Get More Options
Durability
Tech Support
Warranty
Accessories
Wireless
Use
Shielding
Equipment Lifespan
Value
Customer Service
Quality
Receivers
International Collaboration
Support
Gain Options
EMG
Connectors
Pre-amplifiers
Bandwidth

MOTION LAB SYSTEMS

The BEST EMG Guaranteed

MA300 EMG Systems

Call today for a free 30 Day Demo!

Every MA300 EMG System Includes:

- EMG Channels - 6, 8, 10, 16
- Full Set of Pre-amplifiers
- Real-Time EMG
- Minimum 10-1000Hz

Advanced MA300's Also Include:

- Bandwidth up to 2kHz
- 4 Extra Research Channels
- 8 Dedicated Events Channels
- 8-Setting Low Pass Filter

Easily Add Wireless

Flexible

Built in options meet your exact needs.

- Ultrawide EMG bandwidth (Meets ISEK)
  Double the bandwidth of other brands!
- Maximize the signal and eliminate clipping
  10 position channel gain options
- Connect and record other equipment
  Unique ideas and custom sensors? Let us help.
- Combine multiple electrode types
  Surface preamplifiers, fine-wire electrodes, or snap gels
- MA300 Systems are in use worldwide
  Cerebral Palsy, Parkinson's, and sports

Reliable

Depend on your equipment.

- Individual Signal Level Indicators
  Instantly shows overload and signal errors
- Internal Calibration Button
  A set signal to document accuracy and settings
- Ensure data with long lasting quality parts
  Shielded cables, metal boxes, stainless steel disks
- High standards and quality design
  Ensure the best CMRR and smooth cutoffs Signals without ringing
- Endless Digital Recording
  Live, raw, full bandwidth data
  No delays or signal dropout

TIP Buy now and add more channels or add on wireless option later!

Wireless Option

New and existing MA300 users can now easily and affordable upgrade to wireless!

- Clean, real time, wireless data!
- Plug directly into MA300 EMG Systems
- Secure encrypted transmission
- Supports DC-2000kHz bandwidth
- Up to 28 channels!

TIP ONLY A 1.2MS TRANSMISSION DELAY- Means perfect synchronization with 3D and video systems.

Intelligent Telemetry

When operating as a wireless system, the MA300 is virtually error-free in environments that cripple competing systems. The MA300 wireless system supports up to three individual intelligent telemetry receivers, each receiver checks the integrity of the data allowing the MA300 to use any receiver that has an accurate, error-free signal. In addition, it's possible to use either a direct cable connection or telemetry - switching between the two methods of data transmission only takes seconds. A feature of this compatibility is that the EMG signal latency - the delay between the EMG signal at the subject and the EMG signal reaching your computer - is less than 2ms at 1kHz bandwidth, offering true real time performance.

Intelligent system design automatically selects a receiver with the best signal.

4 Channel EMG Interface

Ideal for:

- Student Projects
- Research Applications
- Preliminary/Exploratory

***This is not a complete MA300 EMG System. There is NO ELECTRICAL ISOLATION. This is intended for research and has no clinical approvals for use on human subjects.

Simple & Quick EMG

- Ideal for smaller research studies
- Affordable interface
- Easily connects advanced differential pre-amplified electrodes into ADC
- Available as interface box only or as complete ready to connect package

EMG Interface Box

Simple Box unit offers you the capability to power up to 4 pre-amplifiers and output the signal through standard BNC outputs.

- 4 Pre-amplifier Input Plugs (Binder)
- 4 Output Plugs (BNC)
- Optional Ground Connection Plug (DIN)
- Two Power Lights

EMG Interface Kit

Power and connect two pre-amplified EMG electrodes in this one simple package.

- 4 Channel Interface Box
- 2 Surface Pre-Amplified Electrodes
- 1 Reusable Ground Electrode

TIP

Buy now and trade in for credit towards a complete MA-300 EMG System later!

Data Viewing & Recording

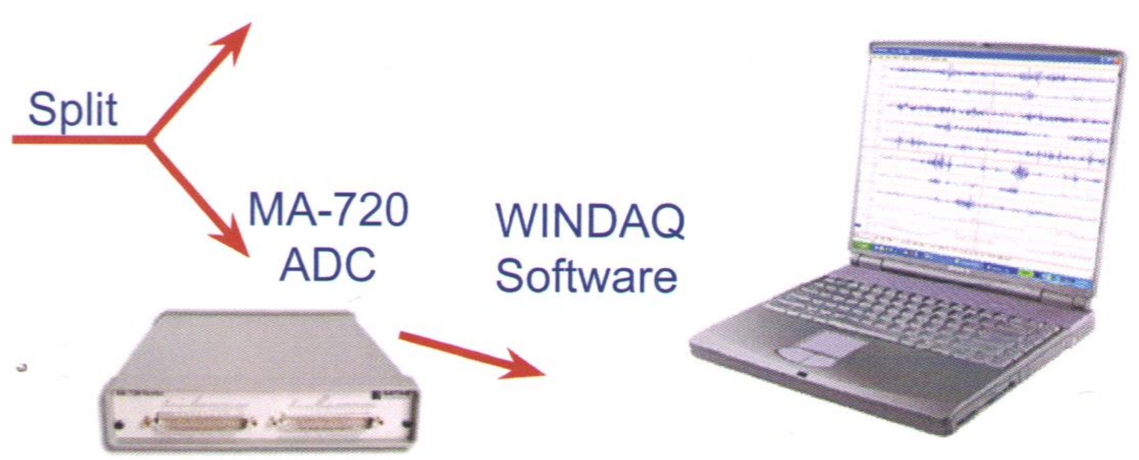
Improve Data Quality!

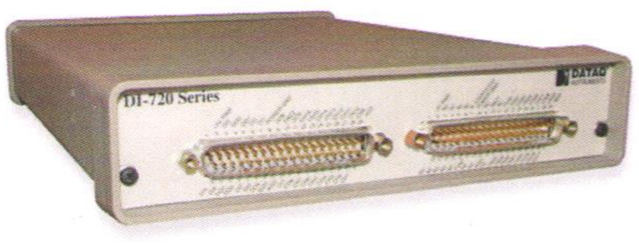
Live high resolution data viewing immediately alerts you to any problems (e.g. poor electrode contact), so they can be fixed as they arise, resulting in higher quality recordings!

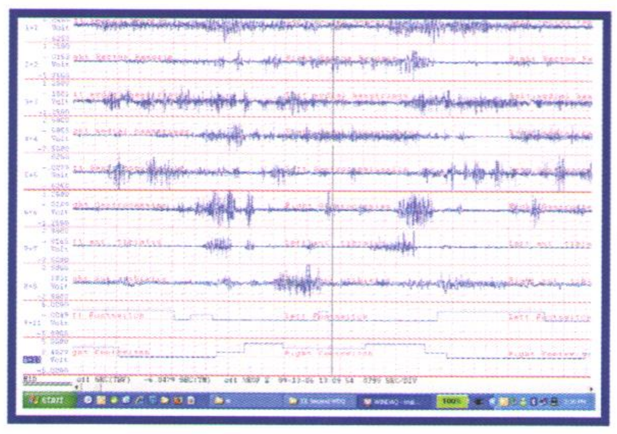
Easily connect:

- To a standalone PC
  (Using MA-720 & WINDAQ-PRO)
- Directly to an existing ADC
  (Such as Motion Capture)
- Or Simultaneously Connect
  (Using free splitter cable)

Motion Capture & **Force Plate** & **Other Analog Systems**





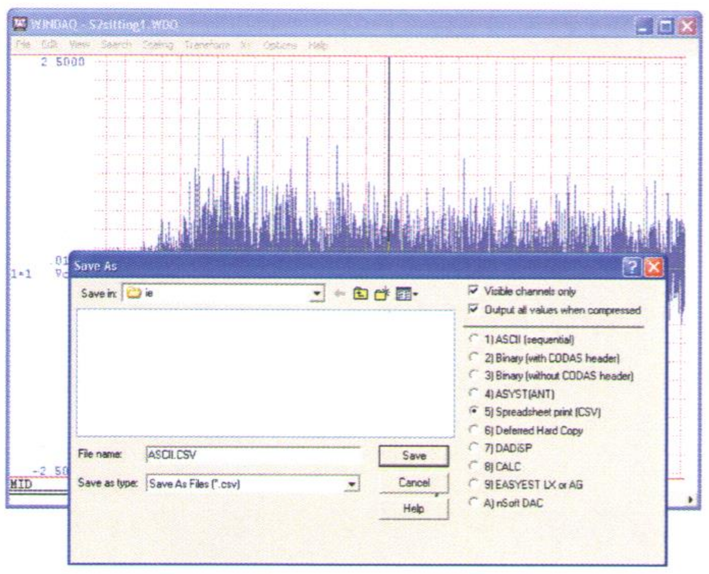


Analog to Digital Data Conversion

- Connects MA300 EMG System to a PC for stand-alone EMG!
- Easy to Connect and Use- USB Connection
- High Resolution Capability- (250 kHz at 16-bits)

Real Time Viewing Software

- Included with the MA-720 HARDWARE
- Real Time Heads-Up Display- View, live streaming data.
- Display Up to 16 EMG channels.
- Multi-tasking operation while still displaying live data!



