

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*



QTest Customer Support Guide

Warning and Copyright Information

Warning: **Unplug the power supply cord from the load frame before servicing any part of your QTest System.**

Mechanical testing equipment is potentially dangerous to operate. Protective clothing and eye protection should always be worn when testing.

No one should operate a QTest system without first reading this start up manual. QTest assumes no responsibility for accidents or damage resulting from misuse of QTest products, use of QTest products contrary to their designed normal use as testing equipment, or accidents resulting from user negligence. Furthermore, QTest is not culpable for accidents or damage resulting from destructive testing.

Although QTest has attempted to minimize software errors, QTest is not responsible for such errors that perform calculations and calibrations incorrectly. It is always the responsibility of the user to verify the accuracy and validity of the software and the operating system.

QTest, a division of MTS Systems Corporation, has prepared this document believing all figures and information to be accurate and true at the time of printing. Information in this document is subject to change without notice. QTest assumes no responsibility or liability for incorrect information published in this manual, incorrect use of this manual, or notifying customers of informational changes made to this document at a future date.

DWG NO. 719-9916/E

Contents

Chapter 1: Unpacking Instructions 1

Domestic Shipments 1
International Shipments 2

Chapter 2: Frame Specifications 3

QT/1 L Frame Specifications 3
QT/5, QT/10, and QT/25 Frame Specifications 4
QT/10 LP, QT/25 LP, and QT/50 LP Frame Specifications 5
QT/50, QT/100, and QT/150 Frame Specifications 6

Chapter 3: Setup Instructions 7

Computer Setup 7
Load Frame Setup 9
The QFCC Panel 13
Load Frame Setup 14

Chapter 4: Maintenance and Repair 17

Preventive Maintenance Schedule 17

Chapter 5: Troubleshooting Guide 21

Replacing the GMCC Card Assembly 23
Replacing the QFCC Connector Panel 24

Chapter 6: Miscellaneous Information 27

Recommended QTest Safety and Operation Procedures 27
Warranty Information 28

Figures

Figure 1-1. Details of a standard QTest Load Frame 2
Figure 3-1. TestWorks QT Activator 8
Figure 3-2. Loopback Connector 9
Figure 3-3. QTest Computer Setup 10
Figure 3-4. Anti-Rotational Load Cell Setup 12
Figure 3-5. QFCC (Frame Controller Card) Connections and Indicator Lights 13
Figure 4-1. Load Frame Maintenance 20
Figure 5-1. GMCC Card Assembly (Shown being installed in computer) 24

Chapter 1: Unpacking Instructions

Domestic Shipments

You will have received the following items:

- 1 computer monitor box (if purchased from QTest)
- 1 computer (system unit) box (if purchased from QTest)
- 1 printer box (if purchased from QTest)
- 1 QTest load frame
- Accessories box(es)

Depending on the number of options chosen, you may also receive additional items.

Prior to moving your load frame please adhere to the following instructions:

With the exception of the QT/1 L, all load frames should be lifted from under the crosshead (refer to Figure 1-1). Never use the upright column(s) or mechanically lift the load frame using its non-load bearing base. However, the QT/1 L should be lifted by hand, from the base.

1. If moving the load frame by hand (as opposed to lifting the load frame), all handling should be done at the load frame's base.
2. If lifting the load frame with a fork truck, position padded forks under the crosshead and lift, taking care not to mark the load frame surfaces.
3. Remove the packing material from your QTest load frame and position the load frame in its permanent location. Be sure to leave access space behind the load frame to facilitate cable installation.
4. Follow the setup procedures found on the following pages.

The QT/1 L can be lifted manually because of its light weight. Employ appropriate safety methods when lifting, to avoid injury. Proceed by lightly placing the upright column against your shoulder. Grasp both sides of the base enclosure and lift.

International Shipments

1. Position the crated frame as close as possible to its permanent location.
2. If your product is shipped lying down, lift it to the upright position. Please exercise caution when righting the crate. Note the crate markings to ensure that the machine is oriented with the base toward the floor.
3. Remove the cover of the crate.
4. Remove the internal crate supports.
5. Continue to unpack your frame using the “Domestic Unpacking Instructions” above.

