

Essential Motorcycle Maintenance



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Checking Oil On Metric Bikes

Most bikes have a dip stick or a sight glass for checking oil.



Dip Stick



Sight Glass

When you first get a bike, check the oil every 200 miles. That way if your bike burns oil, or has a discrete leak, you will be aware of it. After a few thousand miles, you will have a good idea about your bikes oil consumption. It's still good to check it every 1000 miles or so.

- Refer to your owners manual for the exact procedure for your bike. *You can usually find these online Some manufacturers even have them posted on their websites
- Check the oil with the bike turned off. Some manufacturers recommend you run the bike for a few seconds, then turn it off before you check the oil.
- If you have a dipstick, or are planning on adding oil; wipe the dirt off from around the cap first.

Checking Oils continued

- Most metric bikes are designed to have the oil checked while straight up in the air. If you don't have a center stand, this can be tricky. If you are not comfortable with holding the bike and looking, it may be best to ask a friend.
- Once you have the bike in position, inspect the sight glass for the oil level to rise. The oil level should stabilize in the middle to upper $\frac{3}{4}$ of the sight glass. Give it a few seconds, because sometime this is slow, and you want to make sure it has not been over filled. **after you change the oil, the bike will show it being overfilled, until it has been started once.*
- If you have a dipstick, remove it, wipe the oil off with a clean, lint free rag. Reinsert the dip stick, then remove again, and check the oil to the marks on the dipstick.

Remember, the moving parts of your motor have a clearance of as little as .0005 of an inch. 1/6th of a human hair. Even small amounts of dirt can be catastrophic to your motor.

- *Most metric bikes have one oil for the motor, transmission and primary*
- *If you have a shaft drive, you may need to check the oil in the differential periodically. With things like differentials they will not burn oil. So unless you see residue from and oil leak, it generally means the oil level is still good.*

Changing Oil On Metric Bikes

- Stand bike up straight. Secure on the center stand, bike lift, or have a patient friend hold it.
- Locate drain plug per owners manual, wipe dirt and road grime away from the drain plug area, and then remove it. Have a catch pan in place to catch the oil.
- Locate oil filter, wipe dirt and road grime away from the oil filter area, and then remove it. Use an oil filter wrench. If that doesn't work, try channel lock pliers. * More oil is going to come out of the filter, so have the catch pan ready.
- Clean the drain plug thoroughly. Many drain plugs have a magnet in them to catch any metal shavings in the oil. Be sure and clean this magnet with a lint free rag.
*Watch for slivers in your fingers.
- Reinstall the drain plug with a new or reusable washer/seal. These often come with the new oil filter. See owners manual for exact details for your bike.
- Refill with appropriate weight oil. I always chose the heavier weight oil option that is recommended.
- Start the bike, and let it run for 30 seconds or so. Make sure the oil light goes off quickly. Turn off bike and check oil level again.
- Ride it

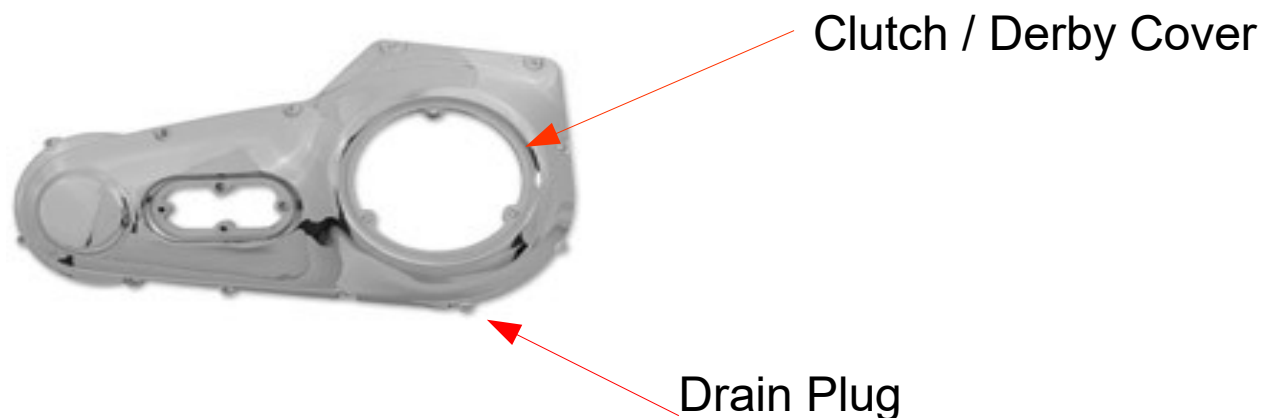
Checking Harley Oil

- You can check engine oil with the bike sitting on the kickstand!
 - Wipe the area around the dipstick off. Start the bike for a few seconds. Turn it off and remove the dip stick. Wipe it off with a clean lint free rag, reinsert the dipstick, then remove again and check the engine oil.
- For primaries and transmissions, **the bike has to be standing up straight.** Big Twin Harley's have separate engines, transmissions, and primaries.
- Sportster primaries and transmissions share oil, however the engine has separate oil.
- Because they are just gearboxes, and they do not burn oil, the easy/lazy way to check the oil on a regular basis, is to check for signs of leaks. Crude, but effective.

Checking and changing Sportster Trans/Primary Oil and Big Twin Primary Oil

- Checking the oil
 - Have bike standing straight up. Use a lift, or have a friend hold the bike in place.
 - Remove the Clutch/Derby cover and inspect oil level. It should be filled to the bottom of the opening.
- To change oil
 - Locate drain plug at the rear of the primary cover
 - Drain oil into catch pan.
 - Clean drain plug. Reinstall with washer or new seal (depending on model). Refill with appropriate weight oil

**Be extra careful when reinstalling the drain plug in the primary case. These are extremely easy to strip out.*



Check and Change Big Twin Transmission Oil

- Big Twin transmission oil level
 - Dipstick is on the right side of the trans. This generally require an Allen wrench to remove. The bike has to be standing up straight. Check oil level to marks on dipstick.
- To change oil
 - Locate drain plug (see owners manual)
 - Drain oil into catch pan.
 - Clean drain plug. Reinstall with washer or new seal (depending on model). Refill with appropriate weight oil.

