

# 19



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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

#### Accessory :

MSA	Item	Kg
19.108-E	Calibration device	0.043



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
19.214	MTG-1100	90 - 240 V	240 x 190 x 180 mm	1.100

MTG-1100 simple tester for mechanical watches, equipped with a microphone and a 4.3" high-resolution digital coloured LCD screen. There are three keys to operate. The diagram display is horizontal. It also has all the basic test functions. Compact and easy-to-use model.

- Displays daily rate in seconds per day (+/- 300 s/d), accuracy (+/- 1 s/d)
- Amplitude : 90 – 350°, allowable tolerance (+/- 3°)
- Beat error : 0 - 4.0 ms, allowable tolerance (+/- 0.1 ms).



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



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

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
19.130	(1) With	100 - 240 V / 50-60 Hz	225 x 85 x 191 mm	3.100
19.131	Without	100 - 240 V / 50-60 Hz	225 x 85 x 191 mm	2.900

The CHRONOSCOPE S1 (G2) is a highly professionally measuring device for the efficient testing and measurement of mechanical watches in a repair service, quality control and the industrial sector of the clock and watchmaking industry.

#### Spare part :

MSA	Item
19.150-B	Microphone

#### Accessories :

MSA	Item
19.155-B	Automatic microphone Micromat S, 220 V
19.155-B110	Automatic microphone Micromat S, 110 V



MSA	Microphone	Voltage	Casing size	Kg
19.188	With	100 - 240 V	266 x 213 x 43 mm	2.100

The CHRONOSCOPE X1 (G3) is the high-end watch testing device for mechanical watches and has at its disposal the latest technologies for testing and measuring mechanical watch movements during production, in a repair service or laboratory.

*Delivered with 1 automatic microphone Micromat C, 1 network adapter, 1 protection cover and 1 operating instructions.*



MSA	Voltage	Size	Kg
19.155-C	230 V	115 x 125 x 215 mm	1.700

The modular, space-saving MICROMAT C system is a highly professional measuring station for the testing and regulation of production runs in the laboratory, during watch production and in a repair service. The measurement results of the mechanical watch test are displayed on a PC with the MICROMAT C system. You can connect up to a maximum of 10 independent test channels (microphones) to the same PC.



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

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

Spare parts :

MSA	Item
19.134-P	(1) Thermo paper, Ø 51 x 60 mm
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.*





MSA	Voltage	Size	Kg
<b>19.349</b>	100 - 240 V 50-60 Hz	135 x 289 x 225 mm	8.340

Watch winder for 2 watches.  
Noiseless, reliable and modern design with large transparent windows.  
Winding function : clockwise and anti-clockwise, automatic (bi-directional).

4 timer modes (TPD=Turns Per Day) :  
A : 650 TPD, 13 cycles, 50 turns per cycle, then rest.  
Each cycle takes 110 minutes.  
B : 900 TPD, 18 cycles, 50 turns per cycle, then rest.  
Each cycle takes 80 minutes.  
C : 1200 TPD, 24 cycles, 50 turns per cycle, then rest.  
Each cycle takes 60 minutes.  
D : 1500 TPD, 30 cycles, 50 turns per cycle, then rest.  
Each cycle takes 48 minutes.

*Operates via a 100 - 240 V network adapter, delivered with the device.*



MSA	Voltage	Size	Kg
<b>19.363</b>	100 - 240 V 50-60 Hz	141 x 192 x 243 mm	1.175

Watch winder for 2 watches.  
Noiseless, reliable and modern design with large transparent windows.  
Winding function : clockwise and anti-clockwise, automatic (bi-directional).

4 timer modes :  
A : 650 TPD, rotates 7 min. (50 rotations), rest 104 min., then new cycle.  
B : 900 TPD, rotates 7 min. (50 rotations), rest 73 min., then new cycle.  
C : 1200 TPD, rotates 7 min. (50 rotations), rest 53 min., then new cycle.  
D : 1500 TPD, rotates 7 min. (50 rotations), rest 41 min., then new cycle cycle.

*Operates via a 100 - 240 V network adapter, delivered with the device.*



MSA	Voltage	Size	Kg
<b>19.360</b>	100 - 240 V 50-60 Hz	151 x 151 x 171 mm	0.450

Watch winder for 1 watch.  
Noiseless, reliable and modern design with a large transparent window and lighting spread by LED.  
Winding function : clockwise and anti-clockwise, automatic (bi-directional).

4 timer modes (TPD=Turns Per Day) :  
A : 650 TPD, rotates 5 min., rest 79 min., then new cycle.  
B : 900 TPD, rotates 5 min., rest 56 min., then new cycle.  
C : 1200 TPD, rotates 5 min., rest 41 min., then new cycle.  
D : 1500 TPD, rotates 5 min., rest 32 min., then new cycle.