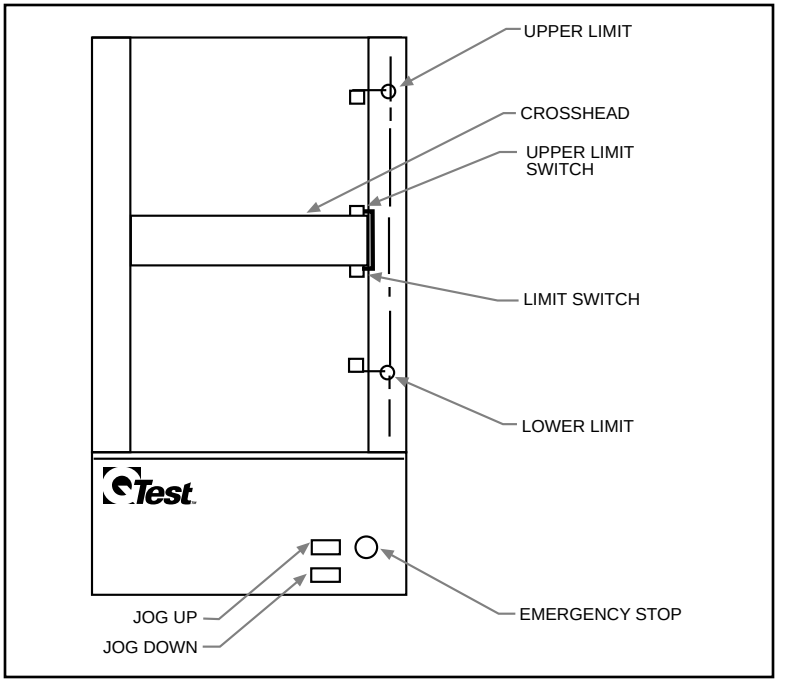


Figure 1-1. Details of a standard QTest Load Frame

Chapter 2: Frame Specifications

QT/1 L Frame Specifications

Load Capacity:	250 lbf (1 kN)
Capacity at Full Speed:	100%
Speed Range:	
Min:	0.02 in/min (0.5 mm/min)
Max:	40 in/min (1016 mm/min)
Frame Stiffness:	N/A
Crosshead Travel:	40 in (1016 mm)
Side-to-Side Clearance:	Single screw
Front-to-Back Clearance:	2.5 in (63.5 mm)
Weight:	80 lbs (36 kg)
Dimensions:	
Height:	60 in (1524 mm)
Width:	14 in (356 mm)
Depth:	14 in (356 mm)
Power Requirements:	720 VA, 120 V ±10% at 60 Hz, single phase.
Optional:	220 V ±10% at 50 Hz. Domestic Plug NEMA 5-15P
Position Resolution:	0.0001 in (0.0025 mm)

Environmental Specifications

Operating Temperature	40°F (4.5°C) to 100°F (38°C)
Relative Humidity	20% to 85%

QT/5, QT/10, and QT/25 Frame Specifications

Load Capacities:	
QT/5:	1125 lbf (5 kN)
QT/10:	2250 lbf (10 kN)
QT/25:	5625 lbf (25 kN)
Capacity at Full Speed:	100%
Speed Range:	
Min:	0.02 in/min (0.5 mm/min)
Max:	20 in/min (508 mm/min)
Optional Speed Range:	
Min:	0.02 in/min (0.5 mm/min)
Max:	40 in/min (1016 mm/min)
Frame Stiffness:	700,000 lbf/in (0.7M lbf/in)
Crosshead Travel:	40 in (1016 mm) 52 in (1320 mm) Tall Option
Side-to-Side Clearance:	16 in (406 mm)
Front-to-Back Clearance:	Unlimited
Weight:	250 lbs (113 kg)
Dimensions	
Height:	67 in (1702 mm) 79 in (2006 mm) Tall Option
Width:	26 in (661 mm)
Depth:	20 in (508 mm)
Power Requirements:	1 KVA, 120 V ±10% at 60 Hz, single phase.
Optional:	220 V ±10% at 50 Hz. Domestic Plug NEMA 5-15P
Position Resolution:	0.0001 in (0.0025 mm)

Environmental Specifications

Operating Temperature	40°F (4.5°C) to 100°F (38°C)
Relative Humidity	20% to 85%

QT/10 LP, QT/25 LP, and QT/50 LP Frame Specifications

Load Capacities:	
QT/10 LP:	2250 lbf (10 kN)
QT/25 LP:	5625 lbf (25 kN)
QT/50 LP:	11,250 lbf (50 kN)
Capacity at Full Speed:	100%
Speed Range:	
Min:	0.02 in/min (0.5 mm/min)
Max:	20 in/min (508 mm/min)
Frame Stiffness:	500,000 lbf/in (0.5M lbf/in)
Crosshead Travel:	48 in (1219 mm)
Side-to-Side Clearance:	30 in (762 mm)
Front-to-Back Clearance:	Unlimited
Weight:	1000 lbs (455 kg)
Dimensions:	
Height:	94 in (2387 mm)
Width:	42 in (1066 mm)
Depth:	23 in (584 mm)
Power Requirements:	1.8 KVA, 220 V ±10% at 60 Hz, single phase. Domestic Plug NEMA L6-20P
Position Resolution:	0.0001 in (0.0025 mm)

Environmental Specifications

Operating Temperature	40°F (4.5°C) to 100°F (38°C)
Relative Humidity	20% to 85%

QT/50, QT/100, and QT/150 Frame Specifications

Load Capacities:	
QT/50:	11,250 lbf (50 kN)
QT/100:	22,500 lbf (100 kN)
QT/150:	33,750 lbf (150 kN)
Capacity at Full Speed:	100%
Speed Range:	
Min:	0.02 in/min (0.5 mm/min)
Max:	20 in/min (508 mm/min)
Frame Stiffness:	1,200,000 lbf/in (1.2M lbf/in)
Crosshead Travel:	48 in (1219 mm)
Side-to-Side Clearance:	22 in (558 mm)
Front-to-Back Clearance:	Unlimited
Weight:	1500 lbs (680 kg)
Dimensions:	
Height:	92 in (2336 mm)
Width:	38 in (965 mm)
Depth:	26 in (660 mm)
Power Requirements:	1.8 KVA, 220 V ±10% at 60 Hz, single phase. Domestic Plug NEMA L6-20P
Position Resolution:	0.0001 in (0.0025 mm)

Environmental Specifications

Operating Temperature	40°F (4.5°C) to 100°F (38°C)
Relative Humidity	20% to 85%

Chapter 3: Setup Instructions

Caution: To avoid electrical shock and damage to your QTest system, make sure that all power switches are set to the OFF position during setup.

The only tools required to set up your QTest system are as follows:

- A standard flat technician's screwdriver.
- The enclosed 1/4 round "bar tool."
- One or more of the following open end wrenches: 7/16", 3/4" and / or 1-1/2".
- An 1/8" and 3/4" allen wrench (only required for QTest floor model machines).

