



TELEDYNE TEST SERVICES
Everywhereyoulook™

Valve Diagnostic Testing and Maintenance

Seventh Annual QUIKLOOK Users Group Meeting

August 14 & 15, 2013



Presented by: **Eric A. Solla**



TELEDYNE TEST SERVICES

Everywhereyoulook™

Valve Diagnostic Testing and Maintenance

QUIKLOOK II SOFTWARE

New Program Features

Software Engineer

Eric A. Solla



QUIKLOOK II Software

- Version 2012.061
 - Released March 2012.
- Version 2013.213
 - Released August 2013.

QUIKLOOK II Software

Software Error Notices

- Version 2012.62
 - Error Notice 2012.62-1
 - On a QUIKLOOK acquisition computer if the system is shutdown improperly an offset may be introduced in the analog output channels. The 4-20/10-50 ma current values recorded will be correct but may be slightly different from what was requested.
 - This problem has only occurred on QLII Suitcases running Windows XP
 - This offset may reset if the computer is left unplugged for five minutes. Under some instances the offset may not disappear even if left unplugged for a period of time

QUIKLOOK II Software

Software Error Notices

- Error Notice 2012.62-1
 - Workaround:
 - Install the “Quiklook KUSB Patch”. This patch will install a small program that will run on startup that will ensure that the offset is reset properly before Quiklook starts
 - Notes:
 - If while in the Monitor screen the current or voltage reading for the control signal channel differs from the requested value by more than 1% than you may have this issue
 - It is recommended that all Quiklook systems that are used for AOV testing have this patch installed
 - This has been fixed in Quiklook 2013

QUIKLOOK II Software

Software Error Notices

- Version 2012.62
 - Error Notice 2012.62-2
 - Quiklook software contains a bug that causes an offset to occur on channels with low level inputs. This bug is related to the AutoZero function on Quiklook II/+ systems built with Keithley data acquisition cards.
 - The magnitude of the error, when it occurs, is observed to be up to approximately 1% of range.
 - This error has no impact on data validity due to normal trace zeroing methods, its overall magnitude, and a number of other mitigating factors

QUIKLOOK II Software

Software Error Notices

- Error Notice 2012.62-2
 - Workaround:
 - Data collected is not impacted. There is no need for a workaround.
 - This bug has been resolved with the release of Quiklook 2013
 - Notes:
 - This error only occurs on Keithley Quiklook systems. It occurs with all versions of Quiklook software prior to Quiklook 2013

NEW FEATURES 2013

- Configuration
 - Edit Sensor Database from Configuration Screen

Configure 16 Channel Quiklook Test - C:\TestData\TestData 2012\Auto-Marking\

Load Valve Save Valve Default Valve Define Graph Channels **Edit Sensors** Return Help

Primary Name: Secondary Name:

Description:

Title:

Comment:

Comment:

Channel Assignments

Ch	Name	Units	Type	Range	Sensitivity	Offset	Save
1	Current	(Amps)	Differential	+/-160 mVdc	1.00000 E+00	0.00000 E+00	*
2	Thrust	(Lbs)	4-Wire Strain Gage	+2.0 mV/Vdc	1.00000 E+00	0.00000 E+00	*
3	Torque	(Ft-Lbs)	4-Wire Strain Gage	+2.0 mV/Vdc	1.00000 E+00	0.00000 E+00	*
4	CST	(mA)	Differential	+1.28 Vdc	1.00000 E+00	0.00000 E+00	*
5	Open	(mA)	Differential	+1.28 Vdc	1.00000 E+00	0.00000 E+00	*
6	Close	(mA)	Differential	+1.28 Vdc	1.00000 E+00	0.00000 E+00	*
7	ByPass	(mA)	Differential	+1.28 Vdc	1.00000 E+00	0.00000 E+00	*
8	SprPack	(In)	Differential	+5.12 Vdc	1.00000 E+00	0.00000 E+00	*
9	Va	(Volts)	Single Ended	+1.28 Vdc	1.38200 E+03	0.00000 E+00	*
10	Ia	(Amps)	Differential	+640 mVdc	1.00000 E+00	0.00000 E+00	*
11	Vb	(Volts)	Single Ended	+1.28 Vdc	1.38200 E+03	0.00000 E+00	*
12	Ib	(Amps)	Differential	+640 mVdc	1.00000 E+00	0.00000 E+00	*
13	Vc	(Volts)	Single Ended	+1.28 Vdc	1.38200 E+03	0.00000 E+00	*
14	Ic	(Amps)	Differential	+640 mVdc	1.00000 E+00	0.00000 E+00	*
15	Spare		Differential	+20 mVdc	1.00000 E+00	0.00000 E+00	
16	Spare		Differential	+20 mVdc	1.00000 E+00	0.00000 E+00	

