



**KRAMER**  
**MOTORCYCLES**

**OWNER'S MANUAL**

**HKR-EV02**

**S and R MODELS**

## Introduction

Dear Krämer Customer,

We would like to congratulate you on your purchase of a Krämer HKR Evo2 series motorcycles – the most advanced, hand built, supermonos in the world. These motorcycles feature the trusted power of the KTM 690 LC4 power plant, a race focused chassis, fully adjustable front and rear suspension, and the best available components to create competitive light-weight and ultra-light motorcycles.

This manual will serve as a guide to keeping your HKR-Evo2 in race-ready shape.

If you have any questions concerning the operation or maintenance of your motorcycle, please consult your Krämer dealer.

**THIS VEHICLE IS SOLD AS IS, NO WARRANTY.**



**KRÄMER MOTORCYCLES U.S.A.,  
Sales ▪ Customer Service ▪ Parts**

114 1st Avenue West,  
West Fargo, ND, 58078  
(701) 367-2258

[joe@kramermotorcyclesusa.com](mailto:joe@kramermotorcyclesusa.com)

[www.kramermotorcyclesusa.com](http://www.kramermotorcyclesusa.com)

---

## About This Manual

Use this manual as a guide for proper procedures for basic operation, inspection and maintenance of this motorcycle. This manual is intended for professional service technicians and those knowledgeable of proper safety training and safe shop practices.

All information, directions, photographs and specifications included in this manual are based on the most current information at the time of publication. Krämer Motorcycles accepts no liability for delivery options, deviations from illustrations and descriptions, misprints or other errors. Krämer Motorcycles reserves the right to make changes at any time without notice or obligation.

This motorcycle is to be raced on a closed course only. Krämer Motorcycles & Krämer Motorcycles USA are not liable for any injury to riders, mechanics, public and any damage to the vehicle or property.

This manual is for the following models:

HKR-Evo2 S

HKR-Evo2 R

# Table of Contents

## Introduction

## About This Manual

## Usage and Set Up

Identification / Serial Numbers .....	4
Reference Views of Vehicle .....	4
Serial Numbers .....	4
Operating Components .....	4
Control Components .....	5
Start Up Procedure .....	5
Shut Down Procedure .....	5
Vehicle Break-in Procedure .....	6
Pre-Ride Inspection .....	6
Post Race Service .....	6
Post Crash Inspection .....	6
Transporting / Loading .....	7
Raising the Motorcycle on Lift Stands .....	7
Storage .....	7

## Maintenance / Service

Checking Engine Oil Level .....	8
Changing Engine Oil & Filter, and Cleaning the Oil Screens .....	8
Chain Cleaning / Lubrication .....	9
Chain Tension / Rear Axle Alignment .....	9
Fuel Filler Cap .....	10
Air Filter .....	10
Brake Inspection .....	11
Suspension Inspection .....	11

## Chassis

Seat/Tank Height Adjustment .....	12
Handlebar Adjustment .....	12
Steering Damper Setup .....	12
Rear Set Setup .....	13
Brake Lever Adjustment .....	13
Shift Lever Height Adjustment .....	13
Body Work Removal .....	14
Body Work Installation .....	14

## Engine

Repairs .....	15
Hydraulic Clutch .....	15
Recommended Engine Maintenance .....	15

## Cooling System

Checking the Coolant Level .....	15
Draining the Coolant .....	15
Filling/bleeding the Cooling System .....	15

## Brake System

Brake Bleeding .....	16
----------------------	----

## Suspension

Steering Stem Adjustment – Fixed Triple Clamp .....	17
Steering Stem Adjustment – Adjustable Triple Clamp .....	17
Changing the Fork Offset .....	17
Fork Setup .....	18
Adjusting Spring Preload .....	18
Adjusting Compression Damping .....	18
Adjusting Rebound Damping .....	18
Fork Settings Table .....	18
Rear Shock Setup .....	19
Adjusting Spring Preload .....	19
Adjusting Compression Damping .....	19
Adjusting Rebound Damping .....	19
Shock Settings Table .....	19
Swingarm Angle / Ride Height Adjustment .....	20
Changing Swingarm Pull Rod Adjustment Insert .....	20

## Wheels

Front Wheel Removal .....	21
Front Wheel Installation .....	21
Rear Wheel Removal .....	22
Rear Wheel Installation .....	22

## Electrical

Fuses .....	23
Battery .....	23
Wiring Diagram .....	24
Wire Color Code .....	24

## Multifunction Speedometer Information Center

Koso RX2N GP Style Meter (BA)15B15 .....	25
Set up .....	25
Engine Map Selector Switch (All R models. Optional on S models) .....	25

## Technical Data

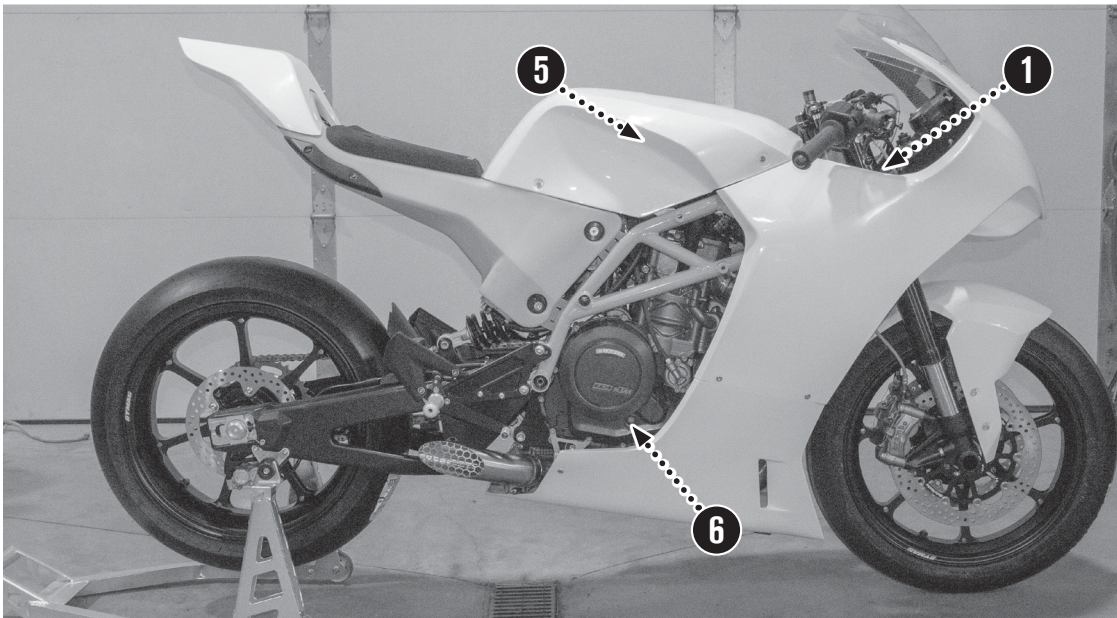
2018 HKR Evo2 S Specifications .....	26
2018 HKR Evo2 R Specifications .....	26
Fluids Specifications .....	26
Engine Specifications .....	26
Torque Specs .....	27
Safety Wire .....	27

# Usage and Set Up

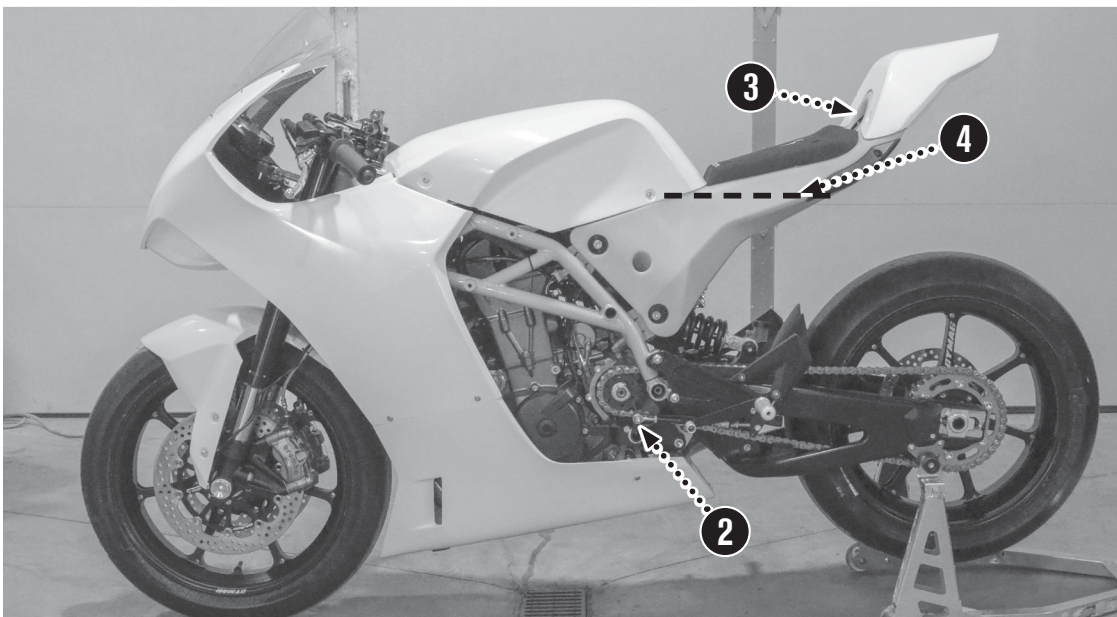
## Identification / Serial Numbers

### Reference Views of Vehicle

Instructions, such as right-hand (R.H.) side and left-hand(L.H.) side are from rider position.



*Right Side View*



*Left Side View*

## Serial Numbers

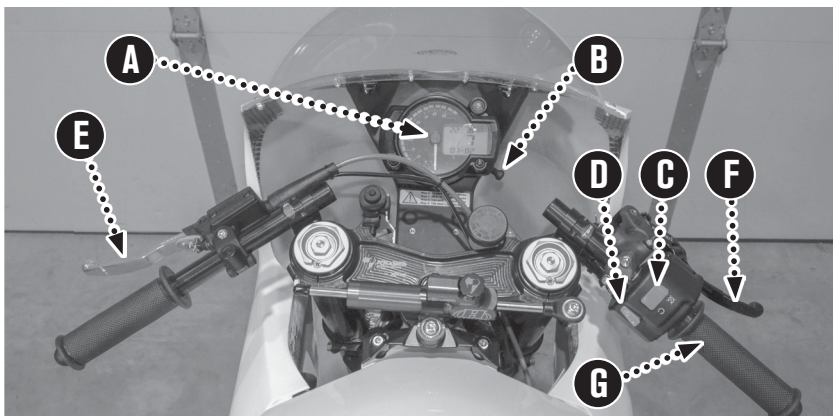
1. Chassis S/N  
(R.H. side steering head)
2. Engine S/N

## Operating Components

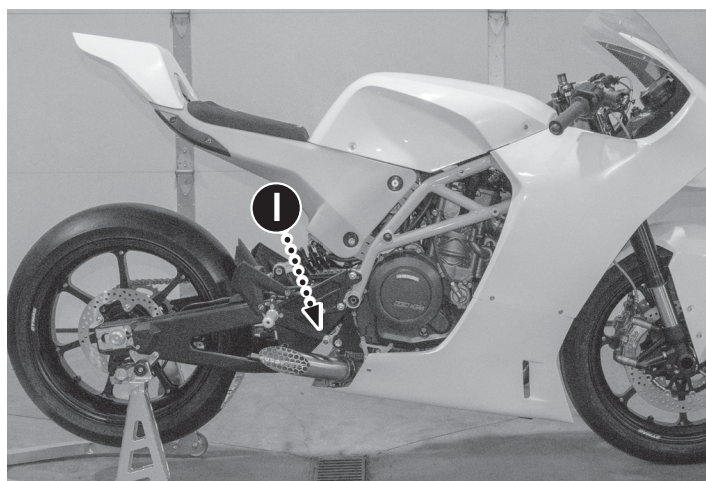
3. Fuel Fill
4. Recommended Fuel Fill Amount for Racing (5.7 L or 1.5 US gal). On translucent tanks the fuel will show at this level.
5. Intake Cover/Air Filter Box
6. Oil Level Check

