PL TD96/2

Level Crossing Machine TD96/2

WEGH GROUP

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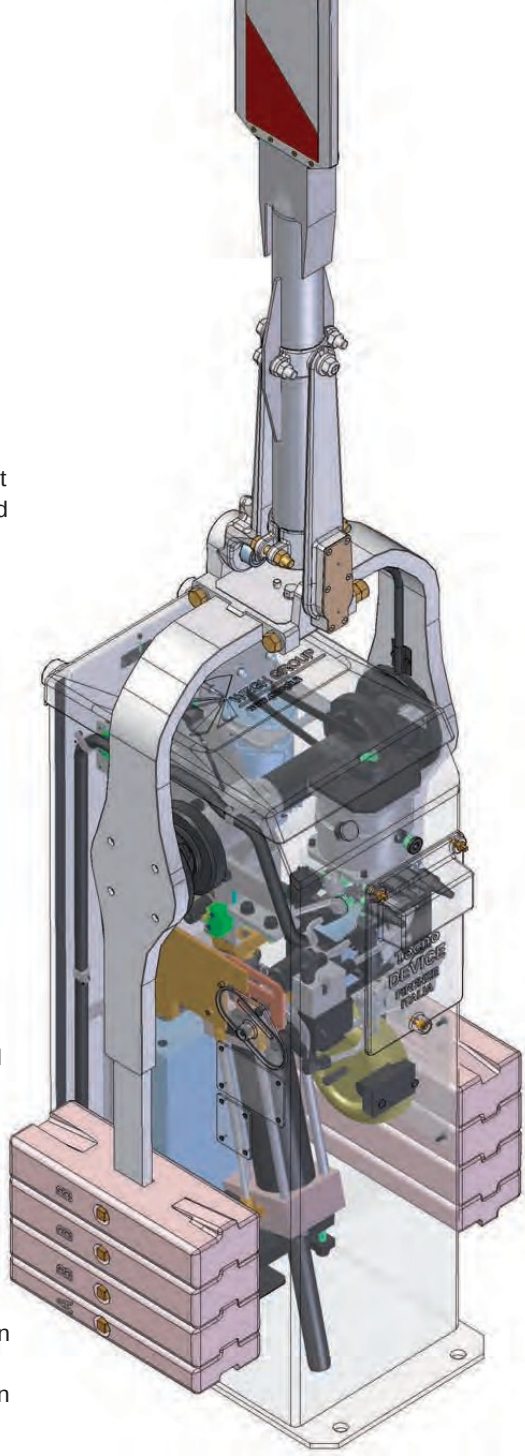


The TD96/2 is a Level Crossing Machine equipped with an innovative electro-hydraulic operating system. It has been designed by Wegh Group to cut down the maintenance cost and to comply with the constant improvement of safety of our signalling systems.

The machine ensures a proper protection of the road side by enabling the following functions:

- Electrical transition of the barrier
- Manual operation of the barrier
- Safety and clamping action of the boom in final positions of the stroke
- Dispatching of the electrical control signal at the final positions of the stroke
- Acoustic signal

Reliability and maintainability proven in years of operation by TD96/2 Level Crossing Machine ensures a high degree of availability and for this has been chosen by RFI as official Level Crossing Machine for the Italian Railways.

The machine is outfitted with a Boom Trailable Device and can be optionally equipped with a module of predictive diagnostics. To withstand the harsh weather operating conditions, the sturdy metal casing containing the mechanism is outfitted with a protective paint livery in agreement with the Rule of The Road safety standards. To facilitate the inspection and the maintanance activities, the TD96/2 Level Crossing Machine is equipped with a removable cover.

