

Ninth Annual QUIKLOOK Users Group Meeting

Marion, MA
August 19 & 20th, 2015

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Quiklook Software Update



TELEDYNE TEST SERVICES
Everywhereyoulook™

- Version 2013.309
 - Released September 2013
 - Quiklook 3 only
- Version 2014.058
 - Released February 2014
 - Quiklook 3 only
- Version 2014.197
 - Released August 2014
 - Quiklook II & Quiklook 3
- Version 2015.208
 - Released August 2015
 - Quiklook 3 only

Software Error Notices

No new notices for 2015

2013.309 – New Features

- Initial Release of Quiklook 3
 - New Data Acquisition Boards
 - Replaced Configure / Acquisition / Monitor Screens with a Single Screen
 - TEDS – Transducer Electronic Data Sheets
 - QL3 contains batteries allowing it to run without AC power.
 - Independent Channel Excitation
 - Increased acquisition rates
 - Increase Marker Names to 5 characters

2014.058 – New Features

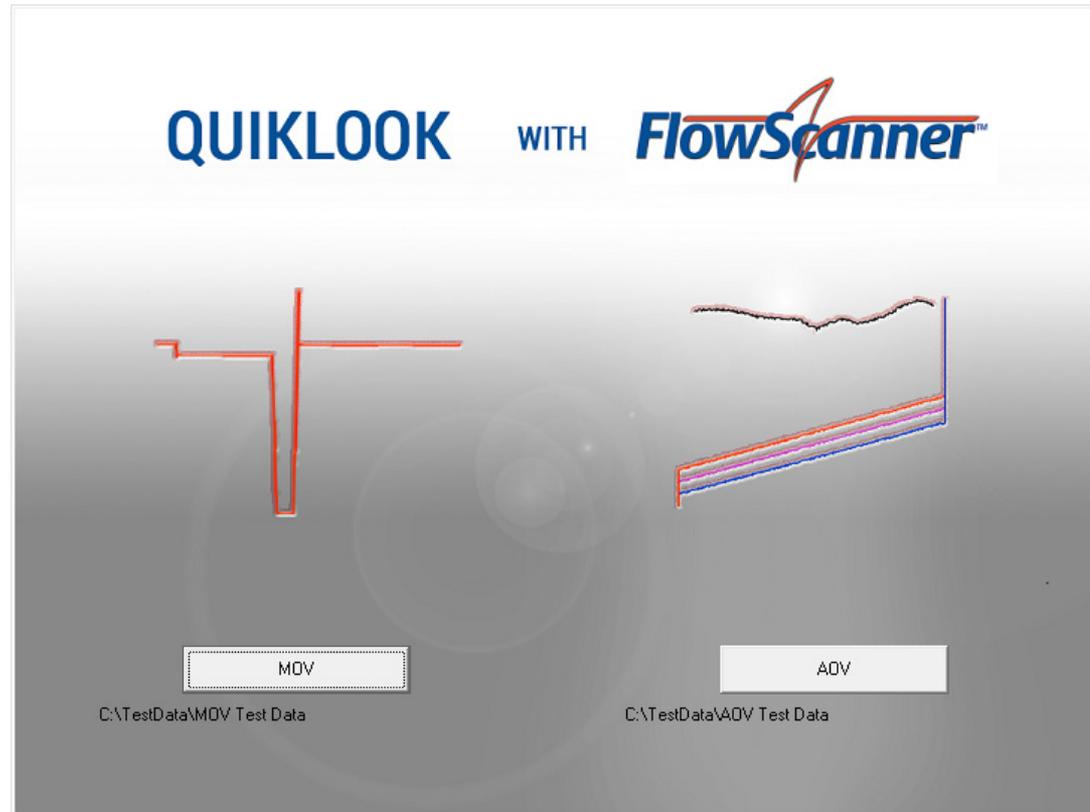
- Minor Release of Quiklook 3
 - Sometimes after a test was complete while using triggers the test would be lost
 - Default Trigger not set properly
 - Changed Sensor Logic-
 - If no sensors detected then no acquisition - No channels disabled
 - If Active Channels Without Sensors then Warning. If Yes selected then channels without sensors disabled.
 - If Trigger Channel has no sensor then message and acquisition cannot continue. No channels disabled.

2014.197 – New Features

- QL3 – Redirector
- Save stem geometry for cof in tag
- Threads per inch in fractions
- Added Excitation method “Power Supply” to allow for the use of Piezo Electric pressure transducers
- Preference for Time Plot to be Single or Multi pane for AOV after acquisition
- Speed improvements while scanning for sensors
- QLII Acquisition

2015.208 – New Features

Power of the Partnership



**Teledyne Test Services and Fisher Lifecycle Services
have partnered to deliver an industry leading
AOV/MOV valve diagnostic system – QUIKLOOK 3^{FS}**

2015 – New Features – Interface Mode

- Interface Mode set with a Preference Setting
- Quiklook Mode
 - Standard Test Listing
 - Shows all the tests for one valve
 - Redirector for selecting valve for acquisition
- FlowScanner Mode
 - Directory Tree
 - Shows multiple valves and tests
 - Valve selected from tree for acquisition

2015 – New Features – Quiklook Mode

QUIKLOOK 3 - 2015.8 - [Test Listing for C:\TestData\MOV Test Data\2-8804B\]

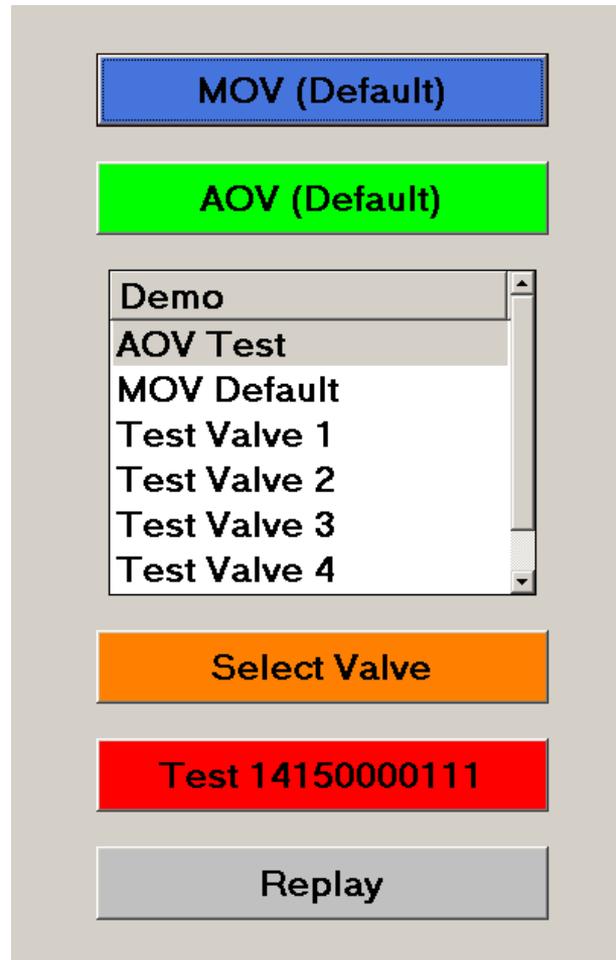
File Test Edit View Utilities Reports Window Quit Help