Air Filters

Major Types:

- Cloth (K&N Type)-Very common in newer bikes. They flow well and the can be cleaned with an assortment of cleaners. The K&N “recharge kit” is the most common product.
- Paper- Economical and they filter very well. Disposable
- Foam- Used in dirt environments, and sometimes in performance applications.
- After Market Cones- Cloth or foam. Notably high flow than stock, but they often require re tuning of the carburetor to get the bike to run properly.

Aftermarket Cone Filter



Disk Brakes

Most common on newer bikes

Points of inspection

- Fluid level-Inspect on a regular basis. Fluid level and be viewed through a sight glass on the reservoir
- Rotor condition and thickness.
- Check pad thickness. Most pad manufactures recommend the minimum pad thickness of .040"
 - A dime is .050, so if the brake pad material is thicker than a dime, you are good to go.



Brake pads and shoes



Shoes for drum
brakes



Pads for disk
bakes

Brake pad inspection

- You can generally inspect your brake pads without removing them.
- Minimum pad thickness will vary by motorcycle. However a general rule is around .040". A dime thickness is about .050". So if they get much thinner than a dime, you should start thinking about replacement.
- Check your rotors for large grooves, oil and grease or other damage.
- Generally you can reuse rotors for numerous sets of brake pads. You do not, and cannot turn rotors like you can on a car. When the rotors are heavily grooved, warped, or smaller than a minimum thickness, they should be replaced.

Types of brake pads

**From EBC's Website*

Semi-sintered pads combine the long life of a sintered pads with the progressive feel and lack of rotor wear of organic. The construction of the semi-sintered pads is 30 percent copper by weight within an organic matrix. These pads fall right in the middle for durability and performance and are a good compromise if you are struggling to decide between sintered and organic.

Sintered brake pads have now become the most popular type of brake pads, and in fact, they have become standard Original Equipment on 99% of motorcycles from the manufacturers. One of the reasons that the manufacturers have opted to equip their bikes with sintered brakes is because they will cover the broadest spectrum of conditions that a rider may encounter.

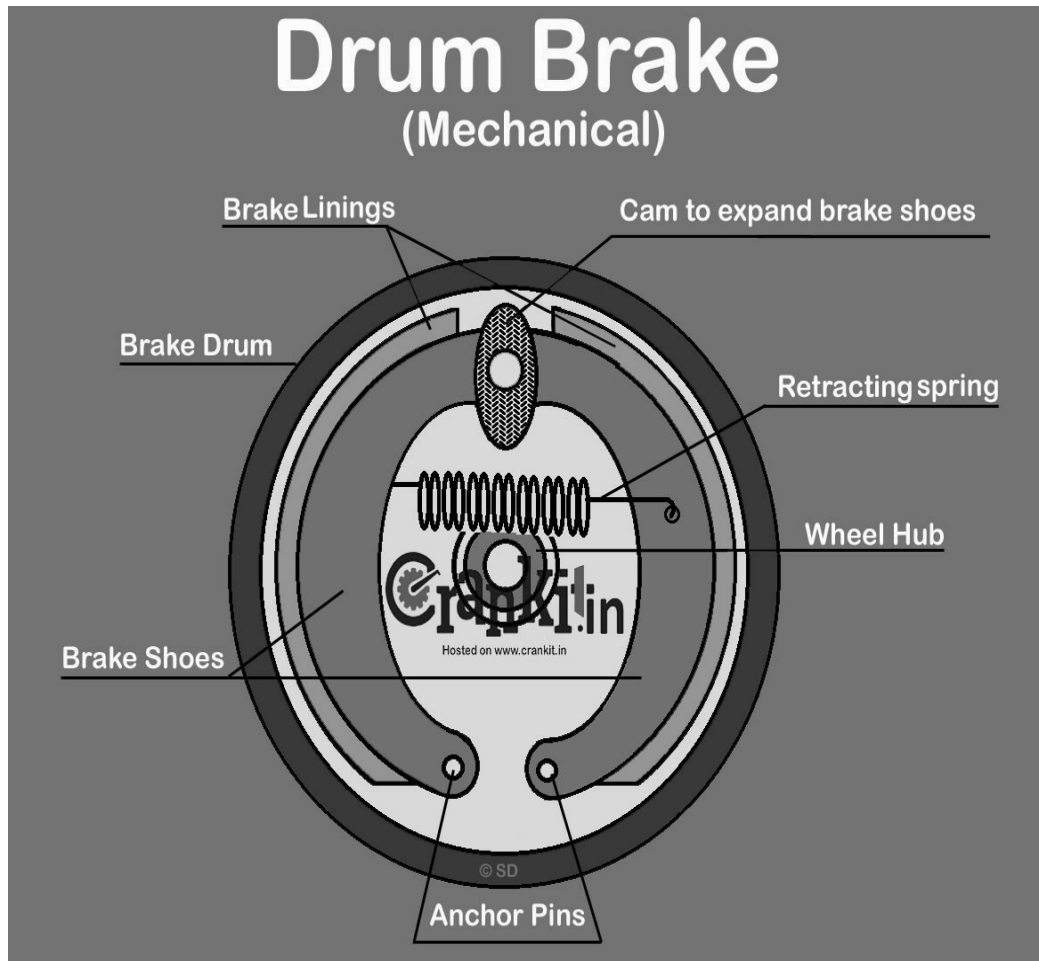
Organic brake pads good for casual riders, or show bikes. They are made from a mix of fibers and fillers that are bound together with a resin. Companies like EBC Brakes have begun to add higher tech fiber components like Kevlar and carbon to increase the durability of the pads.

Brake Drums

- Still found on the rear of some newer bikes
- Operated by cables and linkages. These items should move freely and easily.
- They work well, but they may require frequent adjustment.



Drum Brake Basics



- The external arm is pulled, and this rotates a cam inside the brake drum.
- This pushes the brake shoes outward, against the inside of the brake drum. This causes friction and slows the wheel.
- Some drum brakes have a wear indicator on the arm, to let you know when the shoes are worn.
- Drums require frequent maintenance and service. Especially front drum brakes.
- Be sure no wheel bearing grease gets inside the drum.
- Keep all cables and movement points lubed and moving freely

The Clutch- How it works and how to adjust it.

