

**Force Analysis of an Eccentric Mechanical Press**

(Author: Eng. Natal Pasqualetti Neto)

Due to the principle of work of the eccentric mechanism of a mechanical press, the Nominal Force can be used only near the "BDC - Bottom Dead Center" position. If something does not permit that the slide reaches the "BDC - Bottom Dead Center", the force goes to infinite and that situation requires an overload protection system.

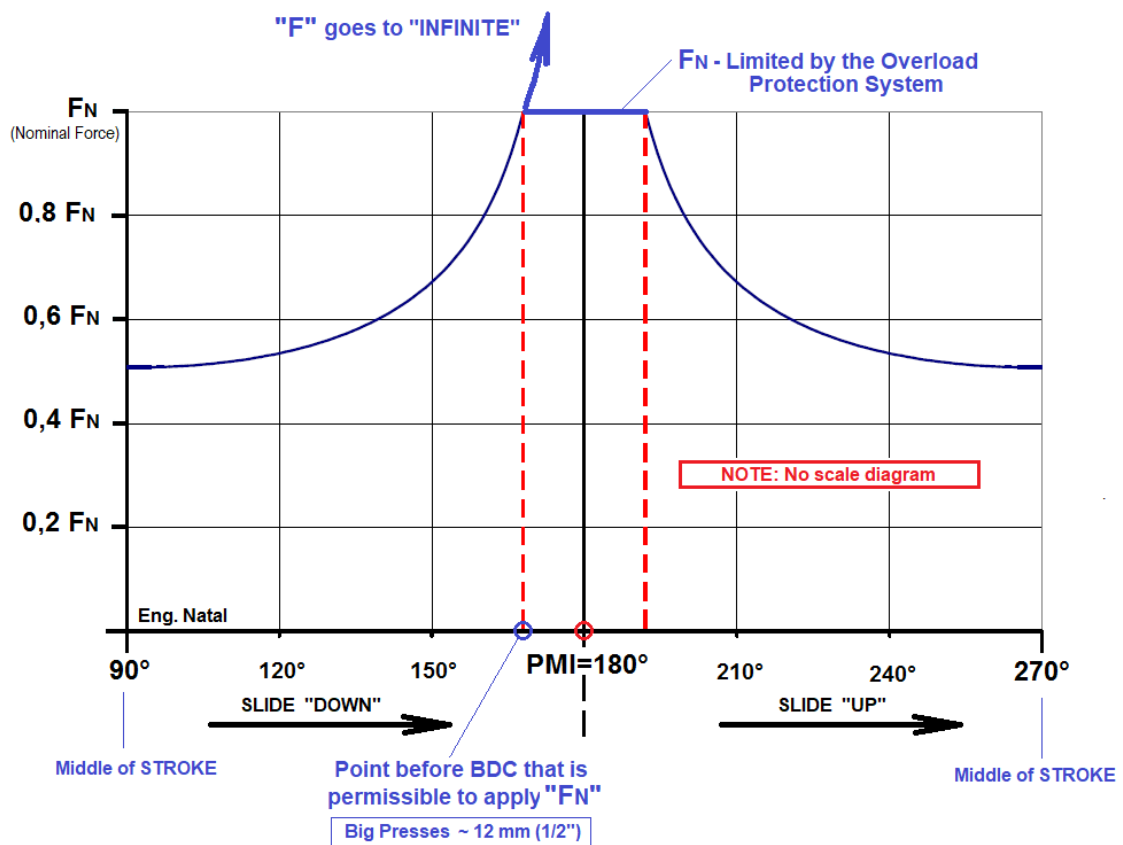
Basically, there are 2 critical points:

1. By using the force out of the range, far from BDC. On that situation the press can break and the people does not understand the cause, because the force was less than nominal tonnage.
2. The force goes to infinite, for example due to a wrong slide adjustment or double blank. For that reason there is the overload protection system.

The diagram bellow shows the limits. The permissible condition of work is under the blue line.

**Eccentric Mechanical Press**

**FORCE Analysis during the "DOWN" and "UP" movement of the Slide**



**Natal Pasqualetti Neto**  
Mechanical Engineer  
Pos-graduated on  
Industrial Automation

Date: April, 2020