Quest Exercise Stress System

Simple, complete control with a touch of a finger

Exercise Stress

The Quest® Exercise Stress System provides simple, complete control with the touch of a finger. Everything you need to see is directly on-screen letting you focus on the patient. It is a sophisticated stress testing system in an easy-to-use, intuitive format and a product of Burdick's commitment to innovation and customer satisfaction.

T-Wave Alternans Testing

Optional T-Wave Alternans provides a reliable way to assess patient risk for Sudden Cardiac Death (SCD).

- Inexpensive, non-invasive diagnostic test
- Brief, in-office procedure
- Test runs simultaneously with standard treadmill or pharmacological stress
- This optional technology can be added to Quest at any time

Easy, Intuitive Touch Screen

Quest's unique touch screen user interface means no more knobs or toggles. Just point and touch. Our proprietary Logistep™ guide leads you through the test by highlighting your next step, making it easy to learn. Convenient pull-down menus allow entry of preprogrammed patient-specific information, or addition of commonly used terms and phrases (e.g. staff names, medications and test events). Screens are color-coded to guide you through the process so you'll always know what part of the test you're performing. Plus unintentional phase changes can be easily corrected with the "Whoops/Return to" key. It conveniently returns to the previous test phase without having to start all over again.

Flexible Programming

Multiple user setups and programmability lets Quest work the way you need it to work. You can adjust workloads instantly with stage hold, advance key or switch to an entirely different protocol; all with the touch of a finger. Choose from 11 standard, preprogrammed treadmill and bicycle protocols: Bruce, modified Bruce, Balke, Ellestad, Kattus, Naughton, Ramp, Persantine, manual protocol, Astrand, and Mod Astrand. And you have the ability to customize an additional 20 protocols of your own design. A flexible ramping protocol individualizes patient workload while optimizing test duration. The quick disconnect feature allows patient prep in a different room before testing. This helps keep your office running smoothly.

Features

- Easy, intuitive touch screen lets you focus on the patient
- Performs both resting 12-lead ECGs and stress tests on one system
- Accurate ECG data acquired at the patient eliminating non-cardiac electrical noise
- Flexible programming means you choose the protocol
- Generous storage, enhanced online data editing and several data management options
- Full-range reporting offers over 15 different report configurations
- Digitally controlled treadmill maximizes system reliability
- Optional T-Wave Alternans helps predict Sudden Cardiac Death (SCD)

BURDICK®

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Sensitivity and Specificity with GRI

Quest features the proven Glasgow Royal Infirmary (GRI) algorithm. Its sensitivity and specificity provide a “silent second opinion” of the electrocardiogram. Interpretation is based on five clinically significant criteria: age, gender, race, medications and clinical classification. Reason statements are in clear, plain English, which provides greater insight into ECG results. A pediatric program accounts for the unique anatomy and continuous development of the neonate and pediatric patient. Choice of long and short interpretation text gives just the right amount of information to suit your needs.

Accurate EGG Data

Digital patient module acquires the ECG right at the patient to virtually eliminate non-cardiac electrical noise. Aggressive digital filters remove baseline wander without introducing ST distortion. Quest meets or exceeds all current AHA and IEC recommendations.

Versatile Functionality

Perform both resting 12-lead ECGs and exercise stress tests on one system. Quest interfaces directly with commonly used automatic blood pressure units and echo systems.

Comprehensive Viewing Options

Quest’s real-time display lets you see instantly on-screen what is being recorded. It presents information in a 3-, 4- or 6-channel format. You can choose to freeze frames for detailed reviewing and printing of ECG data. Additional viewing options include choosing user selectable leads, complexes and graphical trends from pull-down menus.

Data Management

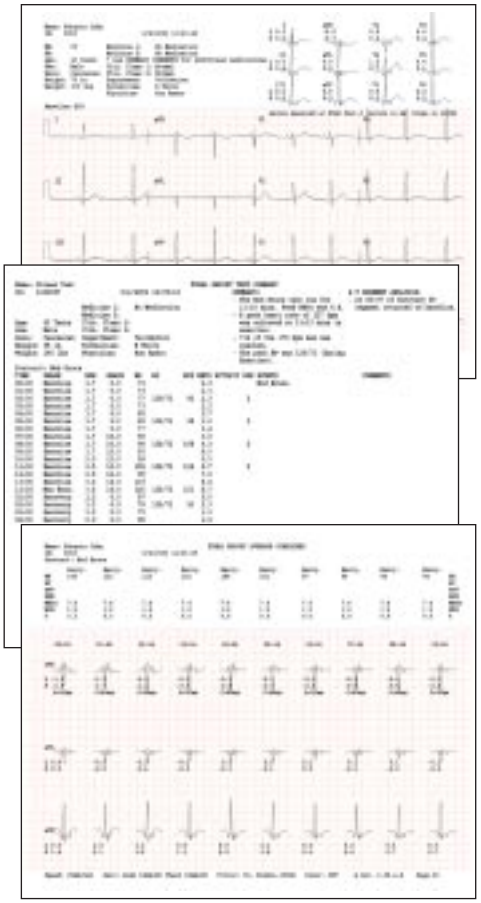
Quest offers generous internal storage, holding over 2,000 20-minute full-disclosure exercise tests. Enhanced online data editing capabilities allow you to correct patient demographic fields, capture test observations using the comments field, edit the test report form, enter comments, and add interpretation for resting ECGs after a test is complete.