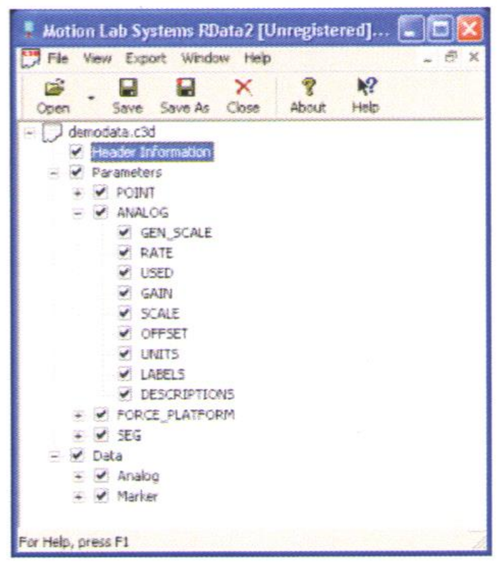
Advanced Recording Software

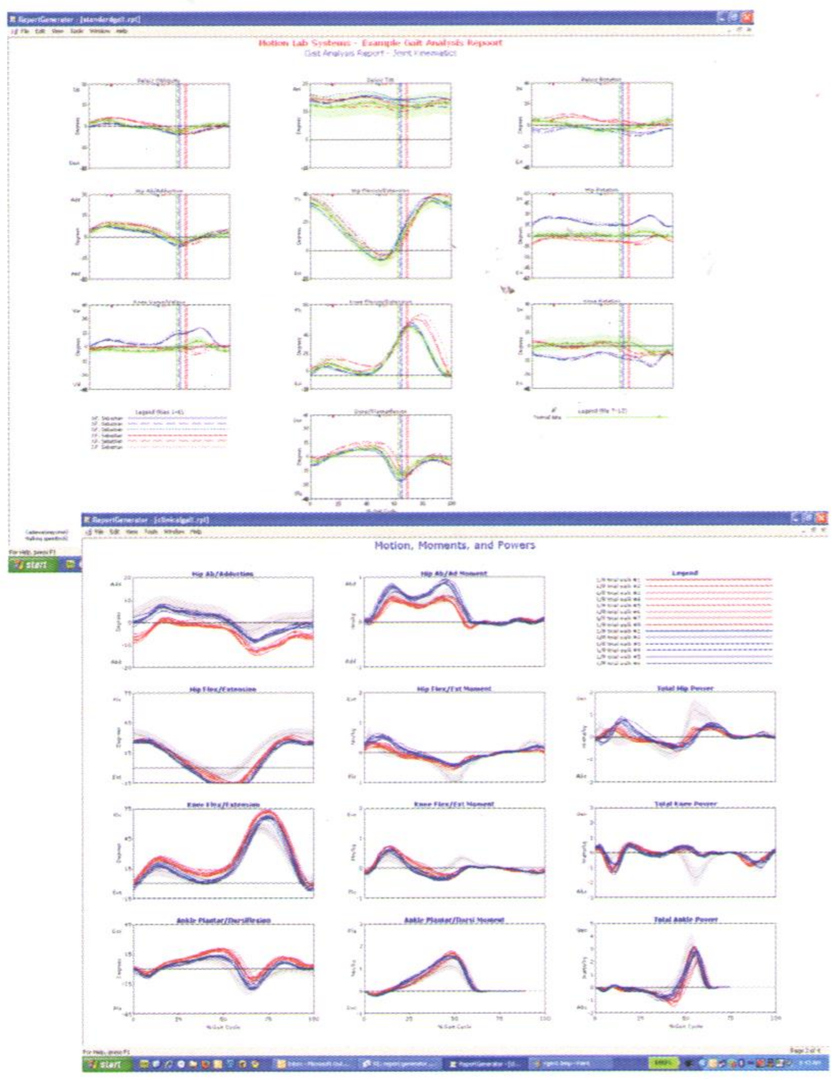
- Record and display 32 data channels, live and in real time.
- Sample your data at optimal speeds! Up to 250,000/sec.
- Export, import and translate data files (text, ASCII, MATLAB...)
- Label channels and add data comments during/after collection.
- Includes many data handling and analysis features such as Automatic Time and Date Stamping, Over-Sampling, Frequency Analysis, Digital Filtering, X-Y Plotting, and Programmable Gain.

TIP Works with Vicon, MAC, Qualysis, AMTI CodaMotion, Bertec, Kistler, and more!

RData2

A universal ASCII file exporter reads several file formats and converts the data to any CAMARC, DST, ASCII format or to a customizable ASCII text format specified by the user.





Report Generator

Advanced Graphing, Editing & Printing.

Works with various vendor files! Report Generator Software plots multiple files in a single report, allowing easy comparison and graphical data identification.

- Easy and effective visualizations
- Customizing, colors/stylizing, orienting options
- Works with kinematic, kinetic, analog & EMG data
- Overlay EMG/force over kinematic graph
- Easily graph and plot multiple channels, files and variables
- Multi-task! Open, view and work with multiple reports
- Add data from up to 120 files into graphs and reports
- Easy printing, flexible outputs!

Gait Cycle Calculation Add-on

Automatically extract and calculate numeric variables.

- Use with Report Generator to perform common gait-related calculations automatically (MAX, MIN, AVE) for gait cycle, stance and swing phases as well as sophisticated slope, area-under-curve and waveform enveloping calculations on any GCD/C3D data file.
- Easily create and automate any number of variables (value of maximum knee flexion, time within the gait cycle when a maximum occurs, slope of any section of the gait cycle data power over any period within the gait cycle).
- Each variable can be stored within the file or used and referenced by subsequent calculations.

Export files directly to PowerPoint for easy presentations.

Subject Vests and Belts

- Secure- Large Velcro placement pad securley holds equipment in place
- Organize- Included Velcro cable holders help group and organize cables
- Washable and Reusable
- Adjustable- Velcro closure for easy adjustment

A. Child Size Vest
B. Teen Size Vest
C. Adult Medium Size Vest
D. Adult Large Size Vest
E. Child Size Belt
F. Adult Size Belt

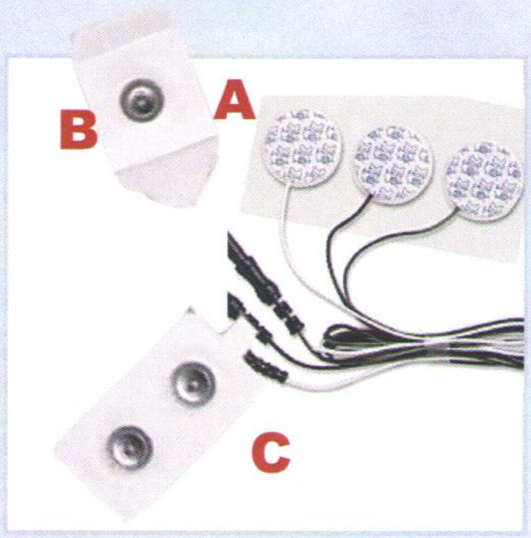
TIP Two vests are included with the Advanced EMG System.