Display Traces Test Data Close Find Test Trending Mode

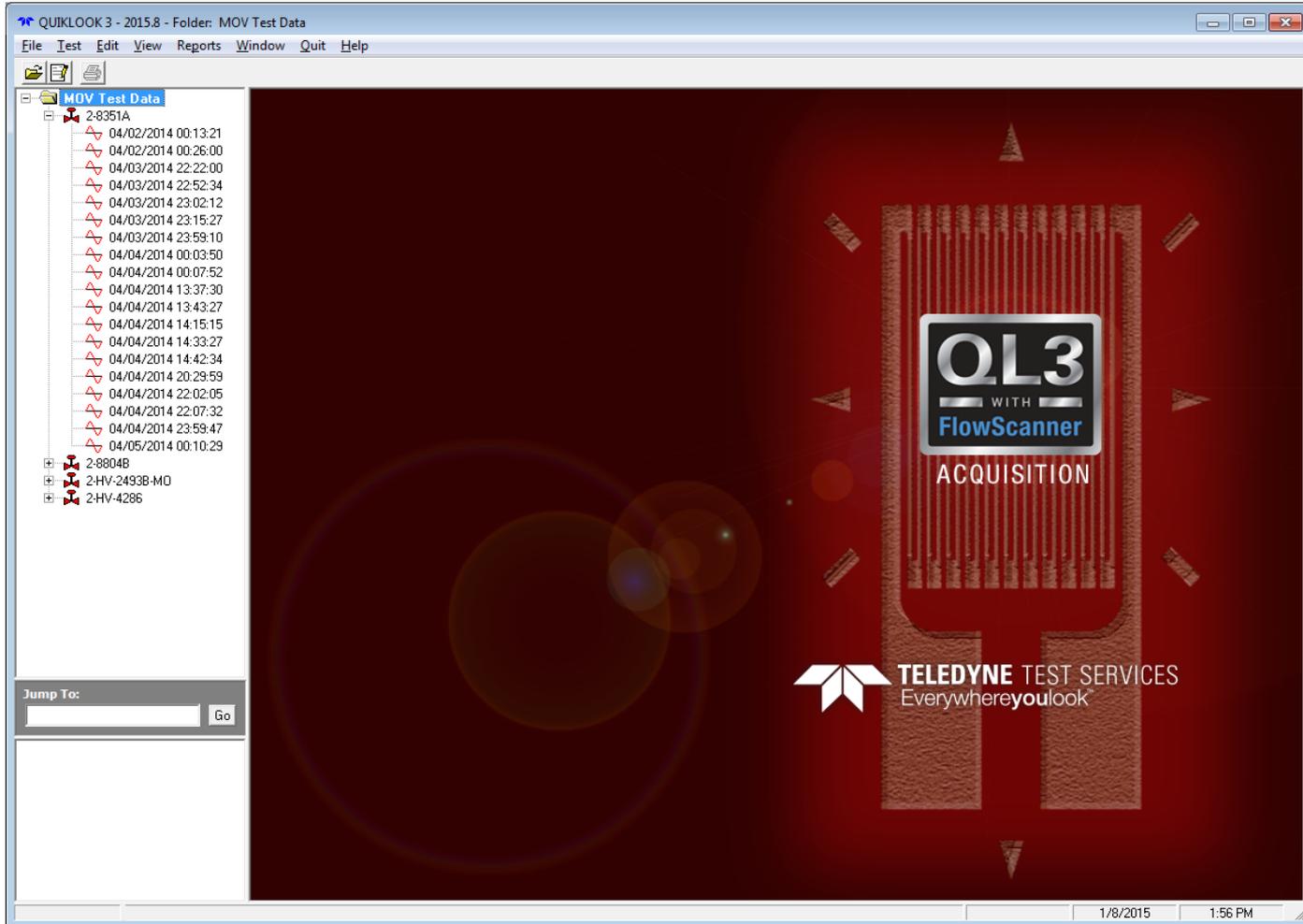
Filename	Primary Name	Test Date	Test #	Secondary Name	Description	Title	Comment 1
14095000101	2-8804B	2014/04/05 01:41:58	1		RHR PMP 2-02 TO SI P...	WO# 4311361	
14095000102	2-8804B	2014/04/05 02:09:24	2		RHR PMP 2-02 TO SI P...	WO# 4311361	
14095000103	2-8804B	2014/04/05 02:21:09	3	TOR	RHR PMP 2-02 TO SI P...	WO# 4311361	
14095000104	2-8804B	2014/04/05 02:46:13	5		RHR PMP 2-02 TO SI P...	WO# 4311361	

