



Power Supply with Screw Counter

VZOP-STC

Instruction Manual
(July 2017)



For VB-OPC screwdriver

For VZ-OPC screwdriver

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Outline of the VZOP-STC

When performing work that requires screws to be tightened with an electronic screwdriver, the operator must check that the correct number of screws has been used for a particular piece of work in order to prevent the work piece leaving with screws that have not been tightened.

The VZOP-STC screw counter makes use of the OP output signals (normal rotation signal, torque up signal, reverse rotation signal) from the screwdriver to allow the operator to check if any screws require tightening.

The VZOP-STC features a power source (DC 24 V / 0.3 A) to power external equipment as well as an input/output signal to control them. As such, the unit can be connected directly to an interlocking solenoid valve to prevent careless mistakes made by the operator.

(When using a jig that prevents removal of the work piece before the all screws are fully tightened)

The operator can also select a function that reverses (increases) the count if a reverse signal is input to the screwdriver to loosen the screws (selected with mode SW3).

Another option allows the reverse count up time to be set when screws are biting (normally not counted). This time can be set between 0.2 and 1.0 seconds. A switch has been installed on the internal circuit board to allow the normal operator to change the settings. The factory default setting is level 2 (0.2 seconds) (level 1 cannot be used).

Note: Changing the settings can be dangerous. Only change settings after removing the power plug.

The SET signal is set when power is supplied to the unit, meaning that it is possible to provide effective management that is not reliant on the operator during cell production when one operator is required to uses several screwdrivers. The ER BZ output signal warns of the presence of incomplete work when the work check switch is OFF. The unit may be reset or the signal will be output until the work is completed. This signal can be used by attaching a warning buzzer to warn the operator.

VZOP-STC Specifications

Input voltage	: AC 100 V \pm 5% 50/60 Hz
Power capacity	: 100 W
Fuse capacity	: 6 A / 250 V (with one spare fuse)
Dimensions	: 160 (W) x 175 (D) x 84 (H)
Weight	: 1.5 Kg
AC cord length	: 1.8 m (with ground)
Supplied accessories	: 8 terminals, 1 slotted screwdriver

Compatible drivers: **VB-OPC** specification driver

VB-1510-OPC

VB-1510-18-OPC

VB-1820-OPC

VB-3012-OPC

VB-3020-OPC Including PS type

VB-4504PS-OPC

VZ-OPC specification driver

VZ-1510-OPC

VZ-1820-OPC

VZ-3007-OPC

VZ-3012-OPC Including PS type

VZ-4506-OPC

Please read through the electronic screwdriver instruction manual carefully before use and use only as per instructions.

