indeco
INGENIERIA DE CONTROL, S.L.

# Levelers

**INDECO'S manufacturing programme for Levelers is including 4 main desing:**

1.-High Precision Levelers
2.-Narrow strip Levelers
3.-Tension Leveling
4.-Perforate sheet Levelers

# High Precision Levelers

The **high precision levelers** are designed for **cold and hot rolled sheets,** plates and strips to fulfil highest flatness and surface protection requirements.

Strip materials in carbon steel, stainless steel, copper, aluminium and high gloss surface aluminium, and high tensile strengths tungsten and molybdenum alloys.

Typical range of application:

- Strip thickness between: 0,2 mm up to 13 mm. (max. 20 mm.)
- Strip width: max. 2500 mm. and more
- Yield: 750 N/mm2
- Leveling speed: 120 m/min.

Leveler Configuration in **"four-high"** and **"six-high"** design .

Cassette changing systems: Manual, Semi-automatic and Automatic change over devices.

Leveler Configuration in **"four-high"** and **"six-high"** design .

# High Precision Levelers

Cassette changing systems: Manual, Semi-automatic and Automatic change over devices.

**A system programme** enable setting the leveler to strip metal characteristics and required flatness.

**Set-up parameters** including: Rolls diameter, metal specs, surface quality and intermediate and back up rolls configuration.

The cassette settings can be **established automatically,** preset and recorded.

The rolls cassette can be **exchange fully automatically** and the storage system can be equipped with 2 or 3 levelling sets.

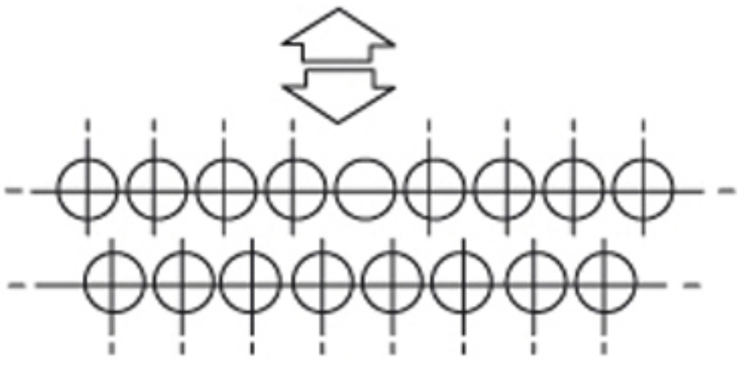
The **estimate change over time** is about **13 minutes**.

**INDECO's** levelers can be fitted with a flatness measuring system for quality assurance and quality improvement.

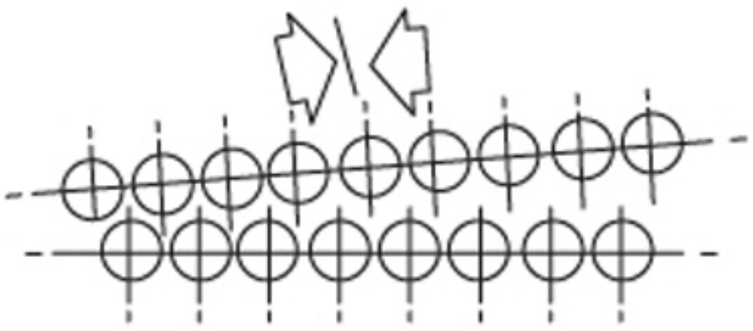
The measured values for leveler adjustment are: **Cross section and Span.**

## Leveler adjustment motions

**Up and down motions, for leveling rolls: INDECO's** levelers have a system for an independent rolls motion at front and back sides. For strip pressing motion at the required leveling pressure the upper leveling rolls are provided with **vertical displacement driven by electrical motors** with digital position display and setting controls on a screen.



