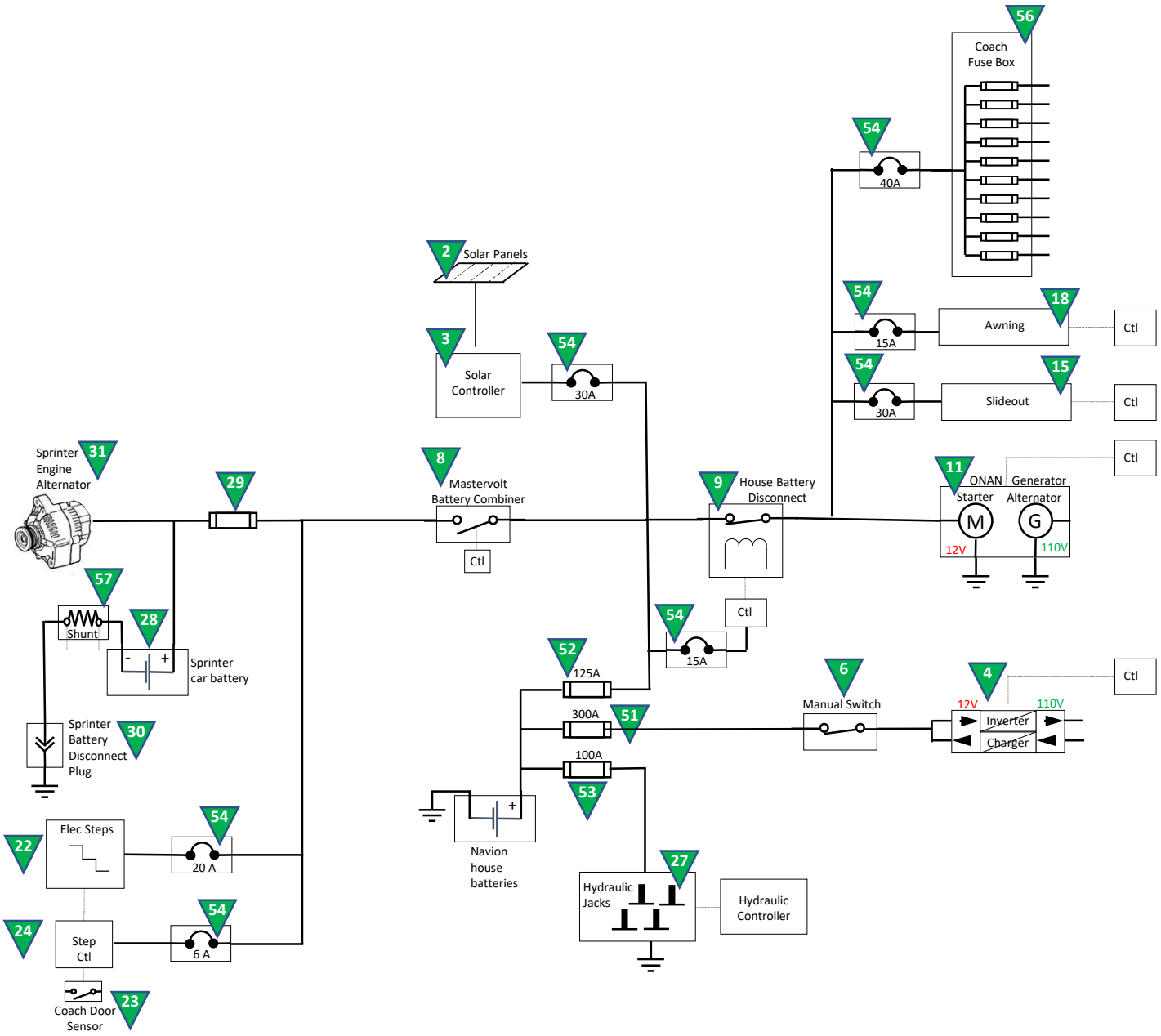
2020 Winnebago Navion 24V

Electrical Components and Circuits

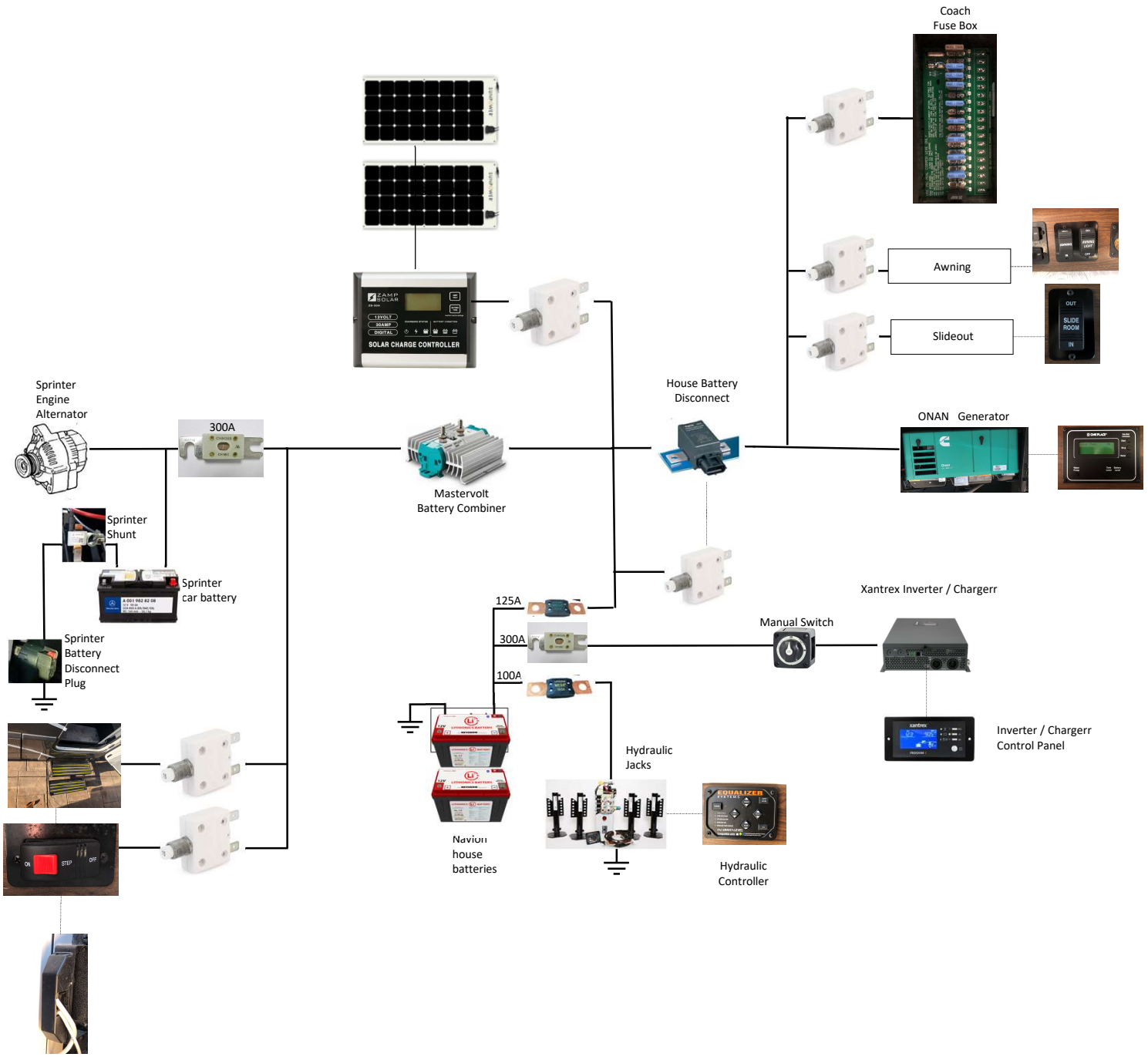
Tom Hildebrand
