PHILIPS

*Page**Writer***

TC70 Cardiograph

The right
touch

Make it easy.
Make it fast.
Make it right.

As clinical environments become increasingly complex, it has never been more important to implement effective, easy-to-use solutions. Enter the Philips PageWriter TC70, a cardiograph designed to help you simplify cardiac patient care. This advanced cardiograph accelerates diagnostic ECG testing and streamlines workflow, by delivering high-quality clinical reports wherever and whenever you need them. In short, no matter how hectic your clinical environment, PageWriter TC70 is at your side.

Ensure quality
Color-coded waveforms on all 18 leads integrate with lead maps to enable high quality test results.

- **Easy to use:** PageWriter TC70 makes it easy to get things right with a simple, high-quality 15-inch touch display, plus illuminated buttons and color-coded signal quality indicators.

- **Automated workflow:** Acquire, print, save, transfer, and retrieve diagnostic ECGs to and from Philips IntelliSpace – all automatically.

- **Clinical excellence:** Get complete clinical information with the Philips DXL ECG Algorithm including integrated 18-lead interpretation and advanced STEMI diagnostic aids.

- **More data, less stress:** A high-performance 2D barcode scanner allows you to capture extensive data from a single scan.

- **State-of-the-art connectivity:** Benefit from open connectivity, plus IntelliSpace ECG, TraceMasterVue, Epiphany Healthcare Cardio Server™ and GE MUSE connectivity.

- **Smart technology:** Auto-detection of lead reversals reduces the risk of incorrect lead placement during testing.

- **Industry-standardized report formats:** A range of report formats are available, including XML, PDF and DICOM – for seamless integration into your IT infrastructure.

Follow the leads
An anatomical Patient Information Module mirrors the body, so clinicians can quickly and easily locate the right lead wires – reducing the risk of lead reversal, and therefore supporting accurate lead placement on the patient.

Avoid tangles
The Trident lead system unites three lead wires to reduce tangling and reversals, for easier placement and quicker ECGs.

Quality design
High-quality cables and lead wires can be replaced individually.

Just touch it
Take ECGs from the large touchscreen, the keyboard, or the Patient Interface Module with a single touch of the green button.

It is as easy as 1-2-3
User-friendly illuminated buttons speed workflow

Map ➔ **ID** ➔ **ECG**

Connect Leads
The system will perform quality controls, in the form of lead reversal detection and lead checks (impedance).

Enter ID
The ID button enables electronic data entry, reducing the risk of errors caused by entering information manually. Confirm ID with the barcode scanner, or the IECG or EMR interfaces.

Take ECG
Acquire, analyze, print and transmit data with a single button. This standardizes your workflow, so that each ECG is captured and screened, and delivers critical, time-sensitive results to clinicians.

Streamline workflow from start to finish

PageWriter TC70 is designed from the ground up to speed the flow of diagnostic ECGs throughout your hospital enterprise. It streamlines everything from downloading work orders and marking cardiac events to acquiring, printing, and transferring ECG reports to your IntelliSpace ECG management system. And it gives you one-button access to previous ECGs to help speed decision making.

Pinpoint concerns
Quickly mark up to 15 different cardiac events for later review with a single touch of the screen.

Never miss a beat
Capture and store 20 minutes of uninterrupted 18-lead data to capture periodic and intermittent arrhythmias using full disclosure. Select any 10 seconds for a fully interpreted report.

Save it
After up to 20 minutes, cardiac event data is automatically saved in a time capsule, so you never lose sight of an important clinical episode.

