



HEXAGON

HEXAGON XALT **QUALITY INSPECTION** **APPLICATION:** USER GUIDE

Xalt Quality inspection User Guide
10 April 2019

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Introduction

Problems Solved by this application

1. Guided Checklist for quality inspection of trailers and coaches before shipping
2. Objective evidence of quality
3. Precise “punch list” of defects to be corrected by technicians
4. Paper-free, electronic records
5. Historical / Statistical results to use in trend reporting
6. Pictures serve in the place of verbal / written descriptions of problems
7. Pictures serve as evidence of success where problems arise after shipping

Performing an Inspection

Linking the Quality Inspection app to a back-end ERP or application database

The Quality Inspection is designed to integrate to your back-end ERP or database application through the Coach data object. This data object is designed to be associated to a SQL table or SQL view that contains order details of the products that are to be inspected.

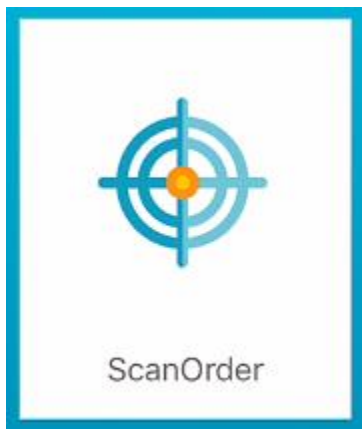
Please refer to the Data Setup guide for further technical information on linking the Coach object to your back-end system.

Please consult with your Account Executive if you would like more information on how to link the Quality Inspection app to your back-end systems.

Scan a Customer Order

Selecting the Scan Order option will invoke the camera screen on the mobile device. The device is now actively looking for a barcode or QR code.

When you scan either type of code the device will create an order number which is used to search for that order.



Example QR codes for Orders contained in the test data.

Order #501



Order #506

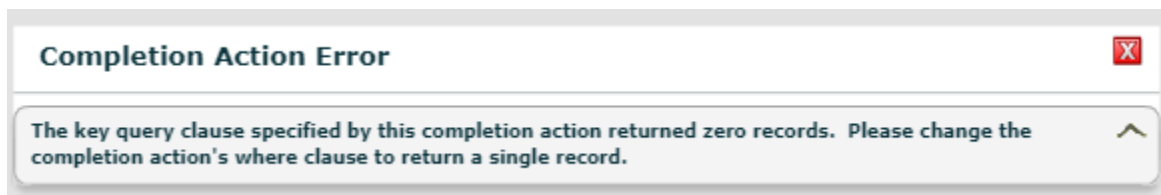


Type a Customer Order

Alternatively, an order number can be typed into the app by hand. This order number is then used to search for that order.



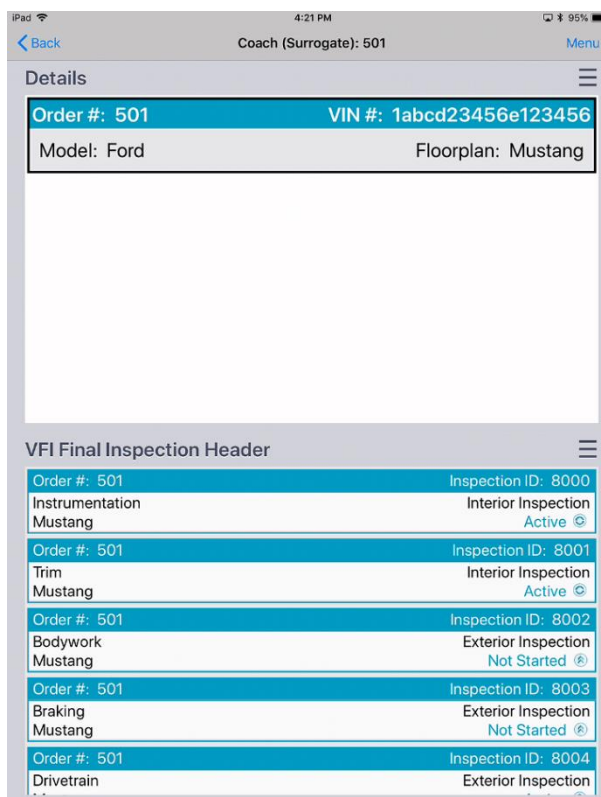
When an order number is entered into the app, either by scanning a code or typing a number, the Quality Inspection app expects to find a matching order in the back-end system. If it does not find a matching order the following error message will be displayed.



Start an Inspection

An inspection will be started when either a valid barcode is scanned, or a valid order number is manually typed into the app.

Tap on the inspection that you wish to begin from the list of inspections in the lower half of the screen.



Inspection Screen

The inspection screen is split into 4 sections. The Inspection Header and the Open Items are shown stacked on the first screen, and Defects and Completed Items are shown stacked on the second screen.



iPad 1:40 PM 20%

< VFI Final Inspection Status Final Inspection Header: 8019 Menu

Inspection Plan

Order #: 505	Inspection ID: 8019
Model: Chevrolet	Floorplan: Traverse
Exterior Inspection	
Drivetrain	Total Insp Items=7
Open=3	Defect=2
Disp=0	Pass=2
	N/A=0

Create Defect

Send Notifications

Interior Defects

Exterior Defects

Open Items

Exterior Cooling System	Engine Bay Engine
Begin Test	Fail / Defect
N/A	
Open	Awaiting Test
Exterior Engine Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection
Exterior Transmission Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection

iPad 1:40 PM 20%

< VFI Final Inspection Status Final Inspection Header: 8019 Menu

Fail/Defects

Exterior Engine Block	Engine Bay Engine
Pass	Disposition
Discrepancy	Awaiting Repair
Exterior Fuel Injection	Engine Bay Engine
Pass	Disposition
Discrepancy	Awaiting Repair

Completed

Exterior Torque Converter	Engine Bay Transmission
Document	Reset
Pass	Completed
Exterior Transmission	Engine Bay Transmission
Document	Reset
Pass	Completed

Swipe left from the first screen (Header, Open Items) to the get to the second screen (Defects, Completed Items). Conversely, swipe right from the second screen to reach the first screen.

Record results

The purpose of a quality inspection is to process all items from the open items list and from the non-conforming items list. If any items remain on either of these two lists, the inspection cannot be completed (marked as Released).

