ENGLISH

ELECTRONIC HANGING SICK LIFT SCALE

MOD. RS – lb version

Read this manual carefully before using the instrument

INDEX

By choosing the WUNDER mod. **RS** professional electronic hanging scale, you have purchased a high precision instrument. Since over 40 years Wunder has placed its experience at the service of health. This instrument is compliant with national standards in hospitals and clinics with medical class Im with measurement function and is calibrated in conformity with accuracy class III.

1. GENERAL RULES

Carefully read this manual before using the instrument as it supplies important indications concerning OPERATING SAFETY AND MAINTENANCE.

WUNDER reserves the right to modify the images in the following manual, only if they are purely aesthetic modifications and do not affect the safety and performance of the instrument, without communicating the updates promptly.

Conventions: The following symbols have been used in this manual:

CE 0476	MEDICAL DEVICE IN COMPLIANCE WITH COMMUNITY DIRECTIVE 93/42/EEC		
CE M 0474 M	INSTRUMENT SUITABLE FOR LEGAL USE, IN COMPLIANCE WITH DIRECTIVE 2014/31/EU AND EUROPEAN STANDARD EN45501		
III	INSTRUMENT IN COMPLIANCE WITH NAWI METRIC DIRECTIVE ACCURACY CLASS III 90/384 - 2014/31/UE AND THE EN45501 EU STANDARD		
	ATTENTION! PLACED BEFORE DETERMINING PROCEDURES. COMPLIANCE FAILURE CAN HARM THE OPERATOR OR PATIENT OR DAMAGE THE PRODUCT		
	WASTE DISPOSAL IN COMPLIANCE WITH 2012/19/UE DIRECTIVE		
	TYPE B PARTS SUPPLIED		BATTERY POWER
	INDICATION OF WEIGHT FUNCTIONALITY	→O←	INDICATION OF STABLE WEIGHT
	POSSIBLE INTERFERENCES NEAR THE INSTRUMENT		DUAL INSULATION (CLASS II)
	READ THIS MANUAL CAREFULLY BEFORE USING THE INSTRUMENT		
	MANUFACTURER: WUNDER SA.BI. SRL – VIA VECCHIA PER MONZA, 20 – TREZZO S/ADDA (MI), ITALY		

2. SAFETY

Operators must read this manual carefully, follow the instructions contained therein and become familiar with the correct use and maintenance procedures of the instrument.

This manual contains important information for the installation, use and maintenance of the dynamometer.

The manufacturer assumes no responsibility for direct or indirect damage, including loss of profits, or for any other commercial damage that may result from the use of the product that does not comply with the instructions in this manual. Keep this manual and the declaration of conformity for consultation and support of personnel training:

- Do not overload the instrument beyond the maximum flow value.
- Do not apply loads abruptly.
- Do not use sharp or pointed objects to press the keys.
- Do not attempt to open the instrument.
- Do not remove the seals on the instrument.
- Do not short-circuit the battery terminals.
- Use only the power supply provided by Wunder and before use check the compatibility between the local mains voltage and the adapter's rated voltage (if equipped).
- Periodically check the integrity of the instrument power cable and do not come into contact with hot appliances.
- Make sure that the power cord does not create a risk of getting in the way or getting caught.
- Before cleaning the instrument, unplug the power cord.
- Do not immerse the instrument in water or other liquids.
- Have the maintenance operations and the subsequent metric checks done regularly (see paragraph).
- If on wheels, make sure that the instrumentation can not move accidentally. Use the parking brake while the patient sits up and stands up and help people who do not stand up properly.

NOTE: The medical device requires special precautions regarding electromagnetic compatibility and must be installed and used according to the information supplied with the accompanying documents.

