

POWERPLAY SYSTEM

OWNER'S MANUAL



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Introduction

This manual contains important safety, maintenance, and use information. Read and understand it thoroughly before your first ride on your new Powerplay bicycle.

This material applies only to the Powerplay Drive, and should be used in conjunction with your Rocky Mountain Owner's Manual.

Please read the Owner's Manual before your first ride on your Powerplay bicycle. If you do not have a copy of your Owner's Manual, you can get it from your nearest Authorized Rocky Mountain Dealer.

Warnings

Power

Your Powerplay bicycle features a powerful pedal assist when force is applied to the pedals. Familiarize yourself with your bike's ride and pedal assist characteristics in safe, flat surroundings before riding it off road.

Instant start

Your Powerplay bicycle features "Instant Start" technology, which uses a sophisticated torque sensing circuit to deliver smooth, instant, natural feeling power. This circuit is very sensitive, so care must be taken to not have the bike accelerate from a stop in an unexpected or uncontrolled manner.

Use caution on trails

Your Powerplay bicycle accelerates more quickly and handles differently than traditional non-assist bicycles. Use appropriate caution on trails and be aware of your bike's unique handling and acceleration characteristics.

Keep your fingers away

Do not place your fingers or tools near the drive unit. Maintenance and repair of the drive unit should only be performed by an Authorized Rocky Mountain Service Centre.

Do not modify

Do not modify the Powerplay Drive unit or any components directly connected to the drive unit. Maintenance and repair of the drive unit should only be performed by an Authorized Rocky Mountain Service Centre. Any attempt to modify the Powerplay Drive unit may result in serious personal injury or death, and will immediately void the bicycle's warranty.

Shrediquette

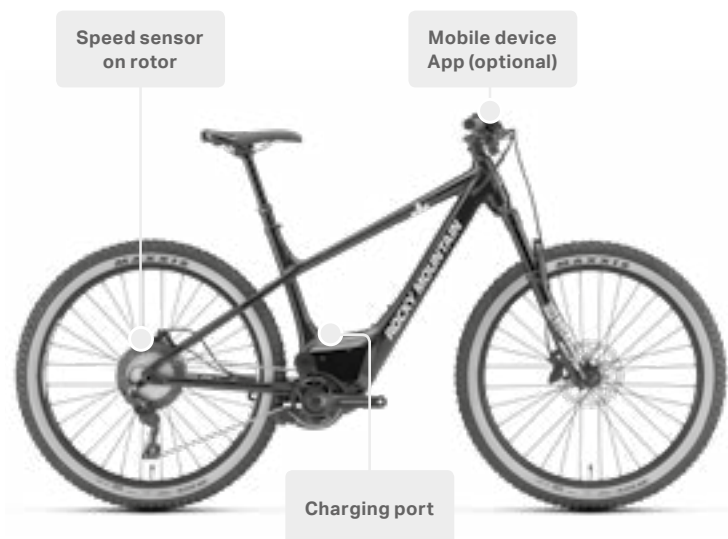
Users

Always be courteous to other trail users. Use extra caution around domestic animals, such as dogs and horses. Give other trail users right-of-way in all situations, during both climbing and descending.

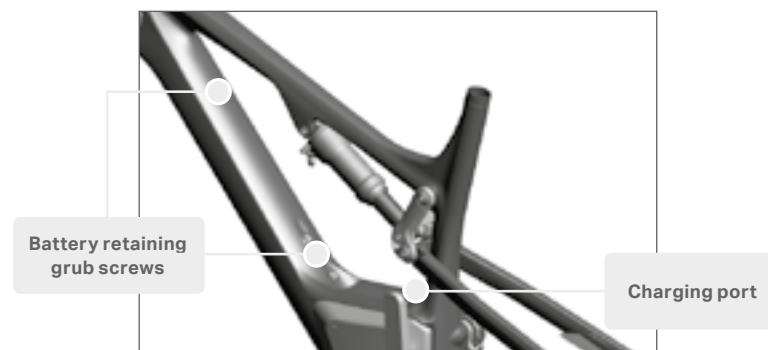
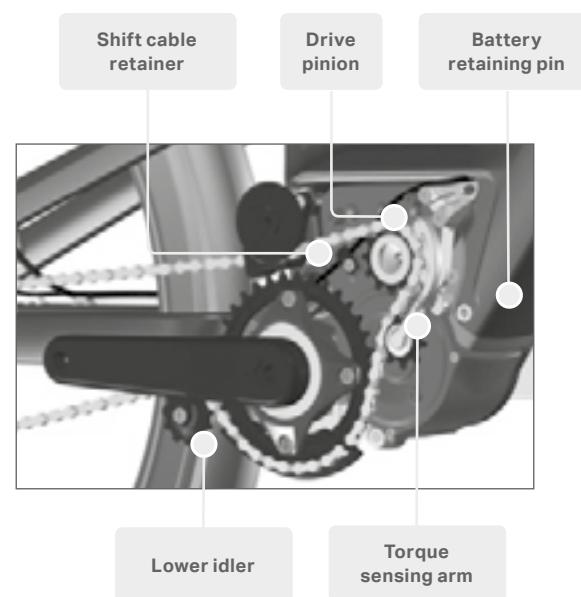
Trail

