

CHAPTER ②

Getting Started

The information in this chapter will enable you to:

- Verify that each component of your system has been delivered safely
- Become familiar with the system components and their interrelationships
- Ensure that each component functions properly by bench testing

What You Should Have

Inspect the S Drive upon receipt for obvious damage to its shipping container. Report any such damage to the shipping company. Parker Compumotor cannot be held responsible for damage incurred in shipment. The following items should be present and in good condition.

Part	Part Number
Power Cable (S8 has 2 cables)	44-000054-01
S Drive S6 (Low) or S8 (High)*	
S Drive User Guide	88-011483-01A
Motor	Variety of sizes available**

*The S8 Drive includes a fan kit

**Refer to subsequent tables in this chapter for specific motor sizes

High-Power and Low-Power Drives

You should verify which type of S Drive you have before proceeding with this chapter. The high-power version of the drive (**S8**) provides bipolar 0 - 8 amps/phase (up to 2,400 oz-in). The low-power version of the drive (**S6**) provides bipolar 0 - 6 amps/phase (up to 400 oz-in). You can determine which drive you have by checking the label on the side of the drive. The label identifies the unit as **S8 DRIVE** or **S6 DRIVE**. You must be aware of the drive's type to set the motor current correctly (using DIP switches). There are different DIP switch settings for the two drive types. If you did not receive the drive type that you ordered, please call your local Automation Technology Center (ATC) or distributor.

Quick Test

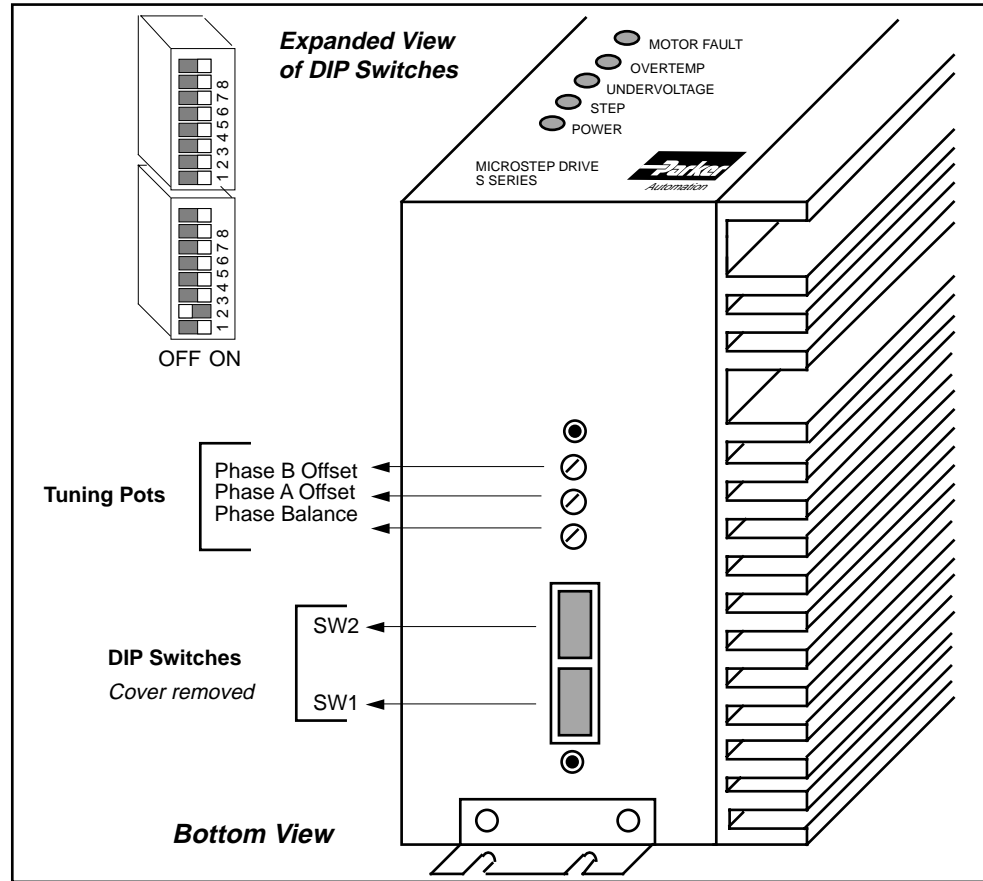
This section will show you how to set the S Drive's DIP switches and wire the unit to quickly ensure that your system is operating properly. Detailed installation instructions are provided in *Chapter ③ Installation*. You will need the following tools to complete these steps:

- A Phillips head screw driver (to move mounting brackets)
- A flat screw driver (to adjust DIP switches and make connections)

CAUTION

Never adjust the DIP switches with a pencil.
Lead from the pencil may contaminate the drive.