1/8/2015 2:03 PM

2015 – New Features – Quiklook Mode

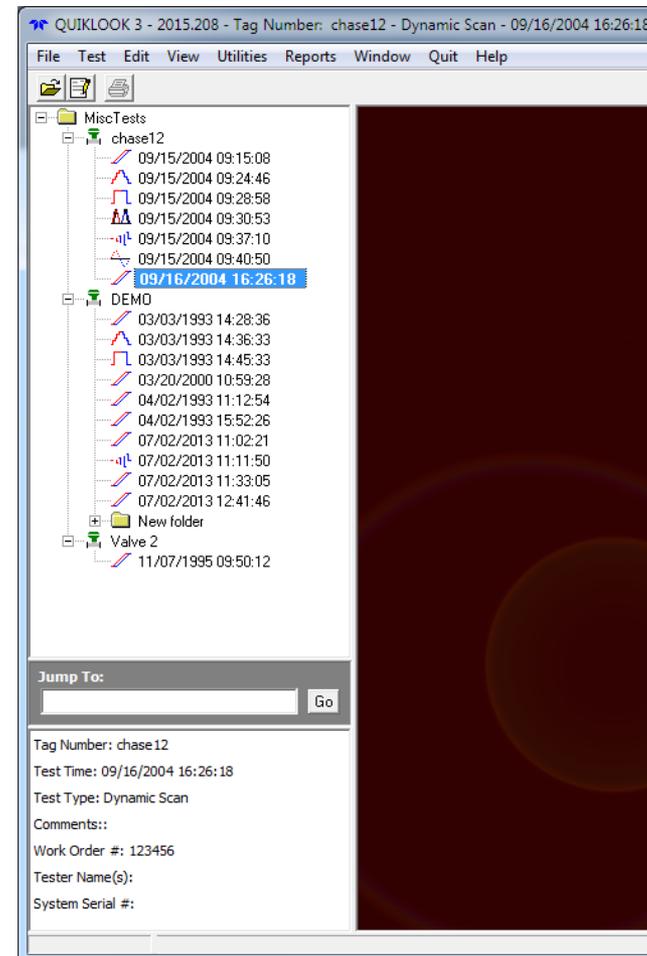


2015 – New Features – FlowScanner Mode - MOV

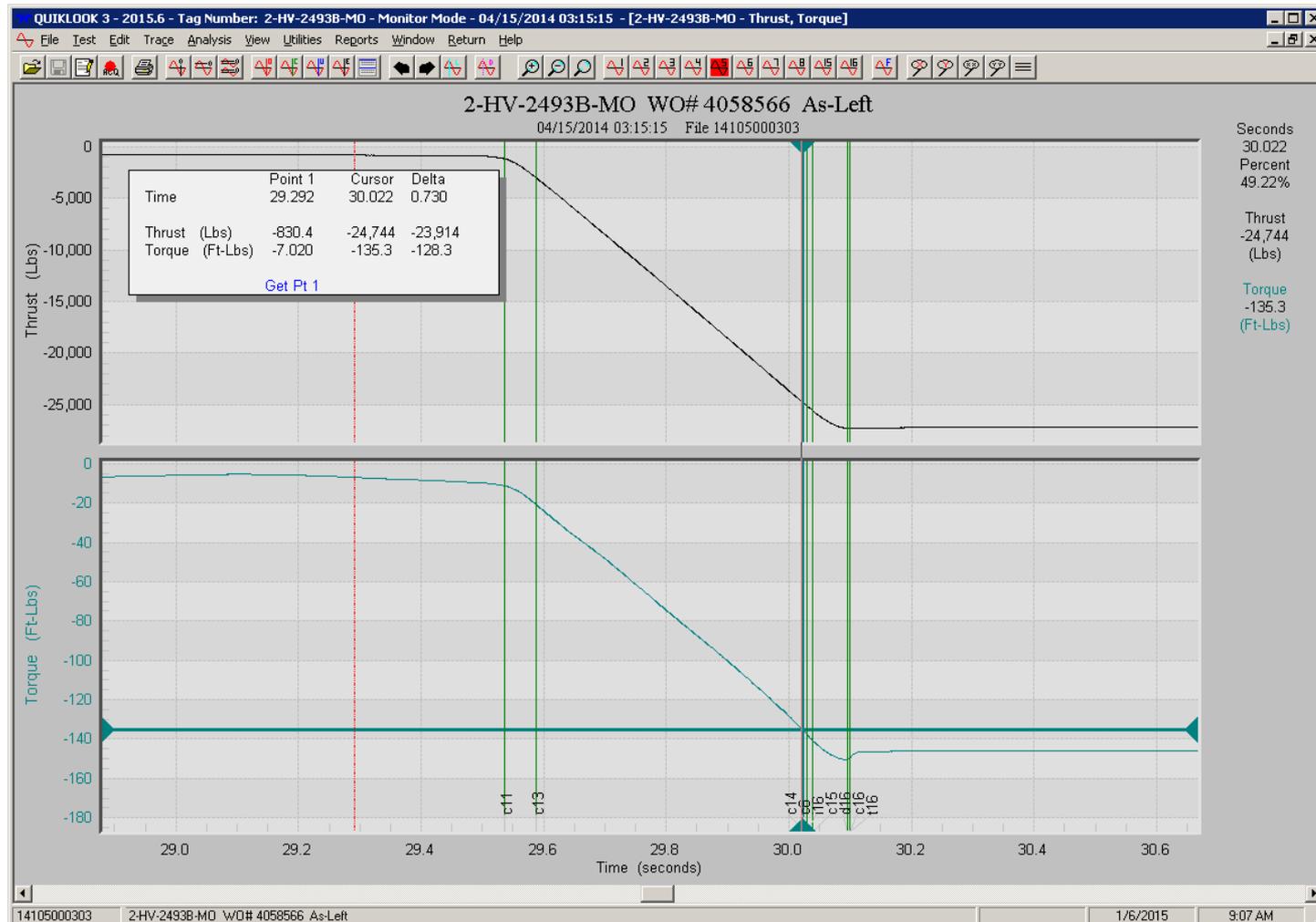


2015 – New Features – FlowScanner Mode - AOV

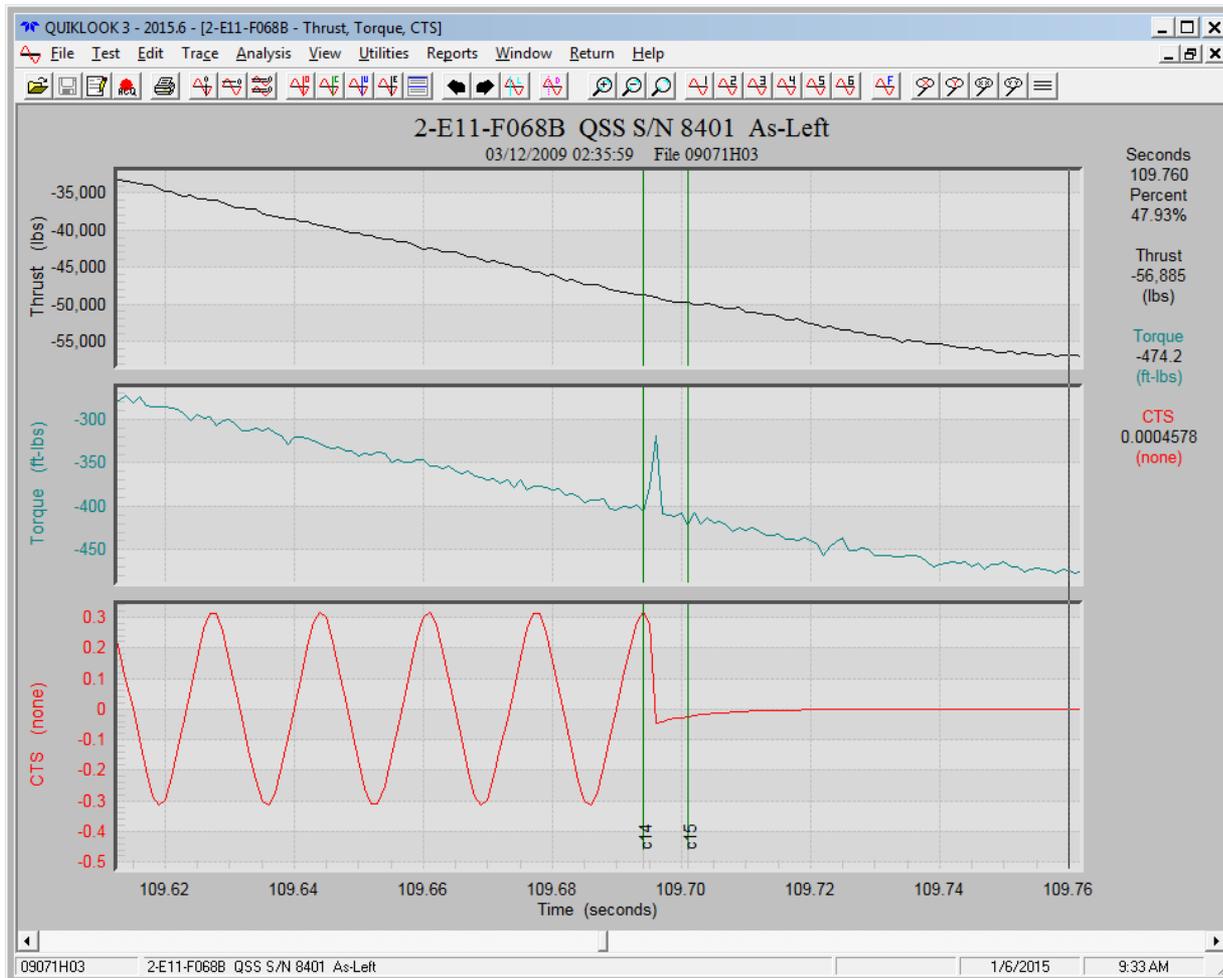
- Caption identifies test
- Icon next to valve identifies valve type
- Icon next to test identifies test type
- Quick view box at bottom gives summary of valve / test