Open Items

Actions for Open Items

Pass

Most of the items inspected are intended to be recorded as passing. The Pass button allows the inspector to record the item as passed without entering any additional data. Tap the green “Pass” button to mark the item as passed. The result will be set to pass, and the item will be removed from the open items list and placed on the completed items list

Non-Conformance

If an item is observed to be unacceptable, it is marked as non-conforming. Non-conformances may also be known as Defects, Issues, Problems, Errors, etc. There are two aspects to marking an item as non-conforming:

- Attributes are selected to provide specific feedback regarding the nature of the non-conformance. The list of attributes has been compiled over time based on prior results. And the list will be updated as new attributes are identified.
- Picture / text: The inspector can capture a photo of the non-conforming item that shows the non-conformance. The picture can be viewed remotely to speed up the process of resolving issues. Further, the inspector can add narrative text to describe the symptom, cause, and/or remedy for the non-conformance.

N/A

Some inspection items appear on an inspection plan but may not be relevant for every vehicle manufactured. In the even an inspection items appears on the plan but is not relevant to this vehicle, it is marked as N/A. N/A items are removed from the open items list but are neither passing nor non-conforming. These items are reviewed for relevance and may be removed from the inspection plan if frequently marked N/A during quality inspection.

Item Testing

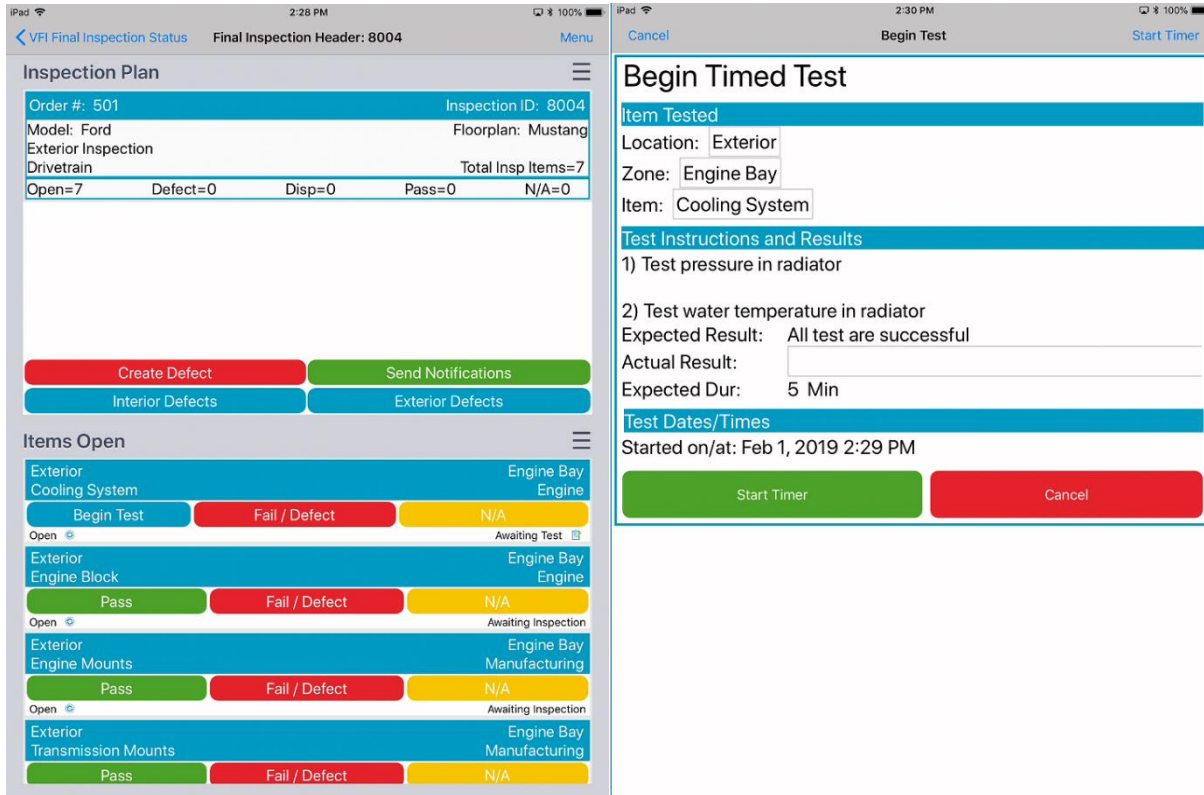
Items can be marked as requiring a test during an inspection. Test are often performed on mechanical systems to ensure they are functioning properly before shipment to a customer. Two important elements are often present when deciding to configure an item for testing: 1) Duration of the test and 2) Recorded test results. A timed test may be performed to ensure that the system can operate at the required level for a sustained period of time without failure. Any recorded test results refer to the need to document the results of the test – perhaps a pressure reading. The master item definition provides fields for these and other characteristics of test requirements:

- 1) Test Required (Timed or Un-timed)
- 2) Expected Result = 30 character (brief) description of the passing result for a test. (e.g. "Pressure > 30 psi")
- 3) Test Instruction: Instructions given to the Inspector to aid in performing the test correctly.
- 4) Test Duration: The amount of time (in minutes) the inspector is expected to spend letting the test run.

Timed Test

Begin Test

Items marked as requiring a timed test appear on the open items list with a blue button to "Begin Test" instead of the green Pass button. It is expected that the test be performed and completed prior to recording inspection results for the item.



Inspection Plan

Order #: 501 Inspection ID: 8004
 Model: Ford Floorplan: Mustang
 Exterior Inspection
 Drivetrain Total Insp Items=7
 Open=7 Defect=0 Disp=0 Pass=0 N/A=0

Create Defect Send Notifications
 Interior Defects Exterior Defects

Items Open

Item	Location	Status	Notes
Exterior Cooling System	Engine Bay	Begin Test	Awaiting Test
Exterior Engine Block	Engine Bay	Pass	Awaiting Inspection
Exterior Engine Mounts	Engine Bay	Pass	Awaiting Inspection
Exterior Transmission Mounts	Engine Bay	Pass	Awaiting Inspection

Begin Timed Test

Item Tested
 Location: Exterior
 Zone: Engine Bay
 Item: Cooling System

Test Instructions and Results

1) Test pressure in radiator
 2) Test water temperature in radiator
 Expected Result: All test are successful
 Actual Result:
 Expected Dur: 5 Min

Test Dates/Times

Started on/at: Feb 1, 2019 2:29 PM

Start Timer Cancel

Step 1: Begin Test

Step 2: Start Timer

While the test is running, the application tracks the running duration since the test started along with the duration of the test defined on the master item. The format shown is "rr/tt Min" where rr = duration since the test started and tt = expected duration of the test (all times in minutes).