Only ride your Powerplay bicycle on trails and paths sanctioned for motorized vehicle use. Follow all local laws and regulations. As with all trail users, care should be taken by all cyclists to avoid impacts to the trail or environment. Do not skid on or modify trails.

Images



Images



Charger



Input voltage
switch



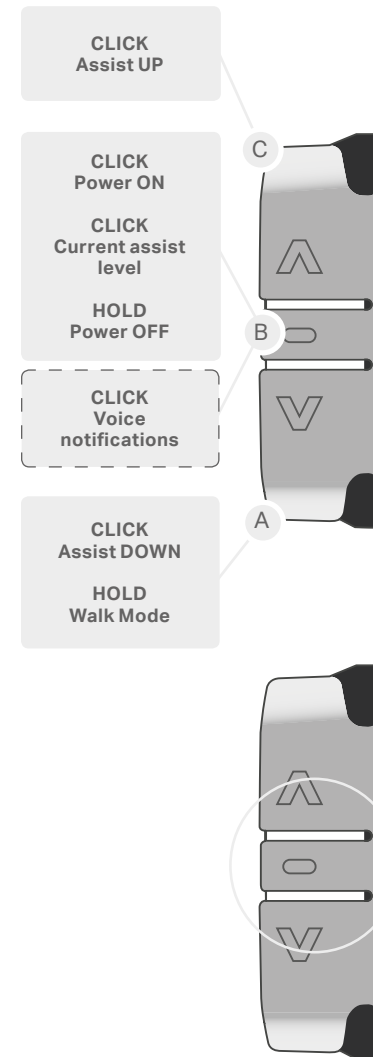
LED Light

Fuse



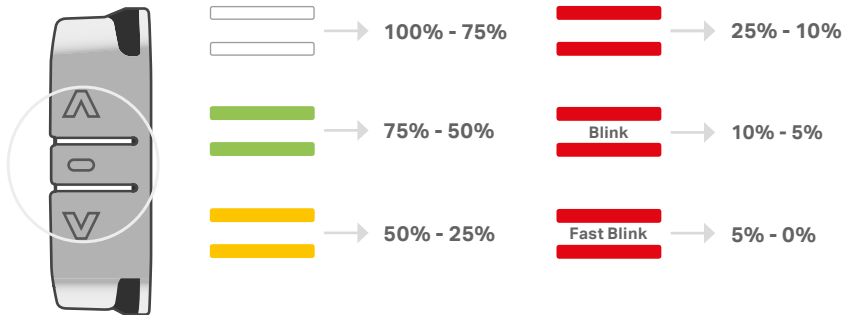
Lock ring

iWoc Remote

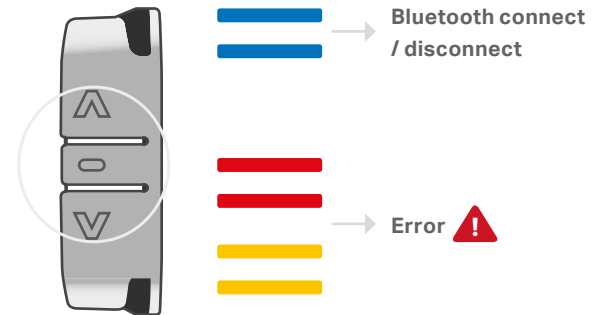


LED Indicators

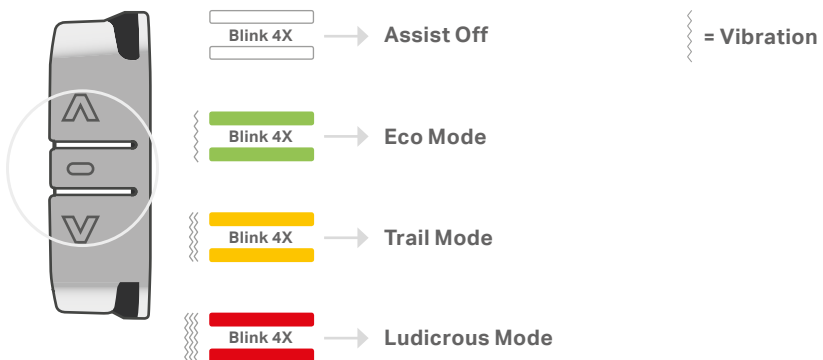
Battery level



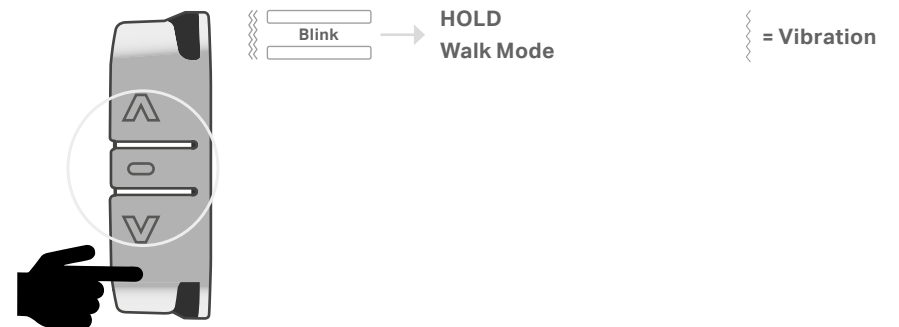
Notifications



Assistance Mode



Walk Mode



System interface

All user inputs for the Powerplay Drive unit are done with the iWoc remote or the optional Ebikemotion mobile app.

Mobile APP

The Powerplay Drive uses an optional Mobile App to access more features, available in the Apple Store or Google Play Store. Ipad users select PHONE app.



Mobile device pairing

- Open the Ebikemotion app
- Create or log in to your existing account
- Open the menu
- Open Settings
- Click "Connect to EBM"
- Click Scan to identify available Powerplay bikes
- Select your bike
- The screen will flash a message when the connection is established.
- Exit menu by clicking Monitor

Online user dashboard

By using the Ebikemotion Mobile App, the rider can access more features through the Online Dashboard.

Go to rmb.ebikemotion.com.

- Activity Log with all metrics
- Strava connectivity
- Activity sharing through social networks
- Image management
- GPS Track Download & Import
- Event scheduling

Battery

Our Powerplay models feature proprietary controls, motors, and battery components. Some of these components are sensitive and require extra care. We want to ensure that you have the most information possible. Please take note of the following updated details related to the Rocky Mountain Powerplay battery, recharging and care.

Failure to follow the instructions and guidelines in this section may result in damage of electrical components on your bike and will void your warranty. More importantly, failure to follow the instructions may result in serious personal injury or death.

General

- The batteries used in all Rocky Mountain Powerplay devices have all the required certifications, and a Battery Management System (BMS) that provides multiple levels of fail-safes to prevent hazards. Despite this safety measure, a charged battery that has reached extreme temperatures or a charging port that has sustained damage can be dangerous, leading to electrical shock, fire, or injury.