	ATTENTION! **IMPORTANT DIRECTIONS**
	The assembling of **RS** dynamometer must be done by skilled operators only and before the use be sure that all hanging sick lift elements, dynamometer and sling are properly assembled, to weight the patient on safety conditions. A faulty assembling of these elements could cause the risk of falling with serious consequences for the patient.
	AFTER THE ASSEMBLY AND BEFORE PILLING THE PATIENT, THE OPERATOR MUST CHECK IF: ※ **THE PATIENT IS PROTECTED WITH SOFT PARTS TO AVOID IMPACTS OR SERIOUS DAMAGES. IN PARTICULAR, PLACE THE PATIENT MATTRESSES, PILLOWS, BED OR ANY SOFT ELEMENT TO GUARANTEE THE BEST SAFETY OF THE PATIENT WHILE CHECKING THE WEIGHT INTO SUSPENSION** ※ The RS dynamometer and the harness are in VERTICAL POSITION ※ The operator must make sure that the weighing is carried out with raising unhealthy patients. ※ The operator who during the lifting and patient weighing phase **MUST ENSURE** that the patient raises with the attached dynamometer is stationary on a level surface. ※ **IT IS ABSOLUTELY FORBIDDEN** to move before, during and after the weighing phase, the patient raises with dynamometer mod. RS300 and the harnessed patient ※ The operator must **ALWAYS** accompany and hold the patient's harness during the patient lifting phase to prevent torsions and sudden movements of the dynamometer and harness that can cause breakage and irreparable damage, with the risk of serious consequences for the patient. ※ **DO NOT MOVE, TRANSPORT or ROTATE** the patient raises with a dynamometer **with the patient in charge**. ※ When the weighing phase is completed, the patient must be removed from the harness and moved with other devices in safety
 NO TORSION	During weighing phase by means of **RS** dynamometer, the operator must be sure that the patient remains still, to avoid any instruments torsion and the following uncorrect weighing.
 NO TORSION	After weighing phase the operator must ALWAYS follow and hold the sling of the patient to avoid torsion and sudden movement of both dynamometer and sling that could cause breakages and irreparable damages, with the risk of serious consequences for the patient.
	**ATTENTION** **To measure the patient ALWAYS IN SAFETY** **The operator MUST place a cushion** **Under the patient raised**

- When using electrical components under increased safety requirements, always comply with the appropriate regulations.
- Improper installation will render the warranty null and void.
- Ensure the voltage marked on the power supply unit matches your mains power supply.
- This device is designed for use indoors.
- Observe the permissible ambient temperatures for use
- The device meets the requirements for electromagnetic compatibility. Do not exceed the maximum values specified in the applicable standards.
- Ensure that the patient does not lean against the device risk of falling! If you have any problem, contact your local service partner.
- The maximum scale loading must not be exceded. The device beeps when loading exceeds its maximum capacity.

2.1 Intended use

This device is intended to be used for the suspension weighing of patients for general diagnostic purposes.

Environment of use: in hospitals and specialized medical clinics. The installation room must be equipped with an electrical system that complies with the regulations in force. It is recommended to use the device in environments not exposed to magnetic interference.

Personnel destined to use the product: specialized operators and doctors who are aware of all the safety procedures for correct use.

Control and Responsibility: the medical device must be used under the supervision of a qualified doctor or qualified maintenance personnel and periodic checks that are aware of all safety procedures.

Limitations of use: this medical device can only be used as described in this manual

Useful life of the product: 7 years

2.2 Manufacturer's guide and declaration – Electromagnetic Immunity

The electronic scales **RS** model is scheduled for operation in the electromagnetic environment specified below.

The customer and the user should ensure that it is used in that environment.

Guide and Statement of manufacturer – Electromagnetic emissions		
Emission test	**IEC 60601 Conformity**	**Electromagnetic environment guidance**
RF Emission **CISPR11**	Group 1	**RS** model uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emission **CISPR11**	Class B	The product is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emission **IEC 61000-3-2**	Class A	
Voltage fluctuations / flicker emissions **IEC 61000-3-3**	Compliant	