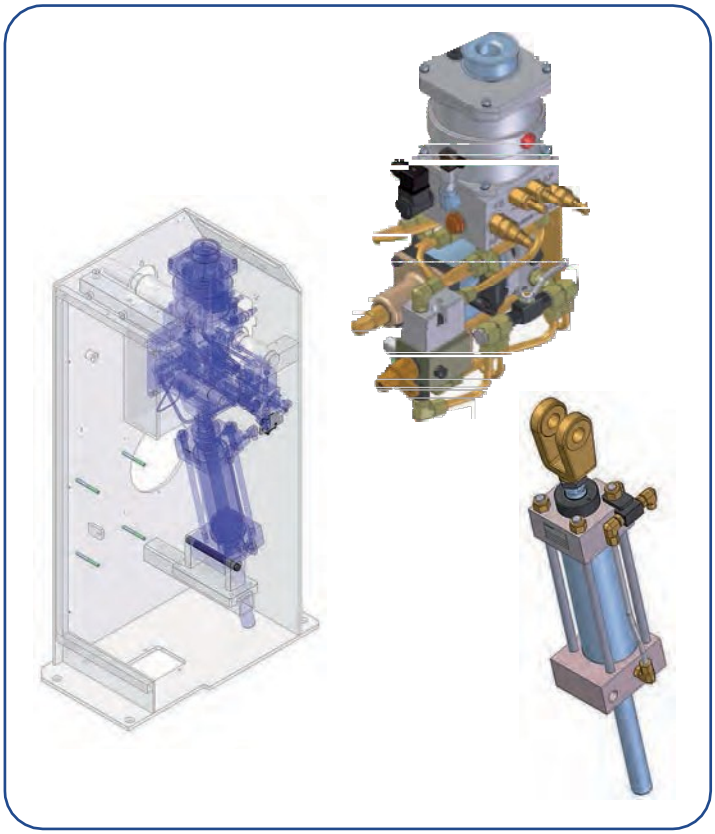
TD96/2

TD96/2 Level Crossing Machine has been designed to be interchangeable with other Level Crossings Machines. Thanks to the high technical development of Wegh Group, the TD 96/2 Level Crossing Machine allows an high rate of customization to satisfy the demands, ensuring the adaptability and complying with corporate projecting purpose.
In fact, the TD96/2 Level Crossing Machine is already in service in various railway lines both in the version at 24 Vdc and 144 Vdc and these according to the customer's requirements.

TECHNICAL FEATURES

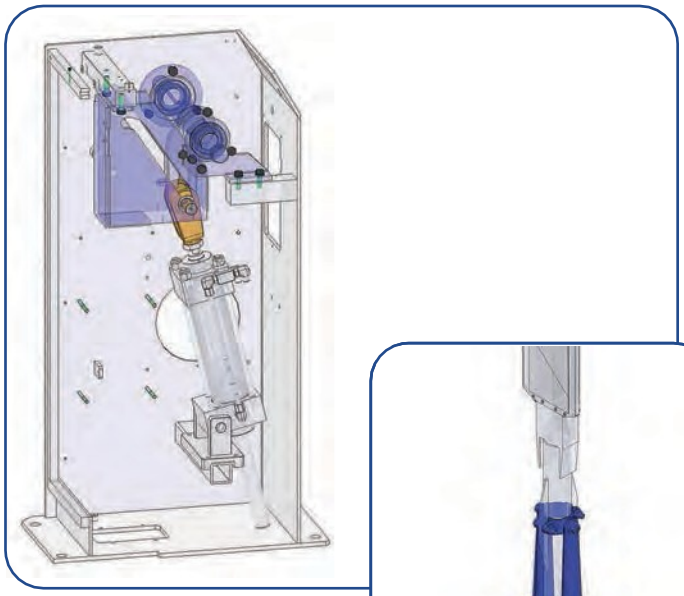
The TD96/2 Level Crossing Machine consists of the following functional units:

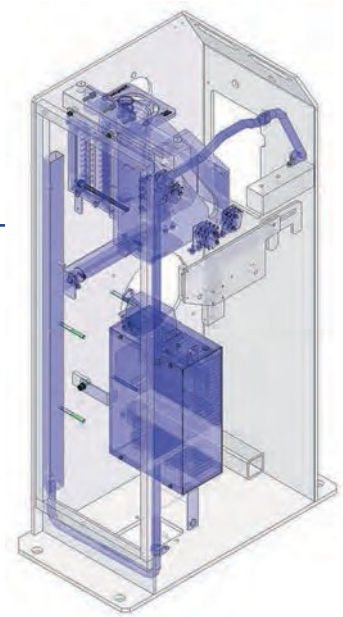
- **Hydraulic drive unit**
- **Actuating Cylinder**