Channel Data

Test Type

8 Channels Quiklook MOV

16 Channels Sentry ADV

NEW FEATURES 2013

- Configuration

- Calculate Rotary Sensitivity – Available for MOV & AOV
- Remembers String Pot Sensitivity

The screenshot displays two overlapping dialog boxes from a software application. The background dialog is titled "Channel Data" and contains the following fields and controls:

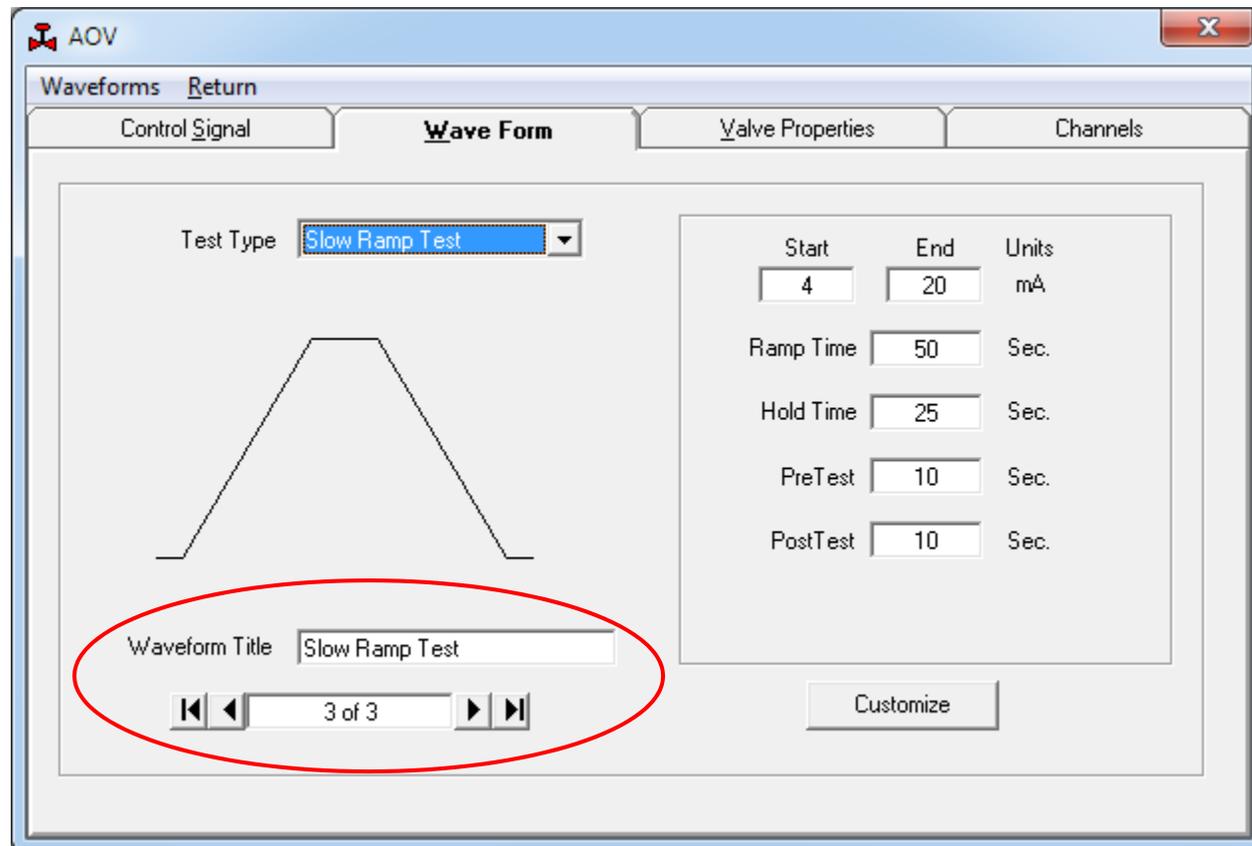
- Navigation: Previous, Channel 4 (dropdown), Next
- Status: Primary (dropdown)
- Name: Position (dropdown)
- Units: (Deg) (dropdown)
- Description: (text input)
- Type: Single Ended (dropdown)
- Range: +10.24 Vdc (dropdown)
- Excitation: Default (dropdown)
- Sensitivity: 3226.4 (Deg) /V (text input)
- Offset: 0 (text input)
- Checkbox: Show Over Ranging
- Buttons: Close, QSS, Rotary, Basic