Computer Setup

Definitions

Port. The connection on your computer, printer or load frame.

Boot Up. The process of starting your computer system and automatically loading your QTest software.

Activator. A black rectangular double ended connector which is labeled "Activator" (Figure 3-1). It is plugged directly into the printer port on the computer (LPT1) between the computer and printer cable. This device acts as a security device to allow the software to run.

GMCC. Controller card in the computer which generates frame command signals and converts all analog signals to digital signals.

QFCC. Controller card in the frame which allows manual movement of the frame by the jog switches. Serves as a buffer for all signals to and from the computer through the GMCC.

MCC Cable. Cable which connects the GMCC to the QFCC.

Loopback. Small circuit card which plugs directly into the GMCC port on the computer (Figure 3-2). It is used for diagnostics. It is not connected during normal operation.

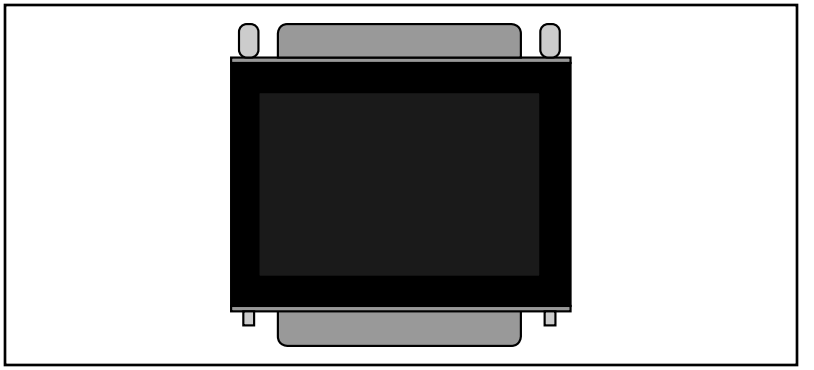


Figure 3-1. TestWorks QT Activator

Instructions

Use the following instructions as a guide for setting up your computer if you purchased it from QTest. If you have supplied your own computer or have questions not covered in these instructions, please refer to your computer's instruction manual.

1. Carefully unpack the computer and place it within six feet of the QTest load frame.
2. Plug the keyboard into the rear of the computer system unit.
3. Remove the mouse from its container and plug into the rear of the computer system unit.
4. Remove the monitor from its container and place it on top of the computer system unit. With the power switches OFF, plug the monitor power cord into the rear of the monitor and attach the other end into the rear of the computer system. Connect the Activator to the computer printer port. The QTest software will not be able to run without it.
5. Remove the printer from its container and insert the supplied cable into the "port" shown in the figure (located on the side of the printer). Swing the printer connector "arms" into the locking position, so that the cable cannot be accidentally detached. Using a technician's screwdriver, attach the other end of the cable to the Activator with the corresponding color marker. Assure that a good connection has been made. Insert paper into the printer.

Load Frame Setup

Along with your QTest system you received one or more boxes labeled "Accessories." Be sure that the box contains each of the following items:

- TestWorks QT Manual
- TestWorks QT Software and Master Template Diskettes
- Activator
- Load cell
- Crosshead bolt
- Spring
- 1/2" diameter pin
- Tool bar
- Hex wrench (QT/150 only)
- Load frame power cord
- Loopback connector (troubleshooting device)
- MCC cable
- Grips, grip adapters, flex fixtures or compression platens will also be in the accessories box(es).

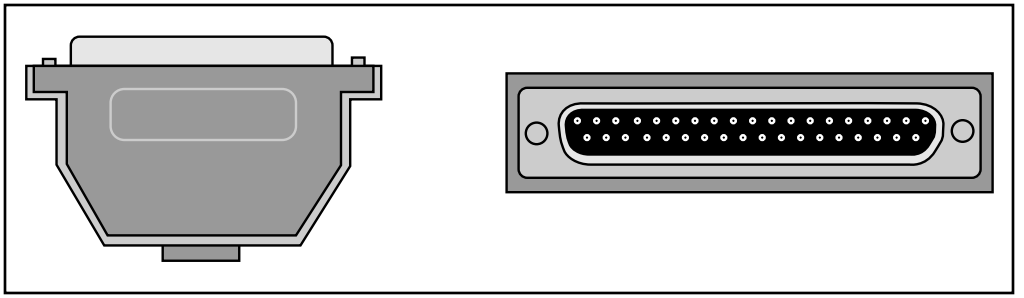


Figure 3-2. Loopback Connector

Instructions

Follow the instructions below to setup your QTest load frame. Refer to the Figures 3-3 to 3-4 as needed.

1. From the accessory box, remove the cable marked MCC cable. Using a technician's screwdriver, attach the end with the male three row sixty two pin connector to the GMCC port on the rear of the computer.
2. Connect the other end of this cable to the connector marked "MCC" on the QFCC panel, located on the rear or side of the QTest load frame.
3. Slide the crosshead bolt down through the top of the crosshead.
4. Cautiously screw the load cell onto the crosshead bolt. Take precautions not to overload the cell.