6/2/2021

Annotated Circuit Diagram 12 Volt

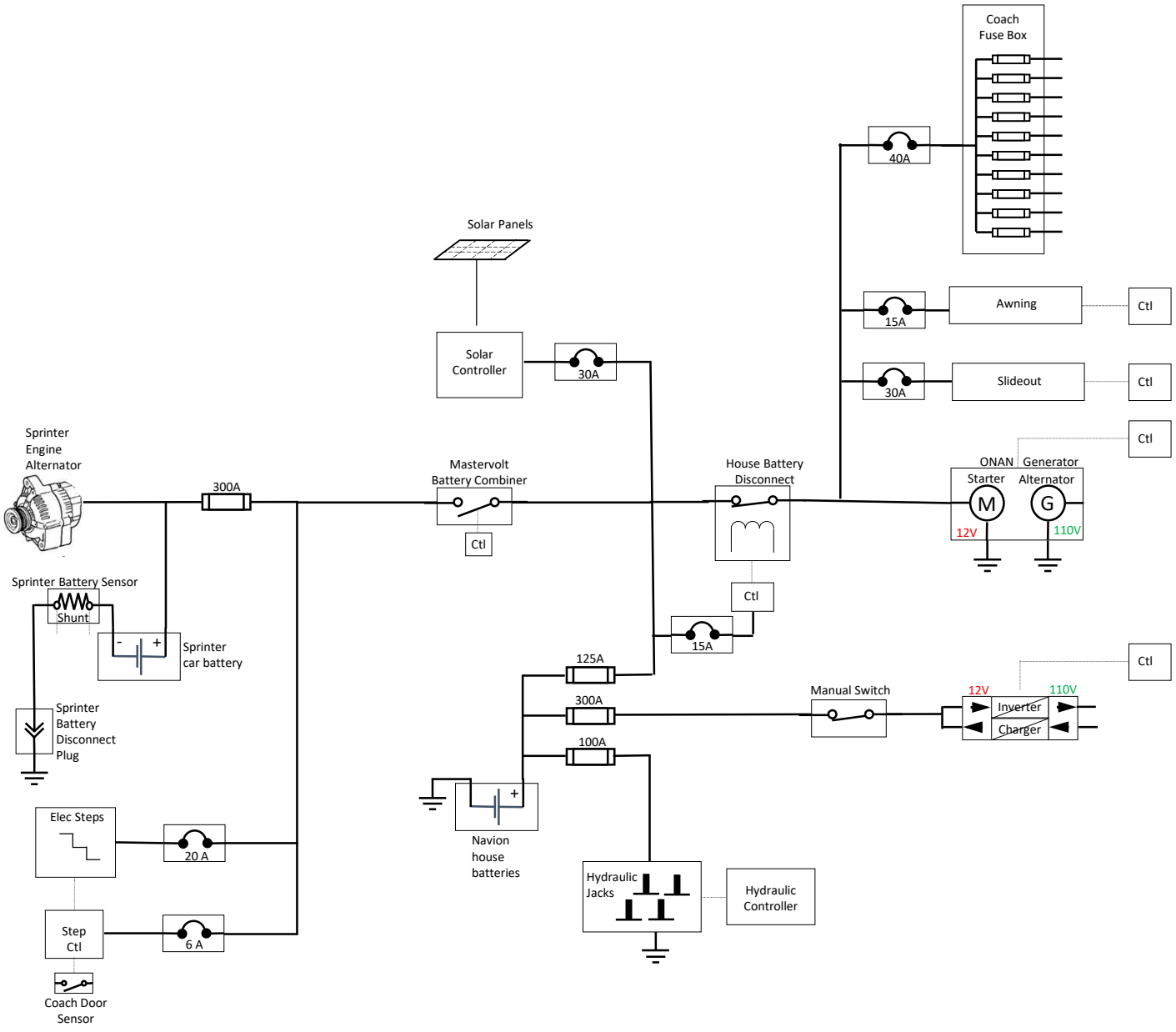
Follow the green triangles in the following pages for details and location



