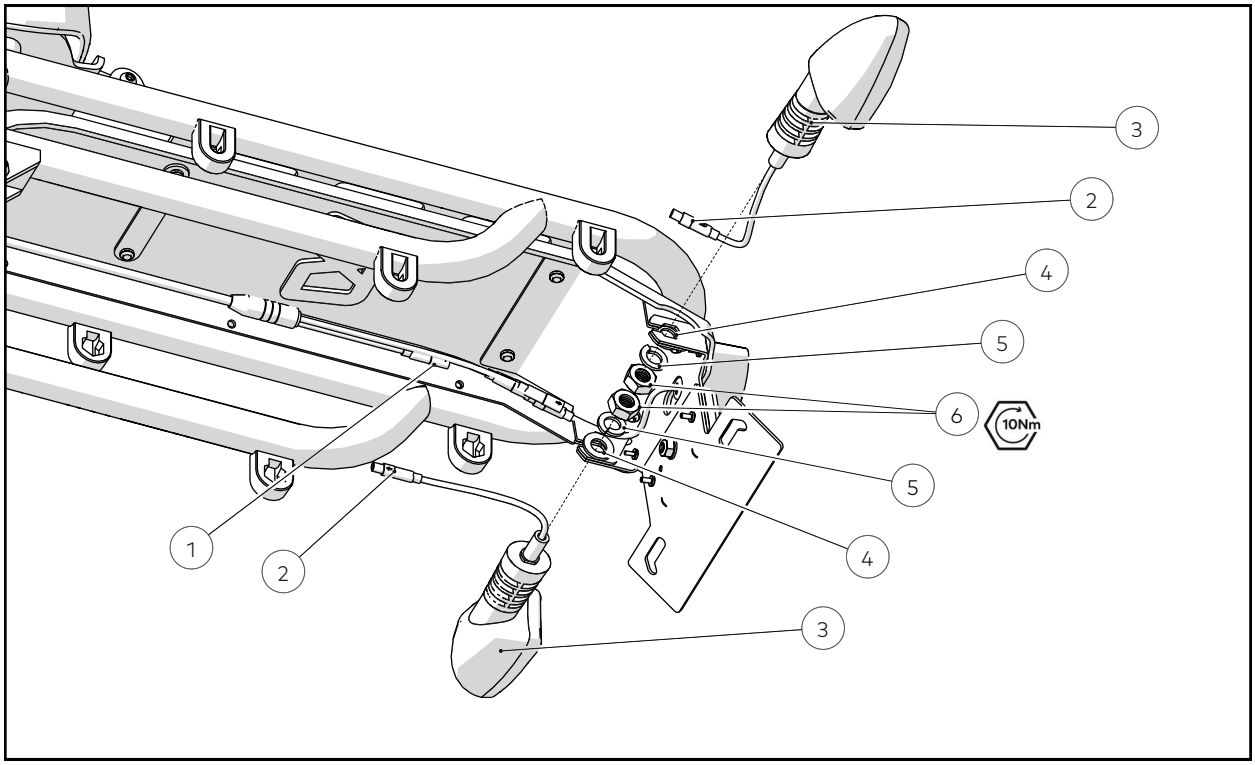
REMOVE

1. Using a T20 Torx Key, remove the 4 fasteners attaching the Dash Cover to the Bike
2. Disconnect Front Indicators from the On Road Harness
3. Using a 17mm Spanner, release and remove the 2 nuts holding the Indicators to the Bike

REPLACE

1. Connect the Indicators to the On Road Harness and test that the Indicators are on the correct side of the Bike
2. Using a 17mm Spanner, tighten the 2 nuts holding the Indicators.
3. Using a T20 Torx Socket and Torque Wrench, tighten the 4 fasteners attaching the Dash Cover to the Bike