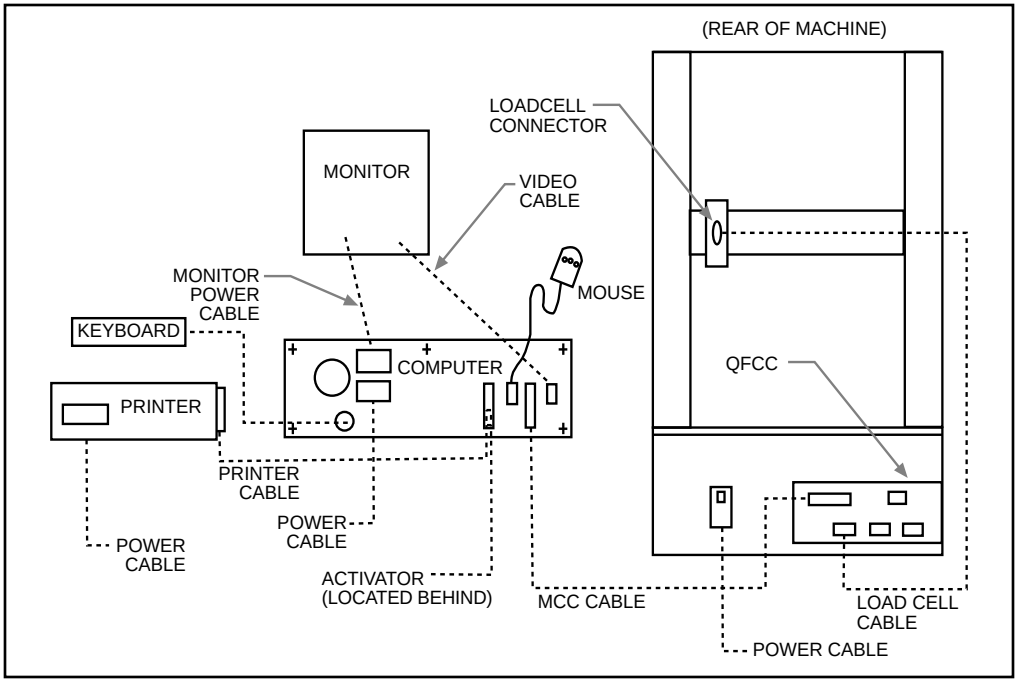


Figure 3-3. QTest Computer Setup

Note: **Some models may have an alignment plate with two pins on each side which mates with the crosshead and the load cell. This plate should be installed between the crosshead and load cell if applicable.**

5. Connect the load cell cable into the connector on the crosshead (on QT/1 L, connect the load cell cable directly to the load cell. Attach the other end of the cable to the connector on the QFCC labeled "Load").
6. Using the hex screw provided, attach the load cell to the grip adapter. The Anti-rotational plate should be between the load cell and the grip adapter.
7. Using the hex bolt provided, attach the grip adapter to the load cell. Make sure that the two alignment pins mate with the load cell alignment holes.
8. Place spring into the base adapter.
9. Attach the grips or fixture that you will use for testing.

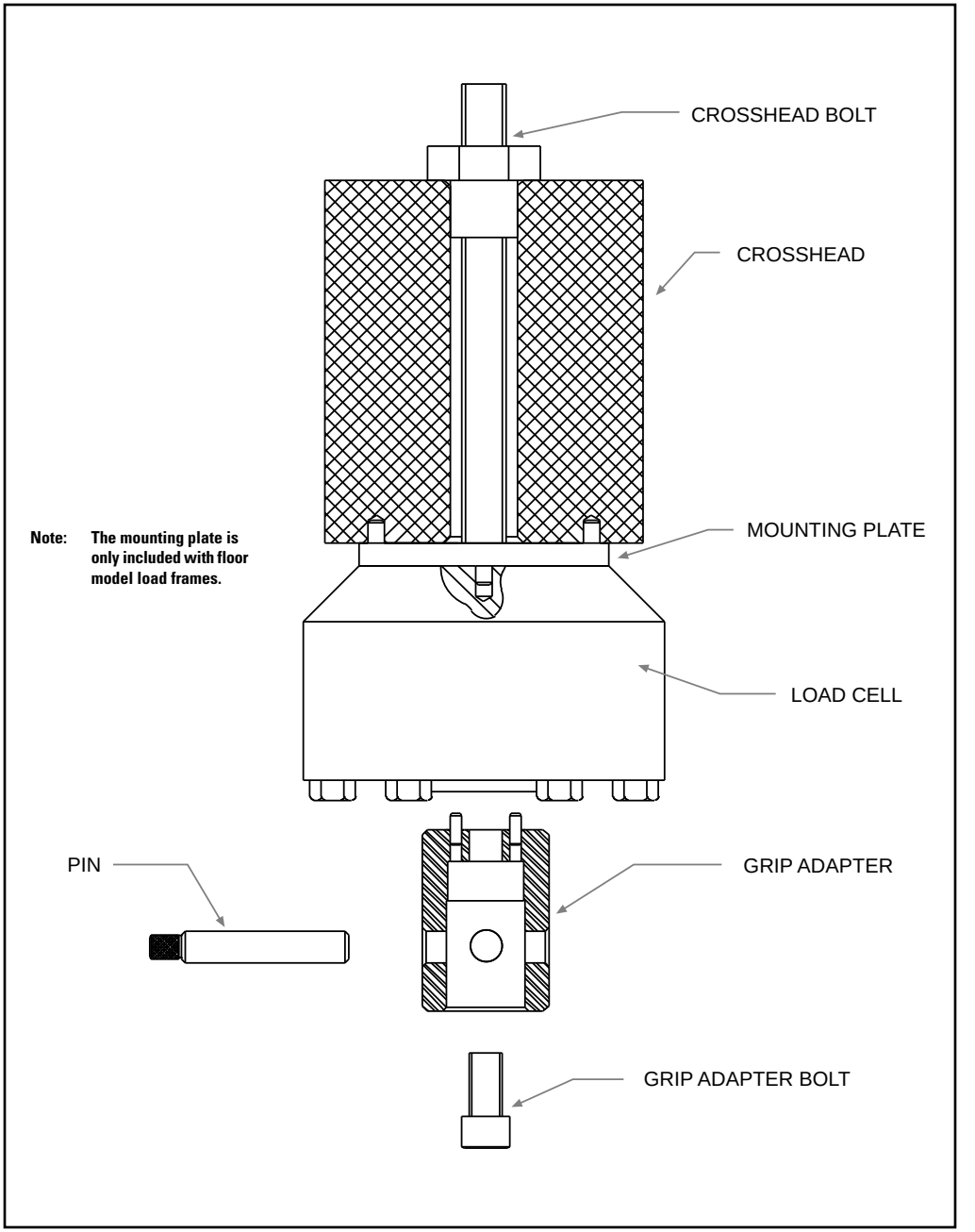
Note: **Most QTest grips attach easily with the 1/4" or 1/2" pin provided. Please refer to Figure 3-4.**