## Control Components

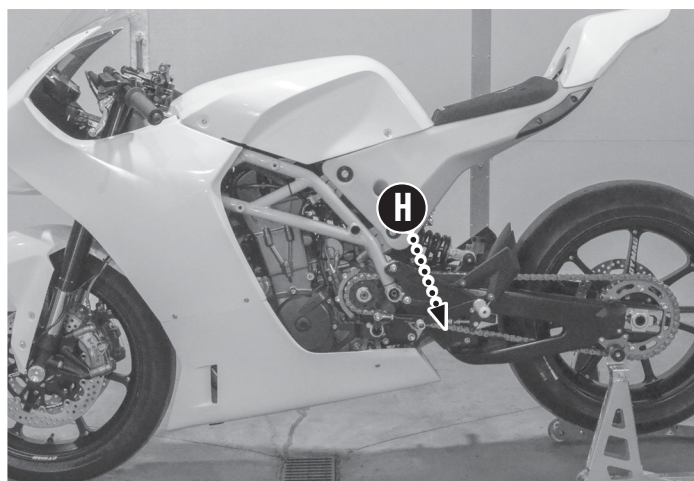
- A** Speedometer/Tachometer/Information Control Center
- B** Ignition Switch
- C** Run/Stop Switch
- D** Start Button
- E** Clutch Lever
- F** Front Brake Lever
- G** Throttle
- H** Shift Lever
- I** Rear Brake Lever



Hand Controls



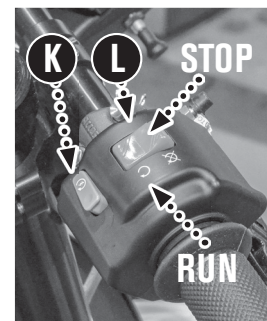
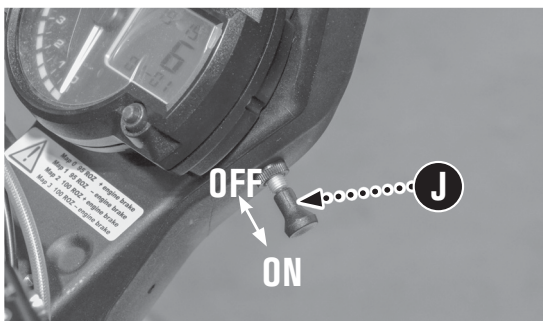
Rear Brake Lever



Shift Lever

## Start Up Procedure

1. Pull out ignition switch **J**, located on the R.H. side of speedometer cluster, to ON position (Wait 5 secs for fuel pump to pressurize)
2. Check that the Run/Stop Switch **L** is in the RUN position
3. Press START button **K**



## Shut Down Procedure

1. Move the Run/Stop Switch **L** to the STOP position
2. Turn ignition switch **J** to OFF position

## Vehicle Break-in Procedure

### Following the first outing (15-20 minutes):

- Screws should be checked for the correct torque [See pg. 27] and general condition.
- Bleed the front brakes. [See pg. 16]

### For the first 100 km (62 miles)

- Do not exceed 70% of full brake pressure.

### For the first 200 km (124 miles)

- Do not exceed 7500 rpm.

### After 2 hours of run time

- Change engine oil and filters.

## Pre-Ride Inspection

- **Check engine oil level** - Oil level to be centered between the “maximum” and “minimum” indicators.
- **Check coolant level** - Coolant should be visible at the bottom of the radiator fill fitting when the radiator cap is removed. Coolant should be centered between the “minimum” and “maximum” indicators on the overflow container.
- **Check tire pressure** - Set to 1.99 Bar (29 PSI) in the front tire and 1.79 Bar (26 PSI) in the rear. Tire pressure may vary by tire type. Tire warmers are recommended for most race tires.
- **Check fuel level** - Recommended race fuel amount is approximately 5.7 L (1.5 US gal). On translucent tanks the level will be even with the Intake Cover/Air Filter Box mounting screw. [See pg. 4] Maximum fuel capacity is 12 L (3.17 US gal.)
- **Check the chain tension** [See pg. 9]
- **Inspect suspension components** (forks, rear shock, linkages) for leaks, excessive wear, or any looseness.
- **Let the engine run up to 176°F (80°C)**, during which the throttle should not be turned.



### CAUTION!

#### Danger of scalding

During motorcycle operation, the coolant gets very hot and is under pressure.

- Do not open the radiator or other cooling system components if the engine or the cooling system are at operating temperature.
- Allow the cooling system to cool down before inspecting or servicing.

## Post Crash Inspection

1. Remove the entire fairing (including the Intake Cover/Air Filter Box). [Pg. 14]
2. Disassemble the airbox and check for any blemishes/dirt within the airbox and air filter. [Pg. 10]
3. Thoroughly clean the fairing and all exposed areas of the motorcycle while checking for damage.
4. Replace any damaged parts with new ones.
5. Inspect Suspension. [Pg. 11]  
Loosen the front axle pinch bolts and bottom triple clamp bolts. Compress the front forks several times, to insure functionality, before re-tightening every bolt to the appropriate torque specifications.
6. Clean and lubricate the chain. [Pg. 9]
7. Check coolant level [Pg. 15] and engine oil [Pg. 8], and fill as necessary.

### Typical crash damages to inspect:

- Front forks
- Handlebars
- Crash pads
- Crash pad frame mounting plates
- Rear set
- Shift & brake linkages
- Debris trapped between the linkages

## Post Race Service

After each race weekend or 5 hours ride time, whichever comes first:

- Remove and clean the fairing (except front fender) [See pg. 3]
- Thoroughly clean the motorcycle (frame, tank, swingarm, fenders, and rims)
- Check the visual condition and torque of each screw [See pg. 27]
- Replace old engine oil and oil filters [See pg. 8]
- Bleed the front brake, rear brake, and the clutch [See pg. 16]
- Perform chain maintenance [See pg. 9]

## Transporting / Loading

Use wheel chock to stabilize front wheel.

### Recommended Tie-down Points

- FRONT:** Attach soft-tie loop straps on the lower triple tree. Lead the loop forward out the lower front fairing **A** attaching to tie-down straps secured to a solid mounting point in the transport vehicle.
  - Use one on each side of the motorcycle.
  - Tighten straps enough to tension front forks partially, being careful that the forks are not compressed completely.
- REAR:** Attach tie-down strap around the rear wheel **B** and tighten the strap rearward, preventing the motorcycle from rolling forward.



## Raising the Motorcycle on Lift Stands

Park the motorcycle on level, firm surface.



### CAUTION!

**Don't park the motorcycle in direct sun.**

- The windshield can amplify the sun's radiant energy.

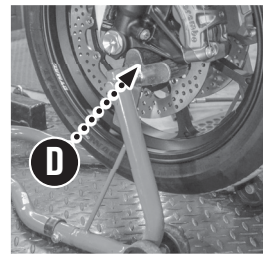
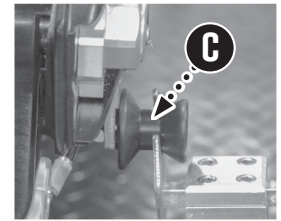
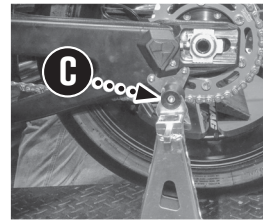
### ▪ Lifting the rear

- The motorcycle is equipped with lifting spools **C**. Insert the lift stand into the groove of the lifting spools.

- Press down on the rear handle of the stand raising the rear of the motorcycle.

### ▪ Lifting the front (raise rear first)

- Point the front wheel straight-ahead.
- Position the lift stand under the front fork caliper mounts **D**.
- Press down on front handle of the stand, raising the front of the motorcycle.



## Storage

To store the motorcycle for an extended period, take the following actions.

### Before storing the motorcycle:

- Inspect all parts for function and wear.
- If repairs or replacements are necessary, perform the service before storing.

### Preparing for Storage:

- Drain fuel tank **E** empty.
- Clean the motorcycle.
- Change the engine oil, the oil filter and clean the oil screens.



Fuel Tank Drain - R.H.

- Check the coolant level and service if necessary with Engine Ice brand coolant. If the storage area will reach temperatures below 0°C (32°F) drain the coolant completely.
- Check the tire pressure.
- Remove the battery from the motorcycle. Store in a safe, warm area, 0°-30°C (32°-85°F), out of direct sun. Keep connected to a lithium rated float charger.
- Store motorcycle in a dry location with a stable temperature.
- Raise the motorcycle on the front, and rear lifting stands.

### Removing from Storage

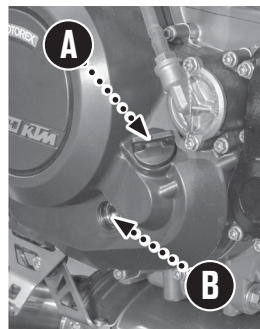
- Fill coolant, if stored drained in freezing temps.
- Install a fully charged battery.
- Perform pre-ride checks.
- Lower the motorcycle from the lifting stands.
- Take for a test ride.

# Maintenance / Service

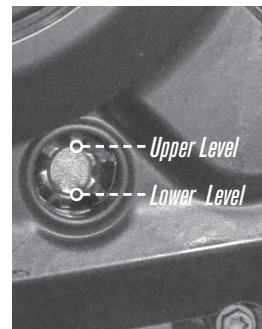
## Checking Engine Oil Level

Check the engine oil level at normal engine operating temperature.

- Stand the motorcycle upright on a level surface.
- Start engine and warm to normal operating temperature. (Turn off the engine, wait one minute before checking the level.)
- Check the engine oil in the site glass window **B**. The level must be between the lower and upper markings beside the window.
- If needed, add oil, at oil filler **A**, to specified level.




Oil Filler and Oil Window



Oil Level

## Changing Engine Oil & Filter, and Cleaning the Oil Screens

### OIL DRAINING PROCEDURE

- Stand the motorcycle upright on a level surface.
- Start engine and warm to normal operating temperature.
- Remove the safety wire from the oil drain plug **C**, oil screen 1 **D**, oil screen 2 **I** and the filler plug **G**.
- Place drain container under the engine.
- Remove oil filler cap **F** from the clutch cover.
- Remove oil drain plug **C**.
- Completely drain the engine oil.
- Inspect the magnetic tip of the drain plug** for any metal shavings and thoroughly clean plug. 
- Install oil drain plug with new crush washer. Tighten to 20 Nm (14.8 lb-ft).

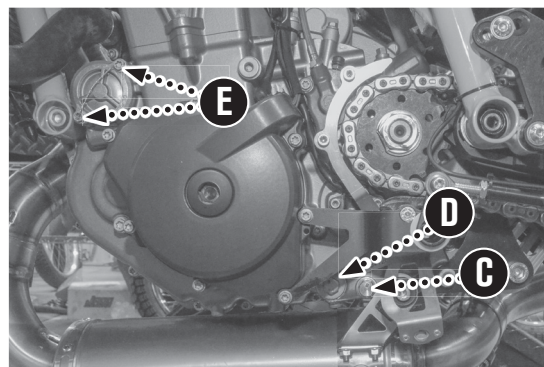
### OIL FILTER CHANGING PROCEDURE

- On left side of engine, remove the screws from the oil filter cover **E**, remove cover with the O-ring.
- Pull out filter.
- Thoroughly clean parts and sealing surface.
- Insert the new oil filter.
- Coat o-ring with oil, position oil filter cover in place, reinstall cover screws.

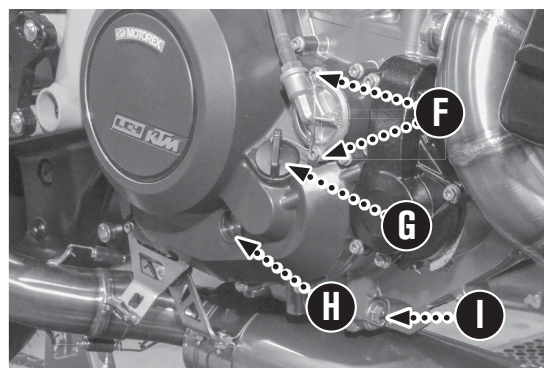
- Torque cover screws – 6 Nm (4.4 lb-ft).
- Repeat steps 10-15 for oil filter **F** on right side of engine.

### OIL SCREENS INSPECTION AND CLEANING

- On left side of engine, remove screw plug with oil screen **D**. Completely draining the remaining engine oil.
- Thoroughly clean the parts and sealing surface.
- On right side of engine remove screw plug with oil screen **I**. Completely draining the remaining engine oil.
- Thoroughly clean the parts and sealing surfaces.
- Position oil screen **D** with the O-rings on a pin wrench.
- Position the pin wrench through the drilled hole of the screw plug in the opposite section of the engine case. Push the oil screen all the way into the engine case.
- Install both oil screen plugs **D** and **I** – 15 Nm (11.1 lb-ft).
- Fill up engine oil at **G** 1.70 L (1.8 qt.).
- Let the engine run for approx. 30 seconds, check thoroughly for leaks.
- Check engine oil level **I**.