Guidance and manufacturer's declaration - Electromagnetic Immunity		
Immunity test	**IEC 60601 Compliance level**	**Electromagnetic environment guidance**
Electrostatic discharges (ESD) **IEC 61000-4-2**	± 8 kV contact ±2, ±4, ±8, ±15 kV air	The floors should be made of wood, concrete or ceramic. If the floors are covered in synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst **IEC 61000-4-4**	± 2kV for power supply lines ± 1kV for input/output lines	The power supply should be of the type used typically in commercial or hospital environments.
Surge **IEC 61000-4-5**	± 1kV line(s) to line(s) ± 2kV line(s) to earth	The power supply should be of the type used typically in commercial or hospital environments.
Voltage dips, short interruptions and voltage variations on power supply input lines **IEC 61000-4-11**	0% UT for 0,5 cycle 0% UT for 1 cycle 70% UT (30% dip in UT) for 25s 0% UT for 5 s **Note:** U_T is the A.C. main voltage prior to application of the test level	The power supply should be of the type used typically in commercial or hospital environments. If the user requires continued operation, it is recommended that the product is powered from an uninterruptible power supply or a battery.
Power frequency (50, 60 Hz) Magnetic field **IEC 61000-4-8**	30 A/m	The product power frequency magnetic fields should be at levels of a typical location in a typical commercial or hospital environment.

ATTENTION!

The medical device requires particular electromagnetic compatibility precautions and must be installed and used according to the information provided in this manual.

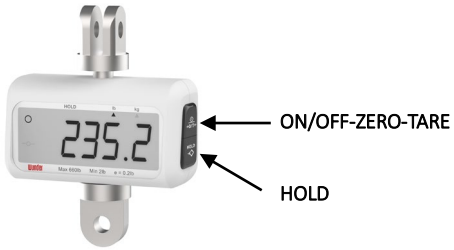
<table>
<tr><th colspan="3">Manufacturer's guide and declaration - Electromagnetic emissions</th></tr>
<tr><th>Immunity test</th><th>IEC 60601 Compliance Level</th><th>Electromagnetic environment-guidance</th></tr>
<tr><td>Conducted RF
IEC 61000-4-6</td><td>3Vrms 150kHz to 80MHz (for appliances that are not life supporting)</td><td rowspan="2">Portable and mobile RF communications equipment should be used no closer to any part of the product including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Recommended separation distance
d = 1.2 √ P
d = 1.2 √ P from 80 MHz to 800 MHz
d = 2.3 √ P from 800 MHz to 2.5 GHz
P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[1], should be less than the compliance level in each frequency range[2]. Interference may occur in the proximity of equipment marked with the following symbol:  </td></tr>
<tr><td>Radiated RF
IEC 61000-4-3</td><td>3 V/m
80MHz to 2,7 GHz
(for appliances that are not life equipment)</td></tr>
<tr><td colspan="3">[1] From 80 MHz to 800 MHz is applied the higher frequency range.
[2] These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
a) The intensity of the field for fixed transmitters such as base stations for radio, mobile and cordless phones and land radio mobile, amateur radio, radio transmitters in the AM and FM and TV transmitters cannot be predicted theoretically with accuracy. To establish an electromagnetic environment due to fixed RF transmitters, it should consider the electromagnetic survey of the site. If the field strength measured at the place where you use the instrument exceeds the applicable level of compliance of the above, the device should be observed to verify normal operations. If you notice abnormal performance, it may take additional measures such as a different orientation of the device or re-locate it.
b) The field strength over a frequency range of 150 kHz to 80 MHz should be less than 3 V/m.</td></tr>
</table>

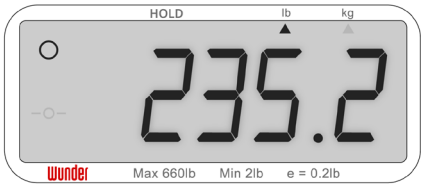
Recommended separation distance between RS Scale and mobile RF communications equipment			
RS Scale is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the product can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product as recommended below, according to the maximum output power of the communications equipment.			
Output power rating of the transmitter (W)	**Separation distance according to frequency of transmitter (m)**		
	150 kHz to 80 MHz d=1,2 √P	**80 MHz to 800 MHz d=1,2 √P**	**800 MHz to 2,5 GHz d=2,3 √P**
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23
For transmitters with maximum rated power output not reported above, the recommended separation distance **d** in meters (m) can be calculated using the equation applicable to the frequency of the transmitter, where **P** is the maximum rated power output of the transmitter in Watt (W) according to the manufacturer of the transmitter. **Note:** [1] From 80 MHz to 800 MHz is applied the higher frequency range. **Note:** [2] These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