10. Apply power to your computer, monitor and printer. After your computer has "booted up," apply power to your QTest load frame.

Note: **Power should always be applied to the computer prior to that of the load frame. When powering your system down, always shut the load frame power off prior to that of the computer.**

11. To change the limit settings, twist the "thumbscrew" counterclockwise (located on the adjustable limits), positioning to the desired location. Twist clockwise to securely tighten.

Caution: **Be sure that the manual limits are set so that the fixtures cannot be damaged.**



Note: **The mounting plate is only included with floor model load frames.**

Figure 3-4. Anti-Rotational Load Cell Setup

The QFCC Panel

The following are brief definitions of the connector and indicator lights found on the QFCC (Frame Controller Card) panel (see Figure 3-5):

Connectors

MCC. Connection for the MCC cable which runs from the GMCC in the computer to the QFCC.

BUFFER. Connection for a high elongation extensometer (DXL) which accepts a high level signal from zero to ten volts.

LOAD. Connection for the load cell and mechanical limit cable which is routed from the crosshead on all models except for the QT/1L which is connected directly to the load cell.

STRAIN. Connection for a standard MTS extensometer or deflectometer. Provides excitation to the device and accepts a low level millivolt return signal.

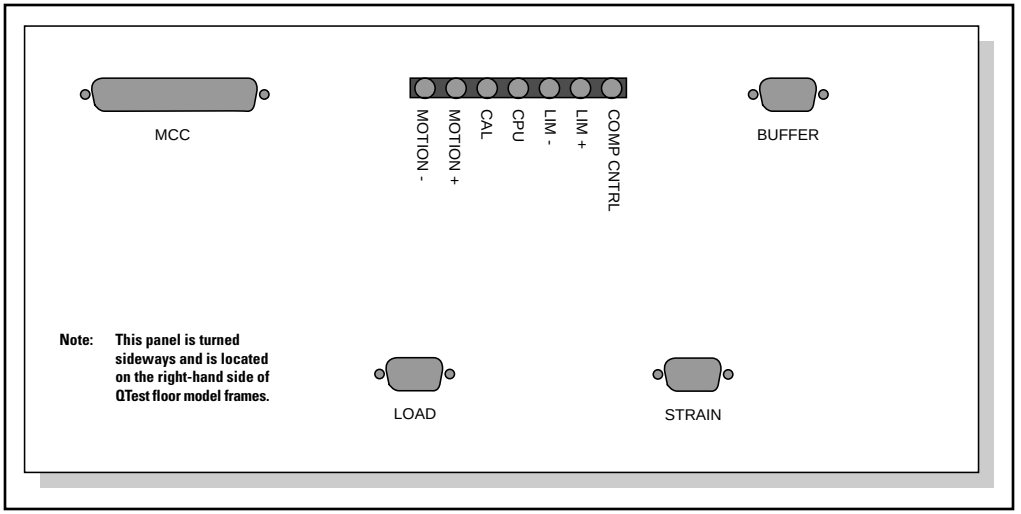


Figure 3-5. QFCC (Frame Controller Card) Connections and Indicator Lights

Indicator Lights

COMP CNTRL. This light is on when the frame is operating under computer control.

LIM +. This light is on when upper limit is active.

LIM -. This light is on when lower limit is active.

CPU. This light is on when the microprocessor in the QFCC is functioning properly.

CAL. This light is on when the auto-calibration relay is activated for the load cell.

MOTION -. This light is on when crosshead is moving down.

MOTION +. This light is on when crosshead is moving up.

Load Frame Setup

You are now ready to operate the QTest load frame. Open the TestWorks QT Operator's Guide to Chapter 2, "Starting TestWorks QT" and follow the instructions for launching the application and logging in. Perform the following procedure to insure that your QTest load frame is operating properly.

1. Click on the Test button on the Main Page Button Menu. The Test Page will appear.
2. Follow the steps outlined in the "Sensor Calibration," section of Chapter 2 in the TestWorks QT Operator's Guide to calibrate your load cell.
3. Click on the Display button in the Test Page Button Menu. The Display Menu will appear.
4. Select the following menu items which will appear as windows on your test screen: Load Meter, Extension Meter, Status, and HandSet (you will need to click on the Display button each time you select a menu item).
5. Push and/or pull gently on the load cell adapter and check the Load Meter for a corresponding change in load. You will see a positive change in load for a tensile force and a negative change in load for a compressive force.

