

OutBack

Power Systems

X-240 Instructions

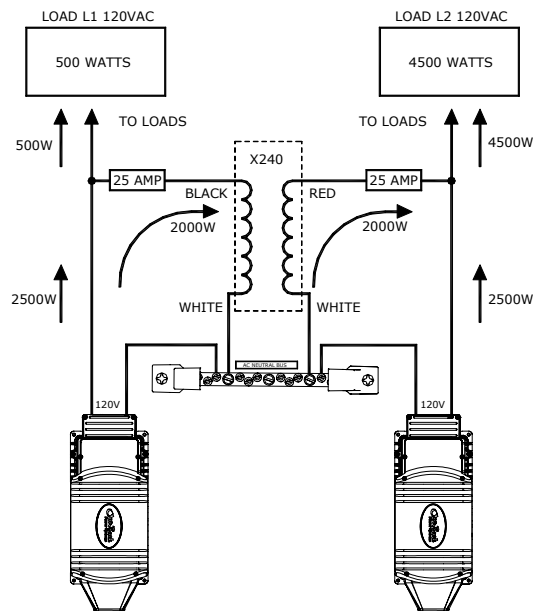


Figure 1

There are three configurations where the X-240 Autoformer can be used.

1: Step up from 120 to 240VAC for powering a deep well pump from a single 120VAC inverter.

2: Step down from 240 to 120VAC for balancing a generator output while charging through a single 120VAC inverter input.

3: The diagram above shows the X-240 installed balancing the output of two FX inverters.

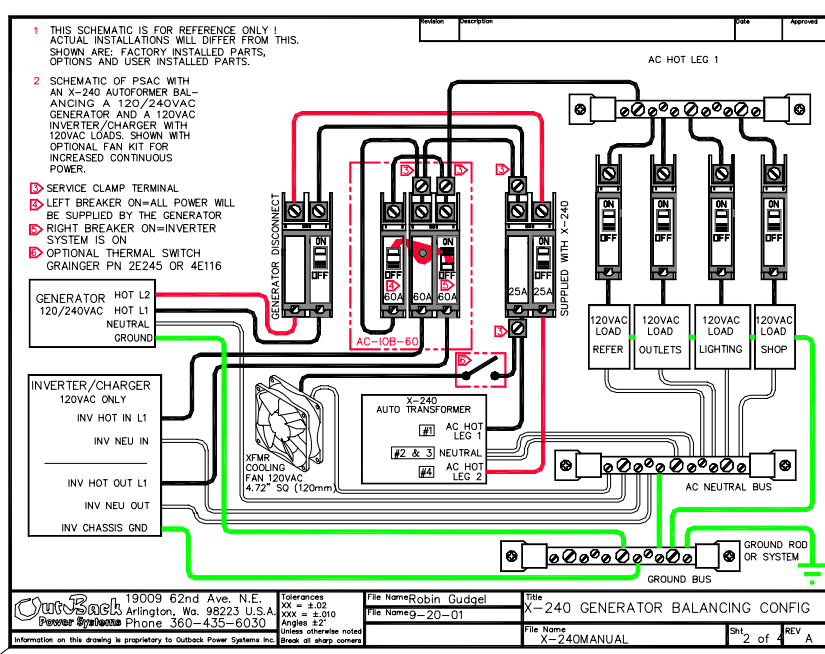
This configuration is what we call OutBack stacking. OutBack stacking allows the system to produce the total power of all inverters at 240VAC. It also allows the power of all the inverters at 120VAC on leg1 or leg2 as required by the loads. To keep things simple, we will talk in terms of two inverters only. Of course you can have up to 10 inverters in one system and it will act the same.

Figure 1 shows current flowing from leg1 inverter through the X-240 to run in parallel with the leg2 inverter output. The result is the leg 1 inverter is producing almost half of the power required to power the load on leg2 and at the same time is supplying power to its own leg1 load.

