

FACT SHEET

ROTARY PRINTING PRESS

A rotary printing press is a press in which paper or other materials receive images from a rubbercoated cylinder, called the blanket or offset cylinder. Materials include paper of various thicknesses (from newsprint to wallpaper), plastic film, and sheet metal used for cans.

Images are transferred to the blanket cylinder from the plate cylinder. The plate fastened to the cylinder contains a copy of the image for printing. Plates collect ink, while water which resists ink is applied to the plates where no ink is wanted. A watery solution is also applied by rollers turning in reservoirs. A smooth-surfaced impression cylinder forces the materials against the blanket cylinder to ensure firm pressure (see Figure 2).

Monochromatic (single colour) prints are made on a press with one station. Colours may be added one at a time to the print by repeatedly passing the printed sheets

through a press like that shown in figure 1.

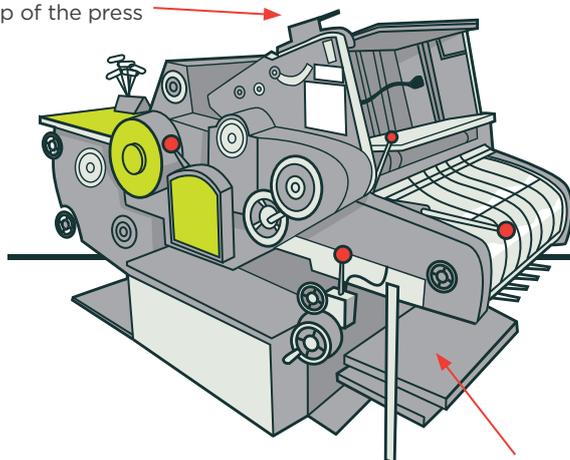
Multiple colours are often printed on presses where each colour is printed at a different station (see Figure 3).

Printing material is presented as sheets, lifted from the stack one at a time with suction cups or grippers. When printed material needed in continuous rolls, like plastic tape or wallpaper, material is presented and removed on rolls. Products like newspapers or shopping bags are presented in rolls, printed on the continuous material or web, and then processed after printing to form the required individual products.

The usual after-printing processes include cutting, folding, and stacking. Plastic bags will probably be heat sealed. Magazine pages will be collated into the right order, stapled, and then bound in stacks for collection and delivery.

FIGURE 1: ROTARY PRINTING PRESS

Sheet paper is stacked on top of the press



Printed sheets land here

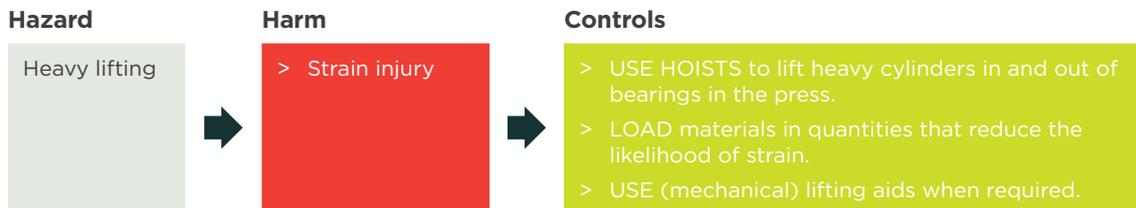
HAZARDS:

- > Heavy lifting
- > Trapping at cylinders
- > Impact at moving arms
- > Contact with knives
- > Contact or impact with moving parts
- > Contact with exposed blades
- > Hazardous substances
- > Noise
- > Slips, trips & falls
- > Entrapment from unexpected movement and contact with exposed blade (during maintenance, cleaning & repairs)

PPE:



TASK - LOAD & UNLOAD MATERIAL

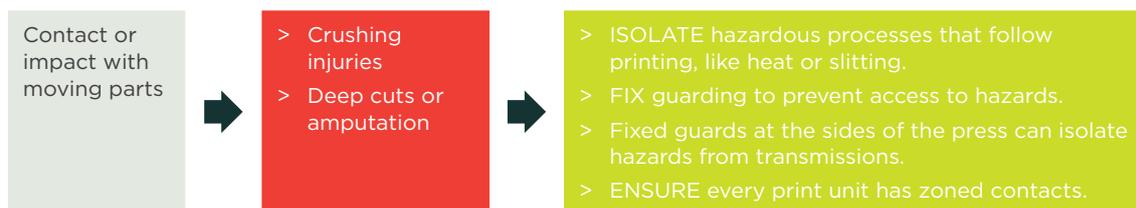


Heavy cylinders will have to be lifted in and out of bearings in the press. Material for printing and printed material will be lifted in and out of the press.

TASK - PRINTING, CUTTING, FOLDING, STACKING



There is a risk of trapping where one cylinder turns away from the operator and the adjacent cylinder turns toward the operator.