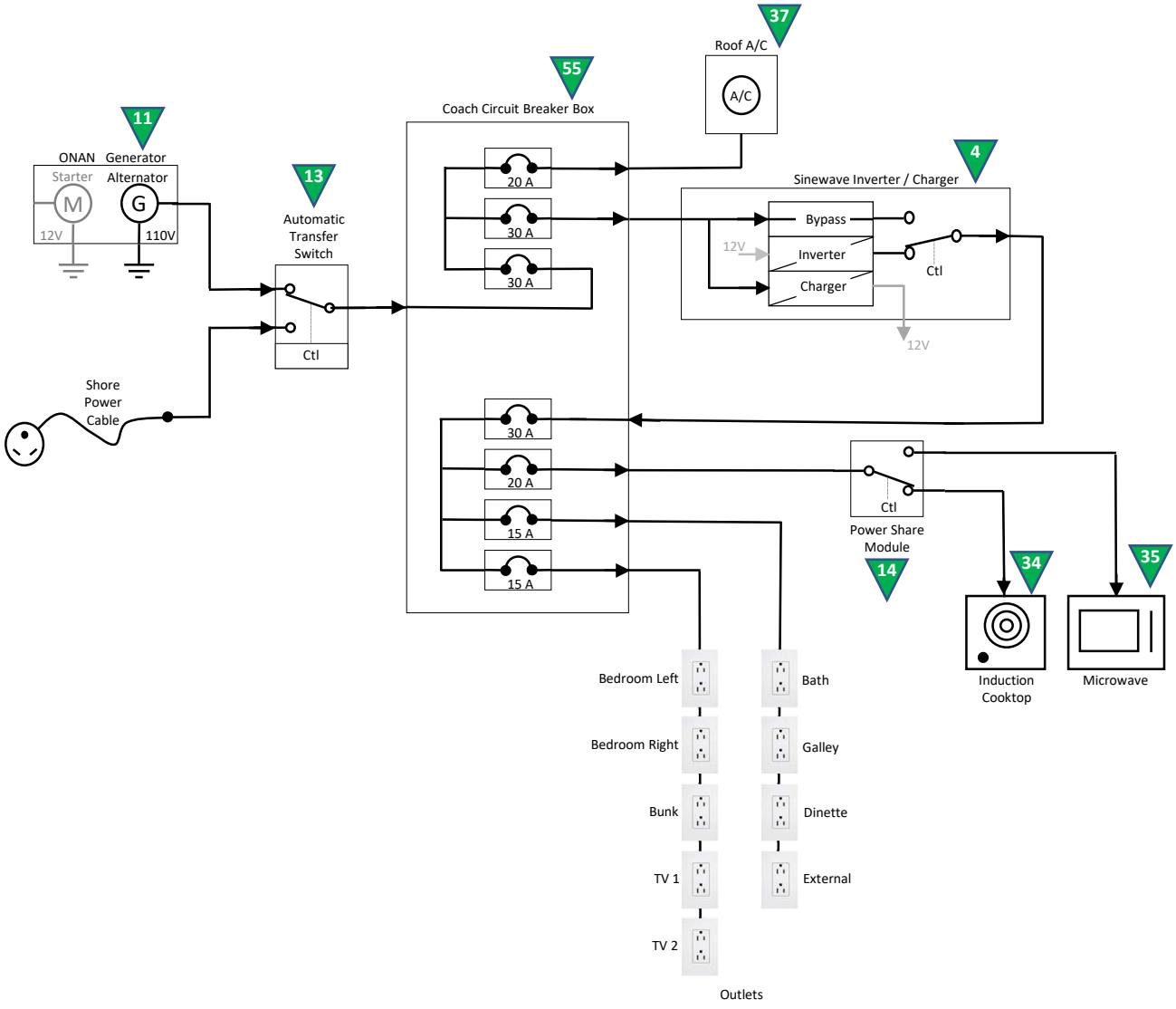
Visual Circuit Diagram 12 Volt



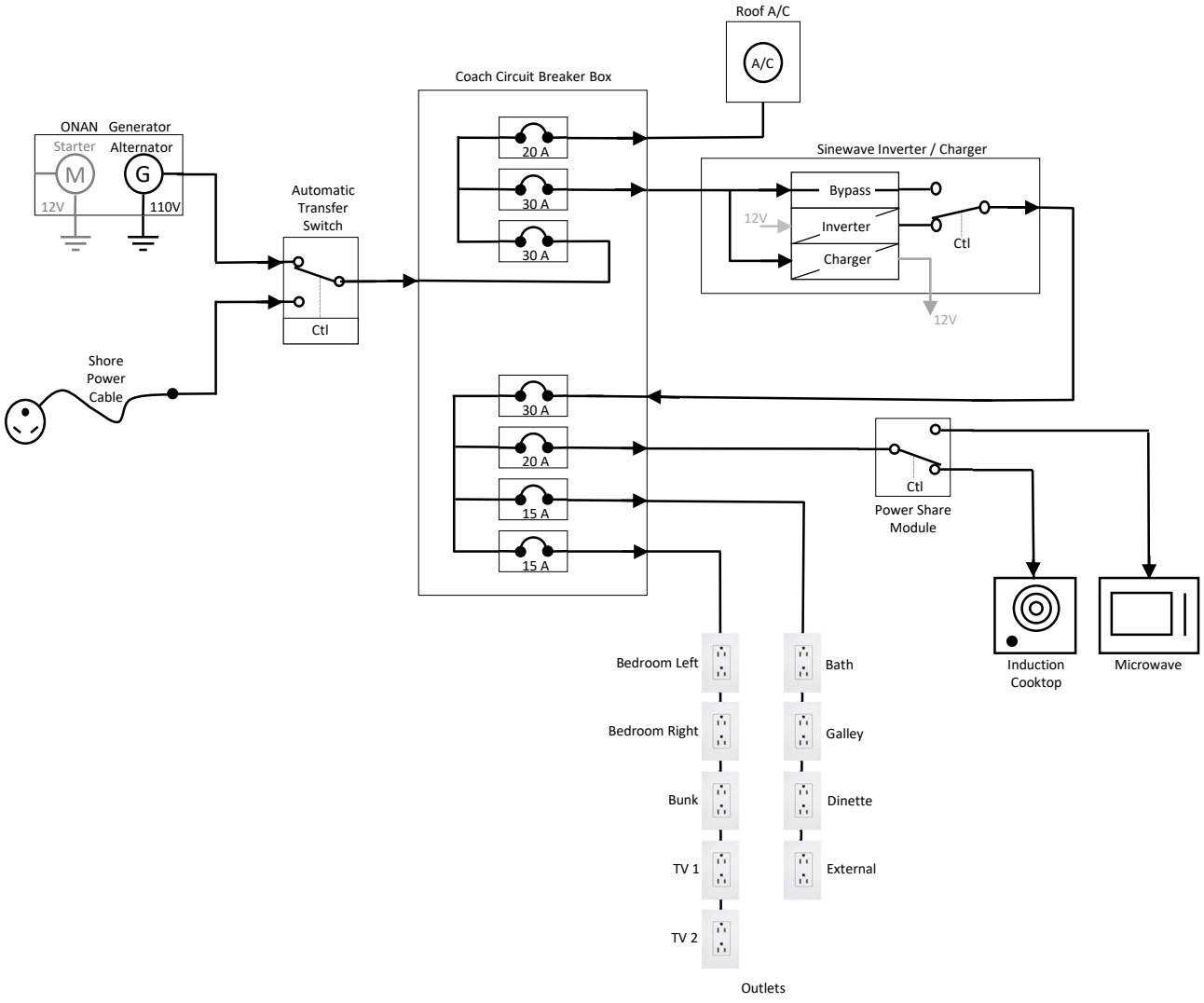
Plain Circuit Diagram 12 Volt



Annotated Circuit Diagram
110 Volt



Plain Circuit Diagram
110 Volt



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Electrical Components

High Power

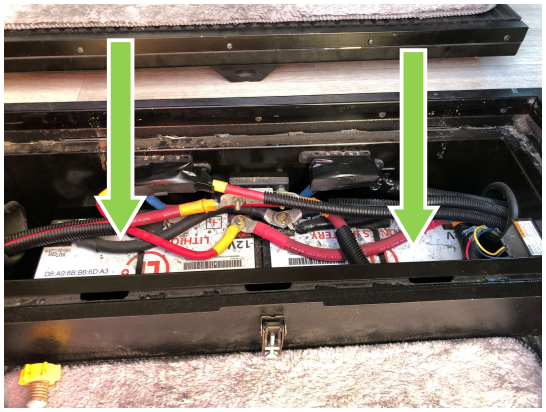
1

Lithium House Batteries (2)

Lithionics 12V130A-G31-LRBM8
Recommended discharge: 80 A
Max continuous discharge: 100A
Surge discharge: 400 A (30 sec)
Pulse discharge: 1,000 A (1 sec)
1,664 Watt-Hours



Location: Battery well under coach entry steps

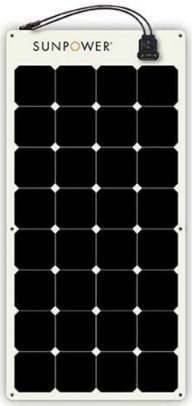


Shown here are the optional Lithium batteries in our 2020 Navion 24 V. Other types of batteries would be located in the same place.

