



QwikCheck™ QC PIG User Guide

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The QwikCheck™QC PIG sperm quality analyzer is used to test and report the quality of EXTENDED pig semen prior to insemination. The following semen parameters are reported:

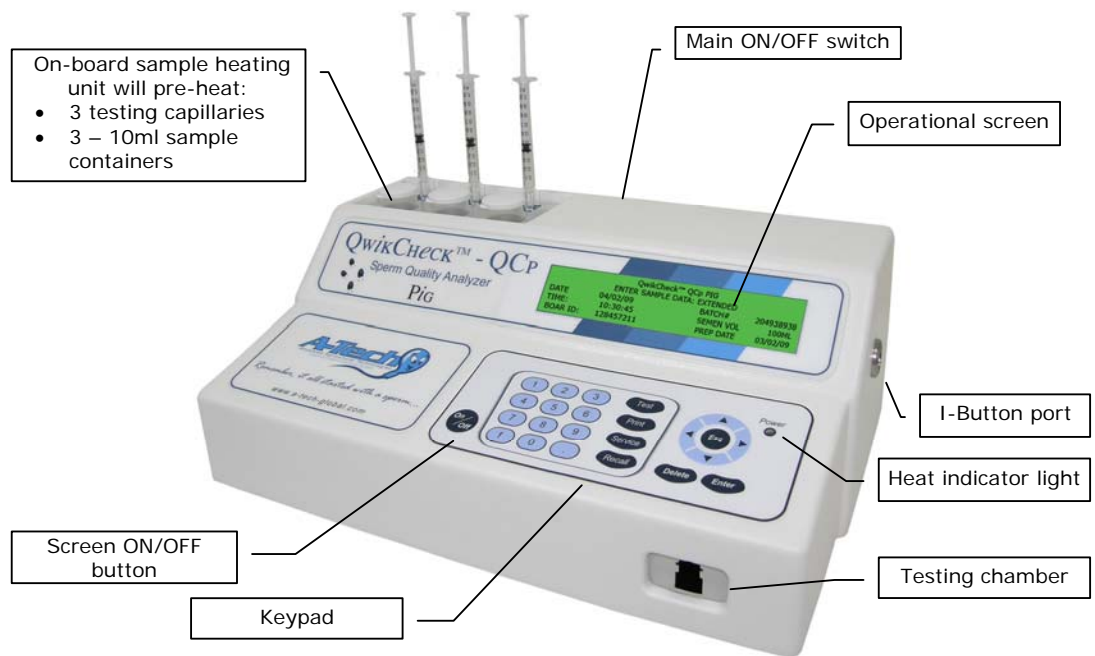
Reported Semen Parameters	
Total Sperm Concentration	Millions/milliliter
Motility	%
# Sperm	Per Sample
# Motile Sperm	Per Sample

The QwikCheck™QCp:

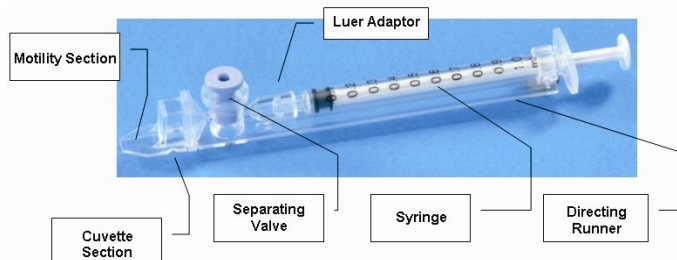
- Quickly reports accurate and precise test results.
- Is fully automated and provides a 40 second analysis of EXTENDED boar semen.
- Prints test results to an optional label printer to make it easy to track the quality of EXTENDED samples.

Section 2: System Overview

QwikCheck™
QCp



QwikCheck™
QCp
Testing
Capillary



- Plastic, multi-use (animal only), disposable.
- Refer to the appendix section for filling, washing and drying instructions.

