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Cobra MOTO, LLC
240 Uran Road
Hillsdale, MI 49242
USA

DISCLAIMER OF WARRANTY

This motorcycle is sold "as is" with all faults, obvious or not. There are no warranties expressed or implied, including any warranty of merchantability and warranty of fitness for any particular purpose.

Motorcycles are generally not covered by homeowner or trailer content insurance, and they typically require their own policy. Contact your own insurance company for specific details.

"WARNING"

THE COBRA CX5E IS A COMPETITION MODEL ONLY AND IS NOT MANUFACTURED FOR, NOR SHOULD IT BE USED ON PUBLIC STREETS, ROADS, OR HIGHWAYS.

THE USE OF THIS BIKE SHOULD BE LIMITED TO PARTICIPATION IN SANCTIONED COMPETITION EVENTS UPON A CLOSED COURSE BY A SUFFICIENTLY SKILLED RIDER AND SHOULD NOT BE USED FOR GENERAL OFF-ROAD RECREATIONAL RIDING.

IMPROPER USE OF THIS MOTORCYCLE CAN CAUSE INJURY OR DEATH.

THIS BIKE IS INTENDED FOR EXPERIENCED RACERS ONLY AND NOT FOR BEGINNERS.

IT IS YOUR RESPONSIBILITY AS THE OWNER OF THIS COBRA MOTORCYCLE OR AS THE PARENT, OR LEGAL GUARDIAN OF THE OPERATOR, TO KEEP THIS COBRA MOTORCYCLE IN PROPER OPERATING CONDITION.

THIS BIKE WAS DESIGNED FOR RIDERS THAT WEIGH LESS THAN 80 LBS WITH FULL RIDING GEAR AND SHOULD NOT BE OPERATED BY RIDERS THAT WEIGH MORE THAN THAT.

BE SURE THAT THE RIDER ALWAYS WEARS ADEQUATE SAFETY GEAR EVERYTIME HE OR SHE RIDES THEIR COBRA MOTORCYCLE.

"WARNING"

This product contains Lithium-Ion battery cells which are very good at storing a lot of energy for a fast fun motorcycle but are potentially very dangerous. For your family's safety, follow the instructions on the next page

IMPORTANT SAFETY NOTICE

⚠ WARNING

Failure to follow WARNING instructions could result in severe injury or death to the machine operator, a bystander, or a person inspecting or repairing the machine.

CAUTION:

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

NOTE: A NOTE provides key information to make procedures easier or clearer.

Lithium-Ion Battery Safety

When not preparing for a race, store the battery with partial charge (2 lights lit, not 3, only the red “S” light and orange “V” lights lit), and away from heat sources.

Store and charge your Cobra CX-E in a place where a fire would cause the least harm.

Additional best practice guidelines below:

- Tampering with the battery, charger, and/or electronics of the motorcycle would be jeopardizing safety.
- Do NOT use Electrolytic Grease or other contaminants on the battery power connector terminals.
- Fully charge the battery **only just prior** to using it.
- Battery / bike Storage (2 lights of charge as stated above)
 - Not in direct sunlight, temperature between 32°F – 110°F (cooler better)
 - Keep away from other heat sources that allow the surface to be ‘hot’ to the touch (115°F)
- Transportation of batteries to protect against shock or impact (2 lights of charge):
 - Batteries are best transported in the motorcycle, covered with a Lithium – Ion fire suppression blanket and protected from contact with other items.
<https://brimstonefireprotection.com/>
 - Batteries not in the motorcycle should be kept in a container (2 lights of charge):
 - Lithium-Ion safe battery case for 1 kWh capacity (in case of energy release). <https://www.denios-us.com/lithium-ion-transport-box-M2921000/M292100>
 - Or minimally an impact absorbing case to avoid sliding, dropping, or impacts during transport. (This will not contain spontaneous energy release but will protect it from unintended impacts. [Available soon from Cobra.](#))
- Clean the battery pack by hand – NOT WITH PRESSURE WASHER.
- When cleaning the battery outside of the bike (recommended) install connector sealing covers to avoid contamination of the terminals.
- A battery that has been dropped or has crash damage should be isolated to a safe location (assume it could ignite at any time). Keep isolated and call Cobra tech ASAP 517 437 9100.
 - Signs of internal heat, escaping smoke, or hissing noise – get away fast, otherwise,
 - Does the housing appear compromised (dent, crack, etc...)?
 - Will the battery pack power up?
 - What is the state of charge?

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General Information

Specifications - General

| Items | CX50 FWE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions Wheelbase Wheel size Seat height | 41" (1041mm) 10" (254mm) rear, 12" (305mm) front 26" (660mm) |
| Motor Type Cooling system Coolant Final drive ratio Chain | Cobra – out runner Liquid-cooled Cobra Motor Cooling Fluid, 425 ml 10/49 T 110 links 420 |
| Chassis Front tire Pressure Rear tire Pressure Front fork Fork oil type Fork oil amount Std settings (turns) Rear shock (std. settings) | 2.50 (60/100) - 12" 16 psi minimum 2.75 (80/100) - 10" 16 psi min. (20 psi for hard pack or rocky conditions) CARD 32mm USD Fully Adjustable w/ Smart Leg 5wt Fork Oil 150 ml Smart leg: 1.5 out, Compression and rebound 2 out Compression: Low 12 clicks out, High 15 clicks out Rebound 16 clicks out, Race/Free sag 75/25mm |

Optional Suspension Components

| Weight of Rider (lb.) | Fork Spring | Shock Spring |
|-----------------------|------------------------|------------------------------|
| Less than 50 lb. | 0.23 kg/mm KCCS3223 | green, 2.9 kg/mm SCKGFX29 |
| 50-60 lb. | 0.25 kg/mm KCCS3225 | black, 3.1 kg/mm SCKGFX31 |
| 60-75 lb. | 0.25 kg/mm KCCS3225 | red, 3.3 kg/mm SCKGFX33 |
| Greater than 80 lb. | 0.27 kg/mm KCCS3227 | gray, 3.5 kg/mm SCKGFX35 |

Specifications - Torque Values

| Fastener | Torque Value | | | Loctite™ | Size & Remarks |
|-----------------------------|--------------|---------|-------|----------|----------------|
| | ft-lb | in-lb. | Nm | | |
| Phase & power to MDU | 4.4 | 53 | 6.0 | No | M5 x 0.8 |
| Phase wires to Motor | 3.0 | 35 | 4.0 | no | M6x1.0, copper |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Motor mount bolts | 22 | 265 | 30 | | M8 X 1.25 |
| Swingarm pivot | 21 | 250 | 28 | | M14 X 2.0 |
| Shock bolt | 35 | 420 | 47 | 243 | M10 x 1.5 |
| | | | | | |
| | | | | | |
| | | | | | |
| Rear axle nuts | 21 | 250 | 28 | | M12 X 1.25 |
| Rear sprocket bolts | 21 | 250 | 28 | | M7 X 1.0 |
| Front axle aluminum bolt | 9-11 | 106-132 | 12-15 | 243 | M10 X 1.25 |
| Fork guard alum bolts | 6 | 88 | 8 | 243 | M6X1, ALUM |
| Front axle pinch bolts | 7.5 | 88 | 10 | | M6 x 1.0 |
| Brake caliper bolts | 9 | 106 | 12 | 243 | M6 x 1.0 |
| Brake caliper to carrier | 7 | 84 | 9.5 | 243 | M6 x 1.0 |
| Brake pad secure | 3 | 36 | 4 | | M5 x 0.8 |
| Banjo bolts – brakes | 15 | 177 | 20 | | M8 x 1.25 |
| Brake rotor bolts | 9 | 108 | 12 | 243 | M5 x 0.8 |
| Triple clamp bolt (top) | 8 | 90 | 10 | | M8 x 1.25 |
| Steering stem pinch bolt | 9.5 | 115 | 13 | | M8 x 1.25 |
| Triple clamp bolts (bottom) | 6 | 72 | 8 | | M6 x 1.0 |

Power Up Procedure

- Before Powering Up the machine inspect the following
 - Tire pressure
 - Chain tension
 - Cooling fluid level
 - Proper wear on chain rollers and sliders
 - Handlebar tightness
 - Throttle assembly movement
 - Check for loose nuts and bolts
- Turn the battery on by pressing the **Power Button** for 1-2 seconds

WARNING

Always wear a helmet and other protective riding gear.

CAUTION: Make sure your rider's foot is not resting on the foot brake while they are riding.

For charging...

Ensure good AC power.... if not, fast charging may produce faults.... however, slow charge is still an option on slightly bad power. Really bad power will produce charging faults(Slow or Fast Charging).

Charging Procedure:

Plug Charger into AC, then Plug into battery with Positive wire towards the back of the bike...while turning the lock ring clockwise to lock it down. Ensure that the connector goes together evenly. Then press the battery power button once and wait a few seconds. The voltage indicator on the battery will start flashing slowly (slow charge). Then hit the battery power button one more time and the voltage indicator will now start flashing faster.

Slow Charge: 3.5-4 hours, Fast Charge: 1-1.25 hour. Once all the lights on the battery charge indicator are solid and not flashing charging is complete. Low power chargers will only slow charge. High power chargers have both charge modes.

There is a new "**Pre-Race**" charge mode... once battery is already full. Turn battery off with long press on the battery power button.... then back on. When the battery sees that it is already charged it will run the "Pre-Race" algorithm... and prepares the pack for maximum runtime.

Do's and Do Nots-

Don't:

1. Don't store the battery fully charged.

WARNING

Energy stored in Lithium-Ion battery packs have the potential to accidentally / unintentionally release their energy rapidly if an internal cell becomes compromised. Less energy to release is better.

2. Don't leave battery with 1 light on charge indicator for extended time.

CAUTION:

A battery stored with only 1 light of charge may run out of energy while resting on the shelf and it's not possible to recharge a battery after it discharges beyond a certain point.

3. Don't wash improperly. See washing best methods.
4. Don't fill with anti-freeze.

CAUTION:

Motor Coolant is not engine Anti-Freeze! it is petroleum based with special additives. Anti-Freeze is conductive and will damage the bike.

5. Don't totally fill the cooling system. There is coolant in the system even though you can't see it when taking the cap off. With the bike on the stand and powered up, apply some throttle and you should see fluid flowing in the radiator... that is all you need to see!
6. Don't put grease on the power contacts of the batter power connector. Grease is not a good electrical conductor. It works fine on 12V low current trailer light connection to keep water out and avoid corrosion, but acts like a current drawing resistor when applied to the bikes battery.
7. Don't over tighten rear axle as this could add drag to the motor.
8. Don't plug or unplug the battery from the bike or charger with it turned on!

Do:

1. Do power the battery to 2 lights on battery indicator before storing. Bike can be plugged into battery when stored. Check and adjust charge level every 2 weeks.
2. Do check chain sliders and sprockets for wear regularly.
3. Do change cooling fluid every 3-6 months.
4. Do lube chain between each moto.
5. Do turn off the battery before plugging in or unplugging from the charger or bike!

Additional info for those serious racers:

1. Warm up motor before racing for better starts. Feel radiator with hand until close to normal running temp is reached. 2026 Bikes now have a indicator by flashing the mode light when cold.
2. Top off battery after a warm up cycle. This is a balance as motor temp is cooling while charging.

3. Adding a couple psi to rear tire would improve top speed and runtime, but at the cost of a little initial traction.
4. If run time is a priority, please see "Pre-Race" charge mode. Or run in Mode 2-4

Change Bike Modes:

Bike must be disabled ("Active" light is off), before mode can be changed. Hitting the "GO" button activates and deactivates the bike.

Add the LED light numbers to get the mode number. So if 1 and 3 are lit, then that is mode 4. Hitting the upper Left Mode button cycles through modes.

Modes:

1. Mode 1 is ~12mins of full power with a quicker de-power at the last stage before going into turtle mode.... make sure they are aware. Once in turtle mode, lite throttle to get back to pits. This is our normal race mode.
2. Mode 2 is 14-15mins of a gradual power reduction to increase run time.... this is similar to how competing bikes acts over a full battery run. Same peak power as mode 1.
3. Mode 3 is a lower power version of Mode 1(approx. 95% peak), Mode 4 is a lower power version of Mode 2(95% peak)
4. Other modes are in flux, but there is slick track version of mode 1 on Mode 5, it just has a softer feel on the bottom end. Mode 6 is a development mode, same as Mode1 as of 5/16/2024....this can change based on feedback.

Holeshot Mode:

1. 2026 60v bikes currently have a minimal holeshot power increase. Updating to the 2025-2026 software will bring this feature.
2. It will be automatically armed when the bike is "Active"... Once the throttle hits 100%, Holeshot mode will engage for 8secs. If a false start happens and race restarted, then hit the "GO" button to deactivate, then reactivate with the "Go" button again. This resets/rearms the Holeshot mode.
3. Small throttle blips will keep the bike from going to sleep as there is a 1-minute inactivity timeout but will not be enough to engage the holeshot mode.

Cold System Indicator:

1. The blue Mode light on the RDU will flash when the system is cold. Be sure to warm the bike up in cooler and cold temps so that the bike doesn't bog over the gate. When flashing, the bike will have a lower power level that will get it over the gate without the bog. This is a feature starting with 2026 Software.

Hot System Indicator:

1. If either the Motor controller(MDU) or the motor itself is hot enough for the system to reduce power, the Turtle light will flash only while power reduction is occurring.

Washing:

1. Please pull the battery out of the bike to wash (it's just three 11mm nuts) that would eliminate 75-95% or more of the electrical problems E-bikes tend to have.
2. Check for dirt/mud in main bike connector and clear with Q-tip or paper towel. There is also a Bike side block off plug Item# DCCEMU002 to keep the bike side connector free of water and dirt.
3. Wash RDU and Tank area sparingly, avoid direct pressure spray.

4. Allow ample drying time before powering up, do not store in enclosed area while wet.
5. Be mindful of anything with wires coming out of it. Things can be waterproof, but those same things may not be pressure washing proof.

Other:

1. While on track, if active light starts flashing.... either from falling over and being tilting too long or kill switch key falling off... when issue is resolved, one button press of the "GO" button will reset and allow rider to continue on.
2. If lower red fault light (Lightning bolt) comes on while riding and bike will not run... check on-board diagnostics code. Otherwise, check wiring for pinches, etc. This fault light is also a "catch all" for other bike system issues...kill switch, non-zero throttle, loss of CAN bus etc.
3. Lower left fault light(Battery) indicates an issue with the battery and needs to be looked at. Check battery indicators for fault code. IE. "M" light is red and another Letter is lit red as well.
4. After sitting a few weeks or from brand new... batteries will need a few runs to "Wake" up. Performance will improve over that time. Approx. 4 or 5 cycles.
5. There are other sprockets available.... a 1 tooth change is significant. We have 48-52T, with the 49T is standard. Check with your dealer.

Other issues:

1. While we feel we have taken care of the 99.5% of the issues we are aware of, there is still the possibility of other small bugs or a parts failure (Electronics, batteries or wiring) that could be possible. We will do our best to find any new issues and fix ASAP. Some do take longer than others to fix however.
2. Doing troubleshooting remotely is no fun for anyone. We have options to get a diagnostic tool in people's hands as quickly as possible. A few dealers have the diagnostic tool also available.
3. Battery change can happen in under 1 min. No serial number or programming change needed. Potential for 1 practice pack to ride bike to the line(warmup), then swap battery in staging for race pack...so full pack and warm motor.... lots of possibilities around that.

Maintenance

A properly maintained machine is safer, faster, and more fun to ride. It is important that you adhere to this maintenance schedule to promote the longevity of your Cobra Motorcycle.

Tips

1. Cobra Motor Cooling Fluid is the ONLY cooling fluid that is compatible with high voltage electronics and provides the necessary lubrication for the bearings.

CAUTION: Coolant designed for Internal Combustion Engines (motor coolant, engine coolant, antifreeze, etc....) is not compatible with the high voltage electronics in the motor and will cause motor faults, potential damage, and an avoidable tech call and down time.

2. New chains will stretch on first use. Never install a new chain prior to a race. Always 'break' them in during practice.
3. Your Cobra Motorcycle has a 10-digit VIN (Vehicle Identification Number). The first three digits indicate the model while the sixth and seventh indicates the model year.
 - a. Example, FWExx17xxx is a 2017 CX50 SR.
4. The frame is 4130 Chrome Moly & HSLA, and it is important to weld it with the proper rod and heat settings set as light as possible. Cobra recommends replacing the frame with a new one if the old one becomes damaged. Use ER70S6 filler if welding on the frame.

Schedule

- Prior to each ride
 - Chain for proper tension and lubrication
 - Chain 'slider' wear on both chain sliders
 - Insure the smooth operation of the electronic throttle cable.
 - Check for adequate tire pressures and adjust if necessary.
 - Check all nuts and bolts for proper torque and re-torque if necessary.
 - Check the frame for cracks in the metal or cracks in the paint that might indicate that the metal has been stressed beyond its safe limits. Replace or get properly re-welded as necessary.
 - Check the rims for signs of stress; like cracks around the rim, spokes, and hub.
 - Equalize the pressure in the forks with atmosphere. Release any pressure built up inside the fork by loosening the bleed screw on the fork cap. Retightening after pressure is released.
- Every 20 hours of operation
 - Replace the fork oil.
 - Have the shock oil replaced by a Certified Cobra Mechanic.
- Every 50 hours of operation
 - Replace the Motor Cooling Fluid.

Replacing Motor Cooling Fluid

Tools needed:

- 8mm Allen wrench
- 425-450 cc (16 oz) *Cobra Motor Cooling Fluid* (Part #MCMUMF32).