- **Casing**
- **Prearrangement for Predictive Diagnostics Module**

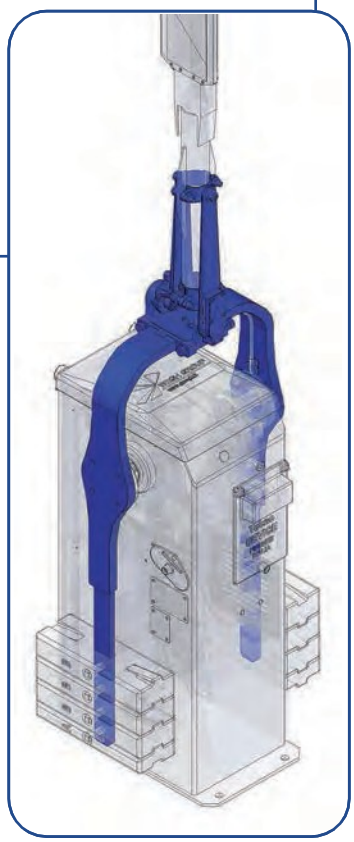
- **Mechanical drive and mechanism locking system**





- **Electromechanical unit**

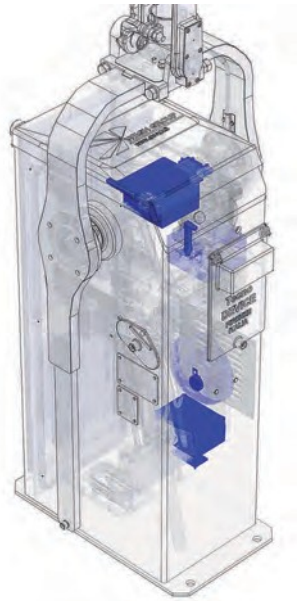
- **Boom lifting arms**
- **Boom Trailable Device**



TECHNICAL FEATURES

WEGH GROUP
Italian Equipment for Railways Industry

The TD96/2 Level Crossing Machine assures the following functionalities with the highest safety standards in the harshest environmental conditions:



Locking System Mechanism

Ensures the locking at the opening or closing positions of the boom even in case of adverse environmental conditions (strong wind), machine failures, lack of energy and tampering.

Torque limiting function in opening and closing operations

Arrests the boom on obstacle, in opening and closing cases, with a force that doesn't damage things or injury persons.

Boom Trailable Device

The boom trailable device ensures the safety both for the road user and for railway traffic. This device able the barriers to offer no great resistance in the case of collision by road vehicles providing an additional safety function to a vehicle that remains imprisoned inside the level crossing. If the barrier will be trailed at the moment of the falling on of the arm, the electrical contact comes off. The signal is transmitted to the train signals in both directions of traffic that it will go off, alerting the engine driver that the level crossing barrier is open and therefore the Level Crossing is not in safe. The system can be restored only when the drafted boom will be re-installed on the Level Crossing Machine. The trailable mechanism is realized to prevent damages to the Level Crossing Machine when trailed.

Manual operation

The manual operation of closing and opening of the barrier can be done in safe condition thanks to the special prearrangement that sections the power supply at the beginning of the operation.

Electromechanical bell

The TD96/2 Level Crossing Machine is equipped with an audible electromechanical bell located inside the casing.

TECHNICAL SHEET

Voltage Supply	144 VDC	24 VDC	■
Motor Voltage Supply	120 VDC	24 VDC	■
Control Circuit Voltage Supply	48 VDC	24 VDC	■
Rated Current	2,2 A	10,5 - 13 A	■
Braking current during boom lifting at 1250 Nm	3,1 A	14 A	■
Current absorbed in stand-by	0 A		
Boom lift movement time at 25° C	10÷15 sec (it could be set)		■
Boom descent movement time at 25° C	15÷25 sec (it could be set)		■
Warning time	4÷60 sec (it could be set)		■
Temperature Range	-25°C ÷ 75°C		■
Opening torque at 25° C	700÷1400 Nm (it could be set)		■
Closing torque at 25° C	700÷1400 Nm (it could be set)		■
Weight with Boom Trailable Device, without boom and counterbalances	400 kg		
Maximum Length of boom	8 m		■

■ features that can be customised on request

PL TD96/2

OPTIONAL

PREDICTIVE DIAGNOSTICS MODULE

The Predictive Diagnostic System has the purpose to detect and continuously control (monitoring), from remote emplacement, the machine's parameters which are considered critical for the regularity of the road traffic and for the availability and quality of Railway Service, with the consequent reduction of the maintenance personnel.
The Predictive Diagnostic System is installed inside the case and it monitors in real time the working parameters by digital and analog inputs and with a specific channel for the bell.