IntelliSpace
ECG Management System

Get Orders
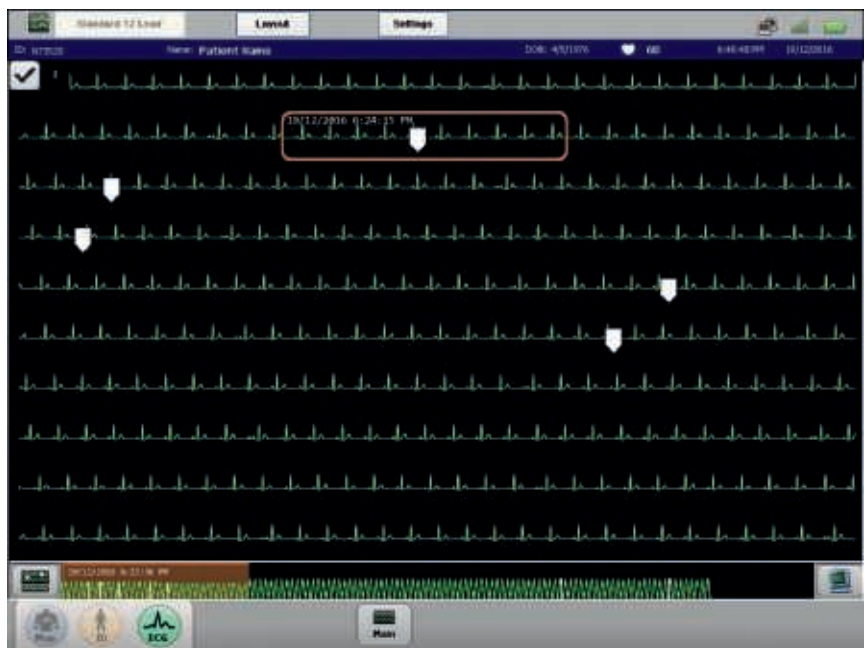
PageWriter TC70
Cardiograph

Synchronize time
Auto set the PageWriter time with your hospital time master to obtain accurate documentation of your patient's clinical history.

Download orders
Import ECG orders with complete patient information from IntelliSpace ECG (DICOM order manager, EMR).

CCX compliance
Support for open communication protocols like Cisco's CCX and 802.11 (a,b,g,n)

Access ECGs anytime
Ever need a physician to read an ECG 10 minutes after they have left the hospital, or when they are 50 miles away? With TC cardiograph communications capability and IECG virtually anywhere, your physicians can access ECGs for confirmation, over-reads and consultation right around the clock.

Instant access
Easily acquire or enter patient demographic information by barcode scanning, keyboard entry, worklist download or patient search.
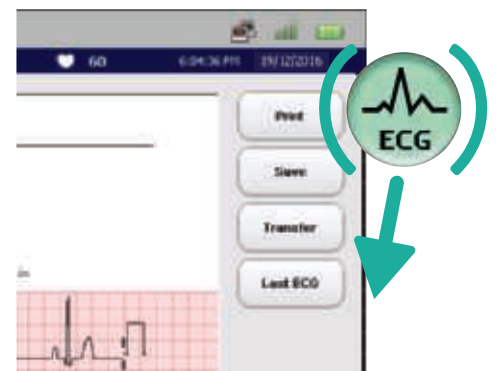

One-touch workflow
With a touch of a button, PageWriter TC70 can be configured to automatically print, save, transfer and retrieve a previous ECG – significantly accelerating your workflow.

ECGs that meet your high standards

PageWriter TC70 is designed to meet your high clinical standards for quality, accuracy, and consistent performance. The Philips DXL ECG Algorithm uses advanced methods to analyze 16, and even 18, simultaneously acquired leads. It delivers an up-to-date interpretation of ECG data – particularly with expanded ST Elevated Myocardial Infarction (STEMI) diagnostic aids, as well as leading pediatric analysis, pacemaker pulse detection, and QT measurements.
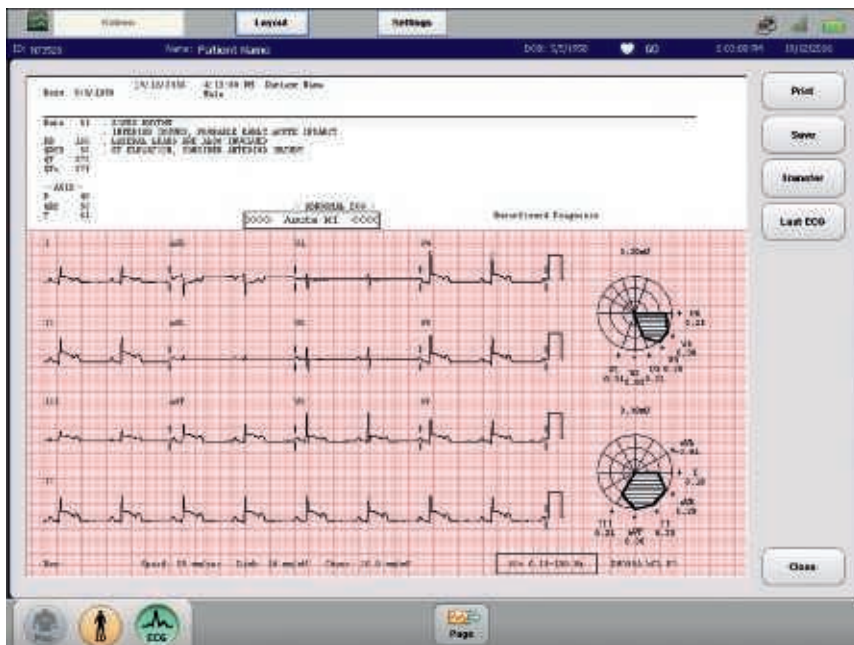
Reveal more
Our DXL 18-lead algorithm incorporates right heart and posterior wall information across a broad range of adult and pediatric conditions.

