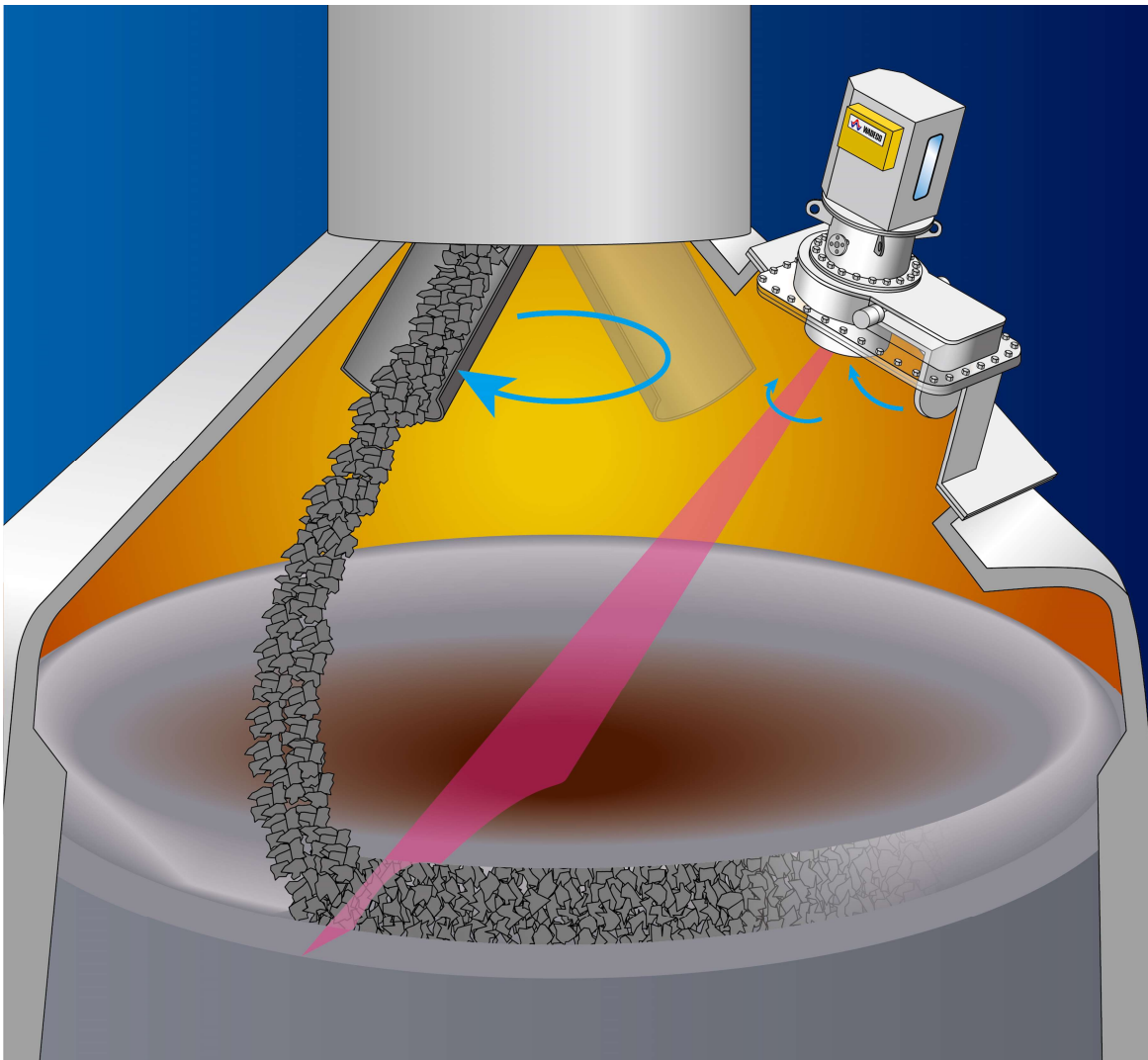




VERTICAL 3D PROFILE METER  
FOR BLAST FURNACE

MWS-BF-3DV PAT.

MILLI-SCANNER



The Wadeco MWS-BF-3DV Milli-Scanner is a combination of a mechanical scanning system and high-speed rangefinder which can be used to measure the 3D surface map of the blast furnace stockline and continuously measure and display the profile of the material as it is charged by following the rotation of the feeding chute.

**WADECO CO.,LTD.**

## General

**THE PROFILE CAN BE MEASURED CONTINUOUSLY WHILE THE FURNACE IS BEING CHARGED BY FOLLOWING THE ROTATION OF THE FEEDING CHUTE!**

The MWS-BF-3DV Milli-Scanner Vertical 3D Blast Furnace Profile Meter is a combination of a mechanical scanning system and high-speed rangefinder which can be used to display both a 3D surface map and profiles at selectable angles of the blast furnace load surface.