3 buttons on the back of the device :  
- TPD (selection of the number of turns per day)  
- LED (device lighting)  
- Switching on and selecting the direction of rotation.

*Operates via a 100 - 240 V network adapter, delivered with the device.*



MSA	Apparatus	Voltage	Kg
19.205	REGLOMAT Final-Test	220 V	2.780
19.205-110	REGLOMAT Final-Test	110 V	2.780
19.305 (1)	CYCLOTEST Automatic-Test	220 V	2.905
19.305-110	CYCLOTEST Automatic-Test	110 V	2.905

Watch winder for 18 watches with :

- 3 arms with clips for 9 watches without bracelets
- 3 arms with foam for 9 watches with bracelets.

The REGLOMAT apparatus (1 rpm) tests the following : slow winding, power on wrist, shock tests, calendar and detects hidden defects.

The CYCLOTEST apparatus (4 rpm) tests the following : accelerated winding, wheel (and pinion) speed, and power reserve.



MSA	Apparatus	Voltage	Kg
19.206 (1)	REGLOMAT Final-Test	220 V	2.780
19.206-110	REGLOMAT Final-Test	110 V	2.780
19.306	CYCLOTEST Automatic-Test	220 V	2.905
19.306-110	CYCLOTEST Automatic-Test	110 V	2.905

Watch Winder for 20 watches with :

- 2 arms with clips for 6 watches without bracelets
- 2 arms with foams for 6 watches with bracelets
- 2 arms with springs for 8 watches with bracelets.

The REGLOMAT apparatus (1 rpm) tests the following : slow winding, power on wrist, shock tests, calendar and detects hidden defects.

The CYCLOTEST apparatus (4 rpm) tests the following : accelerated winding, winding speed and power reserve.

#### Spare parts for MSA19.205, MSA19.206, MSA19.305 and MSA19.306 :

MSA	Item	Kg
19.201-A	Arm with spring for 1 watch with bracelet	0.015
19.201-B	Arm with clips for 2 watches without bracelets	0.052
19.205-A	Arm with clips for 3 watches without bracelets	0.056
19.205-B	Arm with foams for 3 watches with bracelets	0.064
19.205-C	Arm with springs for 4 watches with bracelet	0.100
19.205-E	Foam without arm	0.001



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MSA	Version	Voltage	Size	Kg
19.450	(1) Without arms	100 - 240 V	465 x 325 x 520 mm	10.500
19.451	With 6 arms MSA19.450-B	100 - 240 V	635 x 325 x 585 mm	11.000

CYCLOMOTION watch winder for automatic watch winding and for work testing.

Noiseless motor equipped with a clutch system suitable for heavy and big watches. It is controlled by soft touch keys on the front plate.

Maximum capacity : 24 watches (6 arms for 4 wrist watches each).

Rotation speeds : 1 or 4 rpm.

#### Spare parts :

MSA	Item
19.450-A	(1) Arm for 2 watches with bracelet
19.450-B	(2) Arm for 4 watches with bracelet
19.450-C	(3) Arm for 2 watches with bracelet
19.450-D	(4) Arm for 4 watches with bracelet
19.450-E	(5) Arm for 4 watches without bracelet
19.450-F	(6) Wall mounting kit
19.453	(7) Box for 4 watches without bracelet



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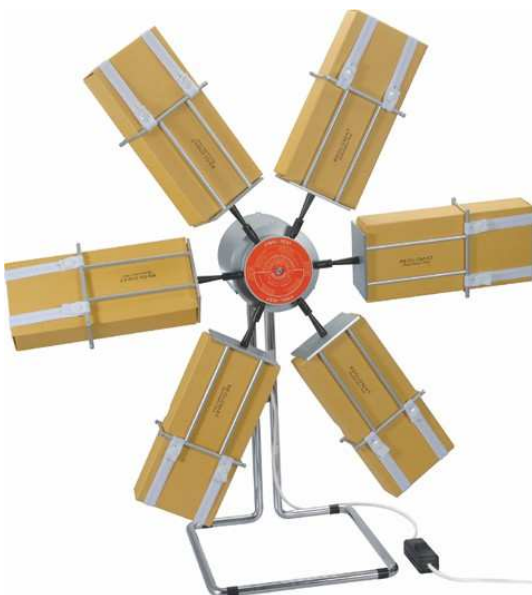
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MSA	Voltage	Kg
19.320	220 V	8.000

Watch winder for 60 watches with :

- 6 arms with 6 boxes for 10 watches without bracelets or 10 movements.  
The CYCLOTEST tests the following : winding acceleration, winding speed and power reserve.

