

BSTe/Nyquist - TubeScan - Digital Strobe / Eagle View
100% Viewing and Inspection Technology

Validation Document

1. Installation Qualification (IQ)
2. Operational Qualification (OQ)
3. Performance Qualification (PQ)

Doc. Version A, Janvier 2018

BSTe France - Validation Kit

Customer Name: Lorge Imprimeurs

Date: 07/06/2024

Location: Yénissieux

Machine ID / Application: C4R+CAM / DS 330 4K (SN 50.2931)

System Version: 8.0.26.24240

System Options: Fine Inspection / Job Management / Placement Queue / 1 contour Light

Table of Contents

Introduction	4
Installation Qualification	5 – 6
Operational Qualification	7 - 8
Performance Qualification	9

Introduction

The purpose of this validation document is to provide a verification procedure for BSTe engineers to ensure correct and successful installation for the TubeScan Digital Strobe / Eagle View Inspection system.

The successful completion of the procedures assures that the installation system functions, including defect detection, are working as required.

Make sure all installation procedures are completed according to TubeScan installation documents, which includes initial configuration and calibrations.

This procedure should be performed at the end of every TubeScan installation.

The successful completion of the Q procedures ensures that the system is ready for use on site.

The Functionality tests should be run two times; the first time by a BST Customer Service Engineer and the second time by another qualified staff member on site (customer).

Installation Qualification (IQ)

TubeScan Installation Validation

IQ Step	Test Name	Test Description	Expected result	BST CS Engineer	Customer QA	Pass / Fail	Date
1.	Electrical Connections	Inspect all connections according to electrical drawings	The connections are according to drawings	✓	✓		07/06/24
2.	Camera Installation	Check the rigid, parallel mounting of the TubeScan camera housing at the right distance.	The web is stable under the camera and touching the backing bar/roller. The camera is not vibrating.	✓	✓		07/06/24
3.	Encoder Installation	Inspect the TubeScan encoder	Verify that the encoder is installed correctly and mounted to the web (should touch the web itself)	✓	✓		07/06/24
4.	System Startup	Press the computer start button ON/OFF in order to start up the system	Verify the computer green light is ON and the system starts up	✓	✓		07/06/24
5.	Illumination	Check that the LED light is getting ON when moving the web.	Standard – regular diffusive lights are ON Optional: UV – when switching to UV verify the UV LED ON Backlight – when switching to backlight verify the LED's ON ContourLight – when switching to CL verify LED's ON	✓	✓		07/06/24

IQ Step	Test Name	Test Description	Expected result	BST CS Engineer	Customer QA	Pass / Fail	Date
6.	Image on screen	Start the rewinder and check that the correct image is shown on the screen.	Image is seen on screen according to camera specification. Image should be stable with no distortions, missing or other artifacts	✓	✓		07/06/24
7.	Image Quality	Verify image quality according to the standards.	Image is clean – no lines or other artifacts Illumination is correct – not too dark not too bright Sharpness – check that the image is sharp	✓	✓		07/06/24
8.	Display of speed	Verify displayed speed on TubeScan monitor is consistent (+/- 5%) with the rewinder speed	Speed should be similar to rewinder display	✓	✓		07/06/24
9.	System shutdown	Shutdown the system by pressing the STOP button in the application.	The system should perform a gradual shutdown until it completely turned OFF. (SW and HW)	✓	✓		07/06/24

Installation Qualification tests completed

BSTe Customer Support Engineer

Name: Arnaud Darcel Signature:  Date: 07/06/24

Customer QA manager

Name: Cyrille PARANTHOEN Signature:  Date: 07/06/24

Operational Qualification (OQ)

TubeScan Operational Validation

IQ Step	Test Name	Test Description	Expected result	BST CS Engineer	Customer QA	Pass / Fail	Date
1.	New Job	Perform "New Job" setup according to the job parameters currently on the rewinder	Make sure all parameters in setup are correct. At the end of the setup, the system should be in inspection mode and ready to perform the defect detection	✓	✓		07/06/24
2.	Basic inspection test	Create a significant (noticeable) defect on one label and make sure that it is detected immediately	The system should show the defect on the screen	✓	✓		07/06/24
3.	Defect Detection test	Simulate a few typical defects, and test detection for: • A spot, or a few spots • Remove a single label • Others – if needed, according to system specifications and customer needs	The TubeScan should activate the ALARM (on printing press) or ERROR / SLOW DOWN output and stop the rewinder, in order to bring the defective label to the inspection table	✓	✓		07/06/24
4.	Stopping accuracy	Create a significant defect on one of the labels, start inspection and confirm signal accuracy.	In case of a printing application, verify that the ALARM light get's GREEN as soon as you activate the DEFLECTION DETECTION and RED as soon as a defect is detected. In case of a rewinder application, the rewinder should bring the defect into the editing table location and stop.	✓	✓		07/06/24

Operational Qualification tests completed

BSTe Customer Support Engineer

Name: Arnaud Darcel Signature:  Date: 07/06/24

Customer QA manager

Name: Cyrille PARANTHOEN Signature:  Date: 07/06/2024

Performance Qualification (PQ)

TubeScan Performance Validation

Thanks to the STRIPE image capture technology used by the TubeScan , the system enables you to perform a machine and speed independent system performance test. With this validation you make sure that the overall system performance, related to the HW, SW, illumination is constant.

IQ Step	Test Name	Test Description	Expected result	BST CS Engineer	Customer QA	Pass / Fail	Date
1.	Creation of a Calibration tool	Define a "calibration tool" with typical defects, put it in front of the camera on web level and perform a static defect detection test	The system should catch all relevant defects with the defined system sensitivity	✓	✓		07/06/24
2.	Variation test	Vary the system sensitivity and activate the static defect detection mode	The system should display more or less defects, according the selected sensitivity	✓	✓		07/06/24
3.	Create and store a PQ Job	Store the results and the golden in a PQ JOB, which can be recalled for a regular PQ test	By using the PQ JOB you assure that all the system settings are the same and the Tubescan should bring the same defects on display, when using the same "calibration tool	X	✓		07/06/24

Performance Qualification tests completed

BSTe Customer Support Engineer

Name: Arnaud Darcel Signature:  Date: 07/06/24

Customer QA manager

Name: Cynille PRANTHOEN Signature:  Date: 07/06/2024