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REF: Electrical System

* See also [Illustrated Stock Wiring Diagrams](#) in the Ironhead Section of the Sportsterpedia.

Ironhead - Simplified (Customized) Wiring Schematics

Minimal Configuration (w/Ultima Module)

The following wiring diagram is a minimal config - **No Starter - No Turn Signals - No Front Brake Switch - No Kill Switch.**

The ignition module is an Ultima version and fits in the nosecone where previously only the cam sensor plate was mounted. In this diagram the [Ultima Single-Fire Configuration](#) is used, feeding separate trigger signals to the dual coils to fire the front & rear spark plugs separately (the Ultima BLUE wire fires the front coil & the Ultima PINK wire fires the rear coil).

If you choose to use a [dual-fire configuration of the Ultima ignition](#), it will also work when you pair it to the appropriate dual-fire coil. In that case, you will only use the Ultima PINK wire to fire the selected dual-fire coil. (The Ultima BLUE wire will not be used at all with a dual-fire version.)

Using the VOES connection with either configuration (which helps with idle & cruising spark timing by providing more advance) is recommended by connecting the Ultima VIOLET wire to the VOES unit.

Implementing a tachometer is optional. If used, the Ultima GREEN wire will connect to the tachometer signal input wire. The tach will also need a ground connection on the bike and key-operated power for the tach light.

There are only six wire colors to minimize wire purchase: **Black - White - Red - Blue - Yellow - Green.** There are enough colors so that no connecting point should have the same color twice in order to make it easier to know which device is connected to/from another device.

This circuit uses the Frame/Engine for ground conduction. Be sure you have good ground points at the needed locations or run a separate black wire to those locations to assure a good ground.

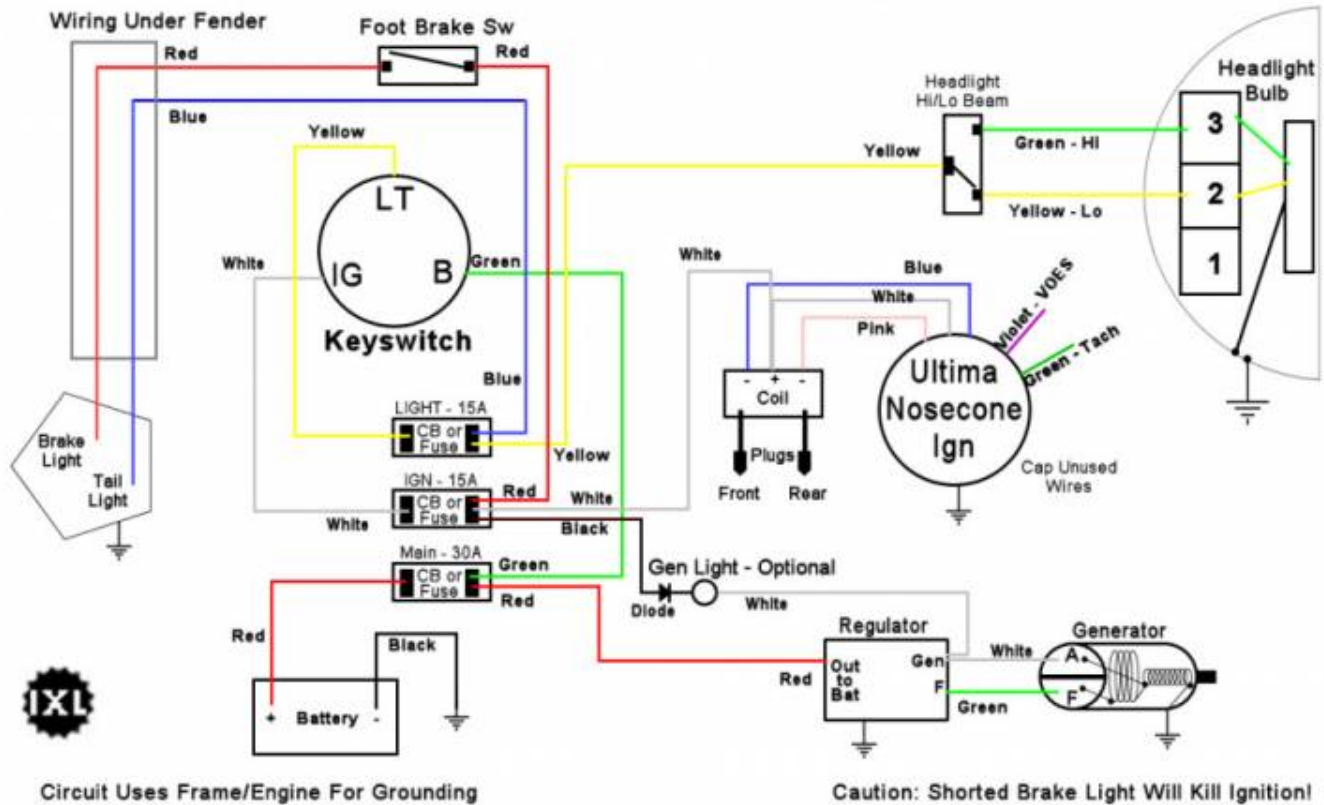
Beware that the brake light shares the same fuse as the ignition circuit - So, if you have a short to ground in the brake circuit it will blow the fuse & kill the ignition. You could add a separate fuse for the brake light to avoid that potential problem.