Tapping the duration “button” will refresh the running duration.

Final Inspection Status
Final Inspection Header: 8004
Menu

Inspection Plan

Order #: 501	Inspection ID: 8004
Model: Ford	Floorplan: Mustang
Exterior Inspection	
Drivetrain	Total Insp Items=7
Open=7	Defect=0 Disp=0 Pass=0 N/A=0

Create Defect
Send Notifications

Interior Defects
Exterior Defects

Items Open

Exterior Cooling System	Engine Bay Engine
End Test	0/5 Min
View Test	
Open	Test running...
Exterior Engine Block	Engine Bay Engine
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection
Exterior Engine Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection
Exterior Transmission Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	

Final Inspection Status
Final Inspection Header: 8004
Menu

Inspection Plan

Order #: 501	Inspection ID: 8004
Model: Ford	Floorplan: Mustang
Exterior Inspection	
Drivetrain	Total Insp Items=7
Open=7	Defect=0 Disp=0 Pass=0 N/A=0

Create Defect
Send Notifications

Interior Defects
Exterior Defects

Items Open

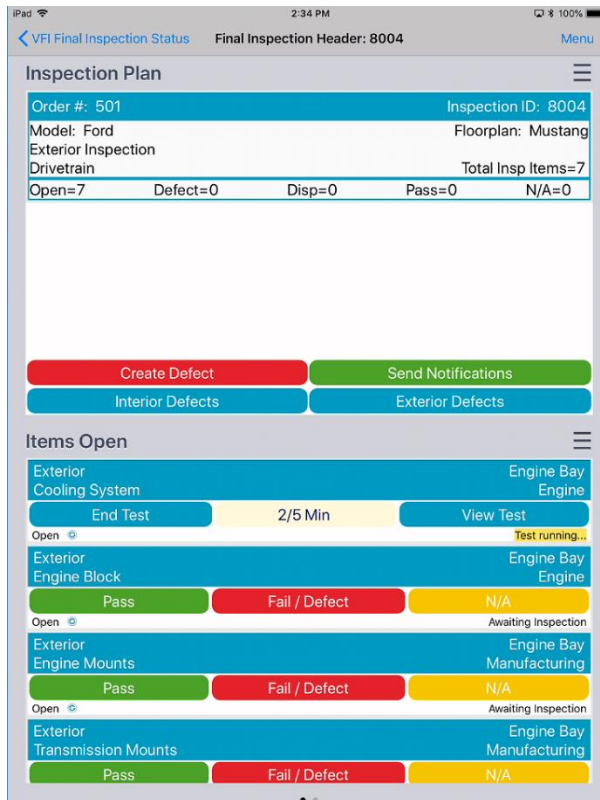
Exterior Cooling System	Engine Bay Engine
End Test	2/5 Min
View Test	
Open	Test running...
Exterior Engine Block	Engine Bay Engine
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection
Exterior Engine Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	
Open	Awaiting Inspection
Exterior Transmission Mounts	Engine Bay Manufacturing
Pass	Fail / Defect
N/A	

Refresh Timer – tap 0/5 Min

Timer updated after refresh

View Test

While the test is running, the View Test Results Button present a display that shows all aspects of the test that is running.



Inspection Plan

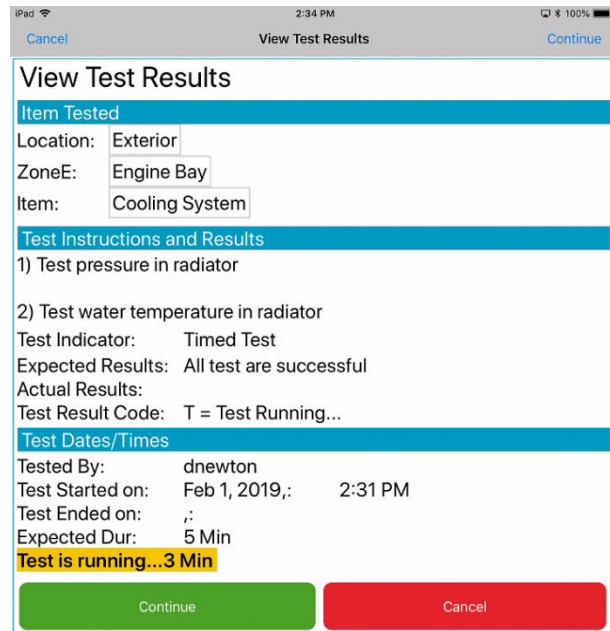
Order #: 501 Inspection ID: 8004
 Model: Ford Floorplan: Mustang
 Exterior Inspection
 Drivetrain Total Insp Items=7
 Open=7 Defect=0 Disp=0 Pass=0 N/A=0

Items Open

Item	Location	Status	Time	Action
Exterior Cooling System	Engine Bay	Engine	2/5 Min	View Test
Exterior Engine Block	Engine Bay	Engine	Awaiting Inspection	Pass / Fail / Defect / N/A
Exterior Engine Mounts	Engine Bay	Manufacturing	Awaiting Inspection	Pass / Fail / Defect / N/A
Exterior Transmission Mounts	Engine Bay	Manufacturing	Awaiting Inspection	Pass / Fail / Defect / N/A

Buttons: Create Defect, Send Notifications, Interior Defects, Exterior Defects

Tap "View Test" button



View Test Results

Item Tested
 Location: Exterior
 ZoneE: Engine Bay
 Item: Cooling System

Test Instructions and Results
 1) Test pressure in radiator
 2) Test water temperature in radiator
 Test Indicator: Timed Test
 Expected Results: All test are successful
 Actual Results:
 Test Result Code: T = Test Running...