Electrodes

Fine Wire Needle Electrodes- Bi-polar/paired needles with a 200mm long wire for EMG applications, work great with Motion Lab Systems brand discrete pre-amplifiers. Sold as a 10 pack of individually wrapped needles with threaded wires.

• Sterilized • Disposable • Pre-assembled • Stainless Steel

30mm 27 Gauge or 50mm 25 Gauge



Mini Adhesive Electrodes- Small single-use gel electrodes that adhere directly to the skin surface. Great for small, hard to reach muscles.

A. Cabled sets of 3 with DIN connector.
B. Single snap connector sold in a box of 50.
C. Dual Snaps with 20mm spacing sold in a box of 120.

Using an extra ground? The cabled, disposable, adhesive electrode can plug directly into the MS-300 backpack.

Reusable Ground Electrode- a durable, reusable electrode with a 1 inch contact. Connects to the EMG System backpack as an extra ground.

Knee Alignment Device

Independently define the knee flexion/extension axis.
This virtual knee joint center eliminates the need for the medial knee marker.

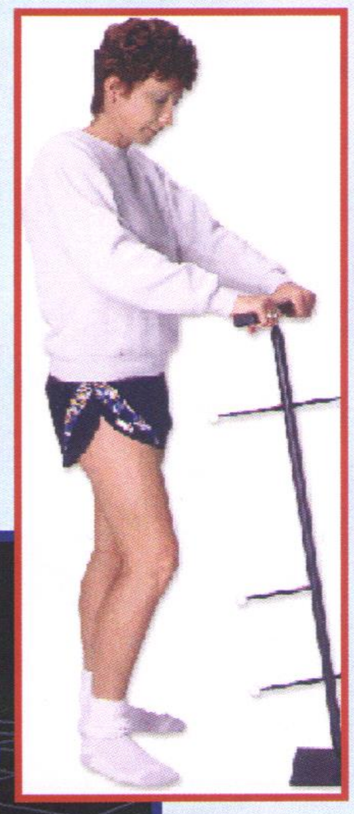
- Set of Two- Complete with 6 retro-reflective markers.
- Supported by most major motion capture systems.
- Comfortable Fit- Latex-free pads provide added comfort at the knee.
- Easy to Place- Spring-loaded adjustment slides open & holds securely in place.
- Customer Support- Equipment maintenance and spare parts are available.

Easy to Use

1. Fit the KAD onto the knee.
2. Perform a static trial of flexion/extension of the knee.
3. Calculate the virtual knee joint center with your supporting motion capture software.
4. Remove the KAD.
5. Use the calculated knee joint center location during motion capture trials.

MTD-2 Mechanical Testing Device

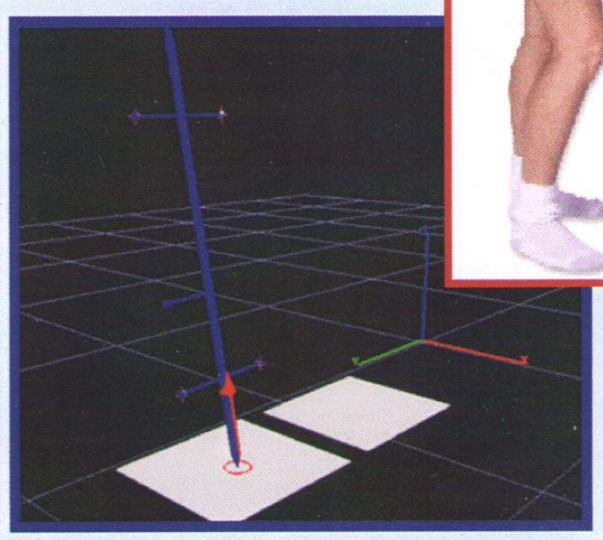
Have you moved 3D cameras or changed force plate settings?



This inexpensive and vital quality assurance tool can be used to ensure the accuracy and reliability of your kinematic and kinetic data. The device is simple to use - just assemble and use it to apply a force to the plate that you wish to test and then analyze the data using the CalTester software package available from C-Motion.

Uses

- Accurate determination of the force plate position within the lab coordinate system.
- Ensure correct settings of parameters (analog scale factors and origin offsets).
- Quality control in gait and biomechanics labs.



Features

- Durable metal, precision-manufactured.
- Passive and active marker systems!
- Includes both retro-reflective markers and mounting disks.
- Assembles in less than a minute.
- Durable storage case included.

Connect and Power

Signal Cables

A single ultra-thin cable connects the MA-300 EMG System Backpack to the Desktop Unit transmitting live, raw data. The same cable simultaneously supplies isolated DC power.

Add on the Wireless Option at anytime!

Coaxial Signal Cable (MA-300s)

18m, 0.2kg (8oz), 2.4mm dia.

15ft, 2.5oz, 2.4mm dia.

Output Cables

MA300 EMG Systems output a live, raw analog signal. A shielded cable connects the Motion Lab Systems EMG Desktop Unit to an Analog to Digital Converter or Junction Box.

Analog Output Cable - (MA-300 to MA-720)

Analog Output Cable - w/ BNC Termination

Analog Output Cable - w/ Pin Termination

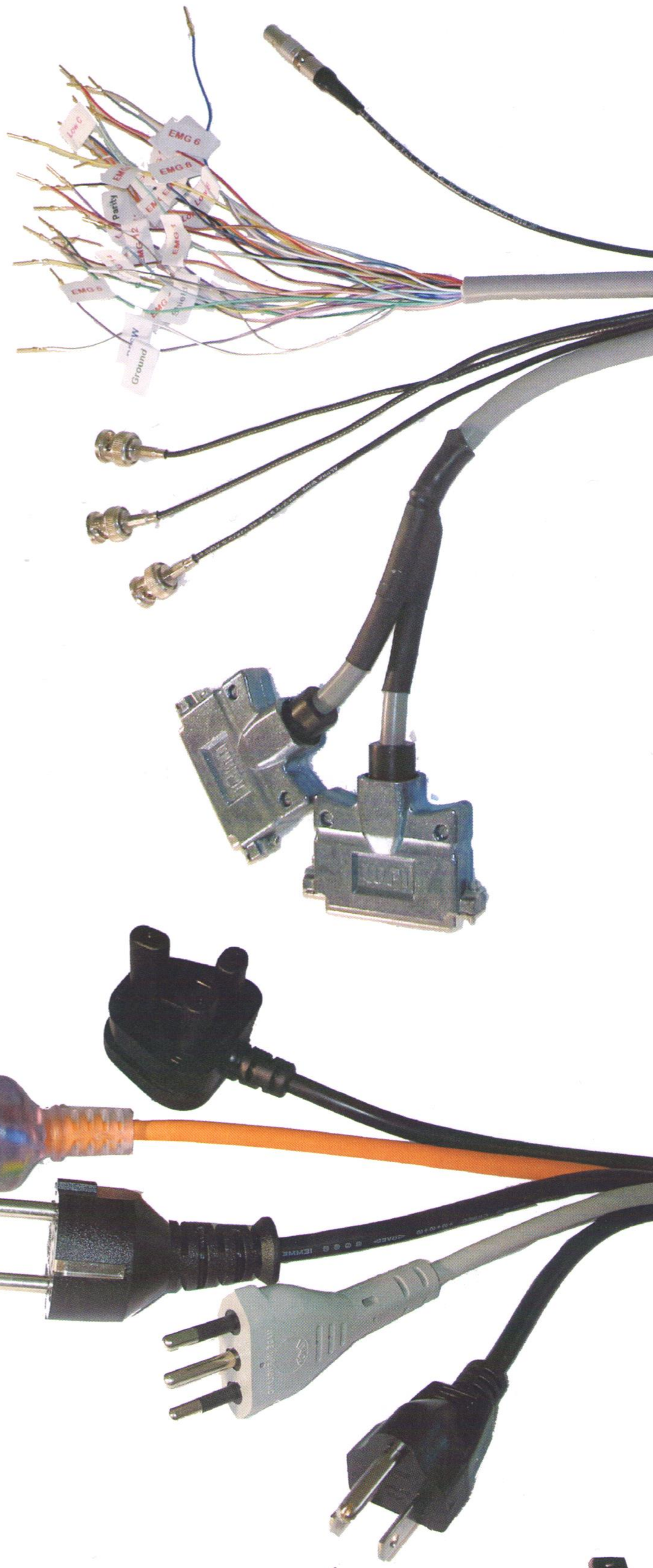
Analog Splitter Cable (MA300 Systems)
(25-way MFM “D” connector)