- Installation area

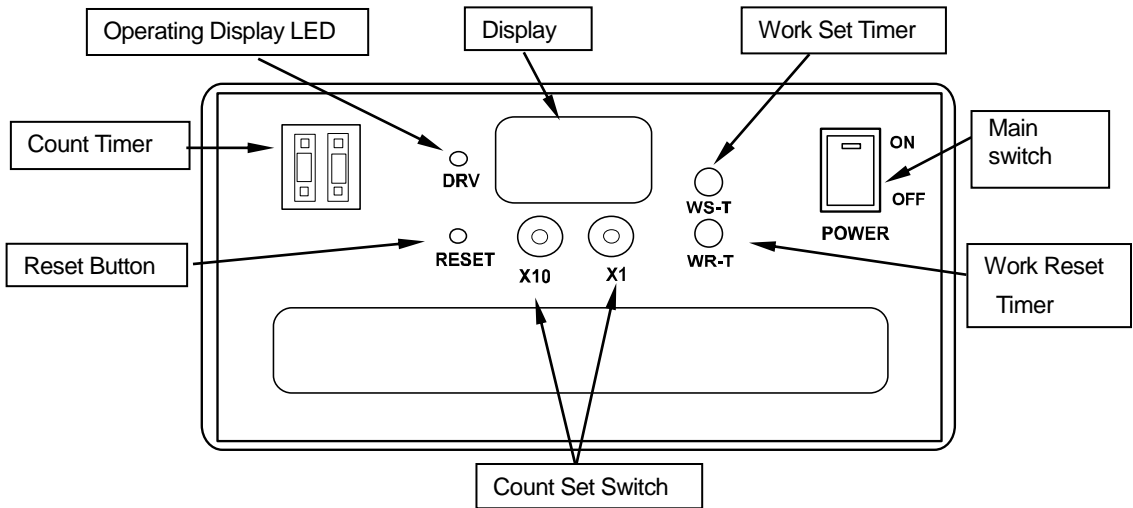
1. Always install a ground leakage breaker and safety breaker to commercial power supplies.
2. Install the unit in an area that is not subjected to dust, dirt or metal fragments.
3. Install the unit in an area that is not subjected to water or oil.
4. Do not place heavy items on top of the unit or stack units on top of one another.
5. Select a safe installation area that is free from vibration.
6. If the unit is to be installed in an elevated location, ensure that it is fixed firmly so that there is no danger of the unit falling.
7. Do not install the unit near other high-voltage equipment or electronically noisy environments.
8. Do not use input and output cables that are longer than required or knot them. Doing so may result in incorrect reading.

- Precautions for use

1. Ensure that the unit is grounded and that the specified rated power and voltage are used.
2. Ensure that loads connected to the output terminals on the rear panel terminal block do not exceed the rated load.
3. If external equipment connected to the +DC 24 V output terminal or input/output terminals on the rear panel terminal block are affected by the electromagnetic induction of relays and solenoid valves coils, noise prevention in the form of reverse voltage absorbing diodes should be used. Equipment may operate incorrectly or malfunction if noise prevention is not used.
4. Do not connect the +24 V DC terminals on the rear panel terminal block to any output terminal or GND terminal.
5. If the unit's functions are used to power external equipment with an external power source, a common GND terminal should be used. Equipment may operate incorrectly or malfunction if a common GND is not used.
6. Do not provide additional voltage to the input or output terminals. Additional voltage will result in a malfunction.
7. Use the unit in temperatures of 5°C to 40°C and 80% or less humidity (with no condensation).
8. Always hold the plug when connecting or removing the power cord or driver cord.
9. Do not pull the cords, drag them across oil or sharp edges, or place heavy objects on top of them. Doing so may result in severed wires or malfunctions.
10. If a malfunction occurs and the unit overheats or the fuse blows, stop using the unit immediately and turn off the main power switch, remove the power cord from the power outlet and bring the unit to our service department.

11. When tightening screws on plastic work pieces that may have a lot of static electricity buildup, remove electricity before starting work. If electricity is not removed, static electricity may flow from the end of bit, resulting in incorrect operation.
12. Do not drop or subject the unit to strong shocks.
13. Do not use drivers other than those manufactured by HIOS. Doing so may result in a malfunction.
14. Turn the main power switch OFF if the unit is not used for a prolonged period of time, and remove the power plug.
15. Never dismantle or modify the unit by yourself. Doing so may result in a malfunction and void the warranty or make it impossible to be repaired.

Front Panel



Main SW : Turns the power to the counter on and off. The LED display will turn green when the power is on.

Reset Button : Click once during or after setting the screw count. The set value will be displayed. This has the same function as the reset signal on the rear panel terminal block.

Operating Display LED : Lights up when solenoid valves have been set by the set signal on the rear panel terminal block.

Display : Displays the set number of screws. The number counts down as screws are tightened and show how many screws are remaining.

Count Set SW : This switch sets the number of screws to be tightened, and can be set from 1 to 99 screws. Set units of 10 and 1 individually. Click the reset button once during or after setting the number of screws to confirm the screw count. Rotate the supplied slotted screwdriver to change settings.

