



# Converter

## SELECT-Cycle



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**WARNING:** This product can expose you to chemicals including lead, which are known to the State of California to cause cancer, and Chromium, which are known to the State of California to cause birth defects and/or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## SCOPE OF THIS MANUAL

This manual describes the operation of the SELECT-Cycle Converter 20 Amp and 30 Amp models. A parts list with illustrations is also included. The electronic version of this manual is available on our website at [www.badgermeter.com](http://www.badgermeter.com).

### IMPORTANT

*Read this manual carefully before attempting any installation or operation. Keep the manual in an accessible location for future reference.*

### Unpacking and Inspection

Upon opening the shipping container, visually inspect the product and applicable accessories for any physical damage such as scratches, loose or broken parts, or any other sign of damage that may have occurred during shipment.

**NOTE:** If damage is found, request an inspection by the carrier's agent within 48 hours of delivery and file a claim with the carrier. A claim for equipment damage in transit is the sole responsibility of the purchaser.

## SAFETY CONSIDERATIONS

### Terminology and Symbols



**DANGER** Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing death or serious personal injury.



**WARNING** Indicates a hazardous situation, which, if not avoided, could result in severe personal injury or death.



**CAUTION** Indicates a hazardous situation, which, if not avoided, is estimated to be capable of causing minor or moderate personal injury or damage to property.

### Safety Rules and Precautionary Measures

Read, understand and follow all of these instructions before using this equipment. Death or severe injury could result from failure to follow the safety rules listed below.

### Hazardous Voltage



**THIS UNIT IS DESIGNED TO PRODUCE HIGH VOLTAGE AND SHOULD BE OPERATED IN A DRY ENVIRONMENT.**

**NEVER ATTEMPT TO SERVICE WHILE RUNNING. MANY PARTS IN THIS CONVERTER OPERATE AT LINE VOLTAGE. DO NOT TOUCH. USE ONLY ELECTRICALLY INSULATED TOOLS.**

### Servicing Information

This equipment should only be serviced by qualified electricians/personnel. Additional instructions are located in the Yaskawa AC Drive-J1000 Manual and must be read and understood before servicing this converter. Contact Wyco (1-800-233-9926) if the above mentioned manual was not included with the order or you can go to [www.yaskawa.com](http://www.yaskawa.com) and download the manual. Before servicing or removing the cover, disconnect the power supply. Wait 5 minutes before removing the cover to make sure that the internal components have had time to de-energize/discharge.

**NOTE:** Some components may remain energized/charged even after being unplugged.

Check that the power LED is not lit. Also check that the output voltage is below 24 Volts before beginning. If the unit is subjected to an excessive shock by being dropped or impacted, or if the enclosure is damaged, it should be disconnected and not used until it has been inspected and repaired by qualified electricians/personnel. Check all cables, plugs, and electrical outlets to be sure that they are not damaged before connecting equipment.

## Power Source

### CAUTION

**CHOOSE THE APPROPRIATE AC POWER SOURCE (230V, SINGLE-PHASE, 50/60 HZ) FOR THE INPUT POWER THIS CONVERTER.**

## Environment

This converter should only be used in a well ventilated environment which will allow heat to dissipate. This will prevent potentially damaging heat build up internally. Do not use in ambient temperatures greater than 105° F (40° C). Keep away from external heat sources.

Keep the converter away from or do not place the converter on top of something that creates excessive vibration.

## DESCRIPTION AND FEATURES

The SELECT-Cycle converter is intended to power three-phase, high-cycle vibrators using a standard, single-phase, 50/60 Hz, 230V power source.

Internally, the converter uses a Variable Frequency Drive (VFD). The VFD converts this single-phase power to the required three-phase 133/200 Hz power required by high-cycle vibrators.

The VFD does this by using the single-phase power to charge a DC bus. It then switches the power on and off very rapidly to simulate the sinusoidal voltage required by high-cycle vibrators.

Three models are available:

- Model #SC1420 has a plug suitable for a four-prong, turn-locking, 20 A, Nema L1420R receptacle.
  - Model #SC1430 has a plug suitable for a four-prong, turn-locking, 20 A, Nema L1430R receptacle.
  - Model #SC620 has a plug suitable for a three-prong, turn-locking, 20 A, Nema L620R receptacle.
- These converters are identical except for the input power plug used. A minimum of a 15 A supply is required.

The wiring for the input plugs is as follows:

Wire Color	Plug Terminal	Purpose
White	X	-115V AC
Black	Y	+115V AC
Green	G	Ground
Not Used	W	Not Used

The frequency of the supplied voltage determines the speed of high-cycle vibrators. This converter outputs three frequencies: 133, 180 and 200 Hz. These frequencies correspond to vibration speeds of 8000, 10,800 and 12,000 vpm. Select this speed with the SELECT-Cycle rotary switch, which can also be switched to the OFF position.

The vibrators plug into two Hubbell (#HBL7410BG) or Leviton (#7420CR), 20 A, 4-pole receptacle outlets. Two plugs that fit these receptacles are Pass & Seymour Model #7411SS and Hubbell #7411GBC.

