

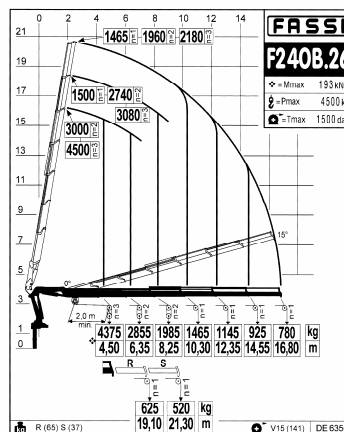
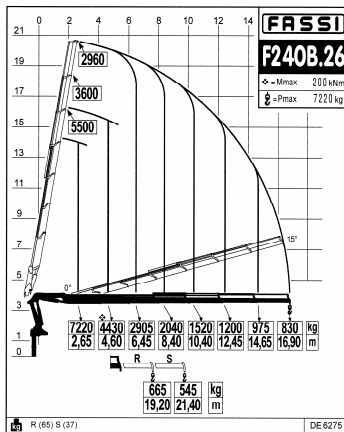
# “LIFTING CAPACITY CHARTS”

Crane lifting capacity charts may seem a somewhat commonplace subject to discuss, but some charts are better than others.....

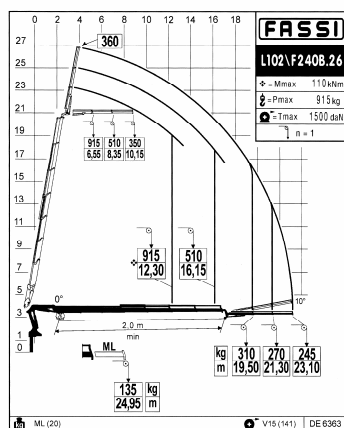
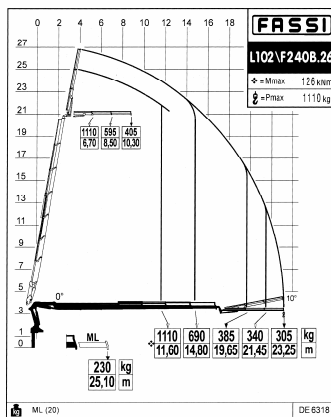
The basic purpose of these charts, whether they are provided on advertising material or in the official documents supplied with the crane, is to highlight the lifting capacity of the crane at the greatest extension, and to provide the relevant load curves for these lifting capacities.

**Fassi's philosophy when preparing the figures provided in lifting capacity charts can be summarised as follows:**

- **Maximum reliability:** the indications provided must be repeatable in practice, guaranteeing maximum working safety for the crane.
- **Dynamic type capacity charts:** at the declared reach it must be possible to lift the relative load and follow the load curve indicated.
- **Capacity charts that take into account deformation** of the extension ram rods and extension booms in the vertical lifting configuration.
- **Extremely precise, detailed capacity charts**, with the reach, the loads and the lifting curves clearly highlighted.
- **Capacity charts for all accessory applications** (hydraulic jibs, winches, manual extensions).



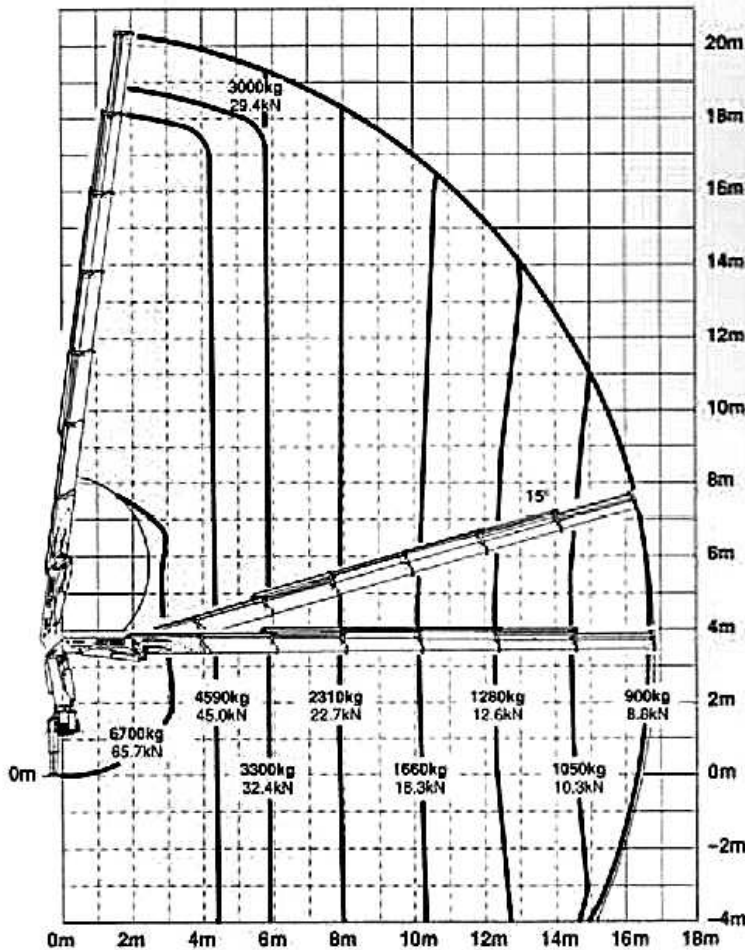
Example of lifting capacity chart for standard crane and the same chart for a crane fitted with winch