NOTE: Load I-button tests and set system defaults **PRIOR** to testing (see Section 6 **SERVICE** for full instructions)

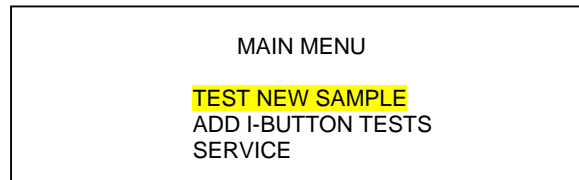
Section 3: Operating the QwikCheck™QC Pig

- Turn on the main switch on the rear panel and the 37°C heating indicator on the front panel will illuminate.
- Press the On/Off key on the QwikCheck™QCp keypad.
- The system will now perform auto-calibration. When finished, the # **Tests Remaining** will be displayed. This indicates how many I-Button tests are still available in the system.
- Press the **ENTER** key to view the **MAIN MENU**. **Before testing samples for the FIRST time – be sure to set the system defaults by going to SERVICE>DEFAULT SETTINGS (see the SERVICE section of this guide)**

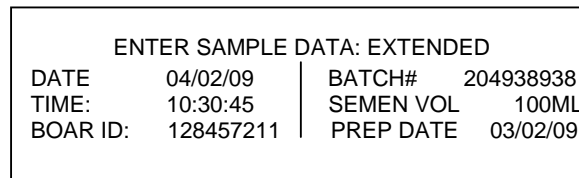
Three options are available from the **MAIN MENU**:

- **TEST NEW SAMPLE**
- **ADD I-BUTTON TESTS**
- **SERVICE**

Section 4: Sample Testing



Select the first option from the **MAIN MENU** and the screen below will be displayed:



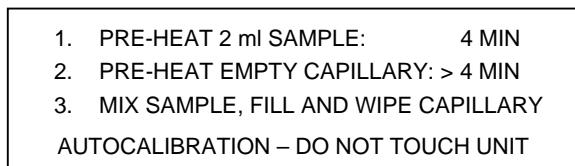
- **Date/Time:** Entered automatically with the current date/time
- **Boar ID:** The number of the boar providing the sample - up to 10 digits
- **Batch #:** The tracking number for the sample - up to 10 digits
- **Semen Volume (Extended Semen):** Enter up to 3 digits (in ml)
- **Prep Date:** The date the semen was extended

NOTE: Wait until the QwikCheck QCp beeps before inserting a testing capillary.

Press the **ENTER** button on the keypad. The QwikCheck QCp will now conduct an autocalibration. **DO NOT** insert a testing capillary or touch the system at this time.

- A 'beep' will sound and the screen below will be displayed when the system is ready for testing.
- Follow the sample preparation and heating instructions.
- Insert the testing capillary only when the beep sounds.

SAMPLE TESTING:



- **Insert the testing capillary when instructed by the screen:**

4. PRE-HEAT 2 ml SAMPLE: 4 MIN
 5. PRE-HEAT EMPTY CAPILLARY: > 4 MIN
 6. MIX SAMPLE, FILL AND WIPE CAPILLARY
- INSERT CAPILLARY INTO CHAMBER**

- Testing will begin automatically and take approximately 45 seconds.

DO NOT TOUCH THE CAPILLARY OR SYSTEM DURING TESTING

WAIT FOR BEEP

- A "beep" will sound when the test is done. The screen below will be displayed:

TEST RESULTS: EXTENDED SAMPLE

DATE	04/02/09	BATCH#	204938938
TIME:	10:30:45	SEMEN VOL	100ML
BOAR ID:	128457211	PREP DATE	03/02/09

- Press ENTER to display the next screen seen below:

TEST RESULTS: EXTENDED SAMPLE

CONC	25.3 M/ml	# SPERM	2.5 Bil
MOTILITY	79.8%	# MOTILE	2.0 Bil

- To print a test results label – press the PRINT button on the keypad

QwikCheck QC PIG
Analysis Report

DEVICE SN	382
SW VERSION	01.00.00
TEST DATE	04/02/09
TEST TIME	10:30
SAMPLE	EXTENDED
BOAR ID	128457211
BATCH #	204938938
PREP DATE	03/02/09
SEMEN VOL	100 ml

TEST RESULTS

CONC	25.3 M/ml
MOTILITY	79.8 %
# SPERM	2.5 Bil
# MOTILE	2.0 Bil

PRINTING THE TEST RESULTS:

NOTE: If the I-Button is not properly inserted a message: **I-BUTTON NOT PROPERLY ACTIVATED** will be displayed. Remove the button, press ESC and try again.