Constantly detects and quantifies the possible degradation of the equipment performances monitored by the real-time acquisition of appropriate functional parameters, giving output information related to:

- Failure Prediction (predictive maintenance)
- Indication of maintenance requirements (on-condition maintenance)
- Detection of failures (on-failure maintenance)
- Aid in the operational choices in case of failure and fixing operations
- Telemetry and remote setting.
- Checking of the vehicular traffic state with a maintenance purpose.
- Methods of intervention in warning and alarm cases.

The main functions absolved by the diagnostic system are:

- Acquisition of the quantities of interest.
- Processing of the measured and acquired values directly from the Level Crossing's Casing.
- Congruence Analysis of the acquired data.
- Communication and transmission of procured data on request.
- Processing and dispatching of warnings and alarms Data.
- Self-diagnosis.

CRANK

A device that allows the manual operation by acting in safety directly on the case.

COUNTERBALANCES

Suitable shaped weights that allow load balancing acting on the boom lifting arms depending on the chosen boom. Available in two Models Type A of 20 kg and Type B of 30 kg

BASEMENT

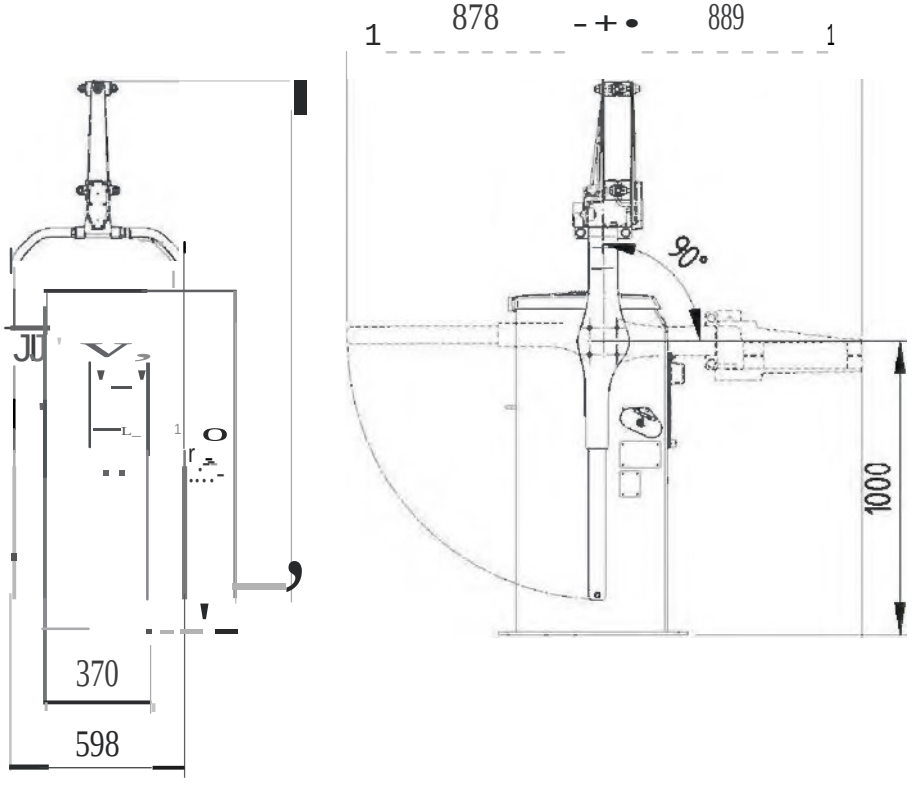
Concrete foundation for the installation of each Level Crossing Machine. The sill has appropriate seats for electrical cables.

FOUNDATION PLATE

Steel plate interface between Level Crossing Machine and the concrete sill.

BOOM SUPPORT

Railway boom colored with reflective red and white stripes, available in different materials (Aluminum, Fiberglass etc.) and in standard sizes (4,5,6,7,8 m); as well can be customized on demand.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