

# CRITERIA OF CHOICE AND LIMITS OF USE OF THE JIB CRANES

To obtain the complete responsiveness of the jib cranes, for the service they are intended for, it is necessary to check the parameters which characterise the limits of use and, thus, the right choice.

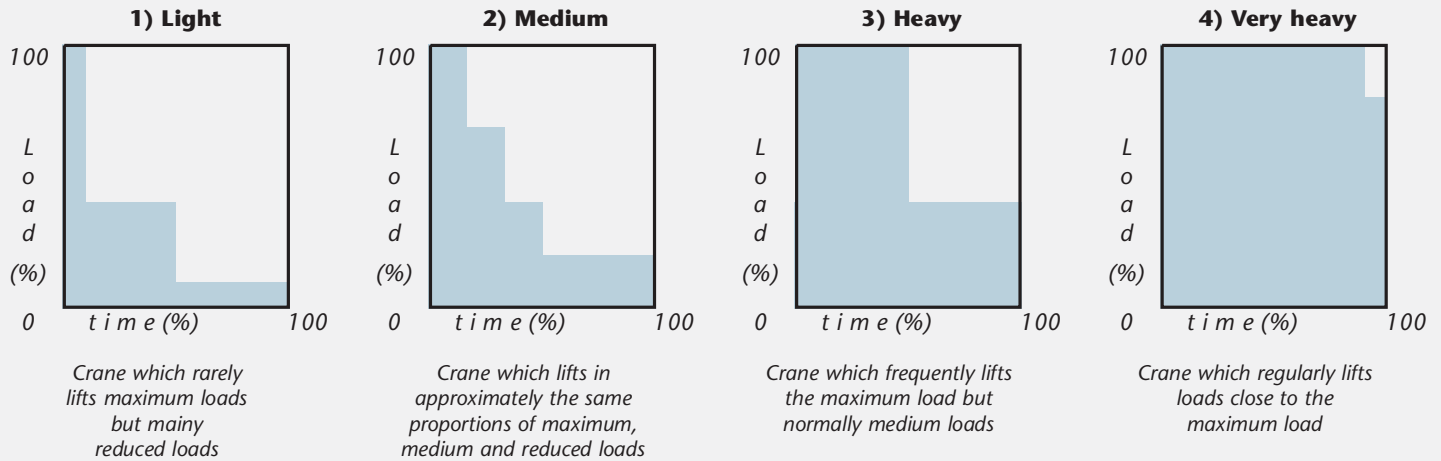
These are essentially the **effective carrying capacity**, the **state of stress** and the **functional parameters**

## 1) Actual lifting capacity

This is determined by the heaviest load to be lifted

## 2) Stress level

The stress level is determined considering the actual entity of the loads to be lifted and it is ascribable to one of the four load regimes shown below.



Check, on the basis of the state of stress intended for the crane, that the limits of use, type of service and n° of cycles intended in 10 years of work is not in contrast with the following table.

Limits of use of the jib cranes of the service class ISO A5 (according to ISO 4301/88)				
State of stress	1) Light	2) Medium	3) Heavy	4) Very heavy
Type of service	intense irregular use	intermittent regular use	regular light use	irregular use
Conditions of use	U 6	U 5	U 4	U 3
N° of operative cycles in 10 years	1.000.000	500.000	250.000	125.000

## 3) Functional parameters

The functional parameters which must be carefully considered in the choice of jib cranes are:

- **Functional dimensions:** height of the arm, which determines the hook run of the hoist, and its jump (jib) must be selected so as to guarantee the functional coverage of the area to be served in consideration of the surrounding encumbrances.
- **Type of movement** (where necessary): manual or electric in relation to the characteristics of the mass to handle and the type of arm already selected.
- **Nature of the load:** delicate or not determines by its positioning the choice of the most suitable speeds of handling (lifting and moving). In some cases it is indispensable to use hoists with two speeds with a slow speed of positioning.
- **Area of use:** the jib crane is characterised, by its conception, by intrinsic high elasticity which becomes even more evident when it is used for handling with loads close to the maximum lifting capacity and/or with prevalent localisation at the ends of the arm.
- **Area of use:** the jib cranes are intended to be used inside and/or in a covered area, sheltered from bad weather and wind. In the case of use outside measures must be taken in relation to the surface treatment (sandblasting - painting) as well as:
  - in the case of manually rotated cranes: a system of stopping brake and an adequate protection cover for the hoist-trolley.
  - in the case of electrically rotated cranes: adequate protection covers for the hoist-trolley, for the motoreducer and for the electrical panel.
- **Frequency of use:** if use is very high (frequent and/or repeated manoeuvres) with loads close to the maximum load the consequent fatigue of the operator due to the manual handling must be taken into consideration.