<https://www.youtube.com/watch?v=TcYsV063Ik8>

- Set your fine adjuster to $\frac{3}{4}$ of the way in. This leaves range for fine tuning and cable stretch.
- Extend your major adjuster to the point that the clutch lever is against the stop, with the small amount of play that was discussed.
- Lock down the jam nut on the major adjuster and pull the rubber boot over the adjuster.
- Cycle the clutch a few times to ensure everything is seated properly, then check the cable mounts to insure nothing has come free.
- Ride it. If any fine tune adjustments need to be made, you will be able to make them in a parking lot with the fine tune adjuster.
- *If you are running out of adjustment, on your cable, then your cable has probably stretched and is beginning to fail. Clutch cables are cheap. Replace it.*

Clutch adjustment

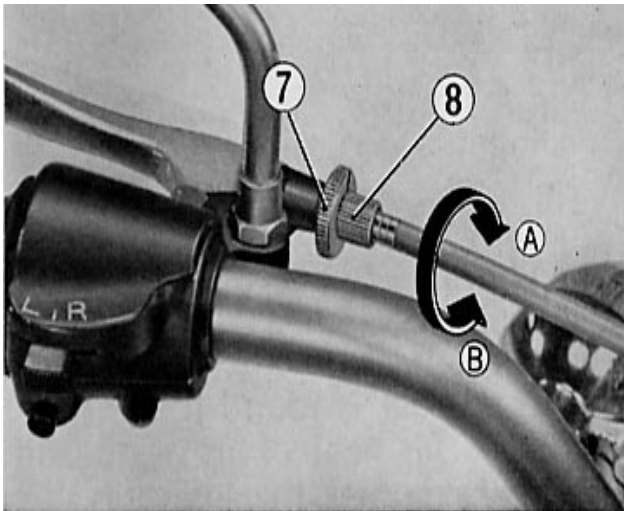
Most metric bikes have two adjustments in the clutch cable.

- A major adjuster in the middle of the cable. Generally located under a rubber boot.
- A fine tune adjustment at the clutch lever. Or at the transmission.

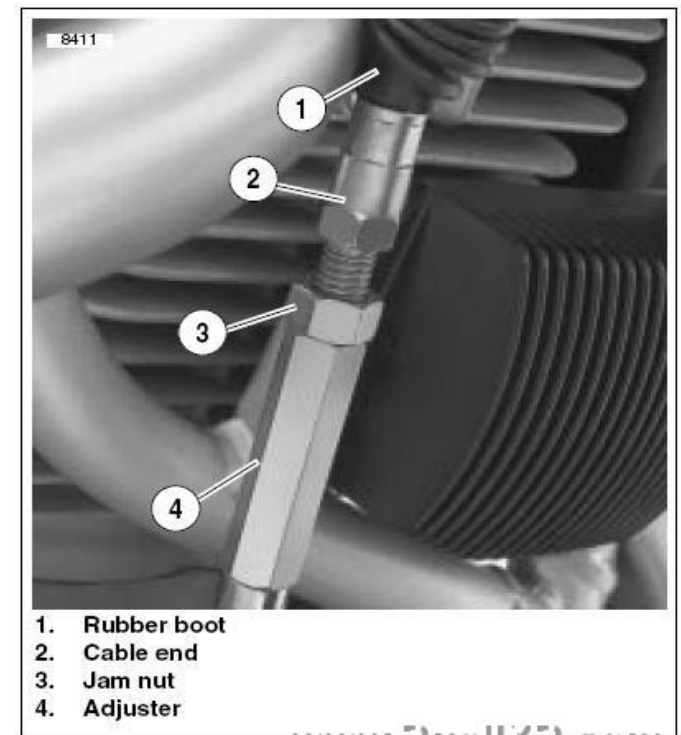
Harley's just have the adjuster in the middle of the cable.

- All of the adjustment is generally done at the cable.
- There is an adjuster on the clutch, inside the primary. However this is generally only adjusted when servicing the clutch.

Fine Tune Adjusters



Major Adjuster



Fixing a heavy or sticking clutch.

If you find the clutch hard to pull, or it does not quickly release, check the following:

- Make sure the cable is lubricated. Drip a little cable lube, or fine oil on the cable, with the clutch pulled in. Then cycle the lever a few times.
- Check for damage or kinks in the cable. If found, the cable should be replaced ASAP.
- Check for hard turns or bends in the cable. This can cause the cable to bind inside the lining.
- New cables are generally under \$40. Don't be too reluctant to replace them.

*If all of these fail to fix the problem, you may need to investigate the throw out bearing assembly on the clutch.

➤ ***Tip: If your bike is hard to find neutral on, your clutch may be dragging when the lever is pulled.***

Tires!

When it is time to replace them



Wear bars

- These are used as a reference for when it is time to replace your tires

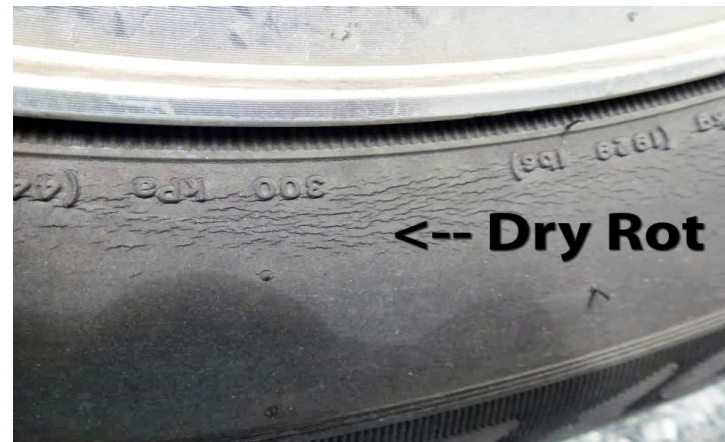
Wear Bars show the minimum amount of tread.

Dry Rot

- Tire rubber gets hard as it ages. Eventually the rubber will get so hard that it cracks.



