Training 1: The Van Power Triad

Welcome!

If you're interested in doing a van conversion (or you've already started), you're in the right place.

I've had several thousand students go through this Van Conversion Workshop since 2015 (don't worry, it's been updated many times since then!) and the underlying core Van Conversion Framework has been tested by hundreds of students building vans for every activity and adventure you can think of.

This action plan is designed to help you capture the critical lessons from this first training, and help you brainstorm and begin your own van conversion.

The THREE types of people that this is perfect for:

1. You're considering doing a van conversion, but haven't started yet.

2. Your van conversion is already underway, but you want to get insights for parts of the build that lie ahead.

3. You've purchased a van and have it sitting there, but aren't quite sure how to get started.

If any of these are you, then you're in the right place!

The Van Power Triad will help demystify van power systems and what you'll need to power your critical devices and nice-to-haves out on the road.

You'll also want to check out the second training in the series, where we'll dive into the 3 systems you'll need to be comfortable during your travels, along with insights on how to insulate correctly so you keep your van's temperature regulated, without having condensation (and the associated problems) build up inside your walls.

THE VAN CONVERSION WORKSHOP

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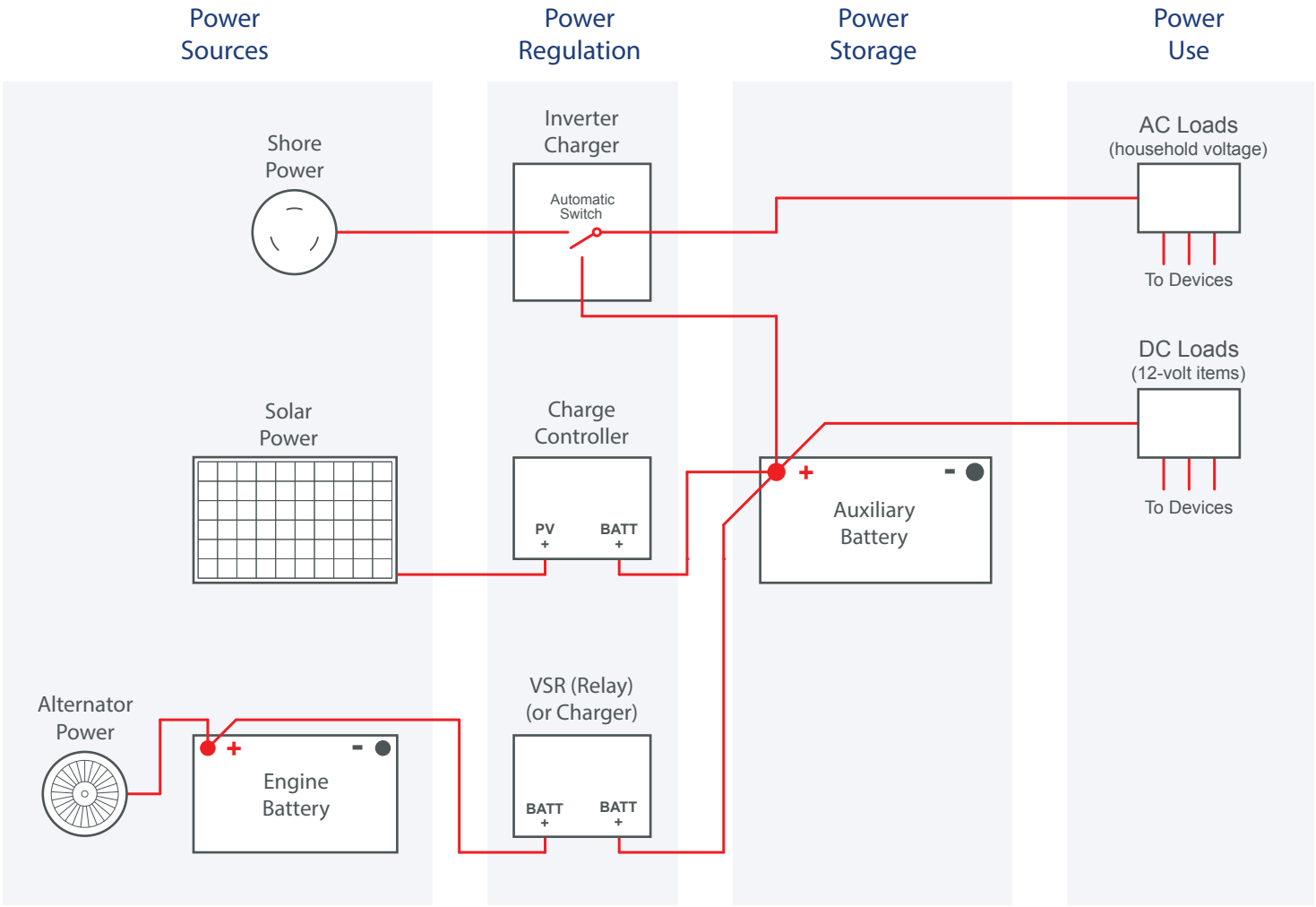
The Van Power Triad uses three charging sources for a well-rounded power system:

1. _____ power is the source that is especially handy for charging at night while driving, and is a robust charging source during off-grid camping.

2. _____ power is great for fast charging and unlimited power at home or while at campgrounds, but means you'll be tethered to a power pole.

3. _____ power produces energy during daylight hours, but output can be limited due to roof size constraints. It's a lifesaver for off-grid multi-day campouts.



Note: Be sure and check out the Van Power Triad video for a full explanation of this diagram.

THE VAN CONVERSION WORKSHOP

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Power system design begins with your needs...

Let's look at some "loads" and what kind of power they draw.

Water pumps, puck lights, and smartphone chargers are typical items that will run off of 12-volt power. To find amp-hours for each item, we need to know how many amps they draw, and how many hours they'll be drawing those amps each day. That's how we' ll then arrive at "amp-hours per day" for different items, and we'll then add them up to size our batteries.

We'll take the watts of the device and divide by our voltage (12 volts) to get the amps.

Let's look at a typical 12-volt water pump: ***90 watts ÷ 12 volts = 7.5 amps***

So the pump draws 7.5 amps from the battery (at 12 volts) while it's running, and will typically run about 5 minutes a day total.

5 minutes is .083 hours (5 minutes ÷ 60 minutes)

Now we multiply 7.5 (the amps) x .083 (the hours) = .625 amp-hours

Not even one amp hour to run that pump each day! As you can see, how long you run each item has a huge effect on how much battery capacity it consumes.

Here are some common items to consider (and their average wattage or daily amp-hours):

- ☐ Roof vent fan (30w)
- ☐ Water pump (90w)
- ☐ LED puck light (3.5w)
- ☐ Rooftop A/C (1550w*)
- ☐ Espar D2 heater (34w)
- ☐ 12-volt refrigerator (25Ah)
- ☐ Laptop charger (60w*)
- ☐ Instapot Mini (700w*)
- ☐ Smartphone charger (10w)

* Add 11% to 110/230 volt items to account for inverter losses

Additional items:

_____

_____

_____

_____

Looking ahead in the Van Conversion Workshop...

Lesson Two – The Van Comfort Combo

In the next lesson, I'll be sharing insights about the three systems that will allow you to travel to all sorts of climates in different seasons, and remain comfortable in your van.

Those three systems – Heating, Air Conditioning, and Ventilation - can be used in various combinations to help you meet your objectives out on the road. From the bare-bones simple van setup, to vans that are more comfortable than a house, this lesson is where we'll break down the best strategy for your personal van project.

You'll also learn how to install insulation so you're comfortable in different seasons, but avoid installation mistakes that cause condensation (and mold) inside the walls.

Lesson Three – The Van Brand Breakdown

After the first two lessons, you've got the groundwork for your van's systems. In this lesson we'll step back and talk about the vans themselves, discussing the vans on their own merit, and then according to how easy each brand is to convert (you may be surprised)! This will be helpful if you're still choosing a van, but also helpful if you already have your van, as you'll learn some conversion tricks and methods for each brand.

Lesson Four – Moving Forward and Next Steps

This lesson is all about you moving forward. I'm a big fan of learning, and I believe that "preparation is the key to success" when it comes to van conversions.

But all the learning in the world won't move you forward – so this lesson is all about you moving into action. I've had hundreds of students convert vans with huge success, and I want you to take your place in that army – and that's what this lesson is about.