REAR INDICATORS



NUMBERED ITEMS

1. Rear Light Harness Connectors
2. Indicator Plug
3. Indicator Assembly
4. Washer
5. Spring Washer
6. Nut

TOOLS/CONSUMABLES REQUIRED

- 17mm Spanner
- Flush Cutters
- Cable Ties

REMOVE

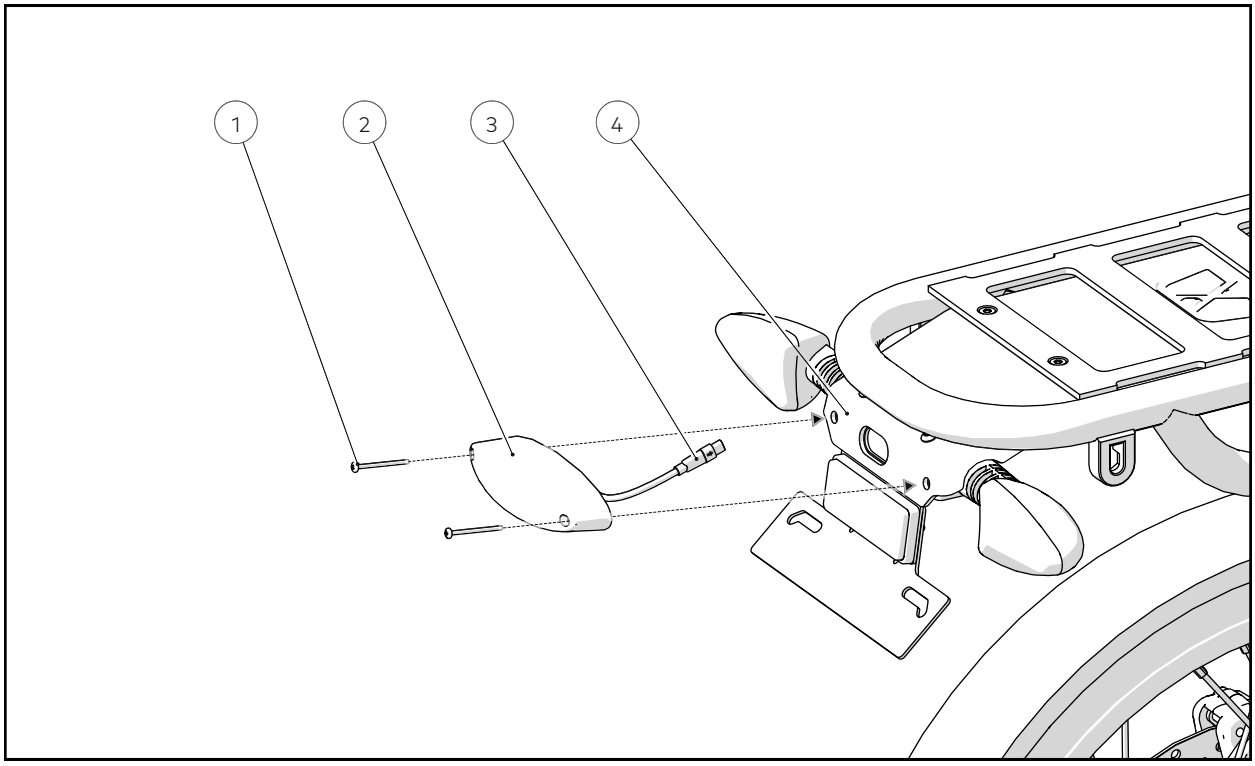
1. Disconnect Rear Indicators from the Rear Light Harness
2. Using Flush Cutters, remove any Cable Ties retaining the Rear Indicator Cables to the Bike
3. Using a 17mm Spanner, release and remove the 2 nuts holding the Indicators

REPLACE

1. Connect the Indicators to the Rear Light Harness, place in position and test Indicator position is correct
2. Using a 17mm Spanner, tighten the 2 nuts holding the Indicators

3. Using Cable Ties, retain the Rear Indicator Cables to the Bike

TAILLIGHT



NUMBERED ITEMS

1. Fastener
2. Taillight Assembly
3. Taillight Connector
4. Taillight Mount Plate

TOOLS/CONSUMABLES REQUIRED

- #1 Philips Screwdriver

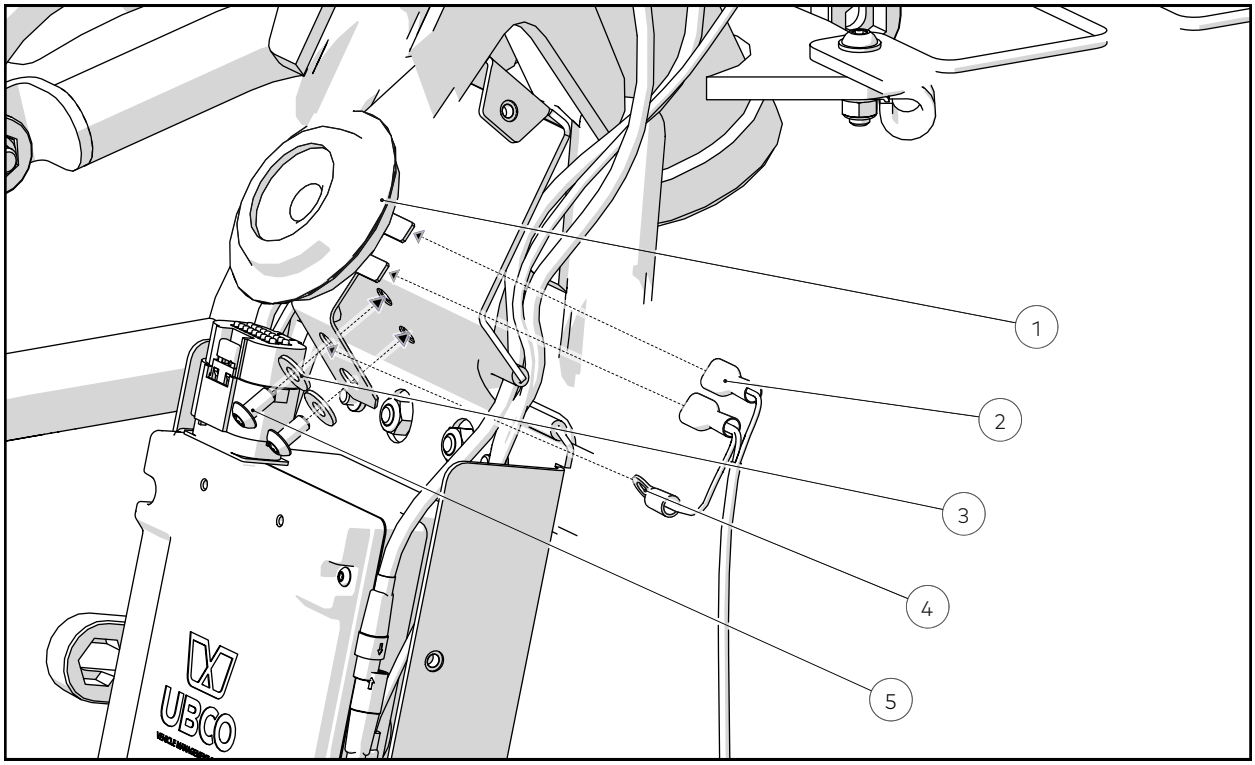
REMOVE

1. Disconnect the Taillight connector
2. Using a #1 Philips Screwdriver, remove the 2 fasteners from the Taillight

REPLACE

1. Connect the Taillight after threading the wire through the hole
2. Using a #1 Philips Screwdriver, tighten the 2 fasteners

