

HSE Safety Alert: Hand Fed Platen (Die Cutting) Machines

Risks from use of the dwell facility on hand fed platen (die cutting) machines

1 Who is affected?

HSE is issuing this safety alert for the attention of firms in the printing and cardboard packaging industries who use these machines. This is to raise awareness of the potential dangers of whole body access between the platens of these machines when operating in the dwell mode.

2 What is the risk?

This alert follows two fatalities in the last 13 months where operators have been crushed between the platens as they made an intervention during normal production. In both cases the machine was being used in the dwell mode, the power to the platen was not isolated before the intervention and the safety devices fitted to the machine did not prevent the platens closing.

3 When can the risk arise?

Over the years hand fed platens have caused many serious incidents. However, in recent times, machines have become progressively larger and it has become clear that where intervention is necessary, operators have to lean further into the platen area, or in some circumstances, physically climb onto the platen bed. Typical reasons for intervention include dealing with a miss-feed, retrieving waste or re-securing the 'feed stops'. Access onto the platens is frequently also necessary during setting.

4 What causes the problem?

There are strong commercial reasons to use the dwell mode to speed up production – it can double the speed of work. Climbing onto the platen from the normal operating position (in front of the machine) may be done without operating the trip bar fitted to the leading edge of the lower platen. Therefore, if a safe system of work is not followed, including isolating the machine, then the platen may continue to cycle if it is being used in the dwell mode and the protective devices will not be automatically triggered.

5 Recommended action to control the risk

To cover such situations, employers must ensure that robust safe intervention procedures exist to prevent the platen from stroking whilst the operator is between

the platens. You will need to consider in detail when access will be required, how this can be minimised and what steps should be taken when this is unavoidable. Suitable procedures may include isolation and lock-off of the power supply or other equally effective measures before the operator attempts to gain access onto to bed of the platen. You should refer to the manufacturer's own operating procedures for further information.

Employers must also ensure that their safe intervention procedures are fully understood and followed by operators by providing suitable operator training. Employers must also ensure there is adequate supervision to ensure staff follow the safe intervention procedures.

The use of dwell rather than single stroking may introduce additional intervention risks which need to be addressed.

6 Risk assessment on hand fed platens

Any safe system of work for operator intervention must be based on a suitable and sufficient risk assessment. Companies should now thoroughly review their risk assessments for their hand fed platens. All aspects of use should be covered, including normal operation, setting, maintenance and trouble-shooting. It is essential that you involve your operators and setters in the process to fully understand how the machines are actually used, rather than how they should be used.

You should pay particular attention to who uses the machine, their skills, knowledge, abilities and any language barriers that may exist. You should consider the following issues when undertaking a review / risk assessment:

Hand Fed Platens (New Machines)

For new machines purchased after May 2005, they should comply with the requirements in the: European Standard EN 1010 - 5 (section 5.5). The standard is not yet available as a British Standard but is in the process of becoming one. The standards cover both the physical (mechanical) standards and the electrical/magnetic/pneumatic control system standards required.

Requirements for Physical (Mechanical) Safeguards (Machines supplied before May 2005)

A summary of the mechanical safeguards required for hand fed platens is covered on page 126 of 'The Printers Guide to Health and Safety 2nd Edition 2002'. This includes;

- A 'U' shaped trip guard which closely surrounds the platen to within 12mm on 3 sides;
- A 'trip bar' or 'pressure sensitive edge' on the front edge of the moving platen;
- Additional side guarding in the form of a 1m wide 'pressure-sensitive mats' extending 250mm beyond the back edge of the fixed platen. Alternatively, 'fixed or interlocked side tables' may be used.

The Guide is a priced publication. ISBN 0-7176-2267-3 available from HSE Books. Website address www.hsebooks.co.uk.

In addition, laser scanning devices are permitted on newer machines in accordance with EN 1010- 5, which gives more comprehensive requirements for machines supplied after May 2005. However, EN 1010-5 has not so far been transposed by BSI, and, if necessary, the manufacturer should be approached for further information.

Note – HSE is currently looking at the standard to see if improvements can be made.

Daily Inspection and Maintenance of Safeguards

It is essential that all the physical (mechanical) safeguards are properly maintained so that they work as intended. HSE published guidance recommends that safeguards on all hand fed platens need to be checked and tested on a daily or a shift basis.

Safe Systems of Work – the Importance of Operator Training and First Line Supervision

Even with all the physical safeguards in place and working correctly, these machines can still pose a significant risk if the operators are not properly trained in a suitable and sufficient safe system(s) of work. The Machinery Supplier's operational manual may provide useful guidance and advice on how the machine should be used and operated safely.

The safe system(s) of work should cover:

- i) Normal operations, and;
- ii) Other operations [For example where an operator/user might need to climb onto the platen (or reach/stretch into the platen), to set up or make adjustments); and
- iii) The possibility of using single stroking, where interventions for adjustment or clearing waste are relatively frequent or the use of dwell is not necessary for the size of the job.

All systems of work are only as good as the operator using them. Therefore, it is vital that there is sufficient close supervision to ensure that operators follow the agreed systems and do not cut corners or take short-cuts.