Section 5: Add I-Button Tests

MAIN MENU

TEST NEW SAMPLE

ADD I-BUTTON TESTS

SERVICE

To load I-Button tests go to: **MAIN MENU > ADD I-BUTTON TESTS**, press **ENTER**
The screen below will be displayed:

TO ADD TESTS
HOLD NEW I-BUTTON AGAINST PORT
PRESS ENTER
PRESS ESC TO EXIT

- Using a new I-Button from the test kit, follow the above instructions. **HOLD the I-Button against the port during the entire process:**

PLEASE WAIT
I-BUTTON LOADING

- The screen below will display the number added and the total remaining.

TESTS ADDED: 500
TOTAL # TEST REMAINING: 510
PRESS ESC TO EXIT

Section 6: Service

MAIN MENU

TEST NEW SAMPLE
ADD I-BUTTON TESTS
SERVICE

Select **SERVICE** from the **MAIN MENU** to enter service screens (move the cursor to this option and press ENTER). The screen below will be displayed:

SERVICE MENU

SERVICE DATA
DEFAULT SETTINGS
SERVICE PERSONNEL

Select **SERVICE DATA** to view the SERVICE DATA, SELF-TEST DATA and ALGORITHM screens displayed below. These screens contain information about the QwikCheck™QCp that is required only in case technical support is required.

SERVICE DATA					
18	28	0.000	6	87	107
5	68.0	112	89	100	2
150	512	10	31	1.3	0.000

SELF-TEST DATA					
REF 1	240	ZL	512	CONC1	0
LCUR1	12	REF2	2985	CONC2	109
AMP	72	LCUR2	20	CONC3	1087

ALGORITHM			
MSC	903.74	AW	15600
CONC	1087	# SPIKES	61
MOTILITY	83.1	# TESTS	XXX

DEFAULT SETTINGS

Select **DEFAULT SETTINGS** from the **SERVICE MENU** to set-up the QwikCheck™QCp for testing and printing results.

SERVICE MENU
SERVICE DATA
DEFAULT SETTINGS
SERVICE PERSONNEL

- Set the QwikCheck™QCp default parameters on the two screens displayed below by moving the cursor over the desired setting and pressing **ENTER**.

DEFAULT SETTINGS			
LOCAL TIME	08:15:45	HH:MM:SS	24 h
DATE FORMAT	MM/DD/YY	DD/MM/YY	
SET DATE	04/01/08		

DEFAULT SETTINGS	
AUTOMATIC PRINTING	YES/NO
# OF LABELS TO PRINT	1 / 2
IS EXTENDER TRANSPARENT?	YES/ NO

IS EXTENDER TRANSPARENT?:

- The QwikCheck™QCp default is set-up to read CLEAR EXTENDER.
- If the semen extender is CLEAR (transparent) select **YES**.
- If the semen extender is not transparent (clear) select **NO** and follow the onscreen instructions for extender testing.

EXTENDER SETTINGS PLEASE WAIT

- Fill a test capillary with extender media used to prepare the semen samples.

FILL CAPILLARY WITH EXTENDER INSERT IN TESTING CHAMBER
--

- Insert the testing capillary into the QwikCheck™QCp to run a short test of the extender.

- The QwikCheck™QCp will automatically set the default settings to the new extender. The new setting will remain in the QwikCheck™QCp memory.

EXTENDER SETTINGS
COMPLETED

SERVICE PERSONNEL: This option requires a password and is for technical service personnel only.

Section 7: Troubleshooting

Stabilization Failed:

STABILIZATION FAILED
TURN DEVICE OFF AND ON
IF SYSTEM FAILS AGAIN,
CALL TECHNICAL SUPPORT

Failed Self-test:

FAILED SELF-TEST
TURN OFF DEVICE
CLEAN TESTING CHAMBER
TURN DEVICE ON

1. Remove any testing capillary from the measurement compartment.
2. Remove the QwikCheck™QCp from all sources of electronic noise (centrifuge).
3. Clean the measurement compartment per the Appendix section.
4. Reboot the QwikCheck™QCp without a testing capillary in the chamber:
 - a. Turn system **OFF** then back **ON** at the main switch on the rear panel.
 - b. Press the front panel **ON/OFF** key to begin Auto-Calibration/Self-Test
5. Call for technical support if failure recurs.