## OPERATION

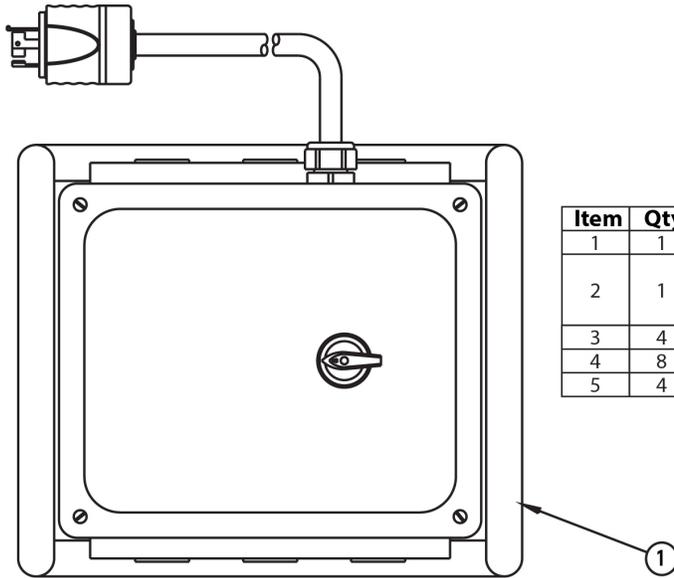
### Startup

1. Make sure that the equipment is in good safe working order.
2. Check all cables, plugs and electrical outlets to verify they are not damaged.
3. Make sure that the converter rotary switch is in the OFF position.
4. Make sure that the vibrators are turned OFF.
5. Apply power to the converter.
6. Set the converter to the desired speed.
7. Turn the vibrators ON and OFF as desired.

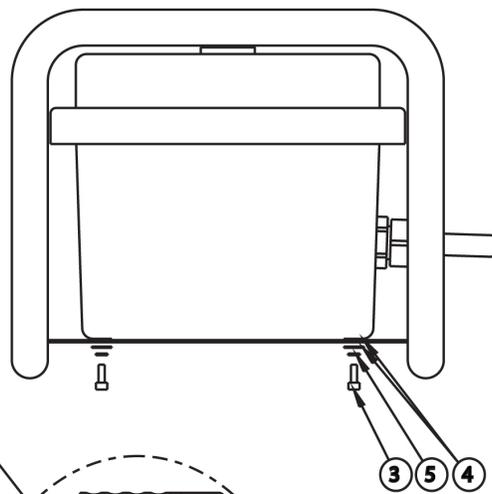
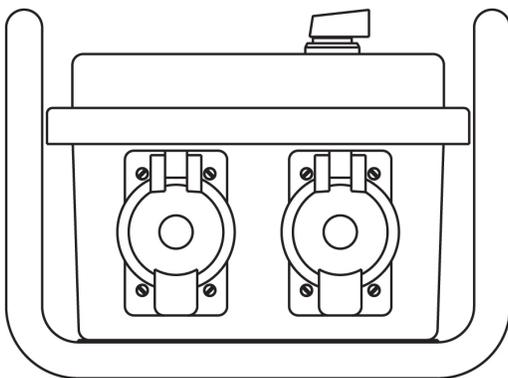
### Shutdown

1. Turn OFF the vibrators.
2. Turn the rotary switch on the converter to the OFF position.
3. Unplug the converter or turn OFF the power to the converter.

## DRAWING AND PARTS LIST



Item	Qty	PartNo.	Description
1	1	416040	Assembly, frame, SELECT-Cycle
2	1	399408	Plug, lock, 20A/125...250V/Gnd, L1420P
		399409	Plug, lock, 30A/125...250V/Gnd, L1430P
		399413	Plug, lock, 20A/250V/Gnd, L620P
3	4	416060	Screw, socket, head, #10-32 x 5/8 in. (15.88 mm)
4	8	416039	Washer, flat, #10
5	4	421226	Washer, lock, spring, #10



Wire Color	Plug Terminal
White	X
Black	Y
Green	G
Not Used	W



L1420P

Wire Color	Plug Terminal
White	X
Black	Y
Green	G
Not Used	W

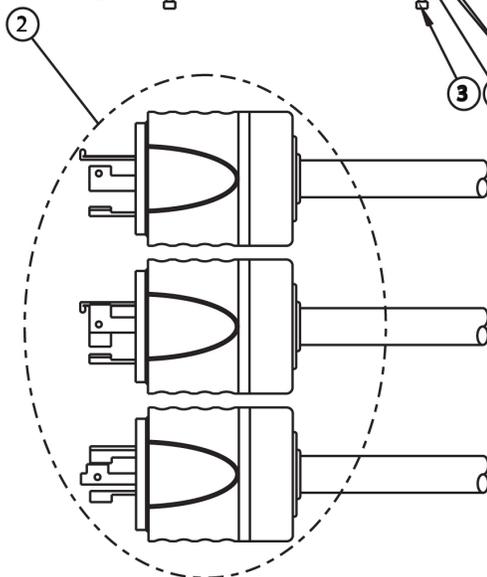


L1430P

Wire Color	Plug Terminal
White	X
Black	Y
Green	G



L620P



## TROUBLESHOOTING

Symptom	Possible Cause	Solution
Ground Fault Interrupter (GFI) repeatedly trips	Short in wires between high-cycle head and switch	Remove head and check wires for wear. Repair as required
	Short in internal high-cycle motor	Replace high-cycle motor stator assembly
	Short in high-cycle cord or plug Internal drive has tripped	Replace cord or plug
Vibrators stop while power is still applied to converter and rotary switch is not off	Internal drive has tripped	Unplug converter for two minutes and plug back in to reset. If the problem persists, have error code on drive checked by a qualified electrician/personnel. Refer to drive manual for resolution
Vibrators do not come up to full speed and converter trips after 2 minutes	Some lower voltage power sources cannot start two vibrators at once	Follow start up procedure in order by powering drive and turning it to desired speed before turning on vibrators
Fuses on converter input have blown	Excess current applied to power drive	The drive will internally shut down when most problems occur. If the fuses blow it is an indication of a serious problem and the converter should be returned to the factory. The high-cycle vibrators should also be thoroughly inspected

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