Optional Data Management Capabilities

Quest offers several data management options to meet your needs. Using an Ethernet interface, store and retrieve an indefinite amount of full-disclosure stress studies on a network storage drive. The Pyramis® ECG management interface allows you to download the stress test final report to Pyramis via HL7 protocol. The Network option also stores stress tests in a PDF or XML format.

Digitally Controlled Treadmills

Burdick TM55 and TM65 treadmills are digitally controlled. They have fewer moving parts, which maximize system reliability. They have a controlled “soft start” for patient safety and quiet operation through entire speed range, eliminating office disruption. The digitally controlled AC-drive system provides high torque for accurate speed and grade, regardless of patient weight. Plus they are fully integrated into the Burdick Quest Exercise Stress Systems.



Choose from over 15 different report configurations.

Full Range of Reporting Features Gives You Exactly What You Need

Quest offers a full range of 3-, 4- or 6-channel report options with logical, easy-to-read formats and high-contrast tracings. You get the exact information you need in an orderly layout. Select from final report summary, average complex summary and detailed reports, arrhythmias and final reports. Choose from over 15 different report configurations. Trend graphs include:

- Heart Rate
- Ectopics
- ST levels
- Blood Pressure
- METS
- Rate Pressure Product

ORDERING INFORMATION

B24-1AP01		**Standard U.S. configuration with treadmill**
Model B24-		**Quest Exercise Stress System**
	1	English language
	2	German language
	3	French language
	4	Italian language
	5	Spanish language
	A	120V operations
	C	220V operations
	G	120V Bicycle ergometer
	H	220V Bicycle ergometer
	L	Resting ECG (optional)
	M	Network (optional)(English only, includes PDF/XML export)
	P	AHA accessory kit (8 1/2" x 11")
	R	IEC accessory kit (A4)
	T	AHA Microvolt T-Wave option
	W	IEC Microvolt T-Wave option
	Y	Laser printing option 120V (English only)
	Z	Laser printing option 220V (English only)
	01	TM55 Treadmill 120V

Accessories and Supplies:

010-0711-00-00	Bicycle ergometer 120V/230V
008049	Bicycle ergometer to Quest interface cable
TM65LXXRBE	TM65 Treadmill 120V
TM65HXXRBE	TM65 Treadmill 230V US/Canada
TM65HECRBY	TM65 Treadmill 230V UK/Europe
TM55LXXRBE	TM55 Treadmill 120V
TM55HXXRBE	TM55 Treadmill 230V US/Canada
TM55HECRBY	TM55 Treadmill 230V UK/Europe
216-0237-00	Assurance® fade-resistant paper
015-0629-00	Baseline Blue Max Stress Prep Kit
015-0635-00	T-Wave Alternans high-resolution electrodes (package of 20 sets; 7 per set)

Contact your local sales rep for current configurations and ordering information, including language options for treadmills.

Quick disconnect allows patient to move about freely before testing begins.