Electronic Noise:

ELECTRONIC NOISE
TURN DEVICE OFF AND ON
IF SYSTEM FAILS AGAIN,
CALL TECHNICAL SUPPORT

- Follow steps 1-3 above.
- After cleaning:
 - Go to: **MAIN MENU > TEST NEW SAMPLE** and re-run the test.
- If this message is displayed again, reboot the QwikCheck™QCp:
 - Turn the system **OFF** then **ON** at the main switch on the rear panel.
 - Press the front panel **ON/OFF** key to begin Auto-Calibration and Stabilization.
 - From MAIN menu: Select **TEST NEW SAMPLE** and re-run.
- Call technical support if this message is displayed again.

Remove Capillary:

If a testing capillary was left in the measurement chamber after testing a sample the following screen will be displayed before testing a new sample:

REMOVE CAPILLARY
FOLLOW ON-SCREEN INSTRUCTIONS

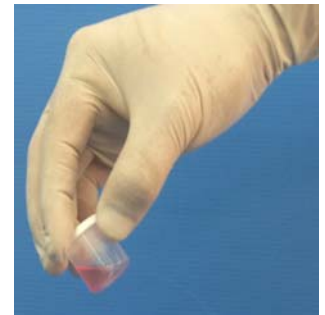
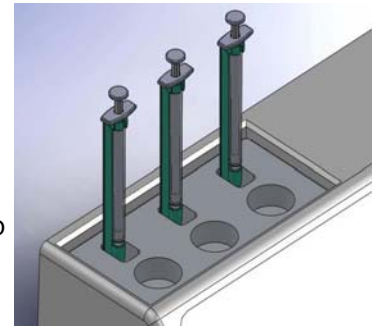
Appendix I: Semen Sample Preparation

EQUIPMENT REQUIRED:

- 10 ml Plastic Container provided in the QwikCheck Test Kit
- Pipette
- QwikCheck™ testing capillary
- QwikCheck™ on-board Heater (pre-set to 37C / 98.6F by manufacturer)

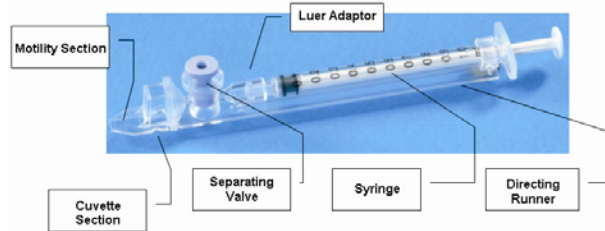
EXTENDED SEMEN SAMPLES:

1. Mix the extended semen in its original package.
2. Transfer a 2 ml sample aliquot into the 10 ml plastic container.
3. Pre-heat the sample in the QwikCheck QCp on-board heater for **4 minutes**
4. Pre-heat the testing capillaries in the QwikCheck QCp on-board heater to for at least **4 minutes**
5. Gently and thoroughly mix the sample for 20 to 30 seconds
6. Fill a pre-heated QwikCheck testing capillary with extended semen.
7. Run a test following the instructions in this User Guide!



WARNING: DO NOT FILL A TESTING CAPILLARY WITH SEMEN AND PLACE IN THE HEATER – IT WILL RUIN THE SAMPLE AND CAUSE SPILLAGE INTO THE HEATING SYSTEM

Appendix II: Capillary Filling Instructions



After heating the testing capillary AND the extended semen sample:

1. Place the thin part of the testing capillary all the way into the 2ml of EXTENDED SEMEN. (Figure 1).
2. Aspirate the sample by pulling back on the plunger slowly. Keep the tip of the capillary well below the sample surface level. (Figure 1).
3. Draw up the sample (without air bubbles) until it appears in the syringe (Figure 2).
4. Check to see that the sample has completely filled the two sections of the capillary and there are NO AIR BUBBLES in the sample. (Figure 2).
5. Quickly wipe the top and bottom of the outer surface of the capillary with a tissue. (Figure 3).
6. Visually confirm that the capillary chambers are still full. If some of the sample has been lost, a meniscus will be visible in the thin section of the capillary. If this is evident, push very slightly on the piston to re-fill the thin capillary section.
7. Slowly and carefully push-in the BLUE separating valve until it is level with the plastic. (Figure 4)
8. The capillary is now ready for testing (Figure 5).
9. Insert the capillary into the SQA-Vp (Figure 5)