There are two ways in which the system gets 240VAC as well. When both inverters are awake and producing power, a 240 Volt load like a deep well pump will be powered by both inverters equally. If there is less than 1000 watts on and on leg1, then the leg2 inverter will go to sleep. The X-240 is still active and is in fact producing 240VAC. A small 240VAC load would be powered from the leg1 inverter and the X-240. A deep well pump turning on will wake up the Leg2 inverter in short order. The Leg2 inverter will go back to sleep as soon as the large load on leg2 goes away.

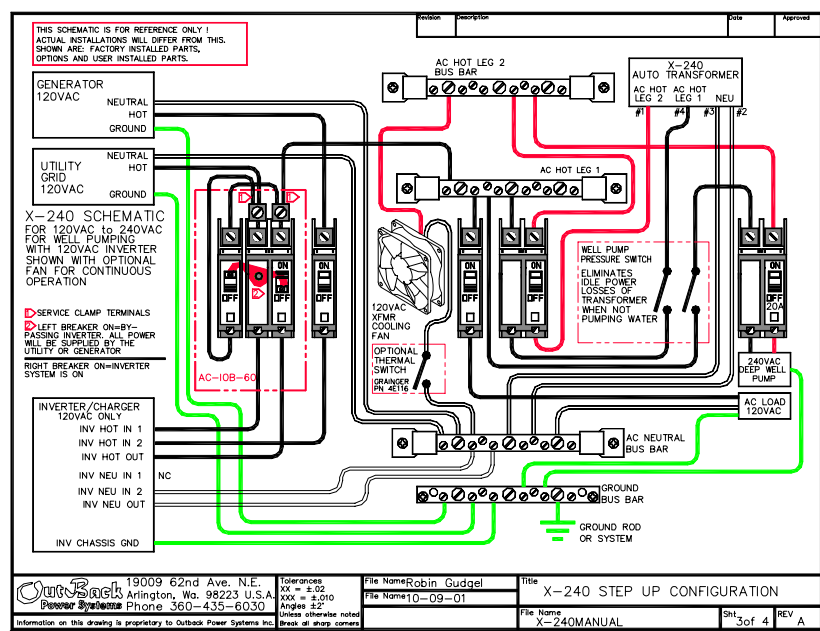
You may need to install a couple of X-240's in parallel in systems that use more than 4 inverters. Fan cooling of the X-240 will add approximately 50% more continuous power through the X-240. You will need 35 amp breakers instead of the 25 amp dual breaker supplied with the X-240. The addition of a fan to cool the X-240 is normally not required due to the transient nature of loads. One application where cooling may be required is when operating as a step down configuration balancing a generator. If you are approaching 4000 watts out of the generator, add a 120VAC fan (X-FAN). You would hook up the fan to the 120VAC charger input bus. This way you will not need a thermal switch. The fan will run anytime the generator runs.

Study the following diagrams for all three configurations.



