C H A P T E R ②

Getting Started

The information in this chapter will enable you to:

- ❑ Verify that each component of your system has been delivered safely
- ❑ Properly configure and *check out* the system

What You Should Have

Inspect your ZX shipment upon receipt for obvious damage to its shipping container. Report any damage to the shipping company immediately. Compumotor cannot be held responsible for damage incurred in shipment.

Part/Quantity	Available Types
ZX or ZXF Drive	ZX600 (120VAC or 240VAC) or ZX900 (240VAC)
Motor	ZX605, ZX606, ZX610, ZX620, ZX630, ZX640, ZX805, ZX806, ZX810, ZX820, ZX830, ZX840, ZX910, ZX920, ZX930, or ZX940
Motor Cable	25 ft., 50 ft., or 100 ft.
Resolver Cable	25 ft., 50 ft., or 100 ft.
ZX Drive User Guide	88-011631-01 D
ZX Software Reference Guide	88-011798-01 E

Ship Kit (ZX System)

Part/Quantity	Available Types
ZX Drive or ZXF (1)	ZX600 (120VAC or 240VAC) or ZX900 (240VAC)
ZX Drive User Guide	88-011631-01 D
ZX Software Reference Guide	88-011798-01 E

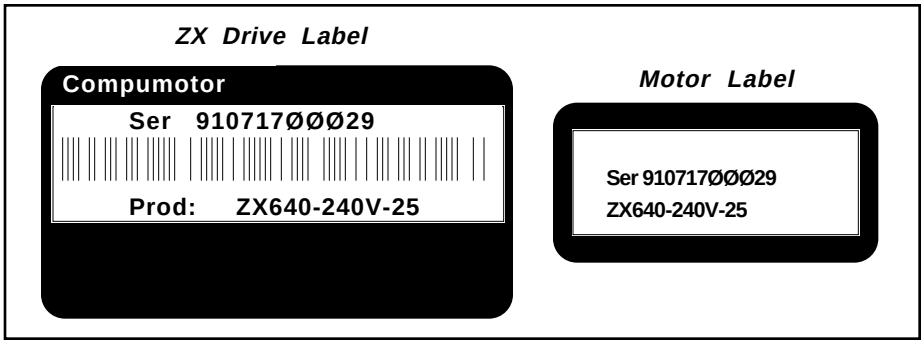
Ship Kit (ZX Indexer/Drive Only)

Drive/Motor Configuration

Compumotor configures ZXs according to the motor that you order. *If you purchased the ZX to run 600 Series motors (ZX605, ZX606, ZX610, ZX620, ZX630, and ZX640), it will not run 800 Series (ZX805, ZX806, ZX810, ZX820, ZX830, and ZX840) or ZX900 series motors (ZX910, ZX920, ZX930, and ZX940). All ZX Series drives* ***must*** *be run with the same ZX Series motors.* You can determine which motor you have by checking the model numbers on the drive and motor labels.

The ZX600 and ZX800 are available in a ***120VAC version*** and a ***240VAC version***. The ZX900 Drive is available in a **240VAC** version only.

