

---

## SPECIAL DIAGNOSTICS

---

In addition to the self-check tests that are part of the power-up sequence, the HS15<sup>plus</sup> plotter can perform other special diagnostics. The steps to access these diagnostics and their functions are outlined below.

► *To access special diagnostics*

1. Hold down the **RESET** key while turning the power switch on.
2. After the first beep, release the **RESET** key. The power-up self test will complete normally. Then the lights over **RUN CONT** and **RUN SINGLE** keys will alternate. These alternating lights mean that **RESET** was held at power-up and that a special diagnostic can now be performed.
3. Access one of the special diagnostics described next by pressing the slew key noted in the description.

*Note: Only one special diagnostic can be accessed at each power-up sequence. To access another diagnostic, turn the plotter power off and then on again (as described above).*

### Diagnostic Options

The following diagnostics are available:

- **RS232 Loop Back** – Press the up arrow key to access. Used to check internal workings of the communications hardware. Beeps indicate a communications error. (A loop back connector is needed for this test; see your Gerber distributor.)
- **Wagon Wheel Test Plot**– Press the left arrow key to access. Used to check X, Y, Z axes in plot mode and to verify operation after adjustments are made.

- **Square/Circle Test Plot**– Press the **SLOW** key. Used to check X, Y, Z, and theta axes in cut mode and to verify operation after adjustments are made.
- **X08 Cut Test** - Press the down arrow key to access. Use to test cut quality.

*Note: If the plotter consistently fails a special diagnostic, contact Gerber Field Service Department at 800-828-5406, or fax at 203-645-2448.*

## **WAGON WHEEL TEST PLOT**

### ► **To plot the Wagon Wheel Test Plot**

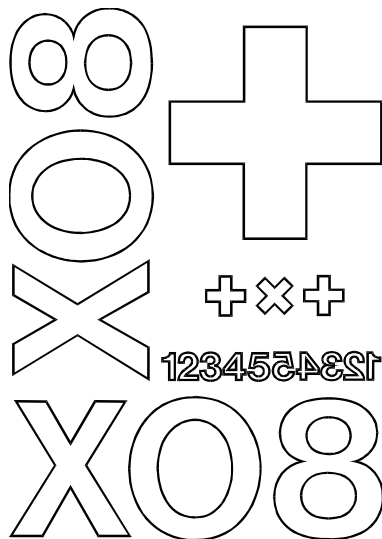
1. Load plotting paper and install the pen holder.
2. Press left arrow key to access diagnostic.
3. Press **RUN SINGLE** to plot once or **RUN CONT** to plot continuously.
4. Compare the test plot to the illustration below. If they do not look the same, call Gerber Field Service.

**SQUARE/CIRCLE TEST PLOT****► To plot the Square/Circle Test Plot**

1. Load vinyl and install the knife holder (tangential or swivel).
2. Press **SLOW** key to access diagnostic.
3. Select swivel or tangential knife mode according to the knife holder loaded.
4. Press **RUN SINGLE** to plot once or **RUN CONT** to plot continuously.
5. Compare the test plot to the illustration below. If they do not look the same, call Gerber Field Service.

**X08 CUT TEST****► To plot the X08 cut test**

1. To access the X08 cut test plot, hold the RESET key while powering up.
2. Load vinyl and install the knife holder.
3. Press the down arrow key.
4. Press RUN SINGLE to plot once or RUN CONT to plot continuously.
5. Compare the test plot to the illustration below. If the plot is different, contact Gerber Field Service.



---

## ERROR CONDITIONS

---

The HS15<sup>plus</sup> is programmed to detect certain mechanical/electrical error conditions at power-up or during operation. When an error condition occurs, the plotter may turn off power to the servo motors. There will be continuous beeping and flashing lights.

### *Error Signals*

There are three kinds of error signals:

- **3-second steady tone, lights on (running job)**

The plotter continues but the job is clipped (parts are not plotted). This happens when the job has exceeded the boundaries of the plotter. There is no recovery and the job must be sent again with a starting position that allows the job to fit within the plotting area.