The foreground dialog is titled "Calculate Sensitivity" and contains the following fields and controls:

- Sensor Information:
 - Type: SPI (text input)
 - Manufacturer: TTS (text input)
 - Model: 30" (text input)
 - Serial Number: 14856 (text input)
- String Pot Channel: Position (text input)
- String Pot Sensitivity: 31.675 (in) /V (text input)
- Diameter at Point of Attachment: 1.125 (in) (text input)
- Sensitivity: 3,226.4 (Deg) /V (text input)
- Buttons: Apply Sensitivity, Cancel

NEW FEATURES 2013

- AOV Multiple Waveforms



NEW FEATURES 2013

QUIKLOOK AOV - Demo Valve

Define Graph Trigger Mode View Traces Monitor **Waveform** Return

Open Step Test Date

Common

Technician

Direction

Max Seconds

Elapsed Time / Events

AF / AL

Display Time

Acquisition Rate

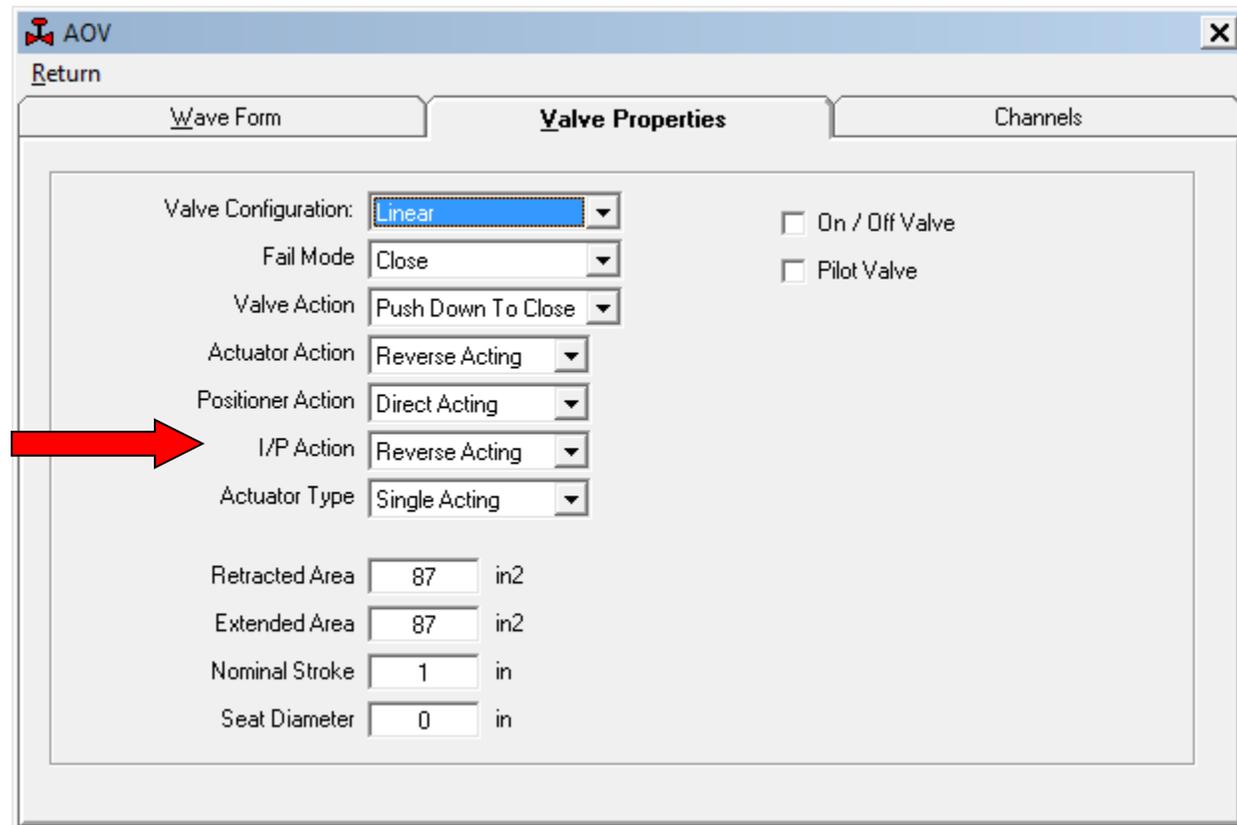
The image shows two empty graphs. The left graph is titled 'I/P Input (mA)' and has a y-axis ranging from -30 to 30 in increments of 5, and an x-axis titled 'Time (Seconds)' ranging from 0 to 10 in increments of 2. The right graph is titled 'I/P Output Pressure (psig)' and has a y-axis ranging from -15 to 15 in increments of 5, and an x-axis titled 'Time (Seconds)' ranging from 0 to 10 in increments of 2. Both graphs have a light blue grid.

