

# Visionscape®

Training and running a simple mark inspection  
application using Visionscape software



# Agenda



- 1. *Checking the mark quality on a laser marked component***
- 2. *Using the Visionscape OCV (Optical Character Verification) Fontless tool***
- 3. *Download and run the new job***
- 4. *Viewing the generated program***
- 5. *Customizing results for display***
- 6. *Using saved images***

Double-click and open the  
Visionscape FrontRunner  
application

Visionscape Version 3.7.2

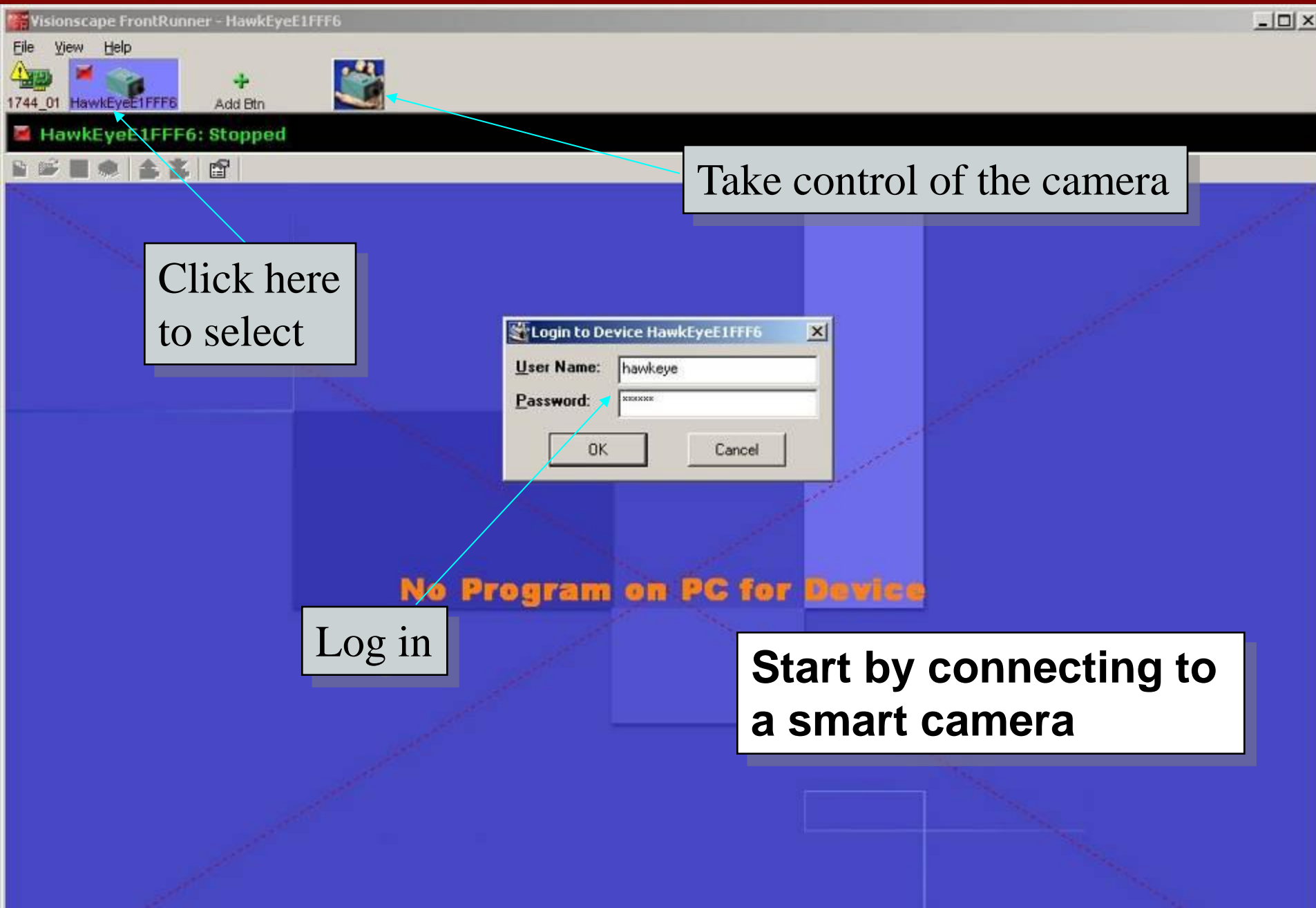
Edition 2008

Build 18

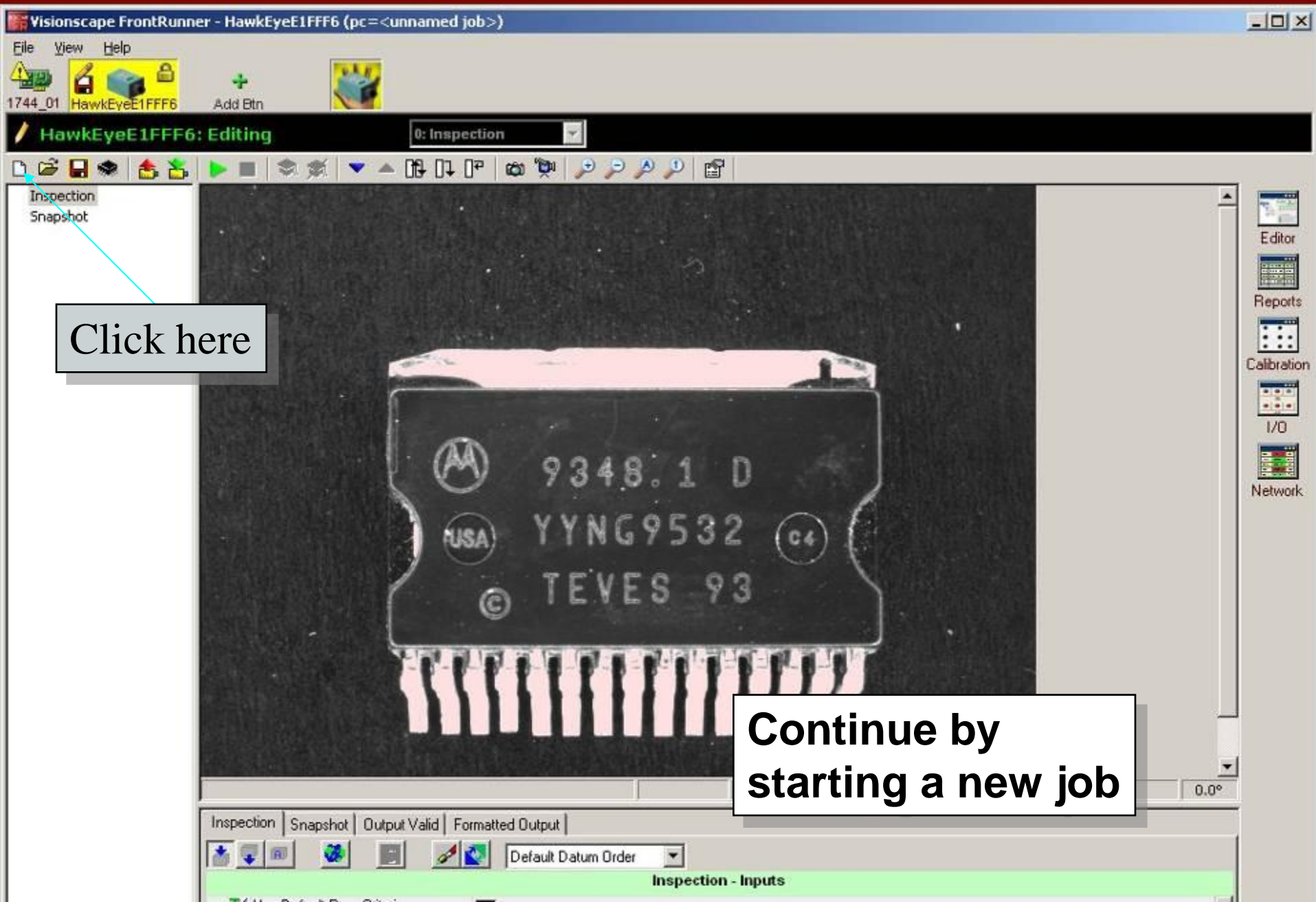
**MICROSCAN.**

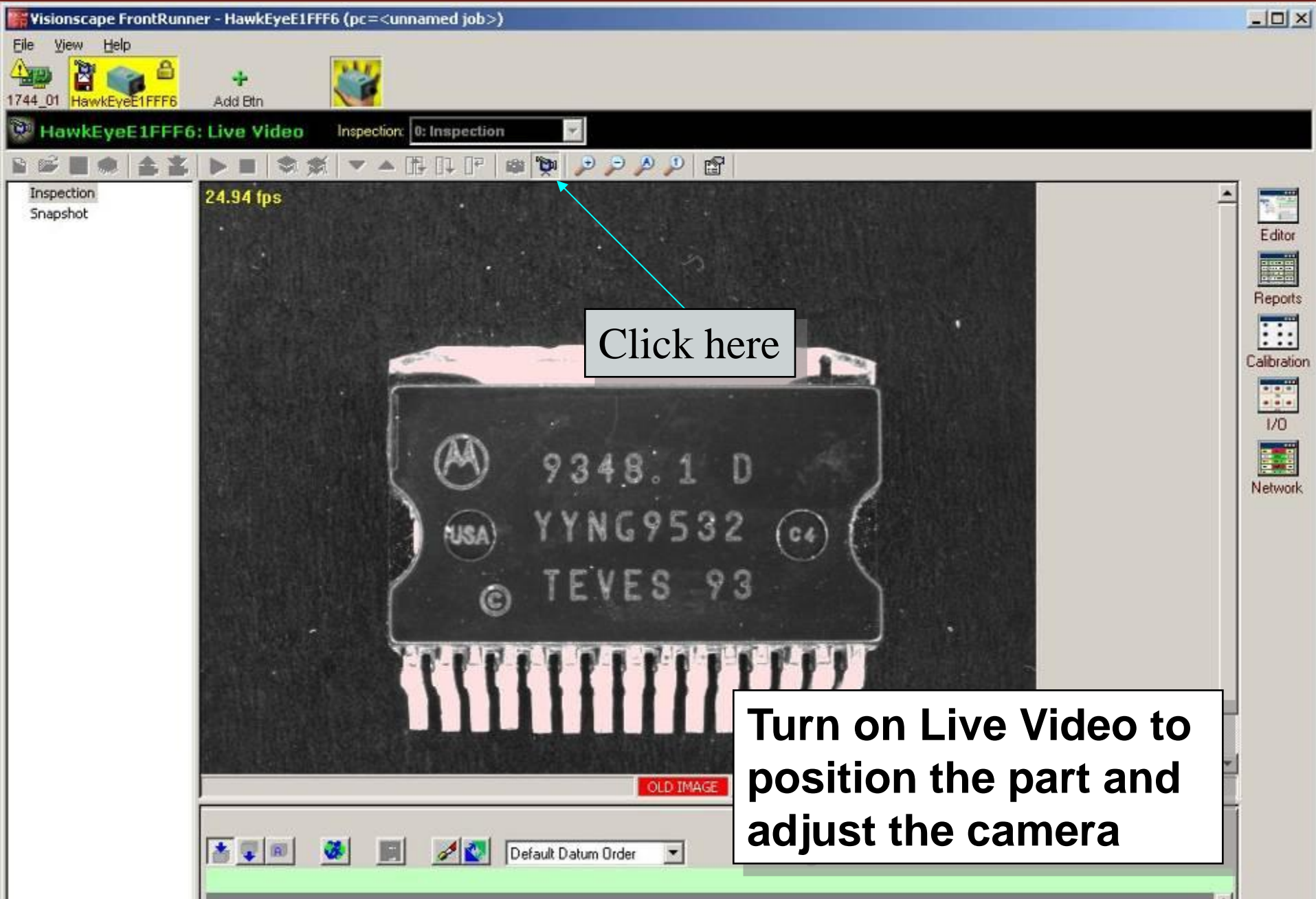
Initializing FrontRunner

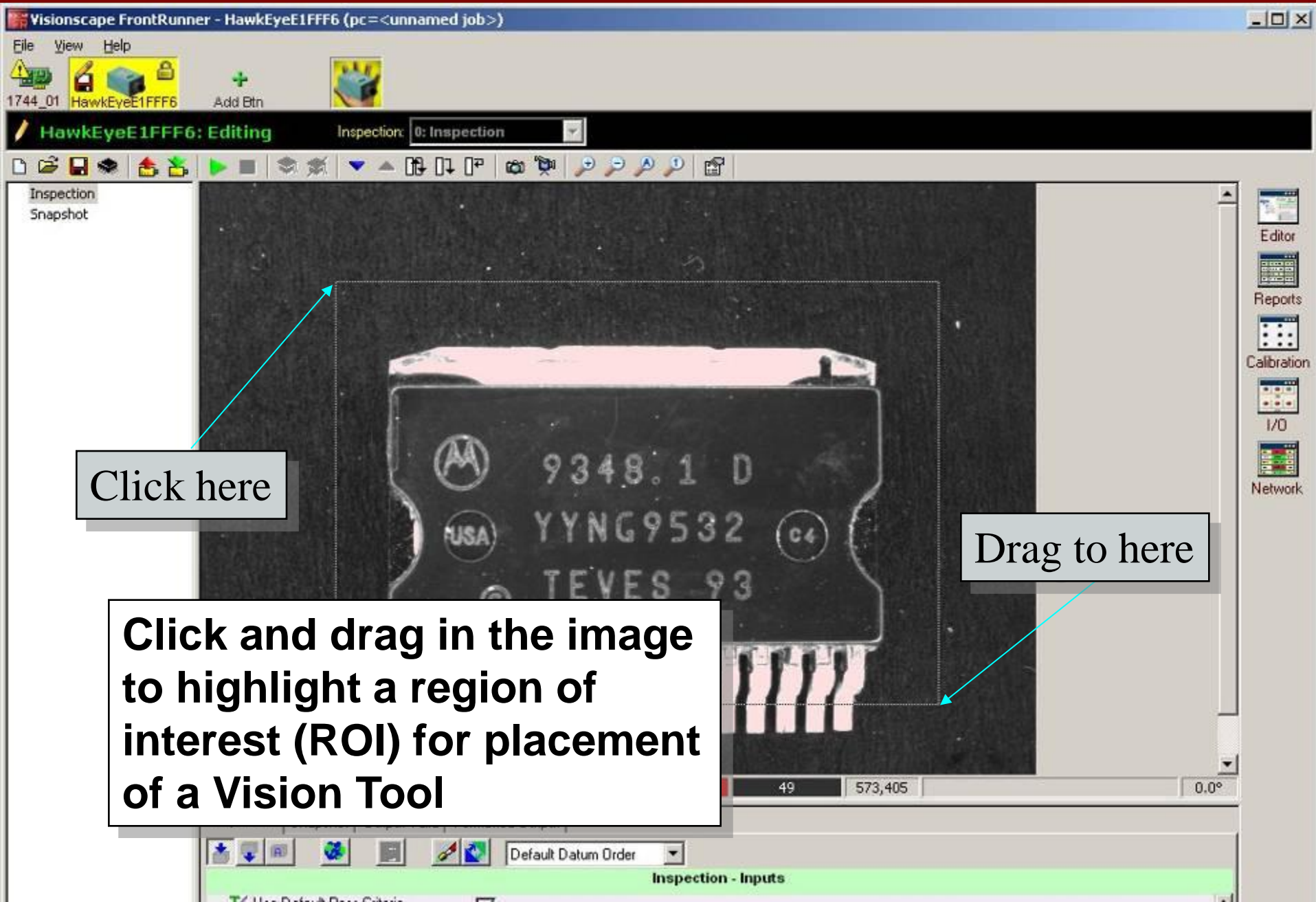
**VISIONSCAPE® FRONTRUNNER**



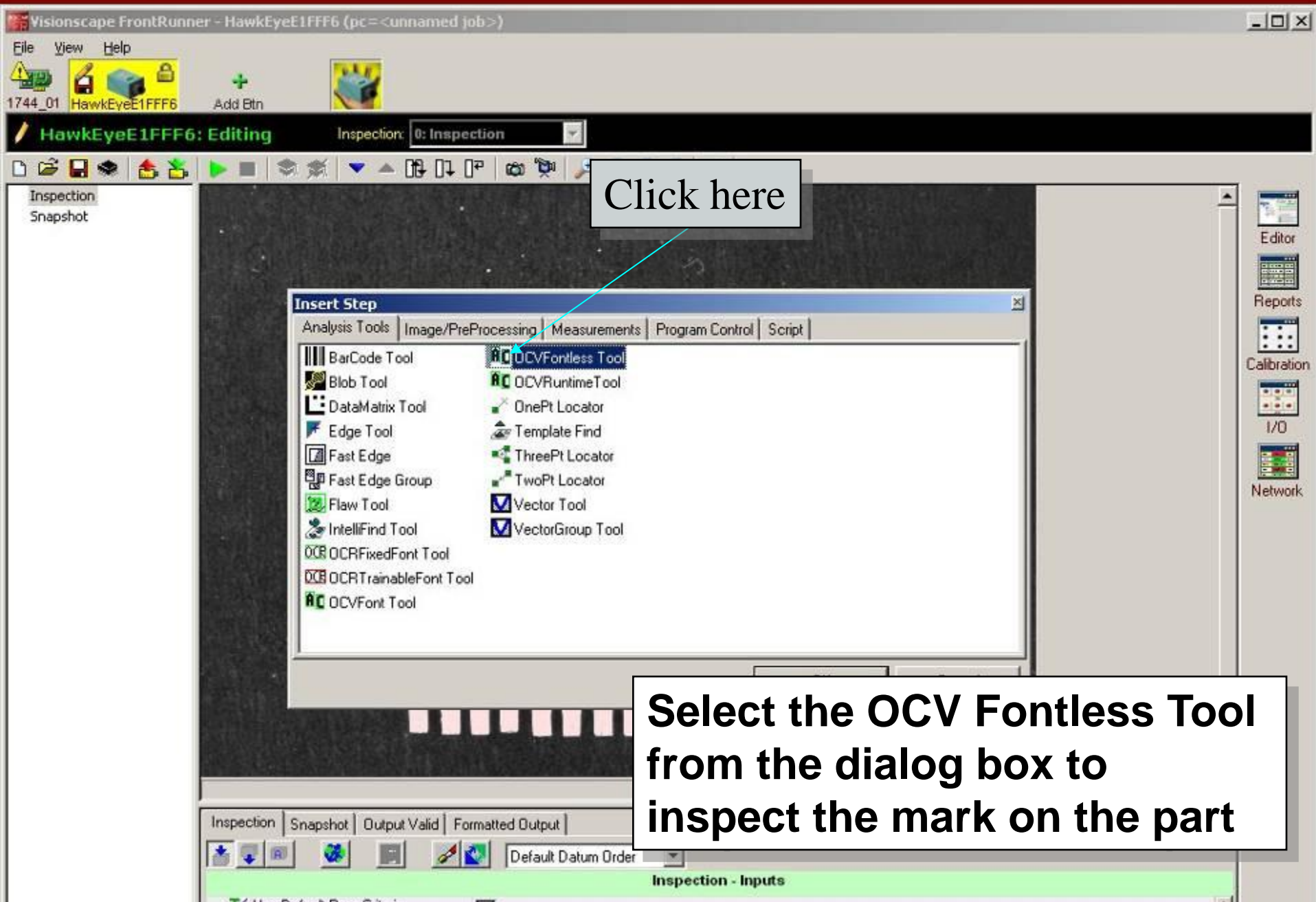