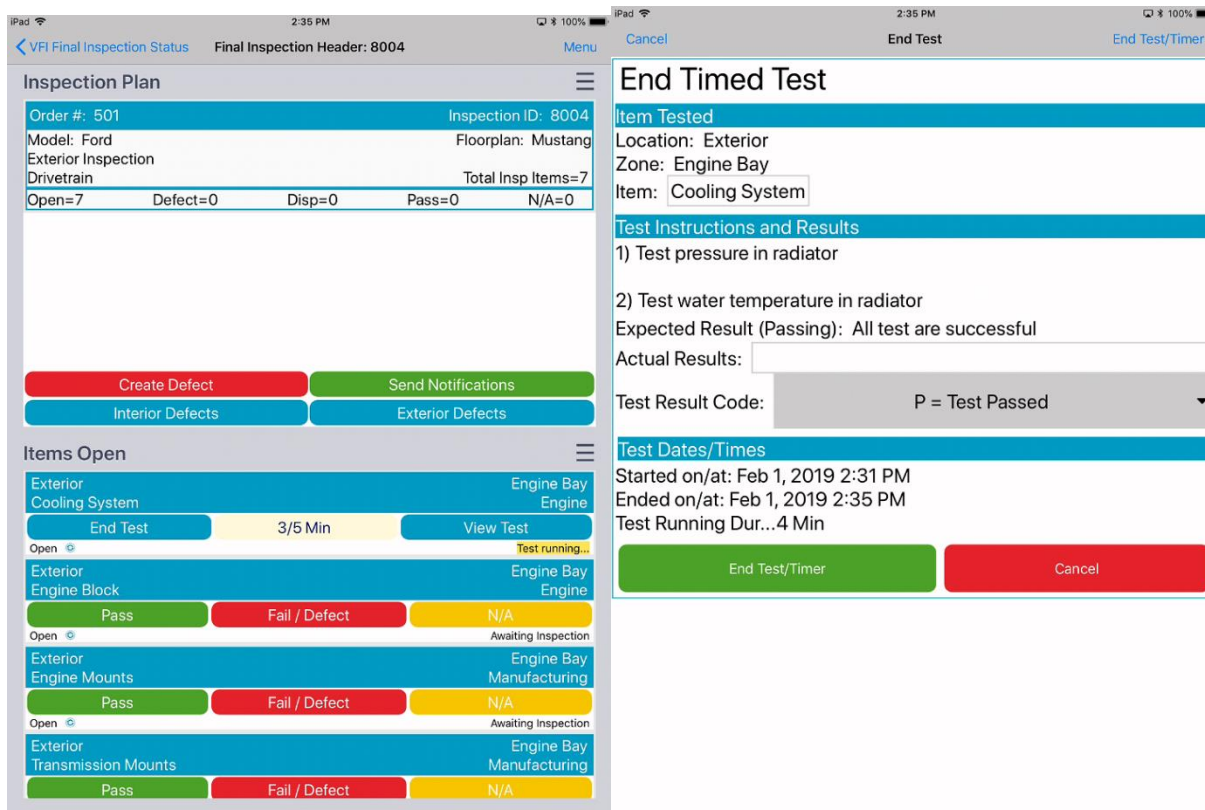
Test Dates/Times
 Tested By: dnewton
 Test Started on: Feb 1, 2019, 2:31 PM
 Test Ended on: ;
 Expected Dur: 5 Min
 Test is running...3 Min

Buttons: Continue, Cancel

Test Results shown

End Test

Once the test has run for the specified duration, the timer is stopped, and test results are entered.



Inspection Plan

Order #: 501 Inspection ID: 8004
 Model: Ford Floorplan: Mustang
 Exterior Inspection
 Drivetrain Total Insp Items=7
 Open=7 Defect=0 Disp=0 Pass=0 N/A=0

Create Defect Send Notifications
 Interior Defects Exterior Defects

Items Open

Item	Status	Time	Action
Exterior Cooling System	Engine Bay	3/5 Min	View Test
Exterior Engine Block	Engine Bay	Pass	Fail / Defect
Exterior Engine Mounts	Engine Bay	Pass	Fail / Defect
Exterior Transmission Mounts	Engine Bay	Pass	Fail / Defect

End Timed Test

Item Tested
 Location: Exterior
 Zone: Engine Bay
 Item: Cooling System

Test Instructions and Results

1) Test pressure in radiator
 2) Test water temperature in radiator
 Expected Result (Passing): All test are successful
 Actual Results:
 Test Result Code: P = Test Passed

Test Dates/Times

Started on/at: Feb 1, 2019 2:31 PM
 Ended on/at: Feb 1, 2019 2:35 PM
 Test Running Dur...4 Min

End Test/Timer Cancel

Tap “End Test” when duration met

Record Test Results

Enter Test Results

There are two elements in recording test results – Actual result value and test result code.

Actual Result: Enter the results that conform to the expected results defined for the item. This is shown immediately above the Actual Results input field on the screen.

Test Results Code: Tap the combo box to choose the appropriate indication of the result of running the test. Choose from these options:

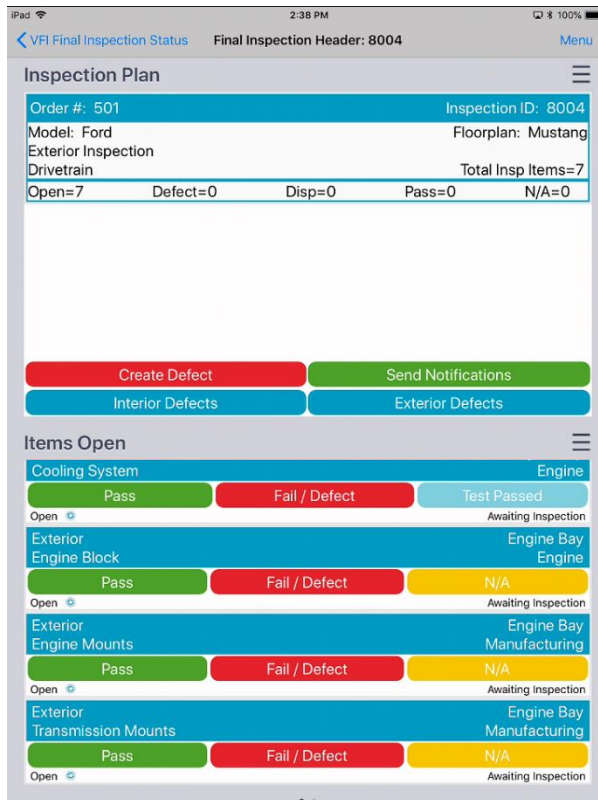
- P = Test Passed
- F = Test Failed

Non-Conforming Items

Items are marked as non-conforming if the inspector observes any imperfections, blemishes, or any other defects which are considered unacceptable to ship to the customer. The non-conformance process allows for these imperfections to be recorded through the selection of attributes describing the defect, photographs, and a narrative of the problem(s).