C:\TestData\TestData 2012\EDF\2012-07-25\

7/30/2012 8:46 AM

NEW FEATURES 2013

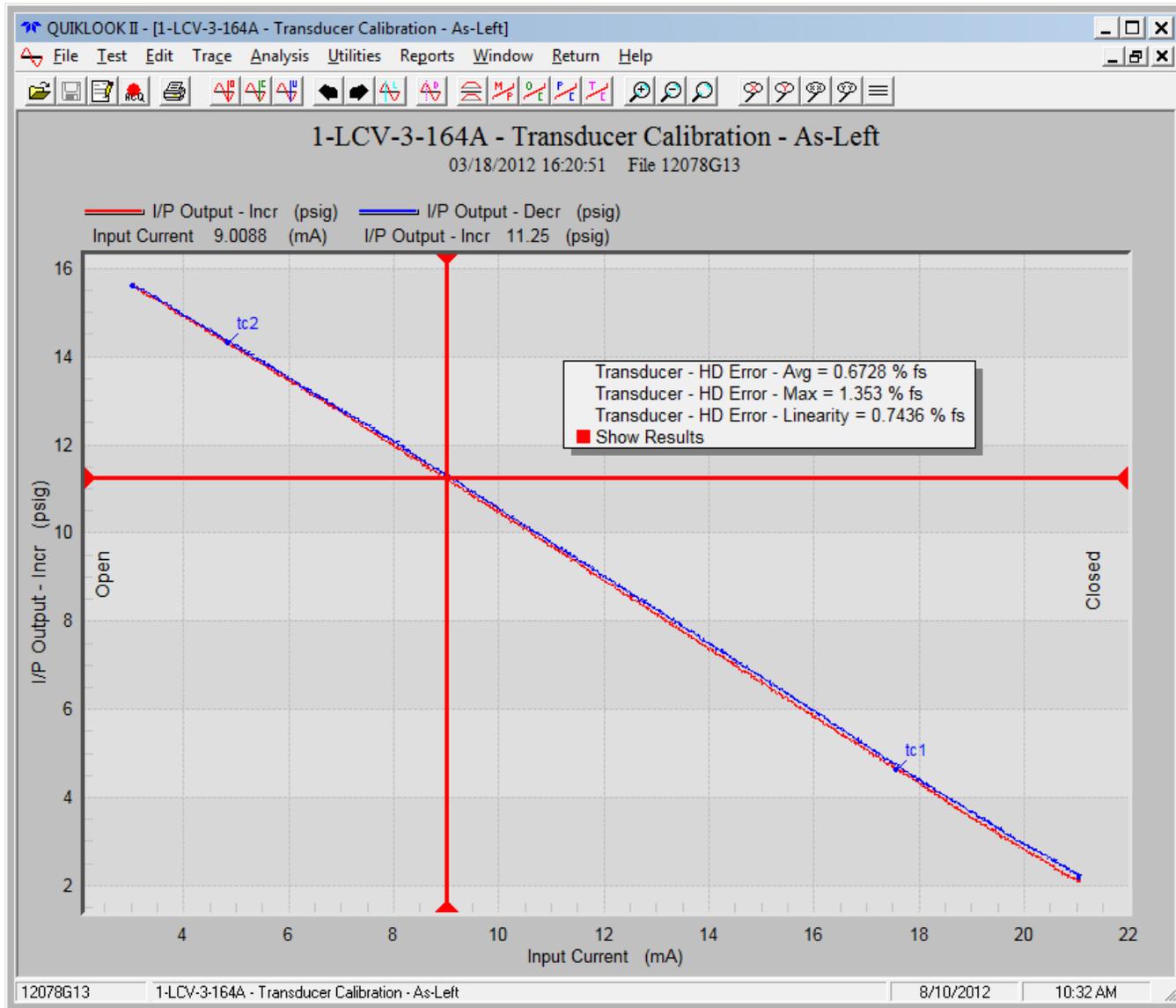
- Configuration / Analysis
 - Add I/P Action