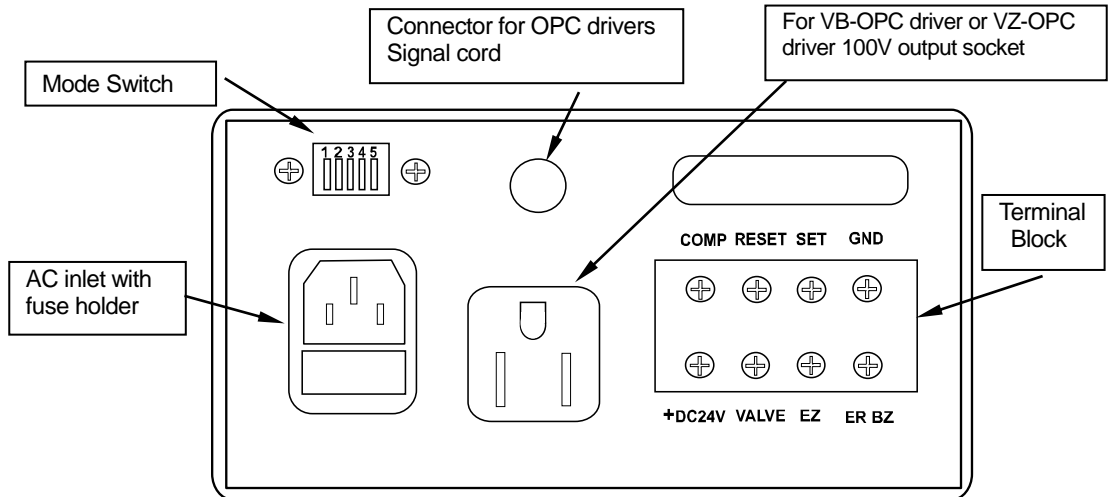
Count Timer : This timer prevents incorrect screw counts when tightening a screw that has already been tightened a second time. Use the digital switch to set the time in 1/100 increments to be ignored for the count when using the driver to tighten screws that have already been tightened (0.01 to 1.00 seconds).

Work Set Timer : Adjusts for the time between the input set signal on the rear panel terminal block and start of operation of the solenoid valve (0.1 to 3 seconds).

Work Reset Timer : Adjusts for the time between the completion of work and when the solenoid valve turns off. A buzzer sounds at the same time (0.1 to 3 seconds).

* Caution!! Do not apply excessive force when setting volume knobs or switches. Doing so may result in a malfunction.

Rear Panel



GND : GND for input and output.

SET : The Operating Display LED on the front panel will light up and the VALVE signal turned ON when the signal received from the external switch when the work is set is shorted to ground and the time set on the set timer elapses.

RESET : The unit is reset when work is stopped as a result of defective work and GND is shorted.

COMP : Output will continue for 0.1 seconds after the screws have been tightened and the buzzer has finished sounding.
(Open collector output DC 30 V / 0.1A)

ER BZ : Output will continue until work is complete or the unit is reset when the work piece is removed during operations (before work is complete). A warning can be generated by connecting an error buzzer.

BZ : A signal generated in time with the buzzer when the final screw has been tightened (open collector output DC 30 V / 0.1A).

VALVE : Used after the set input signal has been received and the solenoid valve (DC 24 V) has started operating. Connect the + terminal of the solenoid valve to the +DC 24 V terminal block and – terminal to the VALVE terminal on the rear panel. If other voltages are used, use an external power source with a

common GND terminal (open collector output DC 30 V / 0.1A).

+DC 24 V : Power source for powering external equipment. The power capacity is DC 24 V / 0.3A.