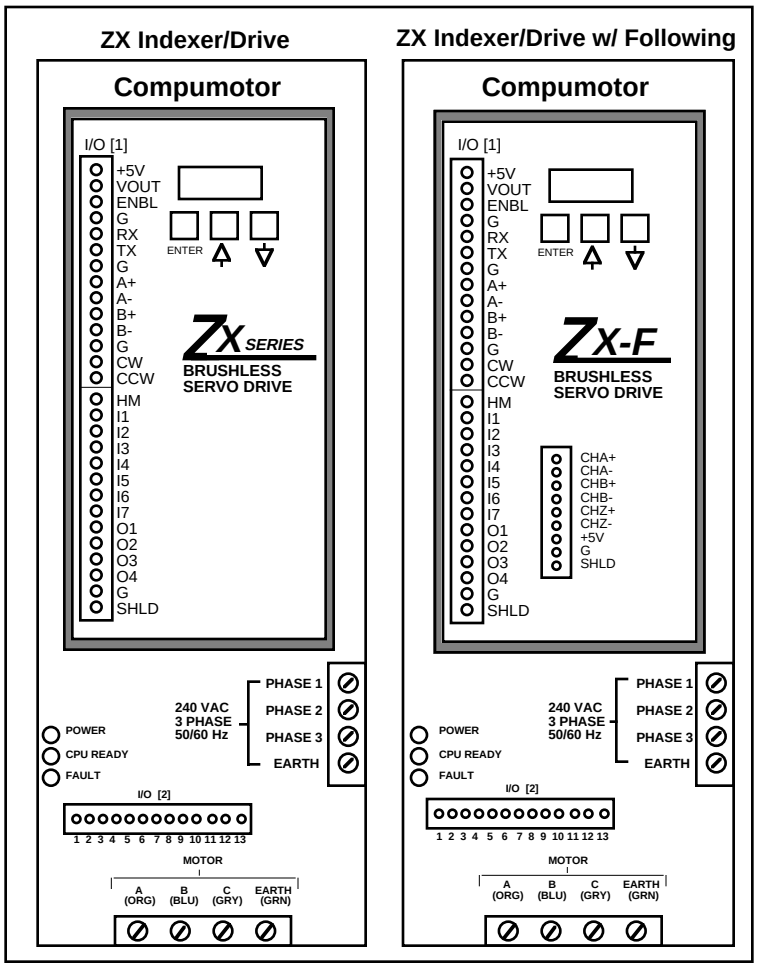
☛ Be sure you have the drive version you ordered before you connect power to the drive. The model numbers on the drive and motor labels identify the 3-phase input power level (120V or 240V). ***The model numbers must match***.



Product Labels

ZX/ZXF Front Panels

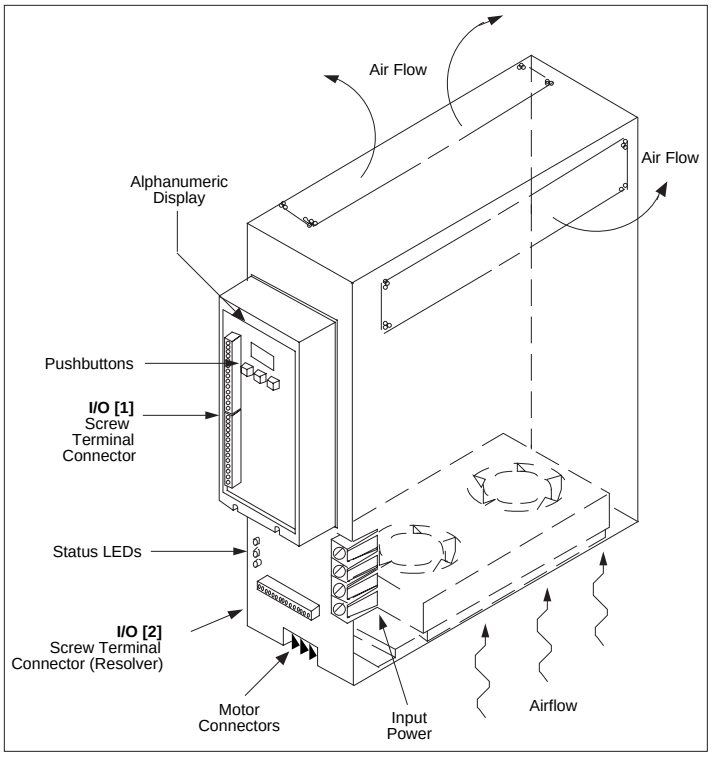
The front panels for the ZX and ZXF are different. ***The ZX's front panel is used throughout this user guide to demonstrate wiring instructions.*** *The ZXF's front panel will be shown when following functions are described.*