The screenshot displays the 'AOV' software window with the 'Return' title bar. The 'Valve Properties' tab is active, showing various configuration options. A red arrow points to the 'I/P Action' dropdown menu, which is currently set to 'Reverse Acting'. Other settings include 'Valve Configuration' (Linear), 'Fail Mode' (Close), 'Valve Action' (Push Down To Close), 'Actuator Action' (Reverse Acting), 'Positioner Action' (Direct Acting), and 'Actuator Type' (Single Acting). There are also checkboxes for 'On / Off Valve' and 'Pilot Valve', both of which are unchecked. At the bottom, there are input fields for 'Retracted Area' (87 in²), 'Extended Area' (87 in²), 'Nominal Stroke' (1 in), and 'Seat Diameter' (0 in).

Property	Value	Unit
Valve Configuration	Linear	
Fail Mode	Close	
Valve Action	Push Down To Close	
Actuator Action	Reverse Acting	
Positioner Action	Direct Acting	
I/P Action	Reverse Acting	
Actuator Type	Single Acting	
Retracted Area	87	in ²
Extended Area	87	in ²
Nominal Stroke	1	in
Seat Diameter	0	in

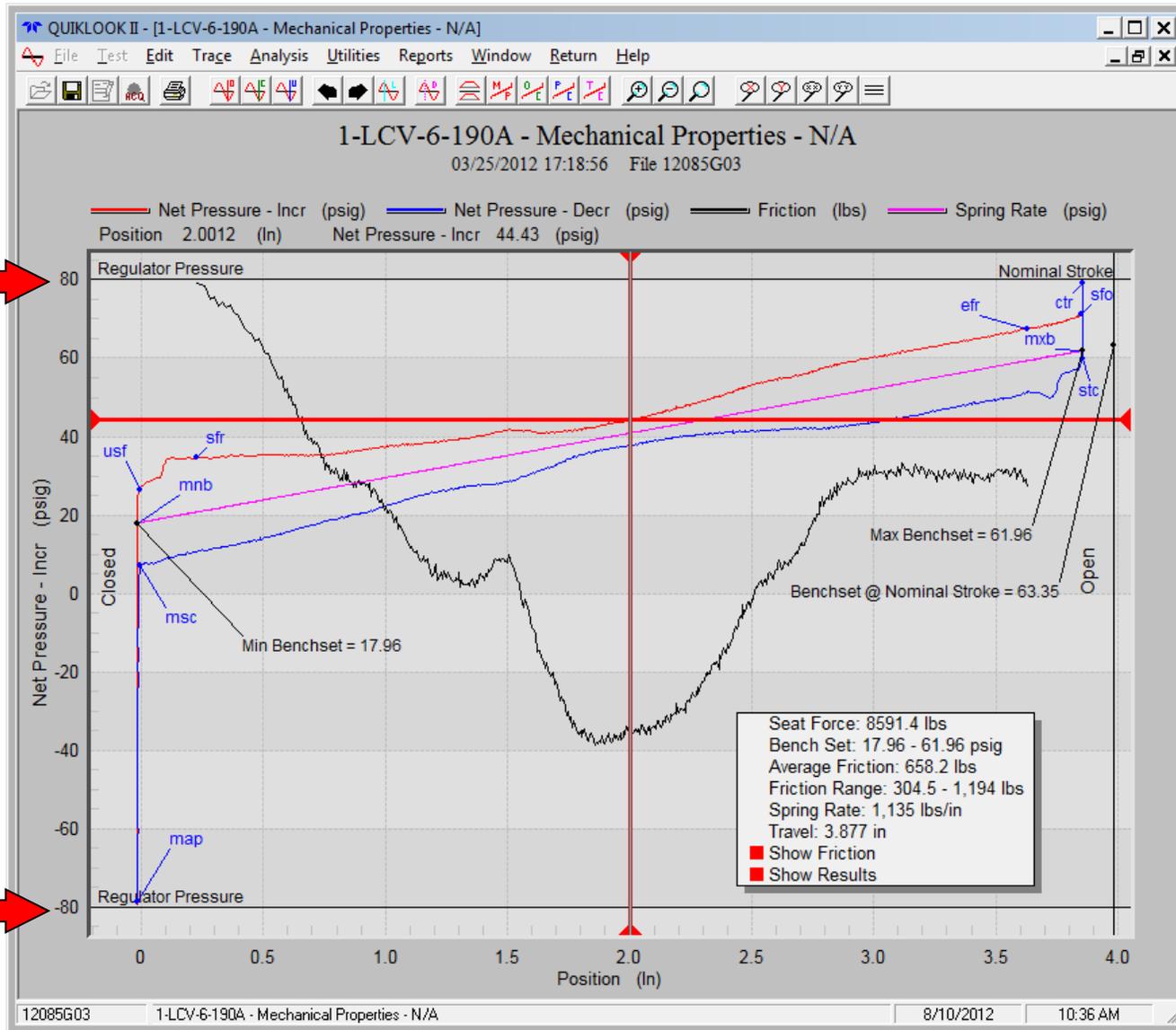
NEW FEATURES 2013



NEW FEATURES 2013

- Analysis
 - Mechanical Properties –
 - Double Acting Valves
 - Add line to show Negative Regulator Pressure

