

Weld Checkers & Monitoring Tools

- The “Perfect Weld” Starts with Process Understanding



Why Monitor?



Full featured measurement of the electrical and mechanical weld process.

What To Monitor

Electrical

- Current – Overall “health” of the process
- Voltage – Part to Part Fit-up and Electrode Condition
- Resistance/Power/Time – Fine Tuning and Limit Setting

Mechanical

Force – Consistency on setup and over time

Displacement – Initial and Final Part Dimensions

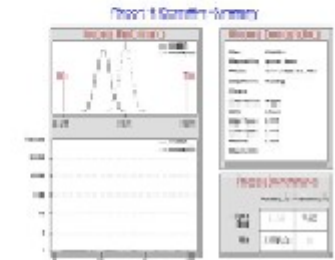
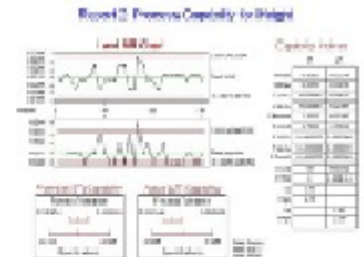
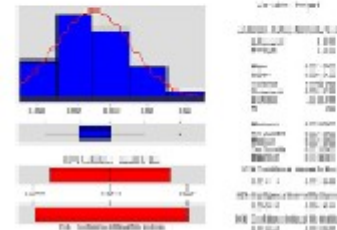


Electrical + Mechanical = A virtual window into your welding world

Monitor & Checker Deliverables

- Lower Scrap Rate
- Decreased Downtime
- Improved Process Control
- Data Collection
- Network Compatibility
- NIST Traceable Certification
- Accurate Machine Set Up
- Weld Optimization
- Welding Process Diagnostics

Process Capability



In any production process knowledge and information are the keys to control!

Weld Process Monitor

- Integrated color graphic display for current, voltage and force waveforms
- Measures Current, Force, Voltage, Power, Resistance, Displacement
- Force gauges with ranges from – 0.2 Kg (0.44 lbs.) – 950 Kg (2100 lbs.)
- Unique “Weld Through” capability allows simultaneous measurement of Force and Current
- 127 monitoring schedules
- High speed printer
 - Waveforms
 - Values
 - Out of Limits
- RS232 or 485 Data Communication

MM-370A



The new standard in integrated welding variable measurement.

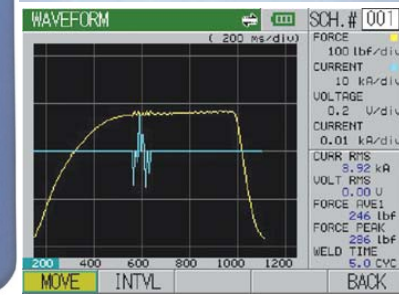
The “Ultimate” Hand Held Weld Tester

- Measures current, time & force – *At the tips, simultaneously*
- RS-232 and printer outputs
- Battery powered for portability
- 0.33 – 199.9 kA, 45 – 2100 lbs

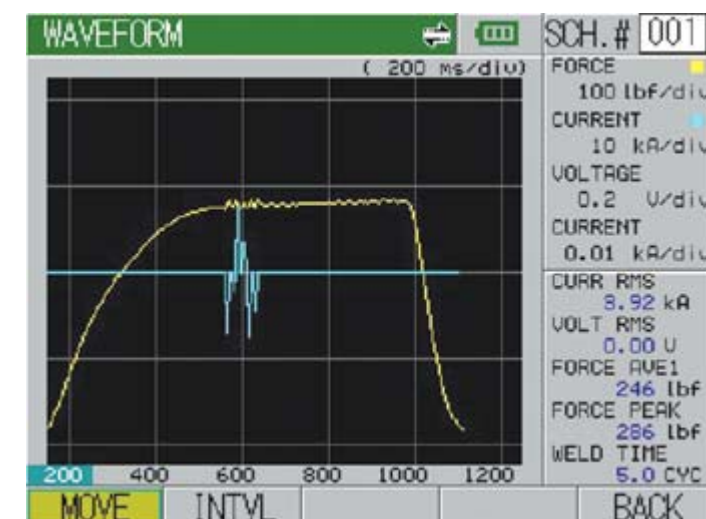
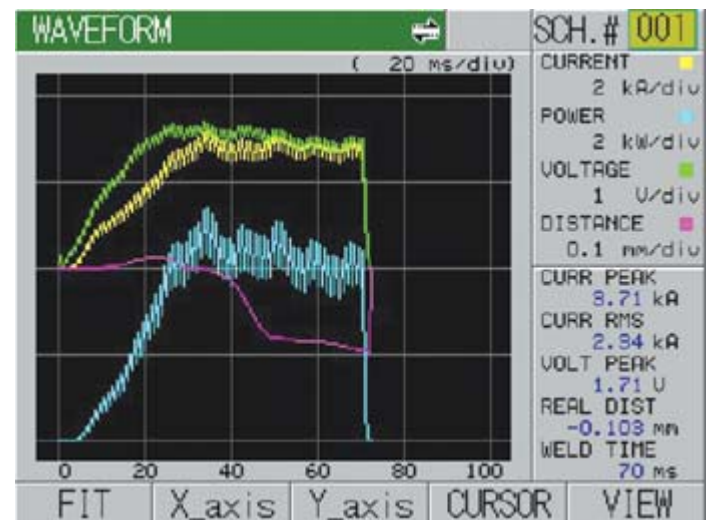
The most advanced hand held checker ever built. Perfect for accurate machine set up, troubleshooting and process verification.



MM – 380A



MM-370A/380A SCREEN



Basic Weld Monitor

MM – 122A

- Measures AC, DC & CD
- 0.010 – 199.9 kA
- Measures current and time in milliseconds and cycles
- 31 weld schedules
- Data communications port RS-232 / 485
- RMS & PEAK values
- Good / No Good machine outputs



Dimensions: 2.8”(W) x
9.7”(D) x 7.5”(H)

*The standard in weld checker
technology.*



Electronic Force Gauge

- Simple and accurate hand held force measurement
- Analog output
- Hold and Zero functions
- Range of sensors available
- One touch tare setting
- Rechargeable battery or AC
- Automatic measurement range detection
- External I/O for Analog Output and Measurement Hold
- Force range 0.20 Kg – 950 Kg
(.44 lbs – 2100 lbs)



Portable Force Verification and Setup

Pocket Weld Tester

- Simple current measurement in the palm of your hand
- For AC and Inverters
- Measures weld current, cycles, milli-seconds and conduction degrees
- Impulse memory function (9 welds)
- Rechargeable batteries, AC
- Includes coil, charger and carrying case
- 1.00 – 9.99 kA
5.0 kA – 49.9 kA



MM – 315B



Quick and Easy

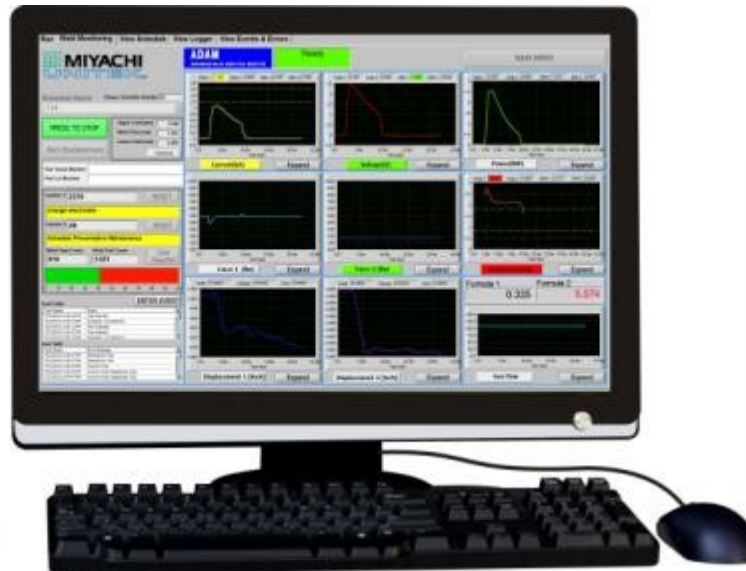
ADAM

New

ADVANCED DATA ANALYSIS MONITOR

The Most Sophisticated Weld Process Monitor On The Planet

- **Current - up to 500KA**
- **Voltage – 0 - 10V**
- **Displacement - .2 or 1 Micron Resolution**
- **Force – User Selectable Input**
- **Gas Flow – User Selectable Input**
- **250K Samples Per Second**
- **1 TeraByte Hard Drive**
- **Fully Integrated MiniTab SPC Software**
- **Pre-Trigger Information – Travel Backwards In Time**
- **Ethernet TCP/IP Internet**



Spirit Of Innovation™

MIYACHI UNITEK™

The F

ADAM SCREEN

Run Weld Monitoring View Schedule View Logger View Events & Errors

MIYACHI UNITEK **ADAM** **Ready** **MAIN MENU**

Advanced Data Analysis Monitor

Schedule Name: Test,215 Binary Schedule Number: 5

Upper Link (ms): 10,000
Weld Time (ms): 7,424
Lower Link (ms): 4,000

Zero Displacement

Part Serial Number: _____
Part Lot Number: _____

Counter 1: 7 RESET
Counter 2: 7 RESET

Weld Pass Count: 4 Weld Fail Count: 3 Clear Pass/Fail

Event Table: ENTER EVENT

Time Stamp: _____
Event: _____

Time Stamp: _____
Error Message: _____

Current (kA) Expand Voltage (V) Expand Power (kW) Expand

Force 2 (lbs) Expand Reshance (mC) Expand

Displacement 1 (inch) Expand Displacement 2 (inch) Expand Gas Flow Expand

Weld Calc: ABC 5.375 0.000

Schedule Binary Schedule Number: 220 Schedule Name: 220

Test Limits Page 1 Test Limits Page 2 Trigger Weld Setup Run Screen Relay Envelope

Envelope Envelope Type: Current Envelope ID: 14

Timestamp: 8/12/2010 2:36:33 PM
Reference Waveform File Pointer: C:\msd\Current:14

Test ID Included: PCL: 0122 00000 033 00000 030 00000 0320 00000 033 00000 030 00000 0320 00000 033 00000 030 00000

Min Index: _____
Max Index: _____
Ref Waveform Upper Offset (%): _____
Ref Waveform Lower Offset (%): _____

Upper Offset: 0.100 kA
Lower Offset: 0.100 kA

Generate Reference Waveform

COPY SAVE RETURN

Digital I/O Analog Input Displacement

DIGITAL INPUTS

- RESET
- ZERO DISPLACEMENT
- WELD TO DISPLACEMENT
- RESET WELD COUNTER 1
- RESET WELD COUNTER 2
- RHIBIT MEASUREMENT
- START PART MEASUREMENT
- INITIAL THICKNESS MEASUREMENT
- EXTERNAL DIGITAL TRIGGER
- Future Expansion 1
- Future Expansion 2
- Future Expansion 3
- Future Expansion 4
- Future Expansion 5

REMOTE BCD SCHEDULE SELECT

1 2 3 4 5 6 7 8 9 10 11 12 13 14

DIGITAL OUTPUTS

- READY TO MEASURE
- MEASUREMENT IN PROGRESS
- LAST WELD IN LIMITS
- LAST WELD OUT OF LIMITS
- LAST WELD OUT OF WARNING LIMITS
- INITIAL THICKNESS PASS
- INITIAL THICKNESS FAIL
- FINAL THICKNESS PASS
- FINAL THICKNESS FAIL
- WELD COAT 1 REACH MAX
- WELD COAT 2 REACH MAX
- POWER SUPPLY 1 CUTOFF
- POWER SUPPLY 2 CUTOFF
- Future Expansion 6

RELAY OUTPUTS

- RELAY 1
- RELAY 2
- RELAY 3
- RELAY 4

ETHERNET TEST SERIAL LOOPBACK RESET OUTPUTS

RETURN

MIYACHI UNITEK

Run Weld Monitoring View Schedule View Logger View Events & Errors

MIYACHI UNITEK **ADAM** **Ready** **RESET CHARTS** **MAIN MENU**

Schedule Name: 220 Binary Schedule Number: 5

ADAM Workshop,197
ADAM Workshop,196
ADAM Workshop,195
disp,212
disp,211
July,99
July,98
martytest,188
test,219
Test,217
Test,215
Test,213
test,204
test,203
test,202
test,201
Test,200

Event Table: ENTER EVENT

Time Stamp: _____
Event: _____

Time Stamp: _____
Error Message: _____

RMS Current Pulse 1: 0.000 kA

Peak Resistance Pulse 1: 0.000 mOhm

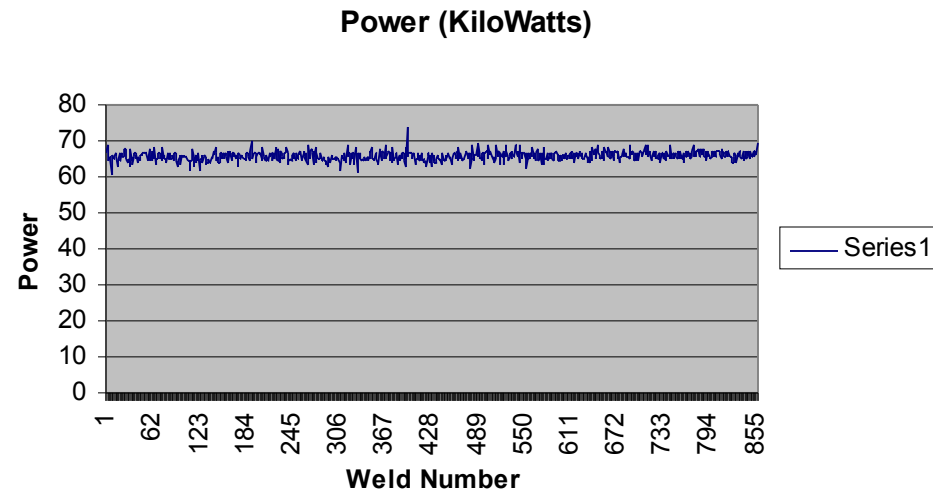
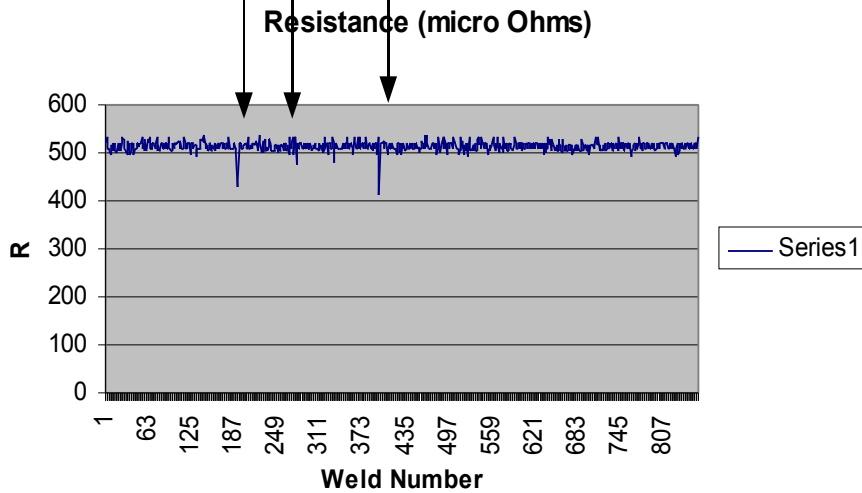
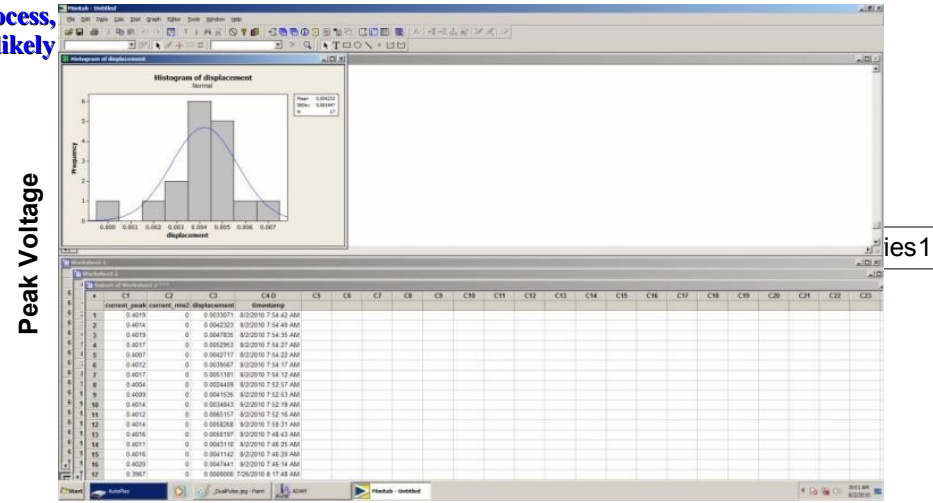
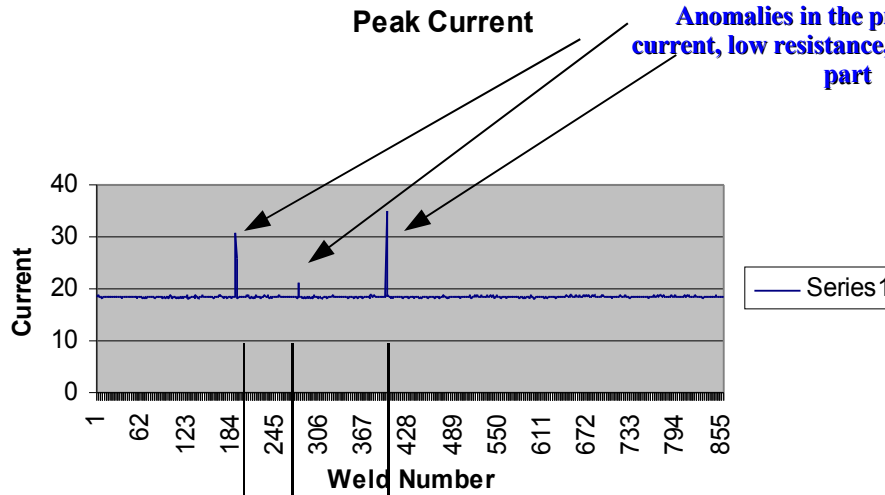
Force 1: 0.000 lbs

Initial Thickness 1: 0.0000 inch

Thickness Change 1: _____
Weld Count: _____
Cpk: _____

Current: _____

“Big Picture” View of Process

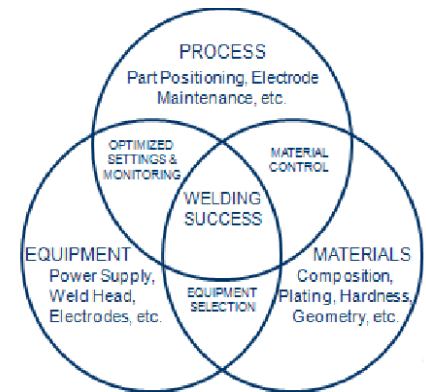


Cost Comparison

Summary

Weld Monitors and Checkers:

- **Tools used by Production, Maintenance, Engineering and R&D**
- **Identify Non-Typical Welds**
- **Set Up Machines and Establish Process Window**
- **Detect Anomalies and Errors In The Process**
- **Detect The Presence or Absence Of Work piece**
- **Detect Routine Maintenance Requirements**
- **Help Satisfy FDA, GMA, and ISO Requirements**
- **Give Statistical and Graphical Data On Every Weld**
- **Have Built In I/O To Control Machine Functions**



Build Trust With Your Customer

- **The “Perfect Weld” Starts with Process Understanding**

We deliver the process tools that provide the solutions...