- If your battery or charger exhibits any signs of damage, do not use it, and immediately bring your bike to your authorized Rocky Mountain retailer for inspection.
- The battery and drive unit, along with other proprietary Powerplay components, should only be serviced by mechanics that have gone through Rocky Mountain Powerplay training.
- Do not allow any small, sharp, and/or metallic objects to come in contact with the battery or the battery's recharging socket.
- Do not modify, open, or disassemble the battery or charger.
- Never clean an Altitude Powerplay with a high-pressure washer or submerge the bike in water. Rain and normal washing will not cause a problem.

- Undamaged batteries will not release fluids or gases. However, in the event of damage, battery fluid can cause skin irritation and burns, and battery gases can be released and irritate the airways. In the event of skin or eye contact with any fluids or gases from the battery, immediately flush with water and seek medical assistance.
- If a battery fire occurs, do not attempt to directly extinguish it with water. You can use water to extinguish materials surrounding the battery, but not the chemical cells themselves. To properly extinguish a burning battery, use a Class D fire extinguisher. Sand can also be used to smother the fire effectively. If possible, without exposing yourself to any personal risk of injury, bring any heated or ignited battery outside to prevent the fire from spreading.

Charging

- Only use the dedicated Powerplay chargers for any Powerplay battery.
- The chargers have been designed to function in 240V or 120V depending on your location. Prior to plugging in the charger, ensure you are using the correct setting, or damage can be inflicted on your charger. At the end of the unit, there is a switch to select the correct input voltage.
- Do not leave the charger in direct sunlight, especially during recharging.
- To recharge the battery:
 - 1-Find the recharging port on the Powerplay bike and open the recharging port protector.
 - 2-Plug the charger into an electrical source. The green LED on the charger will illuminate.
 - 3-Connect the charger to the Powerplay bike and ensure that the locking system on the port is engaged. The green LED will turn red to indicate that the battery is recharging.
 - 4-Once the recharge is complete, the LED will turn green. It is not mandatory to disconnect the charger immediately after the recharge is complete, however you should not leave the bike connected to the charger for a period longer than 12 hours.

