

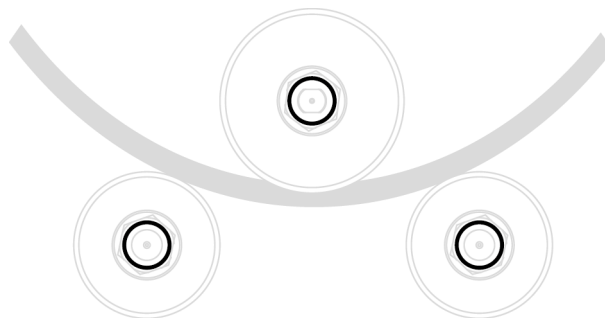
## Buying a bending machine

We propose some points which should be considered before deciding which bending machine is best suited to your needs.

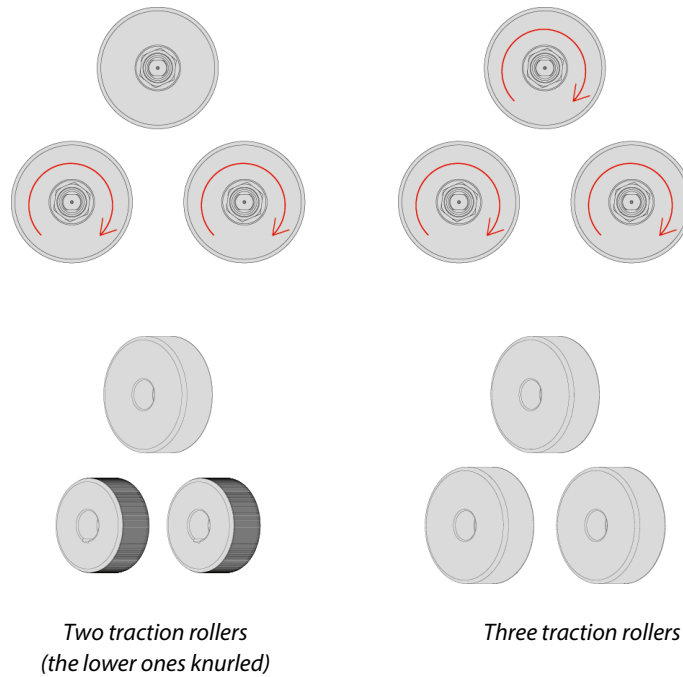


### What should be taken into account before buying a bending machine.

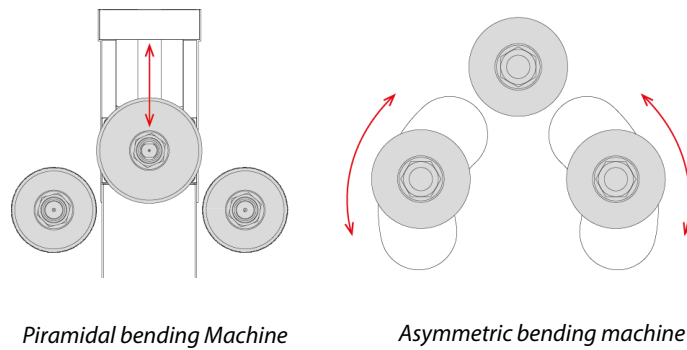
**1. The first and most important is to know the type of work to be carried out**, as well as the type of profiles and sections which are to be bent. This means the maximum diameter of the round pipe, profile or shape must be considered. This will determine the bending power of the machine required. The capacity of the machine is often regulated by the dimension of the axis. That is to say a bending machine which has an axis of 80mm can bend a pipe with a diameter of 80mm maximum, under normal conditions, with the exception of the smaller machines with an axis of 40mm which can bend pipes up to two and a half inches (63.5mm). Some manufacturers use different diameters in the upper and lower axes. It is important to know the diameter of all axes not only the upper one. The price of a machine bending pipes of one, two and two and a half inches is similar, however, if the sections to be bent are over two inches then the cost of the machine is considerably more. Once the dimension of the axes have been calculated we can go on to the next point.



**2. A 2 traction roller machine or a 3 traction roller machine.** If the work to be carried out is sporadic and the finish is not significant, it is possible to use a machine where only two of the axes are motorized. The bending machine which has two motorized axes must have knurled rollers, these being with ridges to help drag the material. In this case only the two lower axes are motorized whereas the upper one is not. When bending profiles and square pipes with this type of machine the part of the material in contact with the two inferior ribbed rollers will leave a mark made by these rollers. When bending a round pipe, some motricity problems may arise and the round pipes may slip on the roller preventing the work to continue at a normal speed as it would do with bending machines of 3 traction rollers.



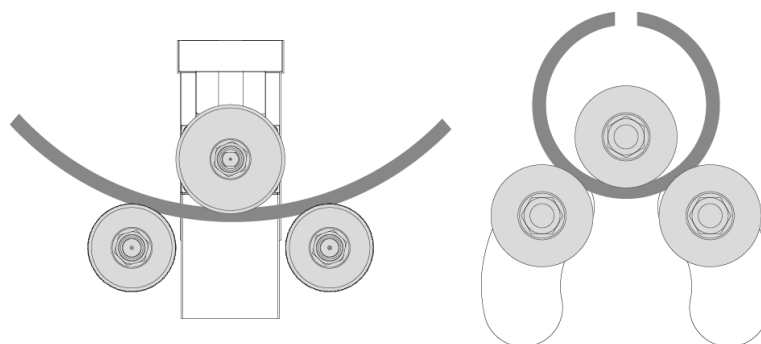
**3. Piramidal bending machine or Asymmetric bending machine.** The Piramidal bending machine is easy to recognise, only the upper and central roller moves up and down, functioning manually with a spindle or with a hydraulic piston. The asymmetric bending machine however, allows the lateral rollers to move up and down to determine the diameter of the curve.