Rotation speed : 4 rpm.

#### Spare parts :

MSA	Item
19.320-B	Button for closing the rubber MSA19.320-E
19.320-C	Box for 10 watches or movements
19.320-E	Rubber for holding the box MSA19.320-C
19.320-EB	Rubber with 2 buttons for holding the box MSA19.320-C



----- (a)

(a) Delivered without support for watches with bracelet

MSA	Voltage	Size	Kg
19.372	230 V	55 x 40 x 45 cm	13.000

CLINAX, small capacity 45° pendulum rotary movement machine.  
For winding automatic watches in small series.

*Capacity : up to 60 watch heads (or movements) and/or 16 watches with bracelets (depending on the type of assembly).*

**Accessory :**

MSA	Item
19.372-A	(a) Support for watches with bracelet



MSA	Voltage	Size	Kg
19.371	230 V	110 x 48 x 49 cm	63.000

STANDARD III, medium capacity 45° pendulum rotary movement machine.  
It is used for industrial winding of automatic watches, as well as for shock tests on watch heads.

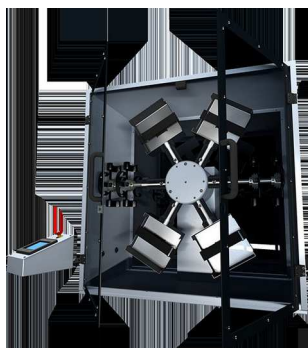
*Capacity : up to 250 watch heads (or movements).*



MSA	Voltage	Size	Kg
19.376	230 V	150 x 53 x 50 cm	98.000

SUPER E, high capacity 45° pendulum rotary movement machine.  
It is used for industrial winding of automatic watches, as well as for shock tests on watch heads.

*Capacity : up to 500 watch heads (or movements).*



MSA	Voltage	Size	Kg
19.370	230 V	56 x 60 x 33 cm	37.000
19.370-110	110 V	56 x 60 x 33 cm	37.000

DUOTEST 48, medium capacity rotary combination machine.  
This machine is specially designed for small quantities and is very suitable for after-sales service and shops.

It is used for winding automatic watches and for rate tests.

*Capacity : up to 48 watch heads (or movements) or 48 watches with bracelets (depending on the type of assembly).*



MSA	Voltage	Size	Kg
19.399	230 V / 50 Hz	110 x 110 x 50 cm	128.000
19.399-110	(a) 110 V / 50 Hz	110 x 110 x 50 cm	128.000

DUOTEST 4, high capacity rotary combination machine.

It is used for winding automatic watches and for rate tests.

*Capacity : up to 300 watch heads (or movements) or 120 watches with bracelets (depending on the type of assembly).*

(a) Requires a 110 V transformer





MSA	Size	Kg
<b>19.373-F</b>	312 x 128 x 23 mm	0.100

Blue plastic container.



MSA	Size	Kg
<b>19.374-F</b>	312 x 128 x 18 mm	0.100

Transparent cover for plastic containers.



MSA	Shape	Cases	Cases Size	Notch	Kg
<b>19.373-A</b>	Rectangular	8	70 x 50 mm	Without	0.010
<b>19.373-B (1)</b>	Television	5	66 x 53 mm	2	0.100
<b>19.373-C (2)</b>	Television	10	51 x 50.5 mm	1	0.100
<b>19.373-E (3)</b>	TV + Bracelet	5+1	51 x 50.5 mm	1	0.100
<b>19.374-A (4)</b>	Round	10	Ø 50 mm	1	0.100
<b>19.374-B</b>	Round	10	Ø 40 mm	1	0.100
<b>19.374-C</b>	Round	10	Ø 45 mm	1	0.100
<b>19.374-D</b>	Round	10	Ø 48 mm	1	0.100
<b>19.374-E</b>	Watch + Bracelet	2	-	Without	0.100

Blue plastic container with cut foams in different shapes.  
To be used with apparatus MSA19.370, 19.371, 19.372, 19.376 and 19.399.  
For watches with or without bracelets and movements.  
*Delivered without cover (see MSA19.374-F).*



MSA	Size	Kg
<b>19.373-D</b>	330 x 165 x 40 mm	0.100

Blue plastic container with cut foam and transparent cover.  
Cases shape : television 62 x 55 mm with 2 notches.

*To be used with apparatus MSA19.370, 19.371, 19.372, 19.376 and 19.399 (according to tray holder).*



MSA	Size
<b>19.373</b>	240 x 110 x 20 mm

Green plastic container (10 compartments) and transparent lid with protection foams.

