

**YILSA®**

YILDIZ ENDÜSTRİYEL ARAŞTIRMA MERKEZİ

MACHINE CATALOGUE

CODE: TE

Wire Rod Flattening

Multi-Purpose Flat Wire Flattening and Profiling Unit



Turns wire rod of different diameters into flat profiles to customer requirements. Flexible production with a roll mechanism set by central clamping.

Up to Ø10.0 mm

WIRE DIAMETER RANGE

0 – 50 m/min

OPERATING SPEED

Up to 40%

COST SAVINGS

**1.2379 (D2) /
1.3343 (HS6-5-
2C)**

ROLL MATERIAL



01 Overview

The wire rod flattening unit is a flexible manufacturing machine that flattens steel wire rod up to Ø10.0 mm, fed from coils, between a pair of rolls into flat strip and strip profiles of custom widths and thicknesses.

- ✓ A wide wire diameter range suits many industrial sectors
- ✓ Rolls can be used for a long time without regrinding, thanks to circulating cooling with 5% boron oil
- ✓ Balanced wire feeding with a horizontal passive uncoiler built into the machine
- ✓ Precise setting of the roll gap with the central clamping system
- ✓ Much longer tool life by shifting the roll horizontally to change the flattening point

02 Technical Overview

Wire Rod Cold Rolling & Custom Flat Strip Profiling Engineering

Flattening Wire Rod up to Ø10.0 mm & Profile Variety

The machine can process steel wire rod **up to Ø10.0 mm**, as widely used in industry. The wire is fed in a controlled way via the **horizontal passive uncoiler** built into the machine.

The roll system is designed to the size the customer needs; the wire is turned in a single step into a flat profile **up to 20.0 mm wide** and **up to 5.0 mm thick**.

Input Diameter: up to Ø10.0 mm | Output Width: up to 20.0 mm (Thickness: up to 5.0 mm)

Tool-Steel Rolls & Circulating Boron Oil Cooling

The flattening rolls are made of **1.2379 (D2) cold-work tool steel** or **1.3343 (HS6-5-2C) high-speed steel**. The roll gap is set precisely with the **central clamping system** to achieve the required flattening height.

The roll can also **be shifted horizontally**, so the point where the wire is flattened moves along the roll surface, wear is not concentrated in one area and **tool life is greatly extended**. The machine's **circulating cooling system with 5% boron oil** also lets the rolls be used for a long time without regrinding.

Rolls: 1.2379 (D2) / 1.3343 (HS6-5-2C) | Flattening Point: Adjustable by Horizontal Shifting

Independence from Drawn Flat Strip Suppliers & Industrial Cost Advantage

Running at adjustable speeds of **0 – 50 m/min** via the **speed control unit**, the unit lets you use wire rod directly, giving **raw material savings of up to 40%** compared with ready-made drawn strip.

It offers low-cost, flexible custom sizing for the automotive, white goods, building components, fencing and spring industries.

Operating Speed: 0 – 50 m/min | Cost Savings: Raw Material Advantage of up to 40%



03 Technical Specifications

Input & Output Specifications

Input Wire Diameter	Up to Ø10.0 mm
Output Profile Width	Up to 20.0 mm
Output Profile Thickness	Up to 5.0 mm
Raw Material	Steel wire rod

Drive & Control

Speed Control	Speed Control Unit
Operating Speed	0 – 50 m/min

Rolls & Cooling

Roll Material	1.2379 (D2) or 1.3343 (HS6-5-2C) High-Speed Steel
Flattening Height Adjustment	Central clamping system
Flattening Point Adjustment	Shifting the roll horizontally
Cooling	Circulating system with 5% boron oil
Uncoiler	Horizontal passive system

04 Sample Flattening Sizes

Examples from quoted applications

Input wire	Output size (width × thickness)	Use
Ø8 mm wire rod	11.5 × 3 mm	Wheel weight strip
Ø7 mm wire	10 × 4 mm	Flat wire / strip
Ø6 mm wire	8 × 3.5 mm	Flat wire / strip
Ø5.7 mm wire	8 × 3 mm or 7 × 3.8 mm	Flat wire / strip

The drums are designed for the cross-section the customer needs; several sizes can be produced on the same machine.