Attributes

The item has been configured with a pre-defined list of attributes reflecting the most common problems for this item. The list of attributes is visible in display mode by tapping the items bold blue header from the open item list.



Inspection Plan

Order #: 501 Inspection ID: 8004
 Model: Ford Floorplan: Mustang
 Exterior Inspection
 Drivetrain Total Insp Items=7
 Open=7 Defect=0 Disp=0 Pass=0 N/A=0

Items Open

Item	Pass	Fail / Defect	Test Passed
Cooling System	Pass	Fail / Defect	Test Passed
Exterior Engine Block	Pass	Fail / Defect	N/A
Exterior Engine Mounts	Pass	Fail / Defect	N/A
Exterior Transmission Mounts	Pass	Fail / Defect	N/A

Buttons: Create Defect, Send Notifications, Interior Defects, Exterior Defects



Select/De-Select Defect Reasons

- ☐ Mis-aligned
- ☐ Bad Weld

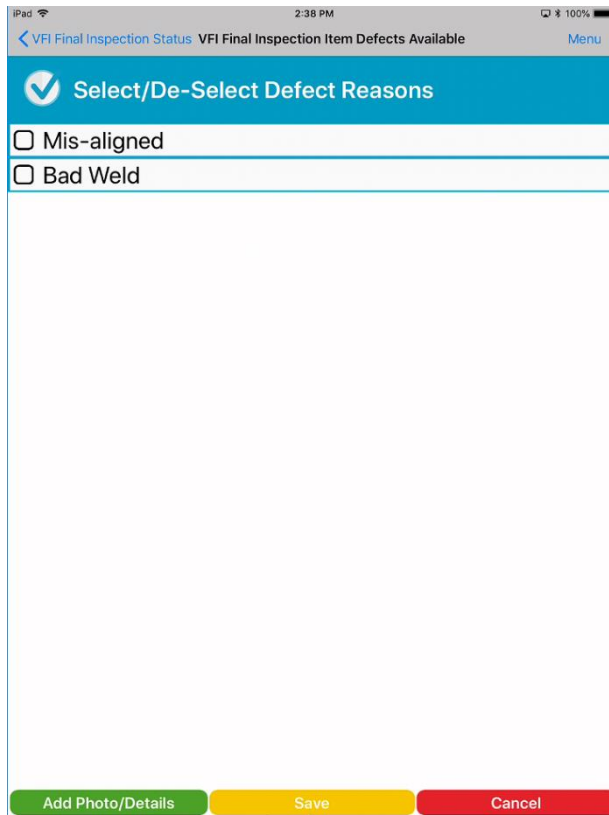
Buttons: Add Photo/Details, Save, Cancel

Mark item as non-conforming

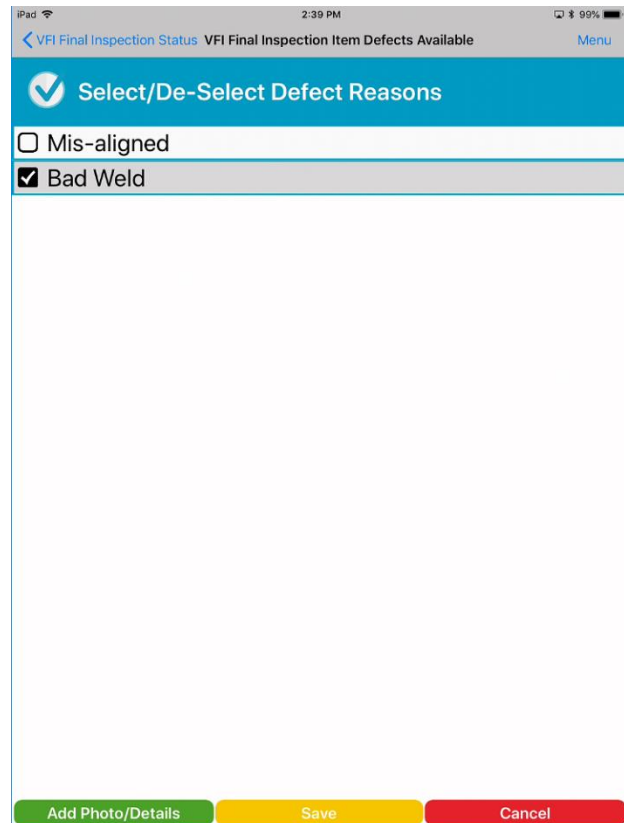
Tap the Non-Conform button to begin the process.

Selecting attribute(s)

The list of attributes is presented in Edit mode, allowing you to select/de-select all attributes that apply to all defects observed for this item. **To select an attribute, tap the attribute from the list.** The attribute will be selected and will show with its checkbox marked. Repeat the selection process until all attributes that apply are selected.



Tap “Bad Weld” to select attribute



Selected attribute checkbox marked

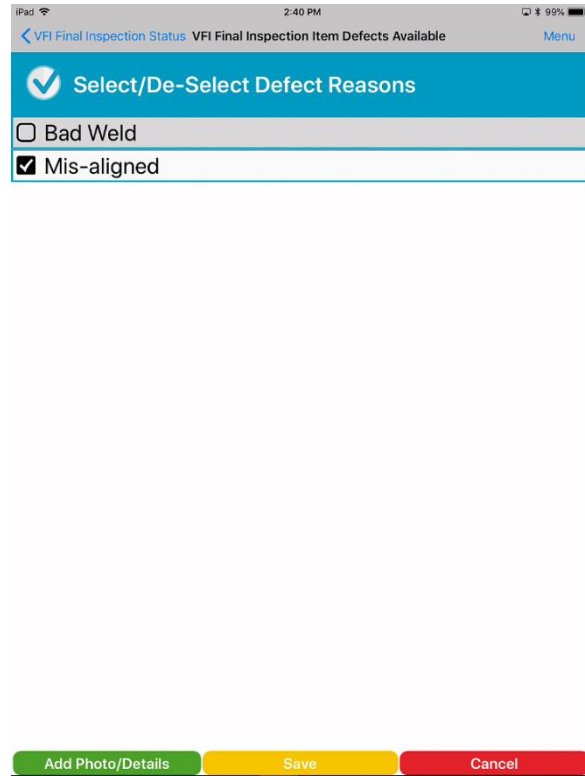
The list of attributes may extend beyond one “page” on the display. Scroll the list by swiping up to see more attributes. If an attribute from the bottom of the list is selected, it will move to the top of the list and show with its checkbox marked. This is done to easily identify which attributes have been selected.