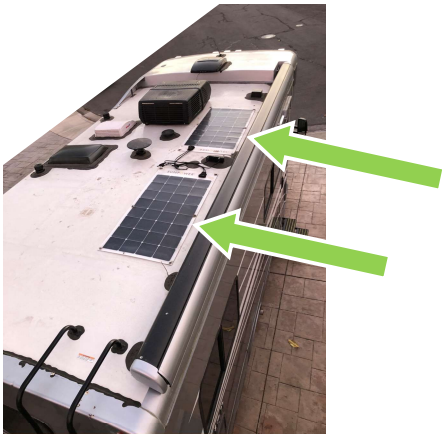
2

Solar Panels (2)

Sunpower flexible
SPR-E-FLEX-100



Location: On vehicle roof



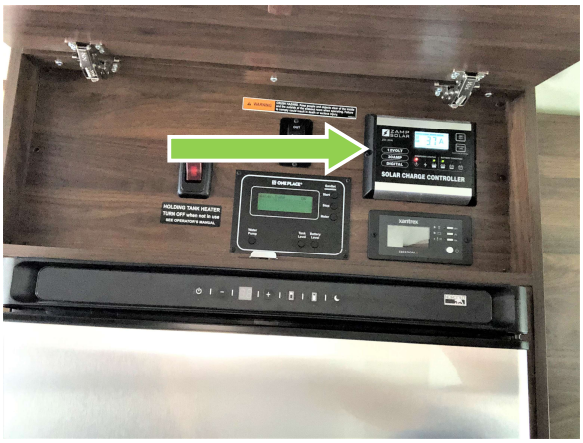
3

Solar Controller

Zamp Solar
ZS-30A



Location: In main coach control panel over the fridge



4

Sinewave Inverter / Charger:

Xantrex Freedom XC 2000 (817-2080)



Location: In forward passenger side storage compartment



5

Inverter / Charger Control Panel

Xantrex Freedom X



Location: In main coach control panel over the fridge



6

Manual Disconnect Switch for Inverter / Charger



Location: In coach entry stairwell

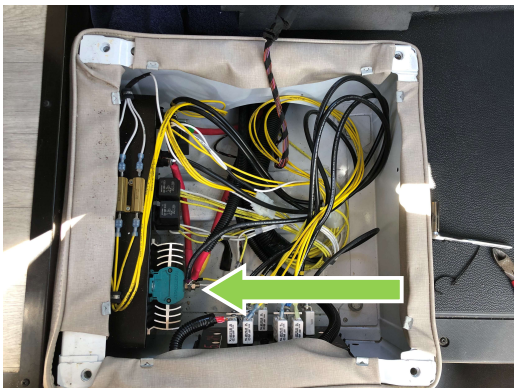


7 Battery Combiner

(Electronic Relay / Limiter)
Mastervolt ChargeMate Pro 40



Location: Under passenger side front seat

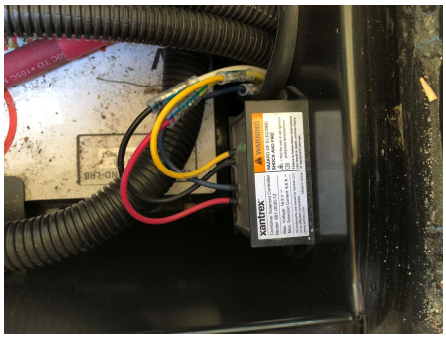


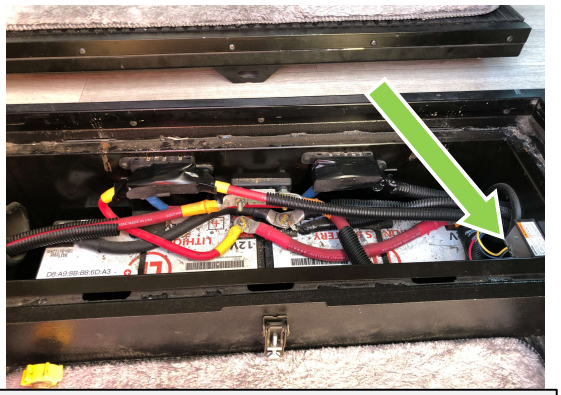
The Battery Combiner allows current from the Sprinter Alternator to charge both the Sprinter battery and the coach (house) batteries when the engine is running, but isolates the Sprinter battery from the house battery when the alternator is not charging (engine not running). This prevents coach consumers from draining the Sprinter starter battery when the vehicle is parked. The electronic combiner also limits the current from the alternator to the coach battery to 40 Amp max in order to prevent overcharging damage.

8 Battery Combiner Controller

Xantrex 881-0030-12

Location: In Battery well under coach entry steps





The Battery Combiner Controller tells the Battery Combiner when to combine the Sprinter battery and the house battery, i.e. allow the Sprinter engine's alternator to charge the house battery in addition to the sprinter car battery, but only if the voltage provided by the alternator is within a safe range for the (lithium) house batteries.

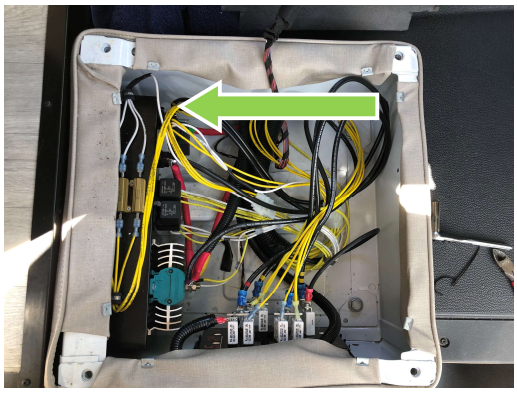
9 House Battery Disconnect Relay

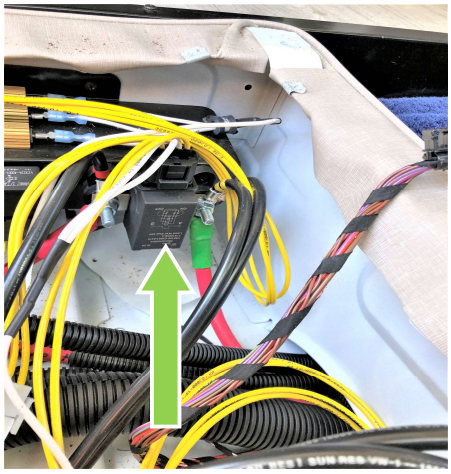


Tyco Electric
V23130C2021A412

Automotive Relay, High Current,
12 VDC, 190 A, SPST-NO

Location: Under front passenger seat





10 House Battery Disconnect Switch



Location: Coach Entry left



11 Generator

Onan 3.6KY-26120R (Propane)
3,600 W 30 A 3,600 rpm

Location: Passenger side rear outside compartment





Other vehicles may come with the optional Diesel powered generator instead of Propane powered

12 Generator (GenSet) Remote Start / Stop Panel

OnePlace

Location: In main coach control panel over the fridge





13

Transfer Switch

(shore / generator)
Southwire SureGuard 41300

Location: Inside shore cable storage box





The Transfer Switch connects all coach 110 V appliances, outlets, and other consumers to the generator when the generator is running, and to shore power when the generator is not running. It also prevents generator power to be fed back into the RV park electrical system.