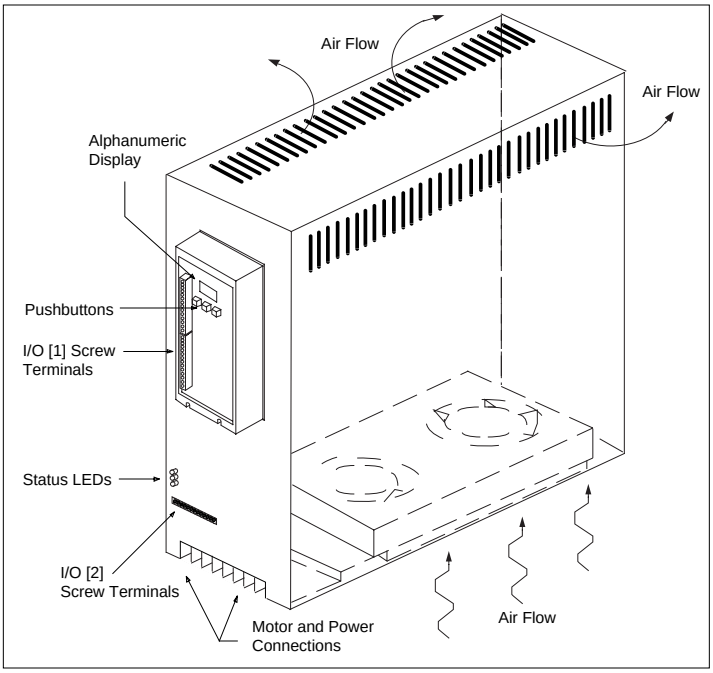
Front Panels—ZX and ZXF

Check-Out Procedure

This section provides a basic ***bench test*** of the ZX. **You must complete the steps in this chapter before you permanently install the ZX and connect the motor to its intended load.**



ZX600/ZX800 Bench Test



ZX900 Bench Test

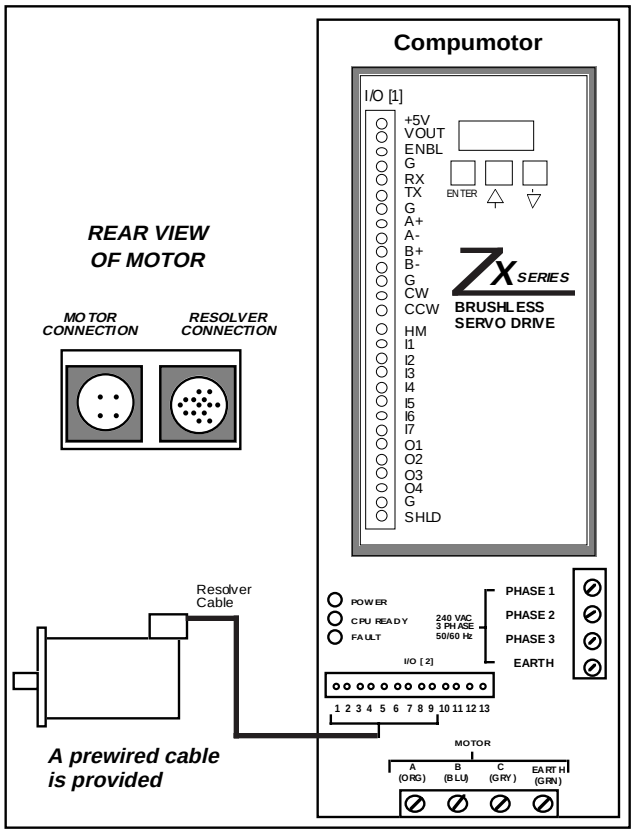
Tools

To complete the Check-Out Procedure, you must have the following tools:

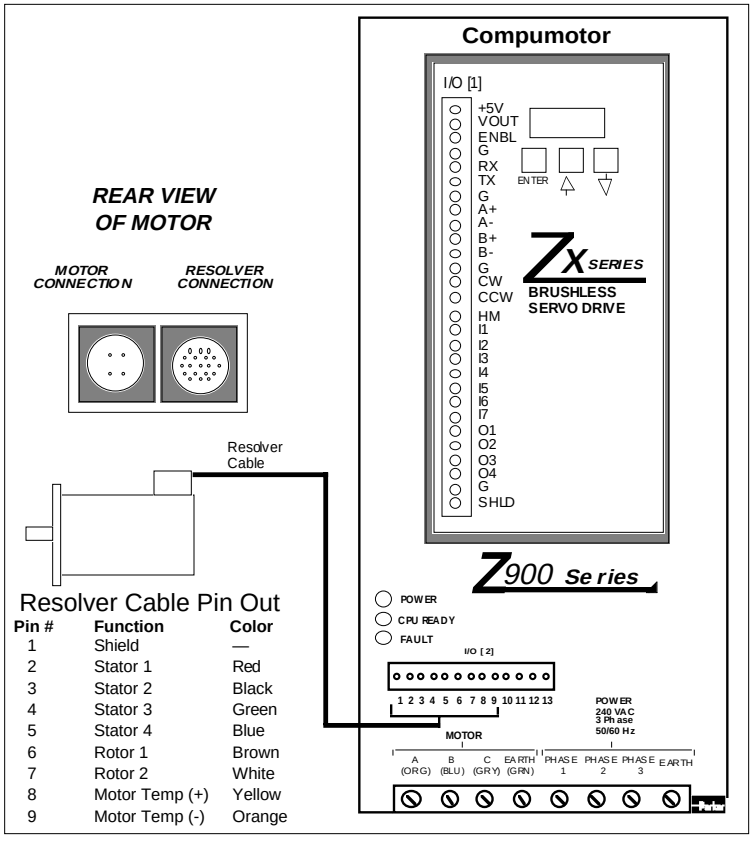
- ❏ Phillips-head screwdriver
- ❏ Large flat blade screwdriver
- ❏ Small flat blade screwdriver
- ❏ Power cable

Step ①

Connect the resolver cable between the ZX **I/O[2]** connector and the servo motor as shown in the following figures (for ZX600/ZX800 or ZX900).



ZX600/800 Resolver Cable Connection



Resolver Cable Pin Out

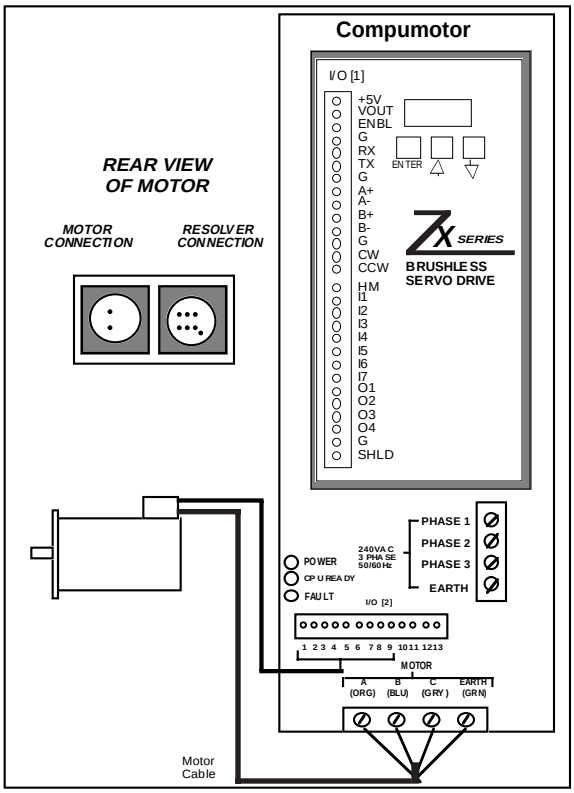
Pin #	Function	Color
1	Shield	—
2	Stator 1	Red
3	Stator 2	Black
4	Stator 3	Green
5	Stator 4	Blue
6	Rotor 1	Brown
7	Rotor 2	White
8	Motor Temp (+)	Yellow
9	Motor Temp (-)	Orange