Procedure:

YouTube videos available: search "CX5e Coolant"

Proper Chain adjustment

Tools required for chain adjustment

- 19 mm wrench or socket
- 13 mm wrench or socket

1. Make sure that the rear wheel is aligned properly.
2. For proper adjustment, the chain should have 35mm (1.378") free movement just behind the chain guard with no load on the bike (figure 2)

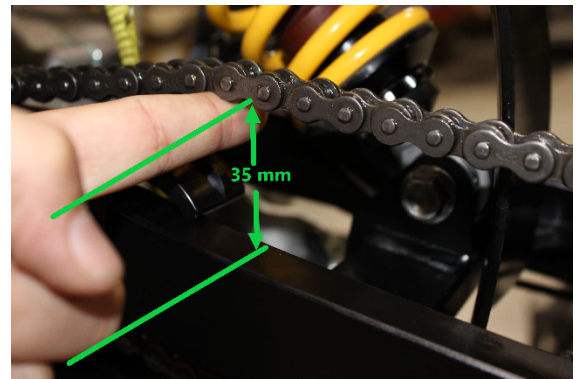


Figure 2

CAUTION:

As a double check, Sit on the bike and verify that the chain has a minimum of 12mm (1/2") up and down free movement when the chain is at its tightest point.

3. If the chain requires adjusting, loosen the axle with a 19 mm wrench and tighten the chain by rotating the adjuster bolts clockwise (CW) or loosen the chain by rotating the adjuster bolts (CCW).
4. Ensure proper alignment of the rear wheel by making sure there are equal amounts of the alignment holes (figure 4) showing on each side of the wheel.
5. Retighten the axel bolt to 25 ft-lb (34 Nm).
6. Retighten the adjustor bolt (figure 3)

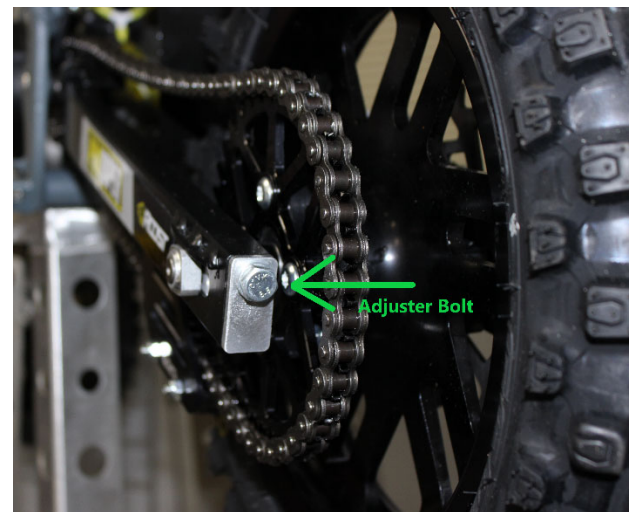
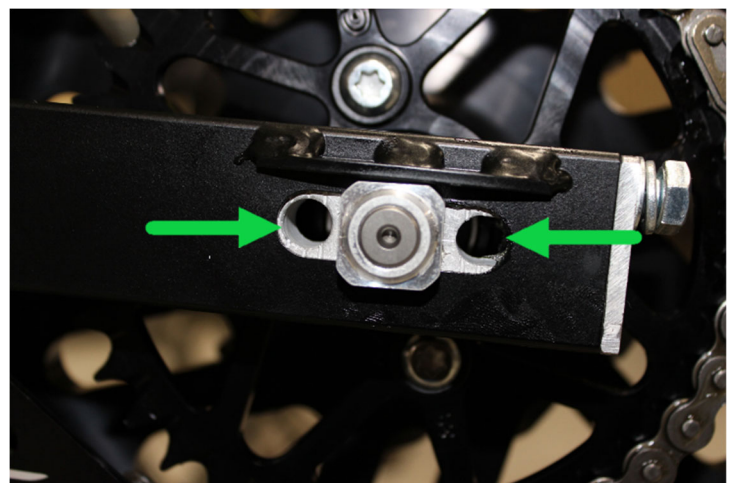


Figure 3 (top), Figure 4 (bottom)



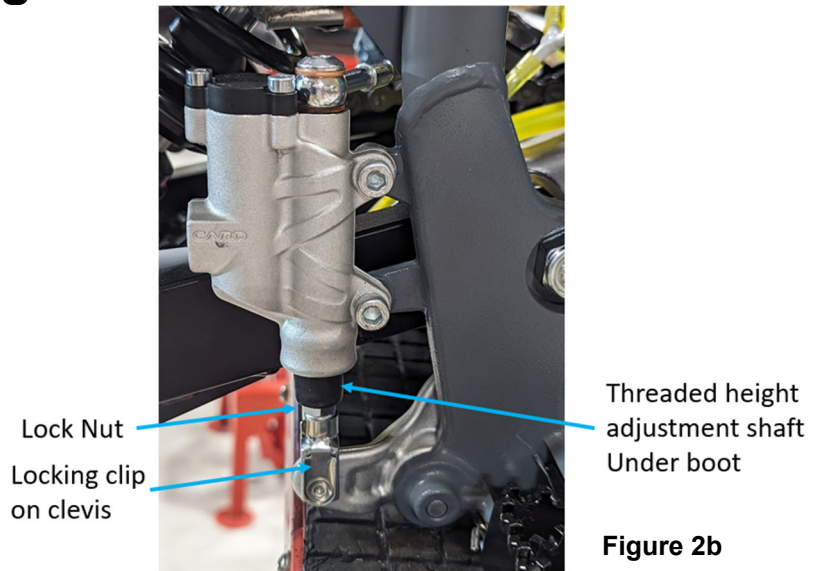
Rear Brake Pedal Height

Brake pedal toe tip height can be adjusted with the nut and adjuster located below the rear brake master cylinder. The free-play is not adjustable on this model.

CAUTION: Use a New container of VP Racing: 622 DOT4 Racing Brake Fluid if necessary to add fluid.

Setting rear brake pedal position (see figure 2b):

1. Loosen the height adjust lock nut (10mm wrench)
2. Adjust the height adjustment shaft (fingers on the threaded portion of the plunger) to raise or lower the pedal:
 - a. Standing riding position, and
 - b. Sitting riding position.
3. Tighten the height adjust lock nut.



NOTE: If it's not possible to rotate the threaded adjuster by finger, the next way would be to remove the clevis from the brake pedal by popping of the **Locking Clip**, use vice grips or similar on the threaded portion to keep it from rotating, and use a wrench on the square portion of the clevis that remains on the brake plunger

NOTE: Turning the clevis Clockwise will lengthen the adjuster (plunger), will raise the toe tip of the brake pedal, and turning the clevis Counter-Clockwise will shorten the adjuster (plunger) lowering the toe tip of the brake pedal.

⚠ WARNING

Make sure that the free play locking clip is installed such that one must push forward, toward the front of the bike, to remove. Otherwise the clip is apt to come undone while riding.

Fork Maintenance

Cobra strongly recommends that a professional service technician conduct all internal maintenance other than changing springs and oil. This will help to ensure safe and consistent operation.

For routine maintenance, the chart below provides suggested service intervals for common procedures:

| | <u><i>Each Ride</i></u> | <u><i>10 hours</i></u> | <u><i>20 hours</i></u> | <u><i>As Needed</i></u> |
|-----------------------------------|-------------------------|------------------------|------------------------|-------------------------|
| <u><i>Bleed excess air</i></u> | <u><i>X</i></u> | | | |
| <u><i>Change Oil</i></u> | | <u><i>X</i></u> | | |
| <u><i>Change Seal/Striper</i></u> | | | <u><i>X</i></u> | |
| <u><i>Change Bushings</i></u> | | | | <u><i>X</i></u> |

Fork Air Bleeding

Tools required

- 3mm hex key (Allen wrench)

During normal operation, both fork legs will build up air pressure. This pressure acts as an additional spring so it must be bled on a regular basis to maintain consistent suspension operation. Before each ride, loosen the socket head cap screw located at the front of each fork cap far enough so that any excess pressure in the leg is relieved. After excess air is bled off, retighten the screw to 5 in-lb. Be careful not to lose or damage the sealing ring that is located under the head of each bleed screw.

Fork Oil Replacement

Tools required

- 32mm Fork Cap Tool (MCMUTL41)
- 8mm Allen wrench
- 4 & 5 mm hex key (Allen wrench)
- 9/16 wrench
- Mallet
- 5 wt. VP fork oil

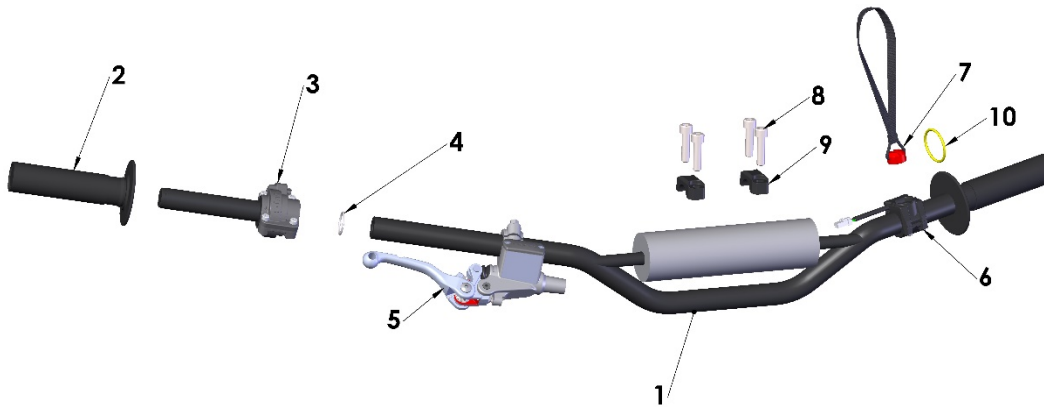
Disassembly procedure

1. Remove the front wheel and axle (8mm Allen wrench).
2. Remove brake line clamp.
3. Remove the brake caliper from the fork leg (4mm hex key).
4. Loosen the top pinch bolts (6mm hex key).
5. Loosen the fork caps (32mm fork cap tool).
6. Loosen the bottom pinch bolts (5mm hex key).
7. Remove the fork legs from the triple clamps (5 and 8mm hex key).
8. One leg at a time
 - a. Remove the fork cap from the fork tube.
 - b. Pull the fork spring down to gain access to the fork cap jam nut and secure it with a 9/16 wrench.
 - c. Holding in one hand the 9/16 wrench use the fork cap wrench to unscrew the fork cap from the damper rod.
 - d. Remove the fork spring pad, and fork spring.
 - e. Inside the damper rod, the rebound adjustment screw pin is resting and will fall out of the damper rod when the fork is inverted. Try to catch it before it falls into your oil bucket.
 - f. Invert the fork and allow the oil to drain completely. Working the damper rod up and down will speed up the draining process.

Assembly procedure

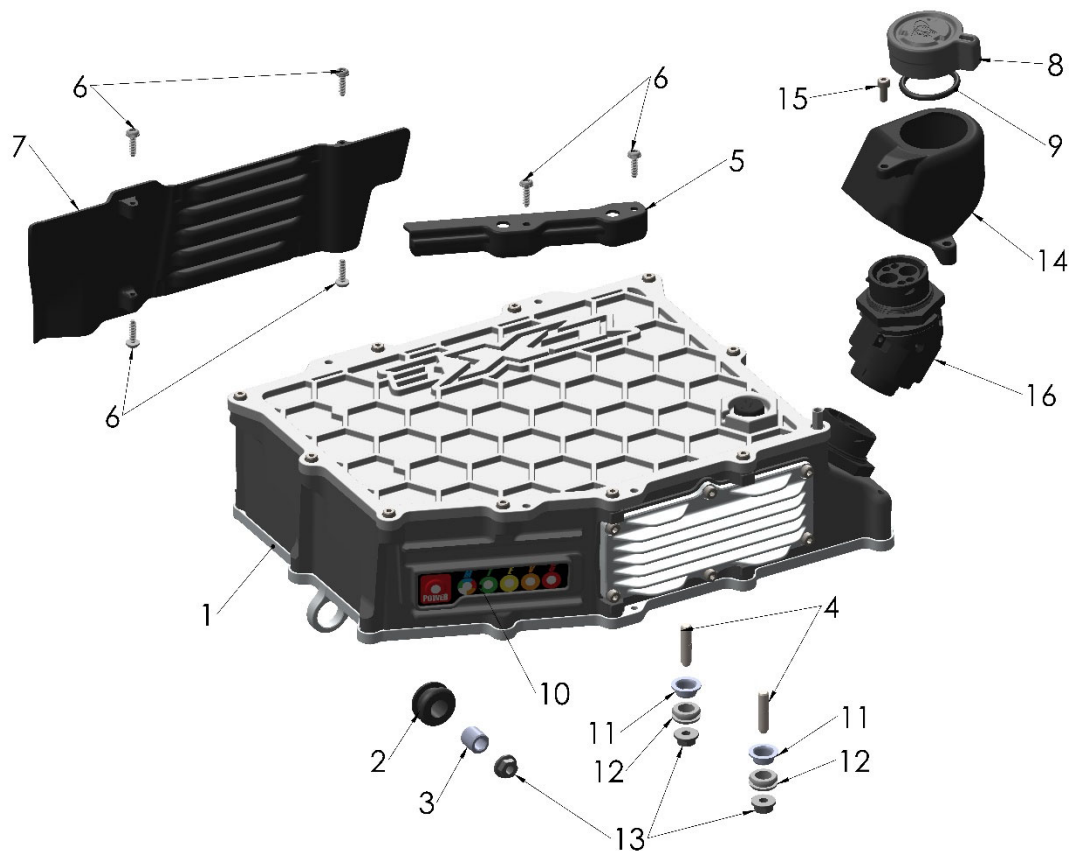
1. Fill the fork with 150ml of fork oil.
2. Work the damper rod up and down to allow the fork cartridge to fill with oil.
3. Install the rebound adjustment screw pin into the damper rod.
4. Install the fork spring and spring pad.
5. Extend the damper rod completely and Compress the fork spring enough to begin threading the fork cap back onto the damper rod.
6. Make sure that the fork cap threads onto the damper rod completely before it contacts the jam nut.
7. Tighten the jam nut.
8. Tighten the fork cap to the fork leg outer
9. Install each leg back into the triple clamp. Torque each pinch bolt to 14N-m (10.3 ft-lb) making sure both legs are set to the same height in the clamps.
10. Pump the fork leg several times to verify that it operates smoothly.
11. Reinstall the brake caliper.
12. Reinstall the front wheel (25 ft-lb. 34 Nm).

Parts – Bars and Controls



| Bars and Controls | | |
|-------------------|--------------|---------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | FAMU0017 | HANDLEBAS – MICROBARS – COBRA BEND |
| 2 | TCMU0021 | GRIPS (SET OF TWO) – MICROGRIPS |
| 3 | JACE50006MP | THROTTLE ASSEMBLY – TWIG - ELECTRONIC |
| 3A | HCBC0412 | M4x12 SHSC |
| 4 | FCMU0041 | STOP RING – MICRO BAR THROTTLE |
| 5 | | SEE FRONT BRAKE |
| 6 | NCCEMU001MP | KILL SWITCH ASSEMBLY - MAGNETIC |
| 7 | NCCEMU002 | KEY – RED – RACER - KILL SWITCH ACTIVATE |
| 7 | NCCEMU005 | KEY – YELLOW – RACER - KILL SWITCH ACTIVATE |
| 8 | HCBC0830 | M8X30mm SOCKET HEAD CAP SCREW (4 REQ'D) |
| 9 | TCMU0060BLK | BAR CLAMP – BLACK (2 REQ'D) |
| 10 | ZCMUOR08 | O-RING – KEY RETAINER |
| ACCESSORY | MCMUAM11 | GRIP DONUT – PAIR – PRO TAPER MICRO BAR |
| ACCESSORY | | |
| ACCESSORY | TKMU00002BLK | BAR RISER KIT |

Parts – Battery



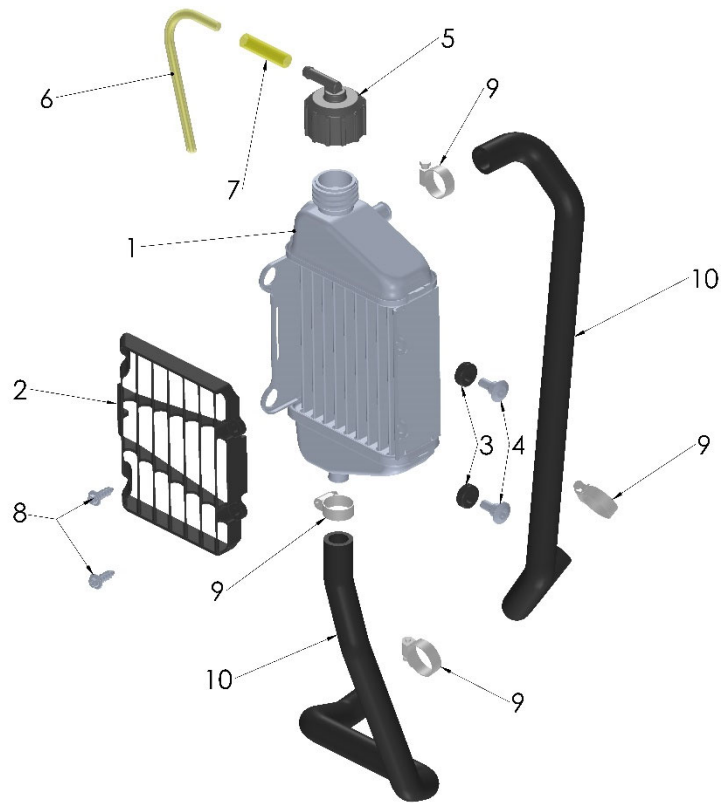
| Battery | | |
|---------|-------------|--------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | DACE10160MP | BATTERY ASSY – 1.0 kWh – 60V - MOUNTING HARDWARE |
| 2 | DCCE10010 | GROMMET – REAR BATTERY MOUNT 1kWh |
| 3 | DCCE10009 | COMP LIMITER – REAR BATTERY MOUNT 1kWh |
| 4 | DCCE10006 | STUD – FRONT BATTERY MOUNTING |
| 5 | DCCE10012 | SHIELD – BATTERY EDGE – RIGHT SIDE |
| 6 | HCTF0416 | M4X16MM THREAD FORMING SCREW FOR PLASTIC |
| 7 | DCCE10013 | SHIELD – BATTERY EDGE – LEFT SIDE |
| 8 | DCCEMU001 | BLOCK OFF – CONNECTOR – BATTERY |
| 9 | ZCCEMUOR4 | O’RING – BATTERY BLOCK OFF CAP |
| 10 | DCCE10005 | OVERLAY – BATTERY USER INTERFACE |
| 11 | DCCE10008 | COMPRESSION LIMITER – FRONT BATTERY MOUNT |
| 12 | DCCE10007 | GROMMET – FRONT BATTERY MOUNT |
| 13 | HCNW0601 | 6MM SPINNING WASHER NUT – 19MM OD (3 REQ'D) |
| 14 | DCCE10018 | HOUSING – INTERPOSER |
| 15 | HCBC0410 | M4X 10 SHCS |
| 16 | DCCE10020 | INTERPOSER |

