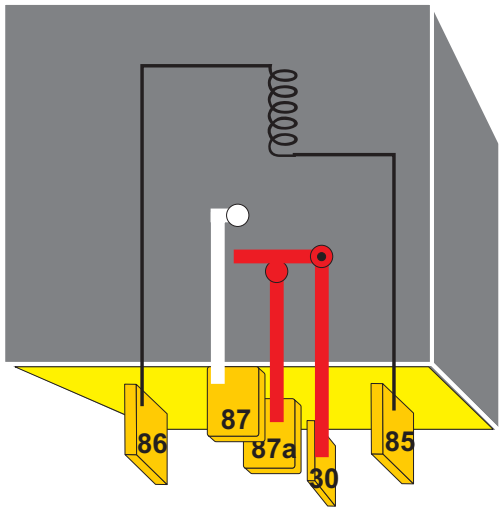
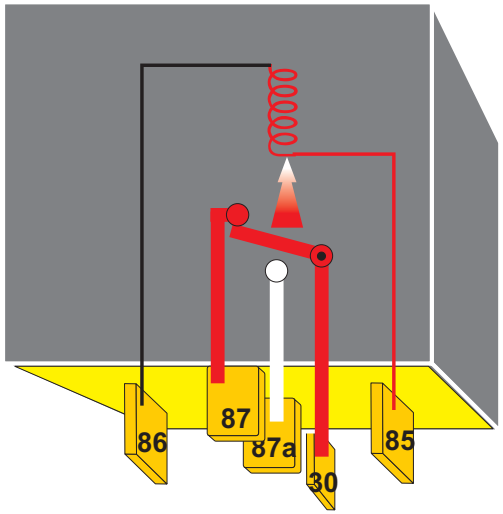


The relay at rest.
Heavy power can flow from 30 to 87a.
The relay is not using any power, so it may as well be in a box on the shelf.
A spring (not shown here) keeps the contacts from moving.

Horn and starter relays are usually rated for intermittent duty.
The electric magnet coils will overheat and burn out unless allowed to cool.

In contrast, electric fans and fuel pumps use continuous duty relays which have magnet coils designed to run all the time.

A relay is a remote-control heavy duty switch. A very small switch in your vehicle can control a massive switch somewhere else.



The relay at work.
A tiny current from a small switch circuit powers the coil, making it an electric magnet. The magnet makes the switch contacts move with a SNAP! Now heavy power can flow from terrminal 30 to 87.

This is why a small switch on a one amp circuit - like a horn button - can sound a 20 amp AH-OOGA horn on heavy wires.

Heavy wire is hard to run and expensive, plus it loses power over distance.
Relays keep heavy wires shorter and provide maximum power.

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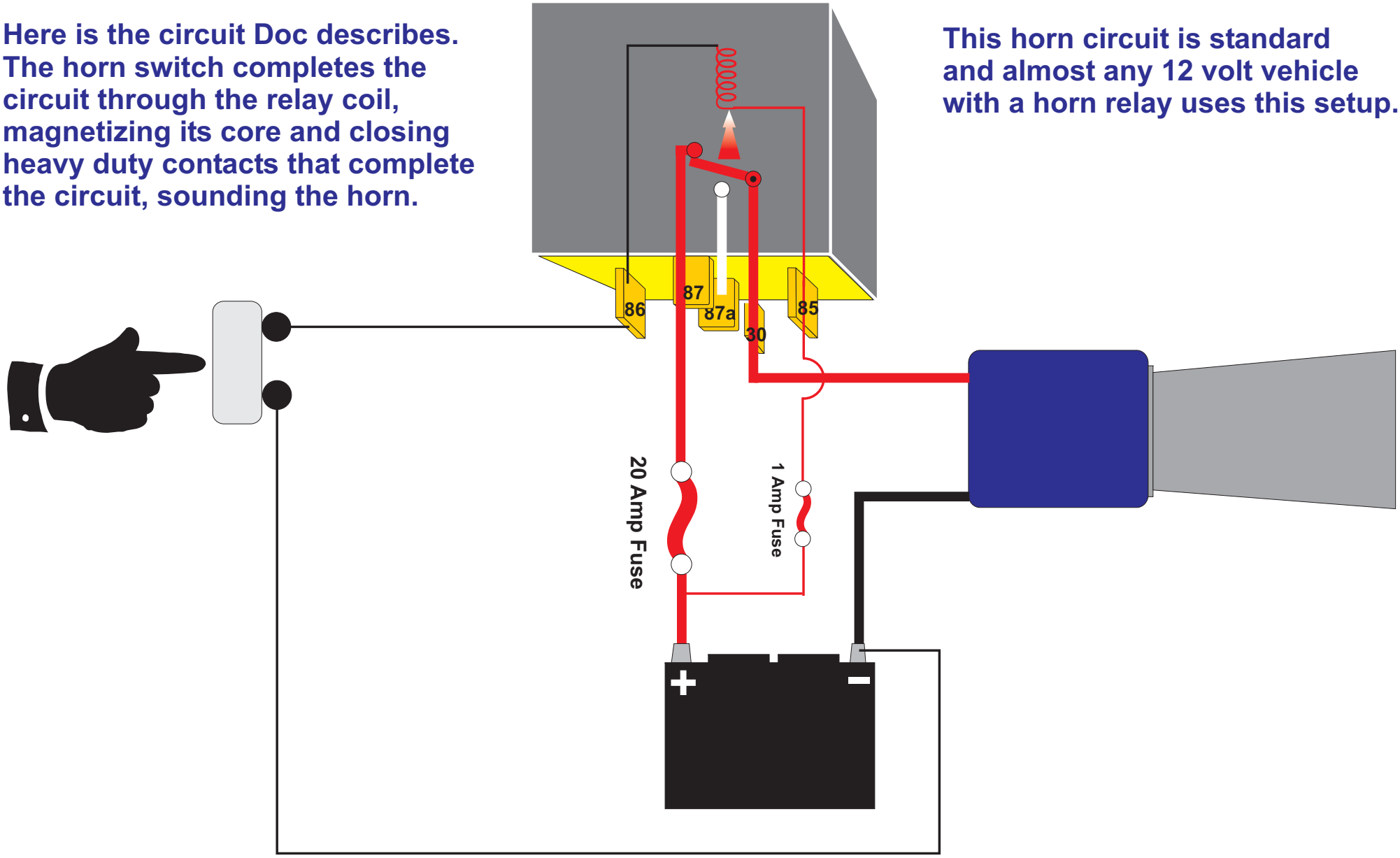
Here is the circuit Doc describes. The horn switch completes the circuit through the relay coil, magnetizing its core and closing heavy duty contacts that complete the circuit, sounding the horn.