- Recharge your Powerplay bike in an open area with clear access to an outside exit.
- Similar to all bikes and equipment with Lithium-Ion batteries, it is recommended to only recharge the bike under supervision.
- If the battery is cold (below 0°C (32 °F)), or warm (above 40°C (104 °F)), allow 1 hour for the battery to readjust to room temperature before recharging.
- Recharging time will vary depending on remaining energy in the battery. Recharging time is as follows:

500Wh Battery

Time to charge from 0-80% = 1:40
 Time to charge from 80-100% = 1:40
 Total charge time from 0-100% = 3:20

632Wh Battery

Time to charge from 0-80% = 2:00
 Time to charge from 80-100% = 2:10
 Total charge time from 0-100% = 4:10

Storage

- To store your Powerplay bike, keep it in a secure place that is not exposed to extreme temperatures (above 65 °C (149 °F), or below -30 °C (-22 °F)), excessive sun exposure, humidity, or condensation. If you believe that the bike has been stored in the conditions listed above, please cease usage and contact your authorized Rocky Mountain retailer.
- Storing a fully depleted battery for a prolonged period will cause damage and diminish its capacity. It is recommended to recharge your battery to at least 75% capacity whenever possible, to avoid damage from deep discharge over prolonged periods.
- If you store your bike for periods of 3 months or longer, you will need to periodically recharge it, to maintain its capacity. Recharge your battery at least once every 3 months. Failure to do so may cause damage to the battery, and a loss of its capacity. A good way to manage storage recharging is to set calendar reminders in your computer or mobile device.
- The best practice to maintain the optimum battery capacity over time is to store the bike at temperatures between 10 °C (50 °F) and 25 °C (77 °F).

Battery functionality

- The battery will function in cold weather, though at a diminished capacity. Expect 80% of full capacity at 0 °C (32 °F), and 50% of full capacity at - 10 °C (14 °F). It is recommended to warm up a cold bike prior to use.
- If the battery reaches 65 °C (149 °F), it will shut itself down for protection until it reaches below 60 °C (140 °F).
- When the remaining battery capacity is low, the Powerplay drive will progressively reduce power output to maximize its range.
- Please note that lithium-ion batteries gradually lose capacity depending on age and use. A dramatic decrease in capacity after recharging may be a sign that the battery is reaching the end of its lifespan and must be replaced. Please visit your authorized Rocky Mountain retailer for battery replacement. Under normal use, you can expect:

500Wh Battery

Will operate at 70% of full capacity after 300 full charging cycles (0% to 100% charge).

632Wh Battery

Will operate at 75% of full capacity after 500 full charging cycles (0% to 100% charge).

Transportation

Transporting and/or shipping your Powerplay Drive equipped bike may be subject to restrictions and require special handling, labelling, and/or packaging. Be sure to inform yourself beforehand of all legal requirements in your country.

Riding the bike

Warning

Make sure the brakes are applied before putting any pressure on the pedals, or even resting your foot on the pedals. The Powerplay Drive uses a sophisticated torque sensing circuit to deliver smooth, instant, natural feeling power. This circuit is very sensitive, so care must be taken to not have the bike accelerate away from the rider when stopped.

Power ON

To power up the Powerplay Drive, use the iWoc remote: click button (B).

Note: the Powerplay Drive will always power up to the lowest Power Level. The rider can then increase the Power Level using the iWoc remote

Power levels

The Powerplay Drive provides several levels of power assistance:

Level 1: Eco

This is the lowest power setting, used for maximum battery life and rider input

Level 2: Trail

This medium assist level balances assistance and battery life for all around trail riding

Level 3: Ludicrous

For maximum speed and assistance, this level delivers a huge amount of power to the rear wheel. Note that prolonged use of Ludicrous Mode will discharge the battery at a relatively rapid rate

To change assist levels, use the iWoc remote: press button (C) to increase assist, or button (A) to decrease assist.

NOTE: WITH THE HELP OF THE OPTIONAL EBIKEMOTION MOBILE APP THE RIDER CAN CUSTOMIZE THESE POWER LEVELS. THIS IS FOUND IN THE SETTINGS MENU.

Walk Mode

Should the need arise, the Powerplay has a Walk Mode. The Powerplay Drive is able to assist the bike at a walking speed.

On the iWoc remote, push and hold button (A). The bike will slowly power up the climb as you push it.

The walking speed can be adjusted by shifting the gears of the bike. If you find the bike is not moving quickly enough, shift into a harder (smaller) cog on the cassette.