Chargers:

Low Power 60V & 50V: DAMU6003MP

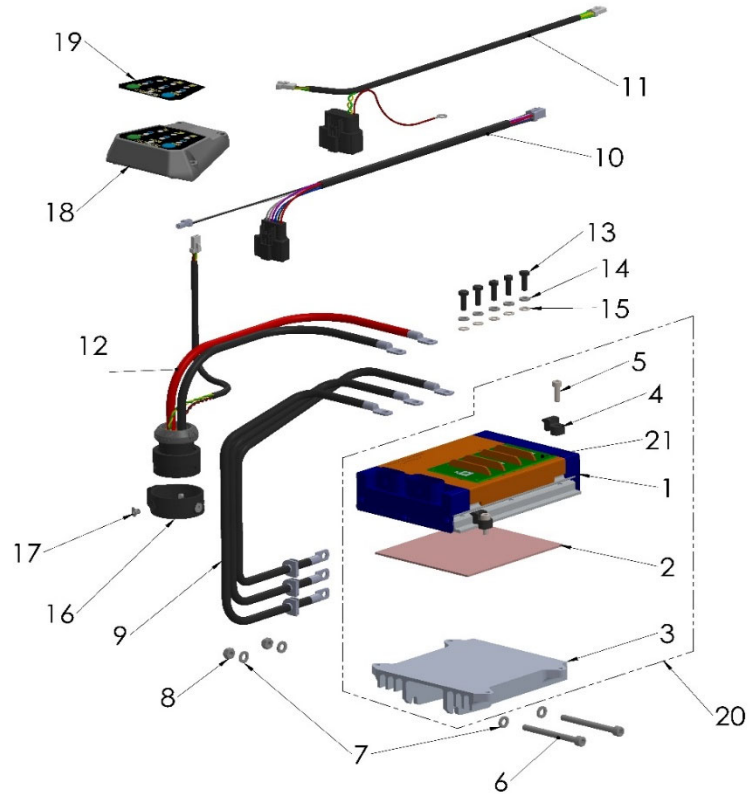
High Power 60V & 50V: DAMU6012MP

Parts – Coolant System



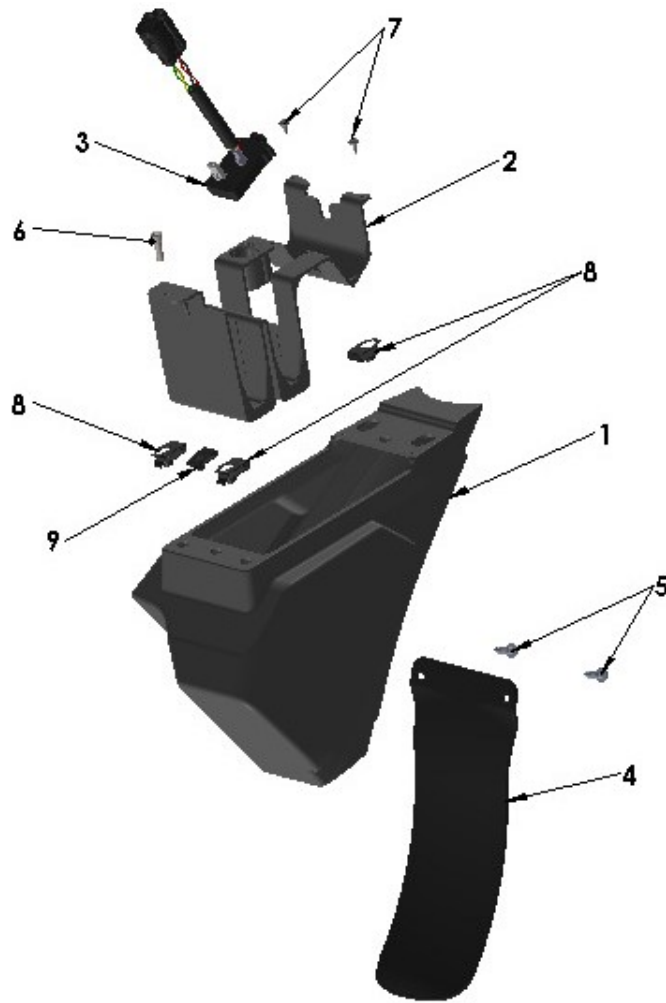
| Coolant System | | |
|----------------|-----------|-----------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | FCCE50012 | RADIATOR |
| 2 | FCMU0069 | LOUVER |
| 3 | MCMUGR12 | GROMMET – RADIATOR MOUNTING (2 REQ'D) |
| 4 | HCSP0610 | FASTENER – RADIATOR MOUNTING (2 REQ'D) |
| 5 | FCMU0020 | CAP, 1.3 BAR |
| 6 | FCMU0113 | RADIATOR OVERFLOW HOSE, 20" |
| 7 | FCMU0322 | HOSE – USED AS CLAMP |
| 8 | HCSP0004 | PLASTIC SCREW |
| 9 | MCMUCL09 | HOSE CLAMP – 11 TO 20MM (4 REQ'D) AT RADIATOR |
| 10 | FKEMU001 | KIT – HOSE – BLK |

Parts – Electrical System



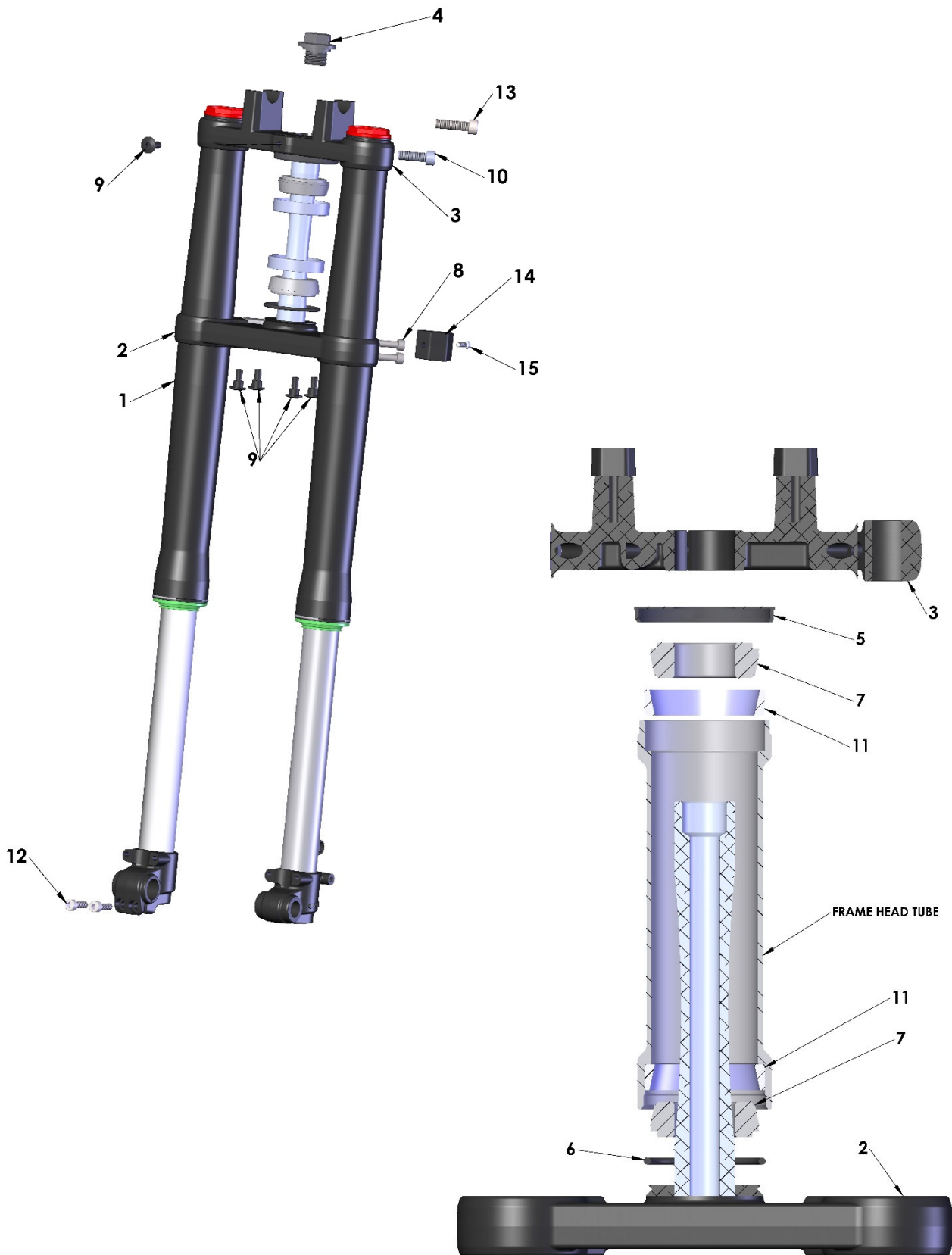
| Electrical System | | |
|-------------------|-------------|----------------------------------------------------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | JCCE50003 | CONTROLLER – MOTOR |
| 2 | NCMU0001 | THERMAL PAD – HEAT SINK TO CONTROLLER |
| 3 | FCCE50016C | MOUNT – CONTROLLER |
| 4 | FCCE50019 | CLAMP – CONTROLLER MOUNT (4 PCS) |
| 5 | HCBC0516 | M5X16MM SHCS or HCBF0516 SELF TAPPER (depends if socket head cap screw or hex head with flange) |
| 6 | HCBC0665 | M6X65MM SHCS |
| 7 | HCWF0601 | M6 FLAT WASHER (4 REQ'D) |
| 8 | HCNL0601 | M6 NYLOCK NUT |
| 9 | JCCE50058MP | MDU PHASE WIRE, WITH TERMINATIONS – CX5E ONLY |
| 10 | JCCEMU006 | HARNESS - HALL SENSORS – CX5E ONLY |
| 11 | JCCE50065 | HARNESS – CAN / COMMUNICATION - JST |
| 12 | JCCE50067MP | POWER LEADS FOR MDU - INTERPOSER |
| 13 | HCBH0512 | M5X12MM HEX HEAD BOLT(5 PCS) |
| 14 | HCWF0501 | M5 LOCK WASHER (5 PCS) |
| 15 | HCWL0501 | M5 FLAT WASHER (5 PCS) |
| 16 | TCCE50005 | HELPER – BATTERY CONNECTION |
| 17 | HCBB0402 | #10-32 FLAT HEAD SCREW - SHORT |
| 18 | VACEMU001MP | RDU – RIDER DISPLAY UNIT |
| 19 | VCCEMU010 | OVERLAY - RDU |
| 20 | JACE50007 | CONTROLLER ASSY - WITH PAD ON MOUNT |
| 21 | JCCE50059 | PCB ASSY - MDU PHASE BIAS - POST BLOCKER |
| 22 | DCCEMU0002 | BLOCK OFF- CONNECTOR- VEHICLE SIDE |

Parts – Electronics Box



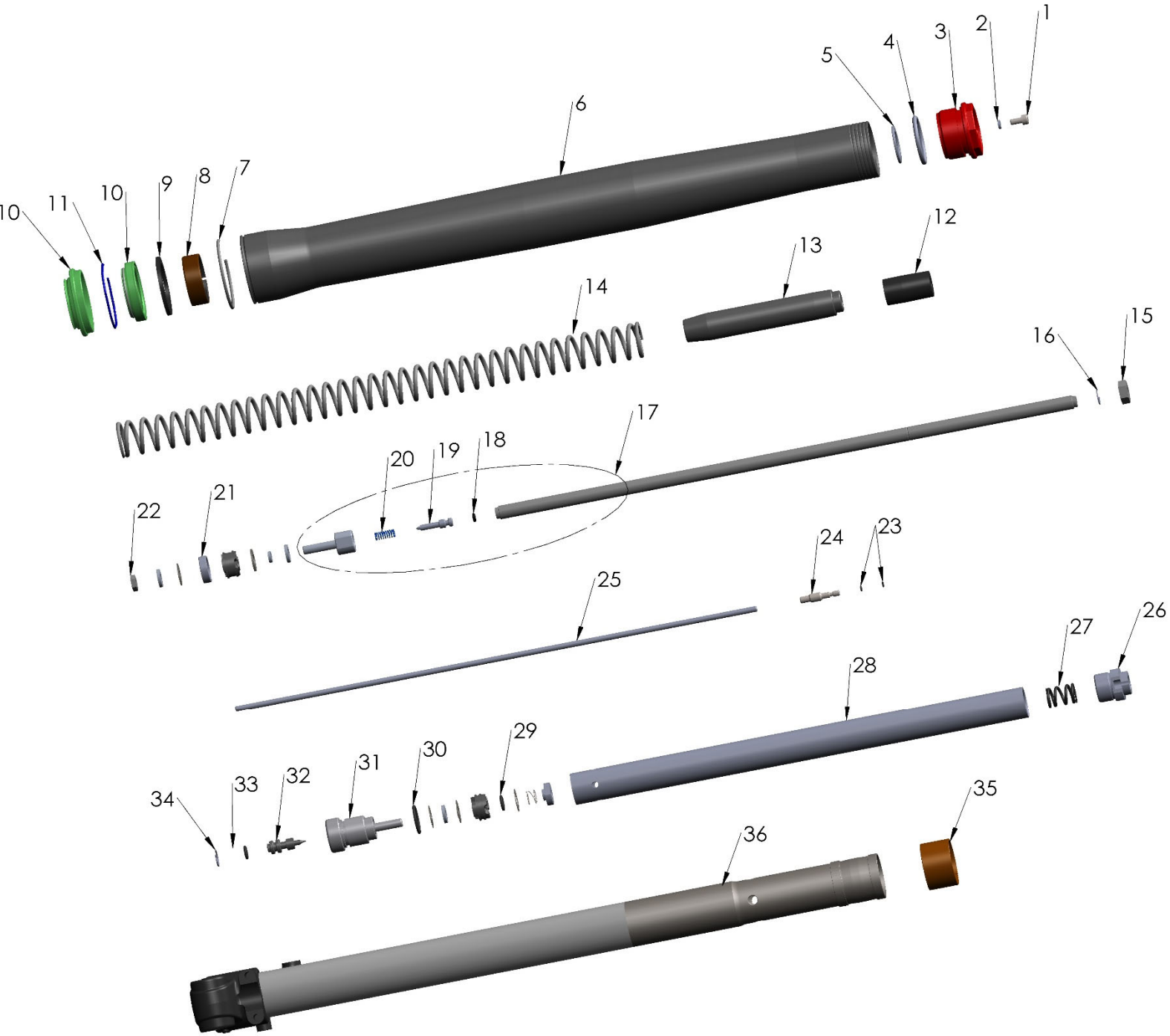
| Air Box | | |
|---------|------------|-------------------------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | TCCE50002P | ELECTRONICS BOX |
| 2 | JCCE50062 | ELECTRONICS HANGER |
| 3 | JCCE50064 | CAN NETWORK NODE MODULE W/ DIAGNOSTIC PORT (CNN Module) – JST – CX5E |
| 4 | TCC60008 | MUDFLAP |
| 5 | HCSP0004 | PLASTIC SCREW |
| 6 | HCBC0516 | M5X 16 SHCS |
| 7 | HCPP0738 | PLASTIC SCREW |
| 8 | HCHA0003 | M6 CLIP NUT |
| 9 | HCCN0001 | M5 CLIP NUT |

Parts – Forks & Triple Clamps



| Front Forks and Triple Clamp | | |
|------------------------------|-------------|---------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | KACS2021FWE | FORK COMPLETE, BRAKE & NON-BRAKE SIDE |
| 2 | FAMU0020BLK | TRIPLE CLAMP BOTTOM ASSY, (CLAMP & STEM) BLACK |
| 3 | FCMU0071BLK | TRIPLE CLAMP TOP - BLACK |
| 4 | FCMU0074 | BOLT – STEERING STEM |
| 5 | FCMU0079 | DUST COVER (1 REQ'D) |
| 6 | FCMU0044 | O-RING (1 REQ'D) |
| 7 | FCMU0004 | STEERING HEAD BEARING (2 REQ'D) |
| 8 | HCBC0625 | M6X25mm SOCKET HEAD CAP SCREW |
| 9 | HCSP0610BLK | BOLT - FORK GUARD - BLACK (NUMBER PLATE & FENDER) |
| 10 | HCBC0825 | M8 x 25mm SOCKET HEAD CAP SCREW |
| 11 | FCMU0011 | RACE – STEERING STEM BEARING (2 REQ'D) |
| 12 | HCBC0620 | M6X20MM SOCKET HEAD CAP SCREW (2 REQ'D) |
| 13 | HCBC0830 | M8x 30 SHCS |
| 14 | FCMU0175MP | STEERING STOP BUMPER (2 REQ'D) |
| 15 | HCBB1416 | M4x 16 BUTTON HEAD (2 REQ'D) |
| | | |
| ACCESSORY | FKMU0008 | KIT – STEERING STEM BEARINGS, RACES AND SEALS |
| | | |
| TOOL | MCMUTL44 | TOOL – BEARING AND SEAL INSTALLER ASSY |

