Load rating of fork lift trucks

One of the major causes of fork lift truck incidents is the misuse or ignorance of the truck's weight limit and its capacity.

All fork lift trucks are rated to a certain safe lifting capacity and safe lifting height by their manufacturer. However, it's a common misbelief that a fork lift truck can safely raise any load up to the maximum rated lift capacity to the maximum lift height specified by the manufacturer.

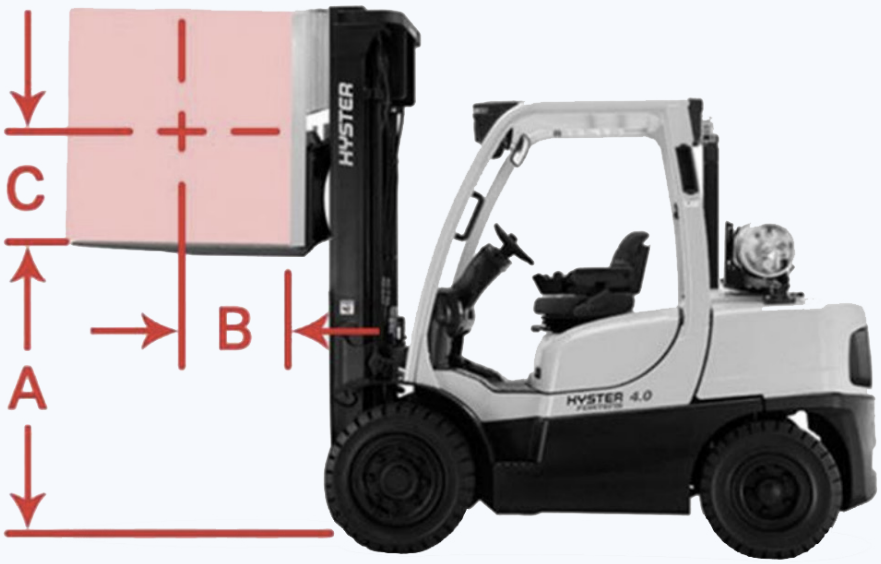
The dimensions of the load, its position on the forks and the loads weight distribution affect the fork lift trucks true maximum capacity. As will side-shift and the fitment of a fork lift attachment.

Understanding load capacity

Load capacity, rated capacity and net capacity all describe the maximum weight a fork lift truck can safely raise at a specified 'load centre'. If the load is not centred, the fork lift truck cannot lift to its maximum stated capacity.

What is a load centre?

When raising a load on the forks, the front of the fork lift truck becomes top heavy, however built-in counterbalance negate this added weight, ensuring the truck stays level and does not tip over. Load centre is the balance point of a load, where it will be evenly balanced whilst sitting on the forks, with one end of the load butting up against the rear of the forks against the carriage.



As indicated above, it is assumed that the centre of gravity in the vertical direction (C) is no greater than the horizontal dimension (B).

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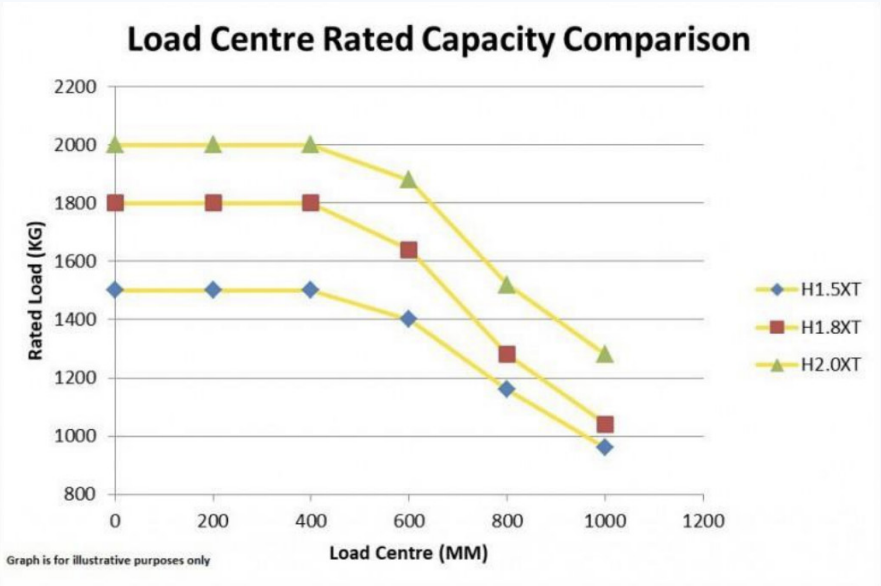
Load rating of fork lift trucks

The above rating plate shows the load centres (Dim. B and C) and the load capacities of the fork lift truck with its mast in the vertical (2,280 kg) and tilted forward (1,550 kg) positions.

