

### Overview

This standard is for printers with responsibility for running sheet-fed, multi-unit lithographic presses.

The standard involves the production of printed work which meets the quality required by the customer with the minimum of wasted materials and achieving the productivity levels required by the company.

A multi-unit machine is one that prints two or more colours in a single pass through the machine.

It includes the make-ready and running of such machines, including the identification and correction of associated print faults, whether they are caused by machine or materials.

Multi-unit lithographic printing machines have many possible configurations and features. This standard requires a machine operator to be able to set up and print multi-colour print on multiple-unit presses. The machine operator must have a full working knowledge of multi-unit presses, including issues that arise from the transfer of sheets between units.

Practical ability must be demonstrated in producing printed work to a commercially acceptable standard, with consistency throughout the run, on different substrates and covering a sufficient range of printed work to show full competence as a multi-colour lithographic printer. This should include a variety of different kinds of images. The printer must be able to print four-colour process work.

The printer must be able to check and assess the quality of print under correct viewing conditions against an approved proof and make whatever adjustments are necessary to the press to achieve and maintain the quality required. On more modern machines, integral colour control hardware and software is installed, allowing the printer to check continually that ink densities, dot measurements or spectral colour meet recognised standards and/or are consistent with an approved 'pass sheet'. The printer is required to be familiar with colour standards and how such standards are maintained. If equipment for this purpose is in use in the company, then the machine minder must be capable of operating and understanding it.

**Performance  
criteria**

**Make sheet-fed multi-unit lithographic printing machines ready for production**

- You must be able to:
- P1 check that you have all the details required for the job and approval to start the job
  - P2 check that you have enough materials of the right type for the job
  - P3 promptly report to your manager, if the material provided is not correct or sufficient
  - P4 accurately identify any post-printing requirements
  - P5 check that the machine and your work area are safe and ready for production
  - P6 make ready the press by:
    - P6.1 fitting the plate(s) correctly to the plate cylinder, including any plate packing if required
    - P6.2 putting ink into the duct(s) (or installing an ink cartridge or similar system)
    - P6.3 ensuring any fount solution is correctly formulated and up to level in the trough
    - P6.4 confirming that the blanket is correctly mounted and tightened
    - P6.5 placing the correct substrate and sufficient make-ready sheets into the feeder
    - P6.6 setting the feeder and delivery for the size of sheet
    - P6.7 setting the front lays and side lay, ensuring that the sheet will pull up fully  
and to the correct side when printing
    - P6.8 setting the impression pressure for the thickness of substrate to be printed
    - P6.9 inking up the ink rollers and, if required, pre-damping any fount roller sleeves
    - P6.10 running up sheets until ink and water balance are achieved
  - P7 make adjustments to the machine settings as necessary to achieve the required job specification and quality standards
  - P8 report promptly to your manager if circumstances beyond your control prevent you from producing a pass sheet to the required standard
  - P9 if required by your company, obtain a 'pass' sheet from the relevant person when the job is ready to run

**Control output and quality from sheet-fed multi-unit lithographic**

You must be able to:

- P10 ensure that you have authority to commence production
- P11 run the sheet-fed multi-unit lithographic printing machine at the optimum speed, achieving the required standard
- P12 regularly check that the output matches the pass sheet
- P13 identify and correct the cause of problems which affect the quality of the image or reduce the rate of output
- P14 report promptly to your manager if circumstances beyond your control prevent you from achieving the required quantity or quality of printed sheets
- P15 run the required number of good sheets, keeping spoiled material to a minimum
- P16 clearly identify or remove any sub-standard sheets from the stack of finished work
- P17 follow the correct procedures for the removal of waste
- P18 accurately record the production and quality assurance details required
- P19 identify machine parts that may require replacing and make sure that such parts are available when required
- P20 identify maintenance that needs to be carried out on the machine and make sure that it is brought to the attention of the person in your company who will schedule it in the production plans

**Knowledge and understanding**

**The law as it affects printing**

You need to know and understand:

- K1 defamation
- K2 copyright and ownership of images
- K3 obscenity
- K4 incitement
- K5 forgery
- K6 data protection
- K7 the printers imprint

**Ethical and employment issues relevant to printing**

You need to know and understand:

- K8 confidentiality

**Health and safety**

You need to know and understand:

- K9 your duties and responsibilities for health and safety as defined by any specific legislation covering your job role
- K10 workplace policies and procedures
- K11 working practices
- K12 hazards and risks in the workplace, their assessment and the action to take to deal with them
- K13 hazards and risks in your own job, their assessment and the action to take to deal with them
- K14 manufacturers' and suppliers' health and safety instructions / advice
- K15 how to stop a machine in the event of an emergency

**Security and storage**

You need to know and understand:

- K16 print with time-sensitive or restricted release dates
- K17 high value products or print with a high risk of theft

**Communication**

You need to know and understand:

- K18 how to communicate with colleagues
- K19 how to communicate with suppliers

**Workplace policy and practice**

You need to know and understand:

- K20 workplace objectives, priorities, standards and procedures
- K21 the range of work carried out in the workplace
- K22 the working practices existing in the workplace

**The identification and assessment of printing options**

You need to know and understand:

- K23 the stages in the printing process from pre-press to printed product

**Time and resources**

You need to know and understand:

- K24 the different types of resource, including labour, materials, machinery
- K25 the relationship between resource usage and profitability
- K26 how to maximise productivity

**The operation of equipment**

You need to know and understand:

- K27 the operation of multi-unit lithographic printing machines

**Printing**

You need to know and understand:

- K28 the principles of lithography

**The causes and treatment of common faults**

You need to know and understand:

- K29 raw material faults
- K30 processing faults
- K31 machine faults

**Administrative procedures**

You need to know and understand:

- K32 scheduling
- K33 recording and reporting
- K34 product labelling

**Environmental**

You need to know and understand:

- K35 the legal requirements for the classification, storage, carriage and disposal of waste
- K36 any specific environmental legislation that covers processes in your company
- K37 control of pollution

**Quality assurance and control**

You need to know and understand:

- K38 the main features of quality assurance and quality control systems
- K39 techniques for controlling quality
- K40 equipment for controlling quality in printing
- K41 light standards for viewing and assessing colour print

**Problem solving**

You need to know and understand:

- K42 types of problems that may need to be solved
- K43 sources of information
- K44 techniques for assessing machine faults

**Materials**

You need to know and understand:

- K45 the types and characteristics of paper, board and other commonly used substrates
- K46 the types and characteristics of inks, toners and coatings
- K47 how to maintain the quality of materials during storage and handling

**Proofing**

You need to know and understand:

- K48 the principal types of proof and their role in the printing process

## PROMP267 (SQA Unit Code – H9JF 04)

### Control sheet-fed multi-unit lithographic printing machines



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