Power OFF

To power down the Powerplay Drive after use, use the iWoc remote: push and hold button (B) for 3 seconds. If the bike is left idle for 10 minutes, with no Bluetooth connection, it will automatically shut itself off to conserve battery life.

Notes

Damage to iWoc

In the event the iWoc remote is damaged and no longer functional, the bike will continue to operate in its current Mode. If the bike is idle for 60 mins, it will shut down with no possibility of starting without replacing the iWoc.

Range

The distance over which the battery will power the drive system varies depending on several factors, such as assist level, ambient temperature, acceleration, wind resistance, poor maintenance, battery age, hilly and rough terrain, and/or rider weight.

Riding tips

The Powerplay Drive delivers smooth, natural feeling power to the rear wheel and works best under these circumstances.

Use a smooth, consistent pedal stroke, rather than "mashing" the pedals.

Shift often, to maintain a cadence between 60 and 80 RPM for optimal motor efficiency, yielding high torque and maximum battery performance.

When shifting gears, care should be taken:

Ease off pedalling pressure prior to shifting to avoid stressing the chain and derailleur.

Do not shift multiple gears at once.

Service

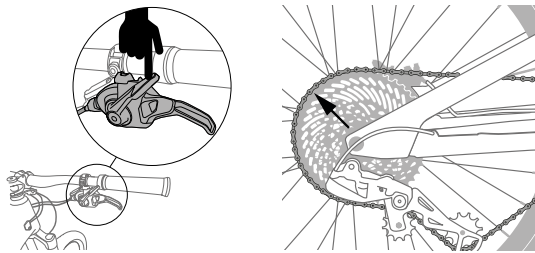
Calibrating the torque sensor

Due to the precise torque sensing capabilities of the Powerplay Drive, calibration may be required periodically.

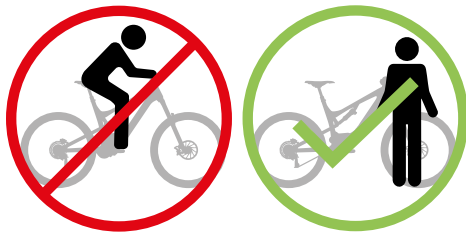
Example:

Debris / Chain jam / Chain / Chainring / Pulley / Pinion replaced

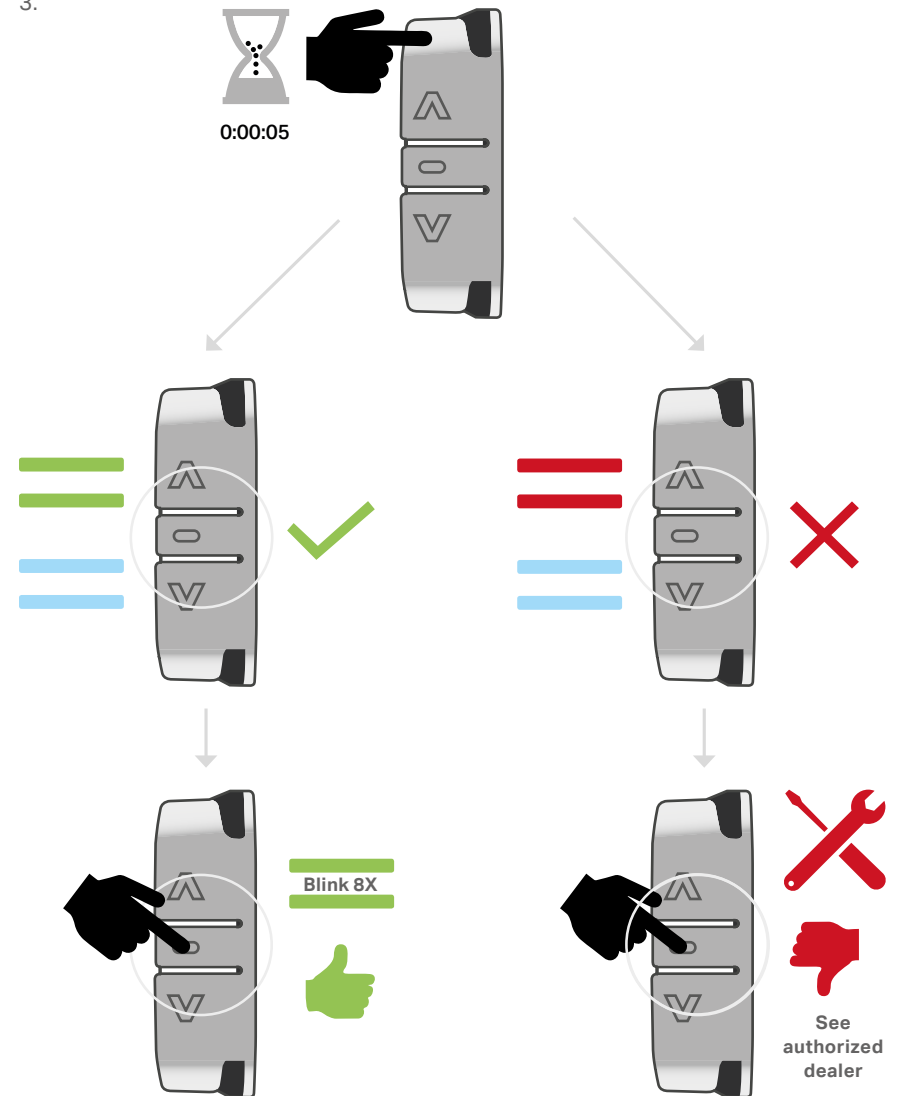
1.