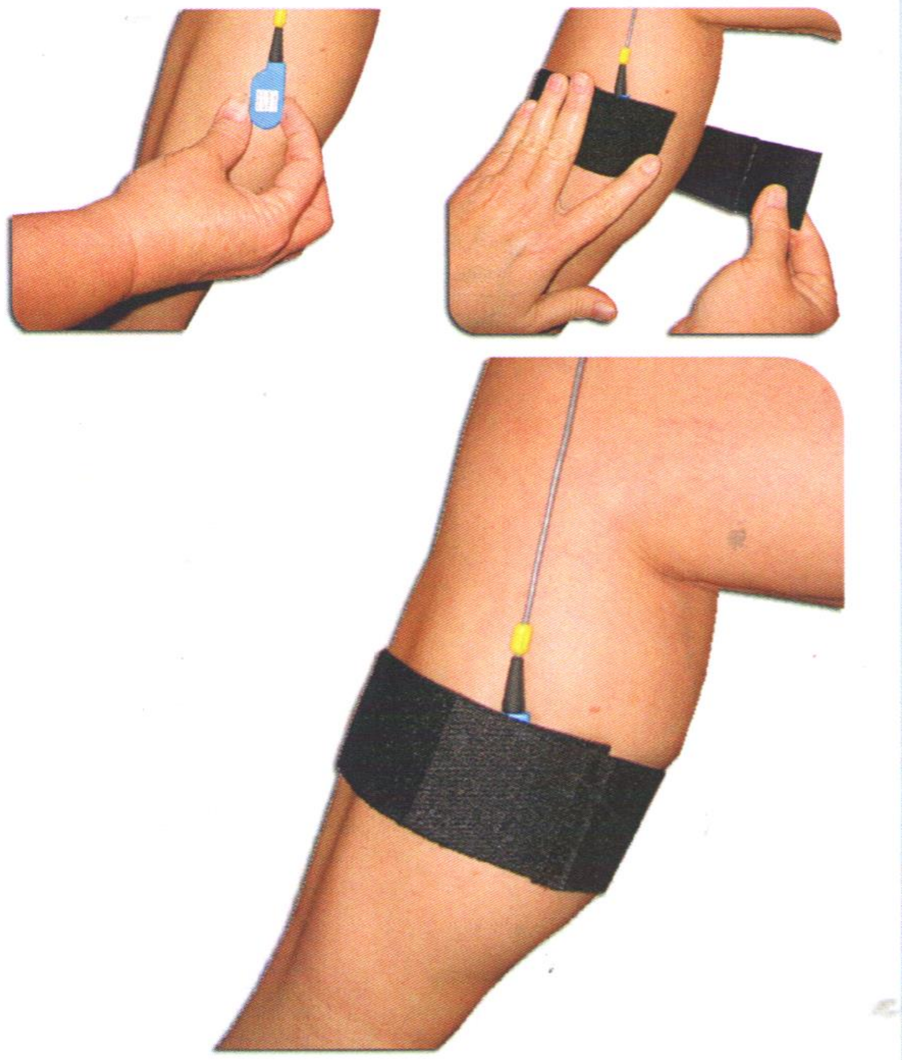
Get live real time viewing even if you’re synchronizing into a another ADC with a custom splitter cable.

TIP **Ask about custom cables and lengths!**

Power Cables

A country-specific power cable is supplied with all new MA300 EMG Systems and MA-720’s. With the MA300’s auto-sensing internal powers supply you can plug in right away!





Attachment Straps

Stretchable Straps made of soft fabric with built-in stretch.
Easy size adjustments to securely hold pre-amplifiers
or other equipment in place without constricting muscles.

- Washable and Reusable- Neoprene or Velcro Brands.
- Adjustable- Velcro tab for easy size adjustment.
- Safe- Latex free.
- Allowing the skin to breath.
- Variety- A range of sizes; can be cut for custom fits.
- Two inches wide.

Disposable Wraps/Tapes

Coban Wrap

Latex-free disposable wrap. Self adhesive without sticking to skin!
Great for securing preamplifiers! Two inches wide. Tan color.

Double Sided Sticky Tape

Clear disposable double-sided sticky tape is sold as a single roll.
Latex-free.Great for securing event switches! 1 inch in width.

Retro-Reflective Tape

This 1” wide single sided adhesive Retro-Reflective tape by 3M Scotchlite is motion camera compatible and easy to cut. (Sold by the yard or whole roll)

Bead Markers Set

Includes 16 reusable bead identifiers for easy cable recognition.
Snaps on and off. (8 colors)

MLSViewer Software Suite

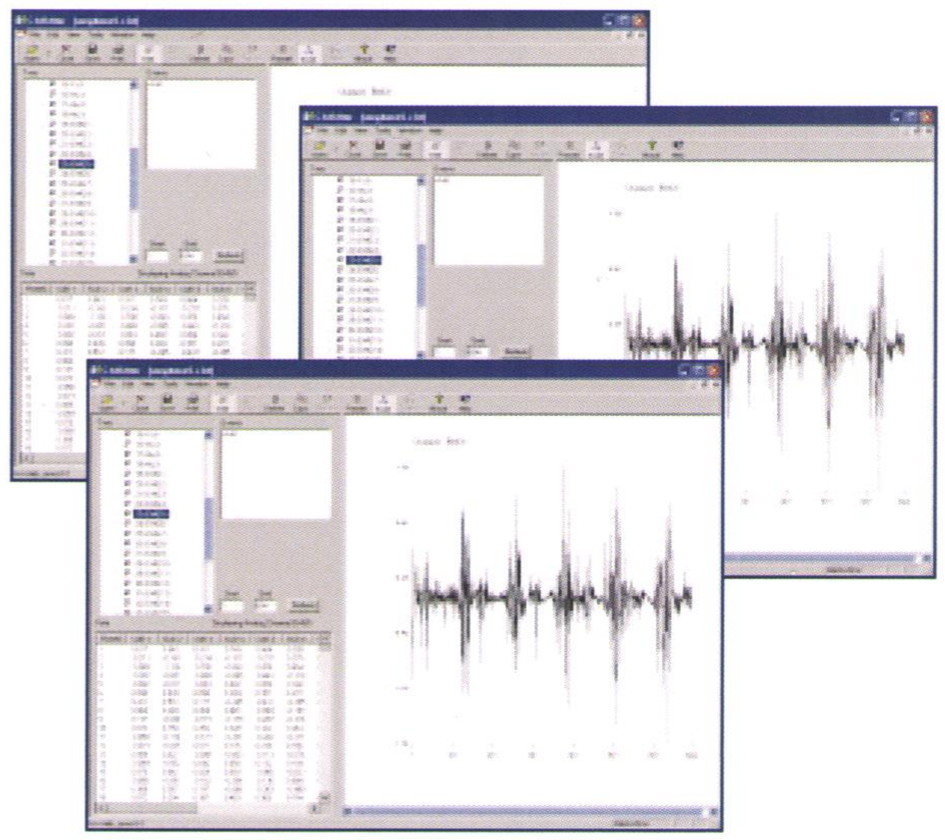
FREE suite that includes five useful programs!