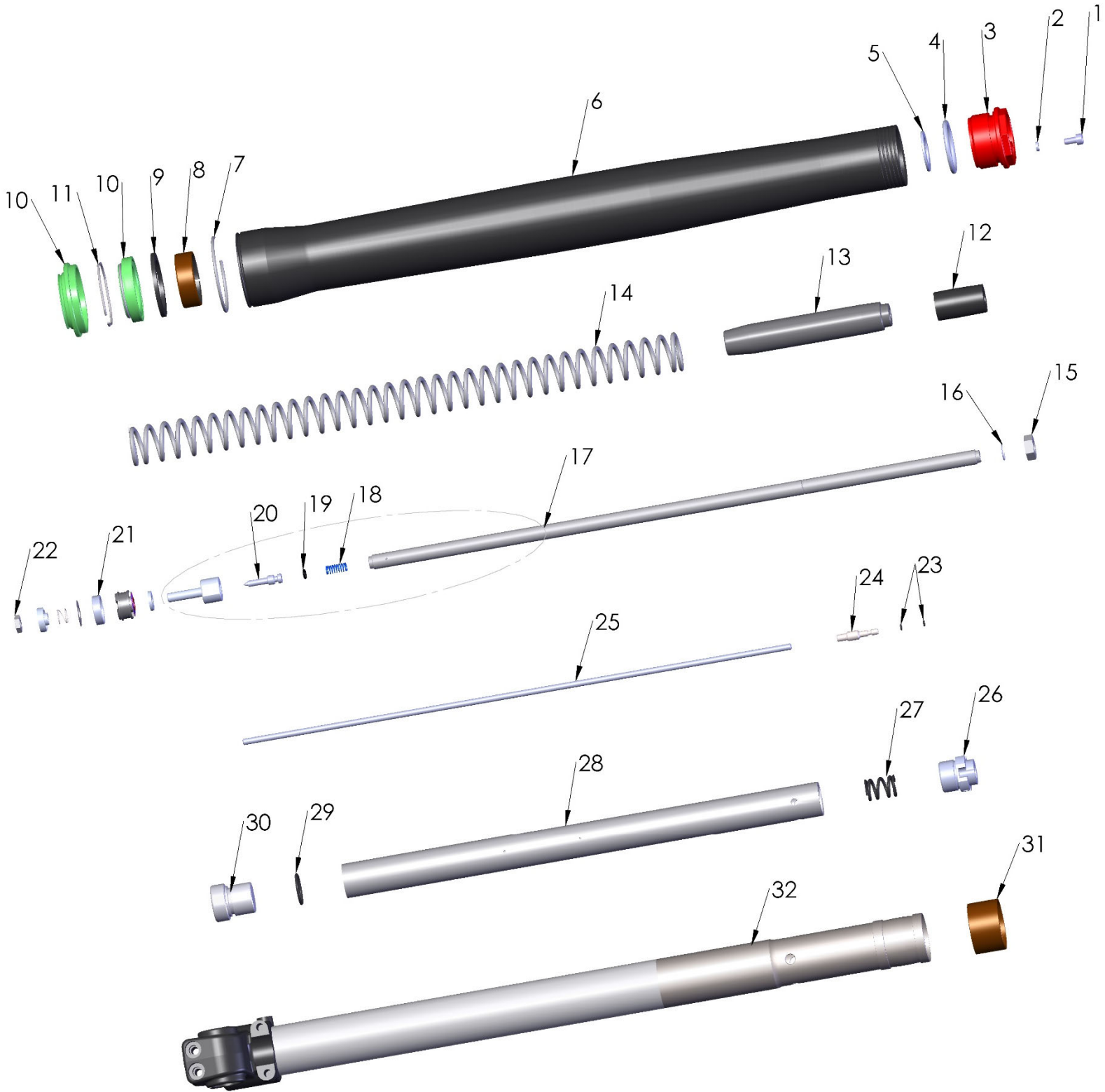
Parts – Forks – Leg Assembly – Brake Side



Parts – Forks – Leg Assembly – Brake Side

| REF # | PART # | DESCRIPTION |
|-------|-------------|-----------------------------------------|
| 1 | HCBC0408 | 4 X 8 SHCS CLEAR ZINC |
| 2 | ZCKG0001 | GASKET, BLEED SCREW FORK |
| 3 | KCCS0004C | FORK CAP - CONVENTIONAL 32MM USD |
| 4 | ZCMUOR18 | O-RING – 3MM X 27MM ID |
| 5 | KCCS0036 | SPRING WEAR PLATE 32MM |
| 6 | KCCS0005 | OUTER TUBE 32MM |
| 7 | KCCS0035 | RING CLIP FORK OUTER WEAR RING 32MM |
| 8 | KCCS0006 | FORK GLIDE RING BOTTOM 32MM |
| 9 | KCCS0032 | FORK SEAL SPACER 32MM |
| 10 | KKCS0004 | FORK SEAL AND SWIPER KIT 32MM |
| 11 | KCCS0002 | RING CLIP - FORK SEAL RETAINER - 32MM |
| 12 | KCC60067 | JOUNCE BUMPER |
| 13 | KCCS0013 | SPRING GUIDE 32MM |
| 14 | KCCS3225 | STANDARD SPRING - FORK 0.25 KG/MM 32mm |
| 14 | KCCS3223 | LIGHT SPRING - FORK 0.23 KG/MM 32mm |
| 14 | KCCS3227 | HEAVY SPRING - FORK 0.257KG/MM 32mm |
| 15 | HCNJ3824 | NUT JAM 3/8-24 CLASS 8 |
| 16 | KCC60068 | RING CLIP - FORK SPRING GUIDE RETAINER |
| 17 | KAC60003 | DAMPER ROD ASSEMBLY |
| 18 | KCC60058 | O-RING MID-VALVE ADJ NEEDLE |
| 19 | KCC60050 | FORK MID-VALVE ADJUSTER NEEDLE |
| 20 | KCC60051 | SPRING - FORK ADJUSTER NEEDLE |
| 21 | KCCS0018 | SEAL - FORK PISTON - MID VALVE |
| 22 | HCNJ0601 | 6MM JAM NUT |
| 23 | BCKG0033 | O-RING – 2MMID |
| 24 | KCCS0033 | ADJUSTER SCREW TOP 32MM |
| 25 | KCC60049 | ADJUSTER PIN |
| 26 | KCMU0013 | CARTRIDGE CAP |
| 27 | KCKG0050 | TOP OUT SPRING |
| 28 | KCKG0019 | CARTRIDGE TUBE |
| 29 | KCMU0021 | O-RING - FORK - BASE VALVE |
| 30 | ZCKGB017 | O-RING - FORK BOTTOM PLUG |
| 31 | KCC60069 | FORK BOTTOM PLUG – ADJUSTABLE |
| 32 | KCC60048 | ADJUSTMET SCREW – FORK BOTTOM PLUG |
| 33 | ZCMUOR03 | O-RING – ADJUSTMENT SCREW |
| 34 | KCCS0031 | RING CLIP – FORK ADJUSTMENT SCREW |
| 35 | KCCS0007 | FORK GLIDE RING |
| 36 | KAMU0003BLK | FOR LOWER – COMPLETE – BRAKE SIDE - BLK |
| | | |
| TOOL | MCMUTL39 | TOOL – FORK SEAL / SWIPER DRIVER – 32MM |
| TOOL | MCMUTL41 | TOOL – FORK CAP WRENCH – 32MM/37MM |
| TOOL | MCMUTL04 | TOOL – CARTRIDGE TUBE WRENCH |

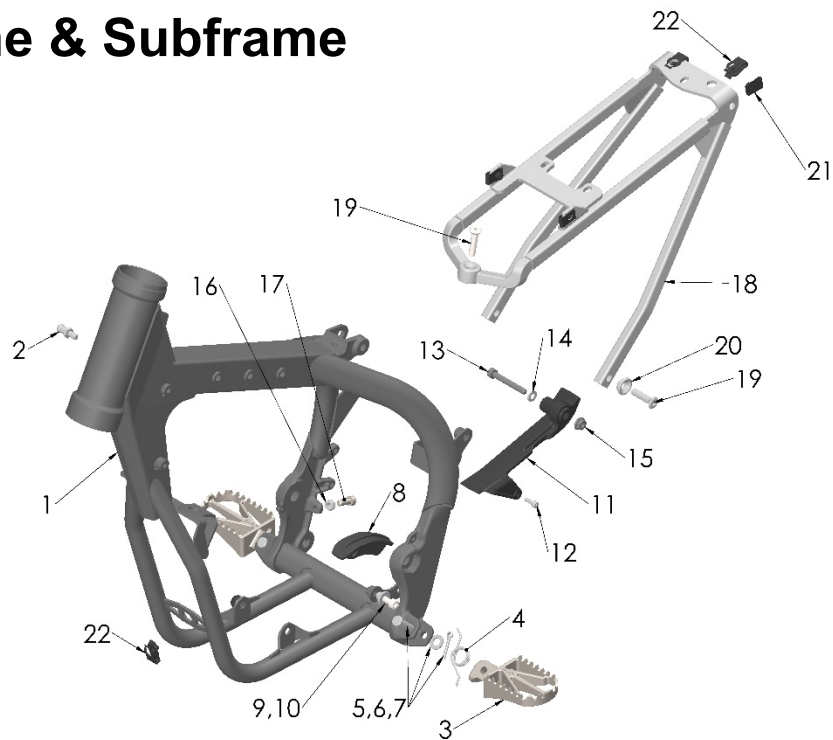
Parts - Forks – Leg Assembly – Non-brake Side



Parts - Forks – Leg Assembly – Non-brake Side

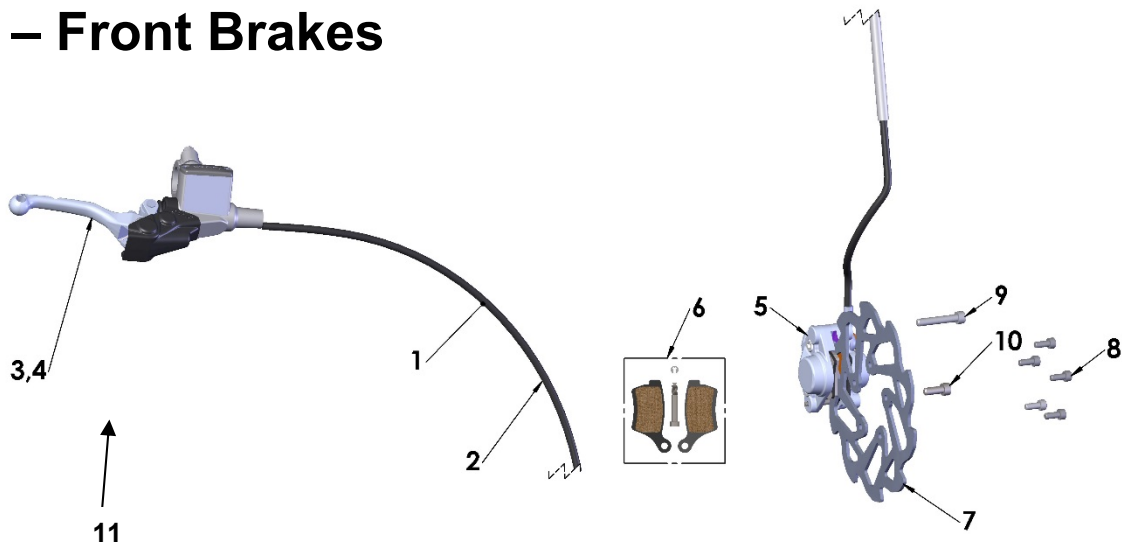
| REF # | PART # | DESCRIPTION |
|-------|-------------|---------------------------------------------|
| 1 | HCBC0408 | 4 X 8 SHCS CLEAR ZINC |
| 2 | ZCKG0001 | GASKET, BLEED SCREW FORK |
| 3 | KCCS0004S | CAP - CONVENTIONAL 32MM USD |
| 4 | ZCMUOR18 | O-RING – 3MM X 27MM ID |
| 5 | KCCS0036 | WEAR PLATE - FORK SPRING 32MM |
| 6 | KCCS0005 | OUTER TUBE 32MM |
| 7 | KCCS0035 | RING CLIP FORK OUTER WEAR RING 32MM |
| 8 | KCCS0006 | GLIDE RING BOTTOM 32MM |
| 9 | KCCS0032 | SEAL SPACER 32MM |
| 10 | KKCS0004 | FORK SEAL AND SWIPER KIT 32MM |
| 11 | KCCS0002 | RING CLIP - FORK SEAL RETAINER - 32MM |
| 12 | KCC60067 | JOUNCE BUMPER |
| 13 | KCCS0013 | SPRING GUIDE 32MM |
| 14 | KCCS3225 | STANDARD SPRING - FORK 0.25 KG/MM 32mm |
| 14 | KCCS3223 | LIGHT SPRING - FORK 0.23 KG/MM 32mm |
| 14 | KCCS3227 | HEAVY SPRING - FORK 0.257KG/MM 32mm |
| 15 | HCNJ3824 | NUT JAM 3/8-24 CLASS 8 |
| 16 | KCC60068 | RING CLIP - FORK SPRING GUIDE RETAINER |
| 17 | KAC60003 | DAMPER ROD ASSEMBLY |
| 18 | KCC60058 | O-RING MID-VALVE ADJ NEEDLE |
| 19 | KCC60050 | MID-VALVE ADJUSTER NEEDLE |
| 20 | KCC60051 | SPRING - FORK ADJUSTER NEEDLE |
| 21 | KCCS0018 | SEAL - FORK PISTON - MID VALVE |
| 22 | HCNJ0601 | 6MM JAM NUT |
| 23 | BCKG0033 | O-RING – 2MMID |
| 24 | KCCS0033 | ADJUSTER SCREW TOP 32MM |
| 25 | KCC60049 | ADJUSTER PIN |
| 26 | KCMU0013 | CARTRIDGE CAP |
| 27 | KCKG0050 | TOP OUT SPRING |
| 28 | KCC60056 | CARTRIDGE TUBE |
| 29 | KCMU0021 | O-RING - FORK - BASE VALVE |
| 30 | KCC60057 | PLUG – FORK BOTTOM – SMART LEG |
| 31 | KCCS0007 | FORK GLIDE RING |
| 32 | KAMU0004BLK | FOR LOWER – COMPLETE – NON-BRAKE SIDE - BLK |
| | | |
| TOOL | MCMUTL39 | TOOL – FORK SEAL / SWIPER DRIVER – 32MM |
| TOOL | MCMUTL41 | TOOL – FORK CAP WRENCH – 32MM/37MM |
| TOOL | MCMUTL04 | TOOL – CARTRIDGE TUBE WRENCH |

Parts – Frame & Subframe



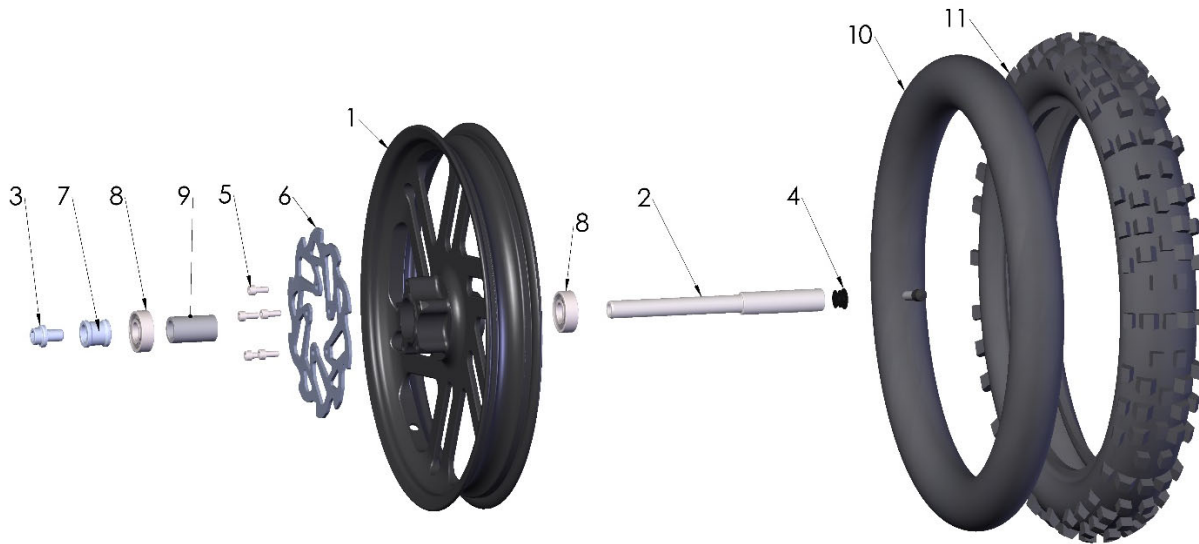
| Frame | | |
|-------|-----------|---------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | FACE52024 | FRAME – 2024 FWE |
| 2 | FCCE50015 | POST – SIDE LOUVER |
| 3 | TCMU0139 | FOOTPEGS (PAIR) |
| 4 | TCC60012 | SPRING - FOOTPEG (SINGLE PIECE) |
| 5 | FCMU0031 | CLEVIS PIN - FOOTPEG |
| 6 | HCWF0801 | 8mm FLAT WASHER |
| 7 | HCCP0008 | COTTER PIN 1/8 X 3/4 |
| 8 | TCMU0044 | LOWER CHAIN SLIDE |
| 9 | HCBC0616 | M6X16 SOCKET HEAD CAP SCREW |
| 10 | TCC60019 | COMPRESSION LIMITING SPACER |
| 11 | FCCEMU001 | CHAIN SLIDE – MOLDED |
| 12 | HCBC0412 | M4X12MM SHCS |
| 13 | HCBC0645 | M6X45MM SHCS |
| 14 | HCWF0601 | M6 FLAT WASHER |
| 15 | HCNL0601 | M6 NYLOCK FLANGE NUT |
| 16 | HCBC0625 | BRAKE ADJUSTER BOLT |
| 17 | HCNS0601 | 6MM NUT |
| 18 | FACE5001 | SUBFRAME - CXE |
| 19 | HCSP0701 | SPROCKET BOLT – M7 |
| 20 | FCMU0109 | COMPRESSION LIMITER – SUB FRAME |
| 21 | HCCN0001 | M5 CLIP NUT (4 REQ'D) |
| 22 | HCHA0003 | 6MM CLIP NUT (2 PLACES) |
| | | |
| | | |