De-Selecting an Attribute

To de-select an attribute, tap an attribute shown with its checkbox marked. The attribute will become de-selected and its checkbox will show unchecked. Further, a de-selected attribute will return to its original sequence in the display, which may be more than one page down.

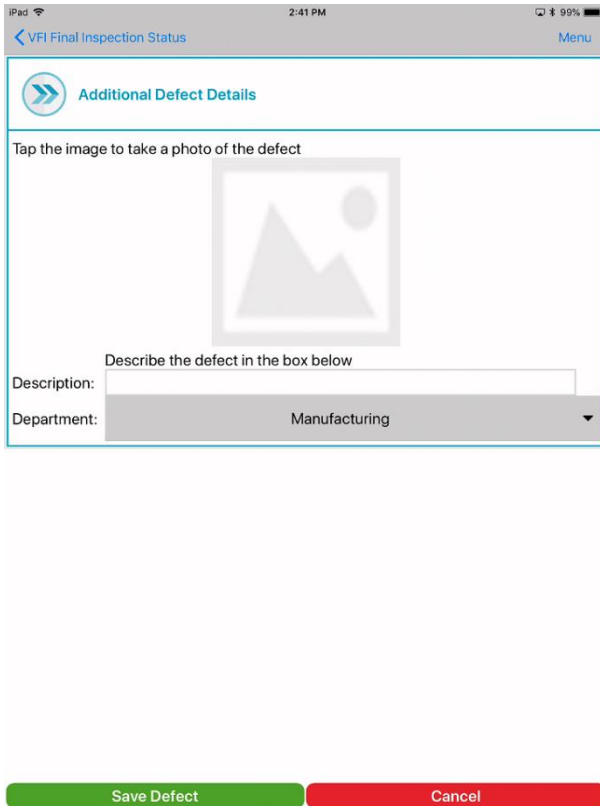


Tap “Bad Weld” to de-select



Attribute de-selected

Once the list of selected attributes accurately reflects all defects for this item, tap the “Non-Conform” button to continue the process of marking this item as non-conforming.



Additional Non-Conformance Details

Picture

Tap the image placeholder to use the device camera to take a photo of the non-conforming item. The photo should illustrate the problem to be corrected.

Description

Using either the pop-up keypad (shown above) or the device microphone, record a description of the defect.

The “Continue” button indicates that the entire non-conformance process is complete; all attributes, the picture (if captured) and the description (if recorded) are saved into the database and the item is marked as non-conforming.

Alternatively, the “Cancel” button will return to the list of attributes and will NOT mark the item as non-conforming. Only the attribute selections will be saved, as they were saved during the selection process. If a photo was captured and a description recorded, the “Cancel” button will discard those values.

Description

Using the dropdown, select the Department responsible for the rework to fix this item.

Creating an ad-hoc defect on an inspection

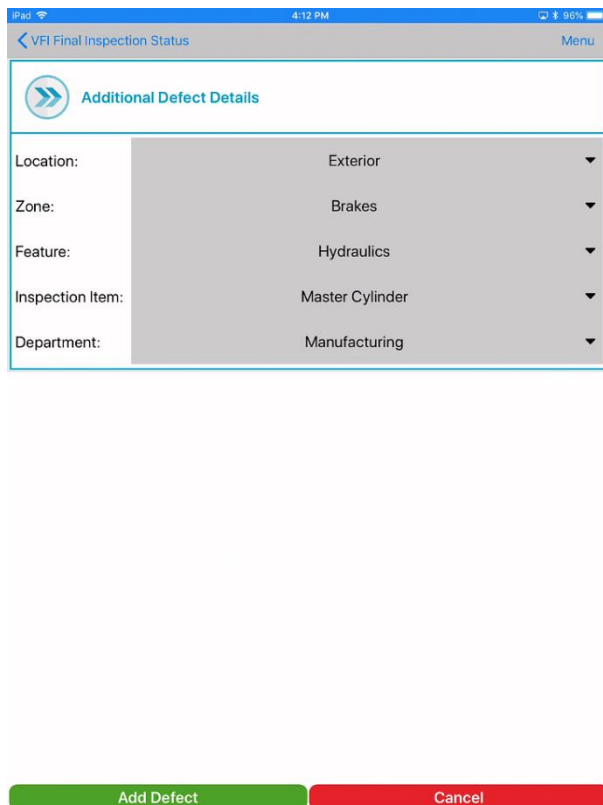
This is an optional feature and requires a specific Inspection Plan to be created to handle all of the possible Inspection Items that can be tagged as an ad-hoc defect in an inspection. See the Data Setup Guide for details on how to create this special Inspection Plan.

With the specific Inspection Plan setup an inspector has the capability to tag any items as a defect, even if that item is not part of the specific inspection plan being executed

To record a defect against an item, tap on the 'Create Defect' button. A screen will be displayed where the following elements are selected from dropdown lists:

- Location – Select the location where the defective item has been found.
- Zone - Select the location where the defective item has been found. Zones in this list are tied to the Location selection above.
- Feature - select the location where the defective item has been found. Features in this list are tied to the Zone selection above.
- Item – Select the defective item itself. The Item list is defined by the Location, Zone and Feature options selected.
- Department – select the Department responsible for rework activities

The green 'Add Defect' button will only appear when all 5 dropdown selections have been populated. Press it to add the defect to the Inspection.



Additional Defect Details

Location:	Exterior	▼
Zone:	Brakes	▼
Feature:	Hydraulics	▼
Inspection Item:	Master Cylinder	▼
Department:	Manufacturing	▼

Add Defect Cancel

Concepts

Holding an Inspection

Overview

An inspection is put on hold when a non-conformance or production issue cannot be resolved quickly. The vehicle is often moved out of the quality inspection area until the issue can be resolved. The issues that cause a vehicle to be put on hold are typically much larger in scope than the non-conforming items found during an inspection.

Hold Code

When putting a vehicle on hold, a hold code is required to be entered. The hold code describes the reason the quality inspection is being held.

Estimated Hold Resolved Date

As a vehicle is being held, an estimated date for resolving the hold is specified. This date is an estimate, and it serves as a reminder that can be used to prompt further activity to get the vehicle off of hold.

