Fitting and use of restraining systems on lift trucks

HSE Information Sheet MISC241

Introduction

This information sheet has been produced by HSE to give guidance on the legal and technical requirements associated with the design, fitting and use of restraining systems (eg seat restraints, seat belts, etc) and associated attachment points on lift trucks (LTs). It supplements and should be read in conjunction with *Retrofitting of roll-over protective structures, restraining systems and their attachment points to mobile work equipment*[1] which provides technical guidance on the fitting of seat belts.

Who should read this?

This guidance is aimed at:

- users and hirers who intend retrofitting operator and passenger restraining systems (referred to afterwards as 'restraining systems') and/or attachment points to LTs;
- occupiers of premises where LTs are used; and
- operators and employers of people who use LTs.

What does the law require?

The Management of Health and Safety at Work Regulations 1999 require employers and the self-employed to assess risks and take suitable and sufficient measures to address them. Regulation 4 refers to the hierarchy for combating health and safety risks so that the risk of overturning is prevented wherever possible. Regulation 14 requires that employees should use transport equipment in accordance with any training and instructions which have been provided.

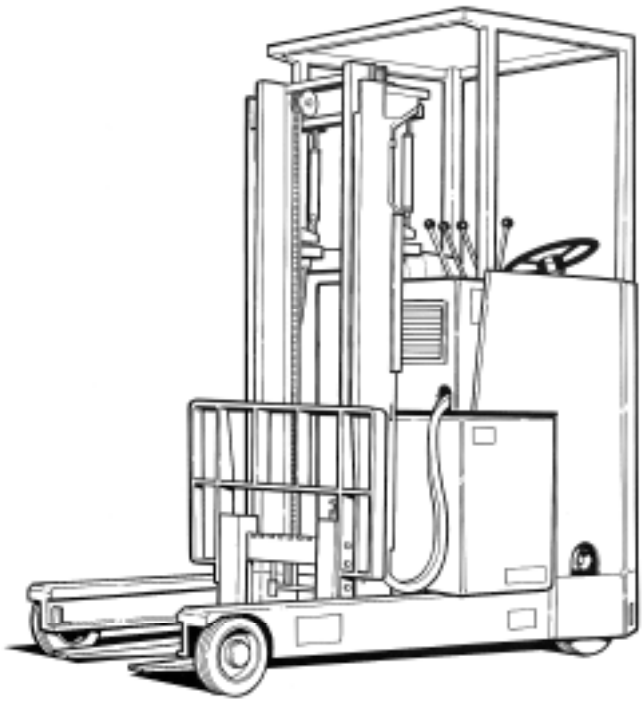
In the Provision and Use of Work Equipment Regulations 1998 (PUWER), regulation 27 requires the provision of restraining systems to prevent crushing of the operator between the truck and the ground where there is a foreseeable risk of overturning. Regulation 4 requires work equipment to be suitable for the purpose for which it is used.

When should operator restraint be fitted?

Operator restraint is required on LTs which are used in situations where there is a risk of injury due to overturning (involving either 90° or 180° roll-over) and where the operator may be trapped between the LT and the ground. It is also required if the LT has a cab and is being used in situations where it can roll over through 180° or more because the operator may be flung around in the overturn.

It is not required if the stability characteristics of the LT are sufficient to prevent overturning, taking into account all the situations in which it is used. Nor is it required on masted trucks which can only roll over through 90° if the operator cannot be trapped between the truck and the ground, eg if the truck has a cab with self-closing and latching doors which have no facilities for retaining them open in use.

LTs with a side-seated operator and cab access from the rear (eg masted reach trucks) or which have a stand-on operator, are not required to have operator restraint. The operator is unlikely to be trapped between the LT and the ground in the event of an overturn.



Masted reach truck

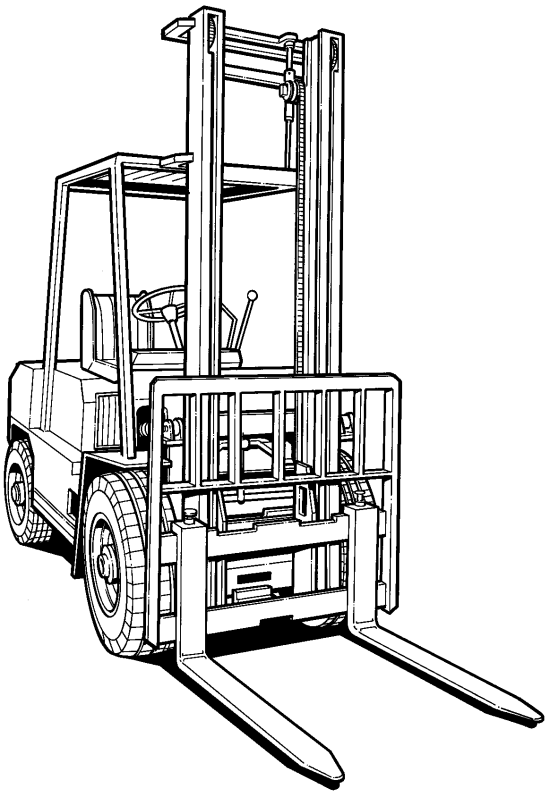
There are unlikely to be significant risks of overturning when trucks are used on level, smooth surfaces and their speed is restricted within safe limits.

What if operator restraint cannot be fitted?