The figure below shows the location of the S Drive's DIP switches.



DIP Switch & Tuning Pot Locations

① Set DIP Switches

The S Drive has two sets of DIP switches. Each set of DIP switches has eight individual switches. The first set of switches will be referred to as **SW1** and the second set as **SW2**. The individual switch will be preceded by the # symbol. Hence, the third switch on **SW1** will be referred to as **SW1-#3**, while the third switch on **SW2** will be referred to as **SW2-#3**.

The first thing that you must do is set the motor current on the S Drive to match the motor that you are using. Use the directions below to set the DIP switches for your motor. (Drive/Motor systems are shipped from the factory with the motor current set for that system. Drive-only products are shipped from the factory with the motor current set at the minimum current level.)

- ① **Be sure that power is not applied to the unit.**
- ② Remove the panel that covers the DIP switches.
- ③ Set the motor current for your Compumotor using the following tables: **SW1-#1** thru **SW1-#6 control motor current**. Make the required adjustments to match the drive and motor types that you are using.

Motor Size	Current	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6
S57-51S	1.18	off	off	on	on	off	off
S57-51P	2.28	off	on	on	off	off	off
S57-83S	1.52	off	on	off	off	off	off
S57-83P	3.09	on	off	off	off	off	off
S57-102S	1.71	off	on	off	off	on	off
S57-102P	3.47	on	off	off	on	off	off
S83-62S	2.19	off	on	off	on	on	on
S83-62P	4.42	on	off	on	on	on	off
S83-93S	2.85	off	on	on	on	on	off
S83-93P	5.62	on	on	on	off	on	on
S83-135S	3.47	on	off	off	on	off	off
S83-135P	6.00	on	on	on	on	on	on

S: Series Configuration P: Parallel Configuration

Setting S6 Motor Current (S Series Compumotor Motors)

Motor Size	Current	SW1-#1	SW1-#2	SW1-#3	SW1-#4	SW1-#5	SW1-#6
S106-178S	6.02	on	off	on	on	on	on
S106-178P	8.0	on	on	on	on	on	on
S106-205S	3.55	off	on	on	on	off	off
S106-205P	6.99	on	on	off	on	on	on
S106-250S	6.02	on	off	on	on	on	on
S106-250P	8.0	on	on	on	on	on	on

S: Series Configuration P: Parallel Configuration

Setting S8 Motor Current (S Series Compumotor Motors)

The previous tables show motor current settings for series and parallel motor configurations. Refer to *Chapter 3 Installation* for specific motor configuration instructions. **Compumotor ships all S Drive systems in series configurations.**

If you use a *non-Compumotor motor*, special precautions and instructions are required. Read the instructions in *Chapter 3 Installation* for non-Compumotor motors thoroughly before attempting to set the motor current or wire your motor.