Oil Filter, Screen, Drain Plug – Left Side



Oil Filter, Filler Plug, Screen, Oil Level Window – Right Side

**!** Safety wire oil drain plug **C**, oil screen 1 **D**, oil screen 2 **I**, oil filter cover **E**, oil filter cover **F** and filler plug **G**



### Chain Cleaning / Lubrication

1. Raise rear of motorcycle on lift stand. [See pg. 7]
2. Check that the shift lever is in neutral.
3. Spray chain cleaner on the chain while turning the rear tire. Rotate the wheel until the entire chain has been sprayed with the cleaner.
4. Let the cleaner soak for approximately 5 minutes.
5. Remove excess cleaner – using a fabric rag (not paper towel) wipe chain while rotating wheel several turns, making certain that the entire chain has run through the rag several times.
6. Let chain dry to the touch before spraying lubricant.
7. Apply chain lubricant – Carefully spray the lubricant in the front of the chain tunnel in the swingarm **A**, with the spray nozzle facing downwards into the inside of the chain links. Rotate the rear wheel until the entire chain has been lubricated.
8. Clean surrounding area surrounding chain – when completing the cleaning and lubrication process, check and clean any residues of any liquids on the rear rim, tire, brake disk, and swingarm.
9. Check the chain tension (See “Chain Tension / Rear Axle Alignment” on page 9. [Pg. 9])



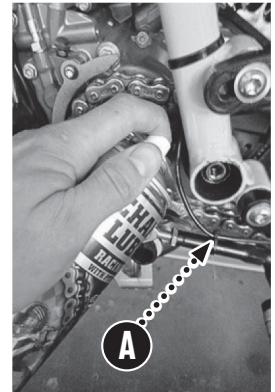
Be careful not to pinch fingers between chain and sprockets.



Spray Chain Cleaner



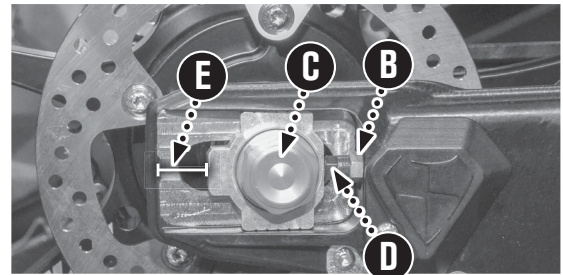
Wipe Cleaner Dry



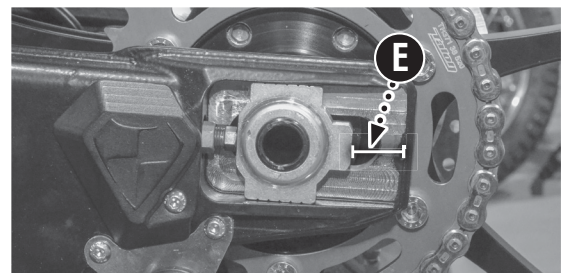
Spray Chain Lubricant

### Chain Tension / Rear Axle Alignment

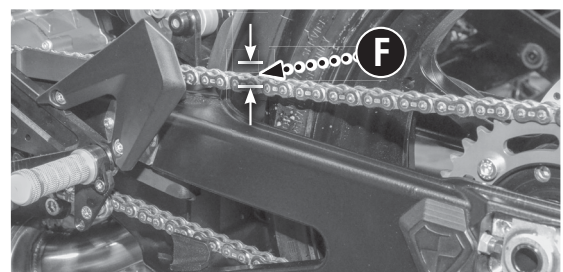
1. Loosen the jam nuts **B** on the adjuster screws on both sides of the swingarm.
2. Loosen axle nut **C**.
3. Turn the adjuster screw **D** in the necessary direction to move the rear axle.
4. On both sides, measure and compare the distance **E** of the rear edge of the swingarm and the edge of the adjuster-blocks.
5. Fine-tune the adjuster screw until the distance is equal (+/- 1mm) on both sides.
6. Adjust until vertical chain tension **F** is 35-40mm. Measure in the chain midpoint.
7. Tighten axle to specified torque – 90 Nm (66.4 ft-lb).
8. Tighten jam nuts.



Right side of swingarm



Left side of swingarm



Chain tension measurement

## Fuel Filler Cap

### Open Fuel Filler Cap

1. Push down on cap lever **A**.
2. Rotate counter-clockwise 1/4 turn.
3. Lift out cap.

### Close Fuel Filler Cap

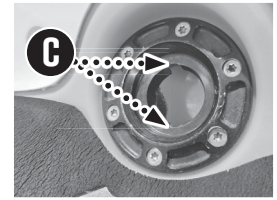
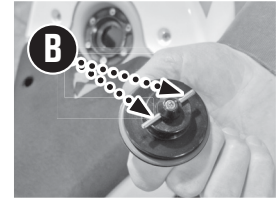
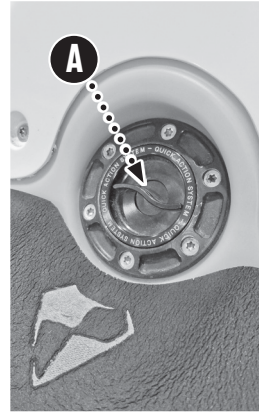
1. Line up cap retainer pins **B** with slots **C** in filler neck.
2. Rotate clockwise approximately 1/4 turn until it clicks.



### FIRE HAZARD Fuel is highly flammable.

The fuel in the fuel tank expands when warm and can escape if overfilled.

- Turn off the engine for refueling
- Do not refuel the vehicle near open flames or lit cigarettes
- Wipe spilled fuel immediately



## Air Filter

### Removal

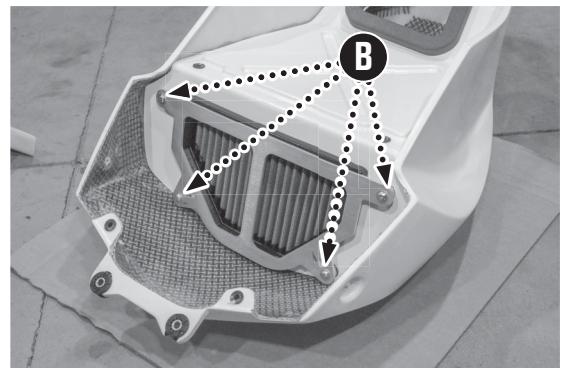
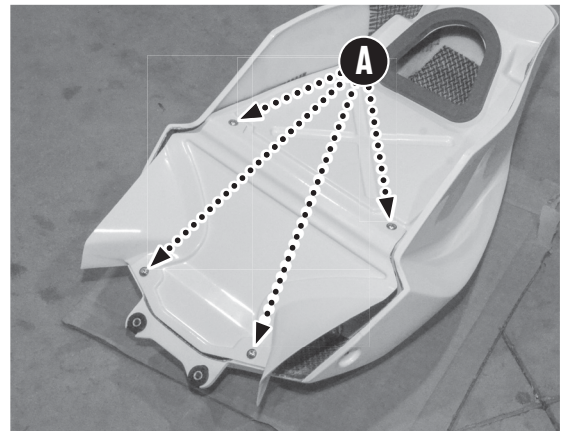
1. Remove Intake Cover/Air Filter Box from motorcycle ("Removing Body Work" on page 13).
2. Remove the 4 inner cover screws **A**.
3. Remove the 4 screws **B** on the aluminum air filter retainer.
4. Remove air filter and inspect.

### S model – Replaceable paper filter

1. Replace paper air filter.
2. Reinstall air filter, retainer, and inner cover.

### R model – Oiled cotton-gauze reusable air filter, designed to be cleaned and reinstalled.

1. Replace if rim seal or air filter element is damaged.
2. Clean and oil filter element following directions of a reusable air filter service kit. (DNA or K&N recommended).
3. Reinstall air filter, retainer, and inner cover.



### REPLACEMENT AIR FILTERS

- Part #: 100610000 Replaceable Paper Air Filter
- Part #: 100610010 Washable/Reusable Air Filter

## Brake Inspection

### Brake Pads

1. Visually inspect brake pads for wear, cracking and damage on all brake calipers **A**.
2. Ensure they have minimum thickness.

**Minimum thickness 1 mm (≥ 0.04 in)**

If the minimum thickness is less than specified or damage is found change the brake pads.

### Brake Disks

1. Check the thickness of the brake disk in several places to see if it is within the specified wear tolerance.

#### Wear Limit

**Front ≥ 4.5 mm (≥ 0.18 in)**

**Rear ≥ 3.5 mm (≥ 0.13 in)**

If the brake disk thickness is less than the specified value change the brake disks.

### Brake Lines and Master Cylinders

1. Visually inspect brake lines and master cylinders for leaking and cracking. Replace components if necessary.

### Brake Fluid Level

1. Position brake fluid reservoir to a horizontal position.
2. Check that the fluid level is between the MIN and MAX markings. Add DOT 5.1 brake fluid to the MAX level.



**WARNING!**  
Danger of accidents

Reduced braking efficiency can be caused by worn brake pads.

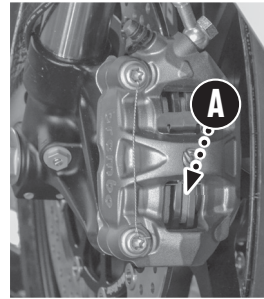
– Check the brake pads regularly.

– Change worn brake pads immediately.

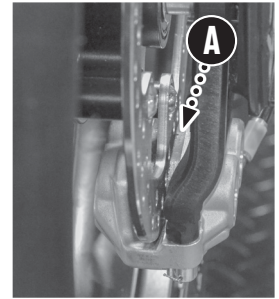
**NOTE:** If the brake pads are not changed in time, the steel brake pads carriers grind on the brake disk. The braking effect is greatly reduced and the brake disks are rendered unserviceable.



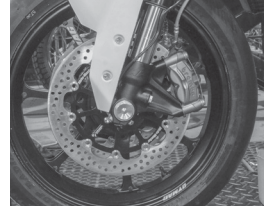
**USE ONLY DOT 5.1 BRAKE FLUID**



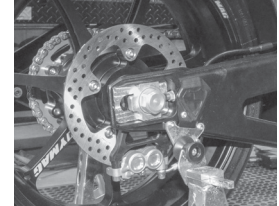
Front Brake Calipers



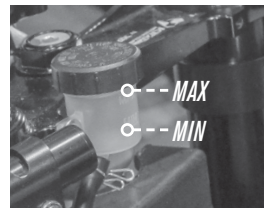
Rear Brake Calipers



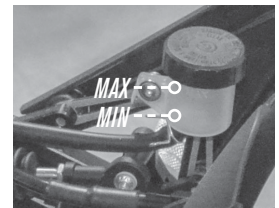
Front Brake Disk



Rear Brake Disk



Front Fluid Reservoir



Rear Fluid Reservoir

## Suspension Inspection

### Front Forks

1. Check the full action of the forks by applying the front brake, pushing down on the handlebars, and compressing the forks several times.
2. Inspect the entire fork assembly for leaks, damage or loose parts and fasteners.
3. Replace or repair any damaged components.
4. Tighten nuts and bolts to proper torque spec. [See "Torque Specs" on page 27]

### Rear Suspension

1. Check the full action of the shock absorber by compressing it several times.
2. Inspect the entire shock absorber assembly for leaks, damage or loose parts and fasteners.
3. Replace or repair any damaged components.
4. Tighten nuts and bolts to proper torque spec. [See "Torque Specs" on page 27]

### Swingarm

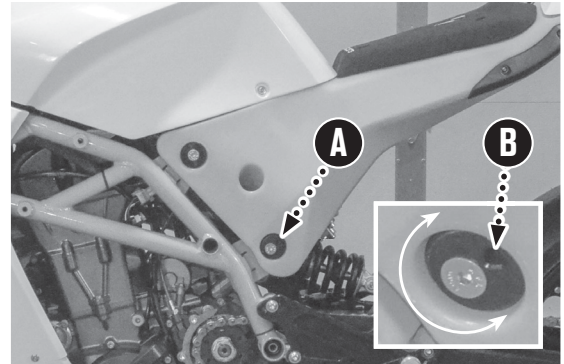
1. Raise rear wheel off the ground and support the motorcycle securely.
2. Check for worn swingarm bearings by grabbing the swingarm and attempting to move it side to side.
3. Replace the bearings if any looseness is detected.

# Chassis

## Seat/Tank Height Adjustment

The seat height is adjusted by moving the complete seat/tank unit. The height is adjusted by turning the eccentric tank mounts **B**.

1. Loosen the bottom mount screws **A** on both sides of the tank.
2. Using a 6 mm Allen wrench placed in the triangular hole, turn the eccentric base **B** to the desired seat position.
3. Temporarily tighten the left mounting screw.
4. Remove the right mounting screw, apply thread lock, reinsert and tighten to the appropriate torque – 30 Nm (22.1 ft-lb).
5. Remove the left mounting screw, apply thread lock, reinsert and tighten to the appropriate torque – 30 Nm (22.1 ft-lb).



## Handlebar Adjustment

The position of the handlebars can be adjusted both in height and angle. It should be noted that right and left handlebar mirror each other and neither should be at a different angle or height than the other.