2015 – New Features – Delta Y Function

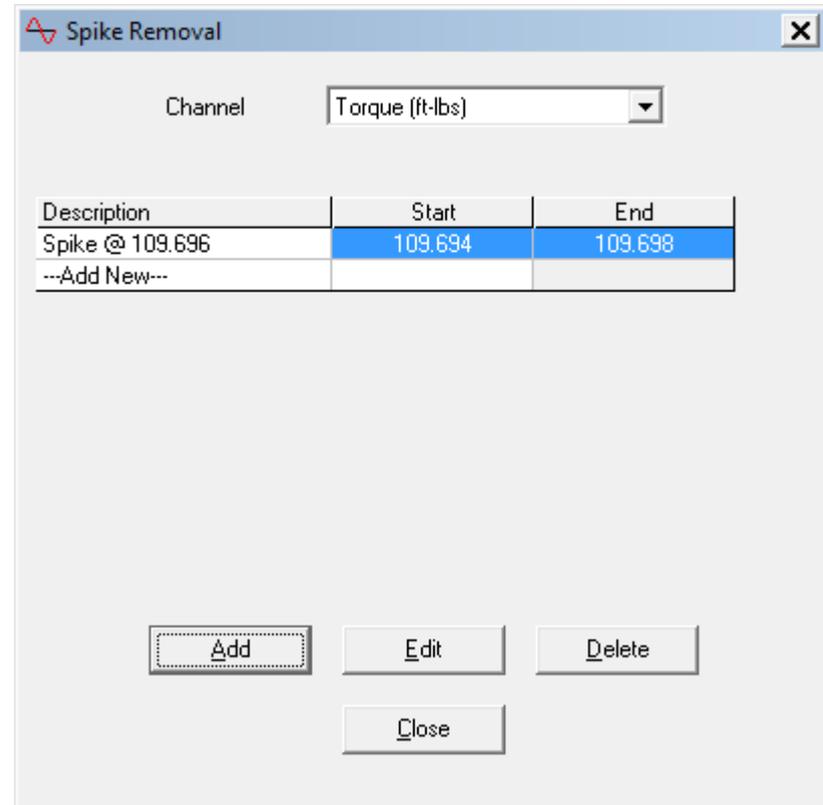


2015 – New Features – Spike Removal

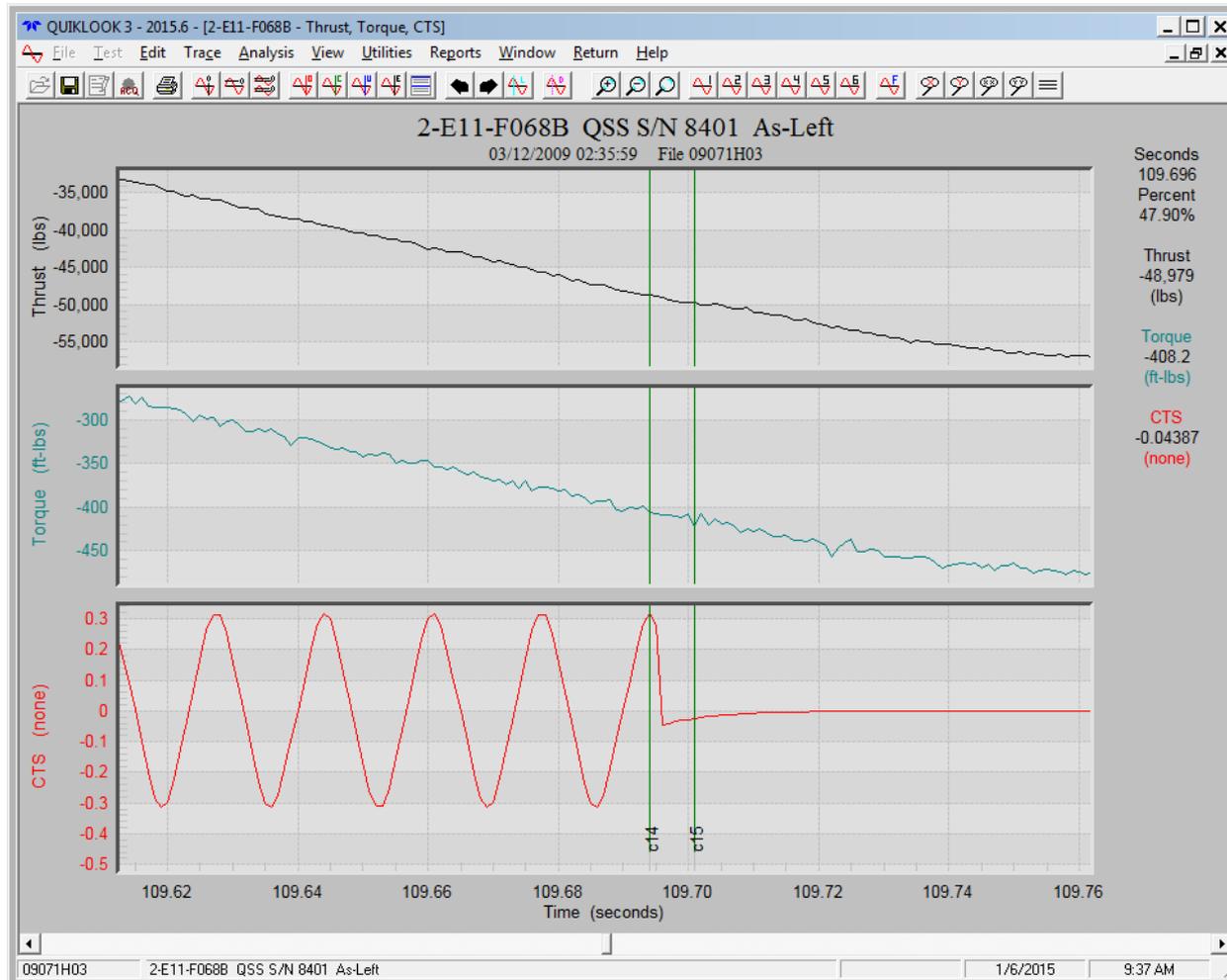


2015 – New Features – Spike Removal

- Select Channel
- Select Start & End Time
- Does not alter original data
- May be turned On / Off
- May be edited or deleted



2015 – New Features – Spike Removal



2015 – New Features – Average Running Load

- AVG Running Load Marker dialog box stays open until all selections have been made.
- Absolute MIN/MAX option added
- Selectable channel dropdown added

	Average	Minimum	Maximum
Running Load Calculated	-433.7034		
Marker Time	0.000	0.000	0.000
Load at Marker	-433.7034	-433.7034	-433.7034
Difference	0.0000106		
Difference (%)	0.00%		

2015 – New Features – Valve Tag Data

- Quiklook Properties combined with FlowScanner Properties
- Over 80 Additional Valve Properties Added for Quiklook Users
- Lookups for most valve and actuator properties
- Over 40 Test Criteria Added for Quiklook Users
- Criteria evaluated for Pass/Fail
- All valve properties are stored with the test and are editable
- Changing Valve Tag will not change test results

2015 – New Features – Valve Tag Data

Valve Explorer: Valve 1 - 10/14/2010 13:50:00

Compare to Valve Tag Return

Positioner Transducer I/P Criteria Accessories

General Body Trim Actuator

Valve Tag Serial No

General

Customer Valve Type

Plant Site

Operating Unit

Description

Comments

General Valve Characteristics

Zero Control Signal Is

Loss of Air is

Specified Stroke

Open Sec

Closed Sec

2015 – New Features – Valve Tag Data

Compare Test to Valve Tag

- Identifies Differences
- Show only Differences

Valve 1 - 10/14/2010 13:50:00 - Comparison to Valve Tag

Return

Update As-Tested Tag Show All

Parameter	Units	Valve Tag	As-Tested Tag	Flag
Valve Tag		Valve 1	Valve 1	
Valve Serial Number		13757363	13757363	
General				
Customer		Ed. Ctr.	Plant Name	X
Plant Site		Plant 1	1	X
Operating Unit			Demo	X
Tag Description				
Tag Comment			Demo valve	X
Valve Type		Sliding Stem	Sliding Stem	
Zero Signal Closed Flag		Closed	Closed	
Fail Mode				
Stroke Speed Close		0.0000000	0.0000000	
Stroke Speed Open		0.0000000	0.0000000	
Body				
Valve Manufacturer		FISHER	FISHER	
Body Model		EZ	EZ	
Valve Action		Push Down To Close	Push Down To Close	
FlowDirection		UP	UP	
Pressure Opens Flag		Opens	Opens	
Body Size		1"	1"	
Body Class		250	250	
Inlet Pressure	psig	260.00	0.00	X

2015 – New Features – Valve Tag Data

Compare Test to Valve Tag

- Identifies Differences
- Show only Differences
- One Click Update
- Updates Test with Tag Data

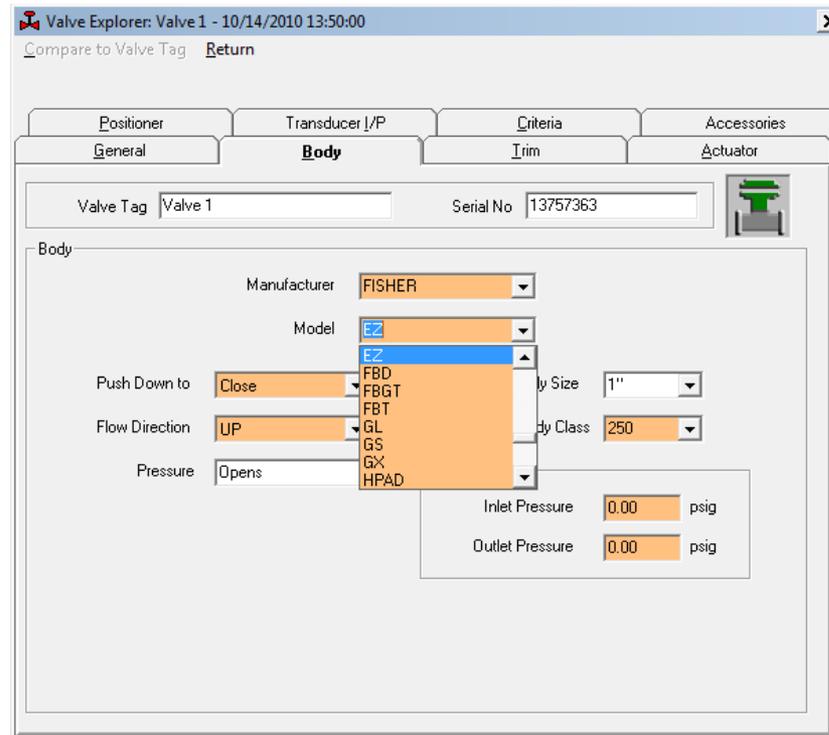
Valve 1 - 10/14/2010 13:50:00 - Comparison to Valve Tag

Return Update As-Tested Tag Show All

Parameter	Units	Valve Tag	As-Tested Tag	Flag
Customer		Ed. Ctr.	Plant Name	X
Plant Site		Plant 1	1	X
Operating Unit			Demo	X
Tag Comment			Demo valve	X
Inlet Pressure	psig	260.00	0.00	X
Actuator Spring Rate	lbs/in	491	0	X
Positioner Model		3582	3582i	X
Positioner Input Type		0	1	X
Positioner Input Full Span	psig	15.00	20.00	X
Positioner Input Zero	psig	9.00	4.00	X
Positioner Resistance		0.0000000	144.0	X
Transducer Manufacturer		FISHER		X
Transducer Model		646		X
Transducer Resistance	psig	144.00	0.00	X
Transducer Input Zero	psig	4.00	0.00	X
Transducer Input Full Span	psig	20.00	0.00	X
Transducer Output Zero	psig	3.00	0.00	X
Transducer Output Full Span	psig	15.00	0.00	X
Transducer Smart Type		NONE		X