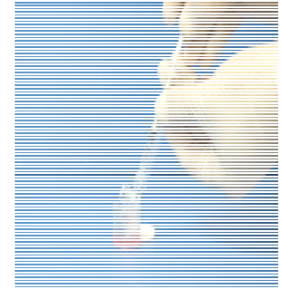


Figure 1



Figure 2

Figure 3



Figure 4



Figure 5



Appendix III: QwikCheck™QCp Cleaning Instructions

WHEN TO CLEAN:

- Daily or after every 25 tests
- If the system fails SELF TEST

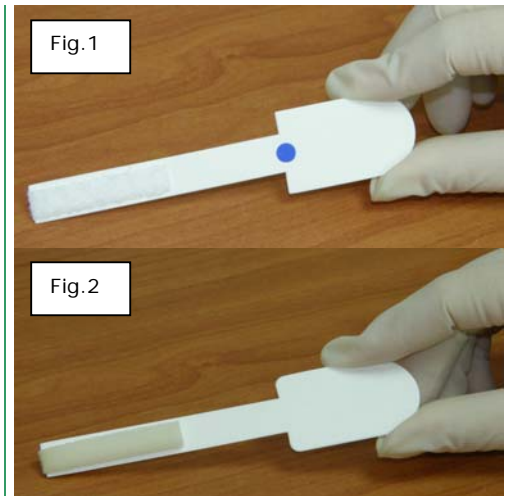
CLEANING: STEP 1

1. **TURN OFF** the QwikCheck™QCp and unplug it at main electrical outlet.
2. Select a **BLUE DOT** fibrous material capillary (Fig 1).
 - Moisten with **ONE** drop of cleaning fluid, shaking off excess fluid.
 - Insert into the measurement compartment - fibrous material facing up, and move back and forth a few times.
 - Repeat with the fibrous material facing down.
 - Select a sponge material capillary (Fig 2) and insert it in the same compartment in order to dry the chamber (Fig 3).

CLEANING: STEP II

Clean the measurement channel using the cleaning brush (Fig 4):

1. Insert the brush (bristle-side down) fully into the upper portion of the lower chamber of the QwikCheck™QCp in same manner as a testing capillary (Fig 5).
2. Pull the brush out of the chamber while sweeping or "dusting off" the LED (you will feel a step or shelf at the back and top of the chamber – this is the top of the LED). (Fig 6)
3. Switch the QwikCheck™QCp ON and observe self-test results. The system should now PASS the self-test. If not, repeat cleaning procedure with the brush.



Appendix IV: Capillary Washing Instructions

(For animal applications ONLY)

Veterinary testing capillaries and 10ml sample collection cups can be washed and re-used up to 10 times. Follow this EASY procedure for all 10 cycles of washing.

Testing Capillary



Reposition the blue valve with the jig



Remove the plunger



Reassemble the capillary

Washing 10 ml sample collection cups

Washing Instructions:

Step 1 After running a test:

- Use the white capillary jig to re-position the blue capillary valve
- Expel semen by pumping the plunger a couple of times
- Soak the testing capillary in tap water until ready to wash

Step 2 Set-up: Fill with 1 liter/2 quarts of solution as follows:

- Bowl #1: Tap water (marked "TAP WATER")
- Bowl #2: Distilled water (marked "DISTILLED WATER")
- Bowl #3: Isopropyl Alcohol 70% - 100%

Step 3: Expel all liquid from the testing capillary:

- Pump the syringe plunger a couple of times to expel all remaining liquids.

Step 4: Capillary Washing – Follow this order:

- **Bowl #1 Tap Water:** Completely fill each capillary with tap water. Expel the solution into a hazardous waste container. **Repeat 2 times** then go to Bowl 2.
- **Bowl #2 Distilled Water:** Completely fill each capillary with distilled water. Expel the solution into a hazardous waste container. **Repeat 2 times** then go to Bowl 3.
- **Bowl #3 Isopropyl Alcohol:** Completely fill each capillary with isopropyl alcohol and expel the solution into a hazardous waste container. **Repeat 2 times.**
- After the final washing: Completely remove the plunger from the syringe.