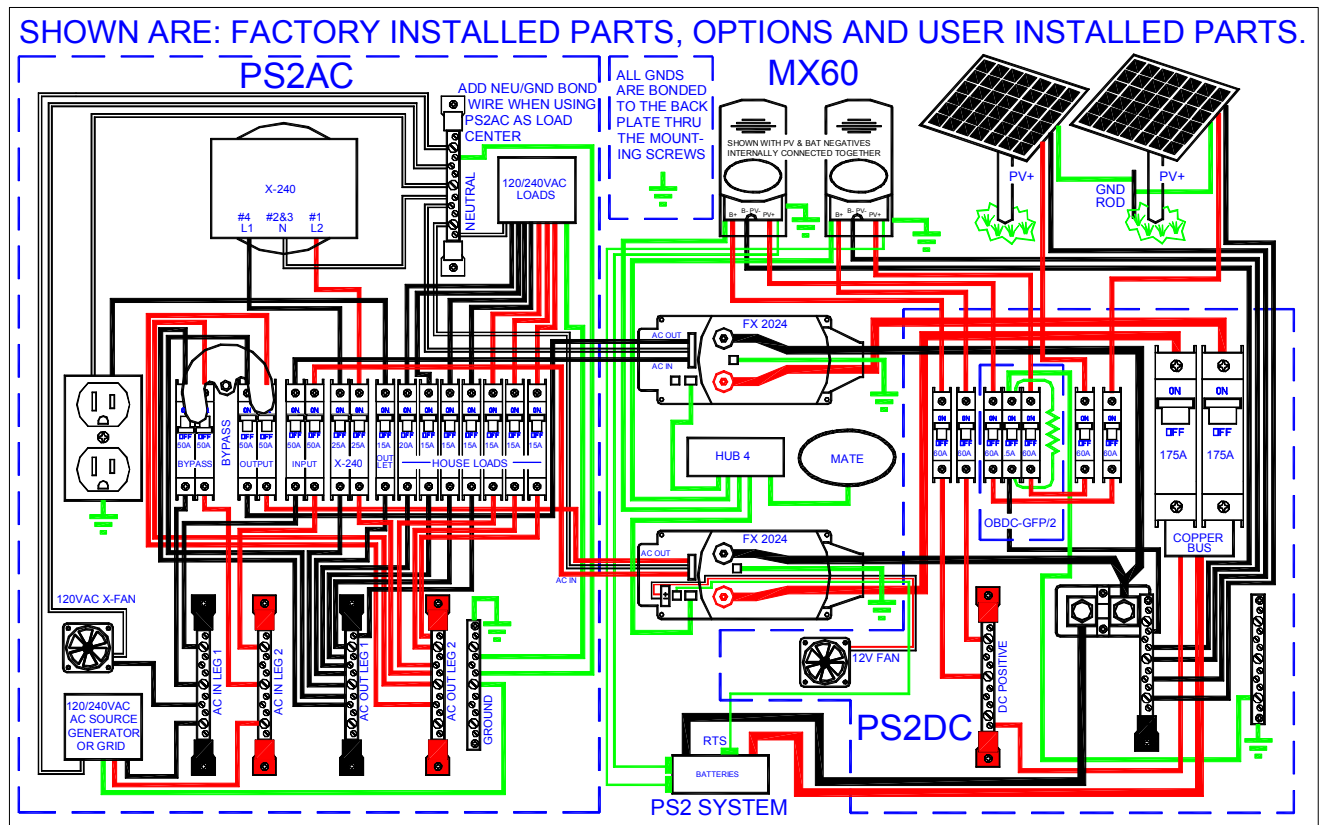
Generator Balancing Configuration.

This takes in 240 VAC From the generator and Steps it down to 120VAC for the AC Input to a single inverter.