Parts – Front Brakes



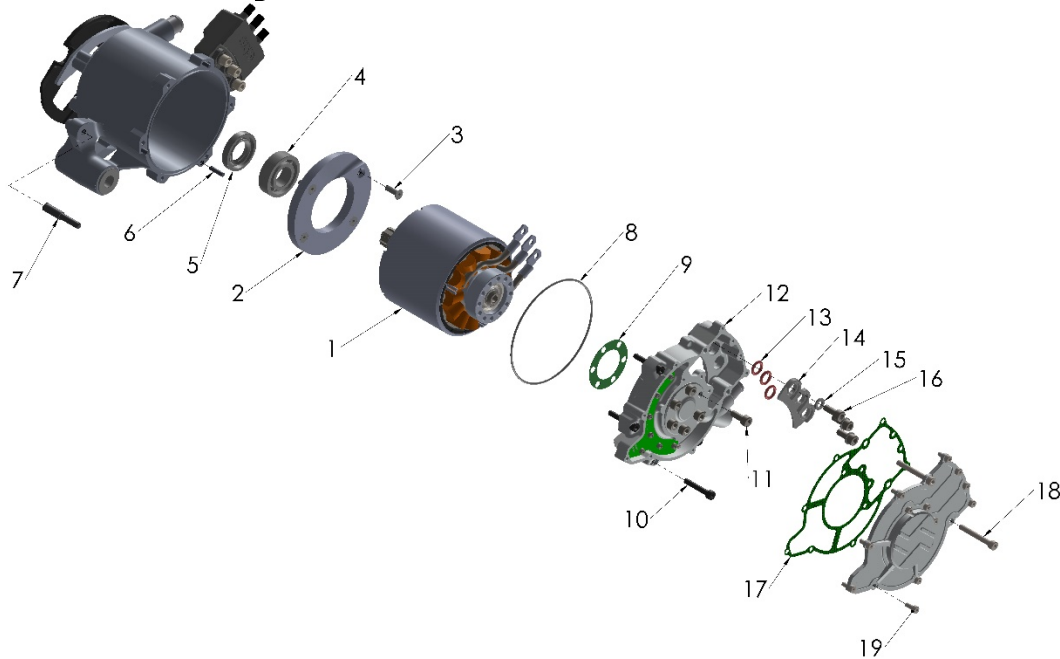
| Front Brakes | | |
|-----------------------------|----------|--------------------------------------------------------------------------------------------------------|
| REF# | PART # | DESCRIPTION |
| 1 | BACS0001 | BRAKE ASSY - FRONT CARD - KING FW - 2 PISTON 11.0 |
| 2 | BCCS0003 | HOSE – BRAKE FRONT |
| 3 | BAMU0009 | LEVER ASSEMBLY |
| 4 | BAMU0006 | MASTER CYLINDER ASSEMBLY COMPLETE W LEVER |
| 5 | BAMU0020 | CALIPER – FRONT – CARD 2 PISTON |
| 6 | BKMU0009 | KIT 505 ORGANIC BRAKE PADS, WITH BOLT AND CLIP |
| 7 | BCMU0222 | BRAKE ROTOR |
| 8 | HCBC0514 | M5X14mm SOCKET HEAD CAP SCREW (5 REQ'D) |
| 9 | HCBC0635 | M6X35mm SOCKET HEAD CAP SCREW |
| 10 | HCBC0620 | M6X20mm SOCKET HEAD CAP SCREW |
| 11 | BCMU0116 | COVER – MUD PROTECTION |
| Caliper Accessories | | |
| ACCESSORY | BKMU0003 | BLEED KIT (MULTIPLE SYRINGES, FITTINGS & HOSE) |
| ACCESSORY | BCMU0038 | SPRING - BRAKE PAD RETURN |
| ACCESSORY | BKMU0006 | PISTON & SEAL KIT – CARD CALIPER |
| ACCESSORY | BKMU0008 | BLEED SCREW KIT – CARD |
| ACCESSORY | BKMU0007 | BANJO BOLT AND WASHER KIT – CARD |
| ACCESSORY | BCMU0014 | CALIPER ADJUSTMENT SHIMS 6mm ID |
| Master Cylinder Accessories | | |
| ACCESSORY | BKC60008 | CAP & BLADDER KIT ZL150 (CAP, BLADDER & (2) M3-0.5 X 6mm LONG PHILLIPS SCREW) |
| ACCESSORY | BCC60058 | CLAMP – M/C ZL150 |
| ACCESSORY | HCBC0620 | M6-1.0 X 22mm SOCKET HEAD CAP SCREW |
| ACCESSORY | BCMU0060 | PIVOT BOLT |
| ACCESSORY | BCC60017 | BOOT – PISTON END COVER |
| ACCESSORY | BKC60015 | REBUILD KIT – MASTER CYLINDER CARD 11.0MM (PISTON, SEALS, BUSHING, SPRING, CLIP & RETAINING WASHER) |
| ACCESSORY | HCSS0520 | M5 X 20 SET SCREW – LEVER POSITION ADJUSTMENT |
| ACCESSORY | HCNJ0501 | 5MM LOCKNUT |
| ACCESSORY | CKC60005 | PIVOT BOLT KIT – LEVER TO PIVOT BLOCK – MALE & FEMALE |
| ACCESSORY | HCSS0610 | SET SCREW – PRESET |
| ACCESSORY | BCMU0059 | LEVER ONLY – THIN FORMLY |
| ACCESSORY | CCC60026 | SPRING – LEVER RETURN |
| ACCESSORY | CCC60025 | SPACER – SPRING CENTERING |

Parts – Front Wheel



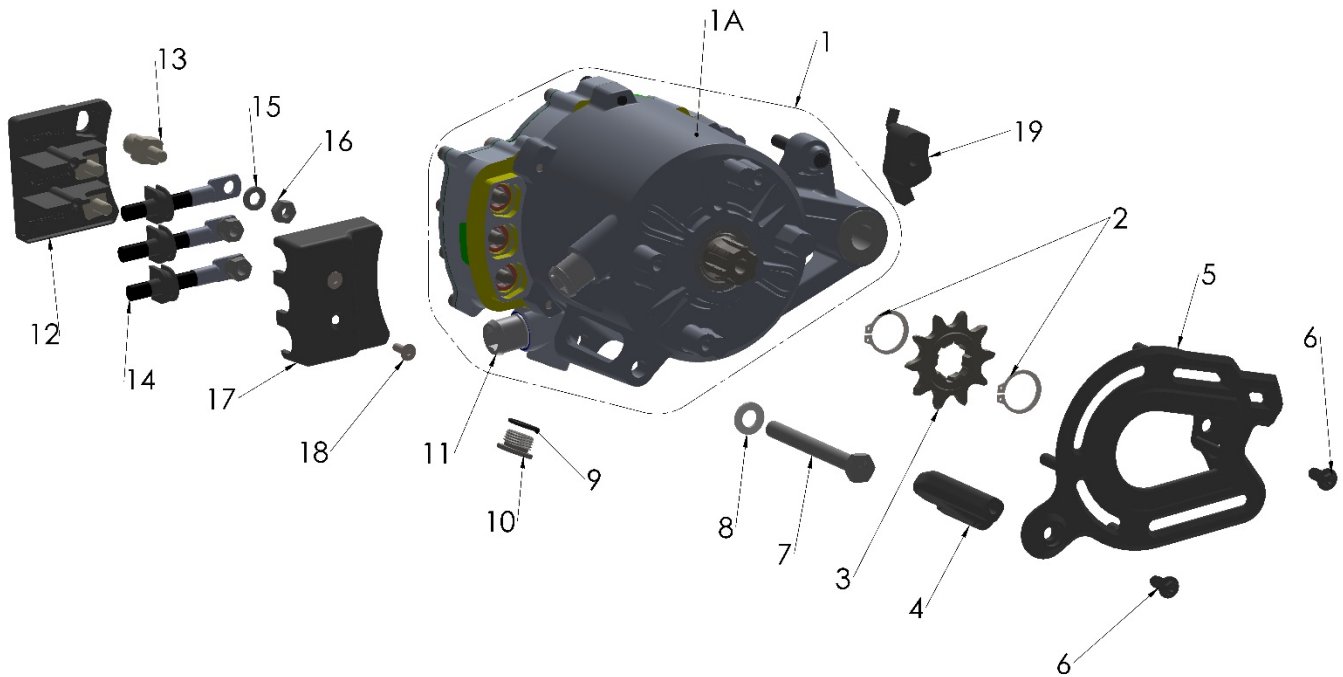
| Front Wheel | | |
|-------------|-------------|-------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | WACSF021BLK | WHEEL WITH BEARINGS SPOKE STYLE – BLACK ANODIZE |
| 2 | WCMU0043 | FRONT AXLE - HOLLOW |
| 3 | HCSP1016BLK | BOLT – ALUMINUM AXLE PULL – BLACK ANODIZE |
| 4 | WCMU0024 | PLUG - BLACK PLASTIC |
| 5 | HCBC0514 | M5X14mm SOCKET HEAD CAP SCREW (5 REQ'D) |
| 6 | BCMU0222 | BRAKE ROTOR – FRONT & REAR |
| 7 | WCMU0045BLK | WHEEL SPACER LEFT |
| 8 | WCMU0120 | BEARING – WHEEL (2 REQ'D) |
| 9 | WCMU0044 | SPACER – WHEEL FRONT |
| 10 | WCKG1201 | TUBE 12" |
| 11 | WCKG1200D34 | TIRE - FRONT - 60/100-12- DUNLOP MX34 |

Parts – Motor System - Internals



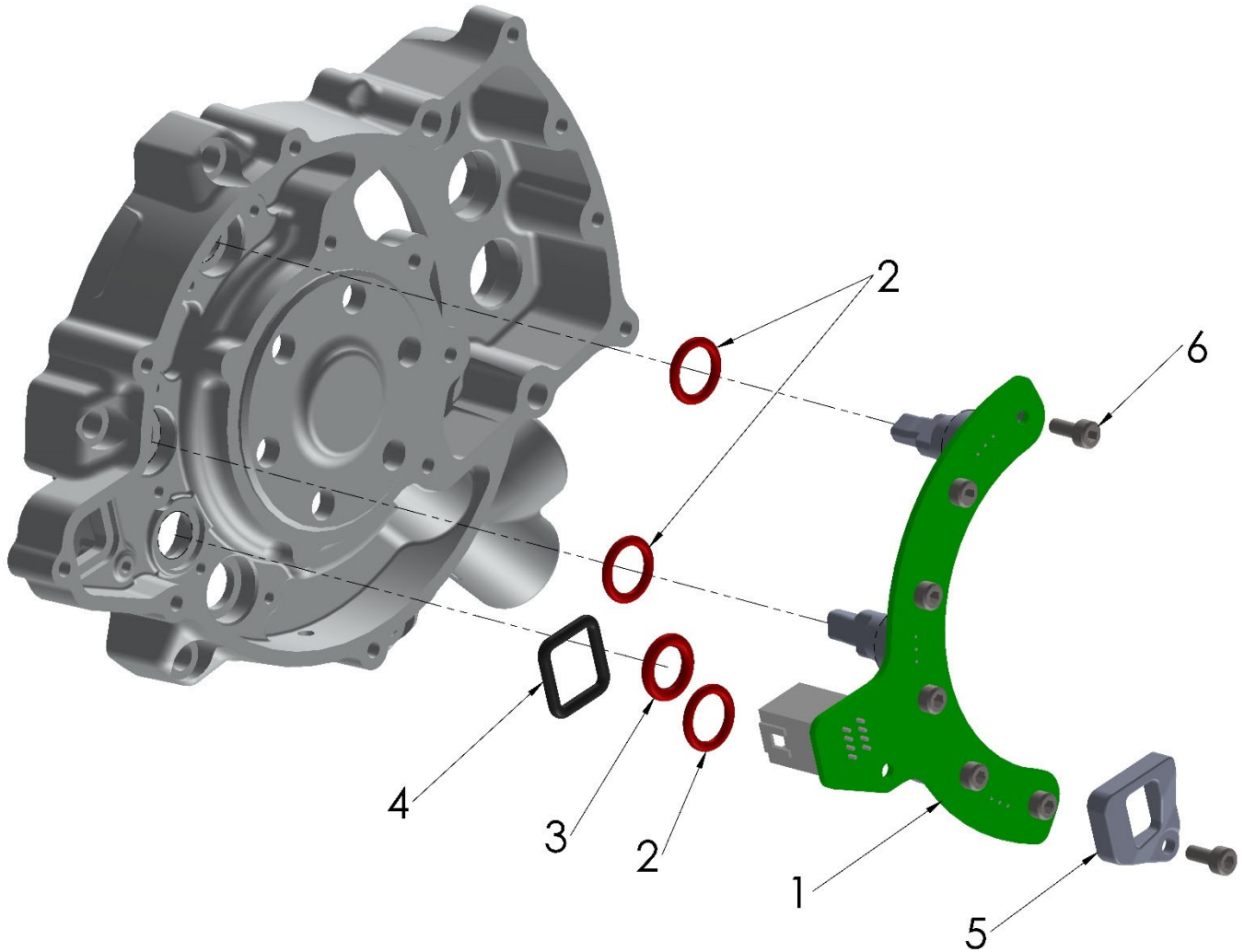
| Motor System | | |
|--------------|----------------|-------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | | MOTOR - NOT SOLD SEPARATELY |
| 2 | JCCE50038 | STUFFER – PUMP |
| 3 | HCFH0516 | M5X16MM FLAT HEAD SCREW (4 REQ'D) |
| 4 | ECKGBR01 | BEARING – OUTPUT |
| 5 | JCCE50031 | SEAL - OUTPUT |
| 6 | ECDC0051 | DOWEL PIN 4X16 (3 REQ'D) |
| 7 | DCCE10011 | STUD – REAR BATTERY MOUNT – M8 / M6 |
| | ECC60107 | STUD – REAR BATTERY MOUNTING M6 |
| 8 | ZCCE50R03 | O’RING – CASE SEALING |
| 9 | ZCCE50002 | GASKET – STATOR TUBE TO CASE |
| 10 | HCBC0540 | M5X40MM SHCS (2 REQ'D) |
| 11 | HCBC0530 | M5X30MM SHCS (4 REQ'D) |
| 12 | JCCEMU001 | HOUSING – MOTOR – WIRE SIDE |
| 13 | ZCCEMUOR1 | ORING – PHASE STUDS |
| 14 | JCCE50037 | INSULATOR – PHASE |
| 15 | HCWF0601 | M6 FLAT WASHER (3 REQ'D) |
| 16 | HCBC0601 | M6X16MM SHCS (3 REQ'D) |
| 17 | ZCCEMU001 | GASKET – PHASE COVER TO CASE |
| 18 | HCBC0540 | M5X40MM SHCS (2 REQ'D) |
| 19 | HCBC0410 | M4X10 SHCS (9 REQ'D) |
| | HCBC0408 | M4X8 SHCS (4 REQ'D) IN THE CENTER |
| | See Rear Brake | BRAKE SNAKE ON BRACKET |
| ACCY | MCMUMF32 | MOTOR COOLING FLUID – 32OZ BOTTLE |