ZX900 Resolver Cable Connection

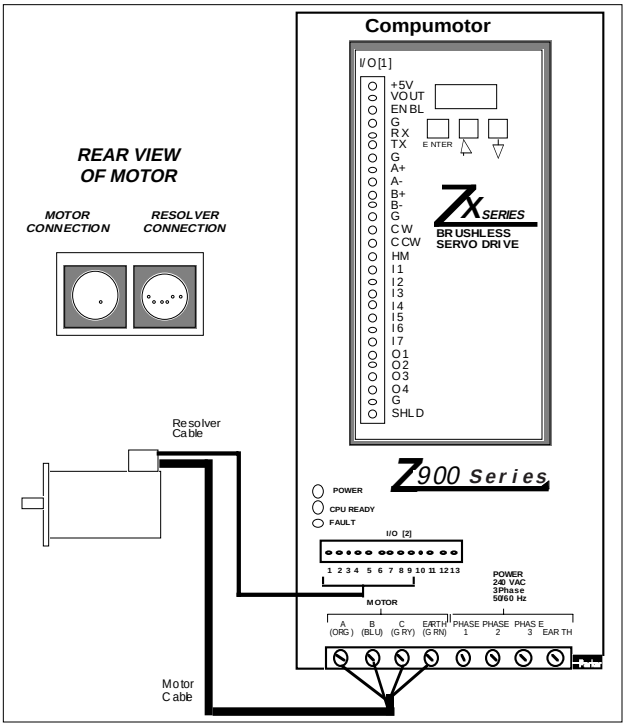
Step ②

Connect the cable between the ZX motor connector and the servo motor. ***Match the color of the wire with the proper terminal.***

> ***WARNING***
>
> Never disconnect the motor cable with the power on. The motor produces lethal voltages. Be sure the motor is properly grounded to reduce the chance of electrical shock.



ZX600/800 Motor Cable Connection

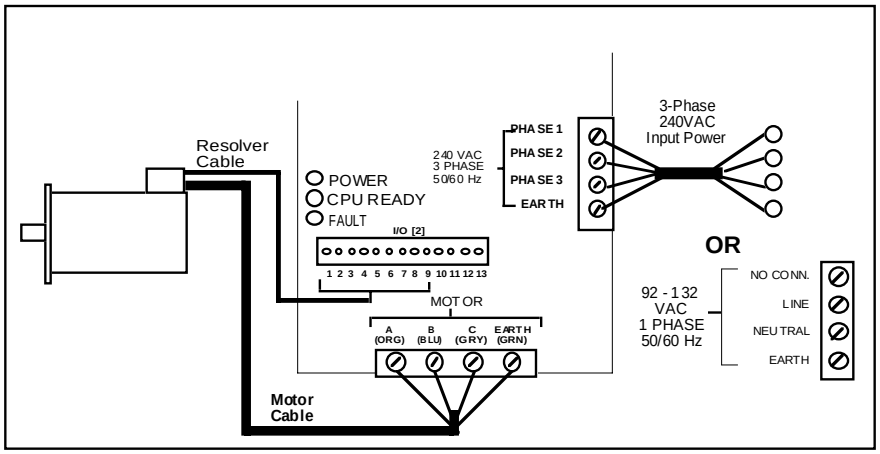


ZX900 Motor Cable Connection

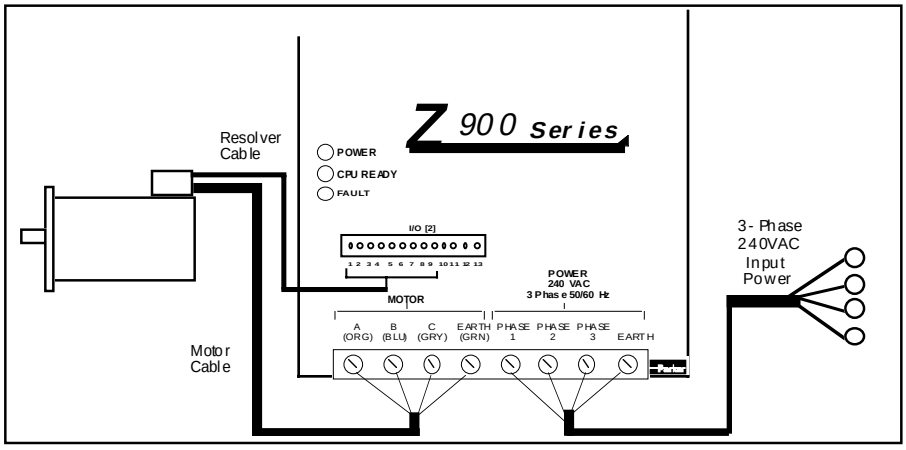
Step ③

Measure and verify your incoming 3-phase 240VAC (*or 120VAC*) line with a voltmeter. Connect, ***but do not energize***. The ZX is designed to operate best on a balanced 3-phase input. Additional wiring options for this connection are provided in *Chapter ③ Installation*.

