

Chapter 5: Power Up and Initial Checks

5.1 Before Powering On



WARNING: Follow Lockout / Tag out and other safety precautions when connecting or disconnecting cabling, wiring, and equipment.

Each item below lists the manual Section(s) that will provide a reference for that specific item. Also refer to **Section 4.5** Connection Diagram.



Caution: Damage may occur if the 24 VDC and 0 VDC Commons are improperly connected.

1. Verify CONTROLLER Unit DIP switch settings (4.10)

- Verify that the eight (8) DIP switches visible through the rear panel removable plate of each unit are set to indicate the appropriate spindle number and options. **Section 4.10 CONTROLLER DIP Switch setting.**

2. Confirm Interface (PLC) connection (4.7)

- Verify that the CONTROLLER unit I/O Interface wiring is connected to the corresponding PLC terminals.

3. Check connections between the tool and the CONTROLLER unit (section 3.1.2)

- Verify that the Single cable (resolver/ motor and transducer) connecting the tool and CONTROLLER unit is secure. If using multiple systems, ensure that the correct cable is connected to the appropriate TOOL and CONTROLLER unit.
- If the layout contains moveable parts, visually inspect all components to ensure that there is proper clearance and that cables have sufficient length. If movement would create any excessive stress on a cable, or create any potential for damage to the system or other components in the layout, then make appropriate adjustments.



WARNING: Do not make motor connections with the power on. Turn off all controller power before attempting to connect or disconnect any motor cables or tool damage may occur.

4. Check the input voltage (3.1.2, 4.6)

- Verify input power is properly connected (4.6.1).
- Ensure input power voltage to the CONTROLLER Units is 100~230 VAC.



NOTE: After a CONTROLLER unit is powered down, the power must not be applied again for at least five (5) seconds. Repeated power up and power down, may temporarily disable the CONTROLLER unit as a safety precaution. If a CONTROLLER unit does become disabled, keep the power off for five (5) minutes, then power on again to reset the fault.

5.2 Initial Data Setting

After completion of the System verification/power on procedure in Section 5.1, the system is ready for the input of data required for the fastening operation. Chapters 6 and 7 give details on the types of information required, and the procedure for entering data into the System. The system will not run until this data is correctly set-up.

NOTE: Most FUSION systems are delivered with application-specific fastening data already set-up (if provided by customer). This set-up data is considered preliminary and should be adjusted according to actual process / part runs for optimal performance.

After the system is setup with the appropriate data, perform the following procedure.

1. Check the transducer ZERO output.

- Press the RESET button on front of the Keyboard-display Unit. The CONTROLLER unit will output a number (voltage) to the DATA display **WITHOUT** the "ABN" LED displayed (See NOTE 1 below.)

2. Check the transducer CAL output.

- Press the CAL button on front of the Keyboard-display Unit. The CONTROLLER Unit will output a number (voltage) to the DATA display **WITHOUT** the "ABN" LED displayed (See NOTE 1 below.)

NOTE 1: If the Zero and/or Cal check results in an "ABNORMAL" LED output from the CONTROLLER unit refer to Section 9 for guidance.



WARNING: VERIFY THERE ARE NO PERSONNEL OR OBSTRUCTIONS IN THE TOOL AREA PRIOR TO ACTIVATING A SPINDLE OR OTHER MOVEABLE COMPONENT.

3. Check manual reverse operation.

- A. Set the Tool assembly to Reverse Mode.
 1. Momentarily depress the Reverse pushbutton switch on the Tool Assembly.
 2. The Tool Assembly light ring should be flashing to indicate Reverse Mode has been selected.
- B. Press the manual Start switch on the Tool Assembly while the tool is in Reverse Mode.
 1. Verify that the spindle is turning in the appropriate direction (opposite the preset (parameter) direction),

4. Verify operation of manual start.

- A. Set the Tool assembly to Fastening Mode.
 1. Momentarily depress the Reverse pushbutton switch on the Tool Assembly.
 2. The Tool Assembly light ring should **not** be flashing (flashing indicates Reverse Mode has been selected)
- B. Press the manual Start switch on the Tool Assembly while the tool is in Fastening Mode.
 1. Verify that the spindle is turning in the appropriate direction for fastening.

5. Verify System operation by external commands (not required for normal operation).

- Confirm that the equipment operates correctly when PLC inputs are activated (as required). Use the PLC to perform all of the functions (Start, Work Sel, etc.) that will be utilized in system operation.
- Confirm all PLC Output signals (Accept, Reject, Ready, etc.) that will be used in system operation.

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