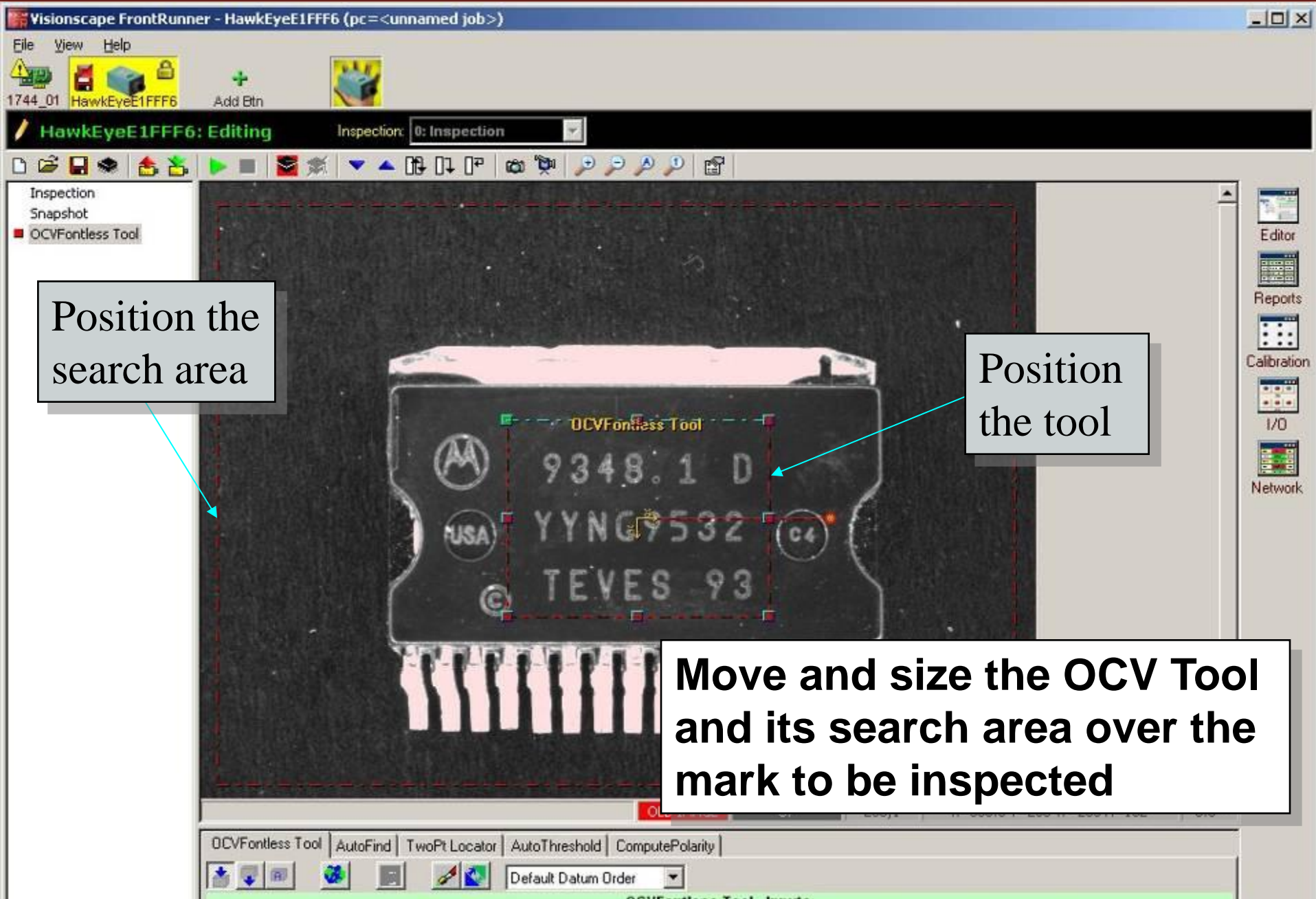


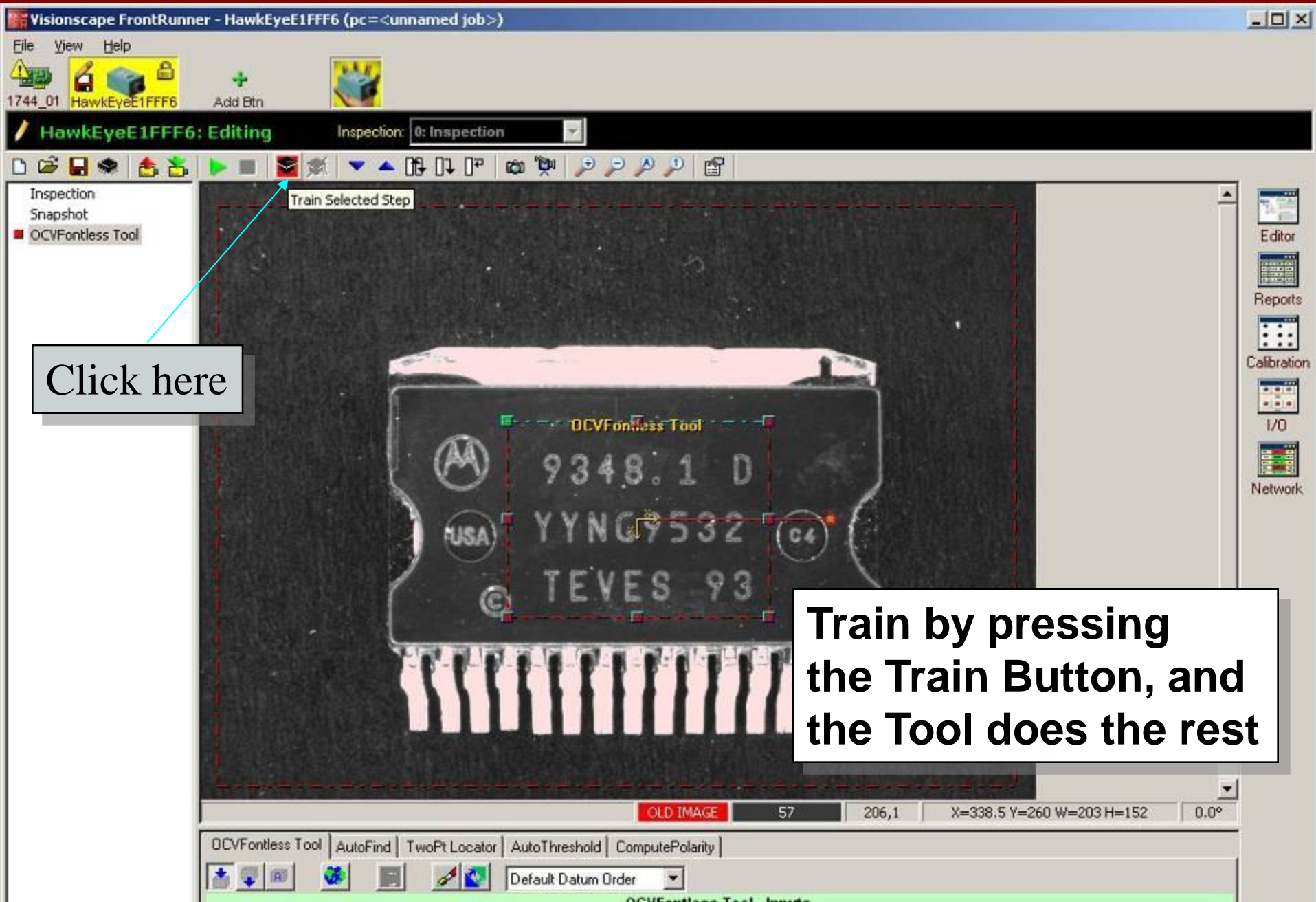




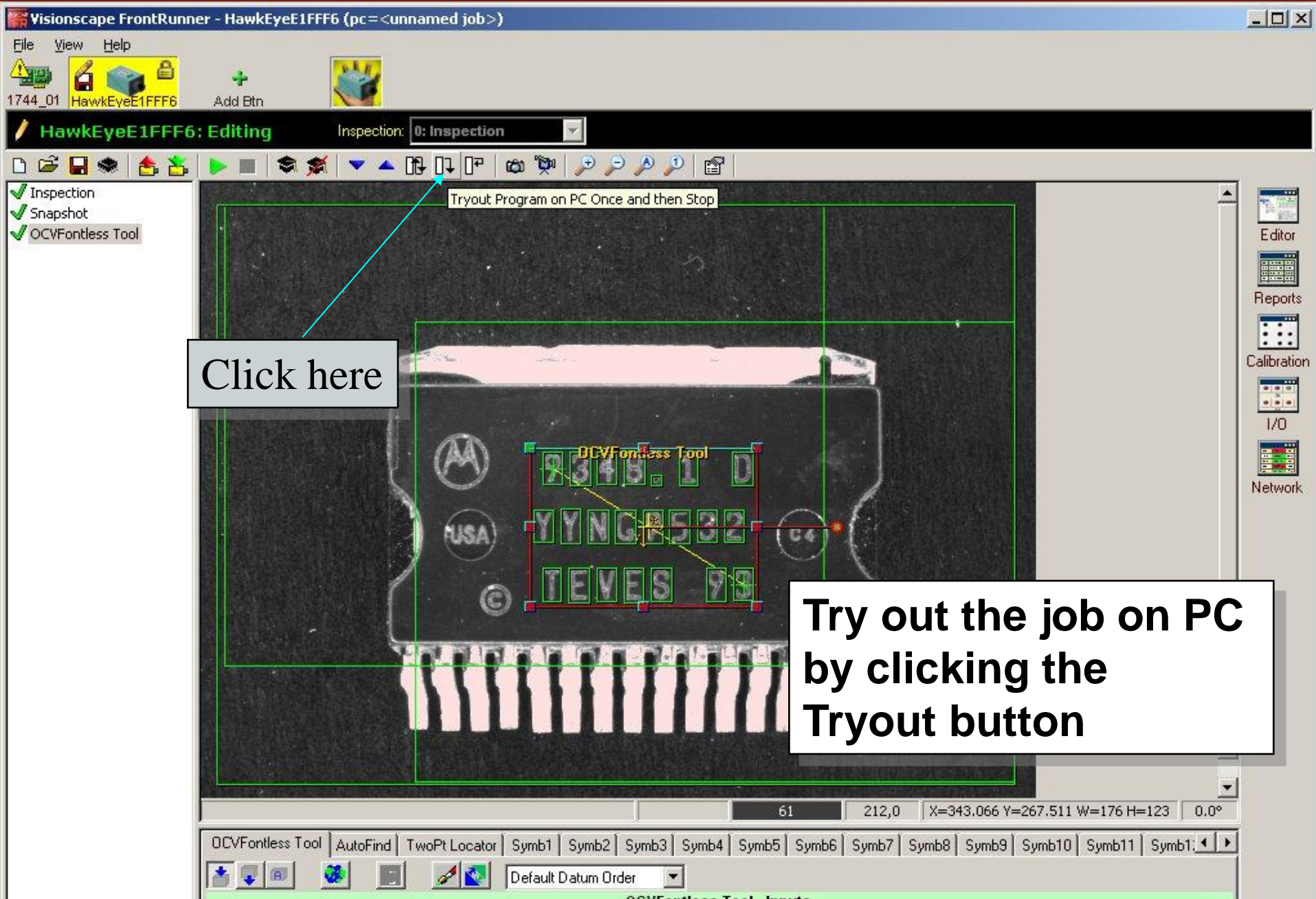


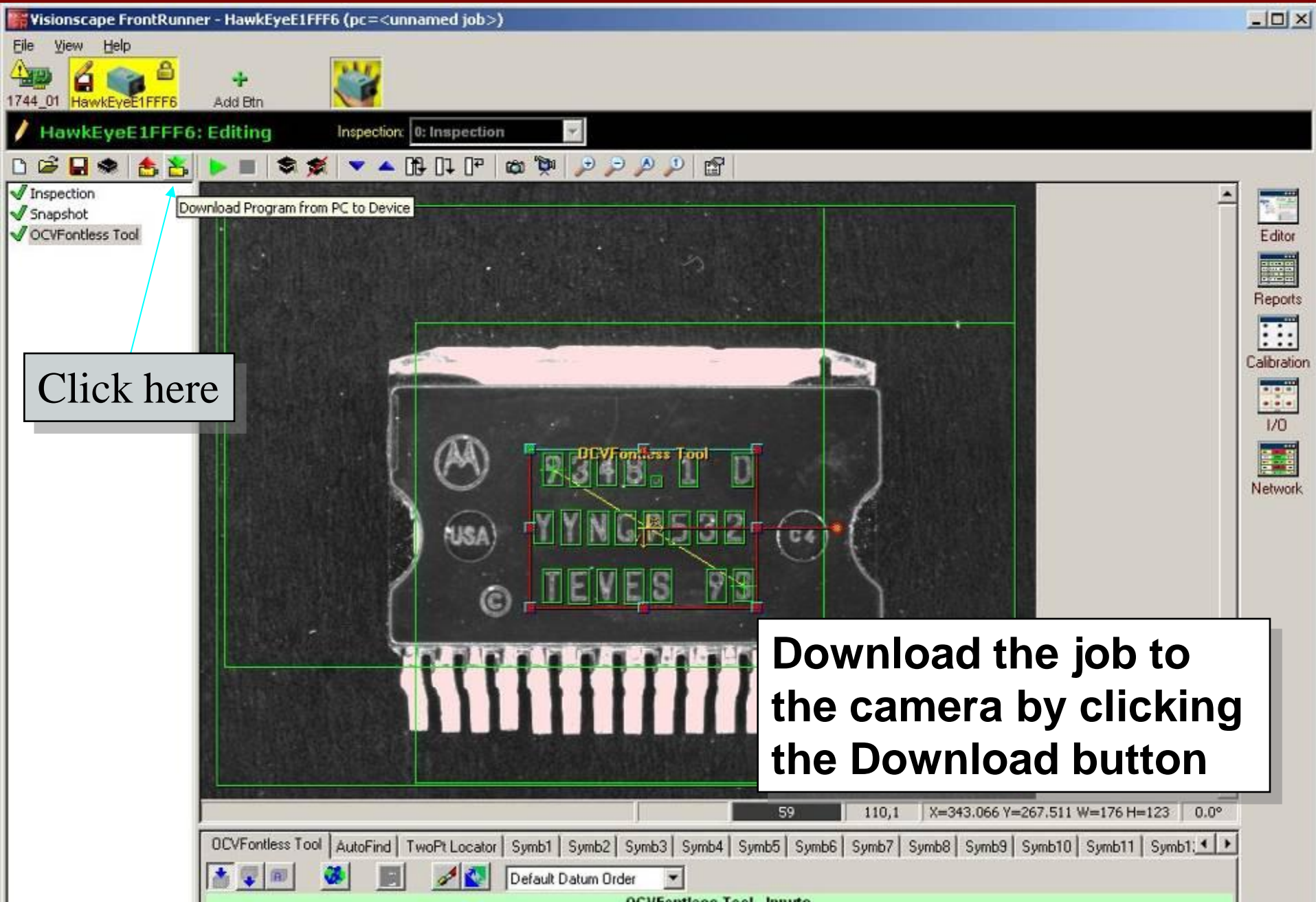




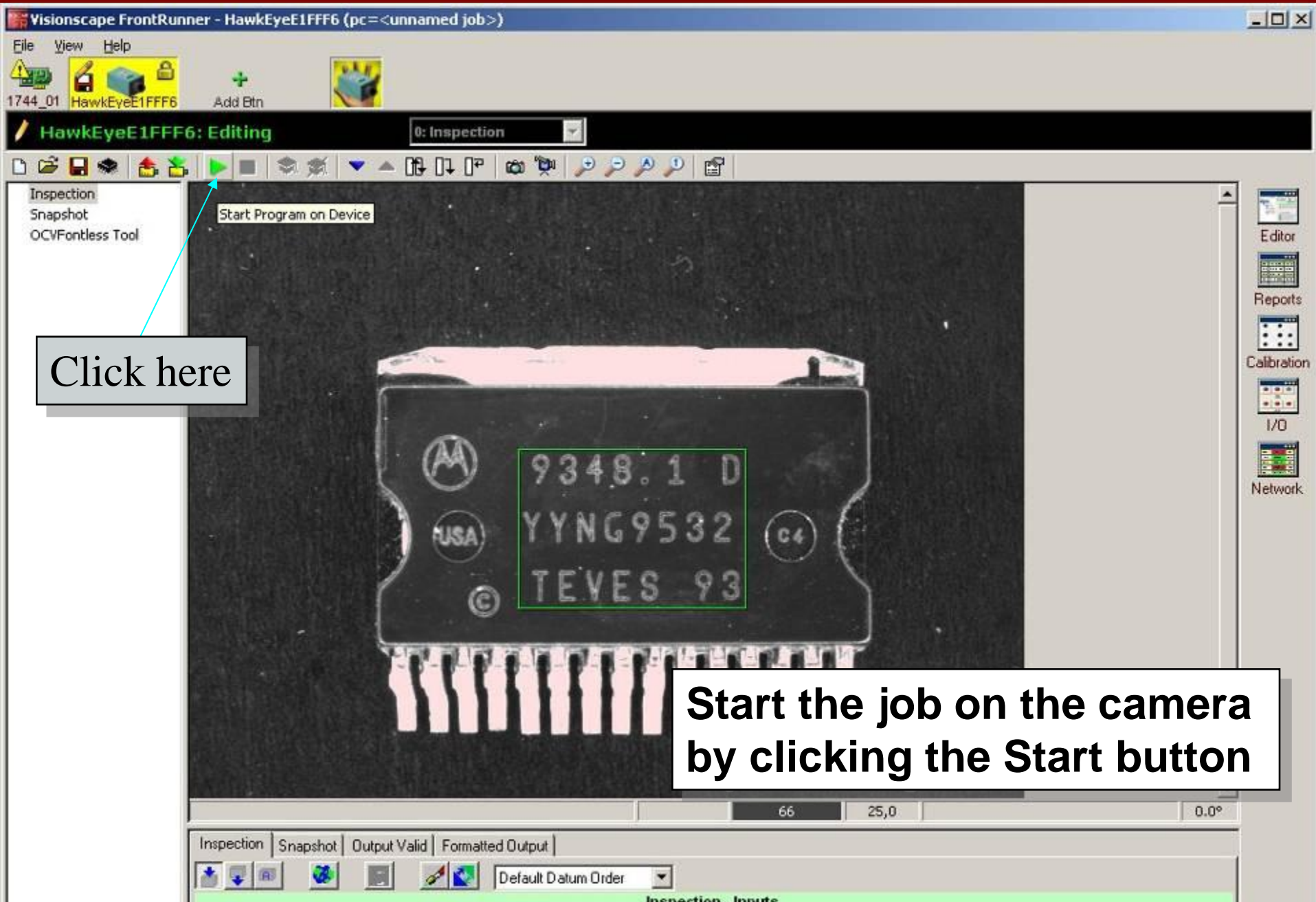


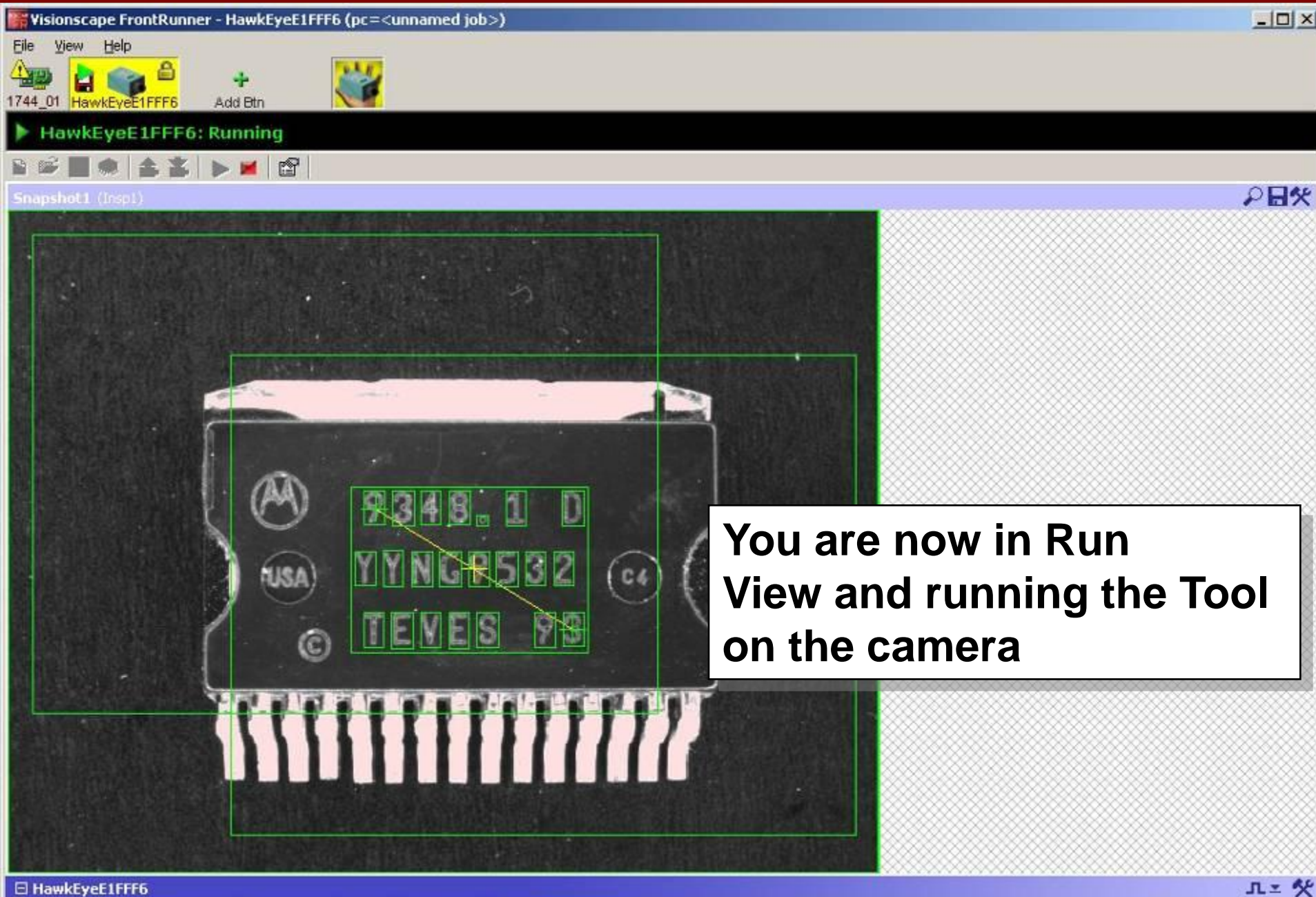




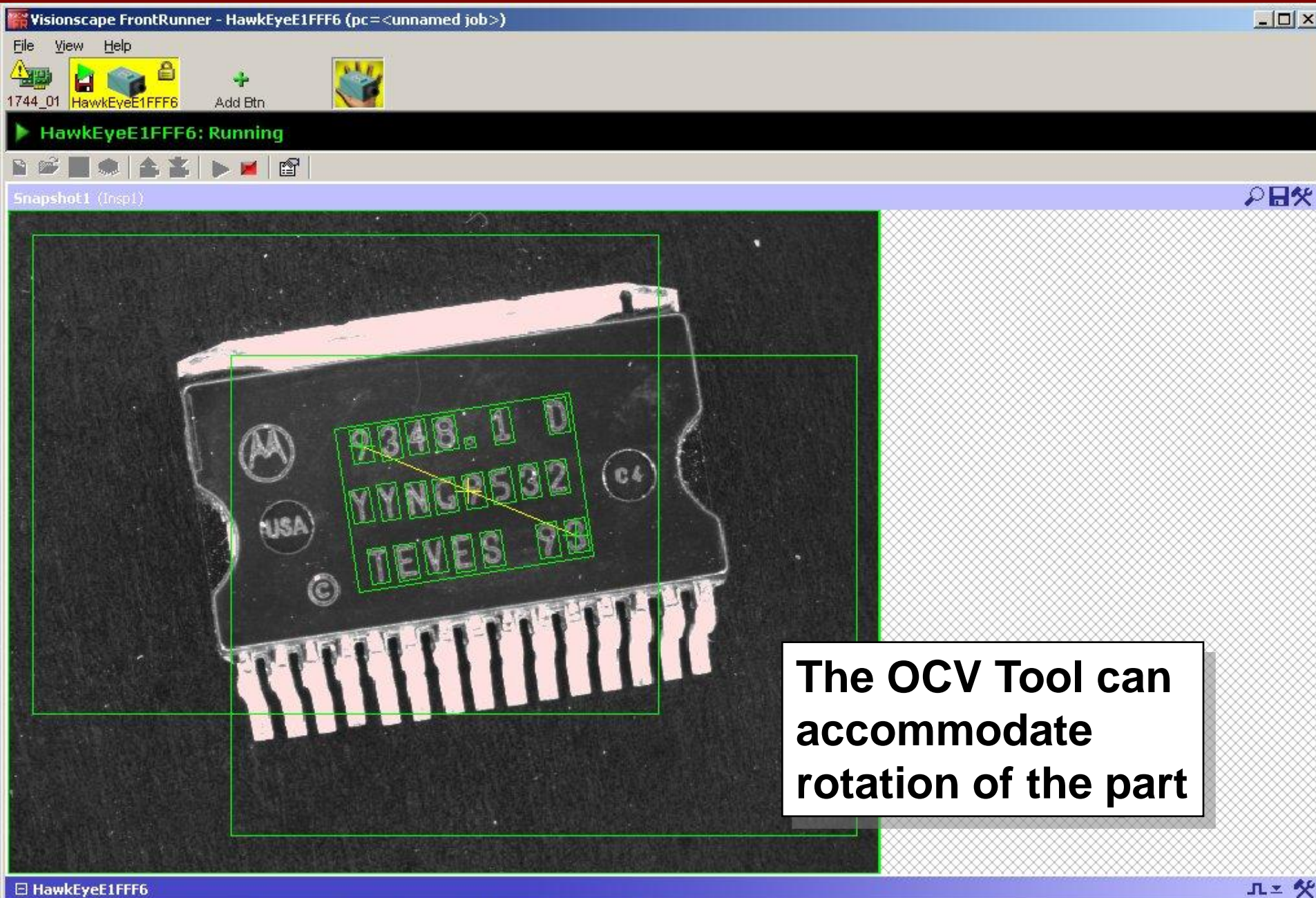








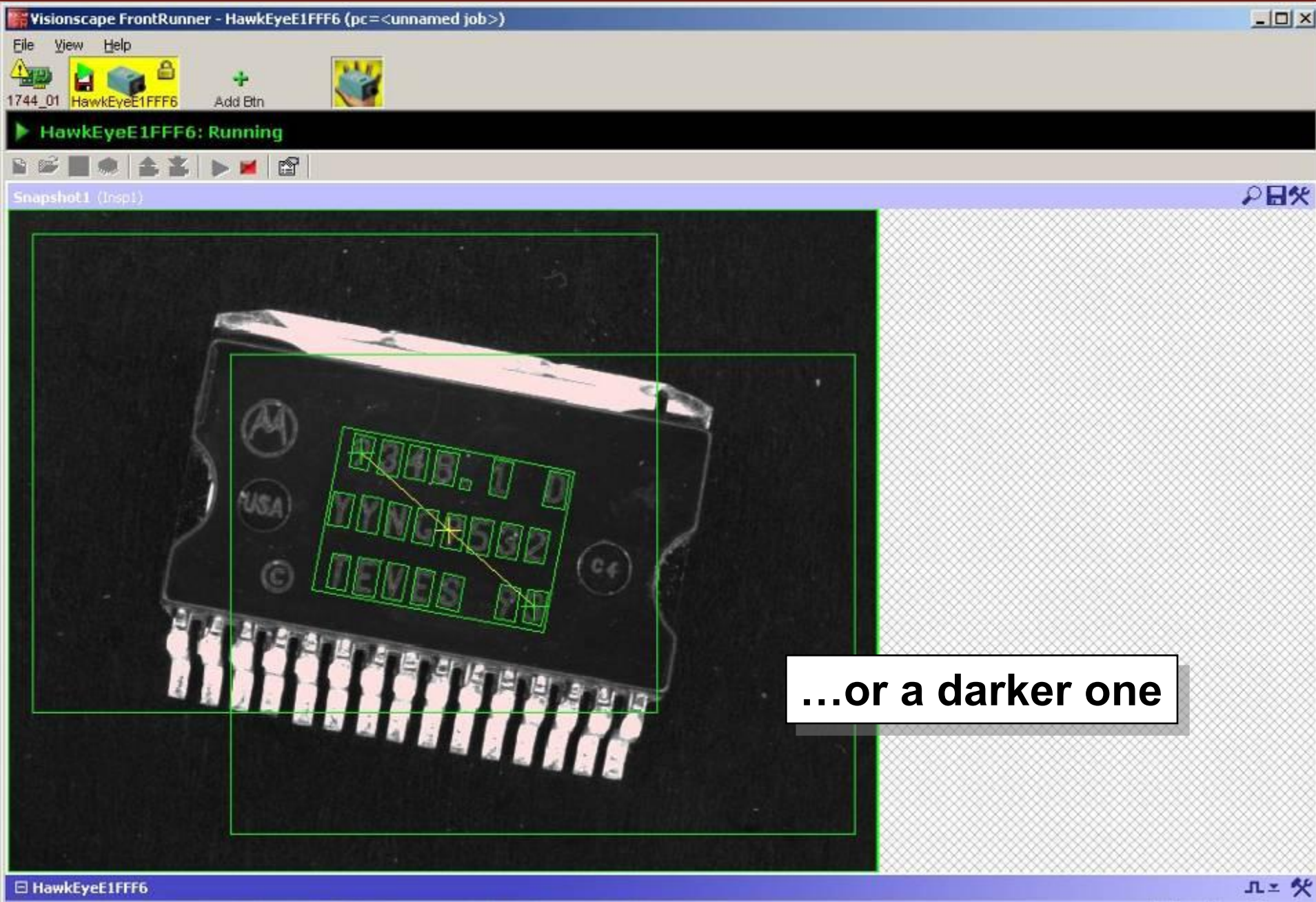














Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Running

Snapshot1 (Insp1)

Click here

To stop running and return to training, press the Stop button

The screenshot shows the Visionscape FrontRunner software interface. The title bar reads 'Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)'. The menu bar includes 'File', 'View', and 'Help'. Below the menu bar is a toolbar with icons for '1744\_01', 'HawkEyeE1FFF6', and 'Add Btn'. A status bar at the top indicates 'HawkEyeE1FFF6: Running'. The main workspace shows a grayscale image of a circuit board with green bounding boxes around text. A red square button in the toolbar is highlighted with a blue arrow and a callout box saying 'Click here'. Another callout box at the bottom right says 'To stop running and return to training, press the Stop button'.