*Piramidal bending Machine*

*Asymmetric bending machine*

**4. Which is the better bending machine.** The piramidal bending machine can be of 2 lower traction rollers or 3 traction rollers. With this type of machine it is easier to bend pipes of a greater diameter as the distance between the centres of the lower axes is superior and always equal. Therefore, if you are bending profiles of greater dimensions with large curves, this machine is a good option. However, if the work to be carried out is varied and on occasion the need is for small curves to be made then the asymmetric bending machine is the better choice. The distance between the centres of the lower axes can vary until the lower rollers touch the upper rollers reducing the diameter of the curve to the minimum. This system of bending allows for much more usage of the material when having the axes closer. In our opinion the asymmetric bending machine is more versatile, efficient and faster than the piramidal bending machine.

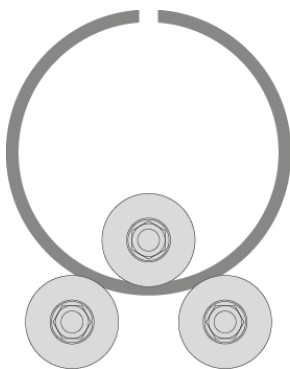


*Piramidal Bending Machine*

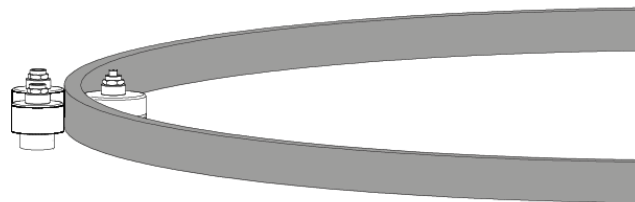
*Asymmetric Bending machine*

**5. Advice when purchasing a bending machine from a mechanical point of view.** Being familiar with the material from which the axes are manufactured helps us to judge their elasticity. A bending machine should never be purchased where the axes are not tempered and rectified and if possible made of D2 steel or its equivalent. This will allow for the overworking of the machine without the possibility of breaking the axes. The motorization of the bending machine is very important. There are several different traction systems: By means of pinions and chain, with time the chain can slacken and in many cases is not sufficiently productive. By means of tempered gears by induction, and in our opinion the best choice, as there is no loss of productivity during the longevity of the machine. Other bending machines use a cardan system, fitted with a plastic security device for the for the overworking of the machine. This device breaks when the machine is used to curve over its possibilities or speed. Another system, in machines of a superior bending capacity, is by means of a hydraulic motor and tempered gears by induction, a system very similar to the gearmotor, with tempered gears, and which is equally productive. Taking these mechanical aspects into account is very important, because although there are machines which are initially more economic, in the long run they end up being more expensive and unsustainable.

**6. Choosing a vertical or horizontal bending machine.** This choice is very simple. The height of the workshop will determine this. When bending curves with a diameter of 4 metres and the workshop does not allow for this height then a horizontal bending machine must be the obvious choice. The machines bending two and a half inches, or axes of 40mm are usually vertical bending machines. This is a more comfortable method of bending all shapes. Machines of 60mm axes or over are normally set up to be used in both positions, always depending on the piece to be bent. That is, when curving superior dimensions the horizontal position is preferable adding conveyor belts to both ends to facilitate the work.



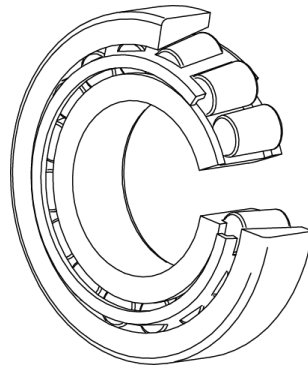
*Vertical bending Machine*



*Horizontal Bending Machine*

**7. The chassis of the bending machine.** Today there are practically no manufacturers who use cast iron chassis. Under no concept, and above all if a professional job is to be obtained and guaranteed, a bending machine of cast iron should never be purchased. If overworked this type of machine could crack without detection or warning. The chassis of the machine should always be made of welded iron, and after its stabilisation, duly mechanised.

**8. Which bearings should a bending machine use to make it more resistant.** Avoid bending machines with conventional ball bearings. The modern bending machines use tapered roller bearings which are more resistant and reliable.



*Tapered roller bearing*

**9. What guarantee should a bending machine have.** The manufacturer's guarantee is another factor to take into account when choosing a brand. By law, and depending on the country of purchase, it is usually one year. Prada Nargesa gives a 3 year guarantee on all our models. [The MC150B bending machine, the MC200 bending machine, the MC200H hydraulic bending machine, the MC400 bending machine and the MC650 bending machine.](#)

**10. Can an iron bending machine be used with aluminium?** In most cases the iron bending machines are used to bend iron and there are specific aluminium machines to bend aluminium. To obtain a perfect curve on an iron profile it is important that the distance between the centres of the axes is minimum, whereas the aluminium bending Machine has its axes further apart and the distance between them is easily adjustable. If the aluminium profile is small or simple, the manufacturer will be able to advise you on its curved viability, always indicating the minimum diameter required. In most cases the aluminium profiles are filled with fine sand or marble dust, it is then vibrated and finally the profile is ready to be bent. Only in this way can the aluminium profiles be bent.

We hope that our observations have helped you better know the world of the bending machine and the most important aspects to take into account. Furthermore we hope that you will find them usefull when decidint to purchase your machine.