Cupping: Happens because of low pressure





Tire Age-Replace Tires after about 7 years

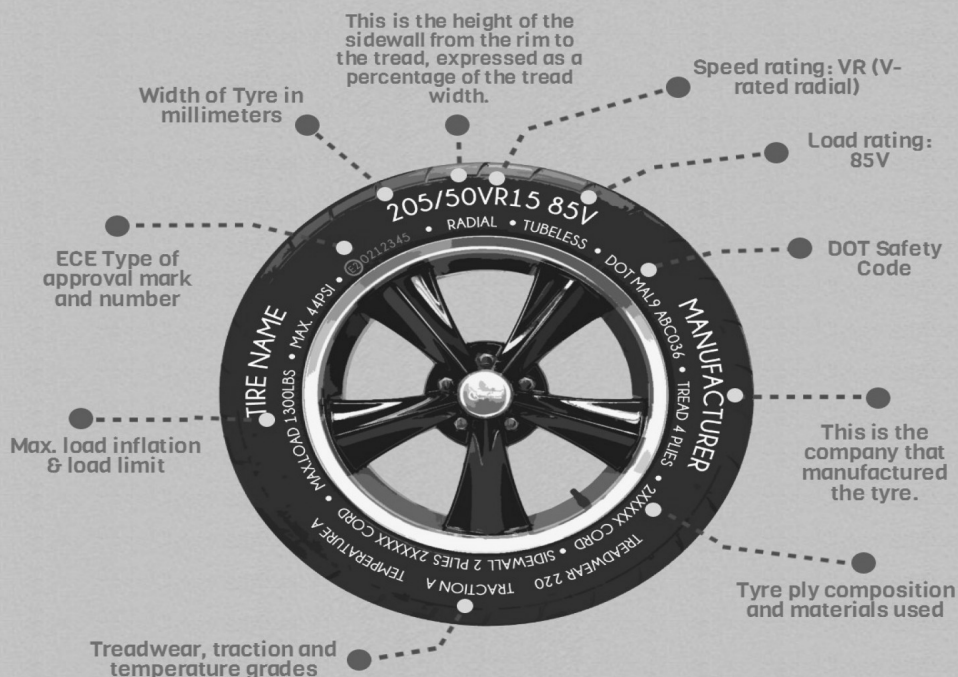
Tire Pressure:

- Ideally you should run your tires around 10% less than maximum pressure.
- Never run tires below 25% of max pressure

Tire Size



HOW TO READ YOUR TYRES



SPEED RATING DESIGNATIONS

Speed Designation	Maximum Speed Rating
N	87 mph
P	93 mph
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168 mph
Y	186 mph
Z	149+ mph

SPEED RATING DESIGNATIONS

Load Index	Load Carrying Capacity (Per Tire)	Load Index	Load Carrying Capacity (Per Tire)
71	761	91	1356
72	783	92	1389
73	805	93	1433
74	827	94	1477
75	853	95	1521
76	882	96	1565
77	908	97	1609
78	937	98	1653
79	963	99	1709
80	992	100	1764
81	1019	101	1819
82	1047	102	1874
83	1074	103	1929
84	1102	104	1984
85	1135	105	2039
86	1168	106	2094
87	1201	107	2149
88	1235	108	2205
89	1279	109	2271
90	1323	110	2337

Read the Writing on the [Side] Wall

Numerical codes on the tire's sidewalls give you a lot of important information; this is especially important to know when shopping for new tires. Read below to see what each of these codes means.

130/90 - 16 67 H

SPEED RATING
LOAD RATING
RIM DIAMETER (in.)
ASPECT RATIO (90%)
SECTION WIDTH (mm)

5.00 H 16 4PR

CASING STRENGTH
RIM DIAMETER
SPEED RATING
SECTION WIDTH (in.)

M T 90 - 16 Load Range B

LOAD RANGE
RIM DIAMETER (in.)
ASPECT RATIO (90%)
TIRE WIDTH CODE
MOTORCYCLE CODE



TYREPITSTOP.COM.AU
TYRE AND WHEEL SPECIALISTS

Source:

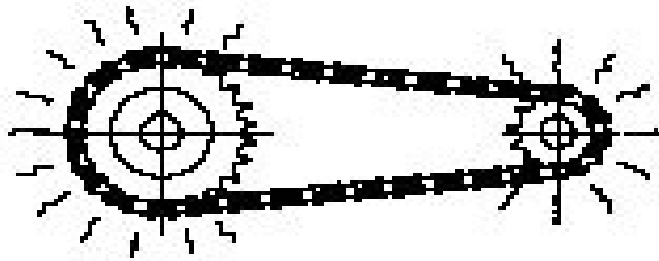
<http://www.edmunds.com/how-to/how-to-read-your-tire.html>
<http://www.dummies.com/how-to/content/reading-a-tire-sidewall.html>

Chain Adjustment

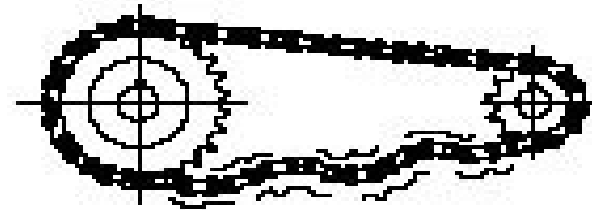
- You want your chain to have a small amount of tension, but not so much tension that the chain slaps around or can skip a tooth. Around a $\frac{1}{2}$ " deflection is a good place to start. Some bikes with over 120 link chains will require more slack.
- Support the bike so the rear wheel is off the ground.
- Remove the clips or pins that hold the axle nut in place and loosen the axle until the nut spins freely.
- To align the chain you can use the marks on the swing arm, or measure from the center of the axle, to the center of the swing arm pivot bolt. *as you align the chain, you will be changing the tension at the same time. Keep an eye on both.
- Once you measure, it is still a good idea to look up the top of the chain and see how it tracks when you spin the wheel.
- Tighten the axles and reinstall any clips or pins that hold the axle nut in place.
- Check for alignment and tension again
- Lower the bike and take it for a ride. If it's out of alignment you will probably be able to tell. You may notice it wanting to pull to one side or the other on hard starts, or it will just track to one side on the highway.

