



MSA	Voltage	Size	Kg
19.115	Dual 115 - 230 V	155 x 172 x 55 mm	0.900

Multifunctional portable touchscreen tester HOROTEC® FLASHTEST specifically designed for the control of watches and quartz mechanisms. This precision device is easy to handle and is intended to test analogue quartz watches and movements with both closed and open watchcases.

Measurements and functions :

- Measuring tension of unloaded batteries from 0 to 19.999 V
- Measuring tension of batteries under load from 0 to 19.999 V
- Measuring the movement supply voltage (1.5 V or 3.0 V)
- Measuring the coil resistance
- Unjamming the wheel trains
- Measuring the rate stability or the gain/loss of a watch or a movement
- Checking the correct functioning of the circuit : electrical impulse and consumption of the electric circuit
- Measuring the consumption of a watch during its operation.

Display : colour touchscreen 48 x 36 mm.

Delivered with 2 precision probes , 1 adaptor 12 V (input 115 - 230 V AC / output 12 V DC), 1 9 V battery and 1 operating manual.

Spare part :

MSA	Item	Kg
19.115-A	Pair of probes	0.015



MSA	Size	Kg
19.106	60 x 105 x 28 mm	0.225

HOROTEC® PULSE is an electronic device for testing the electronic parts (coil/circuit) of analogic quartz watch movements.

Delivered with 1 battery 9 V and multi-lingual operating instructions.



MSA	Size	Kg
19.107	60 x 105 x 28 mm	0.235

HOROTEC® TURBO is an electronic device for testing the mechanical parts (wheel train) of analogic quartz watch movements.
Do not use it for testing mechanical watches.
Delivered with 1 battery 9 V and multi-lingual operating instructions.

ECOLINE



MSA	Size	Kg
19.000	100 x 70 x 40 mm	0.115

Universal battery tester suitable for any type of batteries from 1.5 to 22.5 V : 1.5 V type AA, AAA button, lithium 3 V, Photo 6 V, 9 V, etc.).
Delivered with operating instructions.

ECOLINE



MSA	Size	Kg
19.105	85 x 150 x 55 mm	0.250

Battery, coil and electronic function tester for analogical quartz watches.
Delivered with 1 battery 9 V and operating instructions.



MSA	Apparatus	Voltage	Casing size	Kg
19.213	MTG-2200	90 - 240 V	360 x 165 x 190 mm	2.000

MTG-2200 economical tester for mechanical watches, equipped with a standard microphone and a 5" high-resolution digital coloured LCD screen. There are three keys to operate. The tester has all the basic test functions. It has three display models of diagram of beat noises. Compact and easy-to-use model.



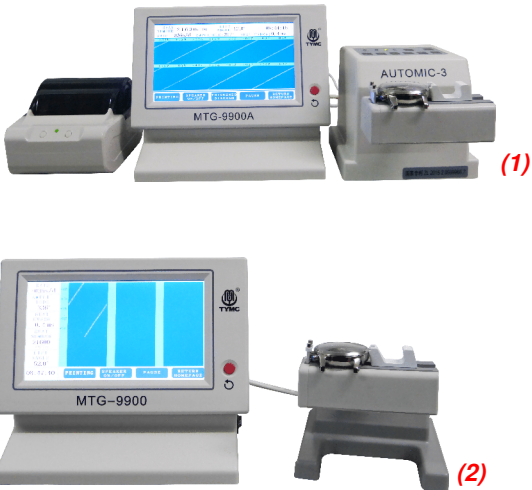
MSA	Apparatus	Voltage	Casing size	Kg
19.172 (1)	MTG-4000A	100 - 240 V	260 x 170 x 120 mm	1.900
19.174	MTG-4000T	100 - 240 V	260 x 170 x 120 mm	1.900

MTG-4000 testing device for mechanical watches. Complete, multifunctional model for professional use.

- Functions :
- Measurement of beat rate (sec/day), mechanical watch beat error m/s and watch beat diagram
 - Acoustic watch beat simulation (can be switched off)
 - Amplitude measurement over a range of 90° to 350°, lift angle selection from 30° to 60° with 0.1° resolution
 - 6 programmed positions with test report
 - "Pause" and "Shift" functions to stop the current measurement and view previous stored beats
 - TYAPS signal processing unit which automatically controls the signal level and filters peripheral noise
 - Highly stable TCXO quartz oscillator for time base : +/- 0.1 sec/day
 - Results are displayed on a 7" (153 x 86 mm) colour LCD screen.

MSA19.172 (4000A) : 1 microphone

MSA19.174 (4000T) : 3 microphones



MSA	Apparatus	Voltage	Kg
19.209-A (1)	MTG-9900A	100 - 240 V	-
19.209 (2)	MTG-9900	100 - 240 V	2.280

MTG-9900A and MTG-9900 testers for mechanical watches with touch screen. Complete multifunction version for professional use, ideal for efficient and fast tests during production, after sales service and watch-test lab.

MSA19.209-A: 1 MTG-9900A device, 1 AUTOMIC-3 automatic microphone and 1 thermo-sensitive printer.