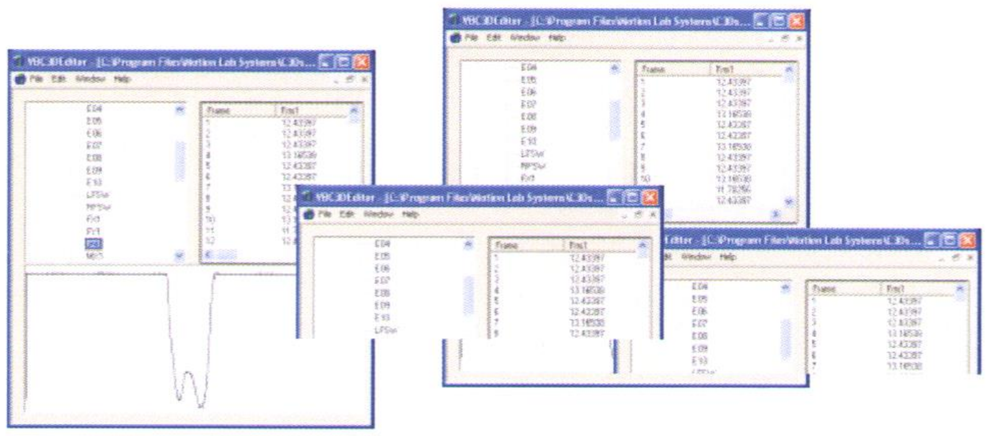
- MLSViewer- View, display or copy the C3D file content.
- C3Dsearch- Quickly search folders for C3D data & parameters.
- DSTeditor- Graphically edit DST and GCD files.
- GCDexport- Automatically average data or extract desired data sets.
- Orthotrak- Convert Motion Analysis XLS files to GCD format.

3D File Editor Software

Full-feature, graphical, C3D file editing program

- Easily create/edit/verify any C3D data
- View data value graphically and numerically
- Automate delete, filter, interpolate, translate, and display data parameters
- Save time with “drag and drop” batch editing- eliminating repetitive data editing





C3D Server Software

High-speed file access

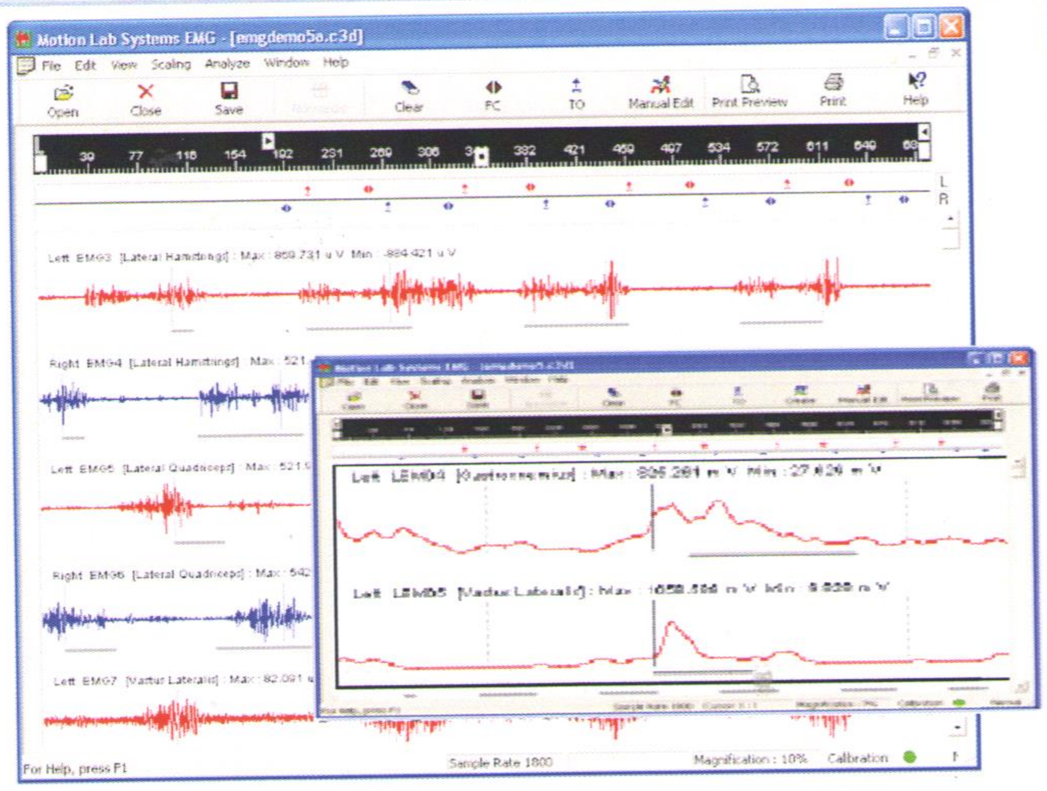
Read, write & create C3D files

This C3D Software Development Kit (SDK) for Microsoft Windows™ can be used to build C3D applications via Visual Basic, C++, Java, MATLAB etc.

MS Software Service Agreement

MS Software purchases automatically include one full year of software support.

- Free upgrades
- Priority technical support
- Buy it once - Use it everywhere. Full Site License!
- Free Trial- Download trial version of software from our website: www.motion-labs.com.



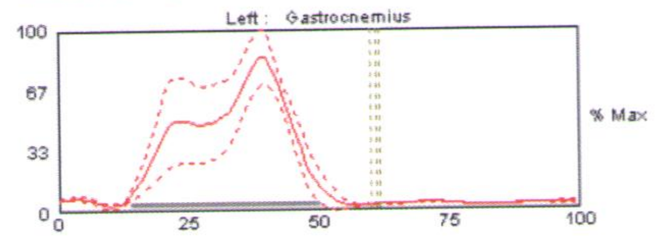
Graphing Software

- Calibrate and View to Scale
  Micro-volts, percentage of MVC, custom scales
- Easily Normalize Data
  MVC, Gait Cycle, or Manual Muscle Test (MMT)
- Automate Data Processing and Calibration
  Label channels, apply filters, detect events
- Full C3D File Support
  Read raw EMG data from other manufacturers