Quest Exercise Stress System

TECHNICAL SPECIFICATIONS	
Dimensions	60" x 25" x 34" (152 cm x 63 cm x 86 cm)
Weight	<170 lbs. (78 kg)
Monitor	**Type**: 15" High-resolution color with integrated touchscreen; **Mount:** User-adjustable tilt (•15°) and swivel (•90°); **Content:** 3, 4 or 6 ECG channels, real-time; information and alphanumeric data; **Displayed leads:** User-selectable during a test; (3-, 4- and 6-channel); Waveform display •8 seconds per lead of ECG in 3-channel mode
Keyboard	**Main keyboard:** QWERTY layout; **Ergometer control**: Dedicated keys for ergometer speed, grade, start and stop
Input/output	**Digital I/O:** RS-232 interfaces to treadmill, bicycle ergometer, and optional automatic blood pressure monitor; TTL pulse for QRS detection, 50 msec. delay; **Analog output:** 4 user-selectable outputs
Standard interfaces optional	**Network:** Ethernet 10baseT for full disclosure report storage and export of final report data using HL7 protocol or XML; **Removable media:** Zip drive for full-disclosure test storage – compatible with 100 MB and 250 MB disks
Power requirements	115/230V AC +/- 10%, 2.5/1.25 A, 50/60 Hz nominal 300 VA max.
Chart recorder	**Paper type:** Pre-grided thermal paper, Z-fold, 8.5" x 11" (US letter) or 210 mm x 300 mm (A4); **Printout device:** 216 mm thermal dot array; **Paper speed:** 10, 25, 50 mm/sec. +/- 2%; **Printing options:** Multiple format ECG waveform and alphanumeric printing, diagnostic quality; **Gain:** 5, 10, 20 mm/mV +/- 5%; **Frequency response:** 0.05 Hz to 150 Hz +/- 10%; **Muscle artifact filter:** User-selectable: Off, 20 Hz or 40 Hz; Baseline filter User-selectable: Off, 0.12 Hz or STABLE (meets or exceeds all 1990 AHA recommendations); **Calibration signal:** 1.0 mV for 200 msec. +/- 5%
ECG computations	**Heart rate computation:** 8-beat average, 30 bpm to 250 bpm, updated every second **ST measurements:** 20 sec. moving window with 10 sec. updates to the display and to reports; **ST parameters:** Level, slope for 12 leads simultaneously; **QRS detection channels:** II, V2 and V5 with switching; **Ectopic detection:** Ventricular arrythmias, unclassified; **ST reference points:** User-selectable: E-point (QRS onset), J-Junction (QRS offset), ST point (0 msec. to 100 msec., 5 msec. interval) with display/printout annotation
Protocols	**Preprogrammed:** Manual, Bruce, Modified Bruce, Balke, Naughton, Ellestad, Kattus, Ramp, Astrand, Modified Astrand, Pharmacological; **User-defined:** 20 protocols with up to 30 stages each plus; Warmup and Recovery phases
Patient module	**Dimensions**: 1.3" x 4.3" x 3.8" (3.3 cm x 10.92 cm x 9.65 cm); **Weight**: <1 lb. (0.5 kg); **Frequency response**: 0.05 Hz to 150 Hz, +10% to -30% (maximum); **Defibrillation protection**: To 360 J, 5 kV; **Common mode rejection**: >120 dB at 60 Hz; **Electrode offset tolerance**: +/- 300 mV; **Line frequency filters**: User-selectable 50 Hz, 60 Hz or off; **Noise:** <30 µVpp; **Pacemaker pulse indication:** Per EC13; **Input channels:** Simultaneous acquisition of 8 leads plus 4 derived leads; **Defibrillation recovery:** Maximum recovery time is 8 seconds; **Patient connection**: 10 replaceable leads
Exercise stress reports	**During exercise:** 12-lead or Average Complex with Trend Graphs (HR/BP, Single-lead ST, 12-lead ST, Side by side averages, Overlaid averages, 12-lead averages), Rhythm, Ectopic Beat, Event Identification; **Final report:** User-selectable: Exercise Test Summary in tabular or narrative format; Average Complex Summary (Baseline, Maximum ST, Maximum Exercise); Trended Average Complexes (per minute or per stage); Trend Graphs (HR/BP, RPP, METS, Ectopics, 12 single-lead ST); Stress Report Form; **Comments:** Selectable, user-defined; **Configurations:** Up to 5 user-defined configurations with final reports and protocol selections
Ergometer interface	**Treadmill:** Dedicate a 110V 20 amp plug in. Dedicated serial RS-232C for TM55 or TM65; Bike Dedicated serial RS-232C for Treadmill Burdick supported bicycle ergometer
Ergometer control	**Control modes:** Automatic or manual; **Displays** Workload in METs; Phase, Stage and Exercise; Test Time (ETT); Ergometer values for treadmill-grade in percent, speed in mph or kmh; for bike -workload in watts, speed in rpm
Environmental specifications	**Operating;** Temperature 50°F to 104°F (10°C to 40°C); **Relative humidity** 15% to 95% non-condensing; **Atmospheric pressure** 525 mmHg to 795 mmHg (700 hPa to 1060 hPa)
Conforms to standards	EN60601-1-1; IEC 601-2-25; EN60601-1-2; ANSI/AAMI EC11, 1991
Safety	IEC 601-1 Type CF Defibrillator Proof
Warranty	Quest system, 3 years; treadmill, 13 months

Phone: 800-777-1777, 608-764-1919 • Fax: 608-764-7188 • www.cardiacscience.com/burdick

Form No. 4011 Rev. D 1005 Printed in USA.

CE 0086

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