14 Power Share Module

(microwave/induction)

Precision Circuits Inc

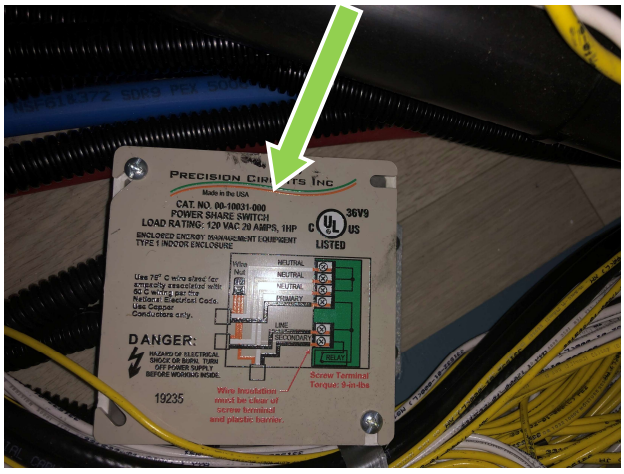
Part number: 00-10031-000



The Power Share Module prevents current overload when both the induction stove AND the microwave oven are run at the same time. It does this by temporarily turning off power to the induction stove while the microwave is active (which usually takes just a few seconds) and turning the induction stove back on when the microwave is done.

Location: Behind coach fuses and circuit breakers
(Navion 24V: Remove drawer for access)





15 Slideout

16 Slide Control Switch

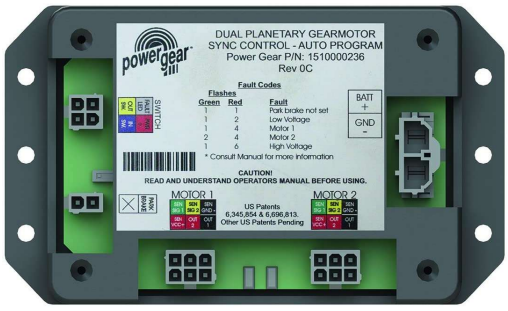


Location: In main coach control panel over the fridge



17 Slide Controller

Power Gear Model 1510000236



Location (Navion 24V): Behind sofa on exterior wall



18

Awning

CareFree IJ1926EJV1LL

19

Awning Wind Sensor

CareFree BT Motion Sensor
Auto-Retract



Location: In awning lead rail, at forward end.



20

Awning Controller

CareFree BT12



Location: Behind coach interior panel over coach door (panel must be removed for access)



21

Awning Control Panel

CareFree BT12



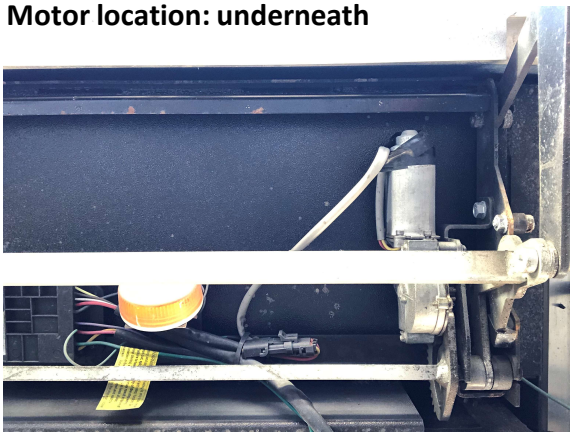
Location: Coach Entry left



22 Retractable Steps



Motor location: underneath



23 Retractable Step Door Sensor



Location: In coach door frame, hinge side



24 Retractable Step Control Switch



Location: Coach stairwell left



25

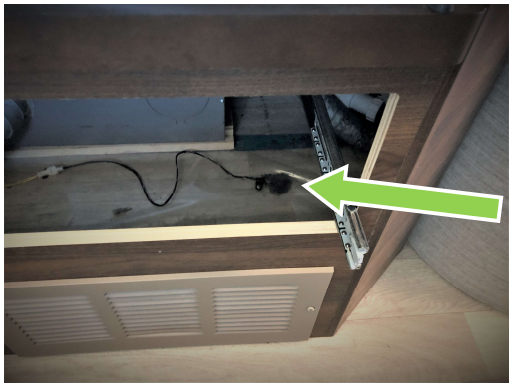
Leveling Jacks

Equalizer Systems
EQ Smart Level 8757UPSA



Leveling Jacks Level Sensor

Location (Navion 24V): Under driver side bed (remove drawer for access)



