

LINIAN CRANE & HOIST COMPANY
Excellence in Lifting & Handling Equipment
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Basic Information about Overhead Cranes

When you need an overhead crane, remember to always tell us as much as you possibly can about your intended use of the crane.

- What is the actual weight of the load you are lifting?
- How often you will be using the crane?
- Describe the load.
- What is the required height of lift?
- What is the required length the crane will travel?
- What is the required width the crane will travel?
- How will the crane be supported, on its own free-standing gantry or from the existing building structure?
- Do you need single or two speeds?
- What controls - pendant or radio remote?
- What will be the power supply?
- What is the general environment?
- Are there any special requirements?

Whatever you want, we will do it.

HELPFUL HINTS

Make of Crane

These days most European cranes are inherently safe and operator friendly. They do not break down unless you abuse them. However, when you buy a crane make sure that it is a well proven make with excellent local spares and service backup as a guarantee may be of little use to you if the spare parts are not readily available.

The Load

The Safe Working Load, or Working Load Limit, is the maximum load which can be safely lifted by the crane. Tell us the actual load you are lifting and do not round it up yourself. Also tell us how often you will lift the load. We will then be able to propose the most appropriate crane type and model to suit your needs.

Hoist Duty

Crane duty ranges from light to very heavy and we are best able to advise on this after carefully considering all the other information you let us have.

Nature of the Load

Tell us as much as possible about the load, its size, shape and what it consists of.

Height of Lift

This is measured from the hoist hook in its lowest position (usually the floor) up to its highest position. If possible, tell us the **exact** height of lift required.

Travel Length x Width

The length that the crane will need to travel, also known as long travel or down-shop, is the length from one end to the other sometimes allowing a couple of metres each end for hook approach.

The width that the crane will need to travel, also known as span or cross-travel, is the width from one side to the other sometimes allowing a couple of metres each side for hook approach.

Headroom

This is the distance between the highest point of the crane structure and the load hook in its highest position. Some cranes are designed to be low/close headroom so that you can maximise the height of lift within the constraints of your building.

Speed of Lift

Some crane applications only need single speed hoisting and travel but two speed (fast and slow) is essential where precise load positioning is required or where the load is such that it is safer to make the initial lift at a slow speed. Some manufacturers now offer variable speed.

Crane Travel Functions

These days most cranes are electrically powered but a cheaper option is to have manual operation. This is not recommended over 1.5 tonnes and the travel trolleys tend to travel in 'jerks' of one or two feet at a time so accurate load positioning is difficult. Electric power travel is best because the hoist travels along the crane effortlessly with the simple push of a button and you can have either single speed or two speed operation to fine control the crane with ease and safety.

Crane Supports

A crane can be supported by its own free-standing gantry or can be supported from an existing building structure, either from roof beams or from building stanchions.

Control

Most cranes are supplied with a low voltage pendant control which is a push button box suspended from the hoist unit on a cable or suspended from a separate cable festoon track so that the operator can stand well away from the load. The pendant can be any length to suit the job. Another option is remote control by either radio or infra-red. Radio control is the more versatile but bear in mind that the operator does not need to be in sight of the crane to operate it so care should be taken to ensure that the handset is only used by responsible people and with great care. Infra-red requires line of sight between the handset and the receiver on the crane and this can be a safety feature but the receivers on the crane must be cleaned regularly otherwise they get dusty and will not function. All controls can be supplied with a key

operated isolator switch for security and safety. We recommend that all remote-control hoists are equipped with a spare plug-in pendant as a backup just in case the remote control fails, sometimes the handsets get lost, damaged or need charging.

Safety Features

Most cranes these days are fitted with overload protection preventing the hoist unit from lifting more than its safe working load. Slipping clutches are sometimes used for this purpose and they also prevent over hoisting and over lowering. Limit switches also prevent over hoisting and over lowering.

Environment

Indoor, warm, and dry or outdoor, cold, and wet?

Is the atmosphere hazardous requiring explosion or fire-resistant measures?

Is there a lot of dust or other contaminants?

Enclosure Protection

Most cranes are protected to IP55 (dust and water resistant) as standard which covers most normal environments, but you may wish to consider additional protection for cranes which are permanently outdoors. An outdoor crane should also be fitted with a hoist weather protection canopy.

Chain Hoists / Wire Rope Hoists

Chain hoists are cheaper and usually preferred up to 5 tonnes, they require less maintenance, tolerate more abuse, chain can last 30 times longer than wire rope, more allowance for side pulling, and they have a true vertical lift. Wire rope hoists tend to be quieter, smoother, have faster lifting speeds and are generally preferred over 5 tonnes especially for long lifting heights and for heavy duty use. There are other pros and cons and we will advise on these according to your specific requirements.

Electric Power Supplies

In the UK it is normal to use 400volt 3 phase 50Hz power supplies, but some hoists are available for use with 110volt or 220volt single phase.

Pneumatic Power Supplies

Most pneumatic cranes operate on an air pressure of approx. 90psi or 6 bar, but it is important to realise that they need a reasonable volume of air supply to operate properly. Typically, pneumatic hoists up to 2 tonnes capacity consume air at approx. 22 litres/second.