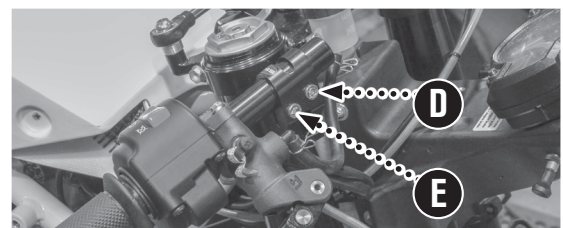
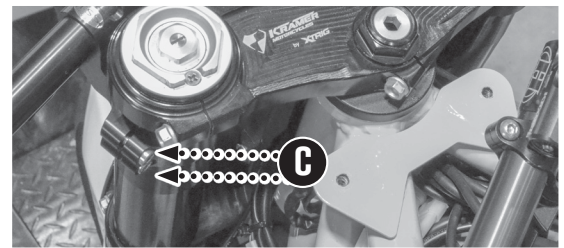
### Height and Angle Adjustment

1. Loosen the clamping screws **C** of the clip-ons on both sides.
2. Adjust the height of the handlebars by sliding up or down on the fork tube. Adjust the angle by rotating around the fork tube. (Ensure that both sides are equal.)
3. Swing handlebars from lock to lock making sure nothing touches or rubs.

4. Tighten the clamping screws **C** of the clip-ons to the appropriate torque – 11 Nm (8.11 ft-lb).

### Width Adjustment (2 positions)

1. Remove the clamping screws **D** of the clip-ons on both sides.
1. Loosen the clamping screws **E** of the clip-ons on both sides.
2. Adjust width of the handlebars. Aligning one of the 2 grooves in the handlebar to the hole **D**. Reinstall clamping screw.
3. Tighten the clamping screws of the clip-ons to the appropriate torque – 11 Nm (8.11 ft-lb).

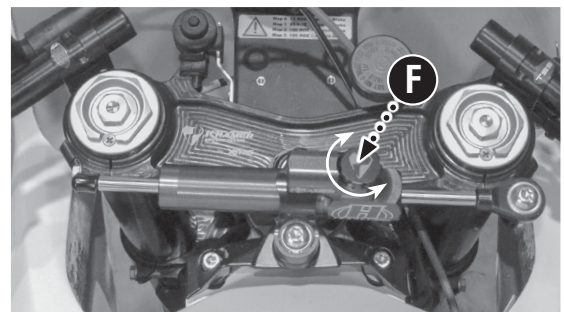


## Steering Damper Setup

Setting the firmness of the steering damper is dependent on riding style and track characteristics. In high-speed corners, a higher setting may help keep the motorcycle more stable, however, through tight and twisty sections a too high setting may cost valuable agility and precision.

### Adjust Damper Firmness

1. Rotate the knob **F** counter-clockwise to decrease the firmness. Rotate the knob clockwise to increase the firmness.

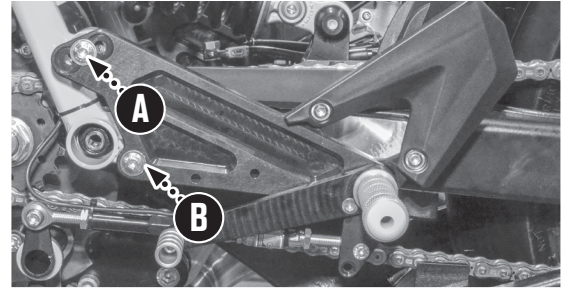


## Rear Set Setup

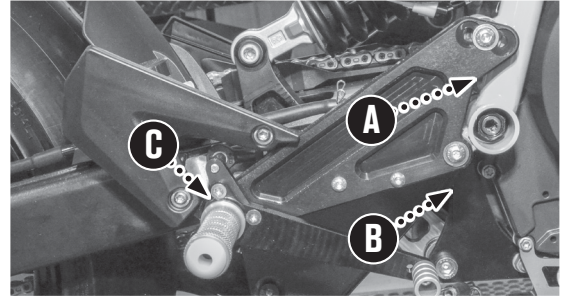
The adjustable rear set allows a personalized setting for each rider, with both foot pegs, the shift lever, and the brake lever being adjustable.

### Adjusting the foot pegs (left and right)

1. Loosen the bottom screw **B** of the foot peg carrier.
2. Loosen the top screw **A** of the foot peg carrier, so the carrier can move freely.
3. Position the carrier to the desired location.
4. Tighten the top screw **A** to the appropriate torque – 25 Nm (18.4 ft-lb).
5. Tighten the bottom screw **B** to the appropriate torque – 25 Nm (18.4 ft-lb).
6. Adjust the position of the shift and brake levers [See below].



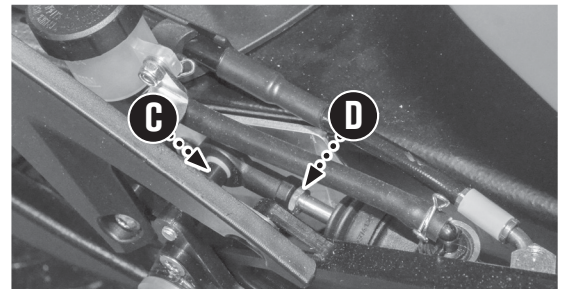
Rear Set Adjustment – L.H. Side



Rear Set Adjustment – R.H. Side

## Brake Lever Adjustment

1. Remove the connecting screw **C** of the brake rod, (pay attention not to lose the spacer between the rod end bearing and brake lever).
2. Loosen the brake rod jam nut **D**.
3. Adjust the length of the brake rod by screwing the rod end bearing in or out of the brake rod, until brake lever is in desired position.
4. Tighten the jam nut **D**.
5. Re-attach the connecting screw **C** and the spacer between the brake lever and the rod end bearing. Tighten to appropriate torque – 10 Nm (7.38 ft-lb).



Brake Lever Adjustment – R.H. Side

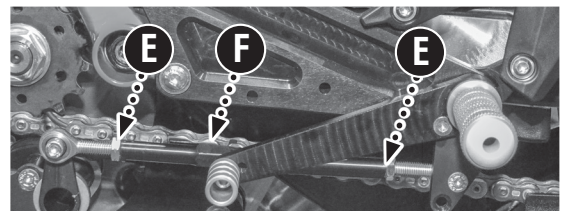
## Shift Lever Height Adjustment

**Non-Quickshift Lever** is adjusted by adjusting the shift rod's length.

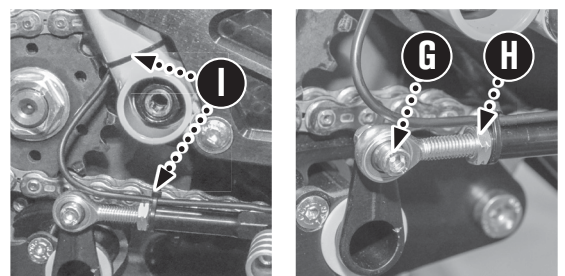
1. Hold the shift shaft **F** in place with wrench and loosen the jam nuts **E** with a second wrench.
2. Adjust the length of the shift shaft by rotating the shaft.
3. Adjust until shift lever is to desired position.
4. Tighten jam nuts **E**.

**Quickshift Lever** is adjusted by adjusting the front rod end bearing.

1. Remove screw **G** holding the rod end bearing.
2. Loosen jam nut **H**.
3. Rotate the rod end bearing until shift lever is to desired position.
4. Tighten jam nut **H**.
5. Install screw **G** and tighten to appropriate torque – 10 Nm (7.38 ft-lb).
6. Inspect that the quickshift cable is properly secured **I** away from the chain.



Non-Quickshift Lever Adjustment



Quickshift Lever Adjustment

**POTENTIAL QUICKSHIFT DAMAGE** – DO NOT tighten rear rod end bearing shaft into quickshift sensor.

Loosening jam nut and turning rear rod end bearing too deep into sensor can damage sensor internal components.



## Body Work Removal

Remove the body work pieces in the order of appearance.

Reinstall the body work pieces in reverse order.

### Remove Intake Cover/Air Filter Box

1. Remove the two screws **E** at the rear of each side.
2. Remove the two 1/4-turn fasteners **F** on each side.
3. Carefully lift Intake Cover/Air Filter Box rearward and up.

### Remove Lower Fairing

4. Remove the two 1/4-turn fasteners **G** on each side.
5. Remove the four 1/4-turn fasteners **H** on each side.
6. Carefully remove lower fairing.

### Remove Upper Fairing

## Body Work Installation

Install body work in the order of appearance.



**USE BLUE THREAD LOCKER ON ALL THREADED FASTENERS.**

### Install Upper Fairing

1. Install upper fairing carefully maneuvering around the forks.
2. Install two 1/4-turn fasteners **I** under the windshield.

### Install Lower Fairing

3. Carefully Install lower fairing.
4. Install the four 1/4-turn fasteners **H** – two on each side.
5. Install the two 1/4-turn fasteners **G** – one on each side.

7. Remove two 1/4-turn fasteners **I** under the windshield.

8. NOTE: If Intake Cover/Air Filter Box is not removed, then remove the two 1/4-turn fasteners **F** on each side.

9. Remove upper fairing by pulling forward, carefully maneuvering around the forks.

### Remove Tail Cap

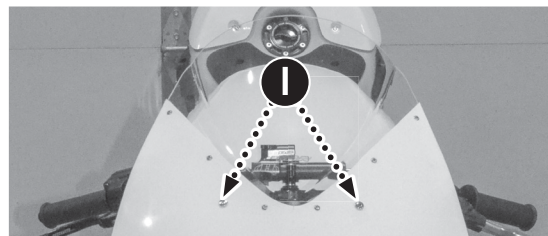
10. Remove two screws **J** under the tail cap.
11. Remove two screws **K** on top of the tail cap.
12. Slide tail cap rearward and upward.

### Install Intake Cover/Air Filter Box

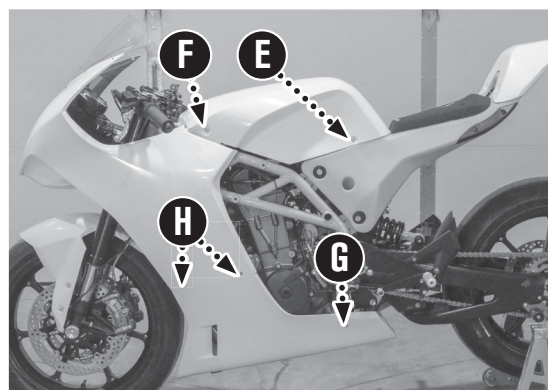
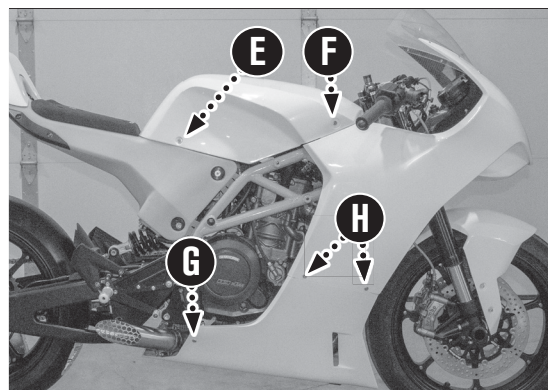
6. Position in place the Intake Cover/Air Filter Box.
7. Finger tighten the two screws **E** at the rear of each side.
8. Install the two 1/4-turn fasteners **F** on each side.
9. Install the two screws **D** holding the steering dampener mount – 6-9 Nm (50-80 in-lb).
10. Torque the two screws **E** at the rear of each side – 6-9 Nm (50-80 in-lb).

### Install Tail Cap

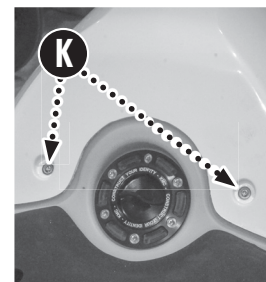
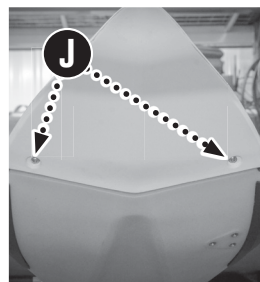
11. Slide tail cap in position.
12. Install two screws **J** under the tail cap – 6-9 Nm (50-80 in-lb).
13. Install two screws **K** on top of the tail cap – 6-9 Nm (50-80 in-lb).



*Intake Cover/Air Filter Box*



*Upper and Lower Fairing Fastener Locations*



*Tail Cap Fastener Locations*

# Engine

## Repairs

Utilize a KTM 690 Repair manual, available from your KTM dealer, to perform more extensive repairs and servicing of the Kramer Motorcycle.