Chain Tension

FIGURE 21C



CHAIN TOO TIGHT
(REQUIRES EXTRA POWER)
(CADENA DEMASIADO TENSA
[REQUIERE MAS POTENCIA])



CHAIN TOO LOOSE
(CADENA DEMASIADO FLOJA)



CORRECT SLACK
(TENSION CORRECTA)

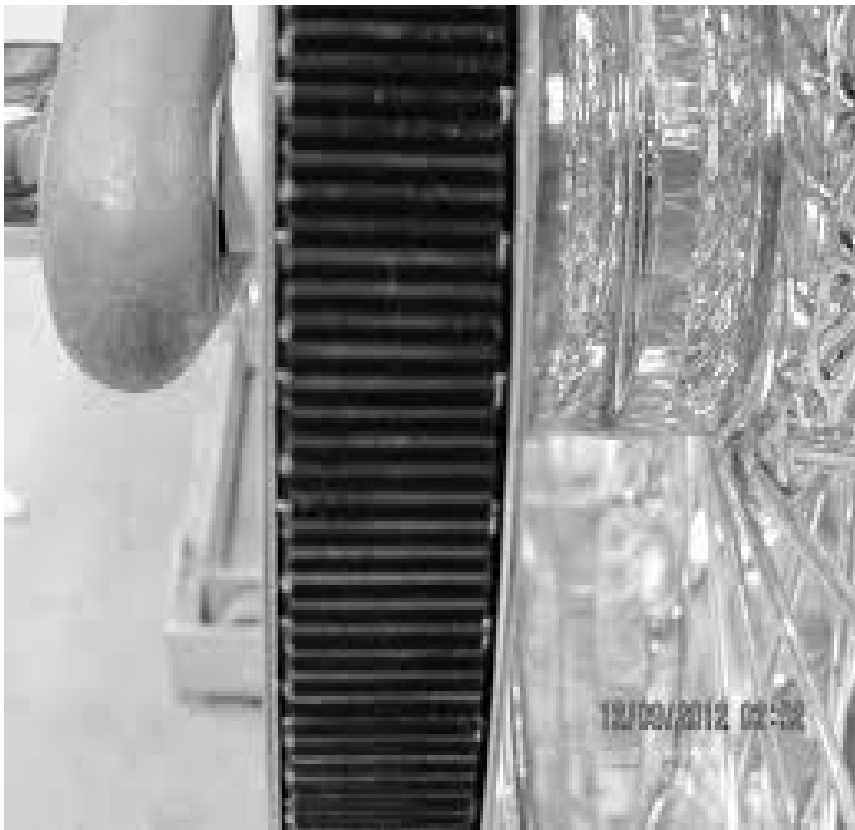
SPROCKET CENTERS
(CENTROS DE CATARINAS)

APPROX. 1/4" OR
2% OF SPROCKET CENTERS
(1/4" O 2% DE CENTROS
ENTRE CATARINAS APROX.)

HD Belt Alignment

- Belt Needs to run in the center of the pulley.
- It will track around slightly, but it shouldn't be heavily pressed against one side of the pulley.

Correct



No



Harley Belt Alignment

Harley sells an assortment of special tools for this, but they generally are not required. Dial calipers, or a small scale ruler will generally get the job done.

- 1) First loosen the axle. Measure from the appropriate location, and compare to the other side.
 - 2) Make adjustments at the smaller axle adjusters
 - 3) Once the adjustments have been made, tighten the axle down.
 - 4) Check alignment again after a few hundred miles to make sure everything is still in location.
- Dyna - Measure from the center of the rear axle to a small hole in the swingarm.
 - Softail – Measure from the center of the axle, to the center of the swingarm pivot bolt.
 - FLH - Measure from the end of the adjuster bolt to the end of the swingarm
 - Sportster - Measure from the end of the adjuster bolt to the end of the swingarm

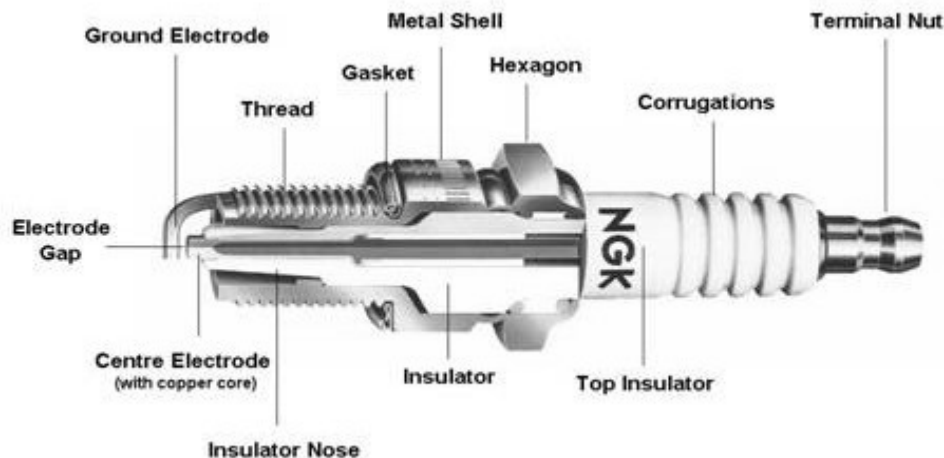
Spark plugs

- Spark plugs ignite the air and gas mixture. This combustion is what moves the piston.
- Replace sparkplugs at the manufactures recommended interval or sooner
- Proper size gap is important to getting a strong and reliable spark

Types of spark plugs

- Copper- common in pre 2000's bikes. Economical and functional
- Platinum – Common in newer engines. The platinum on the electrode of the plug dramatically increases the life of the plug. You CAN use platinum plugs in older engines.
- Iridium – Found in the newest bikes. The iridium is supposed to last longer than the platinum

Parts of a sparkplug



Spark Plug Gap



Spark Plug Gap Tool



Absorbed Gas Mat Batteries

AGM

- AGM batteries differ from flooded lead acid batteries in that the electrolyte is held in the glass mats, as opposed to freely flooding the plates.
- AGM batteries present better self discharging characteristics than conventional batteries in different range of temperatures
- AGM are considered better if the vehicle is going to be sitting for an extended period of time.

Lead Acid Batteries

- Most common in older bikes and cheapest.
 - Require maintenance on acid level.
 - Twice a season make a visual inspection of levels and condition of terminals.