Text	Value
2348.1	D
YYNG	532
TEVES	98

Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Inspection

Inspection Snapshot

OCVFontless Tool

Step Tree Editor

HawkEyeE1FFF6

- Inspection
  - Snapshot
    - Acquire
      - OCVFontless Tool
        - AutoFind
          - TwoPt Locator
            - MarkArea
              - Symb1
              - Symb2
              - Symb3
              - Symb4
              - Symb5
              - Symb6
              - Symb7
              - Symb8
              - Symb9
              - Symb10
              - Symb11
              - Symb12
              - Symb13
              - Symb14
              - Symb15
              - Symb16
              - Symb17
              - Symb18
              - Symb19
              - Symb20
              - Symb21
              - Symb22

OCVFontless Tool | AutoFind | TwoPt Locator | Symb1 | Symb2 | Symb3 | Symb4

Default Datum Order

OCVFontless Tool - Inputs

Use AutoFind	<input checked="" type="checkbox"/>
AutoFind Pin 1 Index	1
AutoFind Pin 2 Index	999
Min Symbol Size in pixels	20
Find Symbols That Touch ROI	<input type="checkbox"/>
Apply Automatic Min Sharpness	<input type="checkbox"/>
Apply Automatic Min Contrast	<input type="checkbox"/>
Allowed Thickening of Symbol	0
Allowed Thinning of Symbol	0
Individual Symbol Search X	3
Individual Symbol Search Y	3
Group Final Res Limit	100.000
Group Final Res Max Blob Size	10
Group Max Flaw Size	1
Group Appear Flaw Break Test	<input checked="" type="checkbox"/>
Group Appear Flaw Break Size	2

Click here

Click the Editor button to see what the automatically generated program looks like

Editor Reports Calibration I/O Network



Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Inspection

Inspection  
Snapshot  
OCVFontless Tool

Select the Output button

Click here

Then select Status

To select results for display, click the Output button and select Status

Step Tree Editor

HawkEyeE1FFF6

- Inspection
  - Snapshot
  - Acquire
  - OCVFontless Tool
  - AutoFind
  - TwoPt Loc
  - Mark
  - Symb1
  - Symb2
  - Symb3
  - Symb4
  - Symb5
  - Symb6
  - Symb7
  - Symb8
  - Symb9
  - Symb10
  - Symb11
  - Symb12

OCVFontless Tool

AutoFind TwoPt Locator Symb1 Symb2

Default Datum Order

OCVFontless Tool - Outputs

INT Error Code	0
Status	True
OCV Results	<Click to Display Val
INT Contrast Difference Between Symbols (%)	0
INT Num of Trained Symbols	22

0 666,242 X=338.141 Y=252.05 W=176 H=122 -0.8°

OCVFontless Tool AutoFind TwoPt Locator Symb1 Symb2 Symb3 Symb4 Symb5 Symb6 Symb7 Symb8 Symb9 Symb10 Symb11 Symb12 Symb13

1744\_01 HawkEyeE1FFF6 Add Btn

▶ HawkEyeE1FFF6: Running

Snapshot1 (Insp1)



HawkEyeE1FFF6

Insp1    Inspect: 44    Pass: 44    Fail: 0

Cycle	265	Cyc Worst	271	Process	228	Draw	4
PPM	226	PPM Worst	221	Idle	32	DMA	0
Buffers	2 of 12 used (17%)			Overruns	None		

OCVFontless Tool.Status    True

If you download the job again you can now see the inspection status results at the bottom of the screen



The screenshot shows the Visionscape FrontRunner software interface. The main window displays a dark image with a green rectangular region of interest. A callout box points to the 'OCVFontless Tool' in the Step Tree Editor, with the text 'Click here'. The Step Tree Editor shows a tree structure with 'HawkEyeE1FFF6' as the root, followed by 'Inspection', 'Snapshot', 'Acquire', 'OCVFontless Tool', 'AutoFind', 'TwoPt Loc', and 'Mark'. The 'OCVFontless Tool' is selected, and its outputs are displayed in a table.

**Click here**

**Step Tree Editor**

- HawkEyeE1FFF6
  - Inspection
    - Snapshot
      - Acquire
        - OCVFontless Tool
          - AutoFind
            - TwoPt Loc
              - Mark
                - Symb1
                  - Symb2
                    - Symb3
                      - Symb4
                        - Symb5

**OCVFontless Tool - Outputs**

|   |                        |
|---|------------------------|
| INT Error Code                              | 0                      |
| Status                                      | True                   |
| OCV Results                                 | <Click to Display Val> |
| INT Contrast Difference Between Symbols (%) | 0                      |
| INT Num of Trained Symbols                  | 22                     |

**You can see more results for each character by going back and selecting OCV Results in addition to Status**

OCVFontless Tool | AutoFind | TwoPt Locator | Symb1 | Symb2 | Symb3 | Symb4 | Symb5 | Symb6 | Symb7 | Symb8 | Symb9 | Symb10 | Symb11 | Symb12 | Symb13

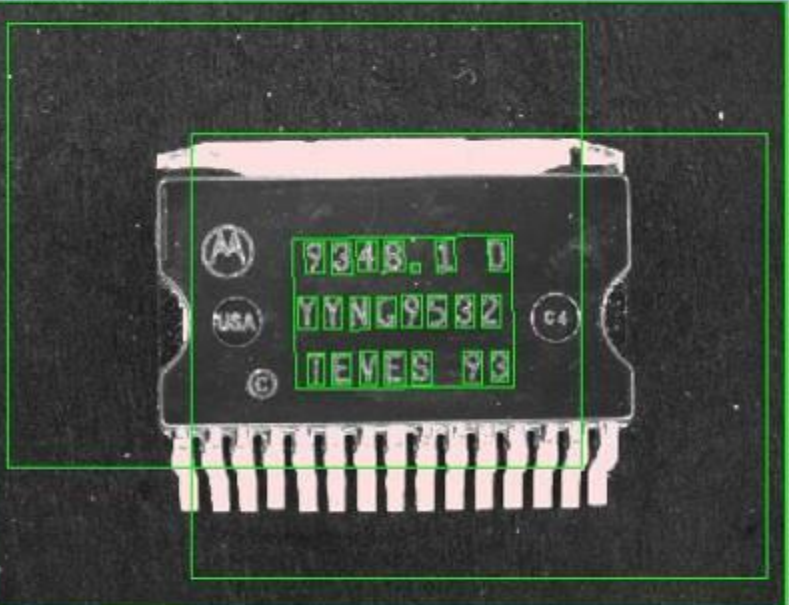
Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

**HawkEyeE1FFF6: Running**

Snapshot1 (Insp1)



**HawkEyeE1FFF6**

| Insp1   |                    | Inspect:  | 96  | Pass:    | 96 | Fail: |
|---------|--------------------|-----------|-----|----------|----|-------|
| Cycle   | 273                | Cyc Worst | 281 | Process  |    |       |
| PPM     | 219                | PPM Worst | 213 | Idle     |    |       |
| Buffers | 2 of 12 used (17%) |           |     | Overruns |    |       |

OCVFontless Tool.Status True

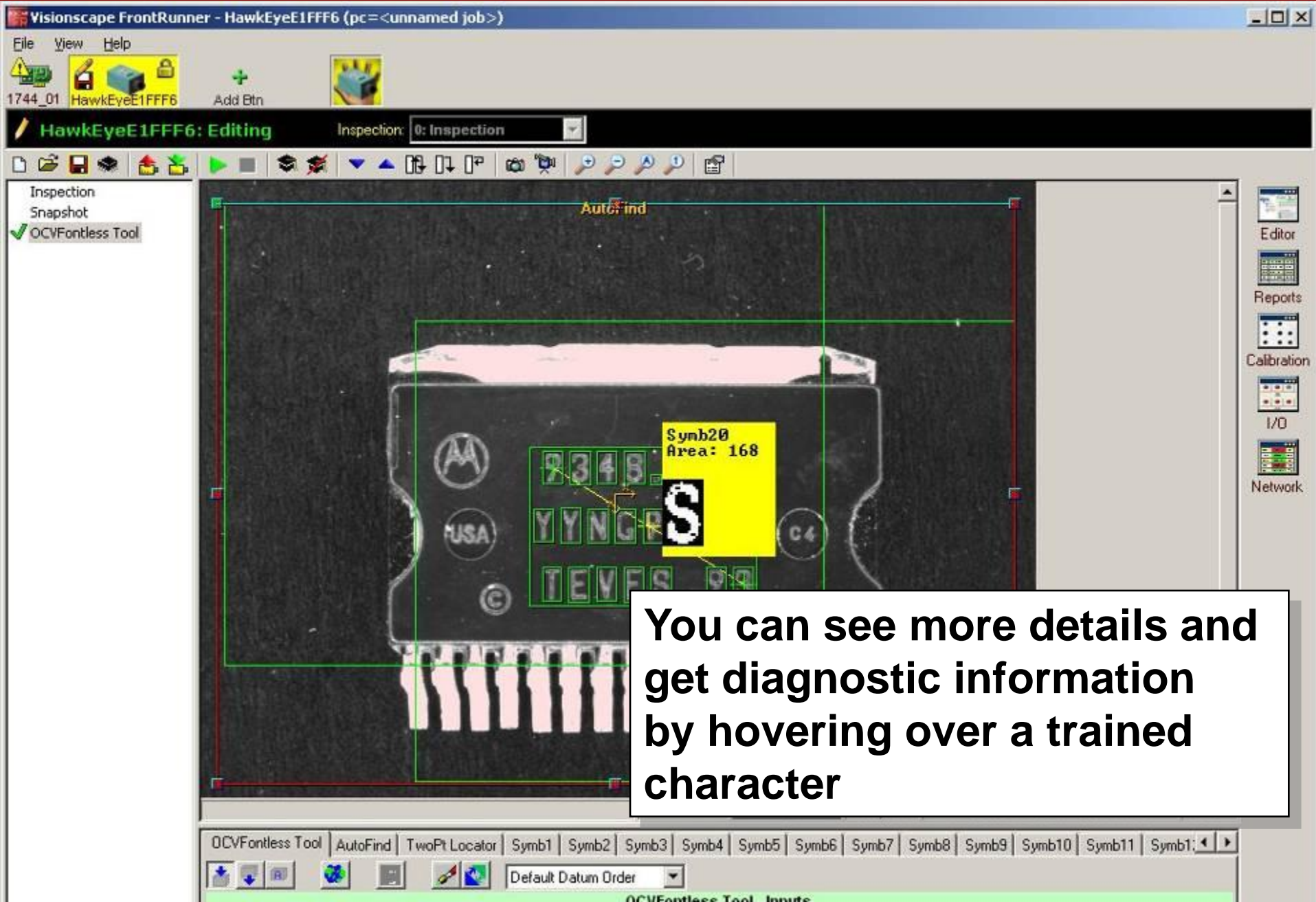
☒ View OCVResults

|         | Char 1 | Char 2 | Char 3 | Char 4 | Char 5 | Char 6 | Char 7 | Char 8 | Char 9 | Char 10 | Char 11 | Char 12 | Char 13 | Char 14 | Char 15 | Char 16 |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Status  | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| XLoc    | 9      | 31     | 51     | 73     | 115    | 157    | 94     | 3      | 24     | 45      | 66      | 87      | 108     | 130     | 151     | 10      |
| YLoc    | 3      | 3      | 3      | 3      | 3      | 3      | 21     | 48     | 47     | 48      | 48      | 47      | 47      | 48      | 48      | 93      |
| XOffset | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| YOffset | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |

OCVFontless Tool.OCV Results

**After downloading the job and returning to Run view, more results will be visible**





Visionscape FrontRunner - HawkEyeE1FFF6 (pc=<unnamed job>)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Inspection

Inspection Snapshot OCVFontless

Symb20 Passed  
Area: 180  
X,Y Position: 94, 93  
X,Y Movement: 0/50, 0/50  
Legibility Percent: 99/25  
Sharpness, Contrast, Breaks: 50/33, 59/30, -1  
Initial, Final Residue Pct: -1/100, 0/100  
Largest Residue Blob Pct: -1/10

This includes default and automatically selected parameters, which can be fine-tuned if needed

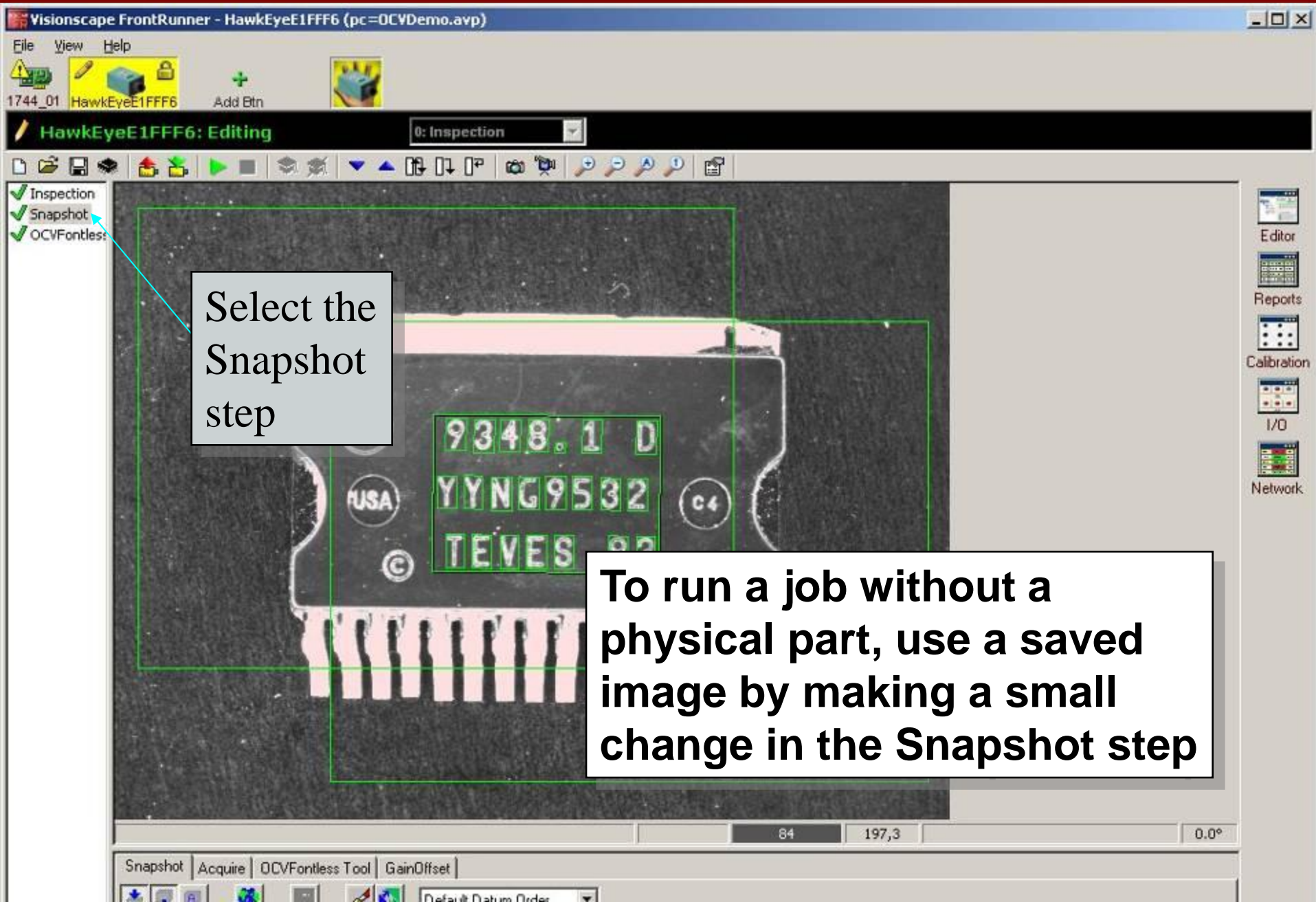
69 347,297 X=338.116 Y=251.874 W=176 H=122 -0.7°

OCVFontless Tool AutoFind TwoPt Locator Symb1 Symb2 Symb3 Symb4 Symb5 Symb6 Symb7 Symb8 Symb9 Symb10 Symb11 Symb12 Symb13









Visionscape FrontRunner - HawkEyeE1FFF6 (OCVDemo.avp)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Inspection

Inspection Snapshot OCVFonle

Step Tree Editor

Acquire

Acquire - Inputs

|                    |                     |
|--------------------|---------------------|
| Picture Mode       | Acquire from Camera |
| File List          | <empty>             |
| Trigger            | <Unassigned>        |
| Trigger Polarity   | Low->High           |
| Lighting           | On                  |
| Exposure Time (us) | 16000.000           |
| Pic Expose IO      | <Unassigned>        |
| Pic Done IO        | <Unassigned>        |
| Trigger Overrun IO | <Unassigned>        |
| Process Overrun IO | <Unassigned>        |

Then click Acquire

Click here

This is done using the Editor

Editor Reports Calibration I/O Network

64 292,33 0.0°

Snapshot Acquire OCVFonless Tool GainOffset



Visionscape FrontRunner - HawkEyeE1FFF6 (OCVDemo.avp)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Ins

Inspection Snapshot OCVFonle

Step Tree Editor

- HawkEyeE1FFF6
  - Inspection
    - Snapshot
      - Acquire
        - OCVFonless Tool
          - AutoFind
          - TwoPt Locator
            - MarkArea
            - Symb1
            - Symb2
            - Symb3
            - Symb4
            - Symb5
            - Symb6
            - Symb7
            - Symb8
            - Symb9
            - Symb10
            - Symb11

Acquire

Acquire - Inputs

|                    |                       |
|--------------------|-----------------------|
| Picture Mode       | Load Images from File |
| File List          | Acquire from Camera   |
|                    | Load Images from File |
| Trigger            | <Unassigned>          |
| Trigger Polarity   | Low->High             |
| Lighting           | On                    |
| Exposure Time (us) | 16000.000             |
| Pic Expose IO      | <Unassigned>          |
| Pic Done IO        | <Unassigned>          |
| Trigger Overrun IO | <Unassigned>          |
| Process Overrun IO | <Unassigned>          |

65 306,414 0.0°

Snapshot Acquire OCVFonless Tool GainOffset

Default Datum Order

Editor Reports Calibration I/O Network

Click on the Acquire step inputs

Then select Load Images from File

Change the Picture Mode in the Acquire step inputs

Visionscape FrontRunner - HawkEyeE1FFF6 (OCVDemo.avp)

File View Help

1744\_01 HawkEyeE1FFF6 Add Btn

HawkEyeE1FFF6: Editing Inspection: 0: Inspection

Inspection Snapshot OCVFontle

Step Tree Editor

- HawkEyeE1FFF6
  - Inspection
    - Snapshot
      - Acquire
        - OCVFontless Tool
          - AutoFind
            - TwoPt Locator
              - MarkArea
                - Symb1
                - Symb2
                - Symb3
                - Symb4
                - Symb5
                - Symb6
                - Symb7
                - Symb8
                - Symb9
                - Symb10
                - Symb11

Acquire

Acquire - Inputs

Picture Mode Load Images from File

File List

Add... Remove Clear Up

Trigger <Unassigned>

Trigger Polarity Low->High

Lighting On

66 326,32 0.0°

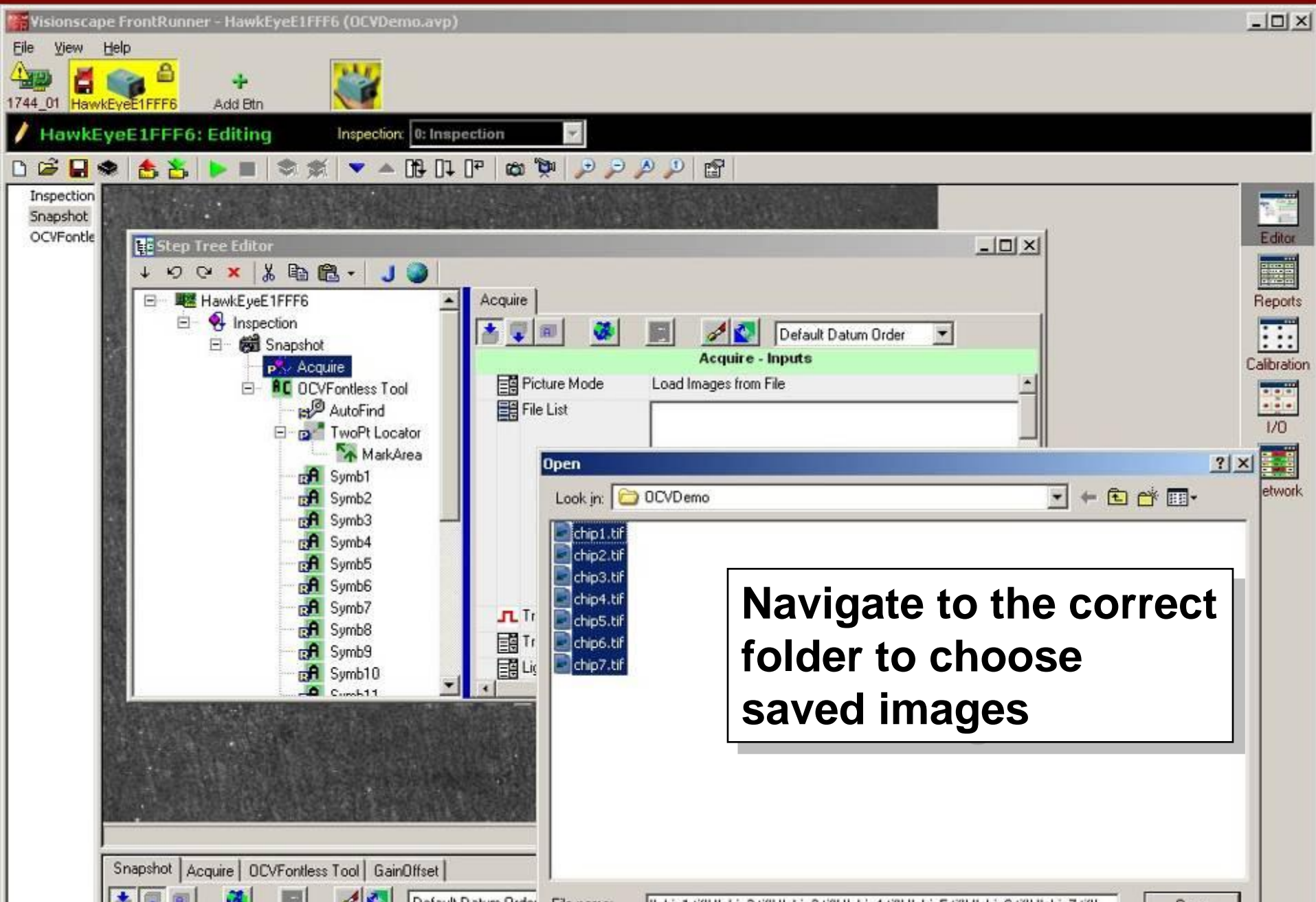
Snapshot Acquire OCVFontless Tool GainOffset