2.



3.



Troubleshooting

Please work with your local dealer for troubleshooting. Your Powerplay Mobile APP can generate error codes for diagnostics. When an error code appears your iWoc will show a red LED. Check your APP for the following error codes, by clicking the red warning icon:

Error	Name	Notes	Possible Solution Proceed in order
3	Torque Sensor Fault	Torque sensor error	Clean / Clear Torque Sensor Arm and Sensor Calibrate Torque Sensor
4	Low Voltage Protection	Low battery voltage	Recharge Battery
6	Hall Sensor Fault	Drive error (error update at power up only)	See Dealer
7	Over Temperature Protection	Drive overheated	Allow Drive to cool down
11	Communication Fault Lost Frame Job	Communication error between iWoc and Drive	Power iWoc Off -> On See Dealer
24	Motor Conn Err	Drive error (error update at power up only)	See Dealer
30	Over Current Protection	Drive error	Power iWoc Off -> On See Dealer
33	Current No Speed	Speed sensor error	Align magnet and sensor See Dealer

Cable routing

NOTE: REMOVE DRIVE SIDE COVER AND LEFT SIDE HEAD TUBE PORT COVER. ALL OTHER COMPONENTS CAN REMAIN IN PLACE.

- Route the derailleur housing through the chainstay near the main pivot, front to back (fig 1)
- Route the other end up the right forward motor mount port to the left head tube port
- Clamp housing to motor mount using shift housing clamp (fig 3) and torque to 2Nm



fig 1



fig 2



fig 3

BOTTOM BRACKET STANDARD

The Powerplay Drive uses a Press Fit BB92.

NOTE:

- THIS ALLOWS A GAP ON THE RACE FACE SPINDLE FOR THE CLUTCH SPIDER.
- USE THE CORRECT SPIDER FOR EITHER RACE FACE OR SRAM EAGLE CHAINRINGS. THESE ARE THE ONLY APPROVED CHAINRINGS.

General maintenance

Please note that electric assist bikes put more stress and strain on components than traditional mountain bikes. The frequency of maintenance and inspection should increase in consequence, to maximize safety, performance, and longevity.

Seasonal charging

If you store your bicycle for a period of 3 months or longer, ensure to charge your battery at least every 3 months. Failure to do so may cause damage to the battery, and a loss of capacity.

A good way to manage storage charging is to set calendar reminders in your computer or mobile device.

Cleaning

A clean bike is a happy bike. The best way to clean a dirty bike is with a bucket of warm soapy water. Avoid using a pressure washer.

NOTE: DO NOT DIRECTLY SPRAY WATER AT ANY ELECTRICAL COMPONENT.

Preventative maintenance

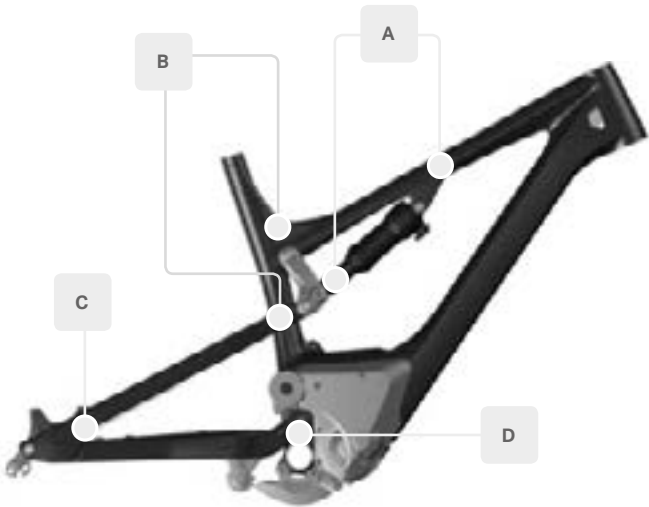
Clean and inspect drivetrain for wear

- Chain
- Cassette
- Pulleys (mid drive idler, lower idler, derailleur pulleys)
- Chainring
- Drive Pinion