6. Use a ruler and mark 2” up from the crosshead.
7. Click on the GOTO button in the HandSet window. The Goto Extension window will appear.
8. Enter 2” as the Goto Value and click OK. Check the Crosshead Position Meter for corresponding changes in extension as the crosshead is moving. The crosshead should stop at the mark.

Note: Make sure the extension is zeroed before initiating the Goto command.

9. Click on the Return button in the HandSet window. The Crosshead should move back to the starting point. The Crosshead Position Meter should read zero to three decimal places.
10. Using the HandSet window in TestWorks QT, run the load frame in either the up or down direction, then press the Emergency Stop Button on the load frame. Prior to proceeding to the next step, reset the Emergency Stop Button by pulling it out.
11. Set each limit one inch from the crosshead and run the load frame so that the limit switch engages and registers correctly on the computer screen in the Status Window.

Note: Be sure to re-adjust your limits to the desired location after this test.

12. Use the “Jog up” button on the front panel to move the crosshead up.
13. Use the “Jog down” button on the front panel to move the crosshead down.

If any of the previous tests cannot be run properly, refer to the troubleshooting section of this document. If you are unable to diagnose the problem, please the MTS HELPLine at 1-800-328-2255 as soon as possible.

Chapter 4: Maintenance and Repair

QTest recommends setting up an annual calibration and service contract to insure the proper performance of your QTest load frame. To set up a service contract or to schedule routine maintenance and/or calibrations, please call the MTS HELPLine at 1-800-328-2255. This number is also on the service sticker located on the front of your load frame.

Preventive Maintenance Schedule

The following sections provide preventive maintenance schedules for QTest frames. In order to keep your QTest machine functioning at peak efficiency, we highly recommend that you take the time to perform these simple procedures.

For machines being used 24 hours a day or in a dusty environment, we recommend the Monthly Maintenance be done every two weeks and the Semi-Annual Maintenance four times a year.

Monthly

1. Turn off the power and unplug the machine.
2. Check for and remove any material from under the machine.
3. Clean the machine of dust or any other debris.
4. Make sure all connectors on the frame and computer are securely fastened.
5. Check the Limits and E-Stop:
    a. Turn on the machine, go into the TestWorks QT software and pull up the Handset, Status, and Extension Meter windows in the Test page under Display.
    b. Check that the Upper and Lower limits are working properly, and that they both are displayed in the TestWorks QT Status window.
    c. Run the machine up or down at 5”/min. and depress the E-Stop switch, making sure that the machine stops.

Semi-Annual

1. Check the inside of the machine. Turn off power and unplug the machine. Remove both covers and check the following:
    a. Fan is free of all material and spins easily with no noise.
    b. Filters on vent and fan are free of dust.
    c. No foreign materials have fallen into the machine.
    d. Check belts for excessive wear.
2. Vacuum or blow out the inside of the machine.
3. Check for and replace any loose connections, tie wrap bases and cables. Replace covers and secure with retaining screws.
4. Vacuum or dust the outside of the machine.
5. Check for and remove any material from under the machine.
6. Make sure all connectors on the frame and computer are securely fastened.
7. Check the Limits and E-Stop:
    a. Turn on the machine, go into the TestWorks QT software and pull up the Handset, Status, and Extension Meter windows in the Test page under Display.
    b. Check that the Upper and Lower limits are working properly, and that they both are displayed in the TestWorks QT Status window.
    c. Run the machine up or down at 5"/min. and depress the E-Stop switch, making sure that the machine stops.
    d. Zero the crosshead in the software (zero button on the Crosshead Position meter), measure and mark 2" up from the crosshead and perform a "GOTO" 2 inches command (Goto button on Handset). The crosshead should travel 2". If the crosshead does not go to the 2" mark, call a QTest Applications Engineer at the Helpline number found in the front of this manual and on the service sticker located on the front of your QTest machine (for a more detailed description of this procedure, refer to the "Load Frame Setup" section at the end of Chapter 3, "Setup Instructions").

Annual

1. Check the inside of the machine. Turn off power and unplug the machine. Remove both covers and check the following:
    a. Fan is free of all material and spins easily with no noise.
    b. Filters on vent and fan are free of dust.
    c. No foreign materials have fallen into the machine.
    d. Check belts for excessive wear.
2. Vacuum or blow out the inside of the machine.
3. Check for and replace any loose connections, tie wrap bases and cables. Replace covers and secure with retaining screws.
4. Vacuum or dust the outside of the machine.
5. Check for and remove any material from under the machine.
6. Replace ballscrew grease (see Figure 4):
7. Remove screws holding upper and lower bellows to crosshead using a 5/64" allen wrench.
8. Wipe off old grease and apply a thin layer of new white lithium grease (LUBRIPLATE no. 1200-2 Multi-Purpose Grease, Part No. 10298) onto ballscrews.
9. Re-attach bellows.
10. Make sure all connectors on the frame and computer are securely fastened.
11. Check the Limits and E-Stop:
    a. Turn on the machine, go into the TestWorks QT software and pull up the Handset, Status, and Extension Meter windows in the Test page under Display.
    b. Check that the Upper and Lower limits are working properly, and that they both are displayed in the TestWorks QT Status window.
    c. Run the machine up or down at 5"/min. and depress the E-Stop switch, making sure that the machine stops.
    d. Zero the crosshead in the software (zero button on the Crosshead Position meter), measure and mark 2" up

from the crosshead and perform a “GOTO” 2 inches command (Goto button on Handset). The crosshead should travel 2”. If the crosshead does not go to the 2” mark, call a QTest Applications Engineer at the Helpline number found in the front of this manual and on the service sticker located on the front of your QTest machine (for a more detailed description of this procedure, refer to the “Load Frame Setup” section at the end of Chapter 3, “Setup Instructions”).