HORN



NUMBERED ITEMS

1. Horn
2. Horn Connector
3. Washer
4. Horn Ground Connector
5. Fastener

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25mm Torx Socket
- Flush Cutters
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

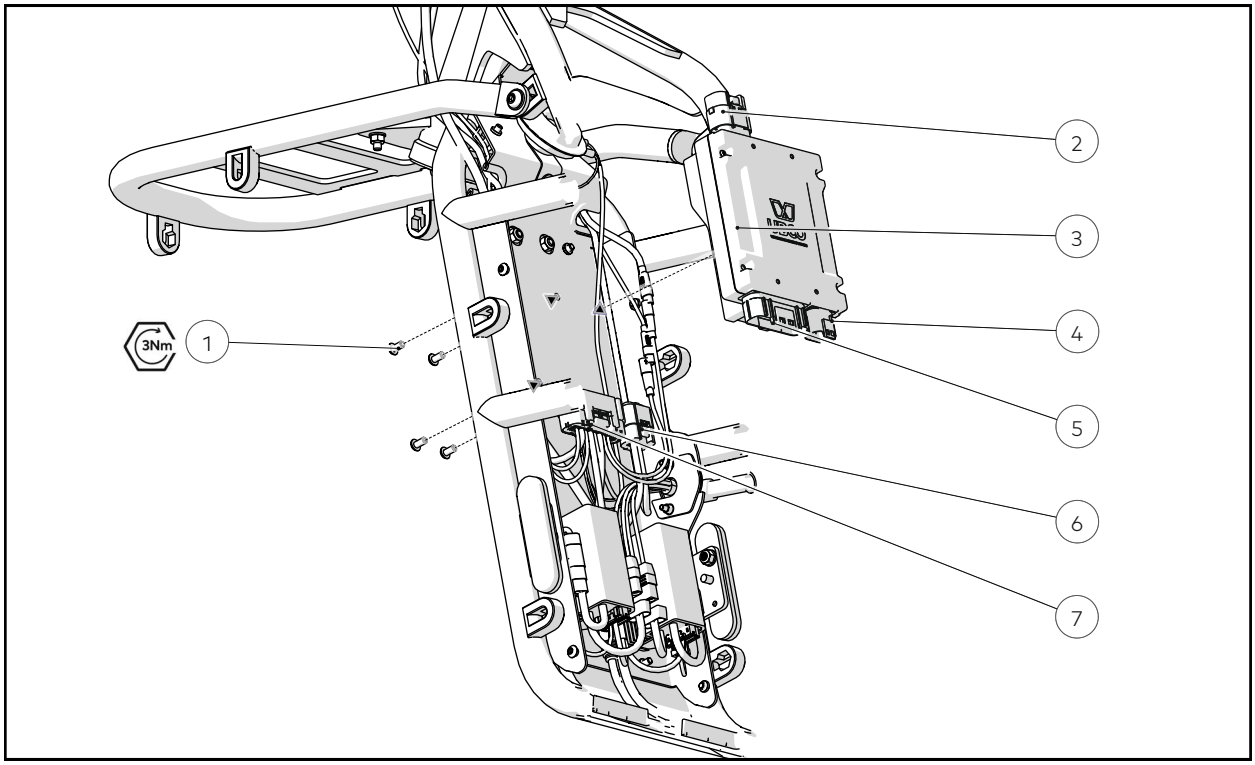
REMOVE

1. Disconnect the Horn from the Main Vehicle Harness by unplugging the two spade connectors taking note of the position of each one
2. Using a T25 Torx Key, remove the 2 fasteners attaching the Horn to the Front Console Rear Panel

REPLACE

1. Using a T25 Torx Socket and Torque Wrench, tighten the 2 fasteners attaching the Horn to the Front Console Rear Panel
2. Connect the Horn to the Main Vehicle Harness replicating the positions from the remove step

VMS



NUMBERED ITEMS

1. Fastener
2. TCU Port
3. VMS Assembly
4. On Road Harness Port
5. Main Harness Port
6. On Road Harness Connector
7. Main Harness Connector