Parts – Motor System – Sprocket Side



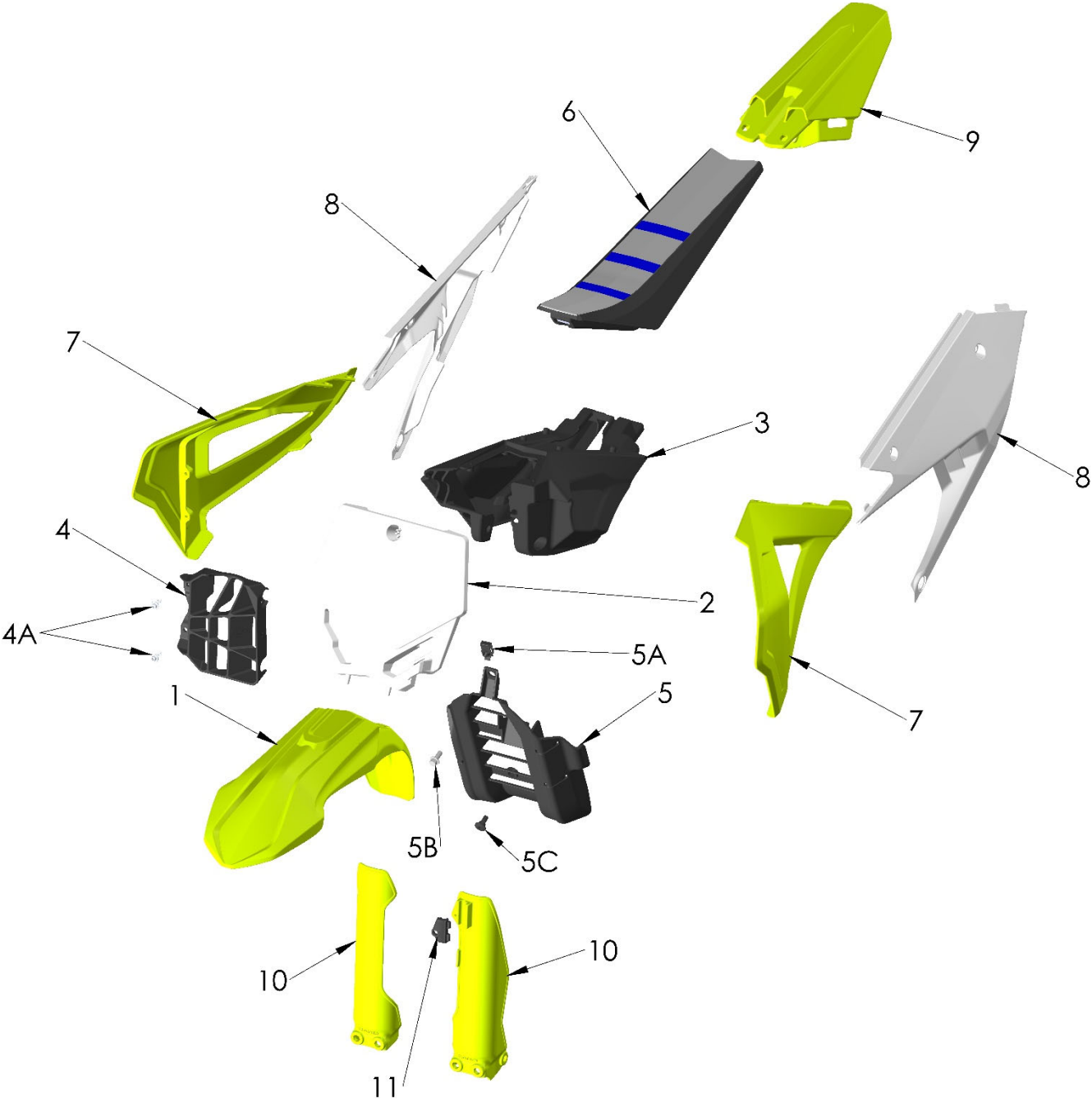
| Motor System | | |
|--------------|----------------|---------------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | JACEMU008 | MOTOR ASSEMBY – COBRA – SMALL VEHICLE |
| 1A | JACEMU007 | HOUSING ASSY V2 - SPROCKET SIDE WITH FITTINGS, STUD & BEARING |
| 2 | ECKGSR03 | SNAP RING – OUTPUT SHAFT (2 REG'D) |
| 3 | PCMU0010 | SPROCKET – FRONT – 10T – 415 CHAIN |
| 4 | JCCEMU026 | FRONT NUT - CX-E CHAIN GUARD MOUNTING |
| 5 | JCCEMU025 | GUARD - FRONT SPROCKET - CX-E SOFT MOUNT |
| 6 | HCSP0004 | SCREW - PLASCREW |
| 7 | HCBH0880 | M8 X 80MM HEX HEAD |
| 8 | HCWF0801 | 8MM FLAT WASHER |
| 9 | ZCMUB014 | O'RING – COOLANT DRAIN |
| 10 | ECMU0272 | PLUG – COOLANT DRAIN |
| 11 | ECMU0132 | FITTING - COOLANT |
| 12 | JCCE50036 | SPACER – INSULATING – PHASE LEADS |
| 13 | JCCE50035 | STUD – PHASE – RING LUG STYLE (3 REQ'D) |
| 14 | SEE ELECTRICAL | PHASE LEADS |
| 15 | HCWF0601 | 6MM FLAT WASHER (3 REQ'D) |
| 16 | HCNS0601 | M6 NUT DIN 934 CLASS 8 |
| 17 | JCCE50044 | CAP – SPACER – PHASE LEAD INSULATING |
| 18 | HCFH0412 | M4 X 12MM FLAT HEAD (2 REQ'D) |
| 19 | JCCEMU027 | BACK NUT - CX-E CHAIN GUARD MOUNTING |
| ACCY | MCMUMF32 | MOTOR COOLING FLUID – 32OZ BOTTLE |

Parts – Motor System – Wire Side



| Motor System | | |
|--------------|------------|---------------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | JKEMU001 | KIT – V2 MOTOR SENSOR MODULE – W/ ORINGS |
| 2 | ZCCEMUOR1 | O’RING – MOTOR HOUSING (3 REQ’D) – FOR V1 MOTOR SENSOR MODULE |
| 2 | ZCCEMUOR05 | O’RING – MOTOR HOUSING (3 REQ’D) – FOR V2 MOTOR SENSOR MODULE |
| 3 | ZCCEMUOR2 | O’RING – TEMP SENSOR PASS THRU |
| 4 | ZCCEMUOR3 | O’RING – JST CONNECTOR PASS THRU |
| 5 | JCCEMU007 | PRESSURE PLATE – HALL SENSOR BOARD |
| 6 | HCBC0308 | M3X8MM SHCS (7 REQ’D) |
| | | |
| | | |
| | | |
| | | |
| ACCY | MCMUMF32 | MOTOR COOLING FLUID – 32OZ BOTTLE |

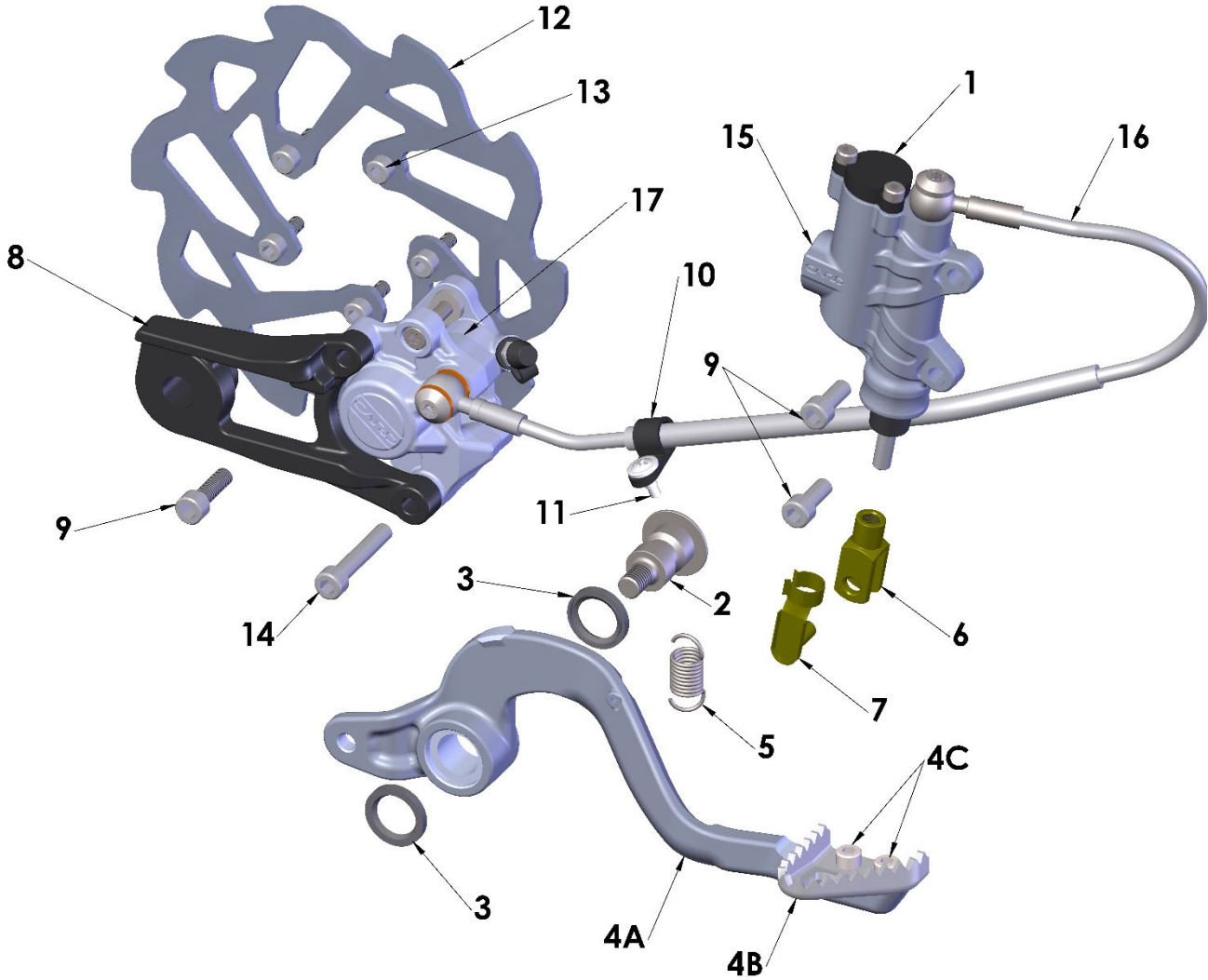
Parts – Plastic Bodywork & Seat



Parts – Plastic Bodywork & Seat

| Plastic and Seat | | |
|------------------|-------------|------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | TCCS0009FXX | FRONT FENDER – FXX YELLOW |
| 1 | TCCS0009x | FRONT FENDER x – DENOTES COLOR BLK, WHT, YEL, FXX |
| 1A | HCBF0616 | FRONT FENDER MTG BOLTS (4 REQD) |
| 2 | TCMU0041WHT | FRONT NUMBER PLATE – WHITE |
| 2 | TCMU0041x | FRONT NUMBER PLATE x – DENOTES COLOR BLK, WHT, YEL |
| 2A | HCBF0616 | M6X16mm FLANGE HEAD BOLT – FRONT NUMBER PLATE MOUNT |
| 3 | TCCE50008 | TANK REPLACEMENT – DASH PANEL MOUNT – INTERPOSER FIT |
| 3A | TCMU0047 | BUSHING - FRONT TANK MOUNT |
| 3B | TCMU0017 | BUSHING – SQUARE THREADED - FRONT TANK MOUNT |
| 3C | TCC60029 | SPACER – SEAT MOUNT |
| 3D | HCFH0620 | M6X20mm FLAT HEAD – FRONT SEAT MOUNT |
| 3E | HCFH0675 | M6X75mm FLAT HEAD |
| 4 | TCCE50003 | LOUVER – SIDE SCOOP |
| 4A | HCSP0004 | PLASCREW – SHROUD TO TANK (2 REQ'D) |
| 5 | TCCE50004 | LOUVER – FRONT GRILL |
| 5A | HCHA0003 | M6 CLIP NUT (2 REQ'D) |
| 5B | HCBF0616 | M6 X 16MM FLANGE BOLT |
| 5C | HCSP0610BLK | BOLT – 6MM ALUMINUM |
| 6 | TACE52025 | SEAT ASSY – CXE5 |
| 6A | TCCE50007 | COVER – SEAT – CXE5 |
| 6B | TCMU0046BLK | SPECIAL WASHER – SEAT HOLDING - BLACK |
| 6C | HCFH0650 | M6X50 FLAT HEAD, REAR MOUNTING BOLT |
| 7 | TCMU0043FXX | SHROUD FXX YELLOW |
| 7 | TCMU0043x | SHROUD x – DENOTES COLOR BLK, WHT, YEL, FXX |
| 7A | HCSP0004 | PLASCREW – SHROUD TO TANK (4 REQ'D) |
| 8 | TCCS0011WHT | NUMBER PLATE PAIR – WHITE |
| 8 | TCCS0011x | NUMBER PLATE PAIR x – DENOTES COLOR BLK, WHT, YEL |
| 8A | HCBC0520 | M5X20 SOCKET HEAD CAP SCREW (2 REQ'D PER SIDE) |
| 8B | TCC60017 | BODY PANEL WASHER 5MM (2 REQ'D PER SIDE) |
| 8C | HCCN0000 | 5MM EXTRUDED “U” NUT |
| 9 | TCMU0055FXX | REAR FENDER – FXX YELLOW |
| 9 | TCMU0055x | REAR FENDER x – DENOTES COLOR BLK, WHT, YEL, FXX |
| 9A | HCSP0610BLK | BOLT – SPECIAL |
| 9B | HCHA0003 | CLIP NUT – 6mm |
| 10 | KCMU0035 | FORK GUARD SET – 2021 |
| 10A | HCSP0610BLK | BOLT - FORK GUARD - BLACK (6 REQ'D,) |
| 11 | KCMU0036 | BRAKELINE CLAMP |
| 11A | HCSP0004 | PLASTIC SCREW (2 REQ'D) |
| ACCESSORY | TCCE52026 | GRAPHIC KIT – CXE5 |
| ACCESSORY | TKFW2025 | BODYWORK KIT – MEGA FLO PLASTIC w WHITE # PLATES |
| ACCESSORY | TKFX2025FXX | BODYWORK KIT – ALL FXX PLASTIC |
| ACCESSORY | TKFW2025BLK | BODYWORK KIT – ALL BLACK PLASTIC |
| ACCESSORY | TKFW2025WHT | BODYWORK KIT – ALL WHITE PLASTIC |

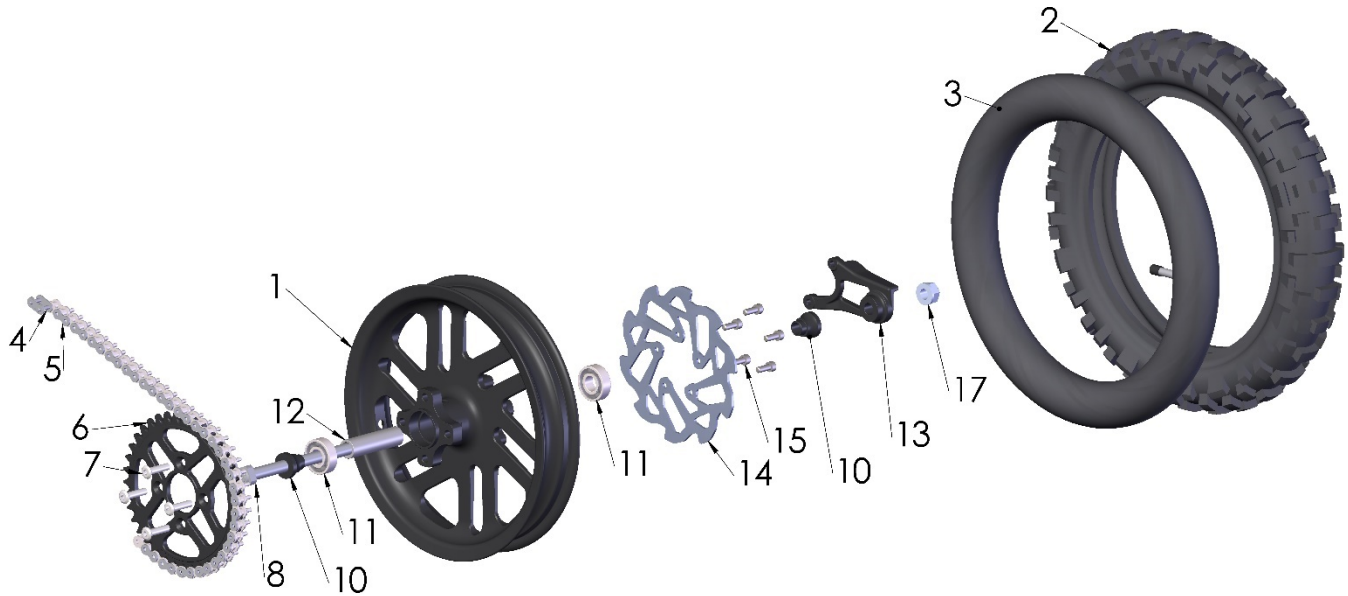
Parts – Rear Brake



Parts – Rear Brake

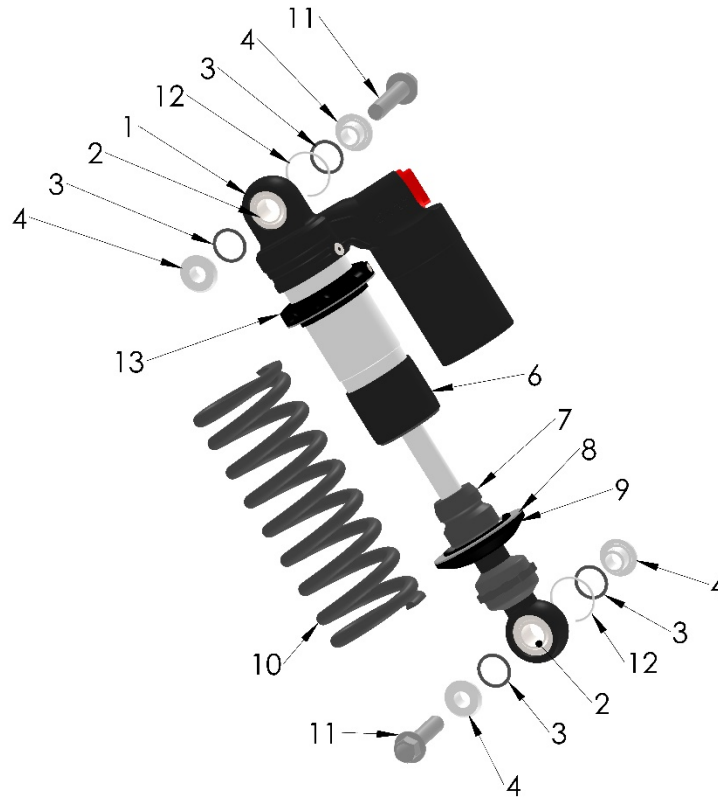
| Rear Brake System | | |
|-------------------|-------------|---------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | BACS0002 | ASSY - REAR BRAKE -CAPTURD CLEVIS -KG FWE 2024 - |
| 2 | BCMU0027 | BRAKE PIVOT BOLT – |
| 3 | BCMU0501 | SEAL – BRAKE PEDAL (2 REQ'D) |
| 4A | BCMU0069 | BRAKE PEDAL – ASSEMBLY 50cc – WITH TOE PIECE |
| 4B | BCMU0023T | TOE PIECE |
| 4C | HCBC0512 | M5X 12mm SOCKET HEAD CAP SCREW |
| 5 | BCMUSP01 | BRAKE RETURN SPRING |
| 6 | BCMU0015A | BRAKE CLEVIS |
| 7 | BCMU0015B | BRAKE RETAINING SPRING PIN |
| 8 | BCMU0045BLK | BRAKE CARRIER – CARD 2 PISTON – CX50 – BLACK |
| 9 | HCBC0620 | M6X20mm SOCKET HEAD CAP SCREW |
| 10 | HCCC0000 | BRAKE HOSE CLAMP |
| 11 | HCPP0832 | BRAKE HOSE CLAMP FASTENER |
| 12 | BCMU0222 | BRAKE ROTOR |
| 13 | HCBC0514 | M5X14mm SOCKET HEAD CAP SCREWS (5 REQ'D) |
| 14 | HCBF0635 | M6X35mm SOCKET HEAD CAP SCREW |
| 15 | BAMU0014 | MASTER CYLINDER - REAR - COMPLETE CAPTURED CLEVIS |
| 16 | BCMU0047 | REPLACEMENT BRAKE HOSE |
| 17 | BAMU0010A | CALIPER ASSEMBLY – REAR BRAKE – CARD 2 PISTON - ALUM |
| 18 | BKMU0002 | ASSY – BRAKE SNAKE |
| ACCESSORY | BKMU0009 | PAD SET ORGANIC W BOLT AND CLIP |
| ACCESSORY | BCMU0038 | SPRING - BRAKE PAD RETURN |
| ACCESSORY | BKMU0006 | PISTON & SEAL KIT – CARD - |
| ACCESSORY | BKMU0008 | BLEED SCREW KIT – CARD |
| ACCESSORY | BCC60034 | RUBBER CAP ONLY - BLEED SCREW |
| ACCESSORY | BKMU0013 | CAP & DIAPHRAGM KIT – MASTER CYLINDER |
| ACCESSORY | BKMU0014 | REBUILD KIT - REAR - MASTER CYLINDER - 2024 - CAPTURED |
| ACCESSORY | BKMU0007 | BANJO BOLT AND WASHER KIT – CARD |
| ACCESSORY | BCMU0014 | CALIPER ADJUSTMENT SHIMS 6mm ID |
| TOOL | BKMU0003 | BLEEDING KIT – FORMULA & CARD |

Parts – Rear Wheel



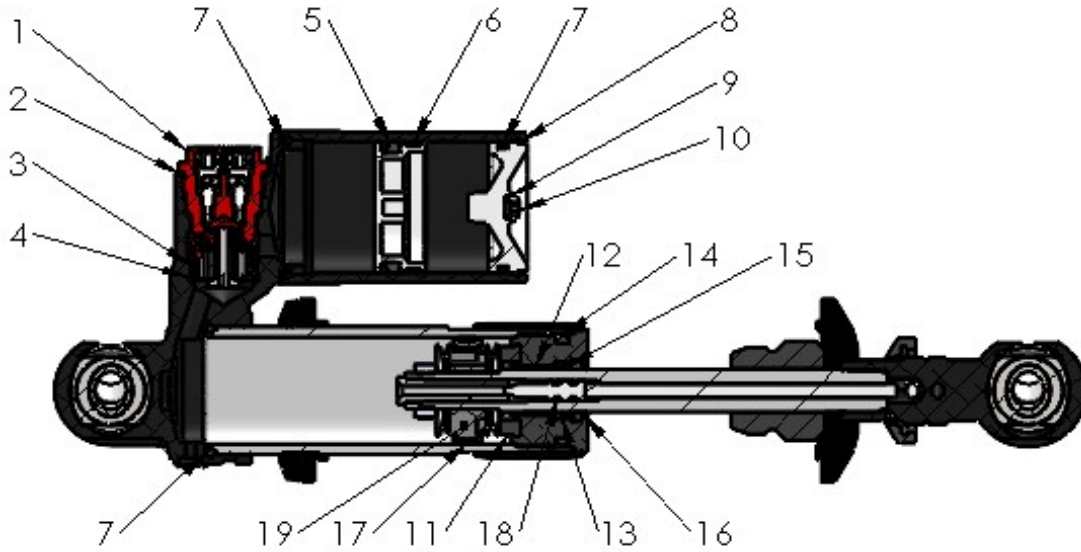
| Rear Wheel | | |
|------------|-------------|----------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | WAMUR021BLK | REAR WHEEL W/BEARINGS – BLACK |
| 2 | WCMU1075D34 | TIRE - REAR - 70/100-10 - DUNLOP MX34 |
| 3 | WCMUTU10 | TUBE, 10" |
| 4 | PCMU0001 | MASTER LINK 420 |
| 5 | PCMU0110 | CHAIN 420 X 110 |
| 6 | PCC50249BLK | 49T SPROCKET (STANDARD) 415 - BLACK |
| 6A | PCC502xx | SPROCKET xx DENOTES TEETH – RANGE OF TEETH (48-52) |
| 7 | HCSP0701 | M7X30mm SPECIAL HEAD BOLT (4 REQ'D) |
| 7A | HCWF0701 | 7mm FLAT WASHER (4 REQ'D) |
| 7B | HCNL0701 | M7 LOCKNUT (4 REQ'D) |
| 8 | GCMU0020 | BOLT - TI - SWINGARM PIVOT and AXLE - CX50 |
| 10 | WCMU0101BLK | WHEEL SPACER (2 REQ'D) |
| 11 | WCMU0120 | WHEEL BEARING (2 REQ'D) |
| 12 | WCMU0041 | WHEEL BEARING SPACER |
| 13 | BCMU0045 | CARRIER – BRAKE |
| 14 | BCMU0222 | BRAKE ROTOR |
| 15 | HCBC0514 | M5X14mm SOCKET HEAD CAP SCREWS (5 REQ'D) |
| 17 | WCMU0038 | NUT - 12MM ACORN - ALUM |
| ACCESSORY | HKMU0002 | BOLT KIT – REAR SPROCKET |

Parts – Shock



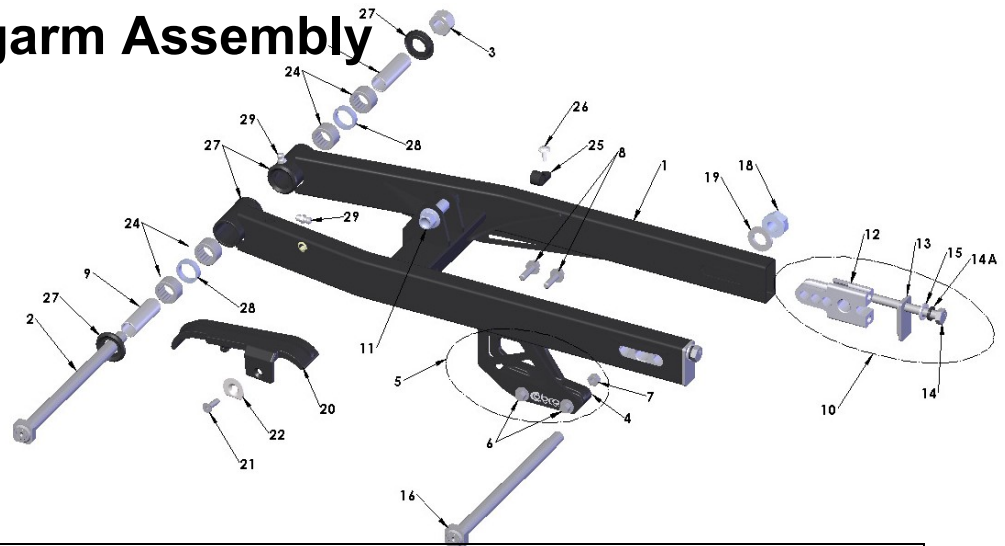
| Shock | | |
|-----------|----------|------------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | SACS2024 | SHOCK ABSORBER – KING |
| 2 | SCMU0043 | SHOCK - BEARING SPHERICAL SHOCK MOUNT–CARD (2 REQ'D) |
| 3 | SCMU0039 | O-RING - SHOCK - BUSHING – CARD (4 REQ'D) |
| 4 | SCMU0042 | SHOCK - MOUNT BUSHING – CARD (4 REQ'D) |
| 5 | SCMU0058 | SHOCK - WHITE NYLON TIP SETSCREW M6-1.0 - CARD |
| 6 | SCMU0056 | SHOCK - SLEEVE BLACK - CARD |
| 7 | SCMU0008 | BUMPER - SOFT - TAPPERED - SHOCK |
| 8 | SCMU0040 | SHOCK - SPRING PAD - CARD |
| 9 | SCMU0054 | SHOCK - SPRING PERCH - CARD |
| 10 | SCKGFX31 | SHOCK SPRING 3.1 KG/MM (STANDARD) |
| 10 | SCKGFX29 | SHOCK SPRING 2.9 KG/MM (LIGHT) |
| 10 | SCKGFX33 | SHOCK SPRING 3.3 KG/MM (HEAVY) |
| 10 | SCKGFX35 | SHOCK SPRING 3.5 KG/MM (XHEAVY) |
| 11 | HCBF1039 | M10 X 39 HEX HEAD BOLT (2 REQ'D) |
| 12 | SCMU0330 | CIRCLIP – SPHERICAL BEARING RETAINER |
| 13 | SCMU0120 | PRELOAD ADJUSTER RING |
| | | |
| ACCESSORY | SKMU0003 | REBUILD KIT – CARD SHOCK |

Parts – Shock - Inside



| Shock | | |
|-----------|----------|---------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | SAMU0001 | COMPRESSION ADJUSTER ASSEMBLY – COMPLETE |
| 2 | ZCMUB020 | O-RING – COMPRESSION ADJUSTER - OUTSIDE |
| 3 | KCMU0021 | O-RING - COMPRESSION ADJUSTER – PISTON SEAL |
| 4 | ZCMUOR37 | O-RING - COMPRESSION ADJUSTER - INSIDE |
| 5 | SCMU0051 | O-RING - IFP |
| 6 | SCMU0052 | IFP SEAL BAND |
| 7 | SCMU0033 | O-RING SHOCK BASE |
| 8 | SCMU0050 | RESERVOIR CAP RETAINER RING |
| 9 | SCMU0035 | O-RING CHARGE CAP |
| 10 | HCBB0506 | M5X6mm LONG BUTTON HEAD STAINLESS STEEL |
| 11 | SCMU0044 | SEAL HEAD BUMPER |
| 12 | SCMU0048 | SHAFT BUSHING |
| 13 | SCMU0046 | X-RING SEAL |
| 14 | SCMU0034 | O-RING SEAL HEAD |
| 15 | SCMU0047 | SPACER - X-RING |
| 16 | SCMU0045 | DUST SEAL |
| 17 | SCC60014 | PISTON BAND |
| 18 | SCMU0059 | O-RING REBOUND PIN |
| 19 | SCMU0091 | PISTON - SHOCK |
| | | |
| | SCCM0001 | SEAL HEAD – WITHOUT COMPONENTS |
| | SKMU0002 | SEAL HEAD - COMPLETE |
| ACCESSORY | SKMU0003 | REBUILD KIT – CARD SHOCK |

Parts – Swingarm Assembly



| Swingarm | | |
|----------|------------|----------------------------------------------------|
| REF # | PART # | DESCRIPTION |
| 1 | GACS2025 | SWINGARM |
| 2 | GCMU0021 | BOLT - TI - SWINGARM PIVOT and AXLE - CX50 |
| 3 | HCNL1201 | M12 SWINGARM LOCK NUT |
| 4 | PCMU0060MP | CHAIN GUIDE - COMBINED SLIDER BOTTOM AND INSIDE |
| 5 | PAMU0002 | LOWER CHAIN GUIDE |
| 6 | HCBF0625 | M6X25mm FLANGED HEAD SCREW (2 REQ'D) |
| 7 | HCNL0601 | M6 LOCKNUT (2 REQ'D) |
| 8 | HCBF0620 | M6X20mm FLANGE HEAD BOLT (2 REQ'D) |
| 9 | GCC60019 | SPACER TUBE - SWINGARM PIVOT |
| 10 | FAMU0005 | WHEEL PULL ASSEMBLY (BLOCK, CAP, BOLT AND WASHER) |
| 11 | HCBF1039 | M10X39mm LOWER SHOCK MOUNT BOLT |
| 12 | FCMU0203 | WHEEL PULL |
| 13 | FCMU0202 | WHEEL PULL ENDCAP |
| 14 | HCBH1865 | M8X65mm WHEEL PULL BOLT |
| 14A | HCWL0801 | 8mm LOCK WASHER |
| 15 | HCWF0801 | 8mm WHEEL PULL WASHER |
| 16 | GCMU0020 | BOLT - TI - SWINGARM PIVOT and AXLE - CX50 |
| 18 | WCMU0038 | NUT - 12MM ACORN - ALUM |
| 19 | HCWF1202 | 12mm FLAT WASHER |
| 20 | GCMU0041 | SWINGARM CHAIN GUARD - CX50 - WITH MOHAWK AND FOOT |
| 21 | HCFH0516 | FLAT HEAD SCREW |
| 22 | GCMU0038 | WASHER - SPECIAL |
| 23 | HCNL0501 | LOCK NUT |
| 24 | GCC60017 | BEARING - DRAWN CUP CAGED NEEDLE - SWINGARM PIVOT |
| 25 | HCCC0006 | CLAMP - BRAKE HOSE |
| 26 | HCPP0832 | FASTENER – ½" SELF TAPPING |
| 27 | GCMU0047 | SEAL THRUST BEARING - SWINGARM - ALL 2025 |
| 28 | GCMU0048 | SPACER - SWINGARM NEEDLE BEARING - 50CC |
| 29 | GCMU0012 | FITTING – GREASE (2 REQ'D) |
| tool | MCMUTL26 | TOOL – BEARING REMOVAL – NEEDLE BEARING SWINGARM |

Service

Trained technicians with precision gauging and proper assembly fixtures carefully assemble all Cobra engines to specific tolerances. If you feel you have the skills, and the appropriate tools, to perform the following service tasks please follow the instructions closely. The part numbers are listed throughout to help you when ordering parts from your local Cobra dealer.

If you don't feel comfortable with the service work, log on to www.cobramoto.com to find a Cobra dealer or Call 517-437-9100.

Motor Cooling Fluid Replacement

Radiator fluid removal:

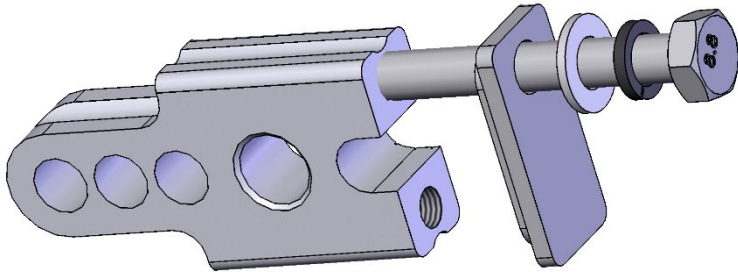
- 8mm hex key
 - Motor Cooling Fluid (MCMUMF32)
1. Remove radiator cap and drain engine cooling fluid using the 8mm hex key and the drain at the bottom of the motor.

NOTE: Inspect the old coolant for evidence of metal or other debris that may indicate a problem.

2. Inspect the O-ring and replace if necessary.
3. Reinstall the drain plug. Snug
4. Fill the system with 400-425 ml of Cobra Motor Cooling Fluid to start. 'Burp' the system of trapped air by rotating the motorcycle back in a 'wheelie' (while on the stand) until the system is free of trapped air and fluid is flowing with throttle application, if not flowing, add 20ml and see if its flowing. Do this until you see fluid flowing. When checking, just need to see the fluid flowing.
5. Overfilling can reduce runtime and top speed performance.



Rear wheel pullers



1. Remove axle, and back wheel assembly.
2. Pull the rear wheel pullers out of the back of the swing arm.

Rear wheel alignment:

By eye, ensure that the rear sprocket is running true (in-line, planar) with the front sprocket. When the sprockets are running true, the wheel is properly straightened, and the chain will run straight.

Brakes

Check before each ride:

- Make sure the brake does not have any leaks by holding the lever in while checking hose connections.
- Make sure the brake lever pressure is OK by pulling in on the lever and ensuring full braking performance is achieved before the lever touches the handlebar. If this is not the case, pump the lever several times until the lever feels firm.
- Always make sure the rotor and brake pads are free from oil and grease. Clean the rotor with mild dish soap or alcohol. Contaminated pads must be replaced.
- Ensure that the brake caliper is centered over the brake rotor. If a correction is needed, Cobra has thin brake shims to help make minor adjustments in alignment.
- Always leave adequate free-play in the lever or pedal.

CAUTION: This brake system uses only DOT 4 brake fluid!

Front Forks

The front forks are fully serviceable, but it is recommended that only trained professionals should service them. Contact Cobra for questions and service of your forks.

Rear Shock

The rear shock is fully serviceable but it is recommended that only trained professionals should service your shock. Contact Cobra for questions and service of your CX50 SR shock.

Tuning

Gearing

What happens with improper gearing?

- Poor performance
- Not enough top end speed
- No snap out of the corners
- No jump at the gate

| Front Sprocket | Rear Sprocket | Gear Ratio |
|----------------|---------------|------------|
| 11 | 48 | 4.36 |
| 11 | 49 | 4.45 |
| 11 | 50 | 4.55 |
| 11 | 51 | 4.64 |
| 11 | 52 | 4.73 |
| 10 | 48 | 4.80 |
| 11 | 53 | 4.82 |
| 10 | 49 | 4.90 |
| 11 | 54 | 4.91 |
| 10 | 50 | 5.00 |
| 10 | 51 | 5.10 |
| 10 | 52 | 5.20 |
| 10 | 53 | 5.30 |
| 10 | 54 | 5.40 |

| Condition | Gear Taller | Gear Lower |
|---------------|-------------|------------|
| Mud | | ↓ ↓ |
| Sand | | ↓ |
| Long Up Hills | | ↓ |
| Hard Pack | ↑ | |
| High Speed | ↑ | |
| Rough | | ↓ |
| | | |
| | | |
| | | |

Stock

Alt-stock

Note: Starting line performance has many factors: Reaction time, Rider Form/Technique, Tire, Gate Type, Conditions past gate, etc. Gearing in a normal range around stock will not affect starting line performance as much as rider reaction time and form. Sometimes going to a smaller rear sprocket will improve starts by having less wheel spin and higher top speed. On a high track gate, a larger rear sprocket can be beneficial. Keeping tension on the chain with some throttle will also reduce bike reaction time off the line.