Caution: **Disconnect the power cord from the load frame before performing maintenance.**

Note: **QTest recommends annual factory calibration of your system (as per ASTM E-4 and E-83). We offer excellent Field Calibration and Preventive Maintenance Plans. Contact your local Field Service Engineer for more information by calling the MTS HELPLine at 1-800-328-2255.**

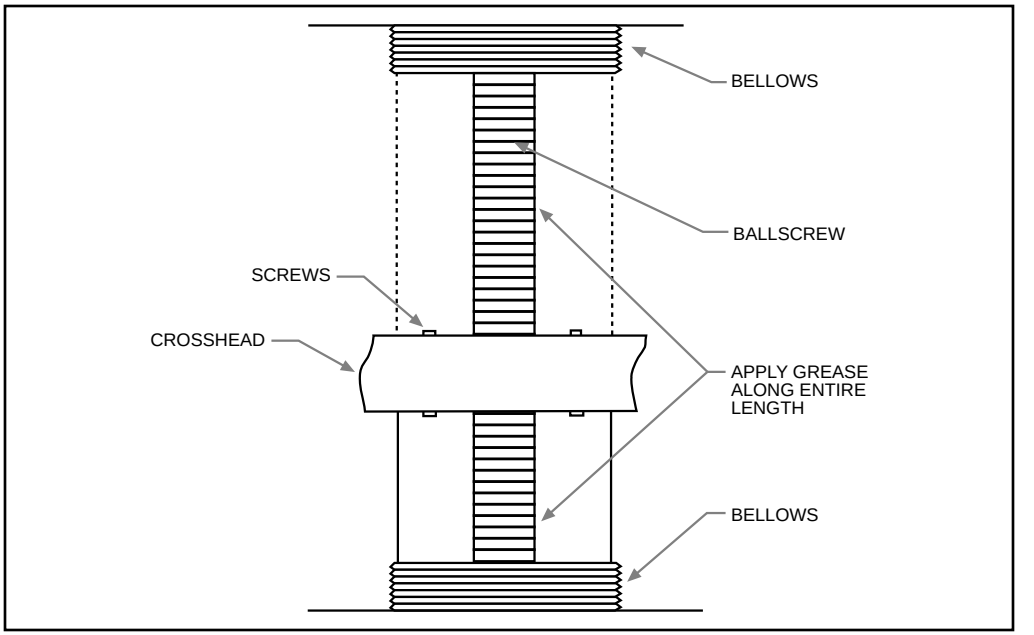


Figure 4-1. Load Frame Maintenance

Chapter 5: Troubleshooting Guide

Use this as a guide for identifying mechanical and electronic problems with your load frame. All problem analyses assume that cables and software are operating properly.

Crosshead will not move

1. GMCC-to-Frame cable loose or improperly connected.
2. Servo fault. Turn load frame OFF then ON to clear the fault. If condition reoccurs, call QTest.
3. Limit switch is active.
4. GMCC malfunctioning.
5. AC power is off.
6. Emergency Stop Button is engaged. Reset by pulling it out.
7. Load cell cable is unplugged either at the crosshead or the rear of the frame.

Crosshead moves only in one direction

1. Active limit switch.
2. Defective servo — call QTest.

Crosshead always moves at maximum speed

1. GMCC malfunctioning.
2. Defective servo — call QTest.
3. No position feedback from motor resolver.

Crosshead stops beyond where it should have

1. GMCC malfunctioning.
2. QFCC malfunctioning.
3. Wrong encoder resolution. Check Environment setup.

Crosshead won't stop

1. GMCC malfunctioning.
2. QFCC malfunctioning.

Limit is always active — can't clear

1. Limit switch (sensor) is still depressed. Back the crosshead away from the limit switch (using the jog buttons) until the crosshead is no longer touching it.
2. Remove cover and inspect wire going to switches for continuity.
3. Damaged limit switch (sensor). Check wire connections inside limit cover on the crosshead or inside the guide columns for single screw machines. Use ohmmeter to measure resistance across the switch in question. There should be zero resistance when the switch is not activated.
4. QFCC limit switch (sensor) circuitry is malfunctioning — call QTest.

Limit switches not functioning

Damaged limit switch (sensor). Same as above DANGER — DO NOT RUN LOAD FRAME!

Won't pull rated maximum load

1. Damaged servo — call QTest.
2. Load cell not calibrated.
3. PID parameters in environment may have been altered.

Load cell won't calibrate

1. Incorrect load cell chosen in software.
2. Cable is loose or improperly connected.
3. Malfunctioning QFCC. Call QTest.
4. Damaged load cell or load cell cable.
5. No power to machine.

Unusual noise

1. Loud constant hum:
   a. Bad electronic ground.
   b. Damaged motor.
   c. Foreign object in fan.
2. Grinding noise:
   a. Lubrication is needed.
   b. A moving part is rubbing — inspect belts.
   c. Bearings are damaged.
   d. Bad electronic ground.
   e. Incorrect PID parameters in environment.

Note: **If your problem remains unresolved after using the Troubleshooting Guide, please contact the MTS HELPLine at 1-800-328-2255.**

Replacing the GMCC Card Assembly

Follow this procedure if instructed to replace the GMCC card. Please Refer to Figure 5-1 if necessary. You will need a Phillips #1 screwdriver, a 1/4" nutdriver, or open end wrench. Anti-static precautions (ground yourself to the unplugged computer) should be used when handling this card.