The table below illustrates that the greater the load centre, the greater the reduction in the trucks lifting capacity. Three models of fork lift trucks are shown in this example.



It is imperative that all operators know the load centre of the load they want to lift and its effect on the rated capacity of the fork lift truck.

If this is not taken into account, the fork lift truck can tip over with the potential to cause serious injury to operators and damage to product and property..

(Continues on pg 3)

Load rating of fork lift trucks

Fork lift truck attachments and capacity

There is no doubt that fork lift attachments when used correctly and in the relevant circumstances can increase the efficiency of operations. Some loads can be handled more safely and efficiently by using suitable attachments, such as fork extensions, booms, rotating heads etc.

Adding an attachment to a fork lift truck reduces the lifting capacity of the truck, due to the additional weight of the attachment itself and because an attachment typically extends the truck's load centre.

Its always advised to speak with a knowledgeable product expert before adding an attachment to a fork lift truck.

Derating

Fitting an attachment to a fork lift truck will reduce the truck's rated capacity, this is known as derating.

To indicate this reduction in capacity, a new rating plate specifically relating to the attachment and truck in combination, must be secured to the truck before it is used with the attachment.

Where derating is necessary, only a person with appropriate knowledge and experience should carry it out.

Attachment training

It cannot be emphasised strongly enough that the use of attachments need to be included in training, as their use affects such crucial aspects of fork lift operation such as basic handling and stability. Adding an attachment changes how a fork lift truck behaves. Operators who are not trained in the safe use of the appropriate attachment can be exposed to some very real risks.

Regardless of what type of attachment is used, the appropriate level of operator training will be required by law, as defined in **The Provision and Use of Work Equipment Regulations 1998** (PUWER).

Instruction in the use of the most commonly used attachment should be in the three stages of fork lift truck operator training. Before using further attachments, operators will require the appropriate level of conversion training.

Approved code of practice

Meeting the requirements of PUWER would be assisted by adherence to the Health and Safety Executive's (HSE) Approved Code of Practices (ACOP) and guidance L117 Rider-operated Lift Trucks. ACOP L117 gives practical advice to help employers ensure that all operators, even those who use fork lift trucks on an occasional basis, receive adequate training.

Fork lift truck operator training is to be consistent with the standards outlined in ACOP L117.

While ACOP L117 is not law, it has been produced under section 16 of the **Health and Safety at Work etc Act. 1974** (HSW Act) and has special status in law.

(Continues on pg 4)

Load rating of fork lift trucks

Law

Employers have a general duty under **Section 2 of the Health and Safety at Work etc. Act 1974** (HSW Act) to provide information, instruction, training and supervision to ensure the health and safety of their employees.

Under **The Provision and Use of Work Equipment Regulations 1998** (PUWER) employers are required
to 'ensure that all persons who use work equipment have received adequate training for purposes of health and safety. Including training in the methods which may be adopted when using the work equipment, any risks which such use may entail and precautions to be taken'.

Marking lifting equipment with its safe working load

Regulation 23 of PUWER states: 'Every employer shall ensure that work equipment is marked in a clearly visible manner with any markings appropriate for reasons of health and safety.'

Regulation 7 of The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) builds upon the requirements of Regulation 23 of PUWER and states:

Marking of lifting equipment

7. Every employer shall ensure that—

(a) subject to sub-paragraph (b), machinery and accessories for lifting loads are clearly marked to indicate their safe working loads;

(b) where the safe working load of machinery for lifting loads depends on its configuration—

(i) the machinery is clearly marked to indicate its safe working load for each configuration; or

(ii) information which clearly indicates its safe working load for each configuration is kept with the machinery;

(c) accessories for lifting are also marked in such a way that it is possible to identify the characteristics necessary for their safe use;

(d) lifting equipment which is designed for lifting persons is appropriately and clearly marked to this effect; and

(e) lifting equipment which is not designed for lifting persons but which might be so used in error is appropriately and clearly marked to the effect that it is not designed for lifting persons.

UKMHA further guidance

Also see UKMHA Fact Sheets 1, 2, 6, 9, 12 and 23 for further information.

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