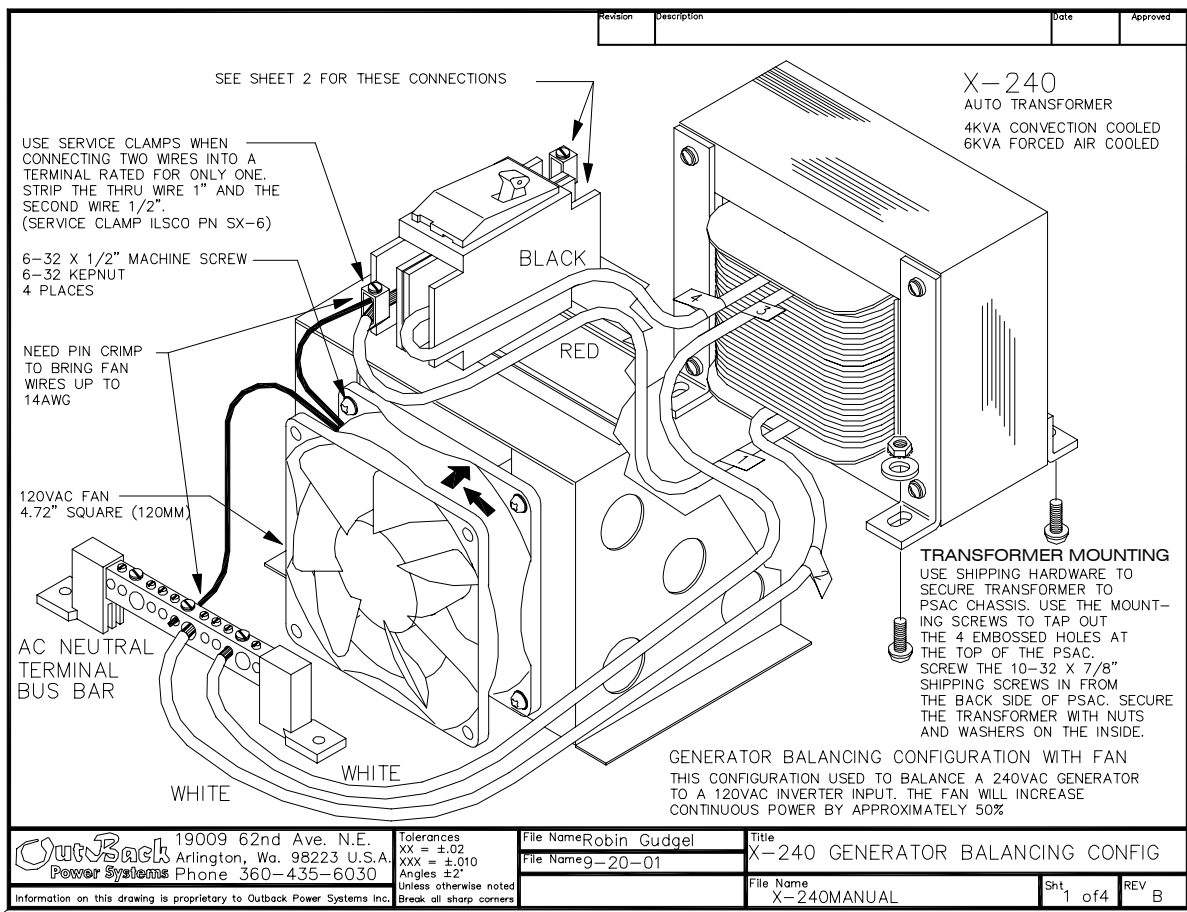
Step up Configuration

The most common use for this configuration is for a single 120VAC inverter to drive a 240VAC deep well pump. The cooling fan is not normally required for this type of load.



Inverter balancing hooked up to the output of two FX inverters.

This configuration will only work with OutBack inverters. Do not attempt this configuration on inverters not designed for it. Damage may result.



Installation into a PSAC showing wire numbers, service crimp placement and breakers.

Hardware:

You will have a variety of hardware for attaching the X-240 in numerous ways.

PSAC mounting: Install the four 10-32 x 7/8" taptite screws from the rear protruding into the enclosure. Set the X-240 over the threads. Secure using four #10 flat washers and four 10-32 kepnuts.

PS2AC onto a PS2MP: Use the four 6mm x 10mm pan head Phillips taptites from inside the PS2AC enclosure down through the X-240 brackets and into the PS2MP.

PS2AC without the PS2MP: Install the four 1/4-20 x 3/4" countersunk screws from the back side of the PS2AC enclosure. These will go through the X-240 mounting brackets. Secure with a 1/4" flat washer and a 1/4" kepnut on each screw.

The 6-32 screws are to hold down a Square D breaker onto a PSAC bracket. No screws are necessary when using the OutBack OBAC25D from CBI (supplied).

For techies that are curious about the X-240 autoformer: It has two identical windings.

Winding one is between leads #1 and #2

Winding two is between leads #3 and #4

The starts for each winding is on #1 and on #3

The X-240 can also be installed as an isolation transformer with a rating of 2000 watts