## Hydraulic Clutch

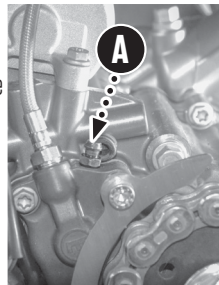
### Checking Fluid Level

1. Move the clutch fluid reservoir to a horizontal position.
2. Check that the fluid level is between the MIN and MAX markings. Add DOT 5.1 brake fluid to the

**USE ONLY DOT 5.1  
BRAKE FLUID**

### Bleeding Slave Cylinder

3. Use standard manual or vacuum bleeding procedures to bleed the hydraulic clutch.
4. The bleeder screw **A** is on the slave cylinder on the left side of the engine.



## Recommended Engine Maintenance

### Check Valve Clearance

- After first run (200km) and then every 1.000 km.

### Piston/Cylinder Service

- Recommended Piston and cylinder replacement 5.000 km or 50 h

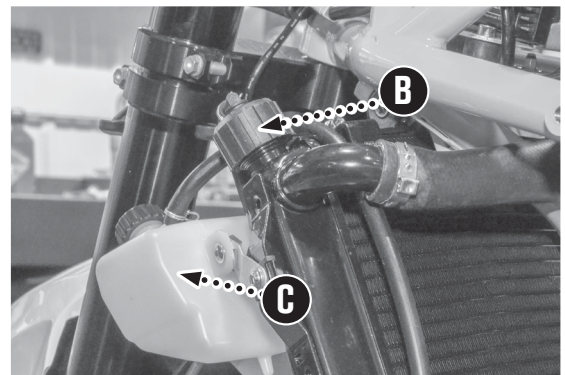
### Repack the Muffler

- Every 1.000km or when it is burned out. Empty muffler reduces engine performance and can lead to cracks in the exhaust.
- Exhaust service kit. Part # 100501000

# Cooling System

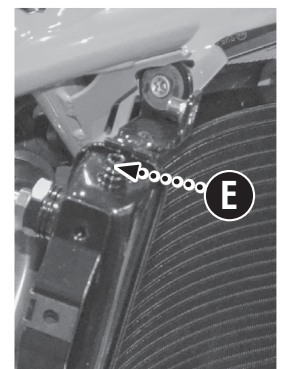
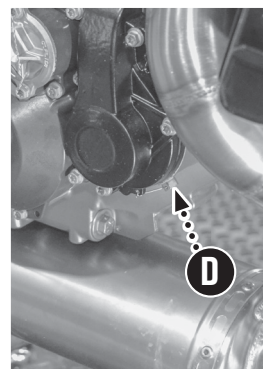
## Checking the Coolant Level

1. With the engine cold, position the motorcycle on a level surface.
2. Check coolant level of the radiator. Remove radiator cap **B**. Coolant should be visible at the bottom of the radiator fill fitting.
3. Reinstall the radiator cap.
4. Check coolant level in the compensating tank **C**. The coolant level should be between the MIN and MAX marks.
5. If level is below MIN mark add coolant (Engine Ice Hi-Performance Coolant).



## Draining the Coolant

1. With the engine cold, position the motorcycle on a level surface.
2. Place a suitable container under the engine. Remove screw **D**.
3. Remove the radiator cap.
4. Completely drain the coolant.
5. Insert and tighten screw **D** with a new seal ring - 15 Nm (11.11 ft-lb).
6. Install the radiator cap.



## Filling/bleeding the Cooling System

1. With the engine cold, remove radiator cap **B**.
2. Remove bleeder screw **E**.
3. Tilt the vehicle slightly to the right. Pour in coolant until it emerges without bubbles at the vent hole, and then replace the bleeder screw **E**.
4. Completely fill the radiator with coolant. Install radiator cap.
5. Check the coolant level.
6. Start and run engine to operating temperature. Turn off engine.
7. When engine is cool, check coolant level in compensating tank and radiator. Add coolant if necessary.

# Brake System

## Brake Bleeding

### Bleeding Front Brake Calipers

Use standard manual or vacuum bleeding procedures to bleed the front brake calipers.

#### SPECIAL NOTES:

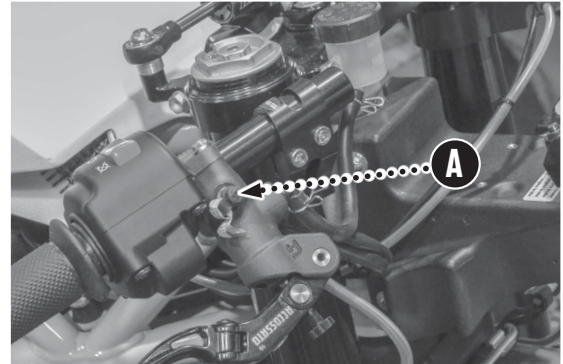
- Bleed each caliper individually used bleed screw **B**.
- Bleed brake lever at bleed screw **A**.

### Bleeding Rear Brake Caliper

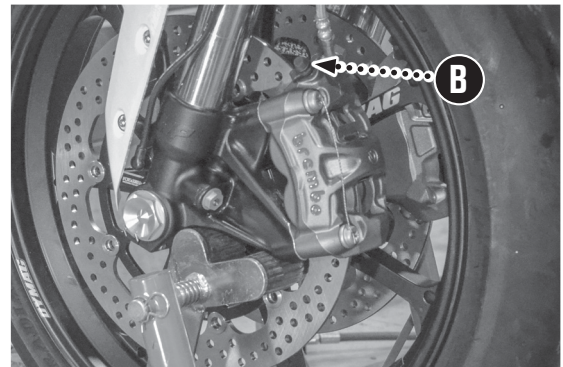
Use standard manual or vacuum bleeding procedures to bleed the brake caliper.

#### SPECIAL NOTES:

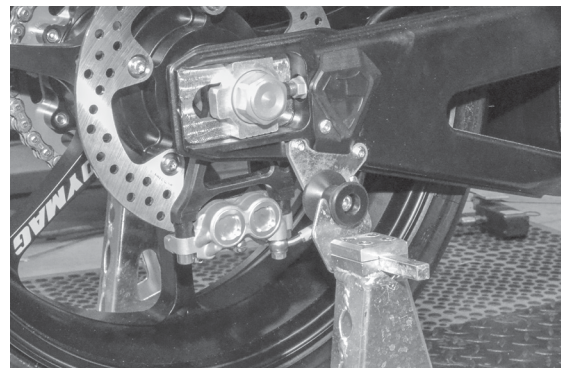
1. Remove Rear Brake Caliper, invert with bleed screw facing up.
2. Raise caliper to a position the bleed screw higher than the master cylinder.
3. Place a 6mm Allen wrench between brake pads to simulate the brake disk.
4. Bleed caliper using standard procedure.
5. Remove Allen wrench and install caliper back on motorcycle.



*Front Brake Lever Bleed Screw*



*Front Brake Calipers Bleed Screw*



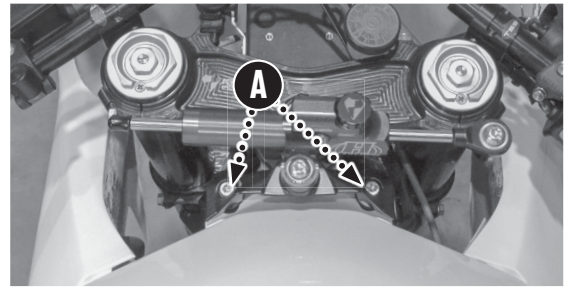
*Rear Brake Calipers need to be inverted to bleed.*



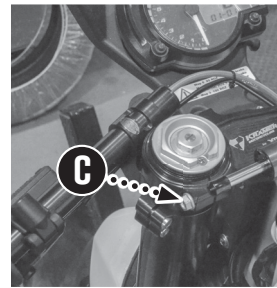
# Suspension

## Steering Stem Adjustment – Fixed Triple Clamp

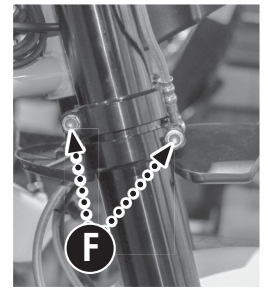
1. Raise up the motorcycle under the frame, lifting the front wheel off the ground.
2. Unbolt steering dampener screws **A**.
3. Temporarily disconnect dampener mount from frame.
4. Loosen top clamp screws **C**.
5. Loosen the top yoke screw **B**.
6. Tighten steering stem adjusting nut **G** to 20 Nm (13.3 lb-ft). Check for smooth bearing operation with no free play.
7. Tighten top clamp screws **C** - 15 Nm (11.1 ft-lb).
8. Tighten the top yoke screw **B** - 20 Nm (14.8 ft-lb).
9. Install steering dampener on frame, securing with dampener screws **A** - 17 Nm (12.5 ft-lb).



Steering Dampener

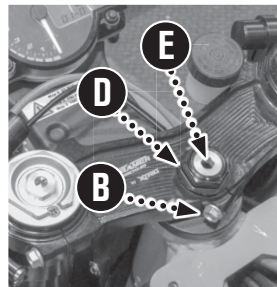


Top and Bottom Clamp Screws

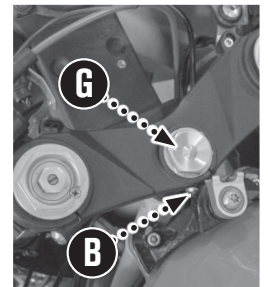


## Steering Stem Adjustment – Adjustable Triple Clamp

1. Raise up the motorcycle under the frame, lifting the front wheel off the ground.
2. Unbolt steering dampener screws **A**.
3. Temporarily disconnect dampener mount from frame.
4. Loosen top clamp screws **C**.
5. Loosen the top yoke screw **B**.
6. Loosen the counter screw **E**.
7. Tighten steering stem adjusting nut **D** to 20 Nm (13.3 lb-ft). Check for smooth bearing operation with no free play.
8. Turn the counter screw **E** in the adjusting nut **D** and tighten to 10 Nm (7.28 ft-lb).
9. Tighten top clamp screws **C** - 15 Nm (11.1 ft-lb).
10. Tighten the top yoke screw **B** - 20 Nm (14.8 ft-lb).
11. Install steering dampener on frame, securing with dampener screws **A** - 17 Nm (12.5 ft-lb).



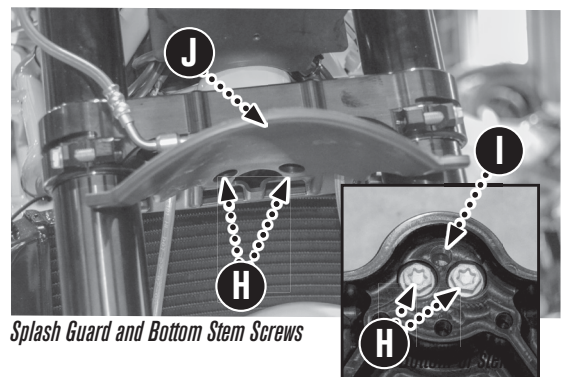
Adjustable Triple Clamp Top Yoke Screw and Stem Adjusting Nut



Fixed Triple Clamp Steering Stem Adjusting Nut

## Changing the Fork Offset

1. Raise up the motorcycle under the frame, lifting the front wheel off the ground.
2. Unbolt steering dampener screws **A**.
3. Temporarily disconnect dampener from frame.
4. Remove Splash Guard **J**.
5. Loosen the four bottom clamp screws **F**.
6. Loosen the two top clamp screws **C**.
7. Loosen the top yoke screw **B**.
8. Remove the two screws **H** from the bottom of the stem shaft.
9. The lower triple clamp can be separated from the conical shaft tube by screwing one of the M8x20 screws **H** into the hole **I**.
10. Push the lower triple clamp down approx. 22 mm (0.86 in.), making sure the fork is not compressed in this state.
11. Making sure you do not loosen the counter screw **E**, turn the adjusting nut **D** on the steering stem 180° in a clockwise direction using a 27 mm wrench.
12. Remove the screw from the hole **I** and push the lower triple clamp all the way up again. Screw in the two screws **H** and tighten - 20 Nm (14.8 ft-lb).
13. Tighten the four bottom clamp screws **F** - 15 Nm (11.1 ft-lb).
14. Tighten the top yoke screw **B** - 20 Nm (14.8 ft-lb).
15. Mount the Splash Guard **J**.
16. Check the steering head bearing clearance and readjust if necessary.



Splash Guard and Bottom Stem Screws

## Fork Setup

### Adjusting Spring Preload

**Preload:** The distance the spring is compressed from its free length with the suspension fully extended. It affects the suspension sag.

1. On the top of both fork tubes, turn hex adjuster **A** equally to the desired setting.
2. **Zeroing:** Turn the screw as far as possible in a clockwise direction.
3. Turn the screw as many complete revolutions as necessary counter-clockwise.
4. **Default settings:** 3.5 Turns.