26

Leveling Jacks Control Panel

Equalizer Systems EQ SMART-

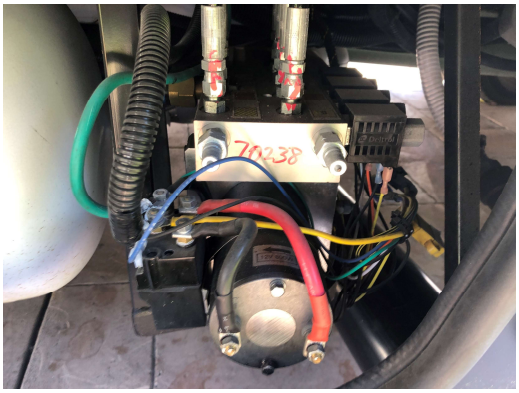


Location: Coach entry stairwell left

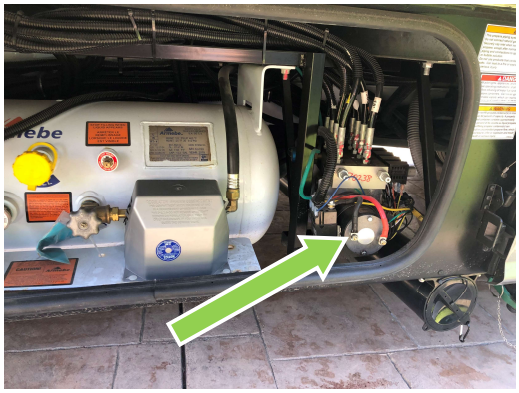


27

Leveling Jacks Hydraulic Pump



Location: Driver side external compartment, next to LP Gas tank

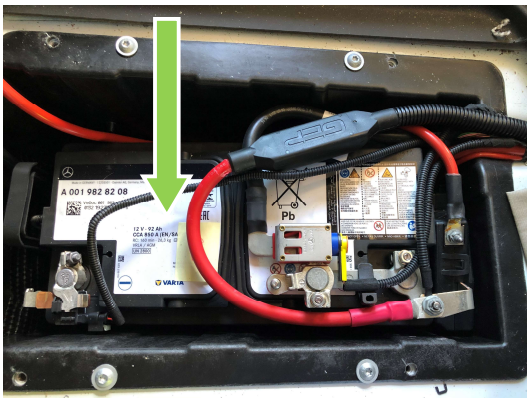


28 Car Battery

(Mercedes Benz Sprinter)
001 982 82 08
12 V 95 Ah CCA 850 Amp



Location: In compartment under driver's floor mat

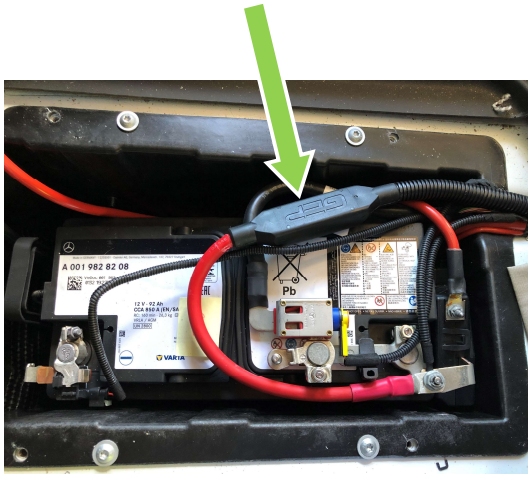


29 Sprinter battery-to-coach Fuse

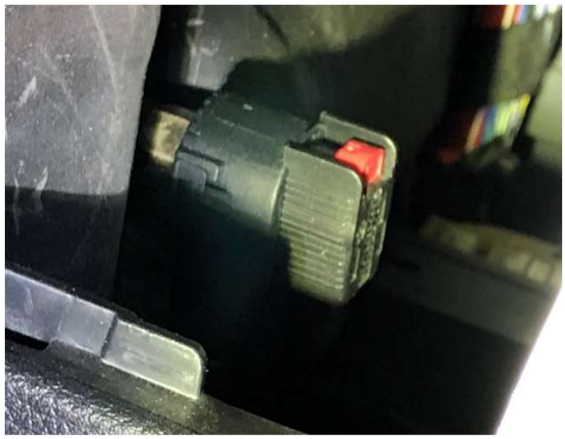
GEP INMEGA inline fuse holder with
300A MEGA Fuse



Location: On top of Sprinter car battery



30 Car Battery disconnect plug



Location:
Behind door next to accelerator pedal





31 Alternator

Location: Part of the Sprinter engine



57 Sprinter Battery Sensor (shunt)

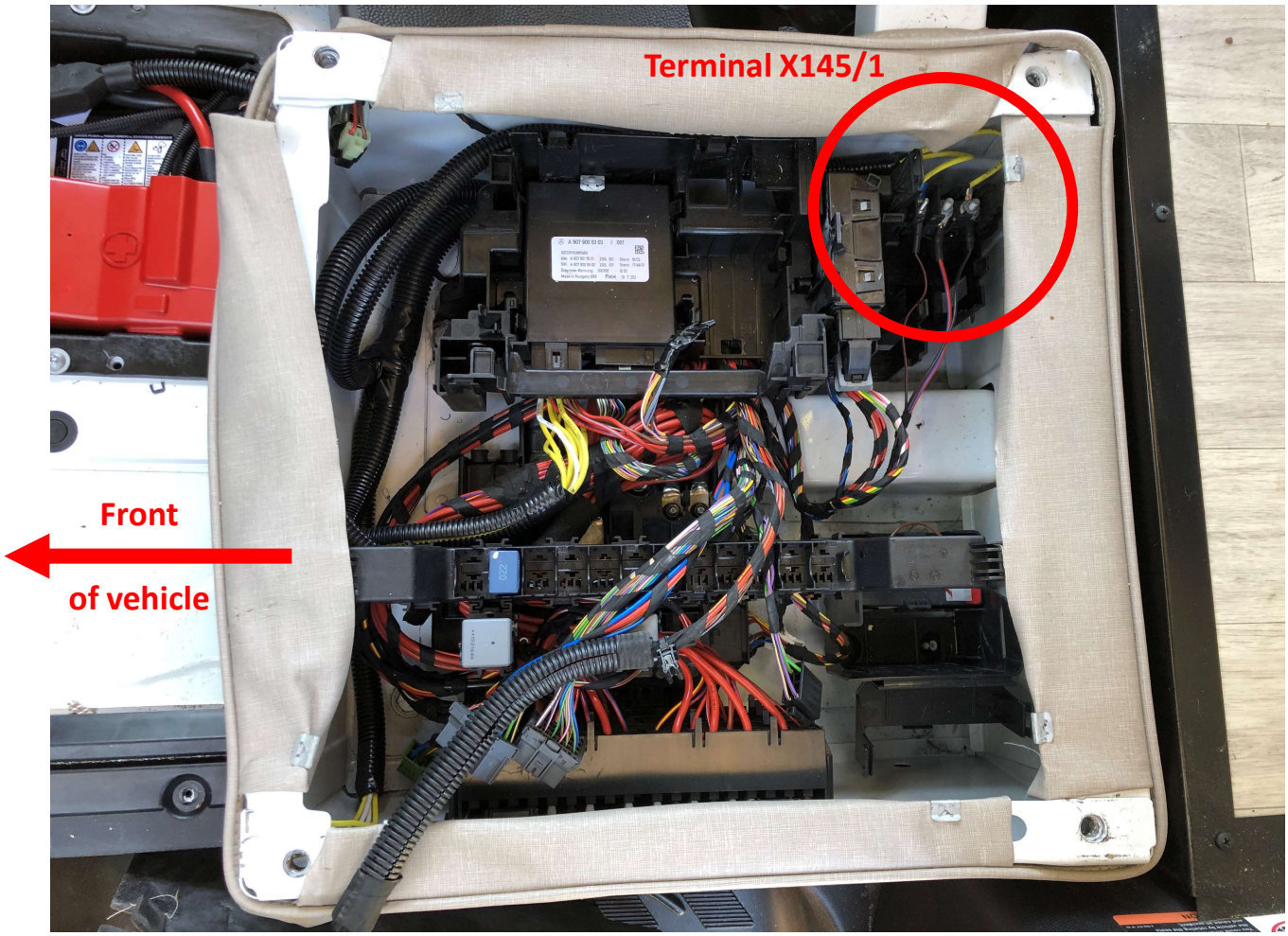
Location: Part of the battery negative terminal

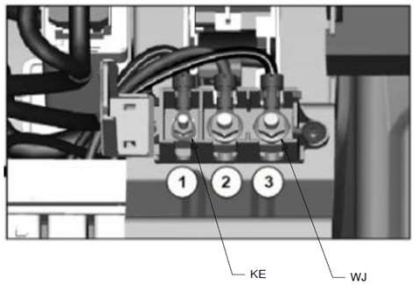


32

Sprinter Car-to-Coach Electrical Interface terminal

Mercedes Benz provides an optional (option EK1) electrical supply point from the chassis (car) to the coach. It consists of a 3-terminal interface called X145/1 that the coach wiring taps into. It is located under the driver's seat as shown here in our 2020 Navion 24 V.