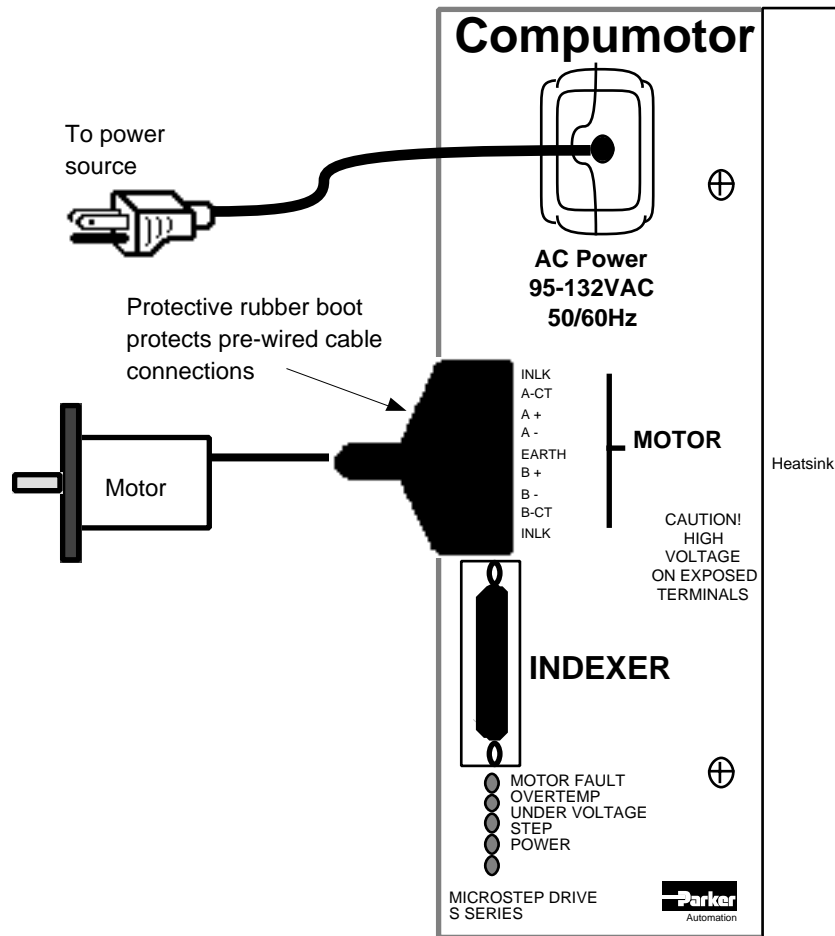
- ④ To test the system, you will use the Automatic Test function. **DIP switch SW2-#8 controls this function.** Turn **SW2-#8 on** to enable the function. The Automatic Test function rotates the motor in an Alternating mode approximately 6 revolutions at 1 rps (12 inches at 2 ips if a L20 Linear Motor is used).
- ⑤ After you have properly set motor current (**SW1-#1** thru **SW1-#6**) and the Automatic Test function (**SW2-#8**), screw the plate that covers the DIP switches back onto the drive. **Do not change any other DIP switch settings.**

② Attach the Motor

WARNING

POWER MUST BE OFF before cabling the drive.
Lethal voltages are present inside the drive and on its screw terminals.
 When connecting the motor to the drive, be sure the connector is firmly seated.

The S Drive motor is pre-wired in series. Plug the pre-wired motor cable into the **Motor** connector on the drive. If you use a non-Compumotor motor, refer to *Chapter 3 Installation* for instructions on wiring the motor to the drive. **Do not connect the motor to the load at this time.**



Test Configuration (S6 Drive Shown)

③ Apply Power

The power cable is a pre-wired, molded AC cord. Complete the following steps to apply power.

- ① Plug the pre-wired cable into the power connector on the drive.
- ② Plug the other end of the cable into a 115VAC power source. *If you are using the S8 Drive (high power), you must also plug in the fan's power cable to 115VAC. The fan must be on when power is applied to the drive.* The motor should rotate in an Alternating mode approximately 6 revolutions at 1 rps. The **green** Power LED should be on.
- ③ **To stop the motor, you must unplug the power cable from the power source. The motor may continue to run for a few seconds after you remove power.**