The diagram shows an optional Gen Light, implemented with a diode and an incandescent bulb.

To implement the VOES, add it with a vacuum hose to the carb - then wire the single VOES wire into the Violet Wire of the Ultima ignition module.

To implement a tachometer, use a normal HD dual-fire tach and wire the input signal to the Green Wire of the Ultima module.

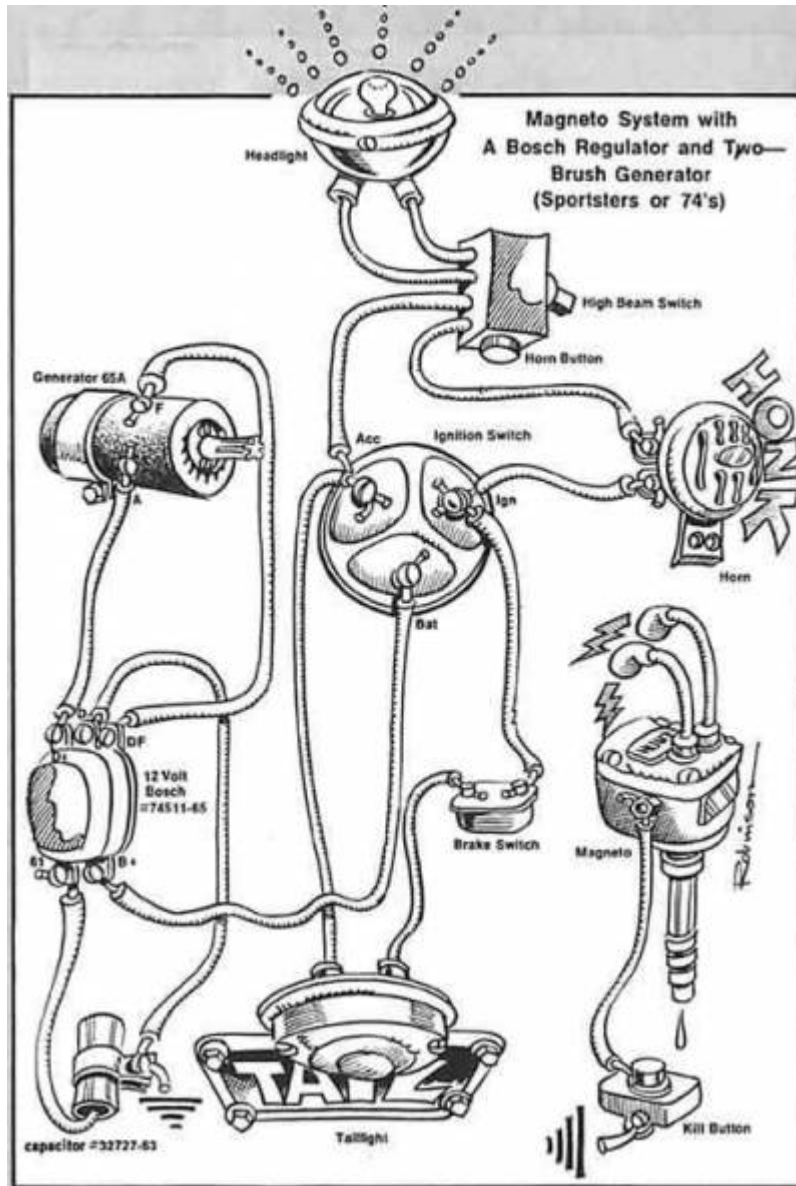
Ironhead Sportster - Simplified Wiring Kick Start - No Turn Signals



