

Control digital colour printing machines

Overview

This standard covers the configuration, operation and control of 'production-scale' digital colour printing machines whether they are large format or sheet-fed machines.

It applies to you if you work in a studio, imaging bureau or digital printing environment and you are responsible for the operation of a production-scale digital colour printing machine.

Modern digital colour printing machines have become extremely sophisticated, high speed devices capable of producing high quality print. Some toner and inkjet printers can now produce print that is as good as or even better than 'litho' reproductions. Most digital printers also have a range of options for finishing 'in-line', ranging from a single staple of a collated set to a perfect bound book.

Whilst the operator interfaces for these machines often provide for quick and easy access for simple copying or printing, the additional controls available for managing colour, determining printing and finishing options can be complex and require a high level of knowledge and ability by the operator.

For documents sent directly to the printer from a computer, the inclusion (or omission) of a source or destination 'profile' in an image file and the selection in print dialogue boxes of colour matching or rendering options can make a dramatic difference to the colour output from the printer.

In order to maintain consistent colour output over time from a digital colour printer, it may also be necessary to run calibration routines at required intervals, to ensure that the colour management system within the workflow is correctly used and, if necessary, make sure that the colour profiles for the printer are still accurate.

Overall print quality is usually maintained by ensuring all consumables are replenished when required and using only the authorised materials for the machine.

Performance criteria

You must be able to:

Prepare digital colour printing machines for print

1. check that digital colour printers are in serviceable condition and ready for production and that colour calibration and/or other periodic checks are up to date
2. check that the job details you have are complete, including details of the imposition and post-printing requirements
3. check that you have enough materials of the right type to complete the job
4. preflight digital files for printing and check whether any source or destination colour profiles are embedded in documents
5. set printer software to handle any colour profiles in the way required for the job
6. follow your organisations procedures to deal with any incorrect embedded colour profiles
7. set up print parameters for printers and job requirements, including any colour settings
8. use correct settings to download or print digital job file(s) to digital printing machines
9. check image is complete, colour accurate, free from contamination or other faults, and in register
10. check fonts, substrates, imposition, scaling and orientation are correct
11. check any duplexing or finishing options are correct
12. adjust machines or print download settings as necessary to achieve required job specifications and quality standards
13. report without delay any machine faults which it is not your job to correct

Run and monitor production on digital colour printing machines

14. run digital printing machine so that it is safe and efficient and at the required speed
15. keep up sufficient supplies of materials and consumables to ensure runs continue as long as necessary
16. check at regular intervals that print outputs including quality of image, colour consistency and finishing accuracy meet job specifications and required quality standards
17. resolve any machine problems which arise during runs that affect quality or productivity
18. record production and quality assurance details, ensuring information is accurate

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19. follow the correct procedure for the removal of waste
 20. stack work safely, using the approved method

Knowledge and understanding

You need to know and understand:

The law as it affects printing

1. defamation
2. copyright and ownership of images
3. obscenity
4. incitement
5. forgery
6. data protection
7. the printers imprint

Ethical issues relevant to printing

8. confidentiality

Health and safety

9. your duties and responsibilities for health and safety as defined by any specific legislation covering your job role
10. the hazards and risks in your own job, their assessment and the action to take to deal with them
11. the manufacturers' and suppliers' health and safety instructions / advice

The safe handling of customer material

12. what kinds of customer materials are likely to be handled, including original photographs or artwork, samples, disks, raw materials for print or finishing
13. techniques for protecting customer materials
14. the potential for loss or damage

Security and storage

15. computer system security and virus protection
16. the print with time-sensitive or restricted release dates
17. the high value products or print with a high risk of theft
18. how to securely archive digital and conventional artwork

Communication requirements and processes

19. how to communicate with colleagues
20. how to communicate with customers
21. how to communicate with suppliers

Workplace policy and practice

- 22. workplace objectives, priorities, standards and procedures
- 23. the way you actually do your job, more particularly the activities and techniques and the way that materials and equipment are used

The operation of equipment

- 24. the set-up of digital communications equipment and software
- 25. the operation of digital communications equipment and software

Printing

- 26. the principles of digital printing

Digital files

- 27. file conversion techniques
- 28. file compression and decompression techniques
- 29. how to transmit digital files
- 30. file management procedures

Digital colour printing machines

- 31. the effect that colour matching and rendering options can have on output
- 32. how to set print dialogue boxes
- 33. how to operate large format or sheet-fed machines
- 34. calibration routines and their frequency
- 35. when to replenish consumables and where to obtain them

The causes and treatment of common faults

- 36. raw material faults
- 37. processing faults
- 38. machine faults

Administrative procedures

- 39. planning and scheduling
- 40. recording and reporting
- 41. product labelling

Environmental considerations

- 42. the legal requirements for the classification, storage, carriage and disposal of waste

Quality assurance and control

- 43. the main features of quality assurance and quality control systems

- 44. techniques for controlling quality
- 45. equipment for controlling quality in printing
- 46. light standards for viewing and assessing colour print

Problem solving

- 47. types of problems that may need to be solved
- 48. sources of information
- 49. techniques for solving complex problems
- 50. techniques for assessing machine faults

Materials

- 51. the types and characteristics of paper, board and other commonly used substrates includes the range of commonly used uncoated, coated, embossed papers and boards; grammage, thickness, opacity, brightness/whiteness, strength, dimensional stability, gloss the types and characteristics of inks, toners & coatings
- 52. how to maintain the quality of materials during storage and handling

Scope/range

The operator has the ability to control all aspects of a production-scale digital colour printing machine in a production environment – to keep the machine running consistently from day to day, to maintain colour accuracy, to solve problems that may arise and to understand and use correctly all the parameters and options in the printer software and device driver / print dialogue boxes.

Note: This standard has been written for operators of 'production-scale' digital printers and therefore operation of an office or desktop laser/inkjet printer is not relevant to this standard

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