### Adjusting Compression Damping

**Compression damping:** It controls the rate of suspension compression.

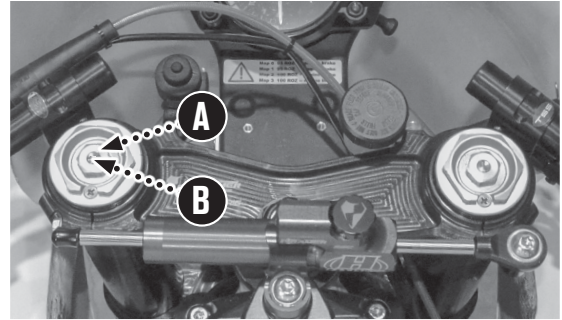
1. On the bottom of both fork tubes, turn brass screws **C** equally to the desired setting.

2. **Zeroing:** Turn the screw as far as possible in a clockwise direction.
3. Turn the screw as many clicks as necessary counter-clockwise.
4. **Default settings:** 15 Clicks.

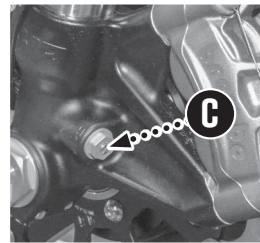
### Adjusting Rebound Damping

**Rebound damping:** It controls the rate of suspension extension after compression, known as rebounding.

1. On the top of both fork tubes, turn brass screws **B** equally to the desired setting.
2. **Zeroing:** Turn the screw as far as possible in a clockwise direction.
3. Turn the screw as many clicks as necessary counter-clockwise.
4. **Default settings:** 15 Clicks.



Spring Preload and Rebound Dampening



## Fork Settings Table

	Wet	Standard	Race Dry
Compression Damping (clicks open)	18	15	12
Rebound Damping (clicks open)	18	15	15
Preload Adjuster (turns open)	4	3.5	3

Air Chamber . . . . . 120 mm    Oil Type . . . . . Motorex  
 Wheel Travel . . . . . 120 mm    Oil Viscosity . . . . . SAE 5  
 Front Fork Length . . . . . 725 mm

Spring	Riders Weight	Spring Rate	Spring Length	Preload Spacer	Preload Tube
Softer		7.5	250 mm	5 mm	137 mm
KMC	70 - 85 Kg	8.0	250 mm	5 mm	137 mm
Harder		8.5	250 mm	5 mm	137 mm

## Rear Shock Setup

### Adjusting Spring Preload

**Preload:** The distance the spring is compressed from its free length with the suspension fully extended. It affects the suspension sag.

1. Raise rear of motorcycle, lifting the rear wheel off the ground.
2. Unbolt and remove rear shock from motorcycle.
3. Loosen safety screw **E**, on preload adjuster ring **D** two turns, but do not remove.
4. Turn the adjuster ring counter-clockwise until the spring is relieved of tension.
5. **Zeroing:** Snug adjuster ring to spring.
6. Measure distance from ring surface to an edge on shock. Add desired preload distance to this reference measurement (RF) to get total distance to set adjuster ring. [ex. RF=30 mm Preload=5 mm then 30+5=35 mm total distance.]
7. Turn the adjuster ring in a clockwise direction, until you reach the desired preload on the spring.
8. **Default settings:** 5 mm.
9. Tighten the safety screw **E** in the preload adjuster ring – 5 Nm (3.64 ft-lb).
10. Install rear shock.

### Adjusting Compression Damping

**Compression damping:** It controls the rate of suspension compression.

There are two separate setups, “High Speed” and “Low Speed”. This refers to the speed at which the rear shock is being compressed.

1. Access to compression dampening is through the hole in the fuel tank **F** on left-hand side of motorcycle.

#### Compression damping Low Speed:

2. On top of the shock, turn brass screw **H** to desired setting.
3. **Zeroing:** Turn the screw clockwise up to the last perceptible click.
4. Turn the screw counter-clockwise as many clicks as necessary.
5. **Default settings:** 15 Clicks.

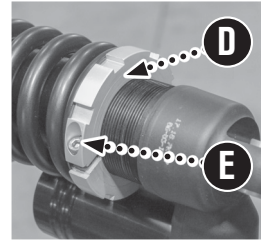
#### Compression damping High Speed:

6. On top of the shock, turn hex screw **I** to desired setting.
7. **Zeroing:** Turn the screw clockwise up to the last perceptible click.
8. Turn the screw counter-clockwise as many complete revolutions as necessary.
9. **Default settings:** 2.5 Revolutions.

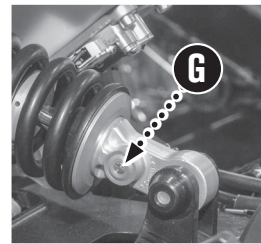
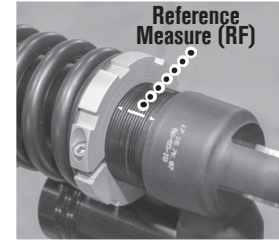
### Adjusting Rebound Damping

**Rebound damping:** It controls the rate of suspension extension after compression, known as rebounding

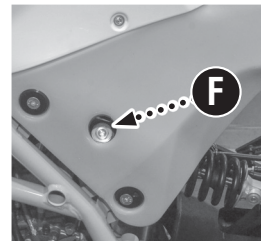
10. On bottom of the shock, turn brass screw **G** to desired setting.
11. **Zeroing:** Turn the screw clockwise up to the last perceptible click.
12. Turn the screw as many clicks as necessary counter-clockwise.
13. **Default settings:** 15 clicks.



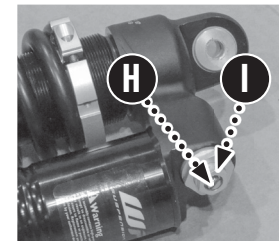
Spring Preload Ring



Rebound Dampening



Compression Dampening



## Shock Settings Table

	Wet	Standard	Race Dry
Compression Damping Low Speed (clicks open)	20	15	15
Compression Damping High Speed (turns open)	3	2.5	1.5
Rebound Damping (clicks open)	20	15	15
Spring Preload	5 mm	5 mm	5 mm

Rebound Disk Height . . . . . 5 mm    Oil Type . . . . . 50180751  
 Stroke . . . . . 63 mm    Oil Viscosity . . . . . SAE 2.5  
 Shock Length . . . . . 290 mm

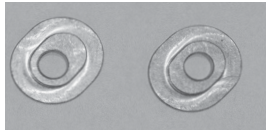
Spring	Riders Weight	Spring Rate	Spring Length
Softer		70	150 mm
KMC	70 - 85 Kg	75	150 mm
Harder		80	150 mm

## Swingarm Angle / Ride Height Adjustment

The swingarm angle influences the general balance, the ride height and weight distribution of the motorcycle.

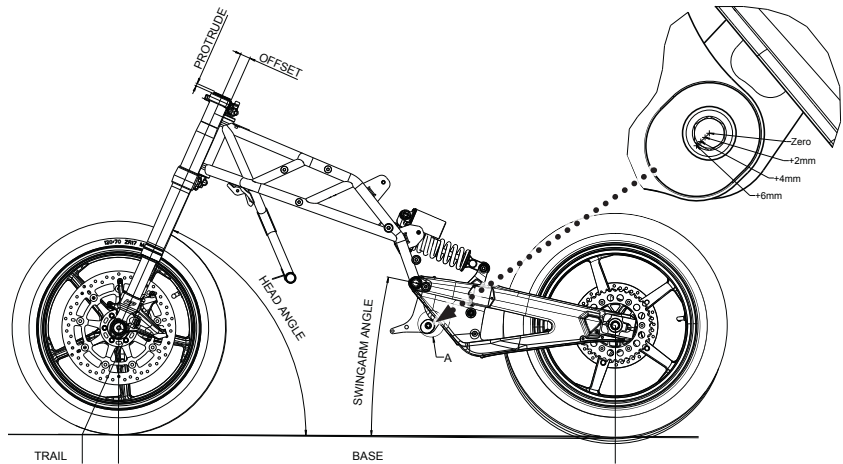
Four settings are available from 0-6 mm. The setting is determined by the position of 2 different adjustment inserts on the swingarm pull rod axle.

- Insert part #100423002 offsets 0 and 6 mm
- Insert part #100423003 offsets 2 and 4 mm



Left: 0 and 6 mm insert  
Right: 2 and 4 mm insert

Utilize the **Chassis Geometry** chart to calculate which adjustment insert and offset attains your desired chassis setup determined by the triple clamp offset of 26 mm or 28 mm.



Chassis Geometry HKR Evo2 2018							
Offset 28mm - Protrude 7mm	Position Pull Rod Axle						
	0	Δ	2	Δ	4	Δ	6
Base [mm]	1395.34	-1.52	1393.82	-1.55	1392.27	-1.60	1390.67
Trail [mm]	101.68	-1.68	100.00	-1.67	98.33	-1.67	96.66
SteeringHead [°]	66.20	0.28	66.48	0.28	66.76	0.28	67.04
SwingArm [°]	11.80	0.42	12.22	0.41	12.63	0.42	13.05
Offset 26mm - Protrude 7mm	Position Pull Rod Axle						
	0	Δ	2	Δ	4	Δ	6
Base [mm]	1393.52	-1.51	1392.01	-1.56	1390.45	-1.61	1388.84
Trail [mm]	104.07	-1.69	102.38	-1.68	100.70	-1.67	99.03
SteeringHead [°]	66.17	0.27	66.44	0.28	66.72	0.29	67.01
SwingArm [°]	11.83	0.42	12.25	0.41	12.66	0.42	13.08

## Changing Swingarm Pull Rod Adjustment Insert

1. Raise the rear of the motorcycle on foot peg mounted stands.
2. Remove pull rod bolts **A** on each side.
3. Remove existing adjustment insert.
4. Install adjustment insert in desired position. Ensure that inserts on each side are installed in the same position.
5. Install and tighten pull rod bolts - 45 Nm (33.2 ft-lb)
6. Lower motorcycle off stands.

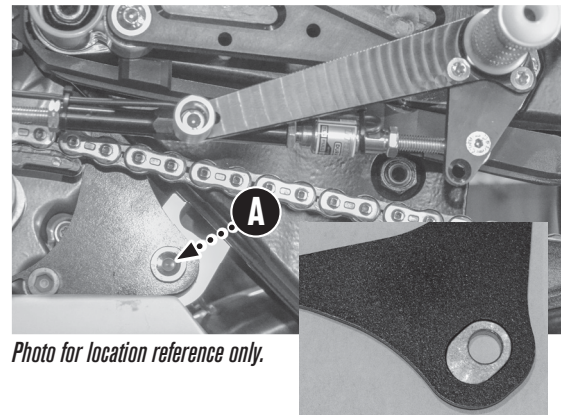


Photo for location reference only.

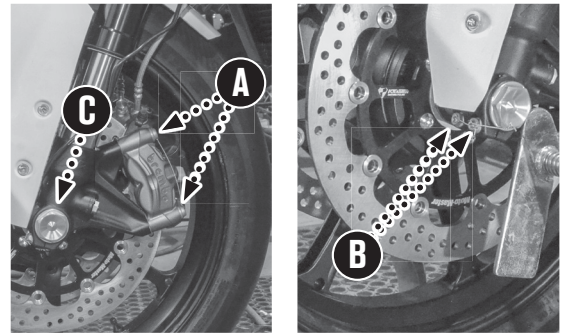
Suspension linkage plate with pull rod adjustment insert.

# Wheels

## Front Wheel Removal

1. Raise motorcycle front and rear on lift stands. [See pg. 7]
2. Remove the screws **A** from both brake calipers.
3. Remove the calipers from the brake disk. Support so the caliper is not hanging by the brake lines.
4. Loosen the pinch bolts **B**.
5. Unscrew axle nut **C** about six turns and press your hand on the nut to push the wheel spindle out of the axle clamp. Remove axle nut **C**.
6. Holding the front wheel, withdraw the wheel spindle. Take the front wheel out of the fork.
7. Remove the two axle spacers.

**NOTE: On S models keep track of the loose spacer on both sides of the wheel.**  
**NOTE: The R model Dymag wheels have captive spacers.**



## Front Wheel Installation

1. Clean and grease the shaft seals and mating surfaces of the spacer.
2. Insert the wide spacer on the left-hand side (when looking in the direction of travel).  
**NOTE: S models have loose axle spacers. The R model Dymag wheels have captive spacers.**
3. Clean axle and axle bolt.
4. Apply thin film of grease on the axle for ease of installation.
5. Lift the rim into position and insert the axle through the forks and the rim.
6. Screw the axle bolt into place and tighten - 45 Nm (33.2 lb-ft).
7. Tighten the left side fork end pinch bolts - 15 Nm (11.1 lb-ft).
8. Position the brake calipers and check that the brake linings are seated correctly.
9. Mount bolts on both brake calipers but do not tighten yet.
10. Operate the hand brake lever repeatedly until the brake lining presses up against the brake disk and there is a pressure point. Strap the hand brake lever in the activated position. (Aligns the brake calipers to disk.)
11. Tighten screws **A** on both brake calipers - 45 Nm (33.2 lb-ft).
12. Release the strap holding the hand brake lever.
13. Lower motorcycle off lift stands.
14. Pull the front brake and compress the fork powerfully a few times. (Aligns the fork legs.)
15. Tighten right side fork end pinch bolts - 15 Nm (11.1 lb-ft).

