

# CNC FLUTING MACHINES

By Mr Ömer Yeğin, Yenar, Turkey

**Y**enar is a company with 25 years' experience, but a vision that extends into the next 100 years. When we set out on this path, some of our prestigious competitors were half a century old and some were a hundred years old. But we have closed this gap with our strong, dynamic and competent efforts, and with the right strategies we have consolidated our position in the sector in a short period of time.

As Yenar, we have been maintaining our business of more than 20 years in the sector, in our modern production plant established on a 40,000 m<sup>2</sup> area, of which 23,000 m<sup>2</sup> is covered in manufacturing facilities. Since 1995, our equipment range of manufacturing rolls have continued to serve the food and

feed industries. As of 2014, Yenar factories have increased their capacity to build rolls with a maximum diameter of 820 mm and a length of 2,200 mm in length.

Producing 22,000 rolls per year in various sizes soon led to Yenar becoming one of the world's largest roller mill manufacturers today. Yenar exports its products to more than 75 countries worldwide, just in 2018 alone. Yenar has combined its experiences and power in roll manufacturing to produce three different sizes of fully-automatic CNC roll fluting and grinding machines and a sand blasting machine for smooth rolls for the food sector.

The milling process is defined as the separation of the husk parts of the grain from the endosperm by passing through different stages. The most important element in this stage is the roller mill rolls. Each parameter of the roll affects the efficiency, tonnage, quality and energy consumption. Therefore, it is very important to choose the right brand and to adjust the rolls perfectly.

Yenar is a world-class manufacturer of roller mill rolls and has two types on offer; cracking rolls and smooth rolls. Cracking rolls are harder than smooth rolls, whereas the rolls used to convert the intermediate products into flour are called smooth rolls.

Yenar uses high-alloyed elements, that have received full marks from our quality control laboratories, in order to produce the highest quality and performance rolls.

At Yenar, we do not leave our business to chance, maximum reliability and quality are indispensable in every product.





Therefore, all production processes are kept under control. In our advanced laboratory, our production process is always supported by surface roughness, groove's angle profile measurements, microstructure analysis, hardness and various other quality control tests.

Yenar are utilising “CNC and ROBOTS” technology at every stage of the production process for high-quality and trouble-free production. Equipped with the latest technology, our rolls are produced mechanically, according to technical drawings, with minimal need for human interference and error.

It is very essential that the fluting process is done correctly, according to the diagram engraved on the roll. Incorrect fluting operations may result in loss of efficiency.

There are two types of combined fluting and grinding machines offered by Yenar, which are available in three sizes; 350x1500 mm, 450x2100 mm and 600x2100 mm for flour milling rolls, feed milling and oil milling rolls. The machines are designed to work efficiently and are designed completely different from the existing machines on the market, with an emphasis on innovation.

Yenar always works with the principle of “perfect machines mean perfect rolls” and performing fluting operations with our own 13 CNC fluting machines, we can produce up to 50 rollers a day, all top quality and highly refined.

The cutting depth of the flute is calculated automatically, according to the miller's diagram engraved onto the roller. You simply input the number of total flutes on the circumference of





the roll, or flutes per cm, alongside the angles, land, roll diameter and spiral on the touch screen. This ensures that the fluting cycle is very simple and can be used by any operator.

If the roll has worn grooves on its surface, your capacity will be decreasing, because the roll cannot break the wheat. This will result in high ash flour and energy consumption. Re-fluting the roll is vital to rectify this issue.

With these machines, provided by Yenar, one can perform the cylindrical grinding process then fluting cycle seamlessly. If the spiral on the diagram will not change, or the existing grooves must not be removed, then the roll can be given a light grind on its surface to delete the flutes slightly, then simply re-flute the existing grooves. If this is not done, then the grooves must be removed.

Yenar's combined fluting and grinding machine presents three options for grinding roll types, which are cylindrical, camber and chamfer. The fluted rolls must grind in a cylindrical profile as aforementioned.

Another matter is that, after a while, the surface of the smooth roll may become shiny. In such circumstances, the rolls are grinded, as a chamfer or camber, by choosing one of the selected on-screen profiles on the machine. Following this, the roller is then sand blasted with aluminum oxide into a properly grinded profile roll, to reach the requested surface roughness for sand blasting machines.

Yenar have always been a customer-oriented company, and we ensure our customers receive only the best. Often when Yenar visit flour mills, if we notice said business does not have access to a Crane, we supply them one, ensuring they get the most out of their equipment and processes.

As Yenar, we allocate five percent of turnover to R&D activities. The investments we have made in last five years have helped us to gain a stronger position in the sector. At the beginning of 2018 our company built an additional 6,000 m<sup>2</sup> closed area to produce 40 machines per year, which will be ready at the beginning of 2019. As Yenar, we will be proud to bring yet more new machinery to the agriculture sector very soon.