**Tilting motion:**



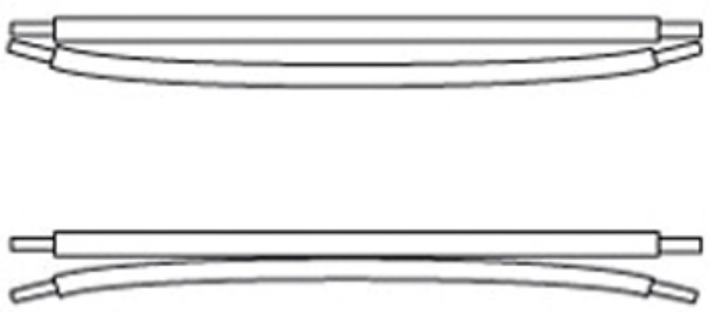
# High Precision Levelers

**Tilting motion** upright to sheet working direction and driven by screw jacks and electric a.c. motors.

**Tilting motion** on the sheet working direction driven by electric a.c. motors.

Lower rolls can be bent, as shown, for leveling the metal working sheet, by means of pressure of the counter rolls.

A)



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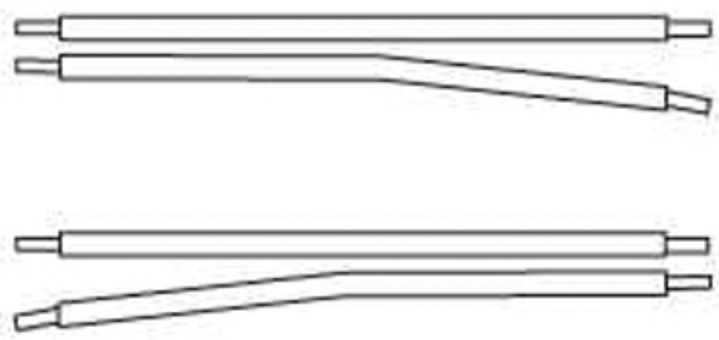
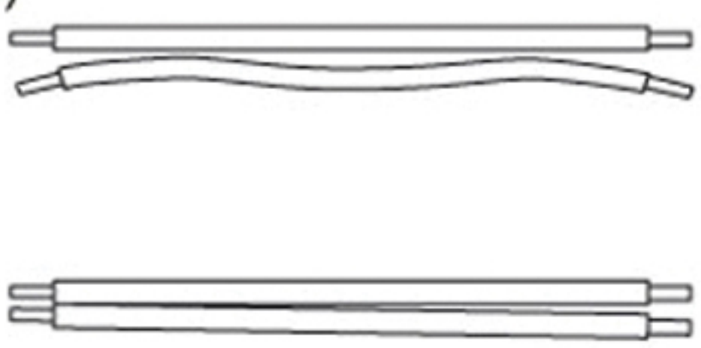


C)



## Narrow Strip Leveler

This leveler is a special design for **heavy duty service** for thick strip and high tensile strength metals.

Typical service application range:

- Strip thickness: 4 mm. up to 20 mm.
- Width: max. 350 mm.
- Yield: 1000 N/mm2
- Leveler speed: 10 m/min.

# Tension Leveling

**Preliminary Information:**

Utilized mainly on **thin cold rolled metal sheets and strips leveling application.** This leveling lines improve **strip flatness, appearance and enhance the quality** of subsequent processes such coating, slitting, shearing, blanking and etching.

To achieve in the strip a low residual internal metal stresses, the line is creating tension through by self regulating driven bridle rolls and then flexed over leveling rolls to get a **controlled elongation of the strip beyond its yield point.**

Strip materials in brass and copper alloys, aluminium and aluminium alloys, stainless steel or nickel alloys and carbon steel.

- Strip thickness: 0,2 mm. up to 4 mm.
- Width: 2000 mm.
- Yield: 450 N/mm2
- Leveler speed:

# Perforate Sheet Levelers

Levelers for perforate sheets and plates fulfilling flatness and surface quality requirements.

Strip materials in carbon steel, stainless steel, aluminium and non ferrous metals, coatings and delicate surfaces.

Typical service application range:

- Strip thickness: 0,2 mm. up to 4 mm.
- Witdth: 2000 mm
- Yield: 500 N/mm2
- Speed: 20 m/min