Terminal	U [V] / I [A]
1st power with engine running	12V / 10A
2nd battery direct power	12V / 25A
3rd ignition power	12V / 15A

Source: Winnebago manual

33 Sprinter Car-to-Coach Electrical Interface terminal Circuit Diagram

This diagram is for a 2015 Sprinter and the actual terminal and wire colors vary by model and year, but the general concept of the 3 terminal points should still apply

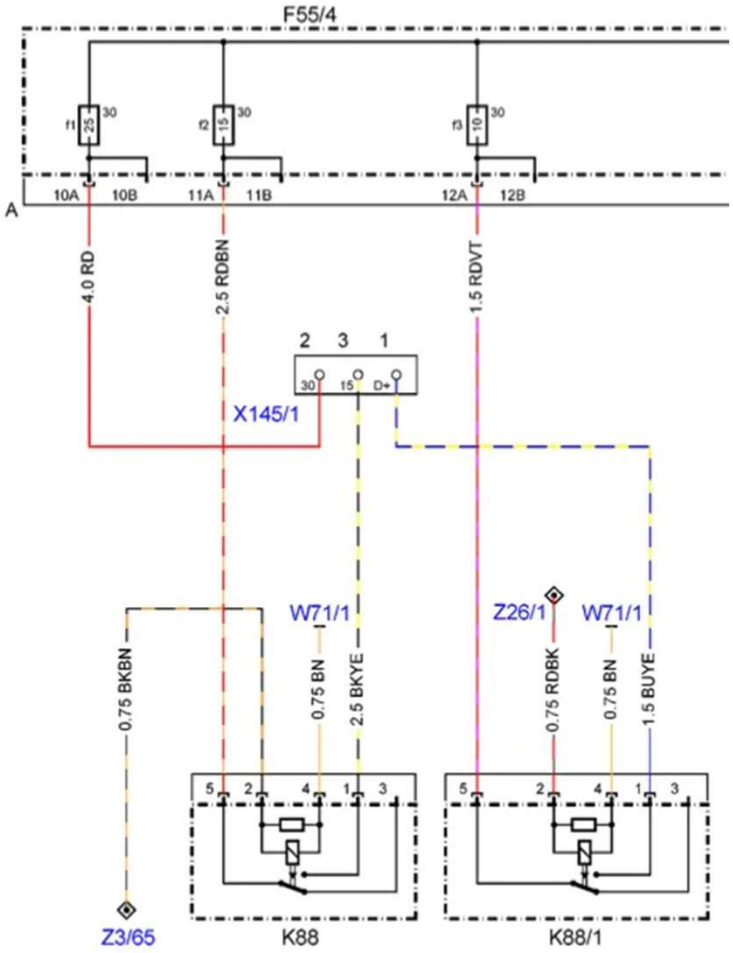


Image source: https://i2.wp.com/sprintervanusa.com/files/2017/08/X145-circuit-diagram.png?ssl=1

34 Induction Cooktop

True Induct T1-1+1B



35 Microwave

Greystone D100N30ASPR



36 Fridge

Norcold N10DCSSR

60 Ah per day (per Navion forum)



37 Air Condition

Coleman 45054-8792



38 Furnace

Suburban SF-20Q W
20,000 BTU/h
12VDC 7 Amp



Location: (Navion 24 V): Under driver side bed. Serviceable from the outside of the coach



39 A/C and Furnace Thermostat

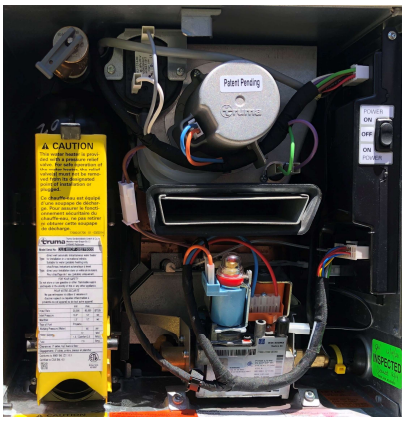


Location: (Navion 24 V): Next to the sofa



40 Water heater

TRUMA DLE 60CP (78203-51)



Location: Outside compartment driver side rear

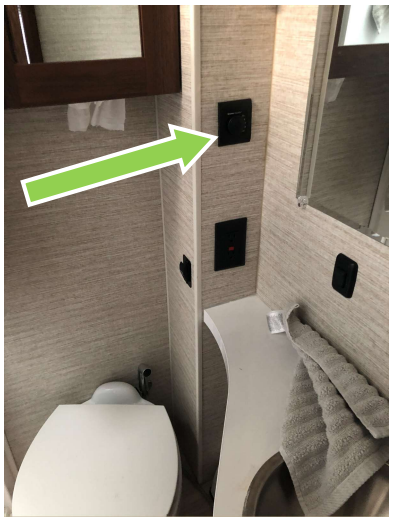


41 Water Heater control panel

TRUMA AquaGo



Location: In the bathroom



42 Fresh Water Pump

Pentair ShurFlo 4008-101-F65



Location (Navion 24V):
Under driver side bed



43 Fresh Water Pump Switch 1



Location: In main coach control panel over the fridge



44 Fresh Water Pump Switch 2



Location: In the bathroom



45 Fresh Water Pump Switch 3

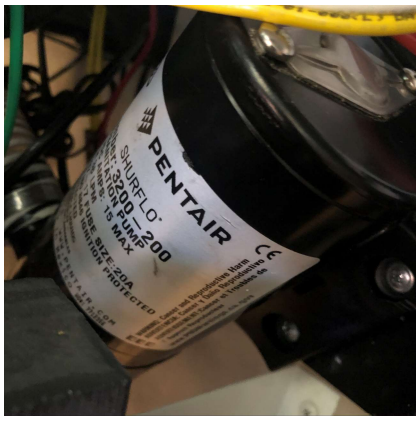


Location: Water valve panel in rear driver side water / power hookup compartment

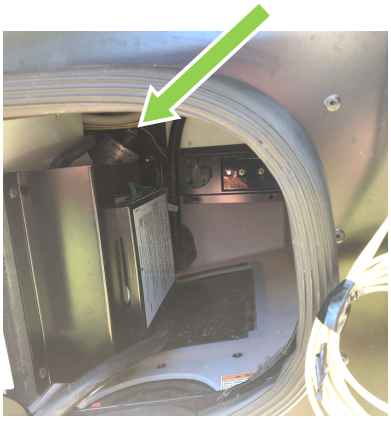


46 Grey Waste Water Pump

Pentair ShurFlo 3200-200



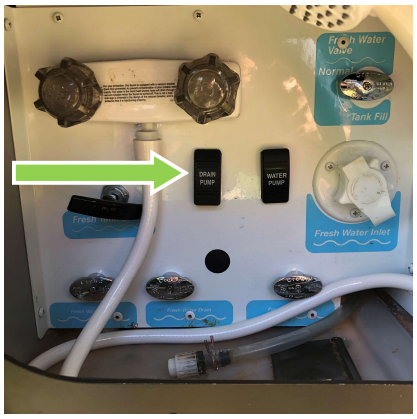
Location: Behind water valve panel in rear driver side water / power hookup compartment



47 Grey Waste Water Pump Control Switch



Location: Water valve panel in rear driver side water / power hookup compartment



48

Vent 1 (automatic open/close with remote control)

AIRXCEL MAXXFAN Deluxe 8501K



Location: Ceiling at bunk bed



49

Vent 2

Generic 12V fan (?)



Location: Ceiling at stove



50

Vent 3

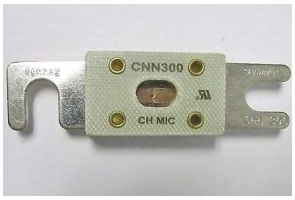
AIRXCEL MAXXFAN Mini 3800X



Location: Bathroom



51 Inverter / Charger Fuse

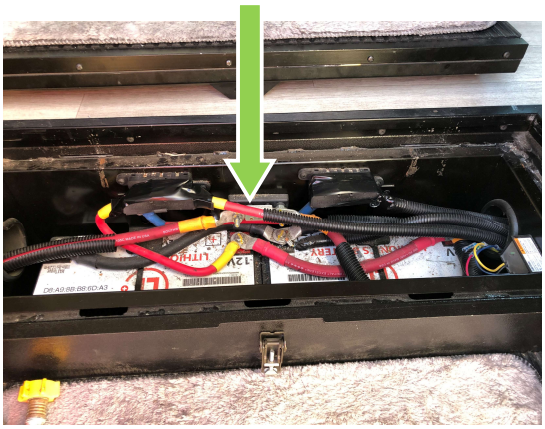


CNN-300

300-AMP "FAST" FUSE

(same as ANN-300)
(not to be confused with ANL/CNL "slow")

Location: In house battery well (under entry steps)

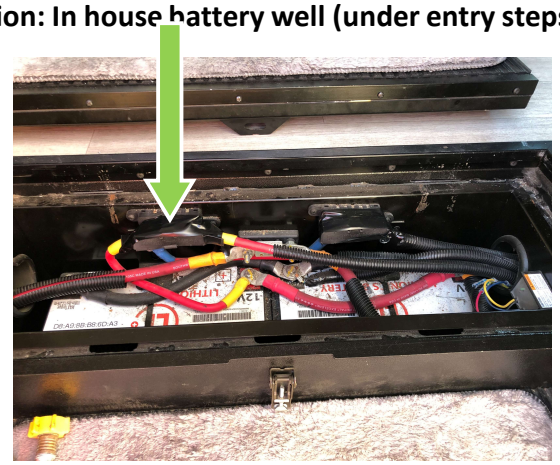


52 Main Coach Fuse



Type: MEGA 125 Amp

Location: In house battery well (under entry steps)

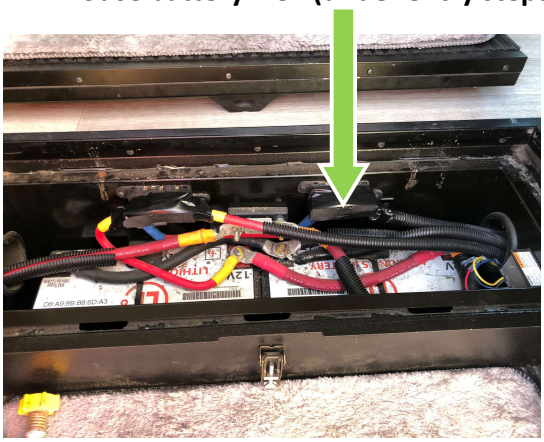


53 Leveling Jacks Fuse



Type: MEGA 100 Amp

Location: In house battery well (under entry steps)



54 Coach Main 12V Circuit Breakers



Mechanical Products MP
Panel Mount Circuit Breaker, 15A
Model 1600-037-150-15
(Also in use: 6A, 20A, 30A, 40A)

Breaker	Amp
Solar	30
Battery Disconnect Switch	15
Elec Step Control	6
Elec Step Power	20
Slideout	30
Awning	15
Coach Breaker Panel	40

Location: Under passenger seat



Outside view



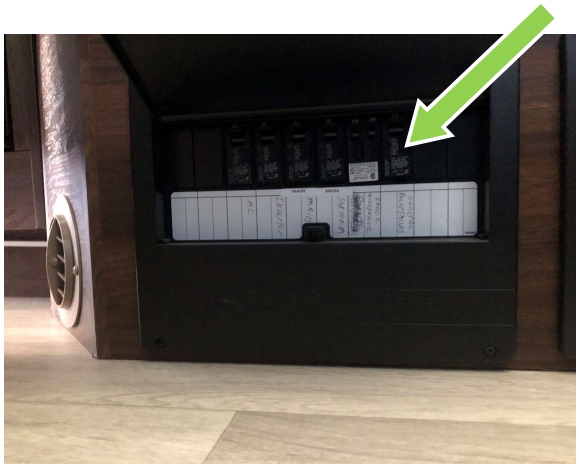
Inside view



55 Coach 110V Circuit Breakers

Location (2020 Navion 24V): Under bed

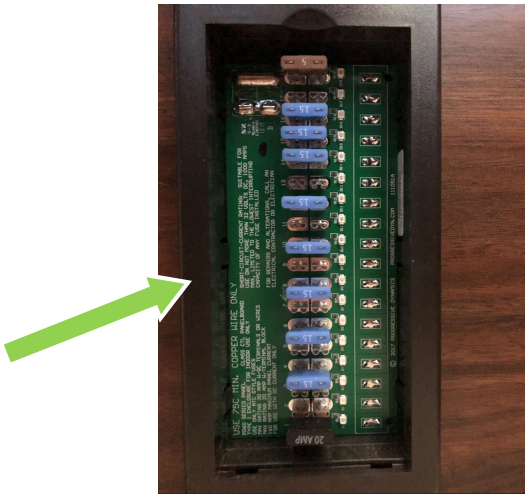
Coach 110V	
Breaker	**Amp**
A/C	20
Charger	30
Incoming from shore or generator	30
Incoming from Inverter	30
Receptacles BedL, BedR, Bunk, TV1, TV2	15
Range & Microwave (power share)	20
Receptacles Bath, Dinette, External, Galley	15



56 Coach 12V Fuses

Location (2020 Navion 24V): Under bed, next to 110V Circuit Breakers

Coach 12V		
#	**Breaker**	**Amp**
1		
2	Pump	20
3		
4	Furnace / Vents	15
5		
6	Refrigerator	15
7		
8	Lamps	15
9		
10	A/V Components	15
11		
12	Lamps	15
13		
14	Tank Heaters	15
15	USB/12V RECP	15
16	USB/Lamps	15
17		
18	LP Leak Detector	5



57

Sprinter Battery Sensor (shunt)

Location: Part of the battery negative terminal