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

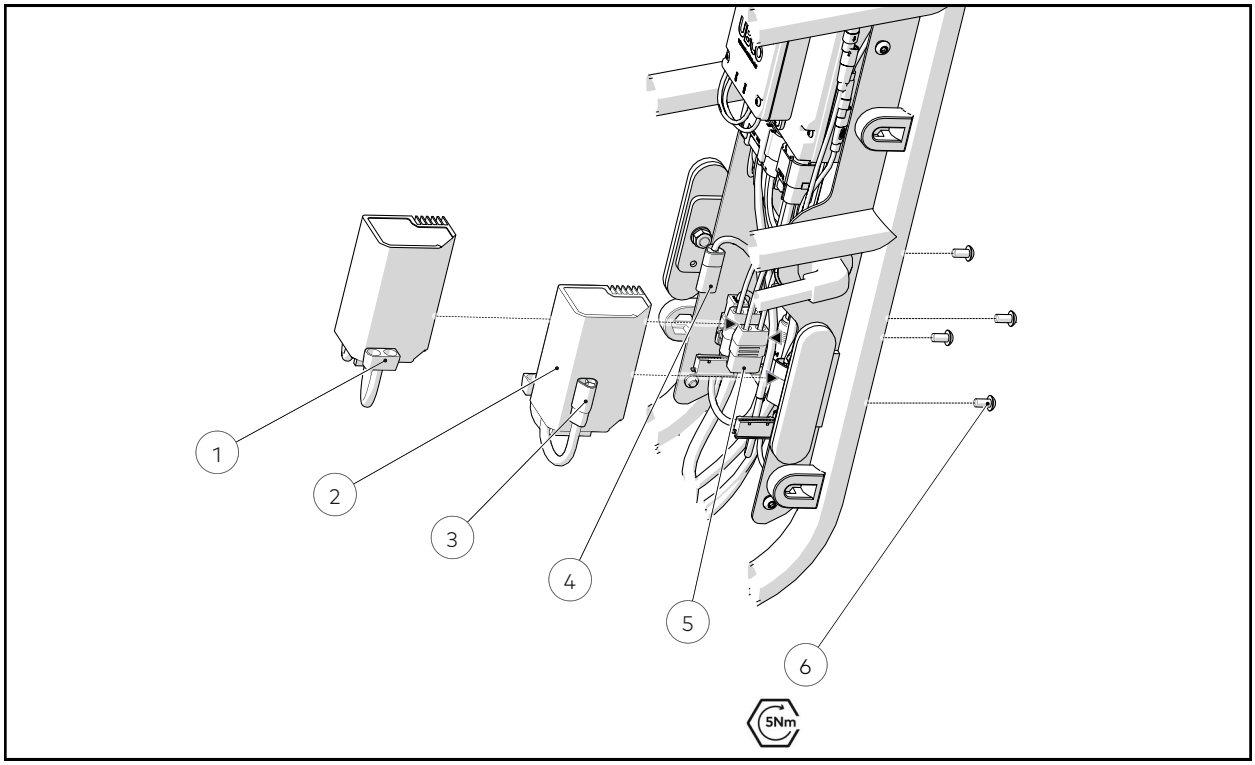
REMOVE

1. Disconnect the VMS from the On Road, Main & Battery Plug Harnesses and if installed, the TCU Harness
2. Using a T25 Torx Key, remove the 4 fasteners attaching the VMS to the Front Console Rear Panel

REPLACE

1. Using a T25 Torx Socket and Torque Wrench, tighten the 4 fasteners attaching the VMS to the Front Console Rear Panel
2. Connect the VMS to the On Road, Main & Battery Plug Harnesses and if installed, the TCU Harness
3. Using the UBCO App, confirm VMS is in correct mode for vehicle type, VIN registration is completed and VMS firmware is up to date

