

**YILSA®**

YILDIZ ENDÜSTRİYEL ARAŞTIRMA MERKEZİ

MACHINE CATALOGUE

CODE: LBA-TE

Wire Rod Flattening

High-Precision Flat Strip Forming Unit



Turns Ø8 mm wire rod from coils into 11.5x3 mm flat strip by passing it through flattening dies. No need to buy ready-made strip, with raw material savings of up to 40%.

Ø8 mm Wire Rod

INPUT MATERIAL

11 kW AC

MOTOR POWER

**40% Raw
Material**

SAVINGS

16 m/min

LINE SPEED



01 Overview

The Wire Rod Flattening Machine, the first unit of the YILSA wheel weight line, is a cold forming system that processes steel wire directly from the coil and turns it into flat strip suitable for wheel weight production.

- ✓ Produces 11.5 x 3 mm flat strip from standard Ø8 mm wire rod
- ✓ Flattening dies made of 1.2379 (D2) cold-work tool steel
- ✓ Much longer tool life by shifting the roll horizontally to change the flattening point
- ✓ Raw material savings of up to 40% compared with buying ready-made strip
- ✓ Circulating cooling system with 5% boron oil
- ✓ Easy operation with a Delta speed control drive, PLC and touch HMI

02 Technical Overview

Wire Rod Flattening Unit: Engineering and Cold Forming Analysis

From Low-Carbon Wire Rod to Flat Strip

The system cold-forms readily available **Ø8 mm** low-carbon steel wire rod (SAE 1006 / SAE 1008) to a final section of **11.5 x 3.0 mm**.

Removing the need to buy ready-made flat strip gives **savings of up to 40%** in raw material costs.

Input: Ø8 mm wire rod | Output: 11.5 x 3.0 mm | Material: SAE 1006 / 1008

Flattening Dies & Cooling System

The flattening dies are made of highly wear-resistant **1.2379 (D2) cold-work tool steel**.

Heat generated during forming is removed by the **circulating cooling system with 5% boron oil**. Because the roll can also **be shifted horizontally**, the flattening point can be changed so that wear is not concentrated in one area, and **tool life is greatly extended**.

Die Material: 1.2379 (D2) | Cooling: Circulating 5% Boron Oil

Speed Control & Line Synchronisation

The **11 kW AC motor** runs under speed control via a Delta AC drive (VFD); the machine is operated from a Delta PLC and touch HMI screen.

The flattened strip is fed directly into the Rotary Punch cutting machine at **16 m/min**.

Motor Power: 11 kW AC | Line Speed: 16 m/min



03 Technical Specifications

Processing Capacity

Input Wire Diameter	Ø8 mm
Output Profile Size	11.5 x 3.0 mm
Raw Material Type	Low-Carbon Wire Rod (SAE 1006 / 1008)

Drive and Power

Main Motor Power	11 kW AC Motor
Operating Voltage	380 V / 50 Hz / 3 Phase
Line Operating Speed	16 m/min

Dimensions and Weight

Machine Dimensions (W x L x H)	800 x 1200 x 1800 mm
Total Weight	1,000 kg

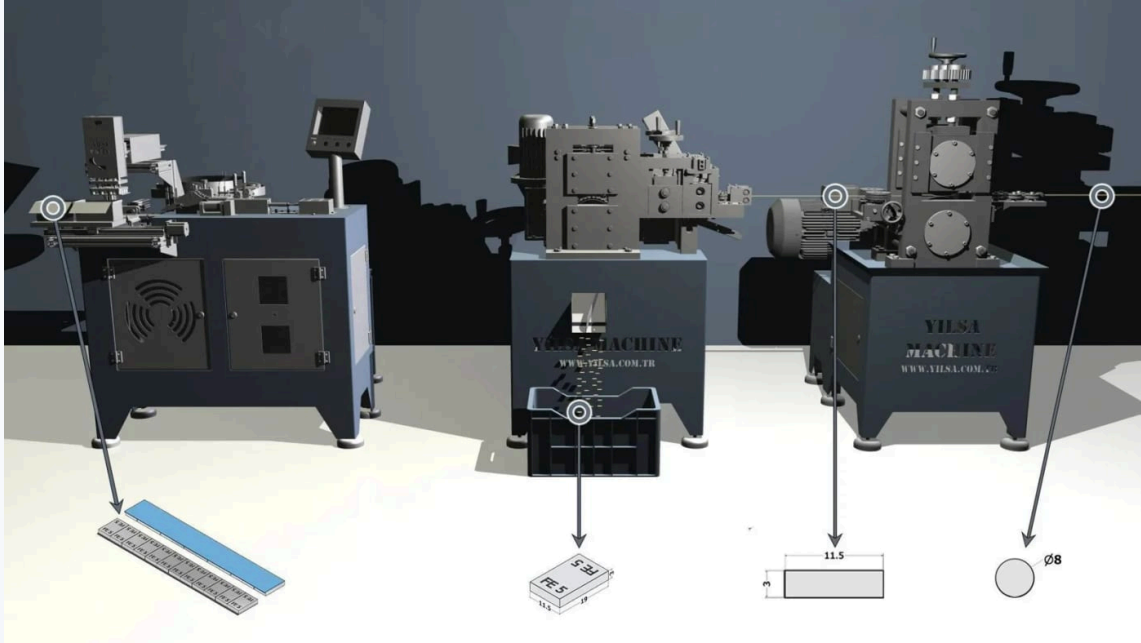
Control & Automation

PLC Platform	Delta PLC + Touch HMI
Speed Control	Delta AC Drive (VFD)