2015 – New Features – Valve Database

- Fisher Valve database added for populating valve data



2015 – New Features – Actuator Data

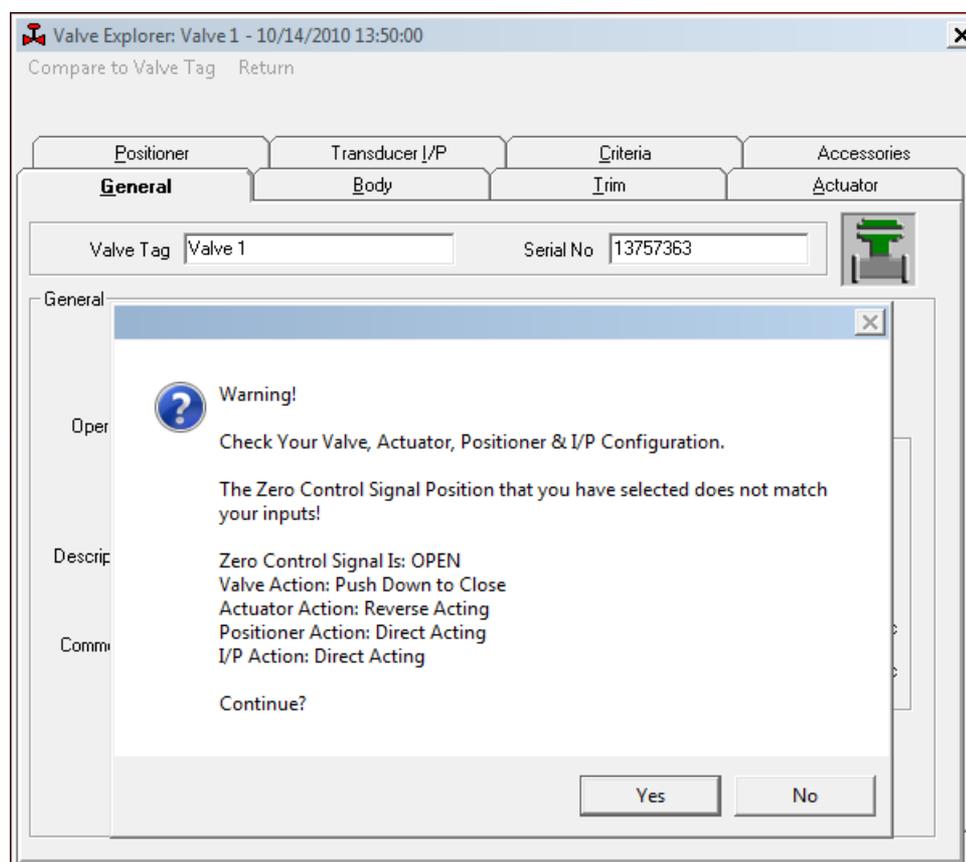
- Retracted / Extended Areas (FS users)
- Complete Link & Lever geometry (FS users)
- Diagram showing Dimensions (FS users)
- Number Actuators (FS users)
- Efficiency & Offset for all actuator types (FS & Quiklook users)

The screenshot displays the 'Valve Explorer' software interface for 'Valve 2' (Serial No. F000070204). The 'Actuator' tab is active, showing configuration options for a FISHER 1052 valve. The actuator is configured as a Single Acting, Direct Acting unit with a Link and Lever linkage type. The diagram on the right illustrates the linkage geometry with the following dimensions:

Parameter	Value	Units
Retracted Area	48.00	in ²
Extended Area	48.00	
Linkage Type	Link and Lever	
Efficiency	.00	
Offset	0	
Number Actuators	1	
Lever Arm Length	1.500	in
Link Length	0.000	in
Centerline Distance	0.000	in

2015 – New Features – Consistency Checks

- “Zero Control Signal” & “Loss of Air” are checked for consistency with other inputs



2015 – New Features – Valve Explorer

- Explore Test or Tag
- Results Added for Tests
- Caption Identifies Test

The screenshot displays the Quiklook 3 software interface. The main window is titled "Valve Explorer: Valve 1 - 10/14/2010 13:50:00". The interface is divided into several sections:

- Tree View (Left):** Shows a hierarchy of valves. "Valve 1" is selected, with a sub-entry for the test "10/14/2010 13:50:00". Other valves (Valve 2-5) are listed below.
- Component List (Middle-Left):** A table with columns "Component" and "Value".

Component	Value
<input checked="" type="checkbox"/> General	
<input type="checkbox"/> Body	
<input type="checkbox"/> Trim	
<input type="checkbox"/> Actuator	
<input type="checkbox"/> Positioner	
<input type="checkbox"/> Criteria	
<input checked="" type="checkbox"/> Results	
- Main Data Table (Middle-Right):** A list of valve parameters and their values.

Tag Number	Valve 1
Valve Type	Sliding Stem
Customer	Calcert Cliffs
Plant Site	1
Operating Unit	Demo
Description	-
Comments	Demo valve
Zero Control Signal	Closed
Stroke Open	.00
Stroke Closed	.00
Seat Force	482 lbs
Seat Load	0.0 lbs/in
Unseating Force	511 lbs
Valve Friction - Min	11 lbs
Valve Friction - Max	18 lbs
Valve Friction - Avg	15 lbs
Stroke Length	0.690 in
Spring Rate	478 lbs/in
Benchset Min	10.78 psig
Benchset Max	17.95 psig
Benchset @ Nominal Stroke	18.57 psig
I/P Output - Min	4.14 psig
I/P Output - Max	14.95 psig
Signal Seat	3.96 psig
Signal Full Open	14.95 psig
Signal Seat	4.95 mA
Signal Full Open	20.00 mA
Supply Pressure - Max	22.29 psig
Supply Pressure - Min	17.40 psig
Supply Pressure - Decrease	21.94 %
Transducer - HD Error - Av...	0.64 %
Transducer - HD Error - Max	0.92 %
Transducer - HD Error - Lin...	0.47 %
Positioner - HD Error - Avg	0.85 %
Positioner - HD Error - Max ...	1.38 %
- Summary Panel (Bottom-Left):**

Tag Number: Valve 1
 Test Time: 10/14/2010 13:50:00
 Test Type: Dynamic Scan
 Comments:
 Work Order #:
 Tester Name(s):
 FlowScanner Serial #: 16306809
- Background (Right):** A large red graphic with the "QL3 QUIKLOOK 3 ACQUISITION" logo and the Teledyne Test Services logo with the tagline "Everywhereyoulook".

2015 – New Features – Analysis Review

- Results shown
- Pass / Fail shown
- Tool Tip identifies Criteria

Tag Number : Valve 1 Serial Number : 13757363

Run Report Wizard Custom Graph Print Quick Report

Total Valve	Specified	Measured	I/P	Specified	Measured
Total Travel :	0.750 in	0.690 in	Pressure @ 0.00 mA :	0.00 psig	
Signal Full Open :	0.00 mA	20.00 mA	Pressure @ 0.00 mA :	0.00 psig	
Signal Seat :	0.00 mA	1.00 mA	Average DEB :		0.64 %
Average DEB :		0.750 in - 0.788 in	Maximum DEB :		0.92 %
Maximum DEB :		1.91 %	Minimum DEB :		
Minimum DEB :			Dynamic Linearity :		+/- 0.47 %
Dynamic Linearity :		+/- 1.22 %			

Plot Graph

Positioner

	Specified	Measured
Total Travel :		
Signal Full Open :		
Signal Seat :		
Average DEB :		
Maximum DEB :		
Minimum DEB :		
Dynamic Linearity :		
Initial Supply :		
Supply Minimum :		
Supply Average :		

Plot Positioner Graph Plot Supply Graph

Valve

	Specified	Measured
Average Friction :		15 lbs
Maximum Friction :	38 lbs	18 lbs
Minimum Friction :		15 lbs
Spring Rate :	0 lbs/in	478 lbs/in
Total Travel :	0.750 in	0.690 in
Bench Set (A.T.) (psi) :	7.00 - 15.00	10.78 - 17.95
Seat Load as Tested :	63 lbs	482 lbs
Service Seat Load :	63 lbs	NSC

Plot Graph

Jump To: Go

Tag Number: Valve 1
 Test Time: 10/14/2010 13:50:00
 Test Type: Dynamic Scan
 Comments:
 Work Order #:
 Tester Name(s):
 FlowScanner Serial #: 16306809

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2015 – New Features – Units

- Preference Setting
- User Units – AOV Only
 - Similar to FlowScanner Configuration
 - Added:
 - Torque
 - Seat Load
- Display Units - AOV / MOV
 - User Units
 - As-Tested Units
- Test Units – AOV / MOV - used for testing and sensors
 - Standard
 - Metric

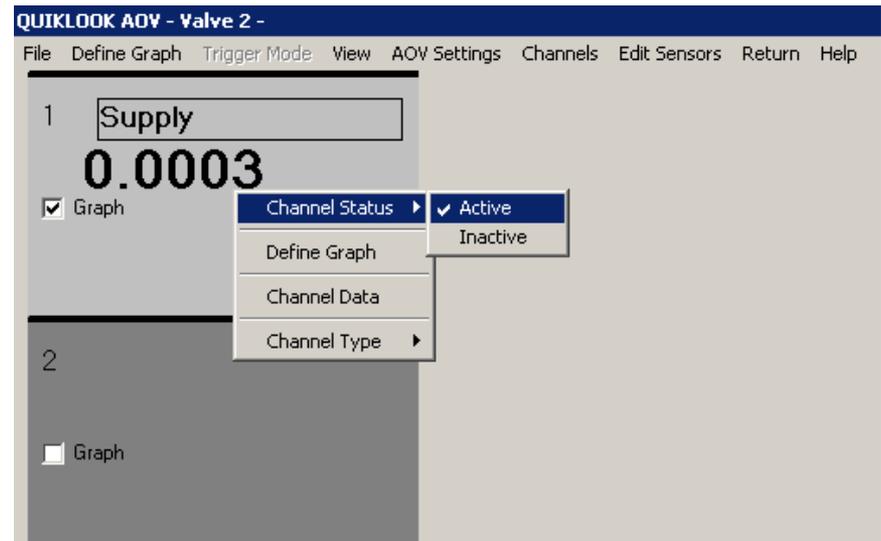
The 'Units' dialog box is organized as follows:

- User Units** (Group Box):
 - Linear**: in, mm
 - Area**: in², mm²
 - Force**: lbs, N, daN
 - Torque**: in-lbs, ft-lbs, N-m
 - Spring Rate**: lbs/in, N/mm, daN/mm
 - Pressure**: psi, kpa, kg/cm², bar
 - Seat Load (Sliding Stem)**: lbs/in, daN/mm
 - Seat Load (Rotary)**: ft-lbs/in, N-m/mm
- Display Units**: User Units, As-Tested Units
- Test Units**: Standard, Metric

Buttons: OK, Cancel

2015 – New Features – Acquisition

- Added Right Click menu to Acquire form for Channels Menu Options:
 - Channel Status
 - Define Graph
 - Channel Data
 - Channel Type (AOV)



2015 – New Features – C-Clamp

- C-Clamp is identified by Model Number on TEDS
- Will default to PreTension graph
- Acq screen will show **RED** if pretension is not in correct range
- Acq screen will show **Green** if pretension is in correct range

The screenshot shows the Quiklook software interface for a C-Clamp sensor. The main window is titled "QUIKLOOK MOV - Valve ID Undefined". The left sidebar shows a list of channels: 1 Current, 2, 3 Thrust, 4 CST, 5 Open, and 6 Close. Channel 3 is selected and highlighted in red, with a "Graph" checkbox checked. The main display area shows the "Channel Data" for Channel 3, which is "Thrust" in "Lbs" units. The sensor is identified as a "C-Clamp" with a model number of "MCC-100". The TEDS information is displayed, including the manufacturer "Crane Nuclear", serial number "12345", and calibration dates. The acquisition screen shows a large red "0.0000 (Lbs)" reading, indicating that the pretension is not in the correct range. The "PreTension" radio button is selected at the bottom of the Channel Data window.

2015 – New Features – C-Clamp

- Sensitivity calculator is built into Quiklook

Sensitivity Calculator for Valve Stem Sensors

Print Cancel

Calibrator Stem Properties

Custom

Nominal Diameter 0.625 (in)

Effective Diameter 0.426 (in)

CDF 0.12

TCF Apply Thrust 4.296

Standard

Thread: TPI / TPR ACME: 4 / 1

Calibrator Sensitivity 0.1235 (μV/μIN)

Mount Surface Threaded

Sensitivity

1176470.59 (LB/mV/V)

Cancel Apply Sensitivity

2015 – New Features – Acquisition - AOV

QUIKLOOK AOV - Valve ID Undefined - Dynamic Scan

File Define Graph Trigger Mode View AOV Settings Channels Edit Sensors Return Help

1 I/P Input
 Graph

2 I/P Output Pressure
 Graph

3 Diaphragm Pressure
 Graph

4 Position
0.0000 (In)
 Graph **15" String Pot**

5 Supply Pressure
 Graph

6 Regulated Supply
 Graph

7 Bottom Cylinder
 Graph

8 Top Cylinder Pressure
 Graph

Tag Number

Test Number Date

Start

Dynamic Scan

Control Data

Work Order Secondary Name

Description

Title

Comment

Comment

Technician

Direction AF / AL

Display Time

Max Seconds Acquisition Rate

Additional Comments

 Excitation Voltage OK

9
 Graph

10
 Graph

11
 Graph

12
 Graph

13
 Graph

14
 Graph

15
 Graph

16
 Graph

..... | C:\Test Data\AOV Test Data Fully Charged 8/17/2015 9:53 AM

2015 – New Features – Acquisition

- Added Icon to identify valve type
- Added Icon to identify test type
- Added label to identify test type
- Added tabs for data & control

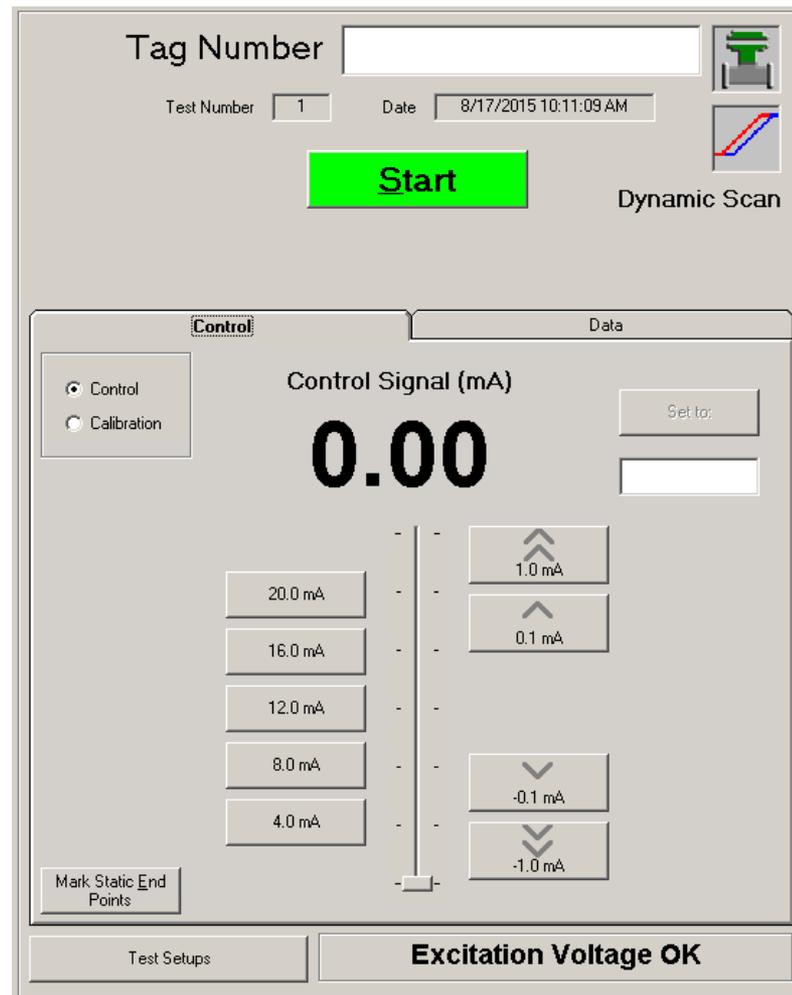
The screenshot displays the software's acquisition interface. At the top, there are input fields for 'Tag Number' (split into two boxes), 'Test Number' (set to 1), and 'Date' (8/17/2015 9:53:06 AM). A green 'Start' button is prominently displayed. To the right, there are two icons: a valve symbol and a graph symbol, with the text 'Dynamic Scan' below them.

Below the 'Start' button, there are two tabs: 'Control' and 'Data'. The 'Control' tab is active, showing several input fields: 'Work Order', 'Secondary Name', 'Description', 'Title' (set to 'Dynamic Scan'), 'Comment' (two fields), 'Technician', 'Direction' (set to 'N/A'), 'AF / AL' (set to 'N/A'), 'Display Time' (set to 20), and 'Max Seconds' (set to 155). There is also an 'Acquisition Rate' field set to 10. At the bottom of the 'Control' tab is a large text area for 'Additional Comments'.

At the bottom of the interface, there are two buttons: 'Test Setups' and 'Excitation Voltage OK'.

