

## Overview

This standard is about operating machinery or equipment in a general print environment or for newspaper or periodical production.

It can apply to the operation of any relevant machinery or equipment but specifically applies to:

- auto-fed sewing machinery
- multiple hopper feeders
- multi knife trimming machinery
- guillotines
- folding machinery
- case making machinery
- casing-in machinery
- adhesive binding machinery (inline or offline)
- main processing machinery
- booklet making machinery
- laminating equipment
- auto punching and cutting machinery
- slitting and re-reeling equipment (adhesive label production)
- automatic stacking/palletising equipment
- automated stitch and trim equipment
- automated inserting equipment
- non automatic finishing machines including wire stitching machines, perforating machines, drilling machines, thread stitching machines, punching machines, eyeletting machines, riveting machines, rotary perforating machines

This is what the standard covers:

1. running the machinery or equipment safely
2. adjusting settings, where necessary to maintain the required standard
3. checking that work meets the required standard
4. identifying faults and taking action to deal with them

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## Performance criteria

You must be able to:

1. check your work area is safe and ready for production
2. check that safety processes have been followed and safety devices are working as they should
3. run machinery at the required speed in a safe and efficient manner
4. keep up sufficient supplies of materials so that runs are not interrupted
5. check at regular intervals that outputs meet approved sample and identify the cause of any marking, damage or distortion to product
6. identify faults which affect the efficient operation of equipment or create risks to health and safety
7. correct faults which it is your job to remedy using approved methods and equipment
8. report faults which it is not your job to correct using agreed procedures
9. check that machines are safe to operate, once faults have been corrected
10. record production and quality assurance details in the appropriate place
11. remove waste using the correct procedures
12. place work in the correct location using approved handling methods

## Knowledge and understanding

You need to know and understand:

### Health and safety

1. your duties and responsibilities for health and safety as defined by any specific legislation covering your job role
2. regulations such as those covering manual handling, noise at work, personal protective equipment, safe handling of equipment and materials, and the safe use of computer equipment
3. workplace policies and written operating procedures relating to written health and safety policy statement, provision, use and processes of workplace equipment, training, prohibited equipment, young persons, safe systems of work

### Working practices

4. the way you actually do your job, more particularly the activities and techniques and the way that materials and equipment are used
5. typical hazards and risks in the printing industry and those that relate to your own job
6. risk assessment techniques and the action to take to deal with them
7. codes of practice relevant to your role and where to obtain information on them
8. manufacturers' and suppliers' health and safety instructions and advice for operating machinery, guarding machinery and data sheets for substances harmful to health
9. the requirements for personal presentation including personal hygiene, suitable clothing and accessories, fitness for work, such as not under the influence of drugs, alcohol or medication, smoking policies in the workplace
10. how to stop a machine in the event of an emergency

### Operating machinery

11. the purpose of the process you are undertaking
12. the information and materials required to meet job specification
13. safety devices found on the machinery you are using, their purpose and how to check they are functional
14. how to adjust the machinery you are using to meet job requirements
15. the causes of common faults with the process you are undertaking and how to rectify them

### The causes and treatment of common faults

16. the causes of faults with raw materials, processes and machinery used in your business and how to identify and treat them

#### **Quality assurance and control**

17. techniques for controlling quality including inspection, testing, sampling and use of input and output controls
18. the impact that faults, in the process you are involved with, have on later processes and the quality of the end product

#### **Problem solving**

19. types of problems that may need to be solved including machinery - electrical, mechanical, electronic, settings, component wear and tear, consumables needing replacement, materials - defects, shortages, incompatibility, systems, organisation and lack of skills or knowledge
20. sources of information for solving problems including manufacturer's documentation / troubleshooting guides, colleagues, tutors / trainers / mentors and reference material - in house or external, such as the internet
21. techniques for solving complex problems including changing one thing only at a time and assessing effect of the change, using the problem solving cycle, root cause analysis, brainstorming and visual representations, such as fishbone / mindmap diagrams
22. techniques for assessing machine faults including observation, listening, inspection of product, reports from colleagues / log reports, touch or smell (if safe to do so) and testing - such as electrical, mechanical, electronic

#### **Materials**

23. the types of paper, board and other commonly used substrates including commonly used uncoated, coated, embossed papers and boards
24. the grammage, thickness, opacity, brightness/whiteness, strength, dimensional stability, gloss of paper, board and other commonly used substrates
25. how to maintain the quality of materials and protect them from damage, humidity and temperature during storage and handling
26. how to label and identify materials

## Scope/range

The operator should be able to produce commercially acceptable work and meet the specific requirements listed below for the machinery with which they are working.