> ***WARNING***
> Be sure the drive is properly grounded to reduce the chance of electrical shock.



ZX600/800 Power Cable Connection



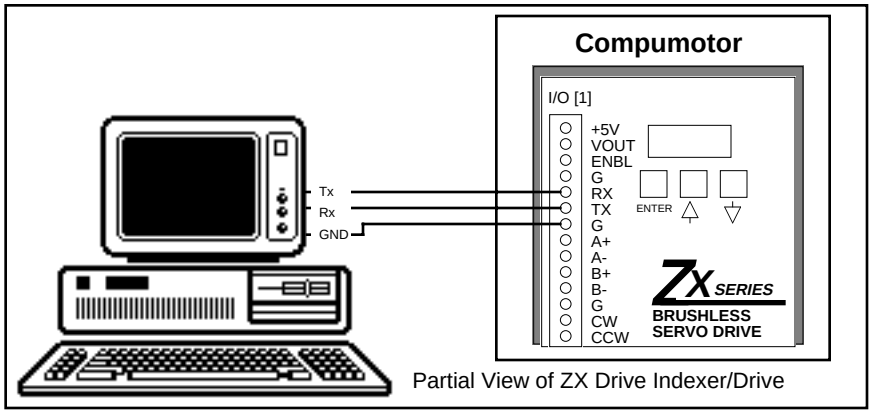
ZX900 Power Cable Connection

Step ④

Connect a terminal to the RS-232C connector (**I/O[1]**) using the **Rx** (receive), **Tx** (transmit), and **G** (ground) connections. The basic communications parameters are listed below:

- ❏ Baud Rate: 9600
- ❏ Data Bits: 8
- ❏ Stop Bits: 1
- ❏ Parity: None
- ❏ Full Duplex mode

Refer to the operations manual that accompanied your terminal for instructions on setting the communication parameters listed above. ***Chapter ③ Installation*** *provides detailed RS-232C information for the ZX.*



RS-232C Connection

Be sure that the ZX's ***ENBL*** *input (****I/O [1]****) is jumpered to ground. The ZX is shipped with the* ***ENBL*** *input grounded.*

If you use a host computer to send characters to the ZX via RS-232C at a high rate, you may need to insert time delays (***pacing characters***) to ensure that the ZX has enough time to process each character. The ability to set a variable time delay is available in most terminal emulator packages.

Step ⑤ **Apply power to all system components now**. The following response should appear on the terminal:

```
*READY
>
```

The following response should appear on the ZX's 4-digit display:

```
OK
```

Step ⑥ You must now disable the hardware limits. Type the following command to disable the limits: **`> LD3`**

To check the state of your hardware limits command, enter the following command: **`> 1LD`**

You should receive the following response: **`*3_No_Limits_Enabled`**

Step ⑦ Enter the following commands to move the motor 25,000 steps.

Command	Description
`> A1Ø`	Sets acceleration to 10 rps^2
`> AD1Ø`	Sets deceleration to 10 rps^2
`> V1`	Sets velocity to 1 rps
`> D25ØØØ`	Sets distance to 25,000 steps
`> G`	Initiates motion

Since the default drive resolution is 5,000 steps/rev, the motor should have moved 25000 steps or 5 revolutions.

This completes the basic configuration tests. The successful completion of this test means that you wired the resolver, motor, terminal (optional), and power connections correctly. The components of your system are functioning properly. If the motor does not move as commanded, check your connections and try the test again. In Chapter ③ you will install and test the rest of your system's components.

ZXF Option

The ZXF can be used as an indexer. However, the ZX cannot perform following functions. The ZXF is configured as an indexer when you receive it from the factory. You can use software commands to enter or exit the Following mode. In *Chapter ③ Installation*, encoder installation and use of the Following mode are explained. *Chapter ④ Application Design* provides some practical examples of Following mode operation.