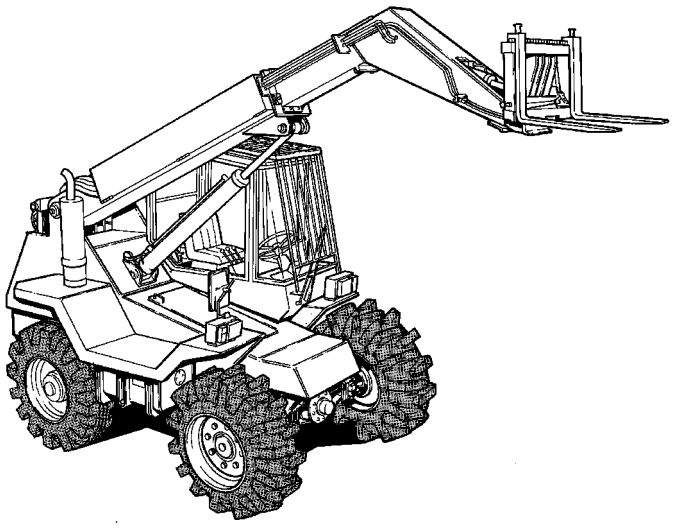
Where the risks are high and operator restraint cannot be fitted you will need to use a different LT, which has a restraining system. Where the risks are less acute and operator restraint can only be fitted with substantial structural modification, eg on some older LTs, you should be able to demonstrate that the risks involved are not sufficiently high to justify the necessary modifications.

Which trucks are most at risk of overturning?

Centre-control, seated, counterbalanced LTs below 10 000 kg capacity are at greater risk of overturning than other types of truck because of the ways and conditions in which they are used. This type of truck includes masted and variable-reach LTs, such as telehandlers. Side-loaders are also at risk of overturning.



Counterbalanced masted truck



Counterbalanced variable-reach truck

Non-rough terrain LTs are intended for use on substantially firm, smooth, level and prepared surfaces. Uneven surfaces or gradients are likely to create a significant risk of overturning with this type of truck.

There is a particular risk of overturning when a rough terrain or non-rough terrain LT can be manoeuvred at speeds close to its maximum speed. Some LTs can be at risk of overturning even when the load is carried in the proper forks-lowered position, eg if the truck is suddenly turned when travelling at speed. These risks are increased if the load is carried in an elevated position or if the LT is unladen.

Even when a rough terrain LT is used, there is a risk of overturning on rough terrain due to, for example, uneven surfaces or gradients or soft ground,

Driving over edges or large objects can also cause a truck to overturn.

When should operator restraint be used?

Operator restraint should be worn at all times when LTs are in motion unless:

- the LT operator needs to dismount repeatedly and frequently (eg to position loads on the forks or check stock levels); and
- the truck is used on a smooth, firm, level surface (eg concrete floor); and
- the truck is unlikely to be operated at speeds or in ways which could cause overturn due to the nature of the operations being carried out and the area in which it is working.

Operator restraint always needs to be fitted and worn in areas where the LT can be turned at speeds approaching maximum speed or on gradients and terrain which can lead to overturning at lower speeds.

Where wearing a restraint is not required **throughout** a premises then measures need to be in place to indicate where LT operators should wear their restraint. Signs may be displayed in the LT or at appropriate access points to the areas where operator restraint should be worn. Also, operators should be instructed and supervised on the wearing of seat restraints.

Preventing overturning accidents

When using LTs it is important to ensure that:

- drivers are adequately trained;
- trucks and the surfaces on which they operate are maintained; and
- trucks are driven at appropriate speeds, taking into account the conditions in which they are operating.

Some risks can be eliminated or minimised by selecting LTs which are appropriate for the surfaces and gradients on which they are to be used.

Speed limits should be set and enforced wherever necessary.

Speed humps to slow down LT movements and other similar devices are not recommended because, even at low speeds, they can increase the risk of trucks overturning.

Technical requirements for operator restraints

European guidance on technical requirements for restraining systems on masted trucks is being prepared. Until this is available the technical requirements for seat belts and their anchorages are covered by ISO 6683:1981.[2] If, however, it is not reasonably practicable to provide anchorages meeting ISO 6683:1981 then ISO 3776:1989[3] gives appropriate guidance.

Inertia seat belts can be used provided they operate effectively in an overturn. Provision of these may help to encourage user acceptance.

Hired equipment

Regulation 27 of PUWER applies immediately to equipment taken into use after 4 December 1998. This includes hired equipment. Additional guidance on the hiring and leasing out of plant is given in *Hiring and leasing out of plant: application of PUWER 98, regulations 26 and 27*.[4]

References

1 *Retro-fitting of roll-over protective structures, restraining systems and their attachment points to mobile work equipment* MISC175 HSE Books 1999 (free)

2 ISO 6683:1981 *Performance requirements for seat belts and seat-belt achorages for earth-moving machines fitted with roll-over protective structures* British Standard equivalent BS 6218:1981

3 ISO 3776:1989 *Anchorages for seat belts in protective cabs and frames on agricultural tractors* British Standard equivalent BS 5453:1992

4 *Hiring and leasing out of plant: application of PUWER 98, regulations 26 and 27* MISC156 HSE Books 1998 (free)

Further information

Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 HSE Books 1998 ISBN 0 7176 1626 6

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance L21 HSE Books 1999 ISBN 0 7176 2488 9

Workplace transport safety HSG136 HSE Books 1995 ISBN 0 7176 0935 9

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This information sheet has been produced by HSE following discussions with the British Industrial Truck Association and the Fork Truck Association.

If you wish to discuss this guidance in more detail, your HSE or local authority health and safety inspector will be able to help.

This leaflet provides information on means to demonstrate compliance with regulation 27 of the Provision and Use of Work Equipment Regulations 1998 and regulations 4 and 14 of the Management of Health and Safety at Work Regulations 1999.

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