2015 – New Features – Acquisition - Control

- Scroll bar is vertical (Similar to FS)
- Larger Buttons
- Set to box
- Calibration Mode
- Mark Static End Points



2015 – New Features – Acquisition - Calibration Mode

Tag Number

Test Number Date

Start Dynamic Scan

Control

Control

Calibration

Control Signal (mA)

0.00

20.0 mA

19.2 mA

12.0 mA

4.8 mA

4.0 mA

Set to:

1.0 mA

0.1 mA

-0.1 mA

-1.0 mA

Mark Static End Points

Test Setups **Excitation Voltage OK**

2015 – New Features – Acquisition - Calibration Mode

- @ 0% (4 mA) signal
 - Travel has not begun to move
 - Positioner output pressure has not begun to change
 - I/P pressure should be in its specified zero cal. range.
 - The supply pressure is also compared to the required setting

- @ 5% (4.8 mA) signal
 - Valve should begin to move, checking the travel and positioner output pressure.
 - I/P pressure should be above its specified zero setting

2015 – New Features – Acquisition - Calibration Mode

- @ 95% (19.2 mA) signal
 - Valve has not yet reached full travel
 - Positioner output pressure has not yet saturated up to the measured supply pressure.
 - I/P output should still be below its specified maximum range

- @ 100%(20 mA) signal
 - Travel has reached its specified full value range
 - Positioner output has nearly reached the measured supply pressure

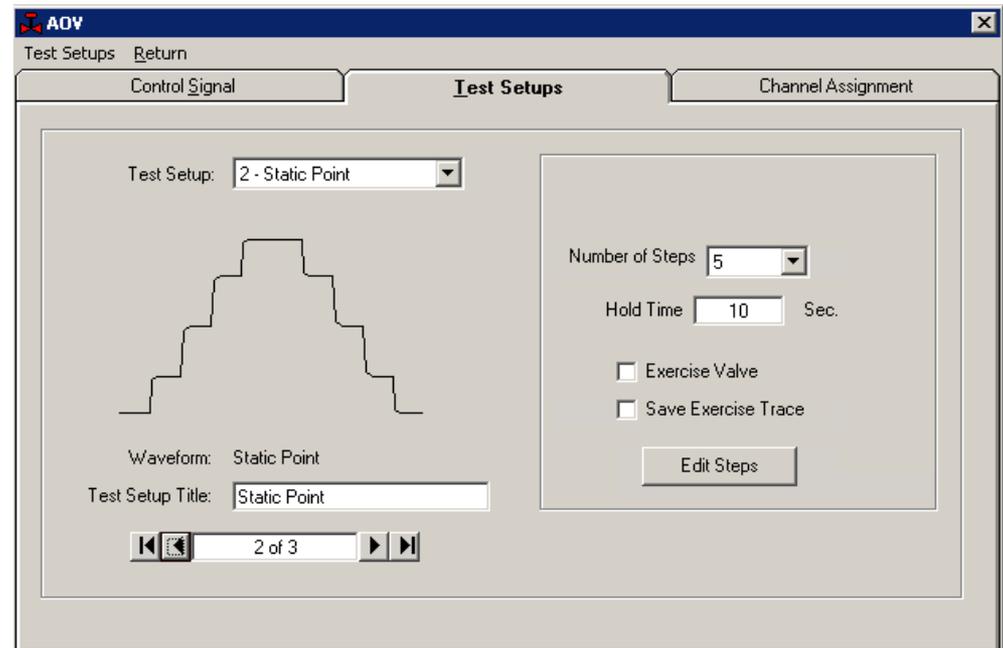
2015 – New Features – Acquisition

Mark Static End Points

- When calibrating a valve positioner, the process of calibration is done in a static condition, where the input signal is stopped and the output is allowed to fully react to the static input signal.
- The Dynamic Scan test is conducted with a continuously moving input signal, where the output (travel or pressure) is always lagging in time behind the changing input.
- You can't tell the static calibration with a Dynamic Scan test, because you can't tell where the instruments would have fully saturated if the input signal had been stopped at any point.
- To show the actual calibration of instrument, the Quiklook software has the ability to mark the Static End Points for display on the Dynamic Scan report.
- These points must be selected by the tester and are subject to human error.

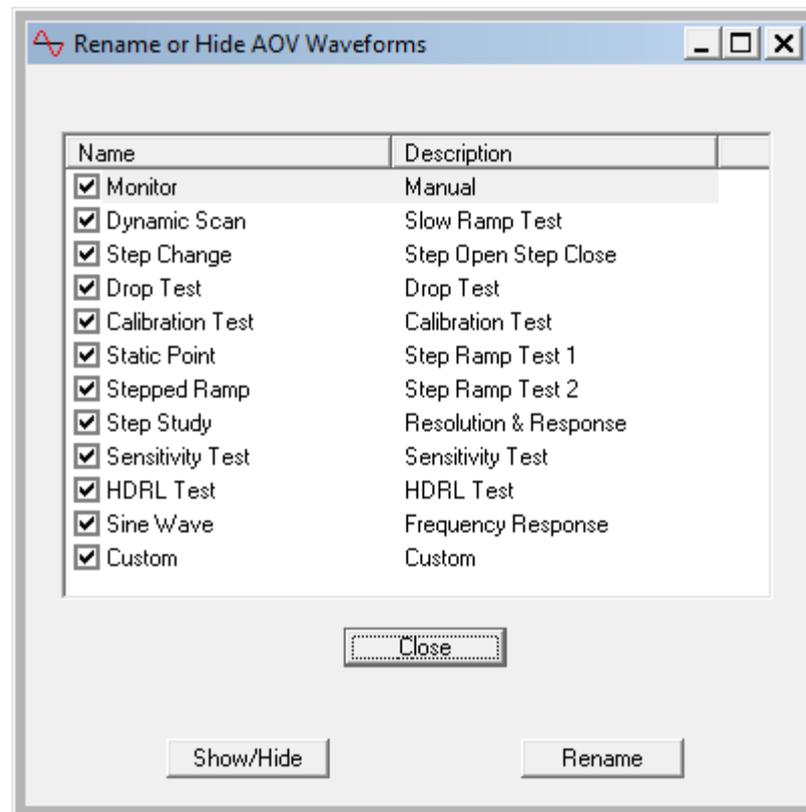
2015 – New Features – Test Setups

- Changed terminology to Test Setup
- Waveform is a part of the Test Setup
- Adding a Test Setup will prompt for Waveform



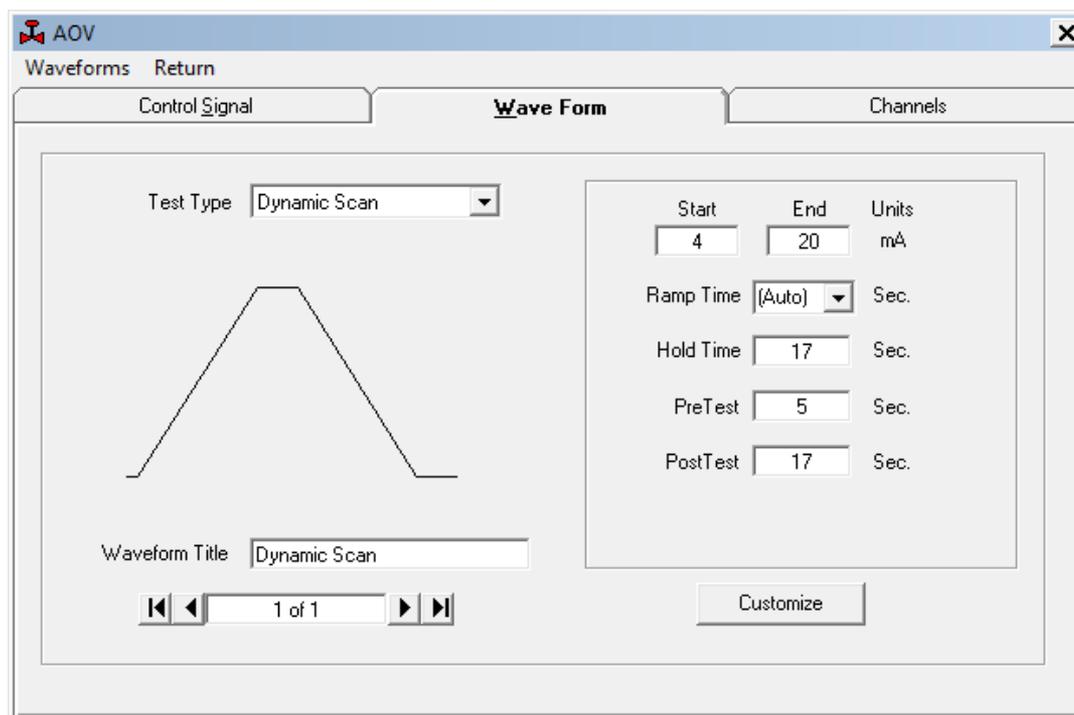
2015 – New Features - Waveforms

- Standardizing Names to FlowScanner
- User option to rename tests
- Option to exclude test from test selection