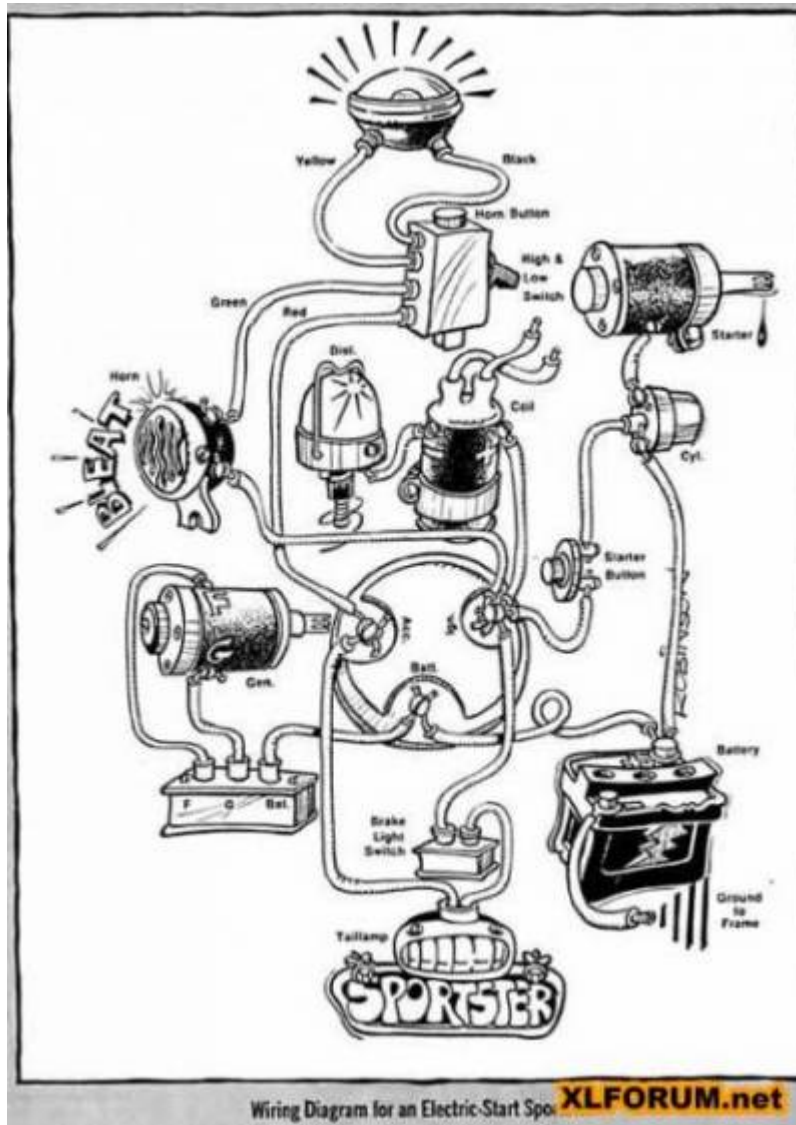
Other Simplified Wiring Diagrams

(**CLICK ON THE DIAGRAM** to get a larger version to display)

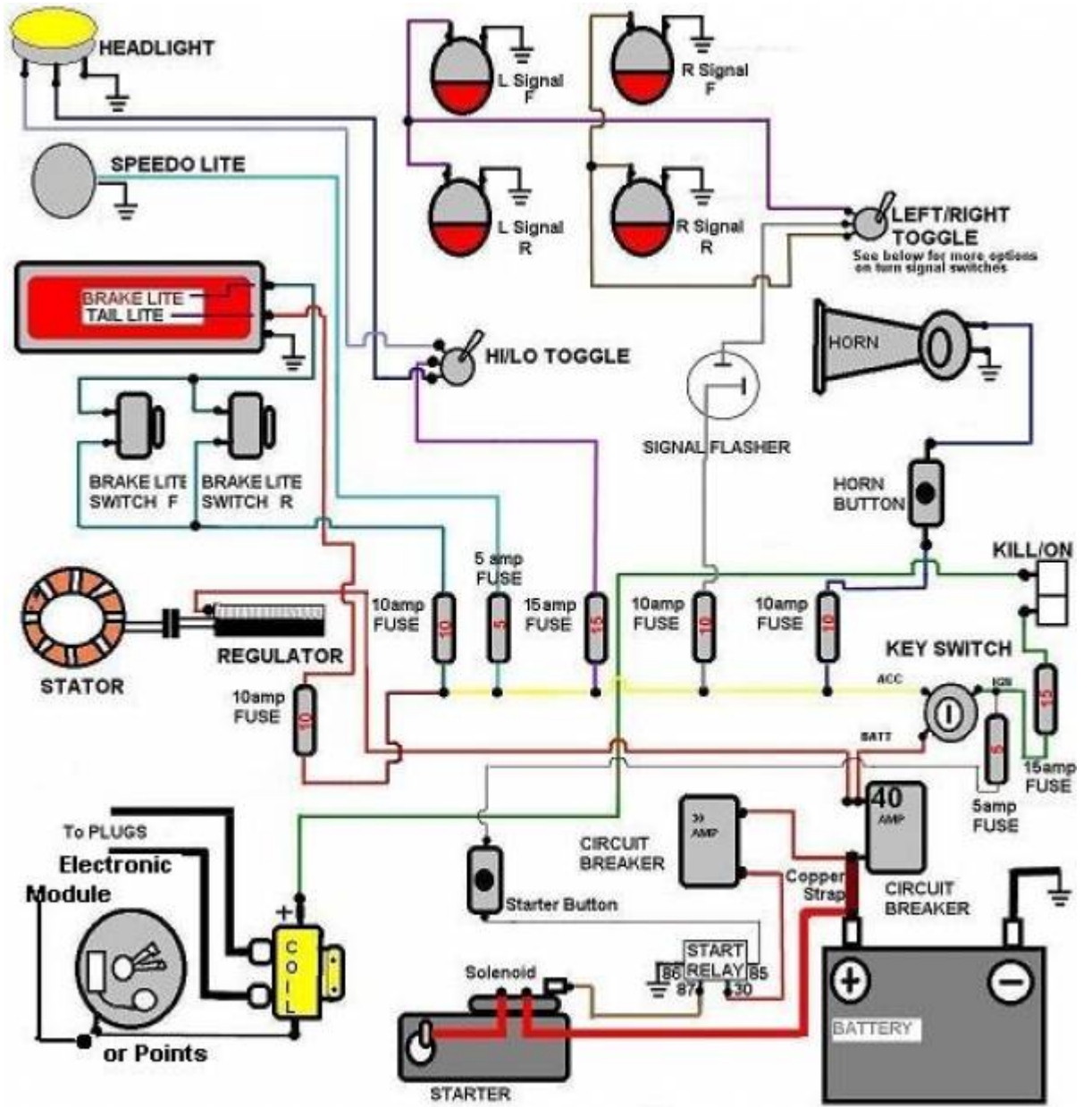
Wiring for Magneto Fired Sportsters ¹⁾



Wiring for an Electric Start Sportster ²⁾



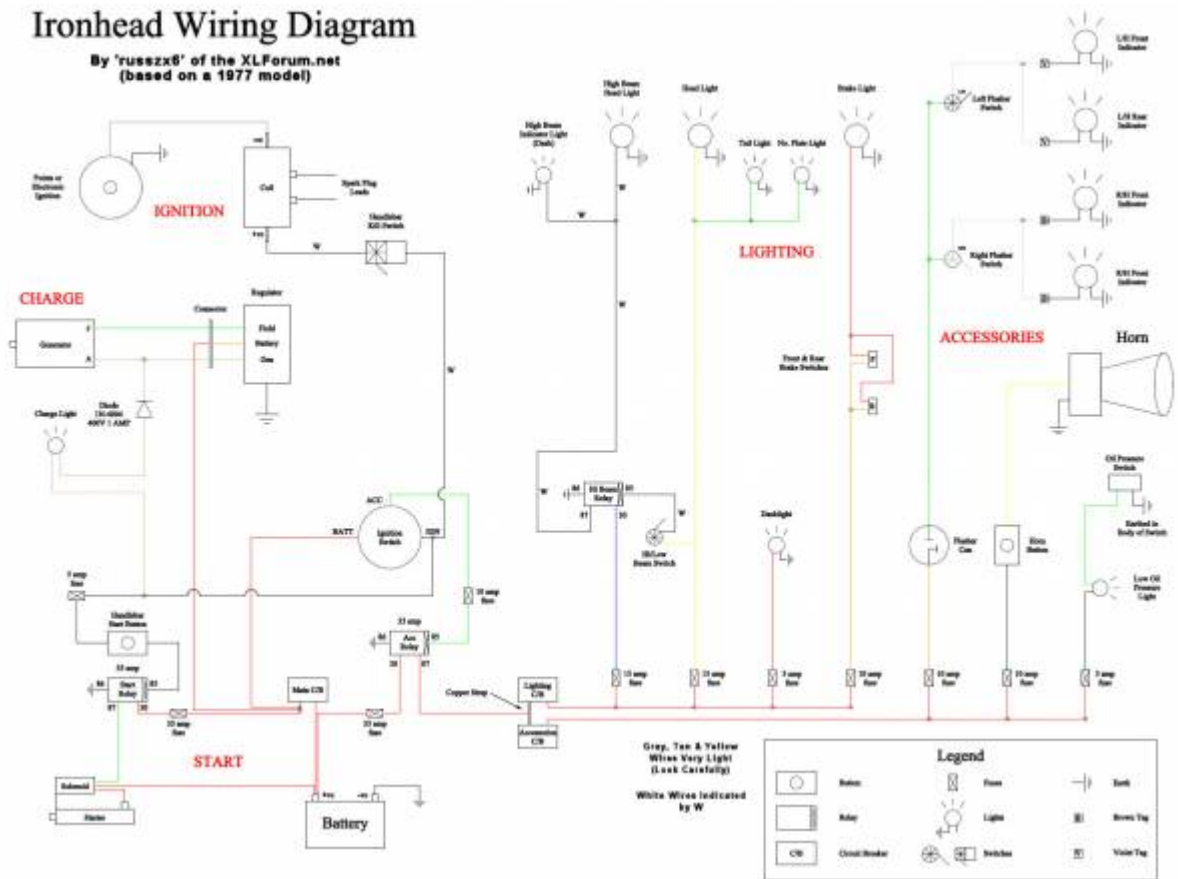
Generic HD Wiring Diagram ³⁾



Ironhead CAD Wiring Diagram ('77) ⁴⁾

Ironhead Wiring Diagram

By 'russzx6' of the XLForum.net
(based on a 1977 model)



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1)
drawing by FourCams of the XLFORUM
<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/66193-magneto-ironheads/page4?t=426562&page=4>

2)
drawing by OutlawTexan67
3)
photo by FE Head
<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/52169-starter-problems?t=230142>

4)
diagram by russzx6
<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/65022-wiring-diagram-in-autocad?t=411626>

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