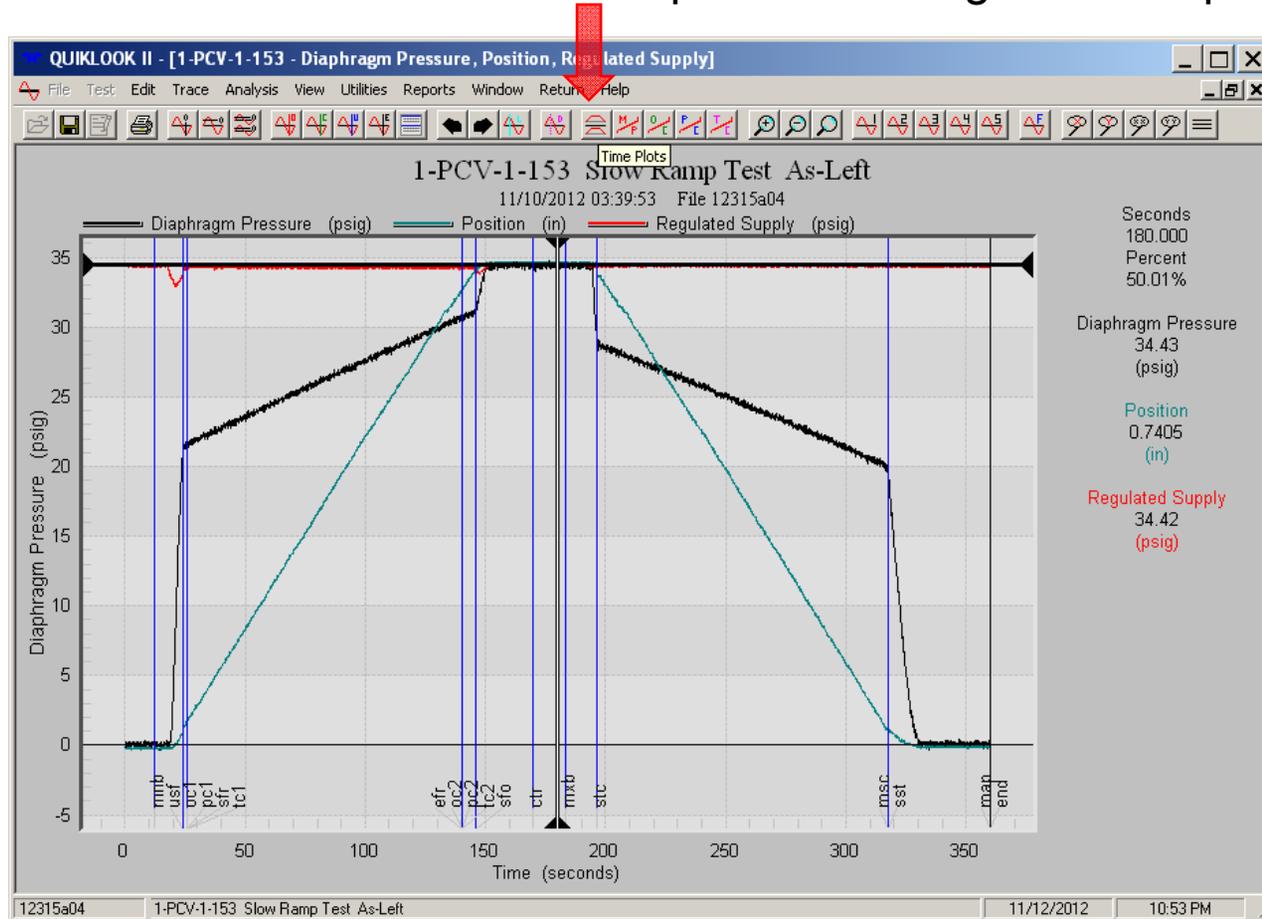
NEW FEATURES 2013



NEW FEATURES 2013

- Analysis

- Time Plot Icon should return to previous configured time plot



NEW FEATURES 2013

- Acquisition – Monitor Screen
 - Warning if pressure channels are zeroed with a large offset.
 - Disable zero for I/P Input Channel

NEW FEATURES 2013

- Acquisition
 - Eliminated Analog Out spike on startup. Needs new E/I board.