Example of lifting capacity chart for a hydraulic jib combined with the crane described above and the same when fitted with a winch

**Other competitors, on the contrary, use different philosophies:**

- **Static lifting capacity charts.** These charts relate to the positions at which the lifting moment limiting device is triggered, so that the load stated at the relevant extension cannot be lifted, but can only be reached by extending the booms. To lift the load declared for the relevant extension the distance between the centre of the column and the load must be decreased by approximately 10% or the load itself must be decreased by the same percentage. Obviously these charts show loads that are approximately 10% higher than those shown in a dynamic load chart.
- **No specific indications of the reach are given** for the load, as these are drawn in graphic form using interpolation grids.
- **Purely theoretical vertical lifting capacities**, that do not take into account deformation of the extension booms and extension ram rods.
- **Absence** of indications for the **loading curve** in the presence of a **hydraulic jib**.
- **Absence** of capacity **charts** for applications with a **winch**.



When looking at the lifting capacity chart on the side, for a crane manufactured by the competition with a lifting capacity equivalent to that of the F240B.26, the following gaps can be highlighted, when compared with Fassi lifting capacity charts:

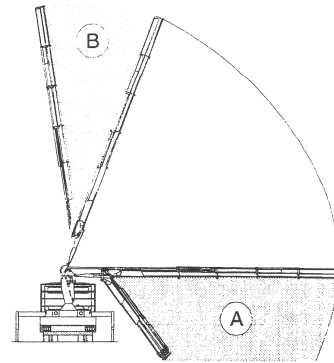
- There is no indication of the real reach of the crane, as this is left to the interpretation of the person reading the grid.
  - There is no indication of the angle of the main boom to guarantee the rated performance; this means that the extensions are geometric rather than real.
  - There is no indication of the reduction in crane performance when working with the outer boom above the horizontal (as the main boom does not have a 0° rated configuration, this reduction is certainly required).
- There is no indication of whether the chart represents static or dynamic lifting capacities.
  - You are left to guess whether or not a fixed hook is necessary to lift the maximum loads when at the shortest reach.
  - The loading curves are shown in negative (below the rated configuration) and then in the user and maintenance manual (see below - case A) the problems that arise when actually carrying out these loading curves are stated (essentially speaking they cannot be used).

**During crane operation**

**4.1-3**

When the main boom is below the horizontal line (area A) the maximum lifting power is not reached. Therefore this arm position should be avoided. If you anyway work in this position, please note that the maximum lifting power of the crane cannot be applied.

In some cranes the hinged arm can be extended over the main boom angle. In the upper movement range (area B about 60°) it is not allowed to use this hinged arm position as working position.



**When working with loads the boom must not be moved to the end stop as in this position the overload safety device is not operational.**

If the loading activity is interrupted the load arm is to be retracted, the hydraulic pump switched off and the crane secured against unauthorised operation.

In order to continue working safely after an interruption of loading activity, check whether the crane has been tampered with before resuming operation.

In view of what we have noted regarding the different methods used by the various manufacturers to represent crane lifting capacities, we would like to stress how important it is to analyse and go through any charts supplied by the competition with the customer, and to give the customer a checklist of the essential things he should do in case of any doubt:

1. Always ask the dealer expressly whether the lifting capacity charts are static or dynamic. If in any doubt, ask for a practical load lifting test, to make sure that the crane is actually capable of achieving the lifting capacities indicated on the lifting capacity charts.
2. During any tests, make sure that the crane is set up for normal working conditions (pressures and oil flow correspond to those indicated in the technical documents supplied with the product) and that all the necessary safety devices (lifting moment limiting devices or other devices) are enabled and working properly.

**Advantages for the user:**

- **When illustrating Fassi crane lifting capacity data, nothing is left to chance or to the interpretation and imagination of the user.**
- **All characteristics are meticulously checked before being made official, by means of specific tests and controls carried out by a dedicated department, to guarantee that the stated performance levels are “effective” and can be achieved in a state of maximum operator safety.**