Status and Hold Code

A vehicle on hold can still be in an Active inspection status. The hold feature does not change the inspection status.

Taking an Inspection Off Hold

Overview

Once the conditions under which an inspection was held have been resolved, the inspection is taken off hold. An action button found on the Quality inspection Header allows the hold to be removed.

Gig Sheet

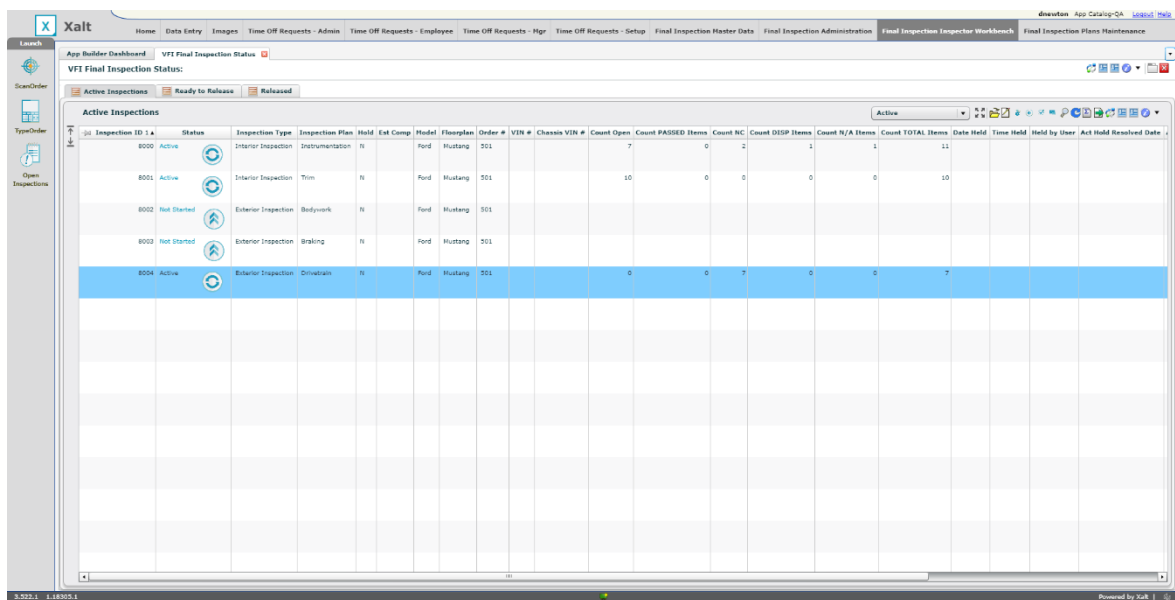
The Gig Sheet is used to publish the list of issues for an inspection. The list contains all items marked as non-conforming, along with the selected attributes.

In the setup of the Quality Inspection app there are 2 separate Gig sheets named as 'Exterior Defect Sheet' and 'Interior Defect Sheet'. It is possible to create as many of these defect reporting sheets as desired.

Please consult with your Account Executive if you would like more information on how to setup additional sheets.

The sequence of steps to produce the list is as follows:

- 1) The Inspection Header is viewed



The screenshot shows the 'VFI Final Inspection Status' dashboard in the Xalt application. The dashboard includes a sidebar with navigation options like 'App Builder Dashboard', 'ScreenOrder', 'TypeOrder', and 'Open Inspections'. The main area displays a table of 'Active Inspections' with columns for Inspection ID, Status, Inspection Type, Inspection Plan, Hold, Ext Comp, Model, Floorplan, Order #, VIN #, Chassis VIN #, Count Open, Count PASSED Items, Count NC, Count DISP Items, Count N/A Items, Count TOTAL Items, Date Held, Time Held, Held by User, and Act Hold Resolved Date. The table contains five rows of inspection data, with the first row (ID 8000) highlighted in blue.

Inspection ID	Status	Inspection Type	Inspection Plan	Hold	Ext Comp	Model	Floorplan	Order #	VIN #	Chassis VIN #	Count Open	Count PASSED Items	Count NC	Count DISP Items	Count N/A Items	Count TOTAL Items	Date Held	Time Held	Held by User	Act Hold Resolved Date
8000	Active	Interior Inspection	Instrumentation	N		Ford	Mustang	501			7	0	2	1	1	11				
8001	Active	Interior Inspection	Trim	N		Ford	Mustang	501			10	0	0	0	0	10				
8002	Not Started	Exterior Inspection	Bodywork	N		Ford	Mustang	501												
8003	Not Started	Exterior Inspection	Braking	N		Ford	Mustang	501												
8004	Active	Exterior Inspection	Drivetrain	N		Ford	Mustang	501			0	0	7	0	0	7				

- 2) Drill down into the inspection details by double-clicking the desired inspection.



Xalt Home Data Entry Images Time Off Requests - Admin Time Off Requests - Employee Time Off Requests - Hgr Time Off Requests - Setup Final Inspection Master Data Final Inspection Administration Final Inspection Inspector Workbench Final Inspection Phase Maintenance

App Builder Dashboard VFI Final Inspection Status Final Inspection Header: 8004

Mobile

Inspection Plan

Inspection ID: 8004
Model: Ford
Floorplan: Mustang
Order #: 501
Inspection Status: Active
Reason: N
Date Issued:
Time:
Hold By:
Est Camp:
Count DISP Items: 0
Count OVER NC Items: 7
Count N/A Items: 0
Count OPEN Items: 0
Count PASSED Items: 0
Count TOTAL Items: 7
Release Error: No Errors
Count NC Items: 7
Open + NC Items: 7
Inspection Type: Exterior Inspection
Inspection Plan: 50000
Inspection Plan: Drivetrain