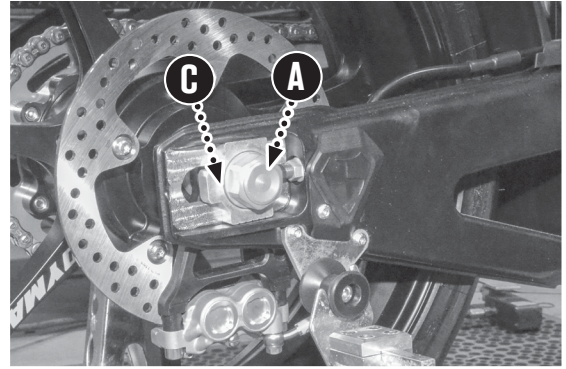
▪ **Safety wire as necessary. [See pg. 27]**

## Rear Wheel Removal

1. Raise motorcycle front and rear on lift stands. [See pg. 7]
2. Remove the axle nut **A** and chain adjuster block **C**.
3. Hold the rear wheel and remove the axle **B**.
4. The wheel will rest on the retention system of the swingarm.
5. Move the rim forwards in the swingarm to remove the chain from the sprocket.
6. Lift the rim until the brake disk is no longer between the caliper.
7. Tilt the tire slightly to insure it does not hit the caliper when removing it.

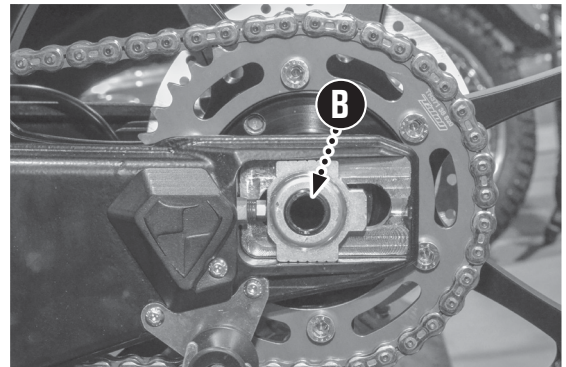
**NOTE: On S models keep track of the loose spacer on both sides of the wheel.**

**NOTE: The R model Dymag wheels have captive spacers.**



## Rear Wheel Installation

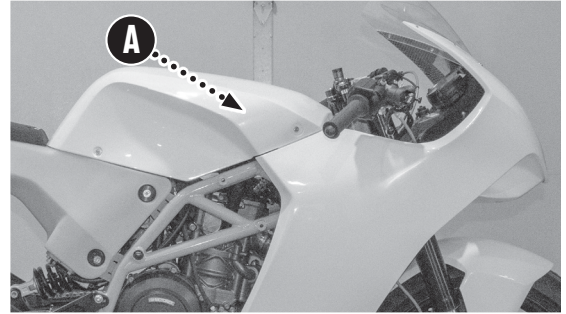
1. Clean and grease the shaft seals and mating surfaces of the spacer.
  2. Insert the spacer on the left-hand side – when looking in the direction of travel.
- NOTE: S models have loose axle spacers. The R model Dymag wheels have captive spacers.**
3. Clean and grease the thread of the wheel spindle and nut.
  4. Clean the mating surfaces of the brake caliper support and swingarm.
  5. Slightly tilt the rear tire to ensure it does not knock or damage the brake caliper when inserted into the swingarm.
  6. Straighten the rim and lower until the brake disk is inside the caliper.
  7. The rim does not have to be supported, as it is resting on the brake caliper.
  8. Move the rim forwards and place a part of the chain on top of the sprocket.
  9. Turn the tire backwards until the chain is mounted back on the sprocket correctly.
  10. Pull the tire back until it is realigned with the chain adjusters.
  11. Insert the axle from the left.
  12. Attach the right adjuster block **C** and the axle nut **A** (loosely tightened).
  13. Push the tire forward until the adjuster blocks are touching the adjuster screws.
  14. Check the chain tension and adjust it if necessary. [See pg. 9]
  15. Tighten the axle nut – 90 Nm (66.4 lb-ft).
  16. Activate the rear brake several times to insure there are not faults in the system.



# Electrical

## Fuses

- **Fuse Box **B**** is located on the right side of the motorcycle under the Intake Cover/Air Filter Box **A**. It contains two 10 amp fuses
- **30 amp main fuse **G**** is on the starter solenoid located behind the right side of the steering head.



Intake Cover / Air Filter Box

## Battery

### Location

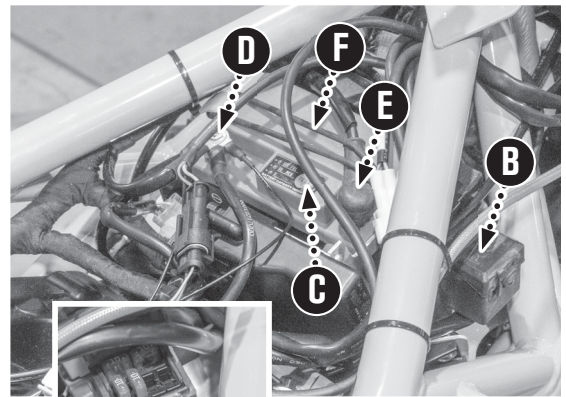
The 12 volt battery **B** is found under the Intake Cover/Air Filter Box **A** behind the steering head.

### Charging

Use a proper lithium rated battery charger. (Optimate 12.8/13.4 .8amp charger is recommended.)

### Removal/Installation

1. Remove Intake Cover/Air Filter Box. [Pg. 22]
2. Detach negative cable **D**.
3. Detach positive cable **E**.
4. Remove rubber retaining strap **F**.
5. Lift battery out.
6. Install in reverse order.



Fuse Box / Battery

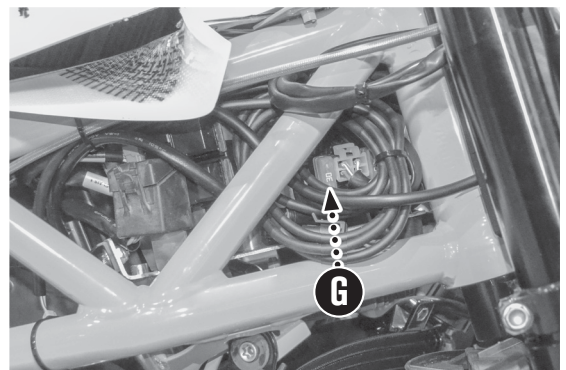


### BATTERY INFO

Kramer Motorcycles are factory-equipped with a lightweight **LITHIUM BATTERY**

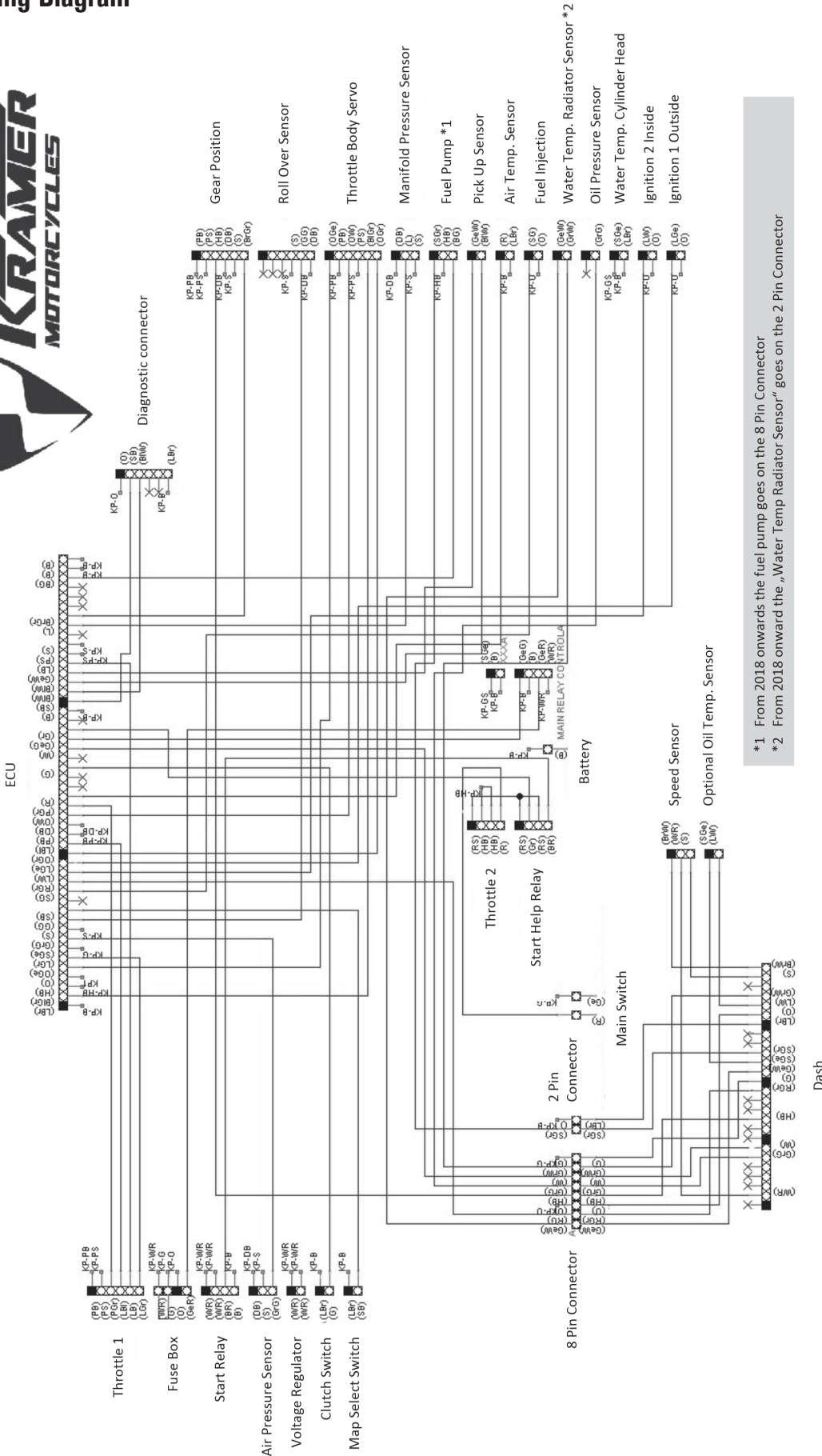
- C.C.A: 150
- Part No: HJTZ7S-FP-IL
- Weight: .64 Kg. (1.42 lbs.)
- 12V / 29WH

Use a proper lithium rated battery charger to ensure long life.



Main Fuse on Starter Solenoid

# Wiring Diagram



\* 1 From 2018 onwards the fuel pump goes on the 8 Pin Connector  
 \* 2 From 2018 onwards the „Water Temp Radiator Sensor“ goes on the 2 Pin Connector

## Wire Color Code

Black-Yellow	SGE
Purple-White	LW
Brown-White	BrW
White-Red	WR
Green-White	GrW
Yellow-White	GeW
Red-Green	RGr
Gray-Green	GrG
Purple-Brown	LBr
Black-Green	SGr
Purple-Black	LS
Yellow-Red	GeR
Blue-Red	BR
Pink-Blue	PB
Pink-Black	PB
Pink-Green	PGr
Purple-Blue	LBl
Purple-Green	PGr
Yellow-Gray	GeG
Red-Black	RB
Brown-Green	BrGr
Blue-Gray	BG
Black-Blue	SB
Blue-White	BIW
Orange-Green	OGr
Blue-Green	BIGr
Orange-White	OW
Orange-Yellow	OGe
Yellow-Green	GG
Black-Gray	SG
Purple-Yellow	LGe
Brown-Black	BS
Purple	
Dark Blue	DB
Light Blue	HB
Green	Gr
Brown	B
Red	R
Yellow	Ge
Orange	O
Black	S



# Multifunction Speedometer Information Center

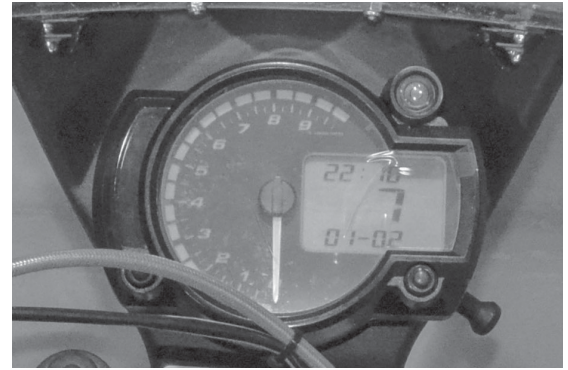
## Koso RX2N GP Style Meter (BA)15B15)

This instrument features many different functions, such as speed, odometer, tripmeter, RPM, shift light, temperature, indicator lights and many other functions.