MSA19.209: 1 MTG-9900 device and 1 standard microphone.

- Functions :
- Measuring of beat rate (+/- 300 sec/day ; precision +/- 1 sec/day), model MSA19.209-A only
 - Amplitude measurement range from 90° to 350°, lift angle selection from 20° to 70°, model MSA19.209-A only
 - Number of beats : 12000, 14400, 18000, 19800, 21600, 25200, 28800 and 36000 beats/hour. Can be selected automatically or manually
 - 6 control positions.



MSA	Kg
19.177	1.030

Thermo printer THERMOPRINT for MTG testers.

Spare part :

MSA	Item	Kg
19.177-A	Thermo paper, Ø 30 x 57 mm	0.032



MSA	Voltage	Size	Kg
19.158	230 V	260 x 150 x 130 mm	1.500
19.158-110	120 V	260 x 150 x 130 mm	1.500

The NEW TECH HANDY II measures the rate accuracy and power consumption of quartz watches and quartz watch movements and facilitates the testing of other components such as coil resistance, insulation and battery voltage.

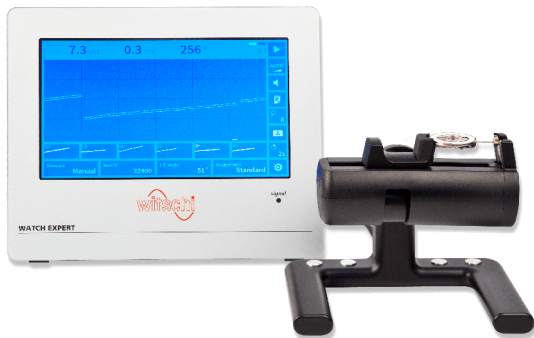
Spare parts :

MSA	Item
19.158-A	Measuring cable with 2 probes, pair
19.160-B	Mobile probe, pair



MSA	Voltage	Size	Kg
19.152	230 V	290 x 170 x 180 mm	2.800
19.152-110	120 V	290 x 170 x 180 mm	2.800

The ANALYZER Q1 provides excellent measurement and testing facilities for the specialist testing and measurement of quartz watches. The ANALYZER Q1 is a testing device for efficient use in a repair service as well as for analyses during watch production, in watchmaking laboratories and in sales situations.



MSA	Voltage	Size	Kg
19.202	100 - 240 V	197 x 164 x 130 mm	1.700

The WATCH EXPERT G4 is the ideal, cost-effective measuring device for testing and measuring the rate accuracy, amplitude and beat error of mechanical watches during watch production and servicing.

Spare part :

MSA	Item	Kg
19.157-M	Microphone	1.300



MSA	Version	Voltage	Size	Kg
19.221	(1) Standard version	230 V	130 x 110 x 110 mm	0.800
19.222	(1) PRO version with software	230 V	130 x 110 x 110 mm	0.800
19.226	AIR (Bluetooth) version with software	230 V	130 x 110 x 110 mm	0.610

CHRONOMASTER control instrument for mechanical watches easily connectable to a PC or tablet. The compact microphone has integrated measurement electronics. The measurement results are displayed on the PC or tablet screen.



MSA		Microphone	Voltage	Casing size	Kg
19.188	(1)	Micromat C	100 - 240 V	266 x 213 x 43 mm	3.800
19.218	(2)	Micromat X	100 - 240 V	266 x 213 x 43 mm	3.800
19.223	(3)	Chronomaster PRO	100 - 240 V	266 x 213 x 43 mm	2.710

CHRONOSCOPE X1 (G3) terminal, measuring device for mechanical watches.

- Measurement of beat noises in mechanical watches
- Various display and analysis modes : Diagram, Vario, Trace, Scope, Sequence and Polar
- High-quality display and easy operation thanks to the 10.4" colour touchscreen
- Adjustable screen stand
- Measurement in 10 test positions
- Proven and reliable hardware for use in the toughest operating conditions.

The terminal is available in 3 versions depending on the microphone chosen

- MSA19.188 with Micromat C microphone
- MSA19.218 with Micromat X microphone
- MSA19.223 with ChronoMaster PRO microphone.

Microphones (individual references) :

MSA		Voltage	Change of test positions	Tolerances	Headphone (3.5 mm jack)	Kg
19.155-C	(1)	230 V	Automatic	Yes	Yes	1.700
19.218-M	(2)	230 V	Automatic	No	Yes	-
19.222	(3)	230 V	Manual	Yes	No	0.800





(1)



(2)



(3)

MSA	Voltage	Size	Kg
19.203	100 - 240 V	112.5 x 200 x 125 mm	2.465

Thermo printer JB01-SLK-TE25-Sfor WITSCHI® testers.

Spare parts :

MSA	Item	Kg
19.134-P	(1) Thermo paper, Ø 51 x 60 mm	0.109
19.203-A	(2) Bluetooth dongle and plug-in module	-
19.203-B	(3) Dongle for Witschi® device	-



MSA	Kg
19.198	0.043

Protection kit of movement on a microphone.
Composed of a support and an anti-dust cover for a microphone WITSCHI®.
Delivered without microphone or movement.