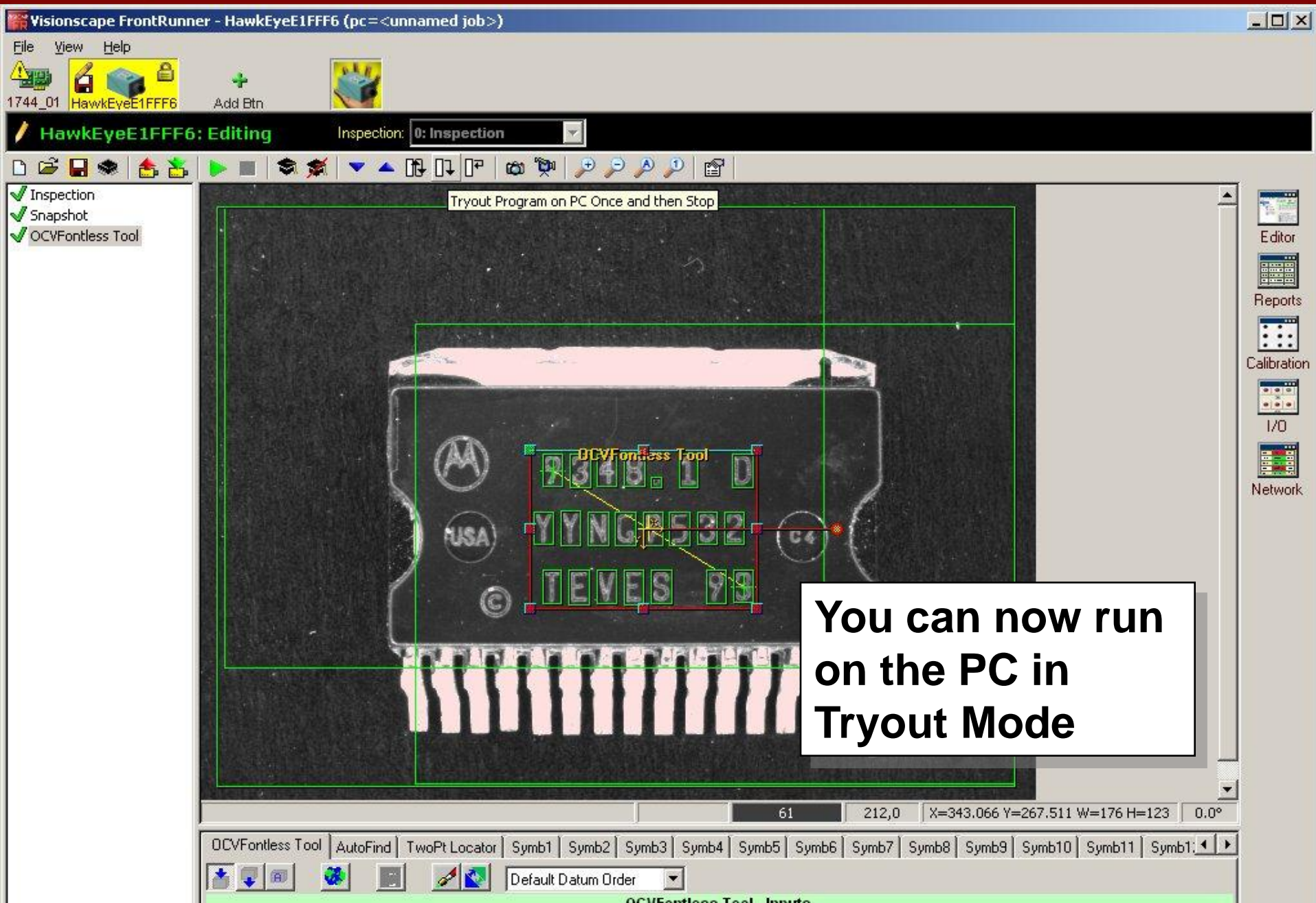
Click here to select

Click here to add the files

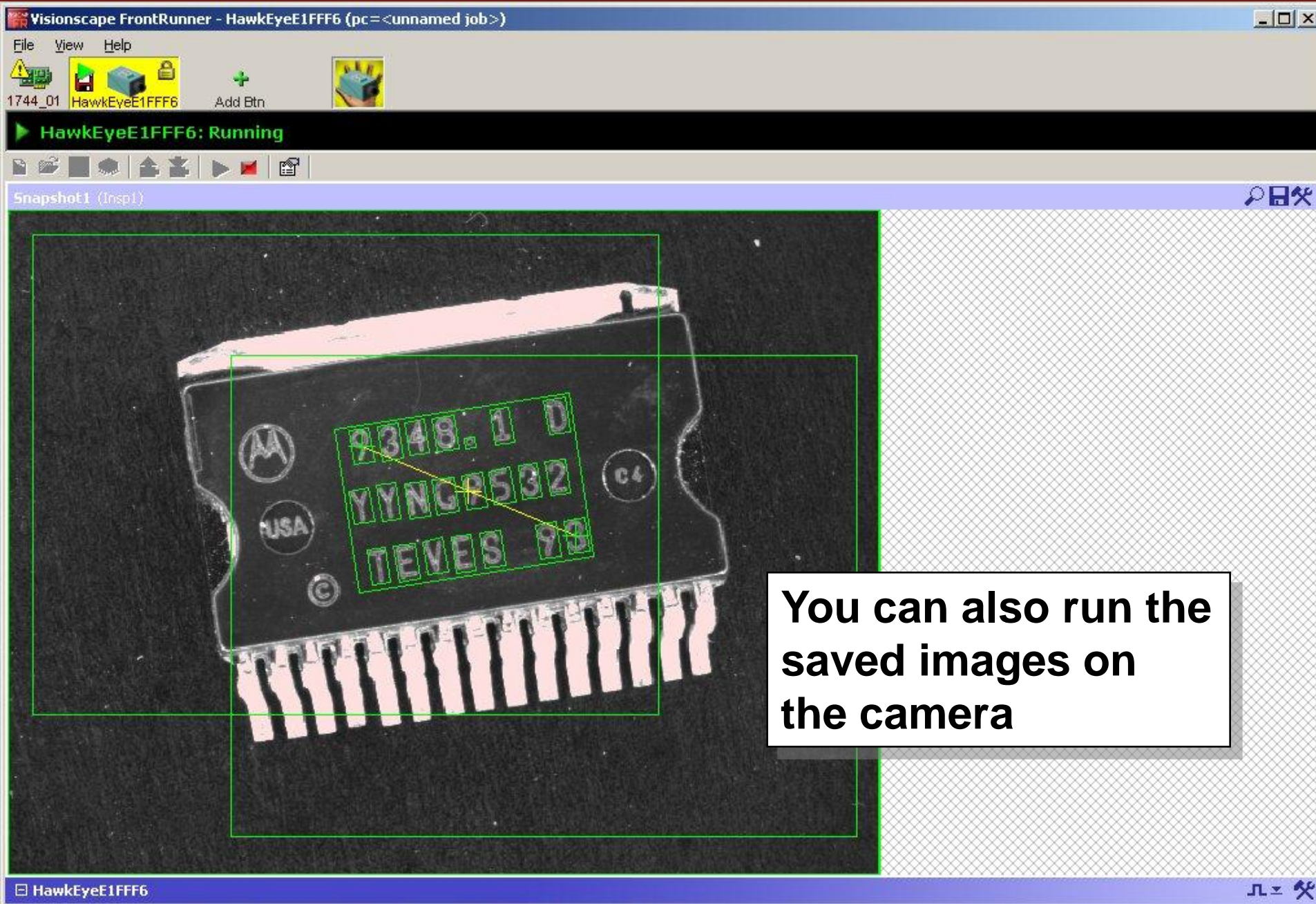
Select images from a saved image list





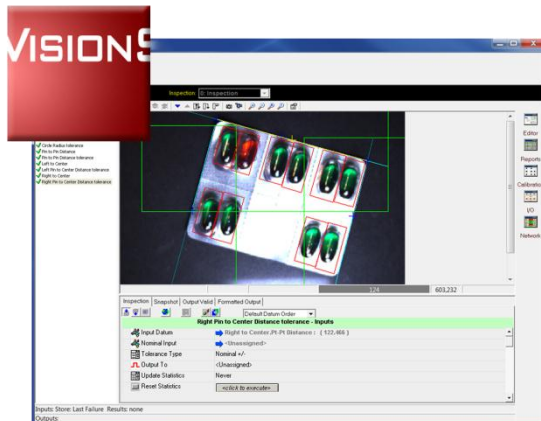






# Visionscape Summary

- Visionscape software provides all the elements needed for developing and deploying complete machine vision applications (not just prototyping vision processing steps)
- Features a configuration environment that can be tailored to different users for maximum productivity
- Powerful and easy to use point-and-click environment
- Extensive collection of proven image processing tools:



- FrontRunner Interface: “Engineering” GUI
- AppRunner Interface: “Monitoring” GUI
- Intellifind: Geometric pattern match tool
- Complete set of ActiveX components

*Thank You.*

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Precision Data Acquisition  
and Control Solutions