Furthermore, by following the rotation of the chute, linear measurements are made in the radial direction of the blast furnace load surface for each given rotation angle of the chute to continuously measure the profile during the charge and display a 3D surface map after each full rotation of the chute.

## Special Features

- Measurement mode can be selected according to application

3 different measurement modes can be selected according to the application requirements.

### **【Normal measurement mode】**

Once the chute has stopped at resting position, the profilemeter measures the profile and outputs the signal. The 3D surface map is displayed at the same time.

### **【Chute-tracking measurement mode】**

By following the movement of the chute and the material as it falls, the profilemeter measures the profile and outputs the signal. The pattern of the fallen material can be seen for each rotation of the chute.

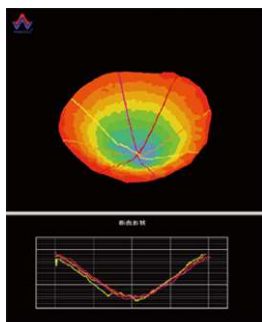
### **【High sensitivity measurement mode】**

High-sensitivity measurement is taken over the full stockline surface, profile measurement of the blowout hole and the presence or absence of gas flow are detected.

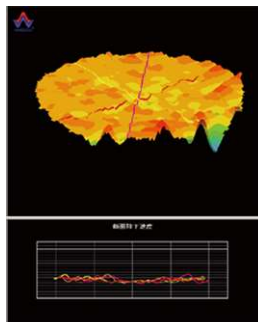
- Various display functions

The 3D surface map and profile at selectable angles as well as descending speed and received power level.

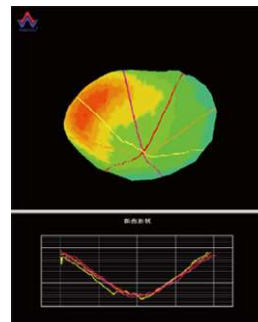
Examples of display functions



3D surface maps and cross-sectional profiles



3D descending speed display



3D received power display and cross-sectional profile

- The profilemeter can be protected even when there is a blowout  
The protective cover can be closed in approximately 7 seconds, protecting the profilemeter from high-temperature gas.
- Compact, simple construction  
Due to the mechanical scanning, the construction of the profilemeter is compact and simple and also has easy maintenance. In addition, there will be almost no dust accumulation on the glass. Gas leaks are also not a concern.
- Greatly improved reception sensitivity  
Significantly improved reception sensitivity. It is less susceptible to signal attenuation due to contamination from dust adhering to the glass surface and dust flying in the blast furnace. Stable measurement is possible even with a shallow beam angle of 10° to the charging surface.
- Self-diagnosis function  
The amount of dust build-up inside the profilemeter can be detected to alert the operator to maintenance requirements.
- Water cooling is unnecessary

## Specifications

### General

Measurement mode	<ul style="list-style-type: none"> <li>• Normal measurement mode (with chute stopped)</li> <li>• Chute-tracking measurement mode (with chute moving)</li> <li>• High sensitivity measurement mode (with chute stopped)</li> </ul>
Accuracy	Approx. ±50mm (stockline surface)
Measurement time	<ul style="list-style-type: none"> <li>• Normal measurement mode : Approx. 20 sec.</li> <li>• Chute-tracking measurement mode : Approx. 5 sec.</li> <li>• High sensitivity measurement mode : Approx. 60 sec.</li> </ul> (depending on parameter settings)
Installation platform size	1610mm×1150mm
System height	Approx. 1767mm
Weight	Profilemeter (main body) : Approx. 700kg Protective cover : Approx. 1100kg