05 System Components and Options

- ✓ Horizontal passive uncoiler (integrated)
- ✓ Coiling system: winds the flattened strip neatly into portable coils
- ✓ 11 kW AC motor, Delta VFD speed control (standard model)
- ✓ Wire flattening unit — central clamping, circulating coolant with 5% boron oil
- ✓ Cut-to-length unit: feeder + pneumatic guillotine + drop table
- ✓ Drum material: 1.2379 tool steel or 1.3343 high-speed steel



Wire flattening machine with coiling system (illustrative design)

06 Images



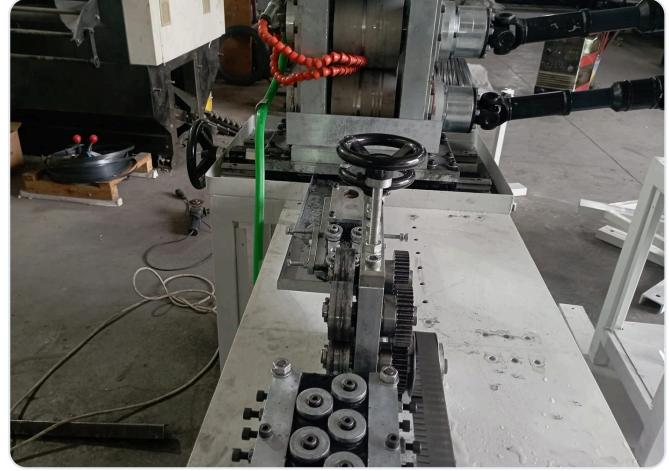
Wire rod flattening machine in the workshop — wire straightening inlet, flattening rolls and drive motor, real photo



Wire rod flattening machine — flattening unit, geared drive and wire guide stands



Close-up of the wire flattening rolls, central clamping handwheels and coolant hose



Close-up of the straightening rollers and the cardan shaft roll drive of the wire flattening machine

07 In the Production Line

Wire Flattening Line

www.yilsa.com.tr/en/wire-flattening-line



01

Wire Rod Flattening



02

Cut-to-Length Unit

The Wire Flattening Line is a compact, highly efficient system that flattens wire rod to the required section and thickness and cuts it to the required lengths. Because it uses wire rod instead of ready-made flat strip, it saves up to 40% on raw material costs.



08 Service and Support

Acceptance test

Before delivery, the machine is tested at the YILSA plant under the buyer's supervision with test material supplied by the buyer; it is delivered once it produces the specified product.

Installation and training

Training takes 1 day at our plant in Denizli, with hands-on installation, operation and maintenance. Thanks to its compact, single-body (monolithic) design, the machine is easily installed and commissioned at the buyer's own plant.

Warranty

Mechanical parts carry a 1-year warranty, excluding misuse. Dies and blades are wear parts and are not covered by the warranty.

Spare dies and drawings

Heat-treatment and material certificates are supplied for the dies. Spare dies are made for a fee; die drawings are shared on request.

Technical support

Technical support is provided, with on-site service when needed. Travel and accommodation costs for on-site service are paid by the buyer.

Compliance and delivery

CE marked; designed in line with Machinery Directive 2006/42/EC, EN ISO 12100:2010 and EN 60204-1:2018; 100% made in Türkiye. Delivery time is stated in the quotation, depending on the configuration.

Raw material must meet the specifications given by YILSA. The values in this catalogue are for standard configurations; machines can be adapted to your product drawing and raw material.



Machine and line solutions built for your production

Since 1992 in Denizli, Türkiye, we have been designing and building Rotary Punch technology, cable tray systems, wheel weight lines and wire processing machines. Share your product drawing and raw material, and we will prepare a configuration and quotation for you.

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PLC/HMI CONTROL

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