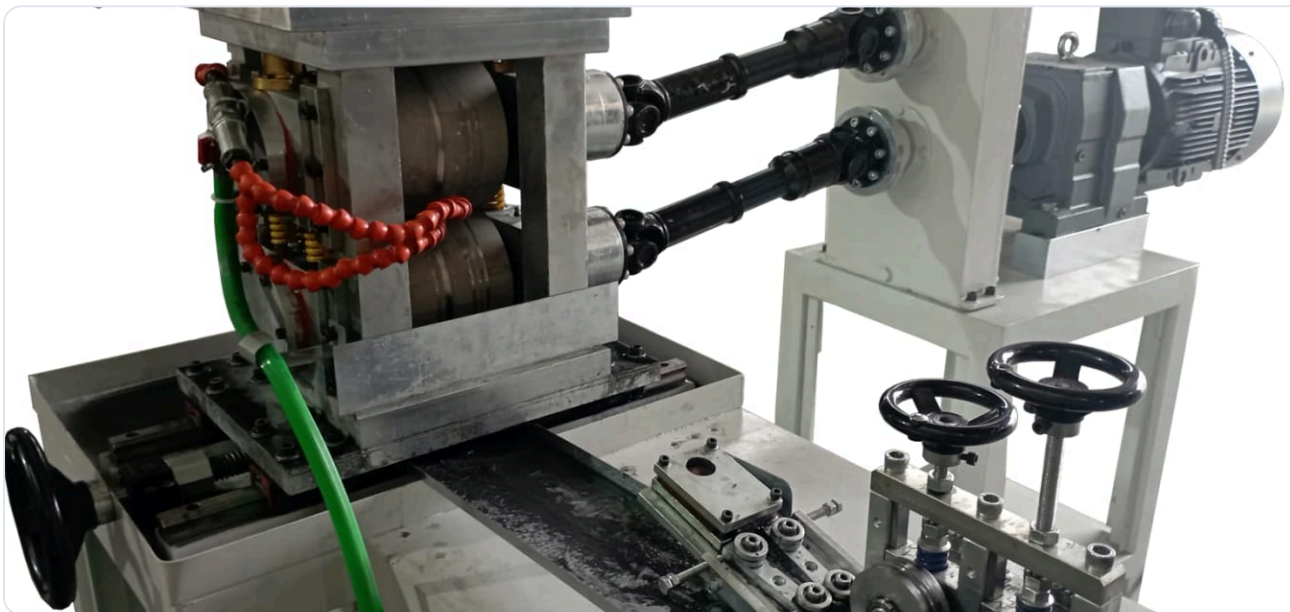
04 Place in the Production Line

The wire flattening machine is the first and most basic stage of the LBA line. The flattened 11.5 × 3 mm strip is fed straight into the Rotary Punch chopping and marking machine, with no uncoiler or extra feeding unit in between; the line becomes more compact and you no longer depend on a supplier of special-size strip.

- 1 Ø8 mm wire rod → wire flattening machine → 11.5 × 3 mm flat strip
- 2 Rotary Punch chopping and marking: zero-scrap cutting, logo, "Fe" and weight marking
- 3 Zinc coating (galvanising): against corrosion, usually done by an outside contractor
- 4 Packaging and taping machine: arranging on double-sided tape
- 5 Packaging unit: counting and boxing, product ready for shipment



LBA production line with wire flattening — right to left: wire flattening, chopping and marking, taping and packaging



Wire flattening machine — flattening drums, straightening rollers and drive



05 Images



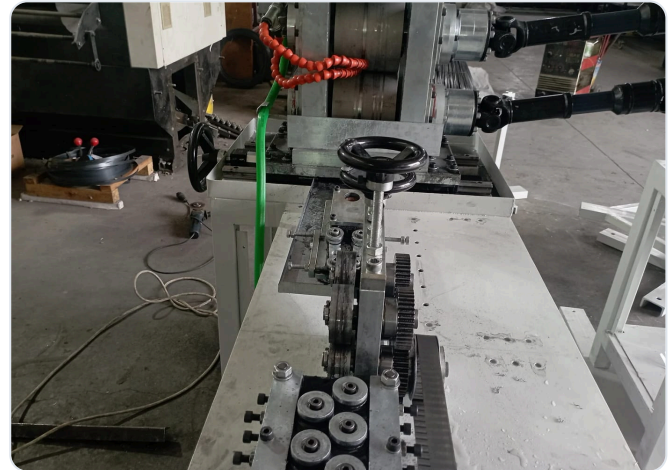
Wire rod flattening machine in the workshop — wire straightening inlet, flattening rolls and drive motor, real photo



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



06 In the Production Line

Wheel Weight Production Line

www.yilsa.com.tr/en/wheel-weight-production-line



01

Wire Rod Flattening



02

Rotary Punch Chopping and Marking



03

Packaging and Taping

The Wheel Weight Production Line is a fully automatic production setup that turns raw wire rod into boxed, ready-to-sell wheel weights untouched by hand. The process starts with flattening the wire rod into flat strip, continues with cutting and marking using patented Rotary Punch technology, and ends with automatic taping and packaging.

07 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 2.5–4 months from order confirmation, depending on the line 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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CE MARKED

100% MADE IN TÜRKİYE

PATENTED ROTARY PUNCH

PLC/HMI CONTROL

Yıldız Endüstriyel Araştırma Merkezi San. ve Tic. Ltd. Şti. · Catalogue no. YILSA-KAT-LBA-TE · October 2026. Values are for standard configurations; machines can be adapted to your product and raw material.