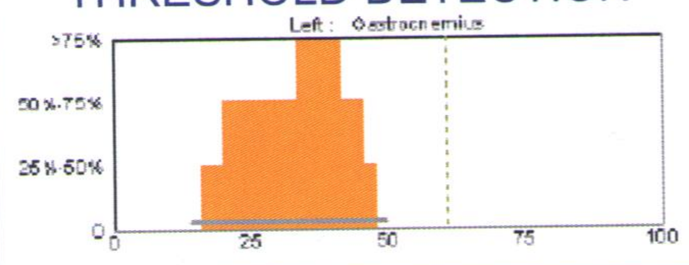
Analysis Software

All the features of EMG Graphing with Advanced Analysis

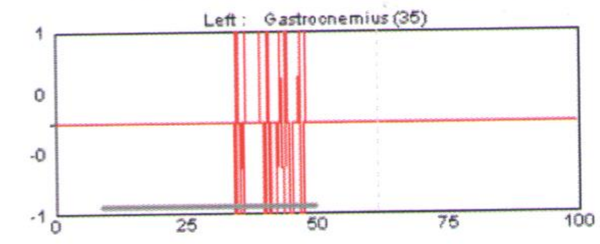
ZERO CROSSING DETECTION



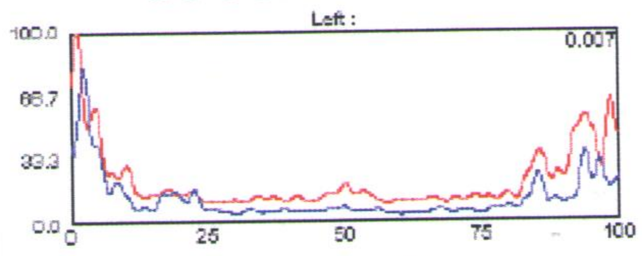
THRESHOLD DETECTION



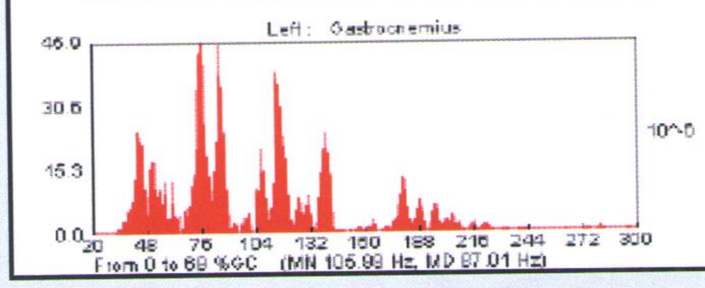
LINEAR ENVELOPE



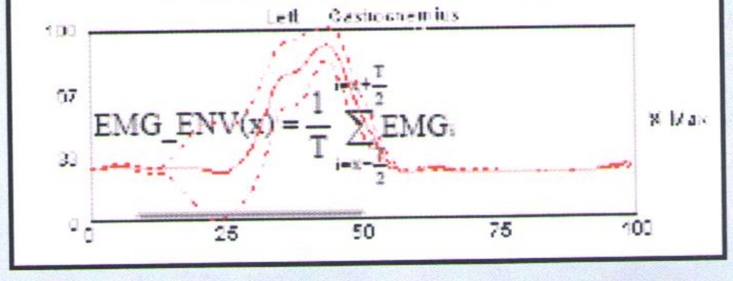
COCONTRACTION



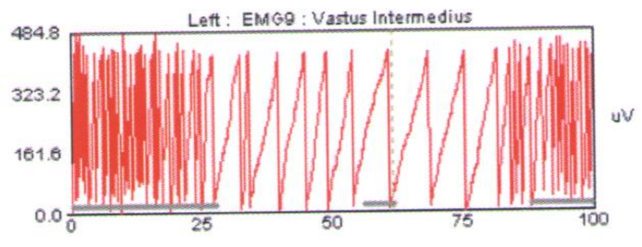
EMG POWER SPECTRUM



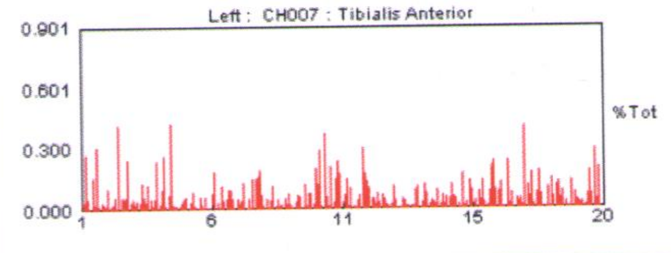
MOVING AVERAGE



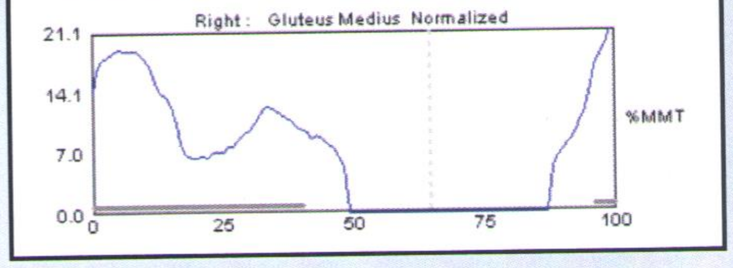
INTEGRATION



SIGNAL ALIASING

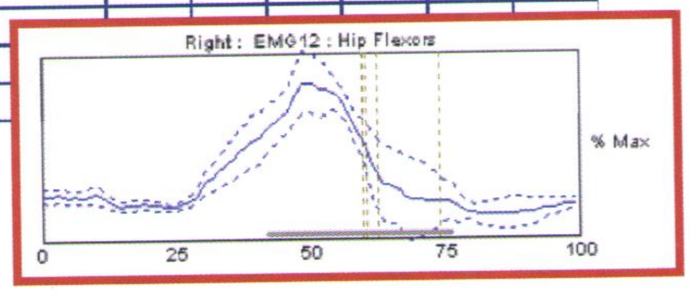


INTENSITY FILTERED AVERAGE



- Smoothing and Enveloping Methods
- Fatigue Assessment
- Classical EMG Analysis Methods
- EMG Activity Analysis
- Quality Assurance
- Ask about adding custom features!

on/off as % of gait cycle	on	off	on	off	on	off
Anterior Tibialis	0	28	60	100		
Vastus Medialis	0	24	84	100		
Gluteus Medius	0	39	81	100		
Gastroc/Soleus	11	52				
Medial Hamstrings	0	37	85	100		
Lateral Hamstrings						
Gluteus Maximus						
Tibialis Anterior						



BONUS! "Normal" Database

- Included in both the MS-900 and MS-905
- Adult and Age-Matched Child- Includes 13 age options
- Simple Comparisons- Graph and compare data files to the included normals or customize/your own "normal"
- Fully Customizable- Enter in your own data for comparison

Pre-Amplified Electrodes

Four fully interchangeable designs!

Design around your needs, rather than around your equipment limitations!

- Accurate Clean Signal
  Differential amplification at skin surface offers a high resistance to noise
- Signal Protection
  RFI, ESD, and EMI protection
- Durable and Reliable
  Corrosion-resistant Stainless Steel contacts

A full set of pre-amplified electrodes are included in the MA300 EMG System.