Warning: **Shut OFF computer power and remove power cable prior to replacing your GMCC card.**

1. Remove the cable from the rear of the GMCC card.
2. Remove the cover from your computer.
3. Attach a grounding strap between your wrist and the computer chassis.
4. Remove the screw from the retention bracket attached to the GMCC card.
5. Grip the top left and top right of the GMCC card and CAREFULLY lift it from the computer. Avoid touching components.

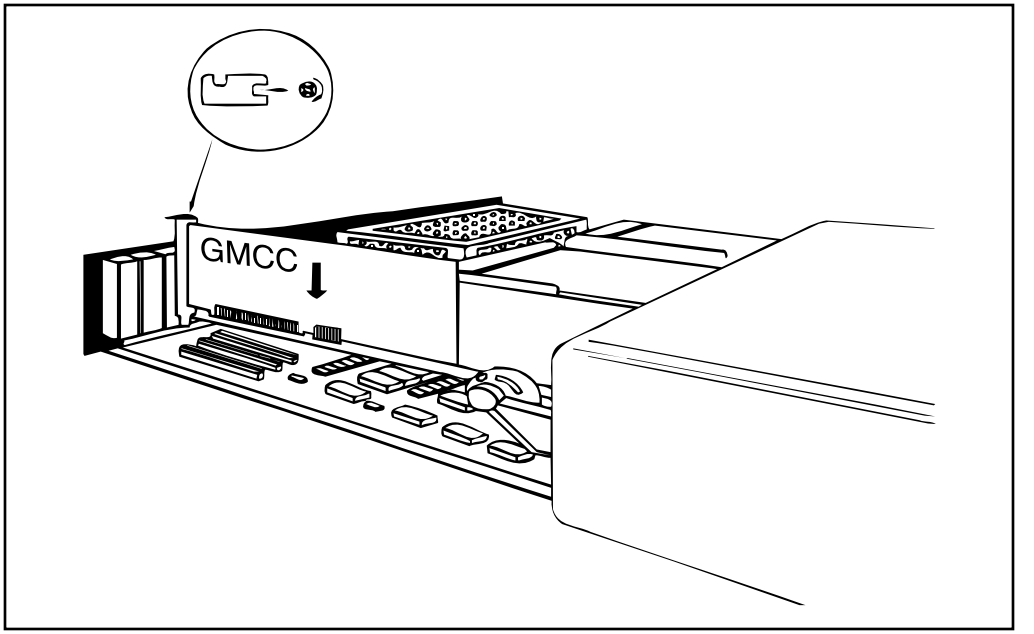


Figure 5-1. GMCC Card Assembly (Shown being installed in computer)

6. Check to make sure the dip switch settings on the new GMCC match the settings on the old GMCC.
7. Install the new GMCC card by following steps one through four in reverse order.

Replacing the QFCC Connector Panel

The QFCC rear panel is located on the rear of the load frame for table top models and on the right-hand side for floor models.

The rear panel assembly contains the QFCC card that is responsible for amplifying load and strain signals, controlling the servo motor and detecting limit switch (sensor) activation. Should you be instructed to replace this panel, you will need a flat technician's screwdriver.

Warning: Turn the load frame power OFF and UNPLUG the power cord.

1. Disconnect all external cables currently connected to the rear panel.
2. Carefully unscrew the screws located around the edges of the rear panel. Hold the rear panel with one hand while removing the screws with the other to prevent the rear panel from falling.
3. Remove the rear panel and lay it face down.
4. Disconnect the ribbon cable.
5. Remove the green power connector.

Installing the Connector Panel

Note: Take special care that you reconnect the cables to their proper mating connector.

- Perform the above steps in reverse order.

Chapter 6: Miscellaneous Information

Recommended QTest Safety and Operation Procedures

- Always back-up important data and test methods on a regular basis.
- Connect the computer to a good quality power line regulator/ isolator or an Uninterruptable Power Supply (UPS) to protect the computer and data.
- Connect the QTest machine to a suitable power line regulator/ isolator or UPS to protect the machine and its electronic components.
- DO NOT leave the QTest system and computer with power ON for long periods of time, such as overnight. Power outages, lightning strikes and power surges can severely damage the equipment whether it is On or Off, but damage can be minimized if the power is Off.
- If, for any reason, the crosshead is moving beyond your test limits, pressing the Space Bar Key on the computer will stop the crosshead during a test.
- The Red E-Stop on the front of the machine should be used to stop the crosshead whenever the crosshead is moving beyond the expected travel range, but should not be used as an ON/ OFF switch.

These recommended practices will reduce the chance of damage to your QTest machine due to accidents or adverse conditions.

Warning: **The computer hooked up to your QTest machine functions as a Controller and should not be used as you would a stand-alone computer. We strongly advise you against adding additional software to the computer, as it may cause the electronics to malfunction. If you disregard this warning, QTest is not liable for damages caused by changing the computer's configuration.**

Warranty Information

- The personal computer and printer are warranted for one (1) year per manufacturer's warranty.
- The two (2) QTest electronic cards (GMCC & QFCC) are warranted for two (2) years. Replacement cards will be sent via overnight carrier if either of these cards is determined to be damaged.
- The mechanical components of the system are warranted for one (1) year from date of purchase. Any defects in these parts will be replaced on site or shipped (at QTest's discretion) to the customer, depending on the extent of the work required.
- The load cells are warranted only against defects in workmanship. They will not be covered if they are damaged due to misuse or abuse.

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP