

Serial Communications Testing

This document explains the possible causes of communications failures between PypeServer and the Watts Machine include, and provides tests that can be done to determine the cause.

Here are things to do to get your serial connection working again, or at least determine the problem.

1 Make sure that everything is set up right

Try to load a part to the machine. If the machine is sending back in error then you have communication but there is something wrong with the file or how the machine is parsing the file. Please contact support@pypeserver.com or call 425 333 7736 for assistance.

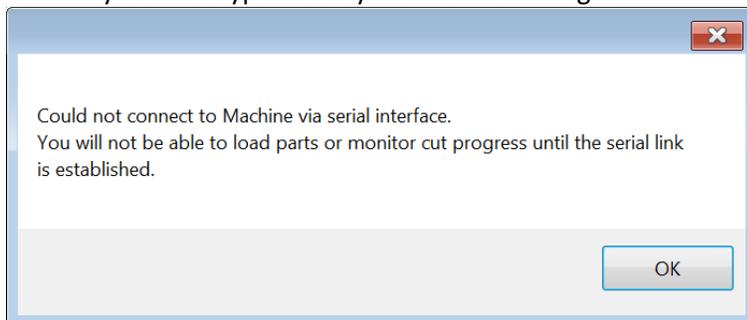
If there is no serial connection you will get an error that says “Handshake Failure.”

Make sure all these things have been set or done:

- a. Make sure the machine is on.
- b. Try restarting the machine.
- c. Try restarting the PypeServer.

2 The USB to Serial adapter plugged into PypeServer is not working

If when you start PypeServer you see this message:



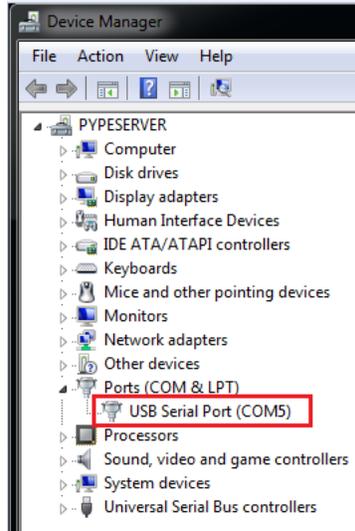
It is likely a hardware or software problem with the USB to Serial Adapter that is (supposed to be) plugged into either the PypeServer computer or a USB hub attached to the PypeServer computer.

2.1 Check that the USB to Serial Adapter is plugged into the PypeServer Computer

If the USB plug is loose or not connected, plug it in and retest.

2.2 Check for Software failure

From the start menu, start “Device Manager”. In “Ports (COM & LPT)”, you should see a USB Serial Port.

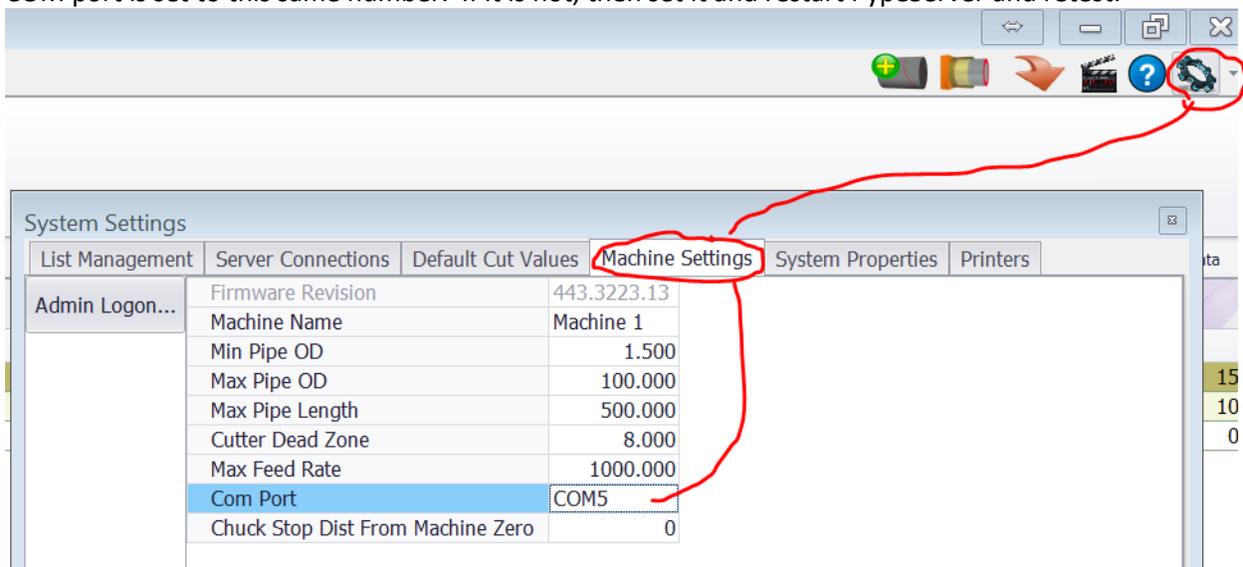


If this is missing, then unplug and plug back in the USB to Serial Port cable, reboot the PypeServer computer and check this again.

If it still does not appear, please replace the USB to Serial Port cable. You may have been provided a backup cable, which would be inside the PypeServer Kiosk enclosure. Otherwise contact PypeServer for a replacement.

3 PypeServer is being directed to the wrong COM port to Communicate with the machine.

As you did in test 2, find the COM port number for your Serial Port (NOTE: It can vary—this is set by Windows). Then open the PypeServer application→Settings→Machine Settings and make sure the COM port is set to this same number. If it is not, then set it and restart PypeServer and retest.



4 The Serial Cable may have lost connection somewhere between PypeServer and the Machine.

This is the most common problem. Over time connections can get loose or build up corrosion on the connectors and stop working. You need to unplug and replug in every cable connector that runs from the PypeServer computer to the pipe cutting machine.

As you perform the steps, also check the cables to make sure they are not crushed, nicked, cut, severed, worn thin, or any other way damaged. If they are you will need to replace the cables.

The cable that you need is a standard null modem cable. The USB to serial cable is a shorter cable in the computer housing and is typically not damaged, though it can stop working.

Do all of this with the power off on both machine and on the PypeServer computer.

The first cable is the USB to serial connector and it looks like this →

1. Unplug the USB plug in from the computer and plug it back in.
2. Disconnect the serial and from the longer serial connector that runs toward the machine.
3. Follow the cable that connects to the serial end of the USB to serial cable and if you come up on any other connections, disconnect and reconnect them.



At the machine you need to disconnect and reconnect the cables where they are connecting to the Watts machine controller.

Older machines will look like something this. Find the cable that is Labeled “Remote” or “J8 Remote” – anything that has the word “Remote”.

(On the panel below it’s the left panel). Unplug the cable and plug it back in.



Newer machines will look like this. Find the Cable labeled "COM2" and disconnect and reconnect the cable. In this case it is Cable B.

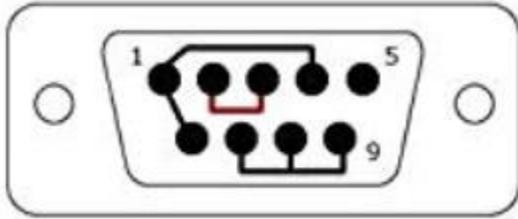


5 Perform Loop-Back test on the Machine

This test will check to see first if your serial ports in the Watts machine work, and then allow you to move the loopback connector to the other end of the serial cable and test the connection all the way through the cable.

5.1 Equipment needed

First you will need a DB9 loop back connector that is wired like this:



You can buy a female loopback connectors here: <http://www.l-com.com/d-sub-slimline-serial-loopback-plug-db9-female> , and a gender changer for testing the other end of the cable: <http://www.l-com.com/d-sub-slimline-gender-changer-db9-male-male>

Webpage shown here of the female connector.

Slimline Serial Loopback Plug, DB9 Female



L-com Item # DMA021T

List Price	\$10.07
Your Price 1-9	\$10.07
10-24	\$9.06
25-99	\$8.06
100 +	Call Us

[Availability: In Stock](#)

[Available for Same Day Shipping](#)

Quantity

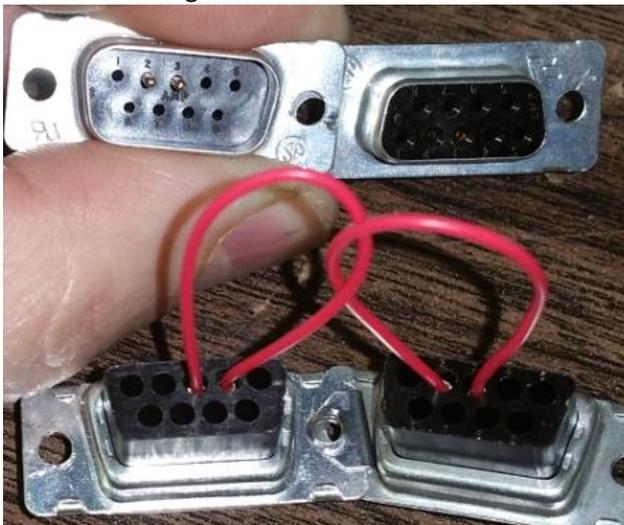
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Here are some loopback connectors that you can make. For our test purposes you only need to loopback wires two and three.



These may be provided to you, either included in the PypeServer kiosk enclosure, or sent to you. Or you can create your own. Here are the back sides of the connectors. The male connector on left, female connector on right.



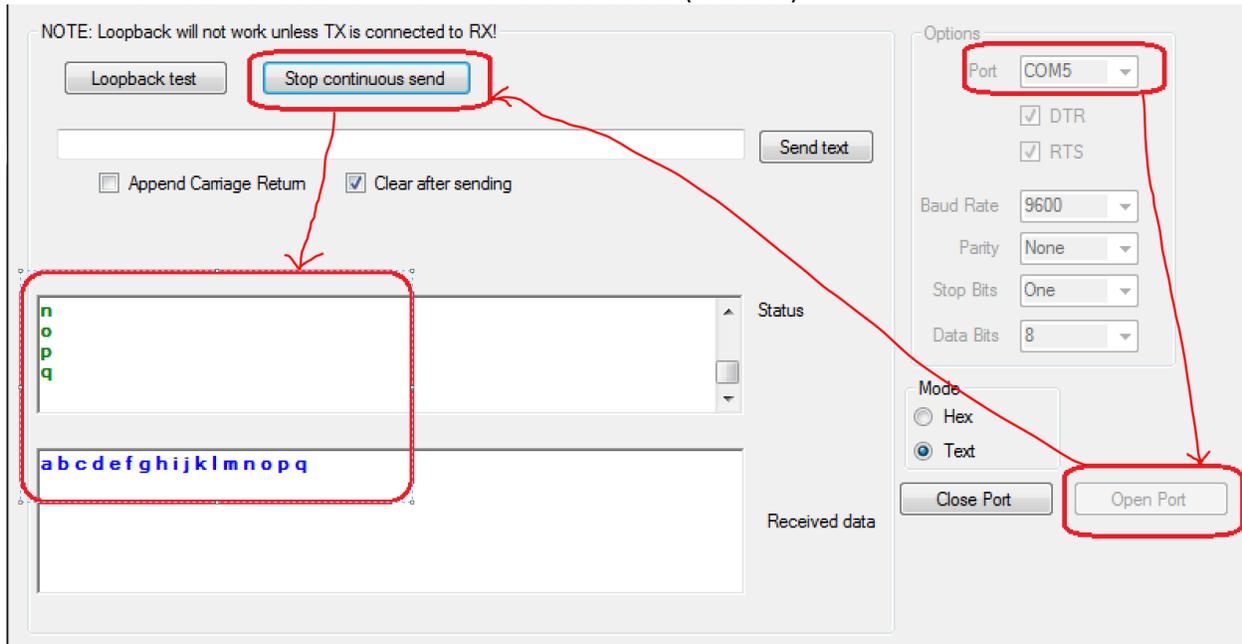
5.2 Test from PypeServer to the end of the USB to Serial Connector

Connect the male loopback tester into the USB to Serial Adapter that is connected to the PypeServer computer:



On the PypeServer computer, go to <C:\PypeServer\Serial Communications Testing> and start LoopbackTest.exe

- Select the COM port (the port identified in test 2.2)
- Open the port
- Click on “Start Continuous Send”
- The “Received data” should match the Sent data (“Status”)



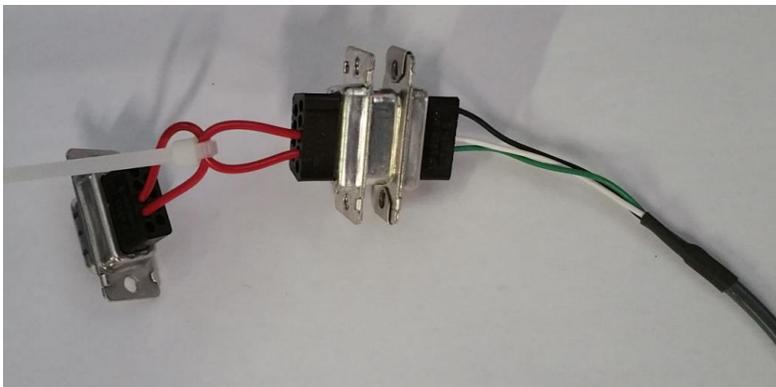
If this test fails, please replace the USB to Serial Port cable. You may have been provided a backup cable, which would be inside the PypeServer Kiosk enclosure.

Otherwise you can order one from Amazon. Here is one we have had good reliability with:



5.3 Test through the Serial Cable to the Machine

1. Connect the female loopback connector to the serial cable that you disconnected from the USB to serial cable— the cable that runs to the machine controller.



1. At the machine gantry console, escape out to the top level menu, then follow these steps: (this is from the Operator Console Users Guide.)

[F4]-ABOUT COM2 (Kiosk) loopback test. View machdwr.cf7 configuration file.
Test machine discrete inputs and outputs.

[F1] COM2 LOOPBACK: Install a DB9 loopback connector on computer
COM2 in the controller cabinet. Press F1 for PASS/FAIL message.

NOTE: In common configurations, you can run a loopback test from the Main Menu by
selecting →F4→F1. If this does not work please contact Watts Specialties for instructions on how to run
the loopback test from the Watts Controller.

If the loopback test fails. Move onto the next test to determine if it is the cable or the controller.

5.4 Test the Watts Controller Serial port

Attach the male loopback tester into the serial port on the machine
controller.

This is the same port that you unplug and plug back in when
receiving your connections (Section 4).

Rerun the same [F4] – [F1] test that you ran in the previous test

The controller will report the success or failure of the loopback test.

**If this test succeeds (and the previous test failed), then you need
to replace your serial cable**

**If this test fails, then you need to contact [service@watts-
specialties.com](mailto:service@watts-specialties.com) to have your machine controller repaired.**