ST map
At a glance, get a clear indication of ST elevation for quick triage.

Critical Values
Quickly identify patients that need urgent care in support of Joint Commission Patient Safety goals.

STEMI-CA
Culprit artery criteria provide an indication of which artery may be occluded to help you manage your cath lab interventions.

Clinically significant
The previous ECG can be automatically retrieved at the bedside, because a cardiac event is dynamic, with clinical decisions changing frequently during an encounter.

Check and confirm quality
Preview ECG waveforms and interpretation on the 15-inch touchscreen to check for signal quality before printing.

Be sure
Unique LeadCheck software tests for 20 different lead reversals to help you be sure of capturing a diagnostic-quality ECG.
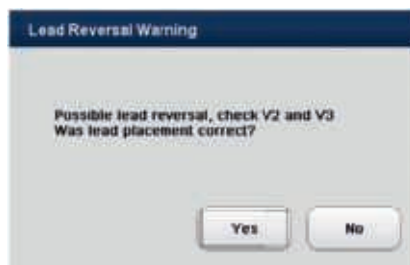
Gender-accurate analysis
Differentiated criteria to help interpret cardiac symptoms in women, including identification of ischemia.

Up-to-date statements
Enhance consistency of care with terminology that conforms to ACC/AHA recommendations.

Stay connected

PageWriter TC70 fits seamlessly into your existing IT infrastructure, and supports WiFi 802.11 a/b/g/n. So you are always connected – without being locked in.

Maintain security

The PageWriter TC70 delivers secure, wireless connectivity via standard LAN protocols like 802.11(i) and WPA2/CCMP to protect the privacy of patient, staff, and financial information.

PageWriter TC70 benefits

Clinicians
- Simple 1-2-3 process
- 3-in-1 Trident lead wires minimize tangling
- Mark events within 20 minutes of patient's ECG
- Anatomic PIM design supports correct lead placement

Department Managers
- Automated sequence speeds workflow
- Critical Values identify patients who need urgent attention
- LeadCheck reveals lead reversals at the bedside
- Solution supports consistent, standards-based workflow and terminology

IT Administrators
- Strong wireless security toolset 802.11(i), WPA2/CCMP
- Connectivity using industry standards
- Built on a native XML format

Cardiologists
- Integrated interpretation on 18 leads
- Advanced STEMI diagnostic tools
- Previous ECGs aid clinical diagnosis

Ready to move with you

A compact user-friendly mobile cart lets you speed PageWriter TC70 wherever you need to go.

Technical specifications

ECG functions

Simultaneous lead acquisition	· Up to 18 leads
ECG reports: 12-lead	· 3x4, 3x4 1R, 3x4 3R, 3x4 ST, 3x4 1R ST, 6x2, 12x1, 6x2 1R · Standard and Cabrera formats, plus Pan 12 Cabrera
ECG reports: Extended leads	· 3x5, 3x5 1R, 3x5 3R, 4x4, 4x4 1R, 6x2 1R · Standard and Cabrera formats, plus Pan 12 Cabrera
Rhythm strips	· Up to 18 configurable leads
Event marking	· 15 independent events can be marked for later review and analysis
Full disclosure	· Twenty minute history of all 18 leads · Complete ECG report of any 10 seconds
Timed ECG	· Support for pharma stress protocols
Report storage/transfer	· Full fidelity at 500 Hz of all 10 sec for up to 18 leads · PDF, XML, DICOM 12-lead ECG, and DICOM General ECG formats

Philips DXL 18-lead ECG algorithm

Interpretive statements	· >600 interpretive statements · Integrated pediatric analysis
Leads used in diagnosis	· Standard 12 leads plus V3R, V4R, V5R, V7, V8, and V9
LeadCheck	· Lead placement software detects lead reversals
Borderline statement suppression	· Three configurable settings
Standard measurements	· Ten interval, duration, and axis measurements · Configurable QT correction method
Extended measurements	· 46 measurements of Morphology analysis in each of 18 leads; 21 parameters of Rhythm analysis
Reasons	· Selectable explanations of all interpretive statements
Nomenclature	· Conforms to 2009 AHA/ACCF/HRS Recommendations for the Standardization and Interpretation of the Electrocardiogram and 2013 ACCF/AHA STEMI Management Guidelines