This horn circuit is standard and almost any 12 volt vehicle with a horn relay uses this setup.

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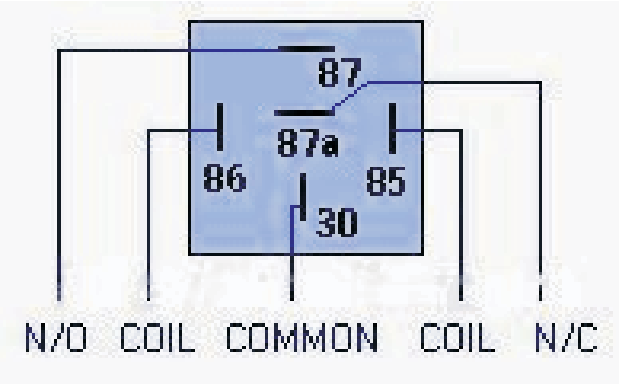

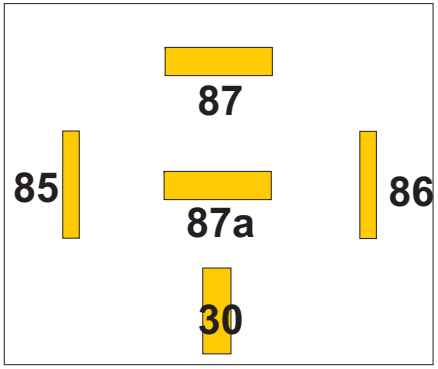

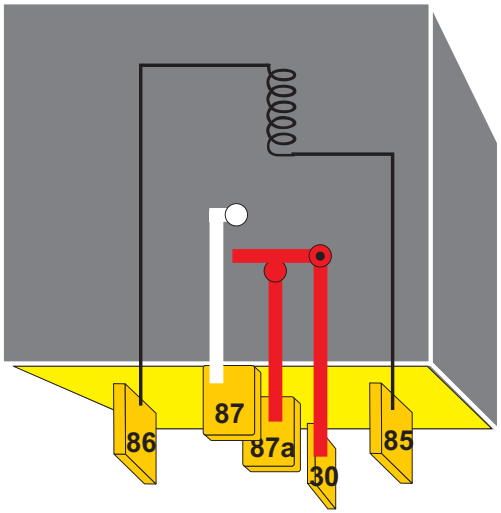

Common vehicle relays are represented by the figure at the left.
A relay socket looks like the center figure.
The figure at right is Jon P's interpretation of a relay at rest.

87 - N/O - Normally Open - One of the 3 Heavy Duty Terminals, it is connected to 30 when the relay coil is powered on and becomes a magnet

87a - N/C - Normally Closed - One of the 3 Heavy Duty Terminals, it is connected to 30 when the relay is resting, no power to the coil

30 - COMMON - One of the 3 Heavy Duty Terminals, connected to either 87a at rest, or 87 when energized

85 - COIL - One of the 2 connections that feed the coil
86 - COIL - One of the 2 connections that feed the coil

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