	UGEE CHEMICALS PSG Department	SOP Standard Operating Procedure

2D CAMERA OPERATION

SOP No:	Issuance Date:	As at Last Signature	
UCL/IBDPSG/CD/Q/012.0	Revision Date:	Maximum 2 years from Effective Date	
	Effective Date:	20 Days from the Issuance Day	Page 1 of 8

PURPOSE

- To define a standard procedure for operating 2D Camera on both UVA and Multilane technology to prevent product mis-pack on PSG production floor

SCOPE

- This SOP is to be adhered to whenever the line is starting up and there are changeovers. This is to prevent possible risk of mis-pack during film splicing operation and change-overs.

RESPONSIBILITY

- **Machine Operator:** Responsible for carrying out the steps outlined in this procedure. He is also responsible to make sure 2D Camera is always 'ON' and 'RUNNING' on his equipment.
- **Shift E&I:** Responsible for starting up and shutting down all power panels.

POTENTIAL RISKS

- NA

PPE REQUIRED

- NA

PROCEDURE

1. Switch on the electrical and pneumatic disconnects to restore energy to the UVA or Multilane equipment.
2. Stabilize the film web using the tip button on the machine to tension the film web and position it rightly.
3. Check the LED indicators for 'power presence' and 'communication established between module and camera' on the 2D Camera module are 'ON'. Also, Check the LED indicators on the Camera itself, that they are all green and not red.
4. Check that outputs 2 and 4 LED indicators on the 2D Camera module are 'ON' for L4A & 4B respectively on Multilane machines.
5. Position the 2D camera on the marked centerline on the 2D camera stand. Use Allen key 6 to move the camera if necessary. Use cotton gloves.
6. Confirm that the 2D Camera focal light is capturing the Data Matrix Code in test mode. Use the PC if necessary to set the camera exposure and focus. There must be no LED light 'ON' on the 2D camera

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
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module at outputs 5 and 6. If the LED light on either output is persistently 'ON' continue with step 7, if not jump to step 13.

7. Open In-sight explorer software on the dedicated PC online or with a PC that has insight explorer software installed. Make sure the Cognex Ethernet cable is connected between the PC LAN port and the Camera Ethernet port.
8. Confirm that the Image view is either on easy builder mode or spreadsheet mode. Also, confirm that the sensor is online and not offline.
9. Take the sensor offline and click on the live-video button to change the view from the configuration page to field-view mode, where you can see the poly-film artwork the camera is capturing.
10. Re-adjust the 2D camera exposure and focus by turning the camera lens clockwise or anticlockwise until a sharp image of the Data Matrix code is viewed.
11. Return to the configuration view to confirm that the Data Matrix code image captured is interpreted in form of a number and displayed in the 'Code Read' section. Once this is achieved, take the sensor back online.
12. Observe that the output 5 LED indicator on the 2D Camera I/O module is now 'OFF'.
13. Teach the camera to register the poly-film Data Matrix code captured as its reference code by pressing the teach button on the electrical panel. This means any other poly-film with a different Data Matrix code will be rejected as the machine will stop for a 'No match' error (output 6 LED indicator will come up).
14. Check and confirm that the LED at output 7 flashes while the machine runs. If this output does not flash, the machine will stop after 10 seconds.
15. Run the machine and cover the 2D camera lens with your hand for two minutes. The equipment should stop for a 2D Camera No Read error. (If the equipment did not stop, stop the machine involved and follow the troubleshooting guide to fix it. Conduct a base condition check and complete 6W2H on the failure).
16. During rapid changeover (RCO), confirm that the 2D Camera stops for 'No Match error'. (If the equipment did not stop, stop the machine involved and follow the troubleshooting guide to fix it. Conduct a base condition check and complete 6W2H on the failure). Follow the job aid on the challenge test.
17. Clear the error by removing your hand and pressing the reset button on the HMI.
18. Run the equipment in production mode.

19. **CHALLENGE TEST PERFORMANCE:**

a) **No Read Test:** Run the machine and cover the 2D camera lens with your hand for two minutes. The equipment should stop for a 2D Camera No Read error. (If the equipment did not stop, stop the machine involved and follow the troubleshooting guide to fix it. Conduct a base condition check and complete 6W2H on the failure). **NO Read test will be done as part of the shift's quality daily trigger.**

b) **No Match Test**: At every start-up, position another polyfilm different from the film on the machine (at shutdown) appropriately on the 2D camera lens. Then start the machine on test mode, and check that the 2D Camera stops for 'No Match error' immediately after you tried to start the machine. Then, document the result of this confirmatory result in the Start-up & Shutdown Checklist. (If the equipment did not stop, stop the machine involved and follow the troubleshooting guide to fix it. Conduct a base condition check and complete 6W2H on the failure). Follow the job aid on the functionality test

REASON FOR UPDATE: New SOP

END OF PROCEDURE

SOP RELATED ATTACHMENTS
ATTACHMENT 1 - SOP Qualification
ATTACHMENT 2- Model Answers
ATTACHMENT 3 - Step up card