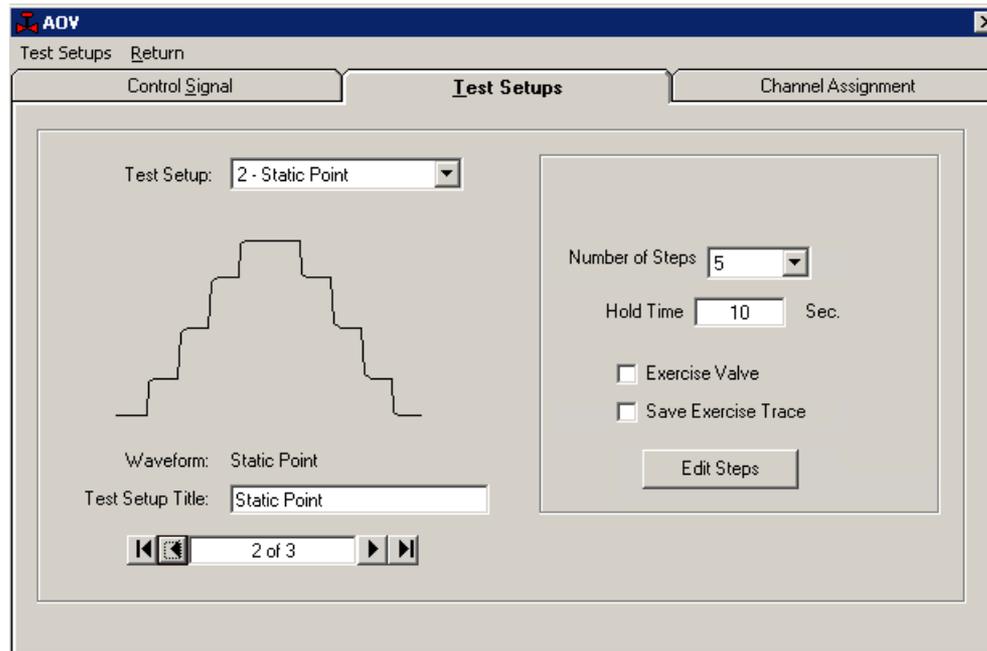
2015 – New Features – Test Setups

- Added “Auto” option for Dynamic Scan (Slow Ramp Test)



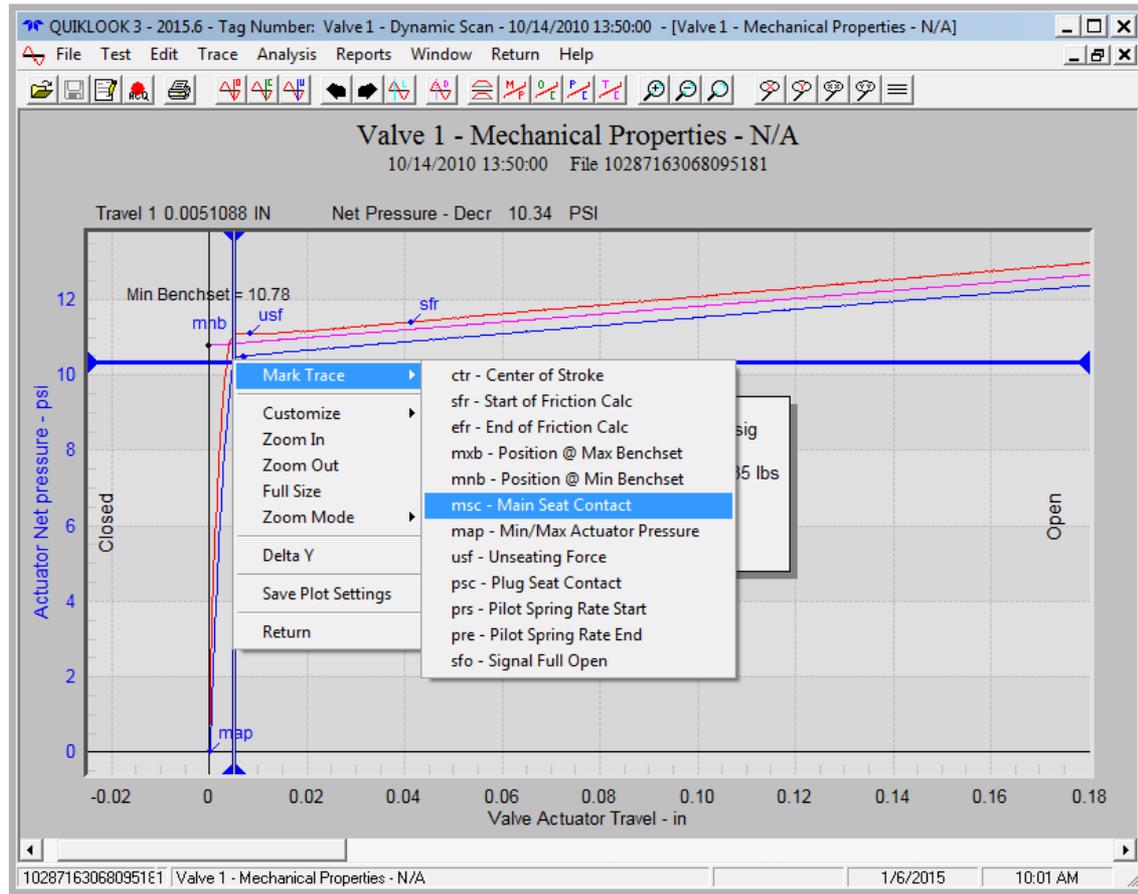
2015 – New Features - Test Setups

- Static Point Test (Step Ramp Test 1)
- Editable Steps
- Step is actually a fast ramp followed by a slow ramp to avoid overshoot
- Exercise Valve option



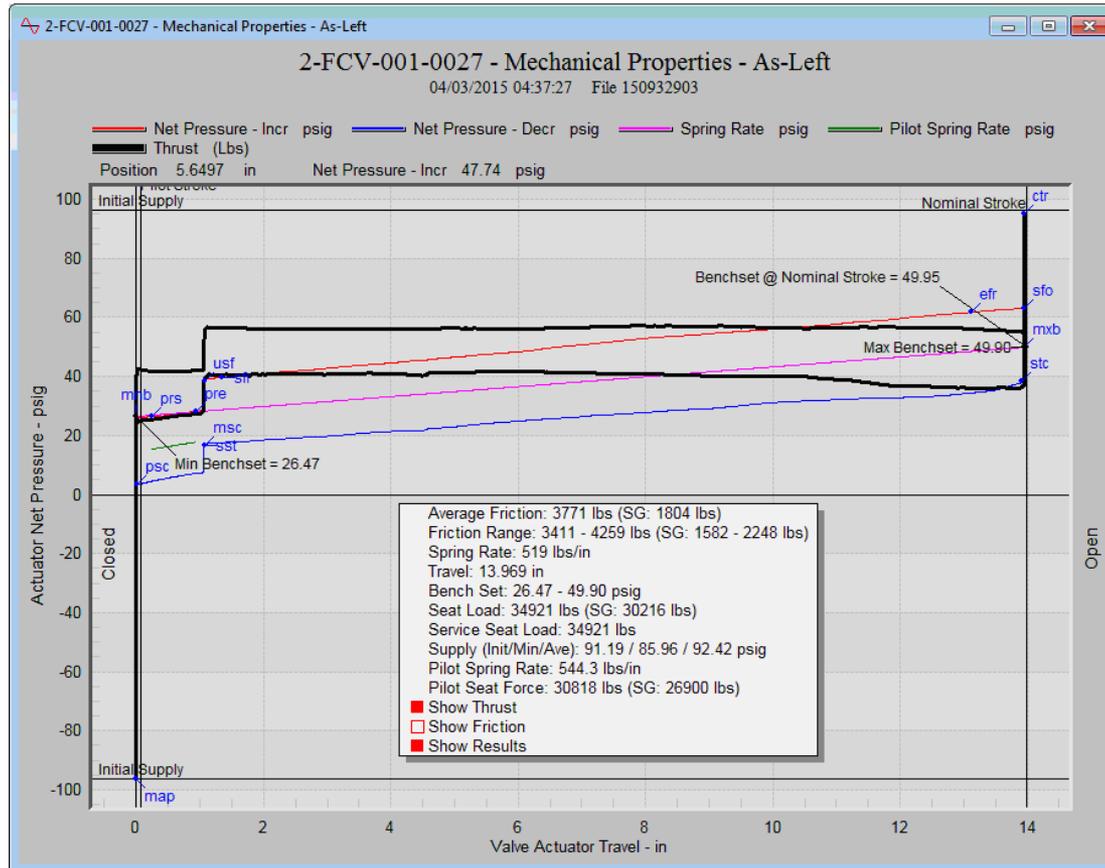
2015 – New Features - Replay

- Right Click Marker menu for AOV



2015 – New Features - Replay

- Overlay of Torque or Thrust on Mechanical properties Plot



2015 – New Features

- Encoder Channels
- Changes to TEDS – Separate presentation
- Overlay tests with different acquisition rates

Any Questions?

THANK YOU



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