Front Fork Operation

The front suspension on the CX50SR works under the principals of hydraulic damping, and it features full adjustability to help tune the fork to meet each rider's needs. The CARD fork contains MXT 'Smart Leg' technology that provides very progressive operation; allowing a small bike to perform well on track surfaces ripped up by larger machines.

The key to Smart Leg technology is to understand that each leg has a different role. The brake side leg features a conventional open cartridge. This cartridge handles both standard compression and rebound damping duties. Rebound damping is adjustable on the fork cap, and compression damping is adjusted at the bottom of the fork. The other leg (the Smart Leg) has no rebound damping, and it contains both a speed sensitive compression damping mechanism as well as a position sensitive one. This design allows for a firm low speed response, controlling rapid chassis pitch, which promotes stability and control. The fork produces significantly less mid and high-speed compression until it travels into the progressive / speed sensitive portion of the smart leg. The speed sensitive compression component is adjustable at the top of the fork.

The combination of the Smart Leg and the conventional leg allows the fork to be very supple throughout all low amplitude operation and yet take punishing hits; producing a progressively increasing damping rate that slows the forks movement as it approaches full bottom. Therefore, the Smart Leg also acts as a hydraulic bottoming control device. Finally, the large degree of adjustability in both legs allows the fork to be tuned to meet each rider's size, ability, and type of riding they do (motocross, off-road, flat track, etc.)

Fork Damping Adjustments

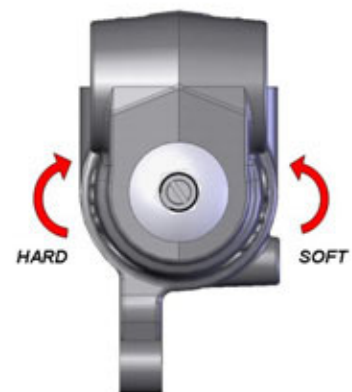
Tools required

- Small flat blade screwdriver



REBOUND ADJUSTMENT

The speed at which the fork rebounds can be adjusted at the top of the conventional leg. Turning the adjustment screw clockwise slows the rate at which the fork extends after being compressed, and likewise, turning the screw counter-clockwise returns the leg to its extended position faster. As shown in the figure, 'S' (slower) and 'F' (faster) are etched into the cap as an adjustment guide.



COMPRESSION ADJUSTMENT



At the base of the conventional leg is another adjustment screw that controls the amount of compression damping. Turning this screw clockwise increases damping and turning it counter-clockwise will decrease it. This is illustrated by the “HARD” and “SOFT” in the figure at the right.

The Smart Leg cap is labeled “Speed Sensitive Bottoming Control”, and this adjuster provides a range of control over how progressive the fork feels. Turning the screw clockwise increases the fork’s resistance to bottoming, while turning the screw counter-clockwise decreases it. On the track, this effect will be felt on

sections where the fork is forced to move very quickly such as on harsh landings or when traversing sharp edged bumps.

Rear Shock Adjustments

Always start with standard settings and make damping changes in no more than two click increments and only make one change at a time.

| Symptom | Action |
|------------------------------------------------|-------------------------------------------------------------|
| Rear end feels stiff on small bumps | Softer Low Speed Compression Damping |
| Rear end ‘sways’ on straights | Harder Low Speed Compression Damping |
| Bike tends to jump ‘rear end high’ | Harder High Speed Compression |
| Bike tends to jump ‘rear end low’ | Softer High Speed Compression |
| Frequent rear end bottoming | Harder Compression Damping |
| Bottoms after end of continuous bumps | Softer rebound damping |
| Rear end ‘kicks’ over square edge bumps | 1) Harder rebound, 2) Softer Low and High Speed Compression |
| Rear end feels stiff under acceleration bumps. | Softer Rebound and/or Stiffer Low Speed Compression Damping |

Proactive Suspension Adjustments

Once you have the suspension adjusted for decent overall feel, you can make proactive adjustments when faced with different racing conditions.

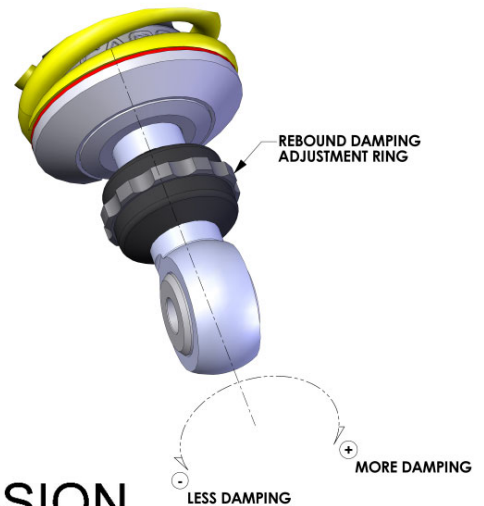
| Situation | Actions |
|------------------|-------------------------------------------------------------------|
| Sand track | Lower the rear end (increase race sag). |
| Sand track | Stiffer compression and rebound damping. |
| Long fast track | Lower the forks in the clamps by 3 mm. |
| Tight slow track | Raise the forks in the clamps by 3 mm. |
| Mud track | Lower the bike if the rider has difficulties touching the ground. |

Shock preload

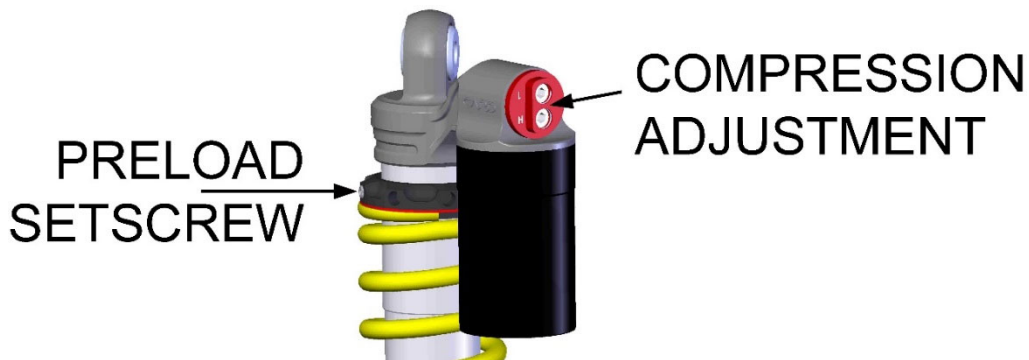
Loosen the set screw and turn the spring perch in full turn increments to get the desired sag settings.

NOTE:

Always leave the spring perch rotated in such position so that the set screw is easily accessible.



Shock Damping



The Low Speed “L” adjustment is what controls how quickly the rear of the bike settles in the corners or how it settles in sweeping ‘flat track’ style corners whereas the High Speed “H” adjustment controls how the shock reacts to kickers. In “+” adds damping or slows it down, whereas out, “-“ speeds up the shock or removes damping.

Troubleshooting

- **RDU Lower Left Fault light: Battery Fault**
- **RDU Lower Center light: Turtle – Low Battery Light**
- **RDU Lower Right Fault Light: Electrical System**
- **Bike doesn't run at all, RDU Lower Red Fault light is On solid.**
 - ***For 2024 and newer bikes, please refer to the Flash Code Diagnostics
- **Bike is slow and coolant smells burnt?**
 - Replace motor and coolant
- **Bike doesn't run at all, RDU Lower right Red Fault light flashes with turning rear wheel.**
 - Change hall sensor board, ensure OBD is showing Hall Sensor fault.
- **If bike has just been washed with or without battery:**
 - Allow ample time to dry before powering back up.
- **Motor has extra high drag, runs rough or seal leaking:**
 - Possible motor issue, replace motor/have motor serviced
- **Bike doesn't have the power it did:**
 - Check for binding / oil the chain (other maintenance)
 - Ensure it has latest software
 - Does bike have 150+ cycles on battery? If yes, may be time for replacement/refresh. High cycle count is not a replacement issue.
 - Ensure that motor coolant hasn't been added. Overfill will reduce performance.
 - Check for loose high-power connections. (Main power and Motor Phase Wires)
 - Change Controller and test.

On board Diagnostics

4-0 Fault Recall function

This is a new function of the firmware as of version 3.1.2(introduced as a 2024 feature).

To recall the last recorded fault:

1. Power up bike or Turn off bike propulsion with the “Go” button.
2. Then hold down the “Mode” button for 12sec. Lightning Bolt light will come on, then you can release the Mode button.
3. Flash code will be in the format (X Number of Flashes) Short Pause (Y Number of Flashes). If no flashes, there are no codes stored.

4. This will form the code as X-Y
5. Then refer the fault code chart for fault description.

| Blink Code | Description |
|------------|--------------------------------------------------------------------|
| 1-1 | ETS_PWR - Throttle sensor power fault |
| 1-2 | NVM - Nonvolatile memory fault |
| 1-3 | RDU Accelerometer Stuck |
| 2-1 | Throttle Fault |
| 3-1 | ETKS_SNS - ETKS sensed value outside of expected range |
| 3-2 | ETKS key signal Fault |
| 4-1 | MTR_SNS - Motor temperature sensor value outside of expected range |
| 4-2 | MTR_HIGH_TMP - Motor temperature too hot for operation |
| 4-3 | MTR_RPM - Motor RPM too high |
| 4-4 | PHASE_OC - Motor phase over-voltage |
| 5-1 | MDU_COMM MDU - Communication fault |
| 5-2 | MDU_TMP MDU - Temperature too hot for operation |
| 5-3 | Instant MDU Undervoltage |
| 5-4 | HSNS_FAULT - Hall sensor fault |
| 5-6 | CTL_UV - Controller under-voltage |
| 5-7 | POST_SGT - Phase on Self-Test Static Gating Test |
| 5-8 | POST_DGT - Phase on Self-Test Dynamic Gating Test |
| 5-9 | H_STALL - Hall stall |
| 5-10 | NET_COMM_TO - Communication timeout |
| 6-2 | INST_CTL_OV - Instantaneous controller overvoltage |
| 6-3 | INTERNAL MDU - internal fault |
| 6-4 | MDU Device Fault |
| 7-1 | BATT_DEV - Battery fault |
| 7-2 | BATT_COMM - Battery communication fault |
| 8-1 | Low Battery SOC |
| 8-2 | Battery Pack-Out connector elevated temperature |
| 8-3 | MDU elevated temperature, Power Reduction Active |
| 8-4 | Motor Temperature too hot for operation |

6-0 Flash Code and Actions:

1-1 ETS_PWR - Throttle sensor power fault

1. Check wires from throttle to RDU
2. Unplug and re-plug throttle to RDU
3. Check power supply voltage on E-Scope(~2.8-3volts), RDU Panel, "Rider Inputs"
4. If trouble remains, replace Throttle
5. If trouble still remains, then replace RDU

1-2 NVM - Nonvolatile memory fault

1. Reflash RDU
2. Replace RDU

2-1 Throttle Fault

1. Check wiring from Throttle to RDU
2. Check throttle magnet for being loose, if so, CA grip glue back in. Black mark to front.
3. Replace Throttle
4. If still remains, replace RDU

3-1 ETKS_SNS - ETKS sensed value outside of expected range

1. Check wires for cuts from Kill Switch to RDU
2. Check that both magnets are solidly mounted in key
3. Check voltage in E-Scope(~3v)
4. Replace Killswitch
5. If the above doesn't fix, replace RDU

3-2 ETKS_UNST - ETKS key signal unstable

1. Check that they have a BMX innertube or rubber band/O-ring holding the key to the kill switch. 2026 bikes will have an O-ring from the factory.
2. Check that both magnets are solidly mounted in key
3. Check voltage in E-Scope(~2.9-3v)
4. Replace Killswitch

4-1 MTR_SNS - Motor temperature sensor value outside of expected range

1. Bike will run with fault light on until powered down (2025 and then 2023/2024 with 2025+ firmware).
2. Check that sensor wire is plugged into RDU (2 wire plug) and pins are not pushed out.
3. Reflash/Update RDU Firmware
4. Check for cut sensor wires.
5. Confirm motor temp irrational in E-Scope.... IE temp higher than 100c
6. Check for coolant and that it doesn't smell burnt.
7. Have motor serviced at Cobra.

4-2 MTR_HIGH_TMP - Motor temperature too hot for operation

1. Stop running bike and allow motor to cool...bike will stop(2023-2024 software). 2025+ will allow running.
2. Check for binds.
3. Check that there is coolant flowing
4. Check that the coolant doesn't smell burnt.
5. Bike will run with fault light on until powered down (2025 firmware when available).
6. Have motor serviced at Cobra.

4-3 MTR_RPM - Motor RPM too high

1. Pretty rare, but if track has long downhill section it is possible.
2. Smaller rear sprocket could help.
3. Replace Motor Controller (MDU) if it's a continuous problem.

4-4 PHASE_OC OV - Motor phase over-voltage

1. Check software version and Reflash RDU first.
2. Flash Motor Controller with production config file(Cobra tool only).
3. There have been zero cases of this, contact Cobra.

5-1 MDU_Dev- MDU Communications fault

1. Check main connector for sunken pins.
2. Ensure the bike has latest Software for both RDU and Battery.
3. Check Green and Yellow CAN Bus wires from RDU to CNN and back to controller (MDU)
4. Have a certified dealer look at Batt Fault History Report.
5. Try a different battery, A battery replacement may also clear this up.

5-2 MDU_TMP – MDU Temperature too hot for operation

1. If this fault occurs while running a moto and ambient temp is 85f+. Then run in lower power mode, Mode 2, 3, 4 or 5. Or cool the MDU prior to the moto.
2. If trying to run 2 battery packs back to back, then allow time for MDU to cool between runs.
3. If being run in very hot conditions, it's a good idea to reduce controller internal temp before racing a 10min+ moto. IE: Bike in AC for 2 hrs prior to moto.
4. If this is a consistent issue in same conditions, then replace controller.
5. If it throws this fault as soon as bike is powered on, then replace controller.

Continued....

5-3 Instant MDU Undervoltage

1. Check main power connector for damage or signs of heat, dropped pins, etc.
2. Try a different battery
3. If a different battery improves operation, replace battery.

5-4 HSNS_FAULT - Hall sensor fault

4. Normally, change Hall Sensor PCB and possibly hall harness (check for cuts/pinches)
5. Always check and reflash RDU and Battery.
6. If new Hall board doesn't fix, then changing controller should clear this up.
7. If these continue to crop up even after changing out parts, send motor for service.

5-6 CTL_UV - Controller under-voltage

1. Ensure software is up to date for RDU and battery (symptom sounds like battery shut down)
2. In rare occurrences, reflash the Controller Config
3. This is typically from disconnecting the battery while the bike is powered on.

5-7 POST_SGT - Phase on Self-Test Static Gating Test

1. If bike power cycles and runs for the most part, then contact us for a POST blocker PCB (dealers only), 2025 Production part.
2. For 2025 and newer bikes, POST faults are a sign of a short.... either on the bike or internally to the controller. Change controller.
3. If this issue keeps bike from running at all, check for bare wires shorting together or to case.
4. Remove phase wires from Controller, if (lightning bolt LED) fault occurs at initial throttle application and phase wires are not attached to controller, replace controller.

5-8 POST_DGT - Phase on Self-Test Dynamic Gating Test

1. If bike power cycles and runs, then contact us for a POST blocker PCB (dealers only) (2025 and earlier). 2025 Prod part.
2. If this issue keeps bike from running at all, check for bare wires shorting together or to case.
3. If POST fault occurs easily with motor connected, remove phase wires from Controller, if (lightning bolt LED) does not light at initial throttle application, ensure that the phase connections to the motor are not wet.
4. Typically, the Fault occurs no matter if motor is connected or not, but may only happen randomly on track. If the fault continues to be an issue, replace controller.

5-9 Hall Stall

1. Motor is detecting a stall(0 RPM). Check that the motor is free to spin.
2. We have had zero cases of this through 2026, contact Cobra.

6-2 INST_CTL_OV - Instantaneous controller overvoltage

1. Ensure latest Software is in both RDU and Battery
2. This is pretty rare and I don't believe we have seen this at all, so replace controller.

6-3 INTERNAL MDU - internal fault

1. Ensure latest Software is in Both RDU and Battery
2. Replace Main COMMs wiring harness.
3. Replace controller

6-4 MDU Device Fault

1. Replace MDU (Motor Controller)

7-1 BATT_DEV - Battery fault

1. Update all Software for RDU and Batteries
2. Try different battery
3. Have the battery serviced/Replaced.

7-2 BATT_COMM - Battery communication fault

1. Update all software for RDU and Battery
2. Check all wiring from battery to RDU and to Controller (esp. Main connector)
3. Try a different battery, replace battery.

8-1 Low Battery SOC(Stat Of Charge)

1. Battery needs to be charged.

8-2 Battery Pack-Out Connector Elevated Temperature

1. Check main battery and bike connector for signs of heat... Dropped Pins, melted plastic, etc.
2. 23-25 bikes, Replace Main Power Bike Side Harness.
3. Bikes with the 26 battery extension: replace Extension and Bike Side Power Harness.

Note: This is an effort to keep from shipping batteries back and forth for a connector issue.

8-3 MDU Elevated Temperature

1. The MDU has been at a temperature where we have actively reduced bike power to maintain the controller temp. This keeps the MDU from just shutting off.
2. If you see this code rarely, reduce the controller temp before the moto... IE at LL's keep bike in AC for 2 hours prior to moto.
3. Check that you are not over-gearred.... IE too small of a rear sprocket for track and conditions.
4. Check for drive train binding, over full coolant, dry chain, etc.
5. If this occurs early in a race regularly, Replace the Controller.

8-4 Motor Temperature Too Hot for Operation

1. Check Coolant levels, ensure that coolant is pumping.
2. Make sure you are not over-gearred (too small of a rear sprocket) for the track and conditions.
3. The bike should continue to run unless it is turned off and back on with the motor temp too high. Then the bike will not be allowed to run. This is the "If you are in the lead on the last lap, we aren't going to shut your bike off." Function. This is saying that the motor is too hot, but not hot enough we reduce power output.