### SET UP

See KOSO RX2N manual for set up and operation instructions.

Speed unit	Km/h or MPH
Speedometer range	0~360 Km/h or 0~223 MPH
Odometer	0~99999.9 km or mile
Trip A,B	0~999.9 km or mile
Speeding warning setting range	30~180 Km/h or 20~110 MPH Adjust unit : 5 Km/h or 5 MPH
Top speed record	0~360 Km/h or 0~223 MPH
Tire circumference setting	300~2,500 m/m Adjust unit : 1m/m Sensor point: 1~60
Tachometer range	0~20,000 RPM Display unit : 100 RPM
Over RPM shift light setting	0~20,000 RPM Adjust unit : 100 RPM
Max RPM record	0~20,000 RPM
Stroke / piston setting	2 stroke : 1, 2, 3, 4, pistons 4 stroke : 1, 2, 3, 4, 5, 6, 8, 10, 12 pistons
Temperature unit	°C / °F
Digital water temperature range	0~250°C or 32~482°F Display unit : 0.1°C or 0.1°F
Temperature level gauge display	20~120°C or 68~248°F Display in 10 levels Range display unit : 1 level = 10°C or 50°F



Digital oil temperature range	0~250°C or 32~482°F Display unit : 0.1°C or 0.1°F
Over temperature warning setting (water & oil)	60~120°C or 140~248°F Adjust unit : 1°C or 1°F
Top temperature record	0~250°C or 32~482°F
Fuel gauge	Display in 10 levels Range display unit : 1 level = 10% fuel
Fuel resistance setting	100 Ω ~ 500 Ω
Insufficient fuel warning setting	10 ~ 50% Adjust unit : 10%
Clock	24H
Target speed timer	30~360 Km/h or 20~220 MPH Adjust unit : 5 Km/h or 5 MPH
Target distance timer	50~1,000 m or 1/32~20/32 mile Adjust unit : 50 m or 1/32 mile
Top speed timer	The record including: Speed : 0~360 Km/h or 0~223 MPH Distance : 0~999 m or 0~3,280 feet RPM : 0~20,000 RPM Timer : 0~9'59"99
Indicator lights	Turn signal (Green) Neutral (Green) High beam (Blue) Oil (Red) Eobd (Amber) Speeding (Red) Temperature (Amber)

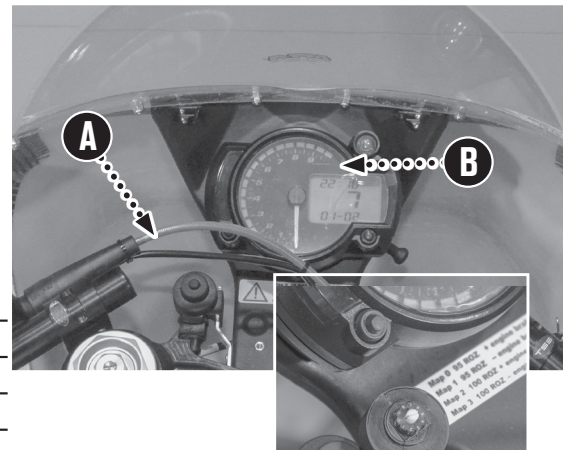
## Engine Map Selector Switch

(All R models. Optional on S models)

The map selection switch **A** is located of the Multifunction speedometer console. It allows the rider to choose the injection mapping most suitable to his/her preference and to the circuit conditions.

1. Peel back rubber cover on map selector switch.
2. Rotate map switch **A** to select desired map.

Map 0	95 ROZ [pump gas 91/93 oct. (R+M/2) ] + engine brake
Map 1	95 ROZ [pump gas 91/93 oct. (R+M/2) ] - engine brake
Map 2	100 ROZ [gasoline > 100 oct. (R+M/2) ] + engine brake
Map 3	100 ROZ [gasoline > 100 oct. (R+M/2) ] - engine brake



## Technical Data

### 2018 HKR Evo2 S Specifications

Weight*:	125 Kg (276 lbs)
Power:	55.92 Kw (75 hp)
Torque:	70 Nm (51.63 ft-lb)
Weight balance:	Front: 55% Rear: 45%
Fuel capacity:	12 l (3.17 US gal)
Engine capacity:	690 cc
Rims:	Aluminium cast 3.5"x17" & 5.0"x17"
Exhaust:	Stainless steel/titan underfloor system
Suspension:	Front: WP-USD Ø 43 mm Rear: WP Monoshock
Brake Rotors:	Front: 1x Ø 320 mm Brembo Rear: Ø 220 mm MotoMaster
Caliper:	Front: 1x Brembo M50 4-piston Rear: 1x Formula 4-piston

\*including all fluids, except fuel.

### 2018 HKR Evo2 R Specifications

Weight*:	125 Kg (276 lbs)
Power:	59.65 Kw (80 hp)
Torque:	74 Nm (54.58 ft-lb)
Weight balance:	Front: 55% Rear: 45%
Fuel capacity:	12 L (3.17US gal)
Engine capacity:	690 cc
Rims:	Dymag UP7X Aluminium forged 3.5"x17" & 5.5"x17"
Exhaust:	Stainless steel/titan underfloor system + slip on
Suspension:	Front: WP-USD Ø 43 mm Rear: WP Monoshock
Brake Rotors:	Front: 2x Ø 290 mm MotoMaster fully floating Rear: Ø 220 mm MotoMaster
Caliper:	Front: 2x Brembo M50 4-piston Rear: 1x Formula 4-piston

\*including all fluids, except fuel.

### Fluids Specifications

Engine oil	1.70 L (1.8 qt) SAE 10W/60
Coolant	1.20 L (1.27 qt) Engine Ice Hi-Performance
Brake Fluid	DOT 5.1
Fork Oil	SAE 5, Volume: 500 ml, Air space: 110 mm Motorex Racing Fork Oil
Fuel Tank Capacity, (approx.)	12 L (3.17 US gal)

### Engine Specifications

Design	1-cylinder 4-stroke engine, water-cooled
Displacement	692.7 cm <sup>3</sup> (42.271 cu in)
Stroke	80 mm (3.15 in)
Bore	105 mm (4.13 in)
Compression ratio	12.7:1
Control	OHC, intake with cam levers, exhaust controlled by rocker arm, chain drive
Valve diameter,	intake 42 mm (1.65 in) exhaust 34 mm (1.34 in)
Valve play, cold	
Intake at: 20 °C (68 °F)	0.10 – 0.15 mm (0.0039 – 0.0059 in)
Exhaust at: 20 °C (68 °F)	0.20 – 0.25 mm (0.0079 – 0.0098 in)
Crankshaft bearing	2 roller bearings
Connecting rod bearing	Slide bearing
Piston pin bearing	Piston pin with DLC coating
Pistons	Forged light alloy
Piston rings	1 compression ring, 1 lower compression ring, 1 oil ring with spring expander
Engine lubrication	Semi-dry sump lubrication system with two rotor pumps
Primary transmission	36:79
Clutch	APTC™ antihopping clutch in oil bath/hydraulically operated
Transmission	6-gear, claw shifted
Transmission ratio	
1st gear	14:35
2nd gear	16:28
3rd gear	21:28
4th gear	21:23
5th gear	23:22
6th gear	23:20
Fuel/air mixture preparation	Electronic fuel injection
Ignition	Contactless controlled fully electronic ignition with digital ignition adjustment
Alternator	12 V, 224 W
Spark plug—Inside	NGK LKAR9BI-10
Spark plug—Outside	NGK LMAR7DI-10
Spark plug electrode gap	1.0 mm (0.039 in)
Cooling	Water cooling, permanent circulation of coolant by water pump
Idle speed	1,550 – 1,650 rpm
Starting	Electric starter, automatic decompression

### Torque Specs

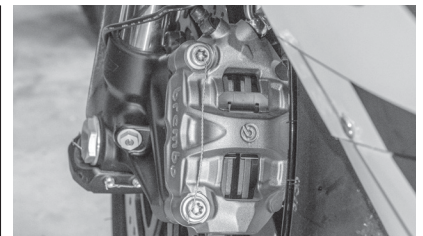
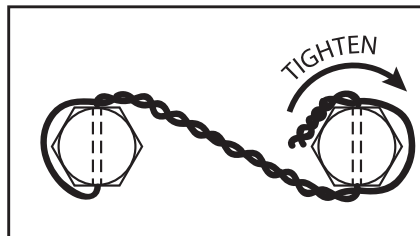
Swingarm Spindle Nut	100 Nm (73.8 ft-lb)	Bottom Yoke Screw	15 Nm (11.1 ft-lb)
Engine Mounts Front and Back	45 Nm (33.2 ft-lb)	Headstock Screw	20 Nm (14.8 ft-lb)
Foot peg	25 Nm (18.4 ft-lb)	<i>Before checking the Headstock screw, loosen the top yoke and afterwards re-tighten the top yoke, using the appropriate torque</i>	
Rearset Mount	25 Nm (18.4 ft-lb)	Clip-Ons	11 Nm (8.11 ft-lb)
Shiftrod	12 Nm (8.85 ft-lb)	Tank Mounting Screws	30 Nm (22.1 ft-lb)
Shift Lever Screws	10 Nm (7.38 ft-lb)	Bodywork Screws	6-9 Nm (50-80 in-lb)
Gear Selector	7 Nm (5.16 ft-lb)	Swingarm Linkage-Adjuster Screw	45 Nm (33.2 ft-lb)
Brake Lever Connection to Master Cylinder	10 Nm (7.38 ft-lb)	Exhaust flange Screw	20 Nm (14.8 ft-lb)
Brake Lever Screw	10 Nm (7.38 ft-lb)	Exhaust Pipe Plug	20 Nm (14.8 ft-lb)
Sprocket Screw	50 Nm (36.9 ft-lb)	Front Brake Disk Screw	45 Nm (33.2 ft-lb)
Rear Shock Screw	45 Nm (33.2 ft-lb)	Rear Brake Disk Screw	30 Nm (22.1 ft-lb)
Caliper Screws	45 Nm (33.2 ft-lb)	Exhaust Mounting Bracket	18 Nm (13.3 ft-lb)
Rear Axle Nut	90 Nm (66.4 ft-lb)	Exhaust Mount	10 Nm (7.38 ft-lb)
Front Axle Nut	45 Nm (33.2 ft-lb)		
Front Spindle Clamping Screws	15 Nm (11.1 ft-lb)		
Top Yoke Screw	17 Nm (12.5 ft-lb)		

### Safety Wire

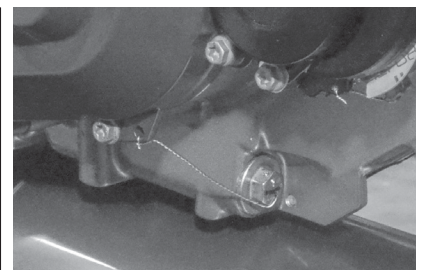
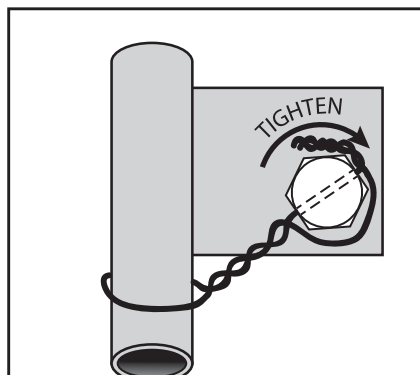
Safety wire is installed as an additional measure of protection to keep critical fasteners in place when being punished by hard use from vibration.

For your reference, here are the steps in order:

1. Drill fasteners, or install ones with drilled heads
2. Loop through the fastener in a direction that pulling on the wire would tighten the fastener
3. Twist with safety wire pliers (or needlenose pliers - more labor intensive, but it works)
4. Stop a little short of next bolt or anchor point, and make last twist by hand to get it to the perfect length
5. Go into the opposite side of other fastener
6. Tighten up second fastener with several twists
7. Snip off end of pigtail and tuck in (snipped ends are needle sharp, and if you don't tuck them in they will snag or puncture your skin or gear!)
8. Collect snipped part and throw in trash (if not, it essentially becomes a needle waiting to pierce a tire if left on the ground!)



This illustration shows how proper safety wire is installed - in a manner that, if one bolt were to come loose, it would tighten the other, and vice versa.



This illustration shows how proper safety wire is installed to a stationary part.



**KRAMER**  
**MOTORCYCLES**

**Krämer Motorcycles U.S.A.,**

**SALES ▪ CUSTOMER SERVICE ▪ PARTS**

114 1st Avenue West, West Fargo, ND, 58078

(701) 367-2258 [www.kramermotorcyclesusa.com](http://www.kramermotorcyclesusa.com)