Items Open

Open

Fail/Defects

Defects

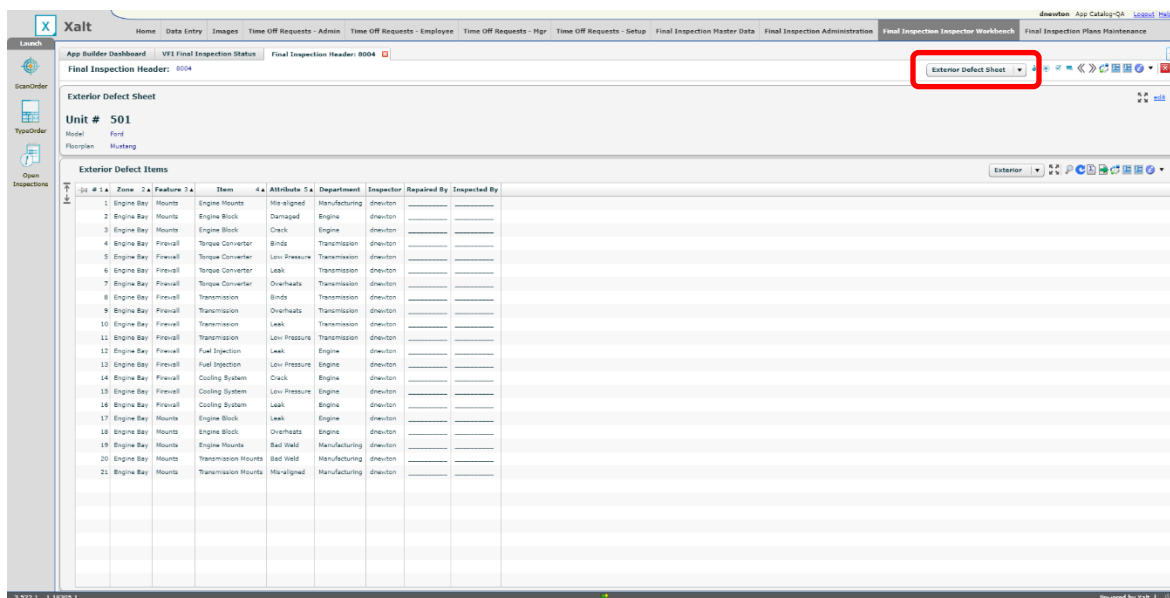
Loc	Location	Zone	Item	Status	Result	Test Result Code	Test Required?	N-C Desc	Failed?	Feas
Exterior	Engine Bay	Engine Block	Awaiting Repair	Discrepancy	O = Not Tested	Not Required	Y	Mon		
Exterior	Engine Bay	Fuel Injection	Awaiting Repair	Discrepancy	O = Not Tested	Not Required	Y	Fire		
Exterior	Engine Bay	Cooling System	Awaiting Repair	Discrepancy	Test Passed	Required	Y	Fire		
Exterior	Engine Bay	Torque Converter	Awaiting Repair	Discrepancy	O = Not Tested	Not Required	Y	Fire		
Exterior	Engine Bay	Transmission	Awaiting Repair	Discrepancy	O = Not Tested	Not Required	Y	Fire		

Completed

Completed

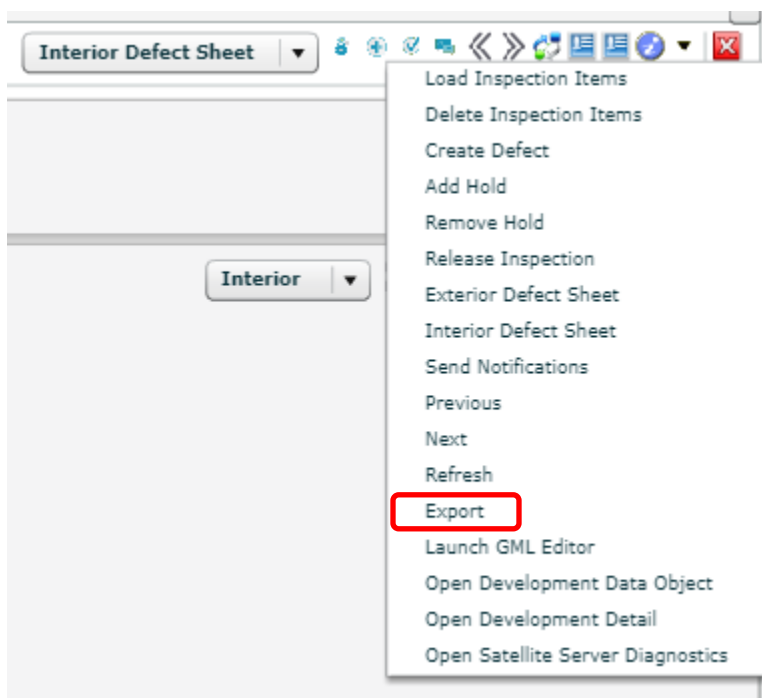
3.502.1 1.18.00.1 Powered by Xalt 1

- The desired Gig Sheet view is selected from the dropdown list. In our example, this is either 'Exterior Defect Sheet' or 'Interior Defect Sheet'.



Exporting to Excel

- The list can optionally be exported to Excel by selecting 'Export' from the context menu.



Zone	Feature	Item	Attribute	Department	Inspector	Repaired By	Inspected By
1	Engine Bay	Mounts	Engine Mounts	Min-alignment	Manufacturing		
1	Engine Bay	Mounts	Engine Block	Engine	Manufacturing		
8	Engine Bay	Mounts	Engine Block	Crack	Engine		
8	Engine Bay	Firewall	Torque Converter	Rough	Transmission		
2	Engine Bay	Firewall	Torque Converter	Low Pressure	Transmission		
2	Engine Bay	Firewall	Engine Clutchset	Leak	Transmission		
7	Engine Bay	Firewall	Torque Converter	Overheats	Transmission		
8	Engine Bay	Firewall	Transmission	Bends	Transmission		
9	Engine Bay	Firewall	Transmission	Leak	Transmission		
11	Engine Bay	Firewall	Transmission	Low Pressure	Transmission		
12	Engine Bay	Firewall	Fuel Injection	Leak	Engine		
13	Engine Bay	Firewall	Fuel Injection	Low Pressure	Engine		
14	Engine Bay	Firewall	Cooling System	Crack	Engine		
15	Engine Bay	Firewall	Cooling System	Low Pressure	Engine		
16	Engine Bay	Firewall	Cooling System	Leak	Engine		
17	Engine Bay	Mounts	Engine Block	Leak	Engine		
18	Engine Bay	Mounts	Engine Block	Overheats	Engine		
19	Engine Bay	Mounts	Engine Mounts	Bad Weld	Manufacturing		
20	Engine Bay	Mounts	Transmission Mounts	Bad Weld	Manufacturing		
21	Engine Bay	Mounts	Transmission Mounts	Min-alignment	Manufacturing		

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