 - Increase capability of E/I board to drive digital positioners.

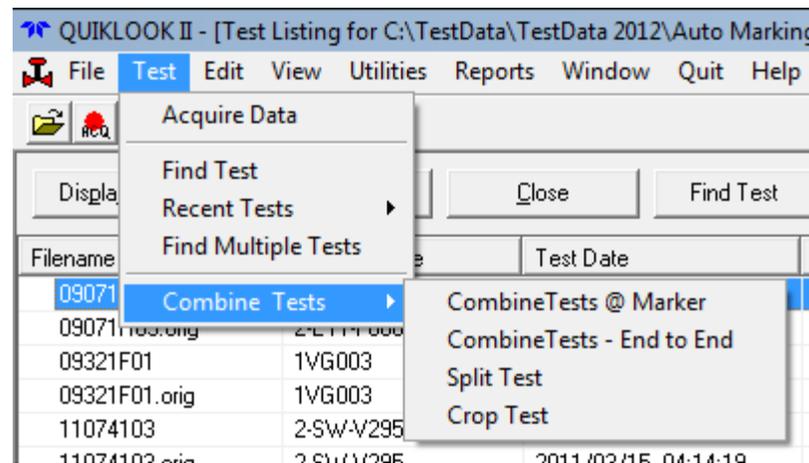
NEW FEATURES 2013

- Test Menu

- Combine test

- Combine two tests @ marker
 - Combine two tests end to end
 - Split test into two tests
 - Crop a test saving only data between two markers

- In each case a new test file will be created leaving the original tests intact.