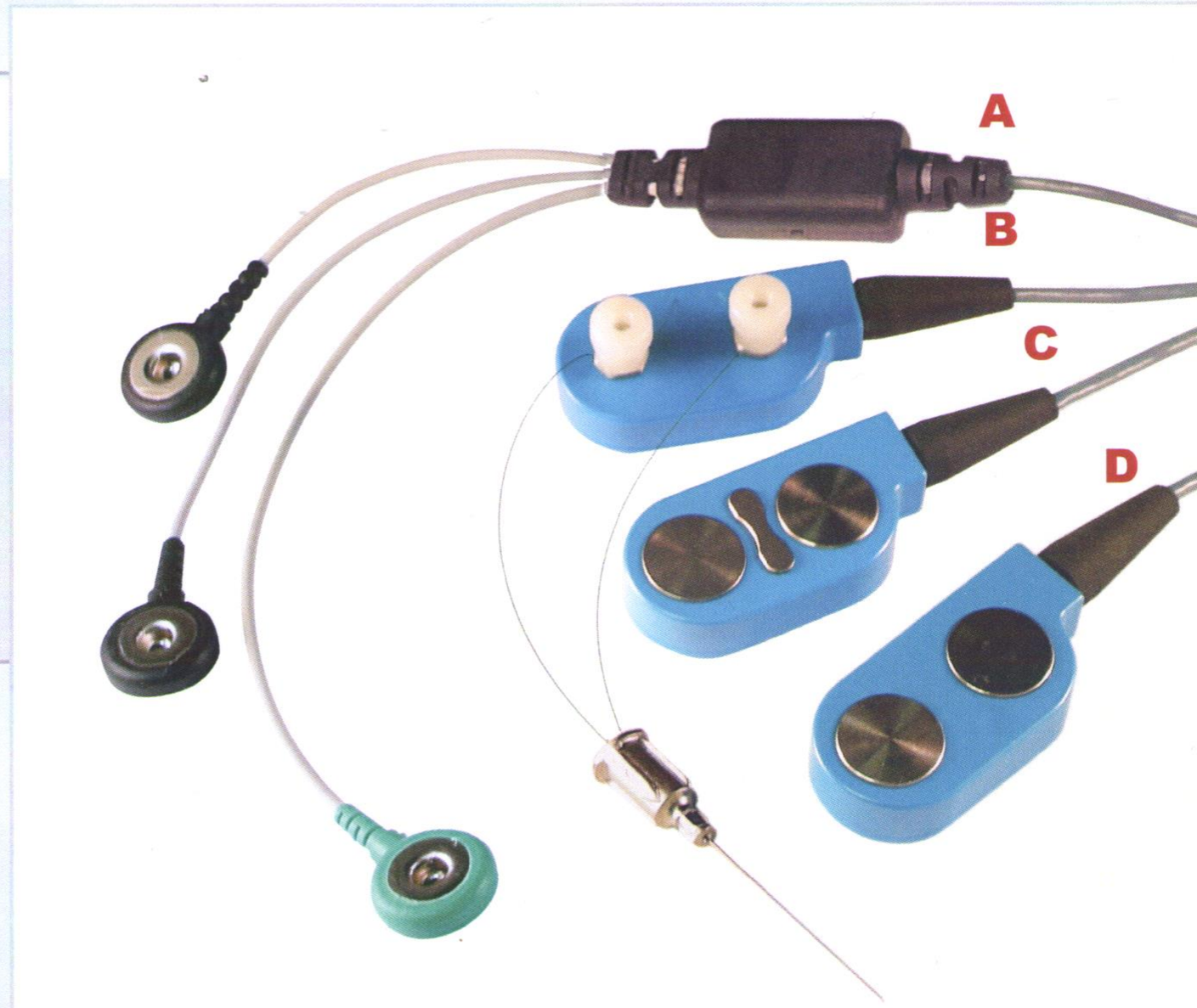
Contact Options

A. Flexible Snap Leads
Connects to standard gel electrodes.

B. Discrete Fine Wire Thumbscrews
Secure attachment to any bare wire.

C. Built-in Surface Disks with Ground
No cable artifact & little to no skin prep.

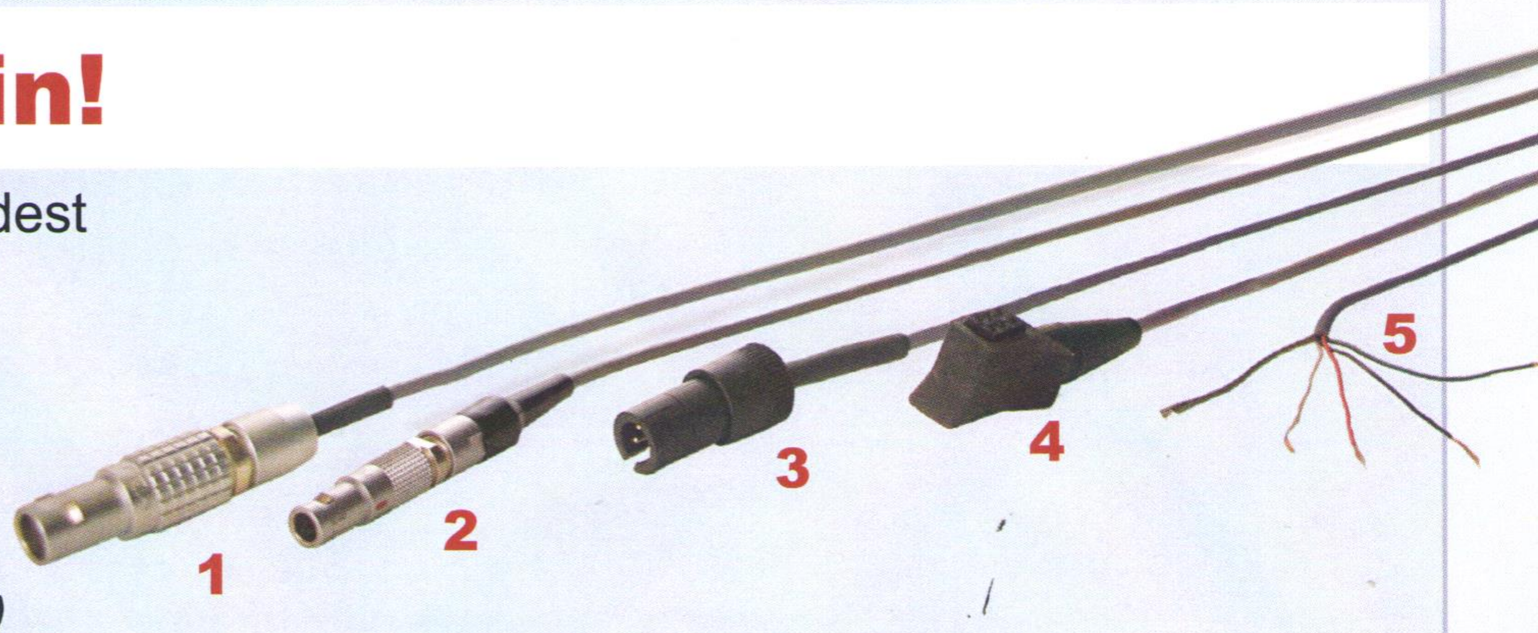
D. Custom Preamplifier
Designed to meet your needs!

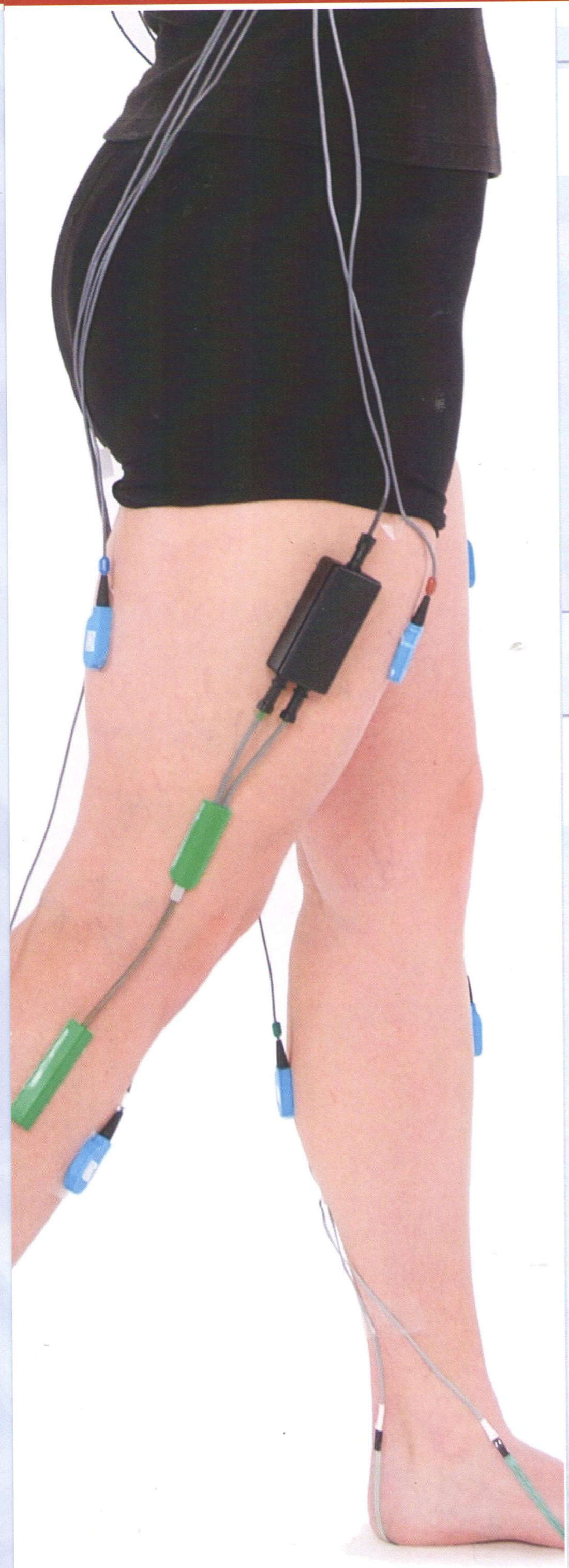


Ready to plug in!

Plug right into our newest or oldest EMG Systems.

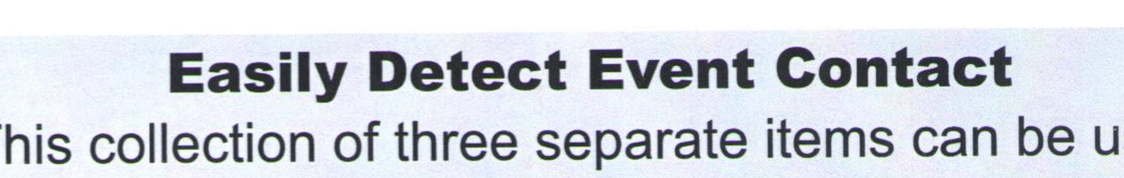
1. Large LEMO- *Metal (004)*
2. Mini LEMO- *Metal (003)*
3. Binder- *Plastic (002)*
4. Harwin- Santoprene *(001)*
5. Bare Wire- *None (000)*





Goniometers

Easily get synchronized goniometer and torsiometer data. Ideal for quick, simple, and accurate measurement of joint movement in multiple planes.

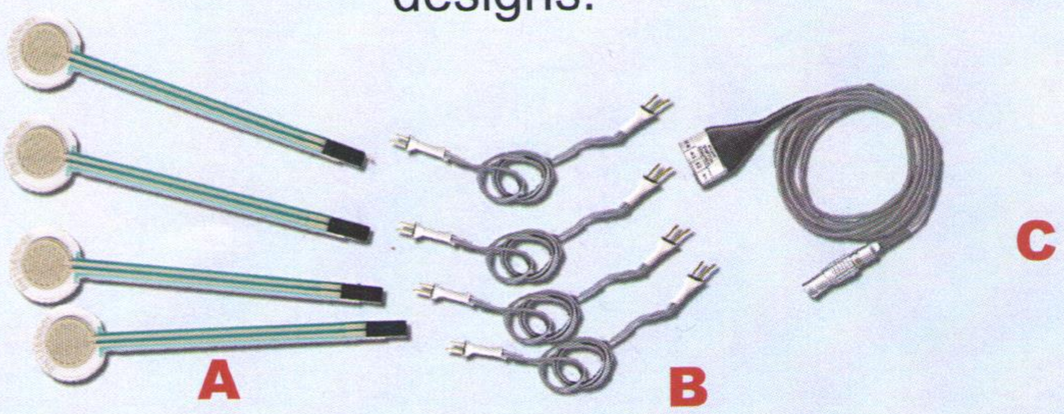


- Extremely robust, lightweight and flexible
- Comfortably worn under clothing
- Does not hinder the movement of the joint

Event Detection

Easily Detect Event Contact

This collection of three separate items can be used together for easy connection to Motion Lab Systems EMG Systems, or used independently for custom designs.



- Accurately detect contact
- Small 25mm on/off sensor
- Saves Money- reusable low cost design
- Comfortable- 0.5mm ultra thin switch
- Easy placement- flexible 100mm tail
- Easy to use in custom applications

MA300 EMG System Features

Easy to Install - All MA300 systems have individual analog outputs for each EMG channel, making them very easy to connect to any data collection system. MA300 systems include an analog signal cable with BNC connectors or any custom cable configuration.

Real Time Operation - MA300 systems have a negligible signal delay. With a bandwidth of 1kHz it takes less than 2ms for the EMG signal, detected at the subjects skin surface, to reach the ADC input of the 3D motion capture system, guaranteeing that the EMG data is always synchronized with your data.

Easy to Use - 10 position gain controls on each EMG channel, together with individual signal level indicators and a built-in calibration test signal, make clean, accurate EMG recordings an everyday event.

Full EMG Bandwidth - with an EMG signal bandwidth up to 2kHz, MA300 systems reproduce the EMG signal more accurately than systems with limited bandwidths. In addition, MA300 systems use high quality Bessel-Thompson filters in the EMG channels for accurate signal reproduction without spectral distortion.

Cabled and Telemetry – You don't have to choose one or the other - it takes only seconds to switch between cabled or radio-telemetry operation. The system performance and specification is unchanged.

Intelligent Telemetry - The MA300 radio-telemetry option can support three intelligent telemetry receivers mounted up to a hundred feet apart to provide reliable radio-telemetry operation in almost any environment and cover large volumes or multiple rooms.

Low Running Costs - Our EMG sensors are small, reliable and available in a range of different types to suit almost any purpose. They are (unlike wireless EMG sensors) both inexpensive and easy to repair. This keeps the lab running costs low - and allows users to maintain spare EMG sensors in case of accidents. Labs that use the wireless EMG sensors may have to keep an complete set of the radio-telemetry sensors to achieve the same level of support.

Flexible - MA300 systems offer the convenience of surface EMG pre-amplifiers, fine-wire needles, and standard gel disposable electrodes as well as foot switches and other devices. MA300 systems have the performance capability for both research and clinical studies with human beings.

Interchangeable - MA300 systems and preamplifiers are fully interchangeable - subject back-packs can be moved from one system to another with any mix of pre-amplifiers or other options as needed.

Modular Upgrades - MA300 systems are designed to make it easy for users to upgrade from one model to another, adding additional capabilities (e.g. radio-telemetry, additional EMG channels, higher bandwidth etc.) as their needs and the demands on the lab change.

Meets US and International Standards - with CE, UL, CSA and FCC class B approvals, together with an FDA-510k for Clinical Use (a much stricter standard than the biofeedback 510k applications of competing vendors), the MA300 system is suitable for almost any multi-channel EMG application, whether clinical, educational, or research.

Free Shipping - the quoted price for an MA300 system includes packing, shipping and insurance costs so there are no additional or hidden costs when systems are delivered within the USA. MA300 systems shipped outside the USA may incur additional customs and importation fees, but there will be no transportation charges.

30 day Money Back Guarantee - If your new MA300 system does not perform to your satisfaction for any reason, return it to us within 30 days and you will receive a complete refund of the price paid.

Support and Upgrades

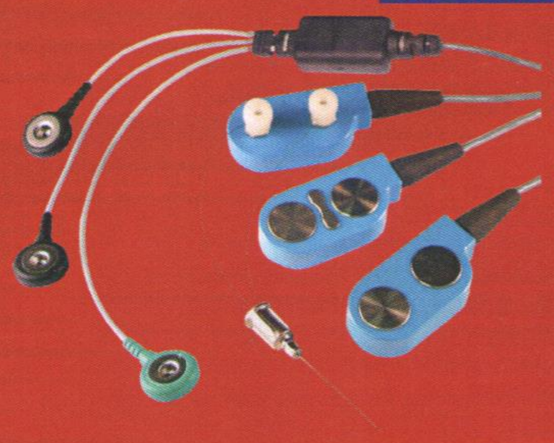
Always here for you.

- 30 Day Money Back Guarantee (USA)
- 2 Year Renewable Hardware Warranty
- 2 Year Renewable Service Contact
- 1 Year of Free Software Upgrades
- Unmatched Customer Service

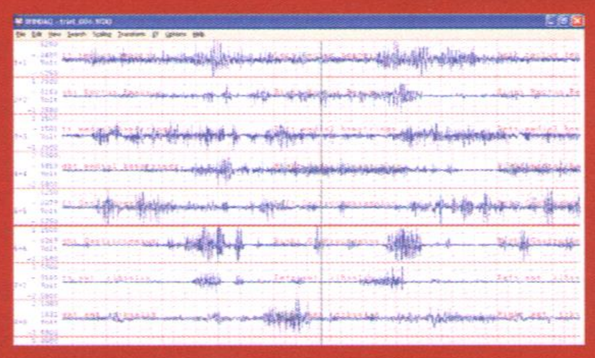
UNLIMITED COVERAGE- Renewable service contracts keep you covered.

Find the Perfect EMG for you!

Always Flexible,



Always Reliable...



Guaranteed!

2yr WARRANTY

1yr SUPPORT

30 day GUARANTEE

System Comparison	MA300-X Systems		Advanced EMG Systems		
	MA300-XII	MA300-XVI	MA300-18	MA300-22	MA300-28
Total Channels	12	16	18	22	28
EMG/Multi-Use Channels	8	16	6	10	16
Extra Research Channels	4	0	4	4	4
Dedicated Event Channels	0	0	8	8	8
Package Included	Standard System Package		Enhanced EMG System Package		
EMG Bandwidth	10-1000 Hz -3dB		10-2000 Hz -3dB		
Variable Low Pass Filter	No		Yes- 8 Position LP Filter Included		
Preamplifiers Supplied	Gel Snap Pre-amplifier		Choose any combination of Gel, Surface or Fine Wire		
Backpack Support	Adult Belt		Adult and Child-Sized Vests		
Event Switches Included	No		Yes		
Wireless Compatability	Fully compatible! Upgrade to add the additional wireless option at anytime.				
Warranty	30 Day Money Back Guarantee and a Full 2 Year Renewable Warranty				
Upgradable	Upgrade any MA300 System and pay only the purchase price differance.				

MOTION LAB SYSTEMS

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