Step 5: Drying the Capillaries:

- Place the capillaries on a flat surface and dry overnight or place in a low heat oven for a few hours until they are completely dry.

Step 6: Final Preparation/Inspection:

- Replace the plunger into the syringe.
- Inspect the capillary and throw away if cracked, broken or semen remains.
- Note the number of washings by making a dot on the capillary with a water proof marker after each washing cycle.

Washing – Please refer to Step 4 Capillary Washing and follow the same process for washing in the solutions in bowls #1; #2 and #3. Turn upside down on absorbent paper to dry overnight.



Appendix V: Glossary of Terms

QwikCheck™ QCp Terms

Definition

Menu		
	SN	Serial Number of the QwikCheck™QCp
	DATE/TIME	The date and time the test was performed
	BATCH #	The number identifying the EXTENDED semen sample
	BOAR ID	The identifying number of the boar who provided the EXTENDED sample being tested
	SEMEN VOLUME	The total volume of the entire EXTENDED sample
	PREP DATE	The date the semen sample was EXTENDED and prepared for sale
Test Results	CONC.	Total sperm concentration expressed in millions/ml
	MOTILITY %	Percentage of motile spermatozoa in the sample
	# SPERM	The total number of sperm cells in the ENTIRE EXTENDED sample volume.
	# MOTILE	The total number of motile sperm cells in the ENTIRE EXTENDED sample volume.

Appendix VII: QwikCheck™QC PiG System Specifications

Dimensions: 14 X 34.5 X 21 cm (HxWxD)
Weight: 3.5 kg
AC power supply: 100 to 250 VAC, 50/60 Hz, 10 VA

Measurement Compartment

- **Sources of radiant energy** - two 880 nm LEDs for motility and spectrophotometry channels
- **Detector system** – 2 photo detectors - Motility and Optical Density

Display(s)

- Operational backlight LCD (16 lines x 40 characters)
- Video backlight LCD (8 X 10 cm)

Keypad

- **Operational keys:** ON/OFF, TEST, PRINT, SERVICE, DELETE, ENTER, four cursor buttons, ESC, numeric buttons (0-9)

Front Panel

- LCD operational display
- Measurement compartment
- Multi-button keypad

Rear/Side Panel

- Power connector with fuse-holder (fuse 250V, 1A)
- RS232 cable outlet
- I-Button port (side panel)

Specimen Testing Supplies

- **Measurement capillary:** Disposable, multi-use plastic. (purchase from manufacturer).
- **I-Button:** Required to run tests (purchase from manufacturer)

Archive Capacity

- None

Operating System

- **Control:** Keypad
- **Analysis Time:** 45 – 75 seconds
- **Software:** Resides on flash memory and drives all man-machine interface functions, runs algorithms for test measurements and operational screens. System can be upgraded from a PC CD-ROM.
- **Sample Testing Temperature:** 37°C (98.6°F).
- **Motility channel input signal:** Analog, up to 5V.
- **Spectrophotometer channel input signal:** Modulated (1 kHz) analog, up to 5V.



Quality Control

- **Internal:** Electronic Self-Test and Auto-Calibration.

Operational Temperature and Humidity

- System is operational at 20-30°C.
- *NOTE:* QwikCheck™QCp is calibrated to measure semen samples heated to 37°C (98.6°F).
- System is fully operational at up to 80% humidity.

Maintenance Schedule

- Cleaning daily and after every 25 tests (refer to User Guide – "Cleaning Instructions").

Manufacturer Recommendations

- Operate the QwikCheck™QCp away from devices that may cause electronic noise (cell phones) or other devices causing vibrations such as centrifuges.
- Turn system **OFF** at the rear-panel when not in use for extended period of time.
- Semen is considered a biologically hazardous material and is subject to individual laboratory protocols for handling such materials.

Factory Default Settings:

Date format: DD/MM/YY

Time/Date: Manufacturer's local time/date

Sample Type: EXTENDED

Automatically print: YES

Labels to Print: 1

Extender transparent?: YES