3. TECHNICAL FEATURES

Model	**RS300**
Factory	Wunder Sa. Bi. Srl - Trezzo sull'Adda (MI) Italy
Max Capacity : Division	Max 660 lb : e=0.2 lb (min = 2 lb)
OIML	Class III
Unit Weight	lb (OIML)
Display	LCD 1inches with 5 digits
Dimension	4.72 x 2.75 x 6.3 inches
Key & Functions	ON/ZERO-OFF-TARE, HOLD
Power	6 alkalin batteries mini-stilo code AAA
Operating Temperature	32 °F / 104 °F
RoHS 2 2011/65/EU	Comply with **Directive 2011/65/CE** (included delegated directive EU 2015/863)

4. KEY PANEL





HOLD → Weight Lock Indicator

LB → Unit of Measure Indicator

O → Indication of stable weight

−O− → Indicates if the instrument is on a flat surface/in balance

KEY	NAME	FUNCTION
⏻ / →0/T←	**ON/OFF** **ZERO** **TARE**	• Long press this key for 3 seconds to power ON/OFF the device • Press to reset the weight within the zero range (the zero range is ±2% of Max. Capacity) • Press this key to tare the weight undesired. Press again to reset the value.
HOLD →◇	**HOLD**	Press this key to lock weight value while weighing. Press again to disable the function.

5. WEIGHING OPERATION

Before reading detailed instructions on how to use all the weighing functions, please read the following guidelines:

- Always be sure that the display shows `Zero` before use, if it doesn't then press the **ZERO** key.
- The Professional Medical Hoist scale is designed to detect when a stable weight is achieved, your reading should be taken at this point.

⚠ **ATTENTION!**

NO TORSION

Tilt angle over 3° will cause false reading.

- An inclination of more than 3° will result in inaccurate readings.
- For a correct weight measurement, during the weighing phase, the operator, before leaving the patient free, must ensure that the patient remains stationary to prevent twisting and oscillation of the instrumentation and carry out an incorrect weighing.

-We recommend not to apply the dynamometer to lifters with a fixed suspension arm without the possibility of rotating at 360°.

-Do not tilt or rotate the dynamometer horizontally.

⚠ IT IS STRICTLY FORBIDDEN ⚠

TO MOVE OR TRANSPORT

THE PATIENTS WHILE SUSPENDED

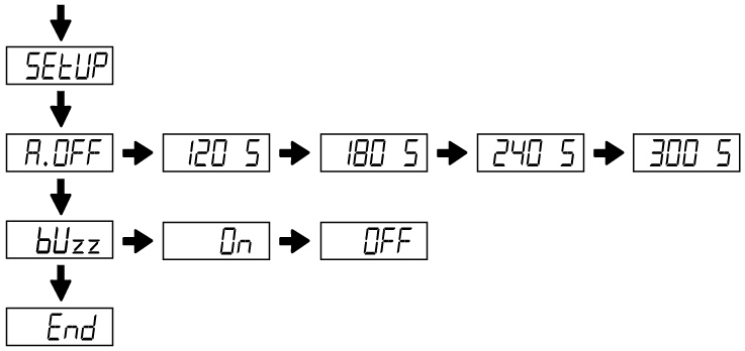
⚠ **ATTENTION!**

For measuring the patient ALWAYS SAFE, the operator MUST place a pillow under the patient raised

WEIGHING THE PATIENT MUST BE STRICTLY OBSERVED

6. FUNCTION SETTINGS

Long press **HOLD** key for 3 seconds and display shows '**SEt**'	**HOLD** = ⟶ Press to switch between the values/functions	**ON/OFF-ZERO-TARE** = ↓ Press to confirm and to go to next step



A.OFF	**Automatic switch-off time setup:** allows you to set the device's automatic switch-off time, programmable between: 120 / 180 / 240 / 300 sec. Once the set time has elapsed, the device will turn off automatically.
bUzz	**Acoustic signal setup:** This function allows you to activate (ON) or deactivate (OFF) the acoustic signal, depending on the user's preference.

Example: Setup with Auto-OFF time set to 180 seconds and acoustic signal disabled

Step 1: Long press **HOLD** key for 3 seconds to enter setup mode.