Retrieving single sheets of printed material MUST NOT require reaching close to moving parts.

OTHER (NON-MECHANICAL) HAZARDS

Hazard	Harm	Controls
Hazardous substances	<ul style="list-style-type: none"> > Health issues from contact or ingestion, or accidental ignition > Breathing problems or worsening of existing health problems 	<ul style="list-style-type: none"> > Handling and storage MUST meet HSNO legislation requirements. > PLACE used cleaning rags in closed, fire-resistant containers. > USE respiratory protection and extraction equipment. > PROVIDE adequate ventilation. > Wear PPE (personal protective equipment) to cover face, hands, and body. > MONITOR employee health. > Follow manufacturer's instructions.
Noise	<ul style="list-style-type: none"> > Hearing damage or loss > Discomfort/ringing in the ears 	<ul style="list-style-type: none"> > WEAR hearing protection. > REDUCE noise levels by isolating machines or enclosing within noise barriers. > ASSESS noise levels. > ARRANGE hearing screenings. > ALWAYS WEAR hearing protection.
Slips, trips and falls	<ul style="list-style-type: none"> > Trapping > Cuts > Bruising 	<ul style="list-style-type: none"> > KEEP up-to-date housekeeping procedures. > KEEP the area around mortisers clear of slip and trip hazards.

TASK - MAINTENANCE, CLEANING & REPAIRS

Hazard	Harm	Controls
Entrapment from unexpected movement	<ul style="list-style-type: none"> > Trapped fingers and hands > Cuts to hands 	<ul style="list-style-type: none"> > LOCK-OUT all power supplies before maintenance, cleaning & repairs, OR RESTRICT cylinder rotation during cleaning. > ENSURE each station has its own controls for use during cleaning and plate changing. > STOP unsafe presses, and DO NOT USE until repaired or replaced. > UNDERTAKE daily inspections and regular testing. > PROTECT hands when handling doctor blades. > Gap covers MUST be fitted to plate and blanket cylinders. > Interlocked guards should limit cylinder movement while guards are open.
Contact with exposed blades		

Operators are most at risk during setup or cleaning.

Instructions MUST be provided in a language understood by the operators.

Cylinders that turn towards each other present traps to people who reach into the nip. Operators may reach close to nips while wiping cylinders.

If presses have drive systems unable to restrict cylinder movement to 25 mm at a time, nips must be guarded by fixed nip bars no more than 6 mm from the cylinders.

Options for interlocked guards are:

- > cylinders are hand-cranked to turn them by one hand while the other hand holds a cleaning rag and wipes the cylinder
- > powered cylinder rotation occurs in short boosts requiring operation of a control for each boost.

FIGURE 2: OFFSET PRINTING PROCESS

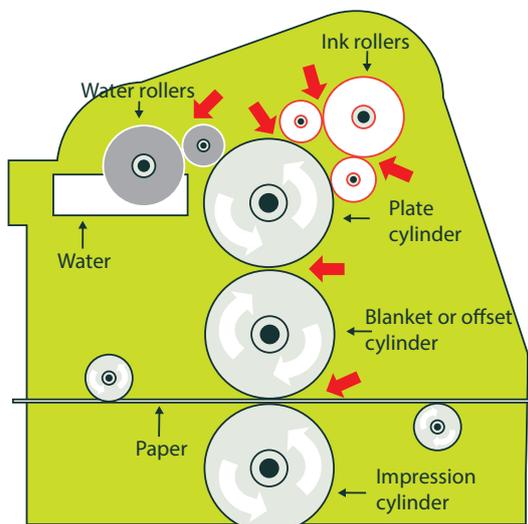
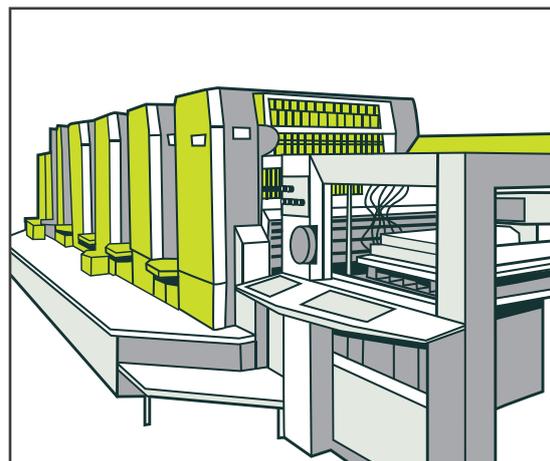


FIGURE 3: A MULTIPLE COLOUR PRESS WHERE EACH COLOUR IS PRINTED AT A DIFFERENT STATION



References, current standards and further information can be found on the Safe Use of Machinery project page at: www.worksafe.govt.nz

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