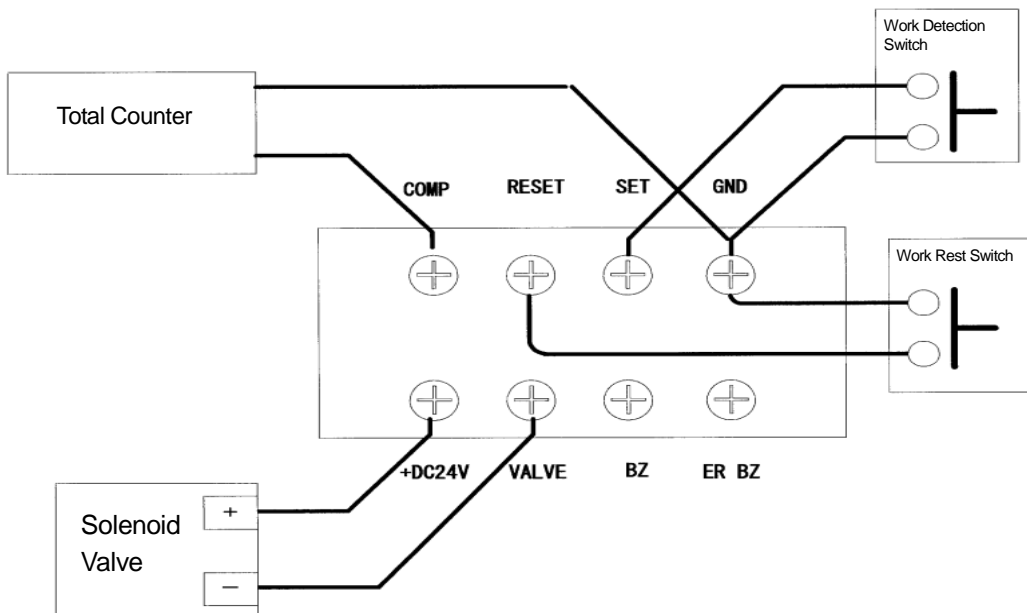
Mode Switches

- 1 : The work complete notification buzzer (built in) no longer sounds if switched OFF.
- 2 : The panel display turns off if switched OFF.
- 3 : The reverse rotation count up operation turns off if switched OFF.
- 4 : When switched OFF, the unit will only work once the set input signal is received.
- 5 : Unused.

Basic Operations

Example 1: When a solenoid valve is used to hold work placed by the operator on the bench and the work is released by the valve and moves to the next production process once all screws have been tightened. (The work piece is not released until all screws have been tightened).