Step 2: Press **ON/OFF** to enter 'A.OFF' setup when 'A.OFF' if displayed on LCD

Step 3: Press **HOLD** to select 180 s = auto switch off time is set to 180sec

Step 4: Press **ON/OFF** to confirm and return to 'A.OFF' screen, then press **HOLD** to go to Buzzer mode.

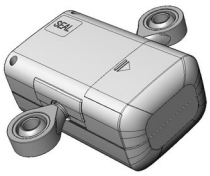
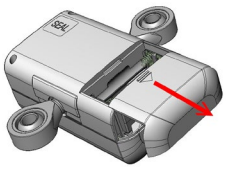
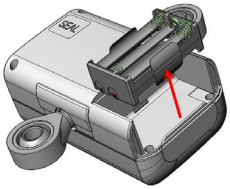
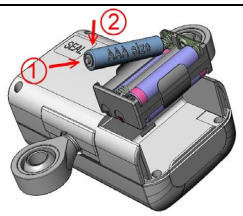
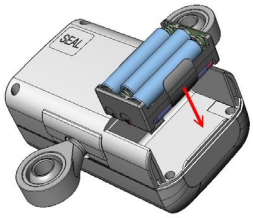
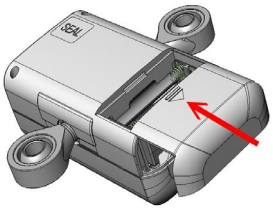
Step 5: Press **ON/OFF** to enter Buzzer setup, then press **HOLD** to switch between ON and OFF.

Step 6: Press **ON/OFF** to confirm and return to 'Buzz' screen.

Step 7: Press **HOLD** to select 'END' and press **ON/OFF** to complete setup mode.

7. INSTRUCTION FOR BATTERY INSTALLATION

RS uses six AAA size alkaline batteries. Please read the following instruction before using the scale.

	
1. Find the battery cover on the backside of the scale	2. Remove the battery cover.
	
3. Take out the battery case	4. Installing new AAA size batteries.
	
5. Reinstalling the battery case.	6. Installing the battery cover.

8. WARNING INFORMATION

1. Low battery indication This warning show that the voltage of battery is very low, please change a new one.	
2. High Zero The loading is over limit when power on, please reduce the loading.	
3. Low Zero The loading is under limit when power on, please increasing the loading.	
4. Overload or Counting error The loading is over limit when power on, please reduce the loading and try again. If the trouble still exists, please call the service.	
5. EEPROM error The programs of the scale is in error, please call the service.	

9. CLEANING & MAINTENANCE

ATTENTION!

IT IS RECOMMENDED TO KEEP THE INSTRUMENT SUPPLIED UNDER CONTROL

WITH A CORRECT PERIODIC MAINTENANCE

We recommend having this check carried out by qualified personnel to carry out the operation. For further information please contact the WUNDER Customer Service Technical Service, which is at your disposal. For a better and longer life of the product it is good to periodically perform a thorough general cleaning.

Periodically perform (at least once a year) functional checks of the RS dynamometer, as follows:

- Control of mechanical parts, hooks, pins, screws, etc.
- Keyboard functional control,
- Control of the Abs enclosure
- Battery check
- Weight control (according to metrological standards DL N.517 and DM N.182).

The instrument must be cleaned with a soft cloth, dampened with water or neutral detergent, avoiding the use of solvents or abrasive substances. Do not use large amounts of water while cleaning the scales, as it may cause damage to the electrical components of the balance. **Always disconnect the scales from the power supply before cleaning.**

In case of prolonged use of the instrument, remove the batteries from the terminal and cover the instrumentation to keep it intact. During transport, be careful not to subject the instrument to shocks or excessive mechanical stress. In case of repair or assistance, contact your dealer or an authorized service center by contacting service2@wunder.it or sales@wunder.it

The instrument is sold approved with a first metrological check (plate with M). A subsequent calibration is always necessary if one or more safety stamps are damaged or the display shows abnormal weights.

We recommend that qualified personnel perform maintenance. The WUNDER technical assistance service is at your disposal.

ATTENTION!

In some countries, calibration can only be performed by an authorized / qualified agent.