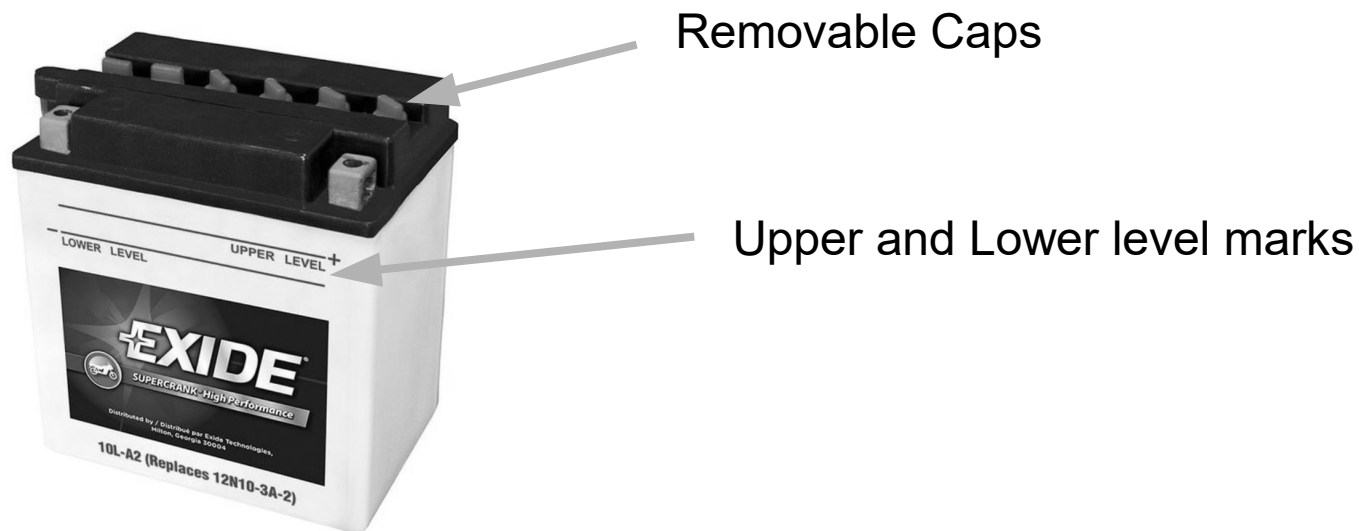
Gel Battery

- Contain a gelified electrolyte; the sulfuric acid is mixed with fumed silica, which makes the resulting mass gel-like and immobile. Unlike a flooded wet-cell lead-acid battery, these batteries do not need to be kept upright. Gel batteries reduce the electrolyte evaporation, spillage (and subsequent corrosion problems) common to the wet-cell battery, and boast greater resistance to shock and vibration.

Checking the acid level in your battery

Battery acid is sulfuric acid. At minimum wear safety glasses when checking acid! If you get it on your skin, you will feel a tingle that turns into a burning sensation. This can be washed off with soap and water. If there is still pain afterwards, seek medical attention.

- Checking is only necessary if you have a clear(ish) battery that require you to add the acid when it is new. All other are sealed and do not require service
- To check the acid on a serviceable battery
 - Undo the mounts or cover and position the battery level to the ground. Visually inspect the acid level from the side of the battery. If it is hard to see, shine a flashlight into the other side of the battery.
 - The fluid should be in between the lines.
 - To add fluid, remove the caps individually and add distilled water or surplus acid until the level in between the lines. No worries if it shows it is over filled a little.
 - The important detail is that the lead plates inside are completely submerged in acid (electrolyte)



Lithium Battery

- More cranking power,
- Faster recharge rates
- Deeper discharge ranges
- Lighter
- Can be mounted in any direction
- Smaller

They are significantly more expensive. Sometimes 3-4 times as much.

*However I am sure the cost will drop as the become more popular.

Lithium

Lead Acid



Battery Corrosion

- Often caused by resistance or existing corrosion on the battery terminals.
- Sometimes the cable to terminal surfaces are pitted or grooved from previous corrosion or improper sanding.
- A light coat of battery terminal grease or dielectric grease will help prevent corrosion.



Charging system tips

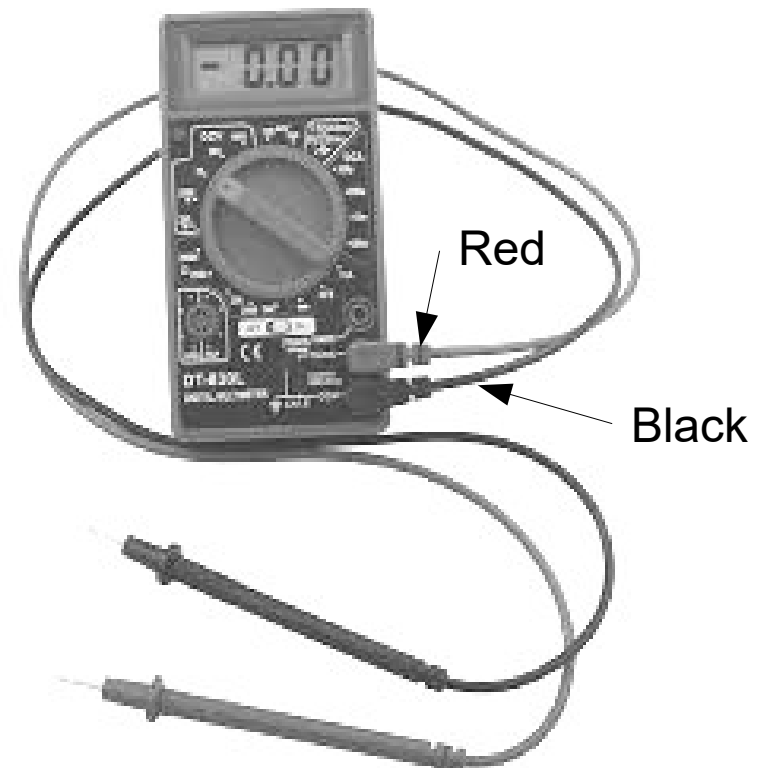
- If your charging system seems to be a little weak, and all the components are functioning: check for corrosion of the connectors.
- Sport bikes are notorious for having weak and slightly undersized charging systems.
- If you are not going to ride your bike for at least a week, put it on a trickle charger. If necessary, remove the plastic clamp connectors and install bolt on ones that have a plug. These can be bought at any auto parts store, and are relatively simple to hook up.

