



# MECHANICAL STOCKLINE RECORDER MECHANICAL BURDEN MEASUREMENT

## **BENEFITS**

The Mechanical Stockline Recorder is a self-contained gas tight unit with electric VVVF drive and off-shelf gearbox with emergency hand wheel operation. The unit is designed to provide accurate positioning via a cam switch directly connected to the furnace charging system. An easily replaceable weight provides for quick maintenance and shortened downtime periods.

## **FIELD OF APPLICATION**

Blast furnace - burden measurement

## **FUNCTION**

The burden level of a blast furnace can be measured using a mechanical stockline winch. The mechanical stockline recorder is specifically designed for high top-pressure operation, with the winch as a complete unit comprising a grooved drum, a transmission gear, an electric motor and electric instruments. The cable drum itself is located inside a gas-tight casing, with the shaft coupled via a special grease labyrinth to a reduction gear and motor. The instrumentation is connected to the stockline device via an intermediate gearbox.

The stockline winch device complete with a manually-operated isolation valve is connected via a flanged arrangement to the blast furnace top cone. The unit consists of a weight on a winch drum, with the drive to the winch drum being provided by a VVVF drive (variable voltage, variable frequency). The output torque from the motor is carefully controlled to provide just enough torque to hold the weight. The weight is allowed to descend until it sits on the surface of the burden. As the burden falls, the weight falls with it, until a low level cam switch tells the unit, and hence the control system, to raise the weight, and also tells the operator to allow another charge to be fed into the furnace.

## **PRODUCT STRUCTURE**

- Cable drum in gas-tight casing
- Transmission gear
- VVVF drive
- Measuring weight
- Low level cam switch
- Control system



1 | Mechanical recorder

2 | Weight change

3 | Drive unit

Technical data	
Operating range	3,300 mm above max. burden level
Operating range	28,000 mm below max. burden level
Recorder weight	125 kg
Electric motor	Primetals Technologies 8-pole VVVF drive, manual brake release lever, 5.5 kW – 710 rpm, frame size 160 M
Lifting speed	1,000 mm / second
Lowering speed	600 mm / second
Isolation valve	400 mm manual gate valve

### SERVICES

- Integration engineering
- Erection advisory
- Commissioning advisory
- Logistics
- Spare parts

### OTHER CUSTOMERS BOUGHT ADDITIONALLY

- Radar Stockline Recorder
- Above Burden Temperature Probe
- Profilemeter
- Ignition Lance

**Primetals Technologies Ltd**  
A joint venture of Mitsubishi Heavy Industries and partners

Ashmore house | 7 Fudan Way |  
Thornaby Stockton-on-Tees | TS17 6ER  
[primetals.com](http://primetals.com)

Order No. T01-1-N159-L2-P-V2-EN  
Printed in Linz | © 2020

The information (including, e.g., figures and numbers) provided in this document contains merely general descriptions or characteristics of performance based on estimates and assumptions which have not been verified. It is no representation, does not constitute and/or evidence a contract or an offer to enter into a contract to any extent and is not binding upon the parties. Any obligation to provide and/or demonstrate respective characteristics shall only exist if expressly agreed in the terms of the contract. These estimates and assumptions have to be analyzed on a case-to-case basis and might change as a result of further product development. Primetals Technologies excludes any liability whatsoever under or in connection with any provided information, estimates and assumptions. The provided information, estimates and assumptions shall be without prejudice to any possible future offer and/or contract. Any use of information provided by Primetals Technologies to the recipient shall be subject to applicable confidentiality obligations and for the own convenience of and of the sole risk of the recipient. Primetals is a trademark of Primetals Technologies Ltd.