MOTOR CONTROLLER



NUMBERED ITEMS

1. Battery Connector
2. Motor Controller
3. Motor Connector
4. Motor Plug
5. Battery Plug
6. Fastener

TOOLS/CONSUMABLES REQUIRED

- T25 Torx Key
- T25 Torx Socket
- Torque Wrench

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

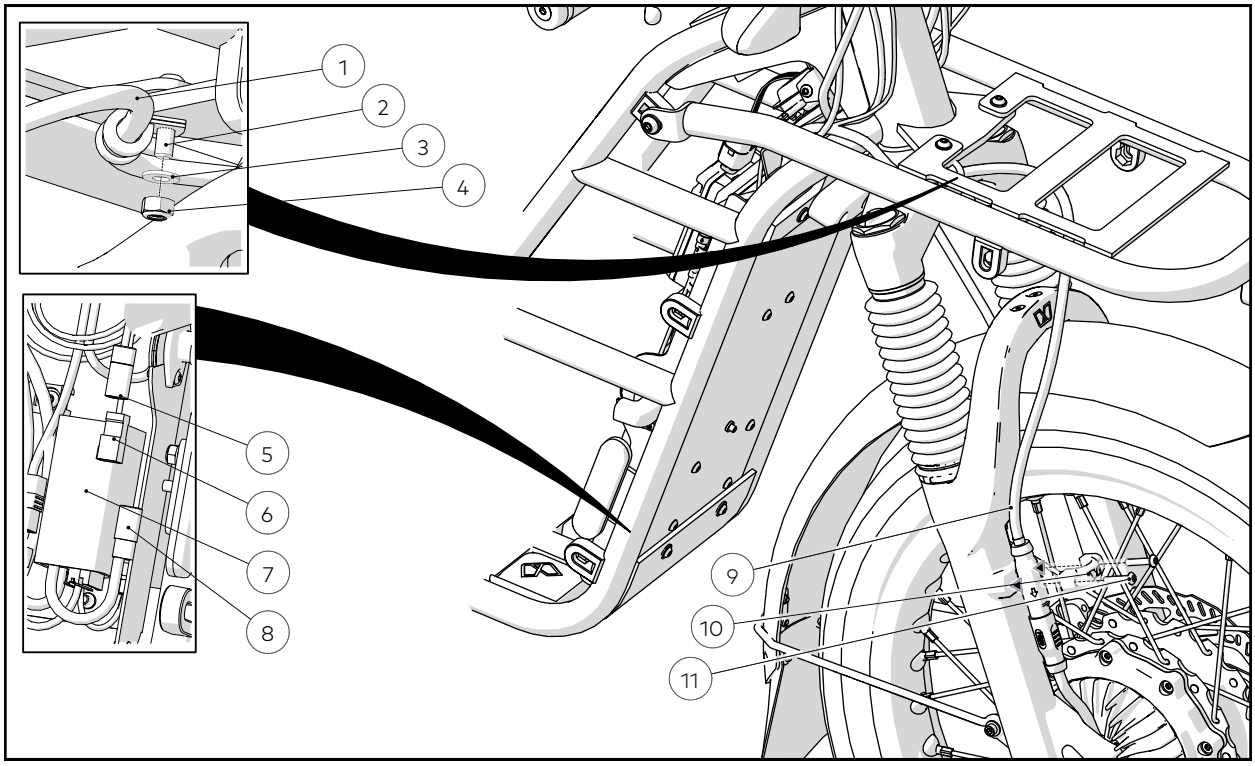
REMOVE

1. Disconnect the Motor Controller from the Motor Cable, Main Vehicle & Battery Plug Harnesses
2. Using a T25 Torx Key, remove the 2 fasteners attaching the Motor Controller to the Front Console Rear Panel

REPLACE

1. Using a T25 Torx Socket and Torque Wrench, tighten the 2 fasteners attaching the Motor Controller to the Front Console Rear Panel
2. Connect the Motor Controller to the Motor Cable, Main Vehicle & Battery Plug Harnesses
3. Using the UBCO App, update the motor configuration to the latest firmware version

FRONT MOTOR CABLE



NUMBERED ITEMS

1. Motor Cable
2. Fastener
3. Washer
4. Nyloc Nut
5. Motor Power Connector
6. Motor Data Connector
7. Motor Controller
8. Motor Power Plug
9. Cable Clamp
10. Fastener

TOOLS/CONSUMABLES REQUIRED

- 4mm Allen Key
- 4mm Allen Key Socket
- 10mm Spanner
- T25 Torx Socket
- Torque Wrench
- Flush Cutters

PRE-REQUISITES

Battery Removal - Page 124

Front Console Cover Removal - Page 103

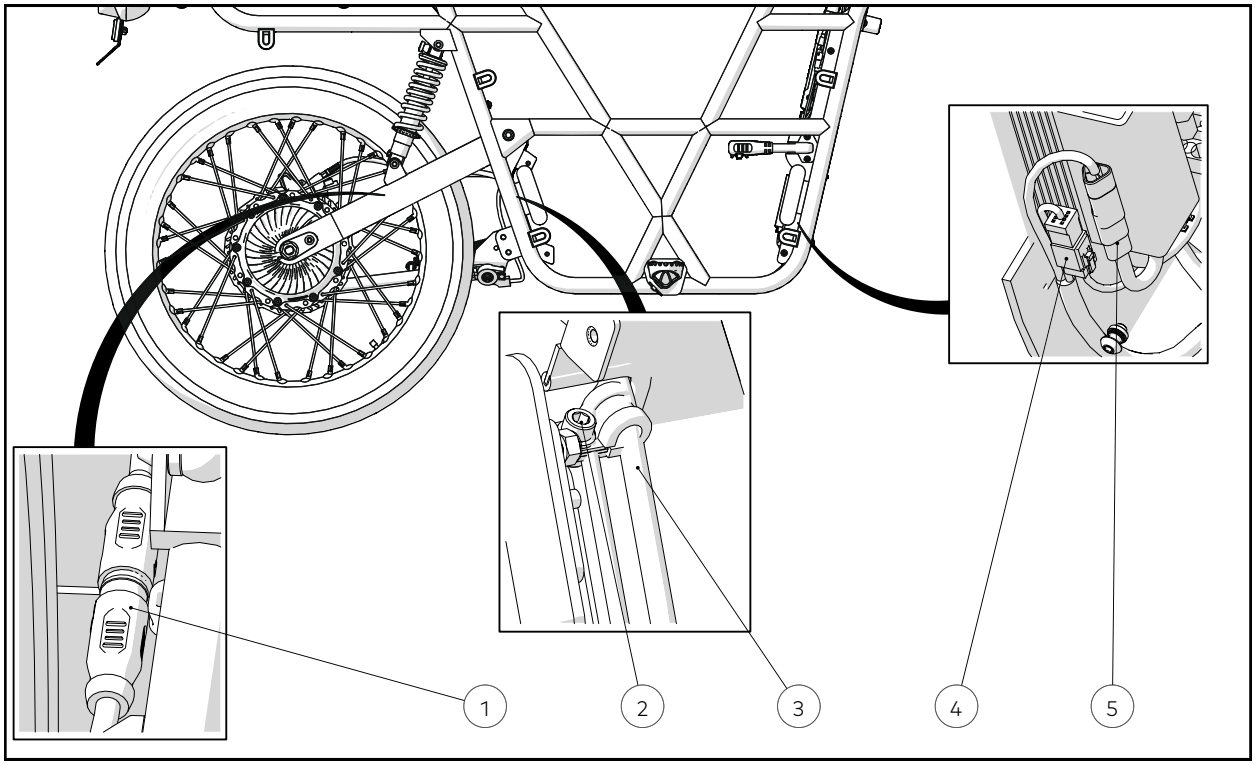
REMOVE

1. Using a 4mm Allen Key, loosen the 2 fasteners attaching the Cable Clamp to the Fork
2. Disconnect the Motor Cable from the Motor Controller and Front Motor
3. Using a 4mm Allen Key and 10mm Spanner, remove the fastener attaching the P Clip to the Front Carrier
4. Using Flush Cutters, remove any Cable Ties holding the Motor Cable to the RH Cable Bundle