- **auto-fed sewing machinery** – be competent to sew open head, closed head and lapped foredge work.
- **multiple hopper feeders** - operate a minimum of two to six hoppers over a variety of work, sizes and coated and uncoated stock.
- **multi knife trimming** - be competent to operate the equipment to trim a range of products using three and/or five knife trimmers on a range of thicknesses and types of stock
- **guillotines** - be competent to operate the equipment to cut and trim to different sizes on coated and uncoated stock.
- **folding machinery** - be competent to operate the equipment to produce folded sections of a range from 4pp to 16pp including 6 page gate folds.
- **case making machinery** - be competent to operate the equipment to produce cases from cloth materials and printed stock.
- **casings-in machinery** - be competent to operate the equipment to produce bound books of a range from thin to thick books, rounded spines and square back spines.
- **adhesive binding machinery** - be competent to operate the equipment to produce either sewn or unsewn sections for thin books and bulky books.
- **mail processing machinery** - be competent to operate the equipment to produce a range of mail processes.
- **booklet making machinery** - be competent to operate the equipment to produce thin and bulky booklets, at least two different sizes of printed sheet on coated and uncoated stock. The collator and the stitch-fold-trim unit may be separate pieces of machinery or may be inline. However, hand collating is not acceptable; nor are booklet-makers without a trimmer.
- **laminating equipment** - be competent to operate the equipment to laminate products of various sizes on a range of thicknesses and types of stock.
- **auto punching and cutting** - be competent to operate the equipment to cut and punch products of various sizes on a range of thicknesses and types of stock.
- **slitting and re-reeling** - be competent to operate the equipment to slit and re-reel labels various sizes and lengths on a range of thicknesses and types of stock.
- **non-automatic finishing machines** - be competent to operate at least 2 of

the following machines. Wire stitching machines, Perforating machines, Drilling machines, Thread stitching machines, Punching machines, Eyeletting machines, Riveting machines, Rotary perforating machine

- **auto-palletising equipment** - be competent to operate the equipment to produce a wide range of bundle numbers and sizes.
- **automated stitch and trim equipment** – be competent to operate the equipment.
- **automated inserting equipment** – be competent to operate the equipment.

In addition, when operating the machinery or equipment, the operator should be able to deal with all running problems within his/her responsibility and specifically be able to identify the cause of faults, listed below, for the machinery with which they are working

- **auto-fed sewing machinery** – missed or loose stitches, sections not square at head, glue marks or rub marking on sections
- **multiple hopper feeders** - sections not gathered, sections inserted in the incorrect order, sections failing to feed and separate, sections feeding unevenly or sections tearing or marking
- **multi knife trimming** - unacceptable cut size variation, score marks or glue marks on cut surfaces, ragged cut on bottom pages, book spines splitting at head or tail, books not square or creasing on spines
- **guillotines** - cut work being out of square or under or over size, cut edges not smooth, unacceptable size variation between top and bottom of pile, marking of material from clamp
- **folding machinery** - sheets folded out of square, slitting and perforating not parallel to sheet edge, unacceptable creasing of sections, sections not in page sequence, marking of sections
- **case making machinery** - blistering of cover material, uneven turn-ins, turn-ins not tight, cover boards not parallel with each other or cover material not adhering to boards
- **casings-in machinery** - book block incorrectly positioned within the case or not glued securely into the case, glue marking of the case and book block or lifting of endpapers from cover turn-in
- **adhesive binding machinery** - cracking of the surface along score lines, print being out of square on the front cover and spine, rounding of spines, too much or too little glue penetration, poor page-pull strength or covers not registering correctly with book blocks
- **mail processing machinery** - incorrect or missing codes, missing or incorrectly positioned inserts, unacceptable marking of the product, material

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jamming or damage or distortion to the product

- **booklet making machinery** - pages missing or duplicated, wire stitches or staples missing, broken or misformed, wire stitches/staples and fold not aligned, trimming faults such as out of square or wrong size or marking of inside or outside pages
- **laminating equipment** - laminating material creasing, bubbles or marking on the product
- **auto punching and cutting** - products having a burred edge out of register with the print
- **slitting and re-reeling** - reels of the wrong length, reels out of square to the core or inaccurate slitting
- **non-automatic finishing machines** – as relevant for the selected machines
- **auto-palletising equipment** – as relevant for the machine
- **automated stitch and trim equipment** – as relevant for the machine
- **automated inserting equipment** – as relevant for the machine

## PROPF414 (SQA Unit Code - H9K9 04)

Operate post press machinery and equipment under supervision



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**Developed by** Proskills

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**Status** Original

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**Originating Organisation** Proskills

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**Relevant Occupations** Printers; Printing machine minders and assistants; Originators compositors and print preps; Screen printers; Bookbinders and print finishers; Graphic designers

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**Suite** Post Press

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