Battery Don'ts

- Never jump start a motorcycle battery.
- **Never charge a battery with a charger setting higher than three amps. Especially AGM batteries!**
- Don't put motorcycle batteries directly on the ground. Somehow it drains them.
- Be careful not to cross the battery terminals. The can cause sparks, and even a battery explosion.

Charging system basics.

- Charging systems are designed to keep the bike at an adequate operating voltage, and to replace any current that is lost during start up. They are not designed to recharge a low battery.
- The voltage coming from the charging system is 13-14.5 volts dc, when the bike is running.
- When your bike is off, the battery voltage should show 12.5 volts dc



Lights!

- Most run on 12 volts dc.
- If you have less than adequate headlight, please upgrade for safety. Halogens are good, LEDs are better. *Personally, unless I am behind a group of bikes at night, I ride with my high beams on all time.*
- Check your lights periodically. Even if its just looking in your mirror for the reflection of your brake light.

- Brake lights are operated by either a mechanical switch on the lever, or a pressure switch on the brake line. Your front and rear brakes have separate electrical switches that operate the same light.

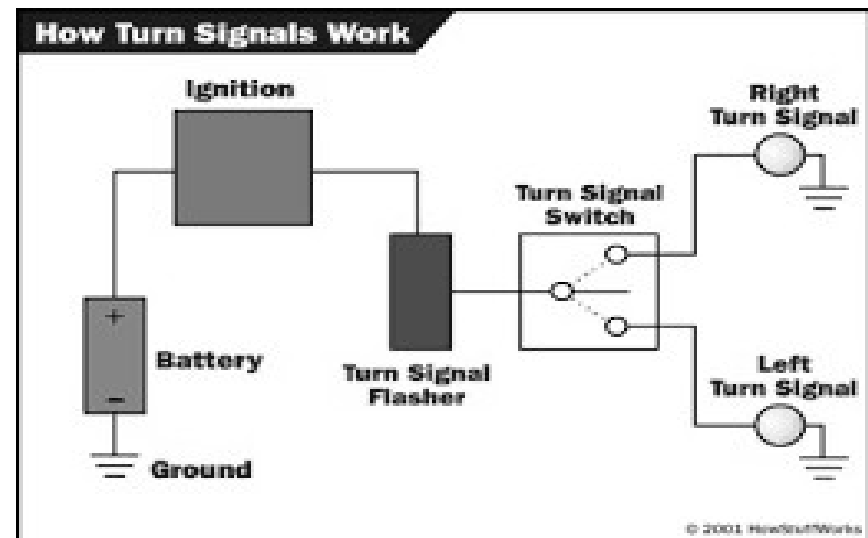
Pressure brake light switches are often mounted to the brake line. When you press the brake lever, the pressure in the line increases. This presses the normally open contacts closed. This allows electricity to flow to the bulb.

- Pull style brake switches are hooked to the brake lever with a spring that is attached to a plunger. They have one set of normally open contacts. When you pull the plunger, the contacts close and this allows electricity to travel to the light bulb



Turn Signals

- Basic systems require the electrical draw of two bulbs to make the system flash. The current draw heats up a breaker, that opens the contacts and causes to turn off, then back on. If one of the bulbs is burned out, the current will be too low and the working bulbs will just stay on.
- Newer systems have a flasher that monitors the current. If the current is too low, the working bulbs will blink faster. *you will see people with LED signals that blink really fast.
- If you switch to LED signals, you will either need to add resistors (load equalizers) to the circuit, or replace the signal switch with one that constantly blinks regardless of current.



Fork Seals

- Front suspension has oil inside for dampening the bumps on the road. The oil and valves inside the forks work like shocks.
- Forks do not require any regular maintenance. However when the fork seals wear or dry rot, they will leak oil. When the oil leaks out it can get on the brakes and tires.



Winter Storage

- Fill the gas tank. This prevents the inside of your steel tank from rusting Also it prevents moisture from building up.
- You can either drain the carbs, or add a fuel stabilizer to the gasoline. This prevents the gasoline from going bad inside the carburetor (See instructions on stabilizer)
- Put the battery on a tender.
- Move the bike a few feet once a month. This keeps your tires from getting flat spots.
- Check for signs of critters moving into your bike.

Spring Service

- ✓ Check all fluids thoroughly
- ✓ Check for signs of leaks.
- ✓ Check your tire condition and pressure
- ✓ Check your brakes for function. On an empty road practice a few hard stops with both brakes, and one with each brake.
- ✓ Check your lights
- ✓ After each ride in the spring, check for new leaks that may have sprung from seals drying out.

Roadside Repairs

Deductive reasoning: The basis of fixing anything

Troubleshooting anything uses the basic philosophical principles of logic. Two kinds of logic are used, inductive and deductive. Use inductive inferences start with observation ... and arrive at general conclusions. As an example, if the rider notices the cycle's engine misfires whenever the cycle goes over a bump, the logical conclusion is that the bumps cause the misfiring. Alternatively, deductive inferences start with general knowledge and make a predictive observation based on this knowledge—the engine's battery powers the horn, so if the battery dies, the horn won't work.

The scientific method uses a combination of inductive and deductive reasoning. Though most motorcycle problems don't require immersion in the scientific method, the method is best for complicated repairs. Complicated or non obvious problems should be entered into a notebook. The mechanic writes down the problem statements and then follows the step-by-step procedure below to solve the problems.

- 1) State the problem.
- 2) Formulate hypotheses about the cause of the problem.
- 3) Design experiments to test the hypotheses.
- 4) Predict the results of the experiments.
- 5) Observe the results of the experiments.
- 6) Draw conclusions from the experimental results.

-Robert M. Pirsig

Roadside Breakdowns and Repairs

Stay Calm!!!!!!!!!!!!!! Breathe. Do your best to be mindful of your emotions.