REPLACE

1. Thread the Motor Cable into place through the Front Console Rear Cover
2. Using a 4mm Allen Key Socket and Torque Wrench, tighten the 2 fasteners attaching the Cable Clamp to the Fork
3. Using a 4mm Allen Key Socket, Torque Wrench and 10mm Spanner, tighten the fastener attaching the P Clip to the Front Carrier
4. Ensure the P Clip is angled so the motor cable points towards the front center of the Bike as shown in the picture above to avoid it from rubbing against the top of the Fork
5. Connect the Motor Cable to the Motor Controller and Front Motor
6. Gather the bundle of cables released within the remove stage and Cable Ties together
7. Test to ensure the motion of the Handlebar is not restricted in any way by the Right Hand Cable Bundle

REAR MOTOR CABLE



NUMBERED ITEMS

1. Motor Connector
2. P Clip Fastnener
3. Motor Cable Assembly
4. Motor Data Connector
5. Motor Power Connector

TOOLS/CONSUMABLES REQUIRED

- 5mm Allen Key
- 5mm Allen Key Socket
- Torque Wrench
- Cable Ties
- Flush Cutters

PRE-REQUISITES

Battery Removal - Page 124

Rear Console Cover Removal - Page 107

REMOVE

1. If installed, remove the Cable Duct Lid from the Bike
2. Using Flush Cutters, remove the Cable Ties retaining the Motor Cable to the Swing Arm
3. Using a 5mm Allen Key, remove the fastener attaching the Motor Cable Retention P Clip to the Rear Console Rear Panel

4. Disconnect the Motor Cable from the Motor Controller and Rear Motor and remove from the Bike

REPLACE

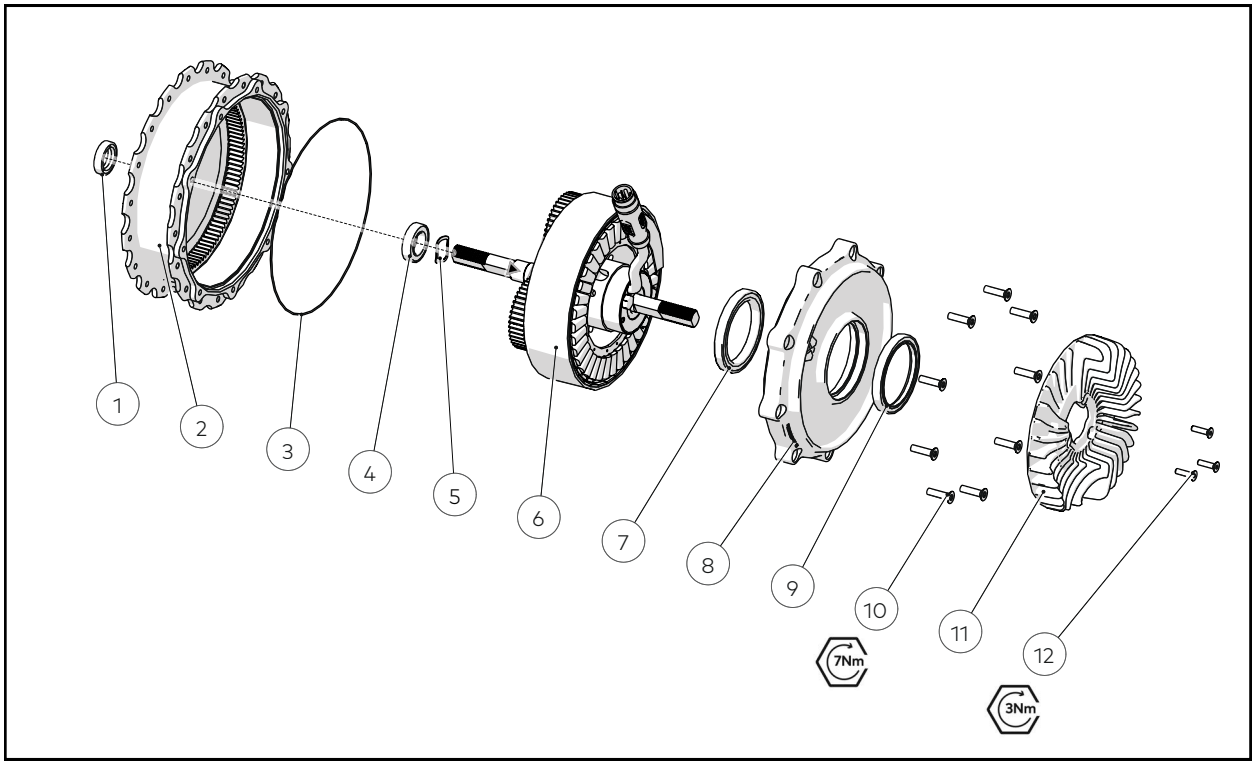
1. Thread the Motor Cable into place
2. Using a 5mm Allen Key, lightly tighten the Motor Cable Retention P Clip
3. Using a Cable Ties, lightly attach the Motor Cable to the Swing Arm
4. Connect the Motor Cable to the Motor Controller and Rear Motor
5. Pull the slack in the cable through into the Rear Console from the Rear Motor and ensure that the Wheel can turn freely
6. Using a 5mm Allen Key Socket and Torque Wrench, tighten the Motor Cable Retention P Clip fastener
7. Tighten the cable retention Cable Ties
8. Install the Cable Duct into the bottom tray