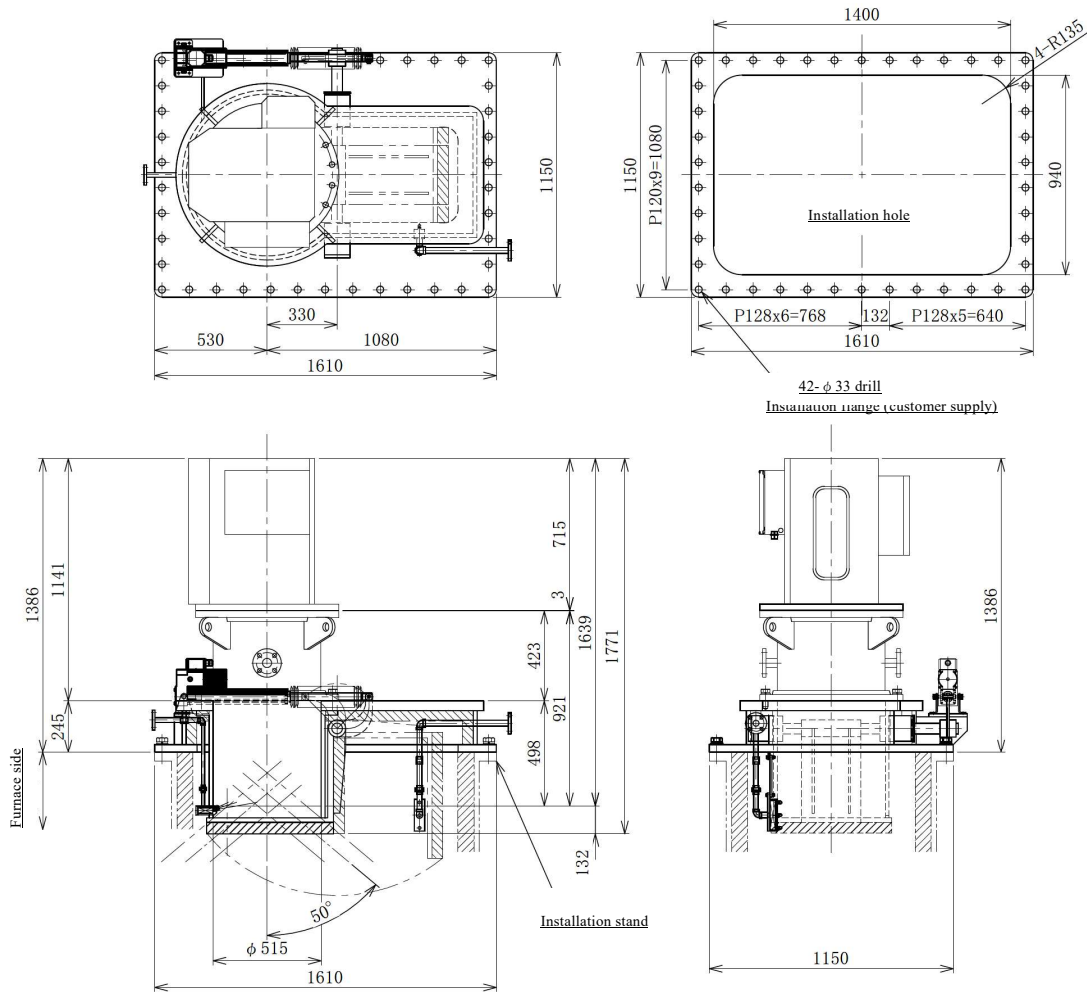
### Profilemeter (main body)

Type	MWS-L-3DV
Scanning angle	Radial direction : Max. 50° , Rotation direction : 360°
Installation flange	10K500A
Pressure	0.325MPa
Construction	Main body external : SUS304 Main body internal (measurement parts) : SUS304
Paint	Heat-resistant paint
Weight	Approx. 700kg

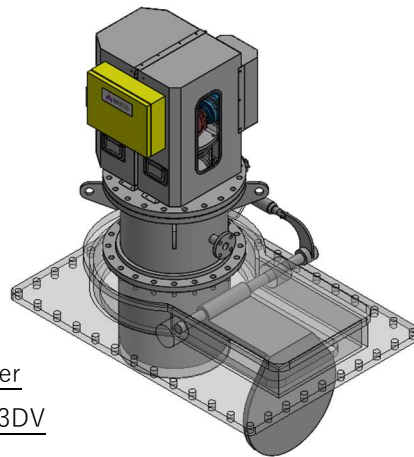
### Protective cover

Type	MWS-B-3DV
Opening/closing motor	Electric cylinder 1φ 400/440V , 50/60Hz , 400W
Time to open or close	Approx. 7 sec.
Protection temperature	Approx. 800°C (approx. 15min.) ※ Protects profilemeter when closed
Construction	Enclosure insertion hole : SUS304 Protective cover : SS400 (t=50mm with castable refractory)
Weight	Approx. 1100kg

Dimensions



Vertical 3D Profilemeter  
Milli-Scanner MWS-BF-3DV



These specifications may be subject to change.



HEAD OFFICE 1-12-9, Meishin-cho, Amagasaki-shi, Hyogo-ken, 661-0021, Japan  
TEL.(06)6422-1248 FAX(06)6422-1247

TOKYO BRANCH 202 Shibuya-homes,2-1,Udagawa-cho,Shibuya-ku,Tokyo  
150-0042,Japan  
TEL.+81-3-3770-5519 FAX.+81-3-3770-5520  
www.wadeco.co.jp