- ✓ Get yourself to a safe spot. Even if it risks damaging the motorcycle to do it. Break traffic laws. The most important thing is your safety. Cops understand extreme situations, and even if they don't; a \$150 ticket is better than being hit by a car. Most people are understanding if you pull into their driveway or their sidewalk. Sometimes they will even offer to help you fix it. If you are with a group, and there is not a lot of room, just have one person stay with you and ask everyone else to go down the road to a safe location to pull off. A crowd of people on the side of the highway just puts people's safety at risk.
- ✓ Take a deep breathe and assess the situation. Calm and clear thoughts will help here.
- ✓ Run through all of your basic things. Frequently the problem is something simple.
 - Handlebar switch.
 - Key on
 - kickstand switch (metric bikes)
 - does it have gas
 - is the gas on
 - Is the choke still on (it should not be)
- ✓ Next look for something that may have vibrated loose. Maybe you bumped something when fueling up. Bumped something when getting on or off the bike. Wind shook something loose. Attached your luggage to something you shouldn't have. Is it raining? Something may have gotten wet that shouldn't have. The short term fix is to let it dry out. The long term fix is to put dielectric grease on the electrical connections. Recent repairs or modifications. Bolts come loose? That ebay part fail?

Next you look at what happened before it failed you and are there indicators of what the problem is or isn't?

This is where deductive reasoning and the process of elimination come in.

- ✓ Does it have fuel?
 - Open the tank and look. This will also verify that the tank isn't vapor locked
- ✓ Does it have electricity
- ✓ Are there lights
 - When you turn the signals on do they blink at the regular speed? If slow, you have low voltage
 - Does it crank?
- ✓ Was there a mechanical failure.
 - Smoke
 - New sounds
 - Metal shavings anywhere
- ✓ What does it do when you try to start it?
 - If it cranks, the battery has enough electricity. Is that electricity getting to the ignition coils? Something unplugged or a fuse blown? *actual component failure may be difficult to troubleshoot on the side of the road.

✓ Is it getting fuel?

- Make sure the fuel petcock is on if its carbed. Switch it to reserve to be sure. You may bypass a clogged port this way too.
- Tap on the carb in case the float is stuck. *you won't be able to tell, but the bike may start afterwards if the float was stuck.
- If its injected, can you hear the fuel pump prime or run? *sometimes you can't hear this on a functioning bike
- With the ignition off, see if you smell fresh gas at the tailpipe after it failed to start. This would mean you are getting fuel and possibly no spark (or its flooded)

✓ Is it getting spark?

- Make sure all the plug wires are on.
 - Generally plugs don't fail in groups, and most engines will still sorta run with one bad plug. So if it's not popping at all, its probably something further up the chain.
 - If it runs but very poorly; this would be a good time to check the plugs. If one cylinder is not firing, that exhaust pipe will be cooler than the rest. Try waving your hand over the pipe to feel for heat. The pipe could be around 500 degrees if the bike has recently been running.

✓ Cranks, but no pop? Try feathering the throttle a little. This can be tricky because you can flood the engine. But listen closely to the motor and see if there is a change in tone.

**engines will crank faster with an open throttle. This is not a good way to start a bike. But if its fuel injected and flooded, you can clear the flood by holding the throttle all the way open. *This works for cars too*

This is no absolute check sheet for a roadside repair, but hopefully this will give you some tips. If all else fails, swear it out, and call a tow truck. Address the problem in a garage with a manual, tools and a clear head.

Pre Ride Check List

- Give your bike a quick walk around. Make sure everything looks in order.
- Look any recent repairs you have made. Does everything look in order? Any bolts backing out or signs of new leaks?
- Give each lever a pull and note how it feels.
- Listen to your bike when you start it. Does it have the same cadence and song as it always did.
- When you first ride off, does the clutch feel the same.
- Does each brake stop the same.
- Don't be afraid to hit the gas and run it through the gears once and a while. This blows the carbon out of the heads, and heats up the oil.
- Get in tune with your bike. Don't just pull levers and cables expecting something to happen, try to be in tune with it and know what should be happening.
- Bikes have soul. Find it, know it and love it

Pre Trip Checklist

- Think about the expected miles of the trip.
 - Will your tires last?
 - Is any service about to be due. Depending on what it is, you may want to perform the service beforehand.
- Look over any recent repairs, or areas known to be problematic on your bike.
- Possibly put a wrench on critical bolts like brake calipers, shifter linkages and luggage mounts. Don't over torque anything, but make sure it isn't loose either.
- Do any electrical connections need dielectric grease? It is likely you will encounter rain on a trip.
- Assemble a basic tool kit of the tools you have noticed you use often. **Also, zip ties and duct tape.**
- Have a plan B. I have AAA. It will only tow up to 100 miles, but that should get me to a U-Haul or Penske truck rental, where I can hopefully load the bike in the back of a rental truck and drive home. It will be cheaper than a long distance tow.
- Have someone to check in with. Especially if you are going alone.

Links

Troubleshooting carbs

- http://www.nightrider.com/biketech/carb_troubleshooting.htm
- http://www.championparts.com/carb_troubleshooting_guide.pdf
- <http://motorcyclemd.com/how-to-diagnose-a-carburetor-problem-in-less-than-5-minutes/>

Fuel Injection basics

<https://www.cyclepedia.com/manuals/online/free/fuel-system/introduction-to-fuel-injection/>

Essential tools for metric bikes

- ✓ Metric box end wrenches. 8Mm - 19mm. You may have to buy smaller or larger wrenches down the road, but this is a good starting point.
- ✓ Allen wrenches / hex key /socket head wrenches
- ✓ 8mm – 1.5 mm if you can get a 10mm tat is a nice bonus. Get the longer handled ones because they give more leverage when breaking bolts free For starters avoid the folding sets. They tend to break when you tighten down bolts with them.
- ✓ Screw drivers. You can never have too many screwdrivers.
- ✓ If you have an older Japanese bike, an impact screw driver is handy.
- ✓ Small oil filter wrench
- ✓ Ball bean hammer.
- ✓ Brass hammer. Brass is softer, so it does not mar the metal as easily when you hit it.
- ✓ Basic volt meter
- ✓ Electrical tape and zip ties. You can rig almost anything with these two items.
- ✓ Penetrating oil such as Pb Blaster or WD-40
- ✓ Adjustable Wrench aka Crescent Wrench
- ✓ Channel Lock pliers
- ✓ Standard pliers and needle nose pliers.
- ✓ Socket set. 1/4" drive and 3/8" drive. Make sure there are deep well sockets and standard sockets (long ones and short ones), plus park plug sockets.