UBCO

Powertrain

TECHNICAL SERVICE MANUAL

MOTOR CORE



NUMBERED ITEMS

1. Small Motor Seal
2. Motor Case
3. Motor O-Ring
4. Small Motor Bearing
5. Wave Washer
6. Motor Core
7. Large Motor Bearing
8. Motor Side Cover
9. Large Motor Seal
10. Motor Fasteners
11. Heatsink
12. Heatsink Fasteners

TOOLS/CONSUMABLES REQUIRED

- Heat Gun
- T25/T20 Torx Key (Model Dependent)
- T25/T20 Torx Socket (Model Dependent)
- Torque Wrench
- 10mm Spanner
- Loctite 243
- ROCOL FOODLUBE Premier 1, EP1
- Red Rubber Grease
- Motor O-Ring

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

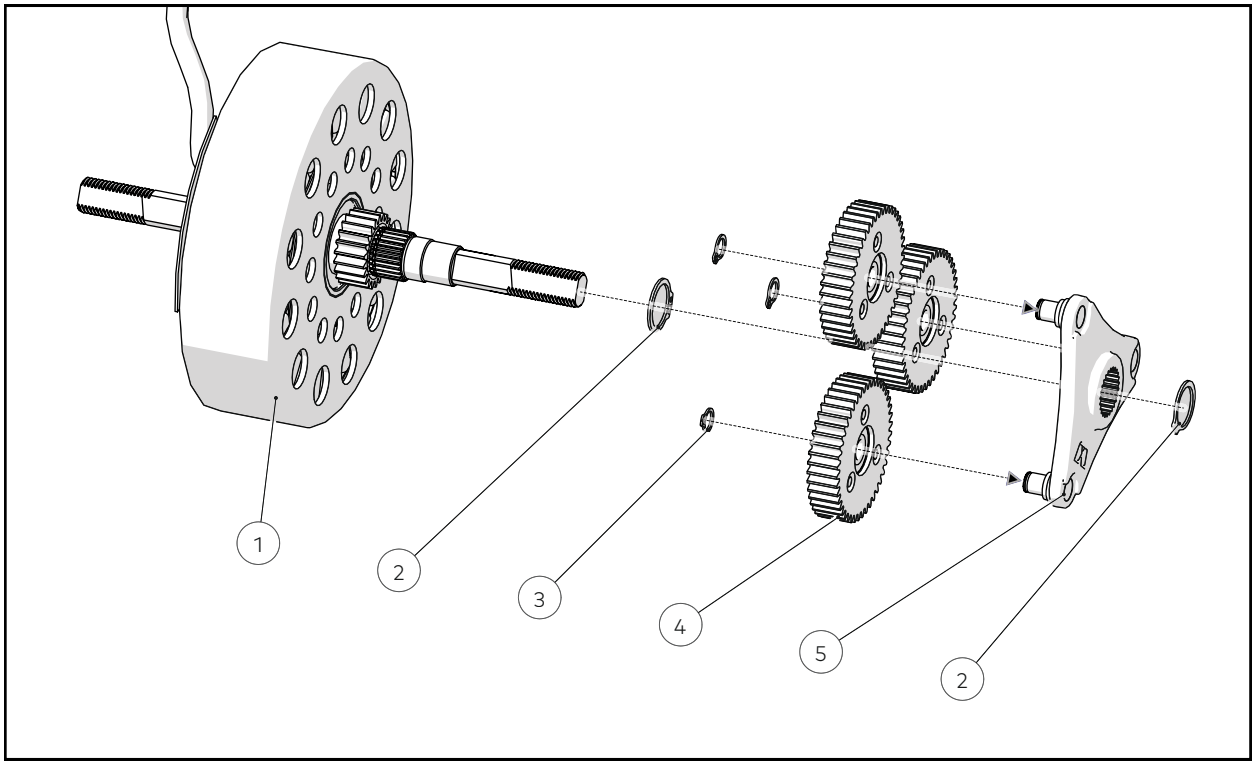
REMOVE

1. Using a Heat Gun and T20 Torx Key, remove the 3 Heatsink fasteners and Heatsink
2. Using a Heat Gun and T25/T20 Torx Key, release and remove the 9 Motor fasteners and Motor Side Cover
3. Release and remove the Motor Core from the Motor Case, you may need to gently tap the brake side of the Motor Axle on a table to release
4. Discard the Motor O-Ring, Small Motor Seal and Large Motor Seal

REPLACE

1. Remove all old lubricant and thoroughly clean the Motor Case
2. Apply ROCOL FOODLUBE Premier 1, EP1 Grease to the Annulus Gear
3. Ensure the Wave Washer is fitted to the Motor Axle
4. Using a 10mm Spanner, rotate the Motor Axle to allow it to fully seat in the Annulus Gear
5. Apply Red Rubber Grease before installing new Motor O-Ring, Small Motor Seal and Large Motor Seal
6. Applying even pressure, assemble the Motor Side Cover onto the Motor Housing
7. Using Loctite 243, T25/T20 Torx Socket and Torque Wrench, tighten the 9 Motor Fasteners in a criss-cross tightening sequence to ensure even force is distributed
8. Using T20 Torx Socket and Torque Wrench, tighten the 3 Heatsink fasteners

PLANETARY GEAR SET



NUMBERED ITEMS

1. Motor Core
2. Circlip Motor Core Shaft
3. Circlip Planetary Gears
4. Planetary Gear
5. Planetary Gear Frame

TOOLS/CONSUMABLES REQUIRED

- External Circlip Pliers
- Circlip 16mm x 1mm
- Circlip 8mm x 0.8mm
- ROCOL FOODLUBE Premier 1, EP1
- 3 Jaw Bearing Puller