STEMI diagnostic aids

Graphical ST vector	· Two polar ST Maps; frontal and transverse planes
Unique right heart statements	· 9 statements called by right-chest leads
Unique posterior MI statements	· 16 statements called by posterior leads
STEMI-CA	· Criteria that suggest the probable site of the occlusion
Critical values	· Highlights 4 conditions requiring immediate clinical attention

Networked features

Central time management	· Time can be synchronized to a networked time master
Last ECG orders (requires IntelliSpace ECG)	· Automated retrieval of previous ECG · Configurable rules to retrieve cardiograph-specific Worklists

Signal quality indicators

Leads-off advisory	· Anatomical lead map displays the location and label of any loose or disconnected leads/electrodes
Lead color	· Four colors to indicate levels of waveform quality
LeadCheck	· Lead placement software detects lead reversals
Heart rate	· Continuous display of patient heart rate
Print preview	· Full screen preview of complete 18-lead report prior to printing

Training

Application help	· Integrated graphical help screens for primary functions
Self paced	· PC-based, interactive, dynamic animation covering all major clinical functionalities

User interface

Touchscreen	· 1-2-3 operation · Context-sensitive application · 5-wire, resistive touchscreen
Keyboard	· 65 button, standard full alphanumeric keyboard · Special characters supported

Display

Size	· 15 inch TFT
Resolution	· Active matrix 1024 x 768 XGA
Colors	· 64K colors

Signal processing

Sampling rate	· 8,000 samples per second per lead wire
Patient Interface Module	· Remote, microprocessor-controlled digital module provides 5µV resolution

Printer

Resolution	· High-resolution, digital-array printer using thermal-sensitive paper; 200 dpi (voltage axis) by 500 dpi (time axis) at 25 mm/s
Paper sizes:	Z-fold letter and A4

Connectivity

Modem (option H11)	· V.90, K56flex, enhanced V.34, V.32bis, V.32, V.22bis and below
Fax (included in H11)	· Group 3, Class 1 or 2 fax modem protocol
LAN connectivity	· 10/100 Base-T IEEE 802.3 ethernet via on-board RJ45
Wireless connectivity (option D24)	· 802.11 (a/b/g/n)
Wireless security (option D24)	· 802.11(i), WPA, WPA2
Internal storage	· 200 ECGs
External storage	· 200 ECGs with optional USB device

Automated data input

Barcode reader (option H17)	· Reads Code 39 Symbology · Flexible field data entry
Magnetic card reader (option H13)	· Four configurable Patient ID fields · ISO 7810, 7811-1,-2,-3,-4,-5
Smart "IC" card reader (option H14)	· ISO 7816 and EMV 3.1.1; supports SLE 4418/28 and SLE 4443/42

Pre-processing filters

AC noise	· 50 or 60 Hz
Signal processing	· Artifact rejection and baseline wander

Presentation filters – 10 sec reports

High pass	· 0.05, 0.15, and 0.5 Hz
Low pass	· 40, 100, and 150 Hz

Presentation filters – rhythm

High pass	· 0.05 and 0.15 Hz
Low pass	· 40, 100, and 150 Hz

Electrical

Battery	· Lithium ion; 2 modules; hot swappable with direct access
Battery capacity	· Typically 60 ECGs on a single charge or 60 minutes of continuous rhythm recording; · No fail operation during ECG printing
Battery recharge	· 5 hours to full capacity
External battery charger/calibrator (9898 0316 2021)	· 4 hours to full capacity
AC power	· 100-240 Vac, 50/60 Hz
Power consumption	· 75 W max

Mechanical

Dimensions	· 40 x 33 x 16 cm (15.7 x 13 x 6.3 in)
Weight	· 13 kg (28 lb) · Includes battery, patient module, lead wires, alligator clips, electrode pack and paper pack

Environmental

Operating conditions	· 10° to 40°C (50°F to 104°F); · 15% to 80% relative humidity (non-condensing); · Up to 4,550 m (15,000 ft.) altitude
Storage conditions	· (–20°C to 50°C) (–4°F to 122°F); · 10% to 90% relative humidity (non-condensing); · Up to 4,550 m (15,000 ft.) altitude

Safety and performance

International standards and regulations	· IEC 60601-1: 1988 +A1:1991 +A2:1995 general requirement for safety · IEC 60601-2-25: 1993 + A1:1999 safety of electrocardiographs IEC 60601-2-51: 2003: particular requirements for safety · UL 2601-1: 2003 1997 US general requirements for safety · CAN/CSA-C22.2 No. 601.1–M90 S1:1994 B:1996 · AAMI EC11 1991 (R: 2001): diagnostic electrocardiographic devices

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