NEW FEATURES 2013

- Replay
 - Plot between markers

QUIKLOOK II - [Display Traces]

File Test Edit View Utilities Reports Window Return Help

(#) - Filename	Primary Name	Test Date	Test #	Secondary Name	Description	Title
(1) - 09071H03.orig	2-E11-F068B	2009/03/12 02:35:59	3	1374762-05	PMT FOR SW INSPE...	QSS S/N

Available Channels Show All Channels

Name	Units	Test #
CTS	(none)	1
Open	(none)	1
LITES	(none)	1
RMS-Current	(amps)	1

Selected Channels XY Plot

Name	Units	Test #	Ch #
Current	(amps)	1	1
Thrust	(lbs)	1	2
Torque	(ft-lbs)	1	3

Between Markers

Save Changes Discard Changes Test Data

2-E11-F068B QSS S/N 8401 As-Left 8/3/2012 1:07 PM

NEW FEATURES 2013

- Analysis
 - Automark MOV traces

Name	Time (Seconds)	Time (Percent)	Current (Amps)	Thrust (Lbs)	Torque (Ft-Lbs)	CST (mA)	Green (mA)	Red Light (mA)	Open (mA)	SprPack (In)
c0	1.974	9.87%	0.02899	442.7	7.489	0.3590	-0.00007E	-0.02728	0.000190	0.001081
c1	1.986	9.93%	18.86	521.3	5.044	-0.07397	0.000228	-0.03593	0.001259	0.001189
c4	2.185	10.93%	4.623	-521.3	-5.846	-0.2098	-0.00034E	-0.02846	-0.000381	-0.001117
c6	2.266	11.33%	3.877	-564.0	-4.700	-0.3105	-0.00022E	0.01854	-0.00095E	-0.00115E
c5	8.286	41.43%	0.3815	-478.7	-4.738	0.1225	0.1606	-0.05505	0.000839	-0.00118E
c11	8.402	42.01%	1.497	-521.3	-4.681	0.07637	0.1187	-0.05817	0.000534	-0.00122E
c14	8.863	44.32%	6.657	-9,637	-98.54	-0.2989	-0.2549	-0.01259	-0.00057E	-0.01243
c8	8.865	44.33%	6.587	-9,627	-99.27	0.02235	-0.1992	-0.01041	0.00057E	-0.01290
c15	8.887	44.44%	-3.117	-9,756	-104.3	0.002480	0.2598	-0.00110E	-0.00003E	-0.01773
t16	8.974	44.87%	-0.03204	-11,332	-115.0	-0.00003E	0.09743	-0.00007E	0.00015E	-0.02425
c16	8.985	44.93%	-0.05951	-11,483	-113.0	0.000000	0.1190	-0.00003E	0.00007E	-0.02450
c17	10.576	52.88%	0.01373	-11,252	-102.2	-0.00003E	-0.1199	-0.00003E	0.000000	-0.02414
o0	12.168	60.84%	-0.01831	-11,197	-101.4	0.2536	0.1944	-0.00007E	0.01888	-0.02425
o1	12.189	60.95%	-30.70	-11,130	-38.97	0.3097	0.1296	-0.00026E	0.01011	-0.02414
o11	12.283	61.42%	2.887	-8,182	-13.70	0.02987	0.1018	-0.000114	0.006409	-0.02378
o9	12.854	64.27%	-5.038	5,394	55.67	0.4104	0.2642	-0.000801	0.01083	0.001729
o13	12.997	64.99%	4.932	614.8	9.285	-0.2872	-0.1403	-0.02495	-0.01553	0.001117
o12	15.909	79.55%	1.718	516.4	8.406	-0.2972	-0.2522	0.04261	-0.1767	0.001081
o14	18.801	94.01%	-3.896	565.6	9.189	0.4096	0.2633	-0.01225	0.3922	0.001189
o15	18.891	94.46%	1.711	573.8	8.444	-0.3122	-0.2734	0.03708	-0.09068	0.001297
o17	18.901	94.51%	-3.976	613.2	9.094	-0.01431	0.01228	-0.01163	0.002022	0.001081
end	19.999	100.00%	0.003052	477.1	7.011	-0.00007E	0.000000	-0.04131	0.000000	0.001153

Close



TELEDYNE TEST SERVICES

Everywhereyoulook™

Valve Diagnostic Testing and Maintenance

QUIKLOOK II SOFTWARE

MOV AUTO MARKING
DEMONSTRATION



NEW FEATURES 2013

Thank you

USER FEEDBACK?