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

Motor Core Removal - Page 155

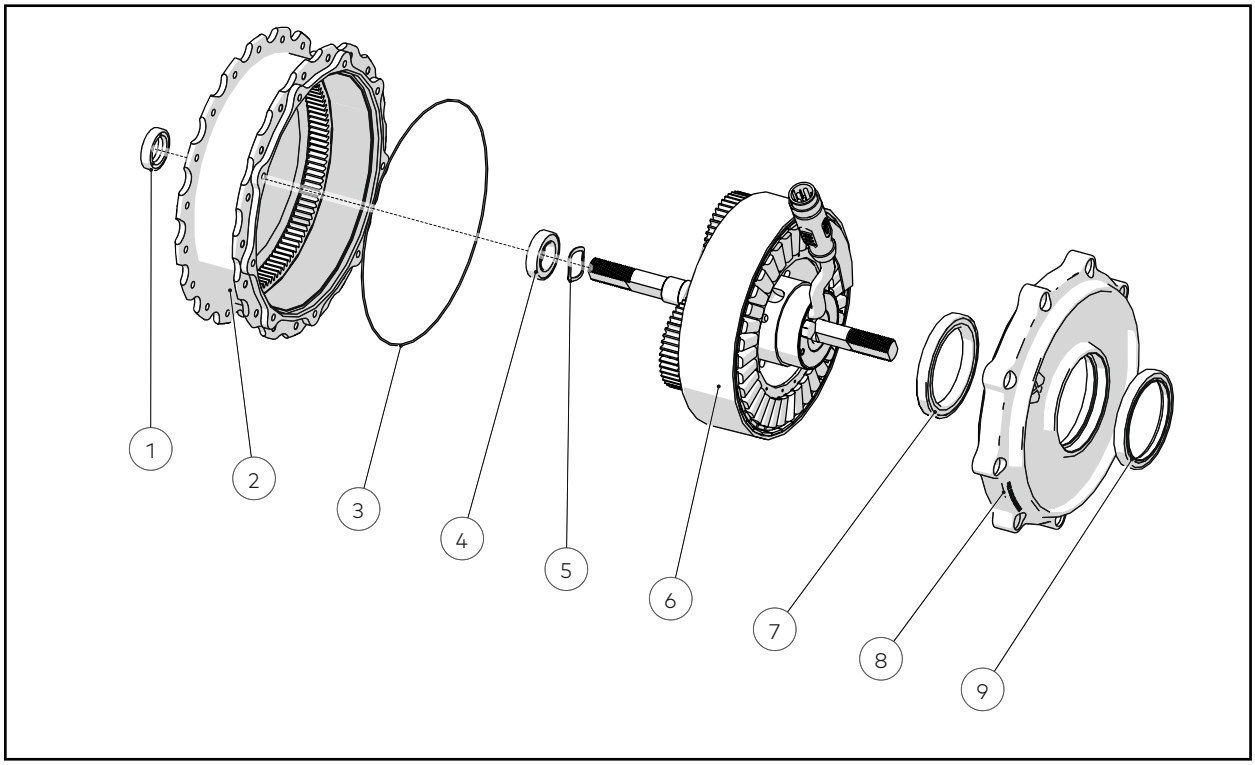
REMOVE

1. Using External Circlip Pliers, remove the Circlip retaining the Planetary Gear Frame to the Axle
2. Using a 3 Jaw Bearing Puller, remove the Planetary Gear Frame from the Axle
3. Using External Circlip Pliers, remove the 3 Circlips retaining the Planetary Gears to the Planetary Gear Frame

REPLACE

1. Apply ROCOL FOODLUBE Premier 1, EP1 Grease to the Planetary Gears
2. Using External Circlip Pliers and Circlip 8mm x 0.8mm (If removed circlips are damaged, replace with new), retain the Planetary Gears to the Planetary Gear Frame
3. Using External Circlip Pliers and Circlip 16mm x 1mm (If removed circlips are damaged, replace with new), retain the Planetary Gear Frame to the Axle

MOTOR BEARINGS AND SEALS



NUMBERED ITEMS

1. Small Motor Seal
2. Motor Case
3. O Ring
4. Small Motor Bearing
5. Wave Washer
6. Motor Core
7. Large Motor Bearing
8. Motor Side Cover
9. Large Motor Seal

TOOLS/CONSUMABLES REQUIRED

- External Circlip Pliers
- UBCO Motor Seals (1 large + 1 small per motor)
- UBCO Motor Bearings (1 large + 1 small per motor)
- Hammer
- Punch
- Flat Head Screwdriver
- Short Legged Bearing Pull
- Red Rubber Grease

PRE-REQUISITE STEPS

Wheel Removal - Page 48 or Page 50

Motor Core Removal - Page 155

REMOVE

1. Using a Flat Head Screwdriver, remove the UBCO Small Seal from the Motor Housing
2. Using a Flat Head Screwdriver, remove the UBCO Large Seal from the Motor Side Cover
3. Using a Hammer and Punch, remove the UBCO Small Bearing from the Motor Housing
4. Using a Short Legged Bearing Pull, remove the UBCO Large Bearing from the Motor Core Assembly

REPLACE

1. Using a Hammer and Punch on the inner race, gently install the UBCO Large Bearing into the Motor Core Assembly
2. Using a Hammer and Punch on the outer race, gently install the UBCO Small Bearing into the Motor Housing
3. Using Red Rubber Grease, install the UBCO Small Seal into the Motor Housing
4. Using Red Rubber Grease, install the UBCO Large Seal into the Motor Side Cover