Contact your distributor for more information

10. SCRAPPING AND WASTE DISPOSAL

If set aside for a long period, protect those parts which could be damaged due to dust build-up.

Scrapping

When you decide to no longer use this item, we recommend making it unusable. We also recommend making those parts which could be sources of danger harmless

Waste disposal 2012/19/UE 

This product complies with the **EU Directive 2012/19/UE**. The symbol of the crossed-out waste bin on the appliance indicates that the product, needing to be treated separately from household waste, at the end of its useful life must be completed in a separate collection facility for electric and electronic appliances or returned to the dealer upon purchase of a new equivalent appliance. The user is responsible for bringing the appliance to an appropriate collection structure at the end of its life. Appropriate separate collection and sending the appliance for recycling, treatment and environmentally compatible waste disposal contributes to avoid possible negative effects on the environment and health and favours the recycling of the materials the product is made of. For more detailed information regarding available collection systems, contact your local waste disposal service or the shop where the product was purchased. As consumers, you are obliged by law to return used or dead batteries. You may deposit old batteries at public collection spots in your town or else with any battery dealer who has placed specific collectors for this purpose. Even when scrapping electric and electronic appliances, they must be removed and deposited in specific collectors.

NOTE: The following symbols indicate the presence of harmful substances.

Pb Pb = batteries containing Lead Cd Cd = batteries containing Cadmium Hg Hg = Batteries containing Mercury

ATTENTION!

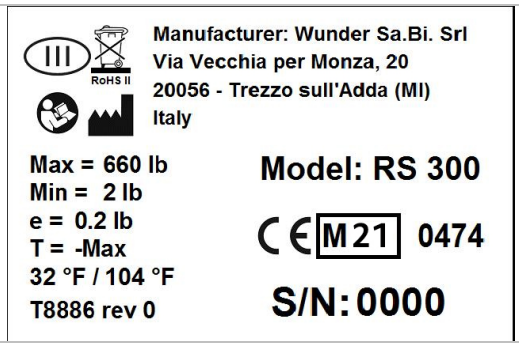
Do not throw electric parts and used batteries away with household waste. Dispose of the batteries by means of your closest collection centres.

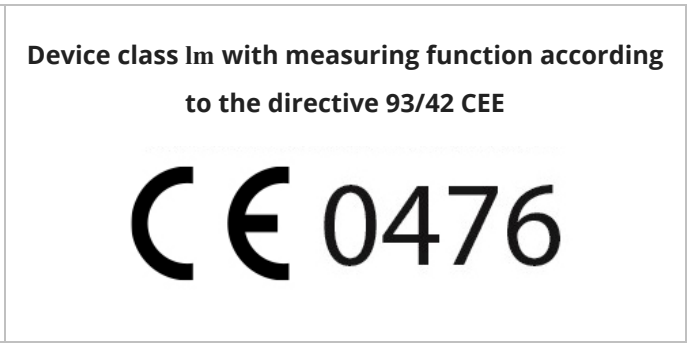
11. WARRANTY-LIABILITY

WUNDER products are guaranteed under warranty. The warranty is valid for faults or malfunctions of the instrument due to manufacturing or material defects, and WUNDER reserves the right to repair or replace the article. In the event that the repairs of the fault or the delivery of the replacement unit do not have a positive outcome, legal measures are to be considered valid. The term of guarantee is two years, taking effect on the date of purchase. The manufacturer shall not be held liable for damage deriving from any of the following causes: improper or unsuitable storage or use; improper installation or placement in service by the owner or a third party; normal wear and tear from use; changes or modifications; unsuitable or negligent manipulation; excessive use; chemical, electrochemical or electrical interference or interference from humidity; unless such causes may be attributed to negligence on the part of Wunder.

12. IDENTIFICATION PLATES

The year of manufacture is indicated on the applied metrological plate. Ex: **M 19 = 2019, 20 = 2020** ... and so on.





Repetition of the metrological verification

The instrument is sold with a first metrological check (plate with 'M'). We recommend that qualified personnel perform maintenance. The WUNDER technical assistance service is at your disposal.

ATTENTION!

In some countries, periodic verification can only be performed by an authorized / qualified body. Contact your distributor for further information.