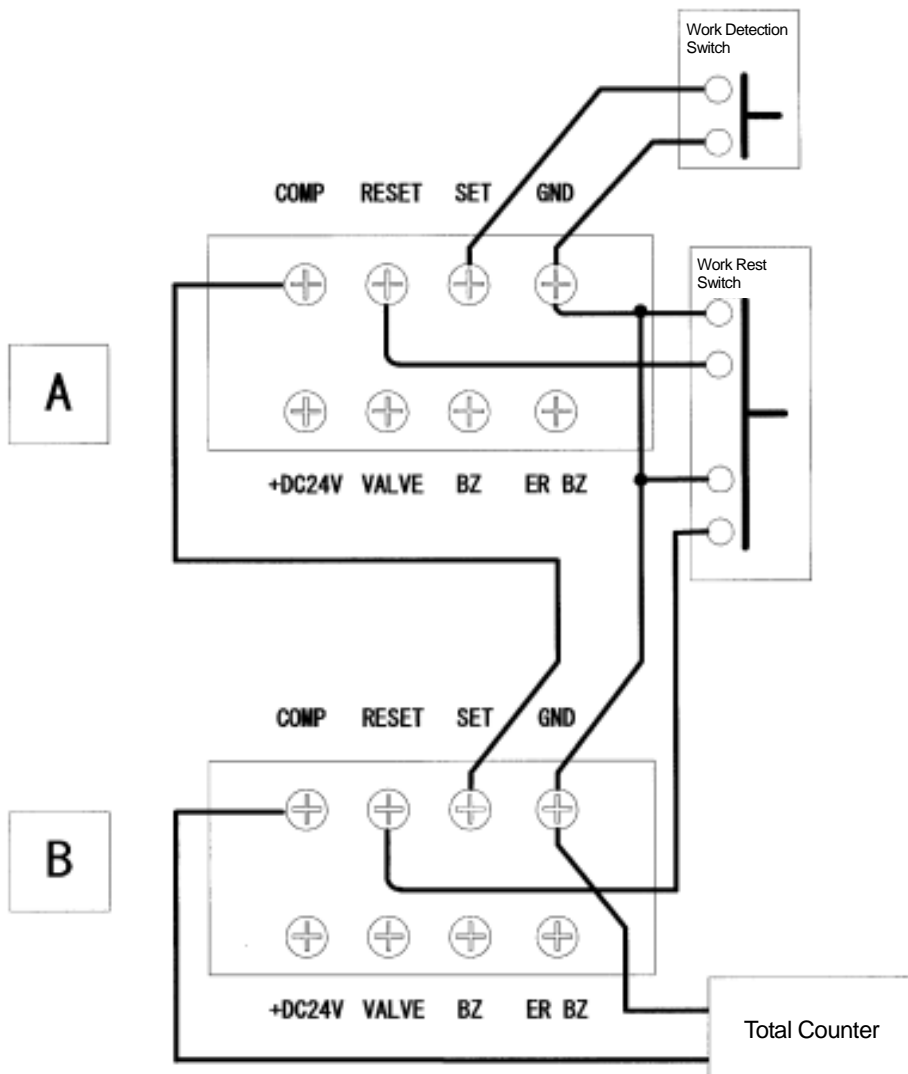
1. Connect the external switch to SET and GND on the rear panel terminal block (no polarity if an external switch is used and common GND if an open collector is used before connecting the output signal to SET).
2. Connect the + terminal of the solenoid valve to +DC 24 V, and – terminal to VALVE on the rear panel terminal block.
3. Connect the switch (contact point) for releasing the work if operations are stopped to RESET and GND.
4. Connect the driver and adjust CN-T to a position that does not count down even if the driver is used to further tighten screws that have already been tightened.
5. Adjust WS-T to the time taken for the solenoid valve to operate after the work piece arrives.
6. Adjust WR-T to the time taken to turn the solenoid valve OFF after all screws have been tightened.
7. Connect a commercially available counter to the COMP signal and GND on the rear panel terminal block to manage the total number of completed work pieces.



Basic Operations

Example 2: When one operator is using two drivers and two varieties of screws and the work piece is not secured. When you only want to use one driver.
(2 VZOP-STC units are being used and are named A & B respectively)

1. Connect the external switch to SET and GND on the rear panel terminal block ((no polarity if an external switch is used and common GND if an open collector is used before connecting the output signal to SET).
2. Connect both A and B GND (common GND).
3. Connect A COMP and B SET.
4. Set A mode SW1 to OFF (so that the buzzer for A does not sound).
5. Connect a total counter to B COMP and GND.



China RoHS2 Table

If you are asked by China Customs, please show this table to them.

有害物质名称及含量标识格式						
产品中有害物质的名称及含量						
部件名称	有害物质					
	铅 (Pb)	镉 (Cd)	镍 (Ni)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电路板总成	×	○	○	○	○	○
外壳	○	○	○	○	○	○
螺丝刀头	×	○	○	○	○	○
-						
-						
-						
-						
-						

本表格依据SJ/T 11364 的规定编制。
 ○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下。
 ×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求。

In addition, the China RoHS marks also is required at the product and product box.

At the product, you can find it at the bottom and it is marked on the product box.

If you cannot find the mark, please ask your distributor.

In case of emergency, please cut the mark below and stick at the bottom of product and on the product box.

China RoHS mark



Note: minimum size of China RoHS mark is 5mm at outer diameter