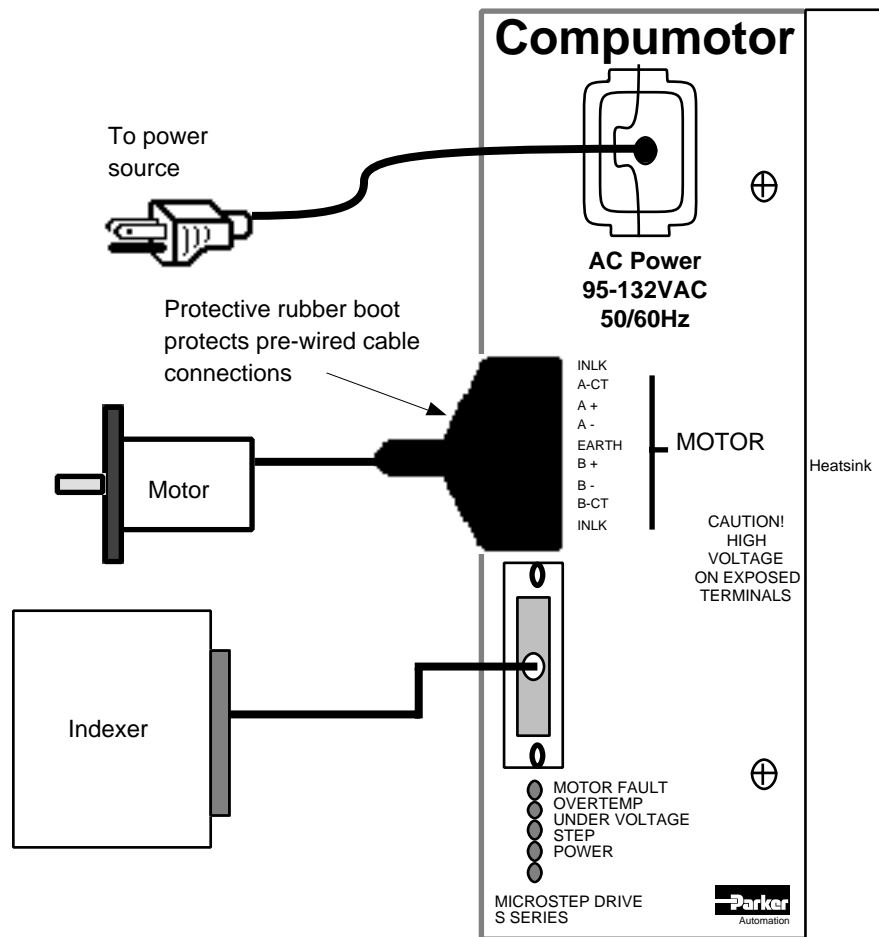
The successful completion of this test indicates that the amplifier, motor, and microprocessor are operating properly. You can now test the indexer interface (the Step, Direction, and Shutdown inputs). Be sure that power is not applied to the system when you begin. To perform this test, complete the following steps.

Quick Test with Indexer

With no power applied to the drive, perform the following steps to test the indexer interface. This test assumes that your indexer's motor resolution is set to 25,000 steps/rev. This is the default motor resolution setting for the S Drive.

- ① Remove the panel that covers the DIP switches. Turn DIP switch **SW2-#8 off** to disable the Automatic Test function. Ensure that switches **SW2-#1** through **SW2-#4** are **off**. **Do not change any other DIP switch settings.** Screw the panel back onto the drive.

- ② Connect your Compumotor indexer to the drive's 25-pin D indexer connector. The appropriate cable is provided with the indexer.
- ③ Ensure that the pre-wired motor cable that you connected in the previous test is still connected. Apply power to the drive and indexer.



Test Configuration (S6 Drive Shown)

- ④ Using the indexer, send step pulses to the drive that will rotate the motor one **CW** revolution (25,000 step pulses) at an acceleration of 1 rps² and a velocity of 1 rps (25,000 steps per second).
When the drive receives the step pulses, the motor should rotate one **CW** revolution. The **green** Power LED and the **green** step LED should be on when the drive is receiving pulses.
- ⑤ Using the indexer, send step pulses to the drive that will rotate the motor one **CCW** revolution at an acceleration of 1 rps² and a velocity of 1 rps (25,000 steps per second).
When the drive receives the step pulses, the motor should rotate one **CCW** revolution. The **green** Power LED is on when power is applied to the drive and the **green** step LED should be on when the drive is receiving pulses. (This LED will flicker during low step rates and shine more brightly at higher step rates.)
- ⑥ Now you will test the Shutdown input. With no step pulses applied to the drive, activate the Shutdown input. Refer to your indexer's operations manual for instructions on activating the Shutdown input.
By activating the Shutdown input, all current will be removed from the motor. You should be able to turn the motor shaft manually. Try to turn the shaft slowly now. If you can turn it easily, the Shutdown input is working properly. If the shaft still has torque, check your wiring and try the test again.