Check bolts and fasteners

- All standard bicycle fasteners: pivots, stem, crank bolts, chainring bolts
 - Motor mounts
 - Torque sensor mount
 - Battery grub screw
- Battery retaining pin
 - Check Spoke Tension
 - Inspect Brake Pads & Rotors
 - Keep Charge Port Clean / Closed

Frame torque values



Frame torque values

Description		Part #	Location	Tool	Torque			Notes
A	Shock Bolts & Screws	1807049 & 180566-016	Top Link	5mm & 4mm Hex Keys	kg/cm	Nm	lb/in	Torque only with correct shock and hardware installed. Apply grease to shock bolts, and Loctite 243 (blue) to screw threads.
		1807062 & 180566-012	Front Triangle	Two 4mm Hex Keys	80	8	70	
B	Top Link Bolts & Screws	1807060 & 180566-012	FT- Link Pivot	6mm & 4mm Hex Key	80	8	70	Apply grease to pivot bolts, and Loctite 243 (blue) to screw threads.
		1807061 & 180566-012	SS - Link Pivot					
C	Dropout Pivot Screws	1807046	Dropouts	6mm Hex Key	175	17	152	Apply Loctite 243 to female seat stay threads.
D	Main Pivot Bolt	1807029	Main Pivot	6mm Hex Key	175	17	152	

Powerplay dual suspension

Description	Part #	Location		Tool	Torque			Notes
Battery Retaining Pin, M6X12	180566-012	Battery		4mm hex	kg/cm	Nm	lb/in	Secures 56, 70 And 81Mm Battery Case Bolts, Blue Loctite
					40.8	4.0	35.4	
Battery Set Screw, M5X20	1808024	Down Tube		2.5mm hex	20.4	2.0	17.7	Ensure Set Screw Bottoms On Battery Plate
Screw, M8X30	1807121	Powerplay Upper Rear Frame Mount		5mm hex	142.8	14.0	123.9	Loctite, Tighten First To 10Nm In Sequence, Then 14Nm Final
M8X60 Bolt	1808023	Powerplay Upper Front Frame Mount And Torque Arm (Under Driveside Cover)		6mm hex	142.8	14.0	123.9	Loctite, Tighten First To 10Nm In Sequence, Then 14Nm Final
Screw M6X30	1807119	Torque Arm		4mm hex	101.9	10.0	88.5	
Screw M6X16	1807120	Torque Arm		4mm hex	101.9	10.0	88.5	
Screw, M8X25	1807123	Powerplay Bash Bracket		5mm hex	142.8	14.0	123.9	Loctite, Tighten First To 10Nm In Sequence, Then 14Nm Final
Screw, M8X65	1807122	Powerplay Bash Bracket		5mm hex	142.8	14.0	123.9	Loctite, Tighten First To 10Nm In Sequence, Then 14Nm Final
Screw, M8X50	1807124	Powerplay Bash Bracket		5mm hex	142.8	14.0	123.9	Loctite, Tighten First To 10Nm In Sequence, Then 14Nm Final
Bolt, M8X18	1807126	Chainstay Pulley Axle		6mm hex	81.6	8.0	70.8	Loctite, Ensure No Play And Pulley Spins Freely
Screw, M5X12	1807152	Chainstay Pulley Bracket		3mm hex	61.2	6.0	53.1	Loctite
Axle, Mid Drive	1457014	Mid Drive Pulley Axle		6mm hex	102.0	10.0	88.5	Loctite, Ensure No Play And Pulley Spins Freely
Torx Screw, M5X12	1808028	Brake Rotor		T25 Torx driver	63.2	6.2	54.9	Loctite, Torque Rotor As Per Manufacturers Instructions
Hanger Bolt	3227001	Derailleur Hanger		6mm hex	204.0	20.0	177.0	Loctite, Left Hand Thread
Axle, 12Mmx173Mm	3227009	Rear Axle		6mm hex	102.0	10.0	88.5	Grease Threads And Axle Shaft
Screw, M5X16 M5X16	1806009	Head Tube Panel		3mm hex	15.3	1.5	13.3	Grease, Do Not Over Tighten
Screw, M5X22	1808037	Drive Cover, Top		3mm hex	15.3	1.5	13.3	Grease, Do Not Over Tighten
Screw, M5X12	1808036	Drive Cover, Bottom		3mm hex	15.3	1.5	13.3	Grease, Do Not Over Tighten

Warranty Information

Your Powerplay bike is warrantied against defects in materials and manufacturing as per the following table:

Category	Term	Notes
Frame Members	5 Years	Front Triangle + rear triangle
Hardware	1 Year	Pivots, Axles, etc...
Electronics	2 Years	Drive, iWoc, Sensors, Charger
Drive Wear Items	1 Year	Pulleys, Pinions, Transfer Chain
Battery	18 Months Or 500Wh: 70% of full capacity remaining after 300 full charging cycles (0% to 100% charge) 632Wh: 75% of full capacity remaining after 500 full charging cycles (0% to 100% charge)	When the battery level falls below 5% charge the Powerplay Drive will progressively reduce power output to maximize range Range varies depending on several factors, such as assist level, ambient temperature, acceleration, wind resistance, poor maintenance, battery age, hilly and rough terrain, and or rider weight. If stored for a 3+ months, charge battery every 3 months. Failure to may cause damage.
Components	As per Original Manufacturer Warranty	

All warranty and after sale service, must be handled by the Authorized Dealer who sold the complete bicycle or frame. We cover your Rocky Mountain frame from the original date of purchase of your new Rocky Mountain bicycle according to the frame material and the type of use against defects in material and workmanship.

Frame Material / Type of Use:

- Aluminum Hybrids: Limited Lifetime*
- Carbon Fiber: 5 years - Limited*
- Aluminum – front & fully suspended 5 years - Limited*
- Downhill & Freeride: 3 years - Limited*

* Please refer to limitations stated below

Other Warranty Coverage against defects in workmanship and materials:

- Coating – paint and decals 1 year
- Frame hardware, suspension, pivots and bushings 1 year
- DH & Freeride frame hardware, suspension 6 months
- Pivots and bushings 6 months

NOTE:

- Warranty is not valid for any bicycles previously used for commercial activity such as rental, courier, police, security etc.
- Installation of components, parts, or accessories not originally intended for or compatible with the bicycle(or frame) as sold.
- Purchasing a Rocky Mountain Bicycle from an unauthorized dealer.
- Purchasing a Rocky Mountain Bicycle or frame off third party internet sites (as eBay) no matter what the listing says.

What is Not Covered?

- Normal wear and tear.
- Damage or failure caused by accident, misuse, abuse or neglect.
- Improper assembly and/or lack of proper maintenance
- Extreme or improper use of your Rocky Mountain bicycle outside of its intended purpose.
- UV ray effects (colors fading)
- The components, parts, or accessories not compatible with the bicycle (or frame)

Detail of what is not covered under warranty:

- Normal wear and tear on tires, tubes, brakes, gear cables, brake pads etc., are not covered. Your authorized Rocky Mountain dealer will inform you of what these normal maintenance items consist of.
- Consequential damage or any damage caused by accident, misuse or abuse.
- Improper assembly and/or lack of proper maintenance, sandblasting, sanding, grinding, wire brushing, filing, welding, brazing, drilled holes, anodizing, repainting, or chrome plating is not covered under your warranty and may void the warranty of the component manufacturers.
- You take great personal risk and shall forfeit the warranty, as outlined in the Warranty Table, when you ride in extreme terrain as depicted in mountain bike videos. I.e. ride «trials» style courses, ride ramps, do stunts, ride on BMX tracks, ride in the city down stairs and embankments, or ride in other similar terrain. It is important to note that bent components, frames, forks, handlebars, seat posts, pedals, cranks and wheel rims are signs of accidents and/or abuse.
- Labour for part replacement or changeover is not included.
- Rocky Mountain retains the right to repair or replace at its discretion any part that is deemed a valid warranty. Please note that Rocky Mountain cannot guarantee a colour match to the

EXCLUSION AND LIMITATION OF DAMAGES: THE WARRANTY OF ROCKY MOUNTAIN IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE PRODUCTS AND DOES NOT GRANT ANY WARRANTY EITHER EXPRESSED OR IMPLIED, LEGAL OR CONVENTIONAL AND DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OF

MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES, AND ROCKY MOUNTAIN SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR DIRECT OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES EVEN WHERE ROCKY MOUNTAIN HAS BEEN ADVISED OF SUCH DAMAGES AND ROCKY MOUNTAIN'S LIABILITY SHALL BE LIMITED TO \$ 50.00

Declaration of conformity

This Powerplay equipped bicycle fulfills the requirements of the following EC directives:



Rocky Mountain Altitude Powerplay Carbon 90 Rally Edition
Rocky Mountain Altitude Powerplay Carbon 70
Rocky Mountain Altitude Powerplay Carbon 50

- Machine Directive: 2006/42/EG
- Electromagnetic compatibility: 2004/108/EC
- Bicycle: mountain bike: EN 14766 or city/trekking bike: EN 14764
- EPAC (electrically power assisted cycles): EN 15194

Manufacturer

Rocky Mountain

Industries RAD inc.

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July 20, 2018



LOVE THE RIDE

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