- **3-second steady tone, lights on (no running job, slewing only, part of plotter jarred)**

One or more axes are shut down because of excessive lag. For recovery, press the RESET button to turn the axes on again. The Z, theta, and Y axes will return to their home position. If a job was pending, it must be resent.

- **Continuous beep and flashing lights**

With this warning a procedure has been established to determine which error condition may have occurred. See the next page for determining error numbers.

## DETERMINING ERROR NUMBERS

The number of beeps and blinking lights signify the type of error that has occurred. Error conditions are assigned a 2-digit number. The number is displayed by flashing lights and beeping, one digit at a time. The **RUN CONT** key displays the first (tens) digit; the **RUN SINGLE** key displays the second (ones) digit. For example, an error number of 25 is displayed by pressing **RUN CONT**, which flashes lights 2 times, and pressing **RUN SINGLE**, which flashes 5 times. Follow the procedure below to find the number of the error.

1. Press the **RESET** key to clear the error signal (continuous beeping).
2. Press the **RUN CONT** key to hear the number of beeps which represent the “tens” error code number. (No beeps means that the error message number falls between one and nine). The Run lights flash the same number of times as the “tens” error number. Press the **RUN CONT** key again to repeat the message, if needed.
3. Press the **RUN SINGLE** key to hear the number of beeps which represent the “ones” error code number. No beeps means that there is no “ones” error number (a zero). The Run lights flash the same number of times as the “ones” error number. Press the **RUN SINGLE** key again to repeat the message, if needed.
4. Press the **RESET** key to clear the error display mode and return to the initial off-line status

The following examples may help you to understand how to determine your error number:

- If the **RUN CONT** key beeps twice and the **RUN SINGLE** key beeps once, the error message code is 21.
- If the **RUN CONT** key beeps once and the **RUN SINGLE** key beeps twice, the error message code is 12.
- If the **RUN CONT** key beeps once and the **RUN SINGLE** key does not beep, the error message code is 10.
- If the **RUN CONT** key does not beep and the **RUN SINGLE** key beeps eight times, the error message code is 8.

## ERROR CODES

The error code numbers and suggested operator responses are listed below as well as on the *HS15<sup>plus</sup> Reference Card*.

Error Number	Error Description	Operator Response
1	Program checksum failure	Try power up again.
2	RAM memory failure	Try power up again.
3	Plotter type error	Call Gerber Field Service.
4	Power relay closed	Call Gerber Field Service.
5	Power relay open	Call Gerber Field Service.
6	Peripheral control chip error	Call Gerber Field Service.
7	Heartbeat error	Call Gerber Field Service.
8	Motor encoder failure	Call Gerber Field Service.
9	X motor encoder failure	Call Gerber Field Service.
10	Y motor encoder failure	Call Gerber Field Service.
11	Z motor encoder failure	Call Gerber Field Service.
12	Theta motor encoder failure	Call Gerber Field Service.
13	Power relay off	Try power up again or call Gerber Field Service.
14	X axis error	Call Gerber Field Service.

Call Gerber Field Service Department at 800-828-5406 (in the USA), or fax at 203-645-2448.

Error Number	Error Description	Operator Response
15	Y axis error	Call Gerber Field Service.
16	Z axis error	Call Gerber Field Service.
17	Theta axis error	Call Gerber Field Service.
18	RS-232 test failure	Call Gerber Field Service.
19	Illegal plot data command	Check plot data; resubmit plot.
20	Plotter has overheated	Allow plotter to cool down or move it to a cooler area. Call Gerber Field Service.
21	Illegal interrupt error	Try power up again. Call Gerber Field Service.
22	Unknown interrupt error	Try power up again. Call Gerber Field Service.
23	Theta home error	Try power up again.
24	Z home error	Try power up again.
25	Y home error	Try power up again.
26	Data overflow (only for HPGL data)	Check communication parameters (baud rate, etc.)
27,28,29	Problems with baud rate, data bits, parity bits, stop bits	Call Gerber Field Service.