*To be used with apparatus MSA19.370, 19.371, 19.372, 19.376 and 19.399 (according to tray holder).*

WATERPROOF TESTERS



MSA	Voltage	Size	Kg
19.449	100 - 240 V	157 x 190 x 240 mm	2.000

Waterproof tester by vacuum VACUPRO.  
Bubbles are formed on the watch to indicate the exact location of the leak.  
*Delivered with 1 network adapter 100-240 V, 1 battery 9 V and 5 most common worldwide adaptors.*



MSA	Size	Kg
19.448	280 x 100 x 200 mm	6.400

Waterproof tester DIVER 125.  
-Robust anodized aluminium construction  
- Chamber diameter : Ø 63 mm (2.5")  
- Chamber depth : 50 mm (2").

... 125 bar



MSA	Version	Size	Kg
19.406	Standard	200 x 170 x 270 mm	3.500
19.424	(1) Plus	200 x 170 x 270 mm	3.500

CALYPSO waterproof tester used with water.  
Cylinder Ø 80 mm for 2 watches.

*MSA19.406 (Standard version) :  
The pressure is generated by a manual pump.*

*MSA19.424 (Plus version) :  
Suitable for both air admission by a manual pump or compressor (not delivered). On compressor mode, the pressure adjustment inside the cylinder is made with an air-gate located in front of the tester.*

... 10 bar



MSA	Version	Size	Kg
19.425	Minus	200 x 170 x 270 mm	3.500

CALYPSO waterproof tester used with water.  
Cylinder Ø 80 mm for 2 watches.

*This version is used with a compressor (not delivered). The pressure adjustment inside the cylinder is made with an air-gate located in front of the tester.*

... 10 bar



ROKOR Seiler



0 ... 40 bar

MSA	Size	Kg
19.416	250 x 270 x 250 mm	7.000

NATATOR 40 waterproof tester, suitable for after sales service single test. Doesn't require any electric plug in. Stainless steel tank Ø 65 x 650 mm. After the water filling (maximum 0.2 L), the lid with window is locked. The control is made using the lateral handle, which will be screwed until the desired pressure indicated on the manometer.  
*No compressor required.*

ROKOR Seiler



0 ... 125 bar

MSA	Size	Kg
19.429	310 x 330 x 300 mm	12.000

NATATOR 125 waterproof tester, Suitable for after sales service single test. Doesn't require any electric plug in. Stainless steel tank Ø 80 x 65 mm. After the water filling (maximum 0.33 L), the lid is locked. The control is made using the lateral handle, which will be screwed until the desired pressure indicated on the manometer.  
*No compressor required.*

Greiner vibrograf



-0.7 ... 10 bar

MSA	Voltage	Size	Kg
19.407	DUAL 115 - 230 V	320 x 250 x 280 mm	7.500

POSEIDON LT100 high-tech waterproof tester with the following characteristics :

- Universal use with all types of watches with or without bracelets
- The test starts automatically under vacuum and pressure
- Automatic determination of stabilisation and measuring time for reliable results
- With colour display in 8 languages. Indication of the results in numerical way as well as in analogical colour diagram
- 12 available programs including 7 individually programmable from -0.7 to 10 bar
- RS 232 interface for printout of certificate.
- Printout the results on a thermo printer.

*Compressor delivered separately (see page 19-XX).*

WATERPROOF TESTERS

Greiner vibrograf



... 0.7 bar

MSA	Kg
19.403	3.200

LEAK-CHECKER PRIME waterproof tester for testing leaks up 0.7 bar vacuum.

- No additional compressor needed thanks to integrated pump
- Suitable for any type of watches, included very small ceramic timepieces
- Programmable vacuum in steps of 0.1 bar
- Results displayed on a 5" colour touchscreen TFT (800 x 480 pixels)
- Printout the results on a thermo printer.



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MSA	Voltage	Size	Kg
19.129	115 - 230 V	260 x 170 x 110 mm	1.000

Thermo printer MARTEL 7830 suitable for all GREINER® waterproof testers.

Spare part :

MSA	Item	Kg
19.167-B	(1) Thermo paper, width 57 mm	0.088

Elma



-0.8 bar

MSA	Voltage	Size	Kg
19.402	100 - 240 V	155 x 315 mm	3.500

The LEAK CONTROLLER 2000 waterproof tester produces a pressure difference between the interior and the exterior of the watch, thanks to a built-in vacuum.

The 1µ precision dial comparator records each variation on the watch case and indicates its pressure compensation.

The equipment is almost mechanical, which allows even the tests of cheap watches with deformable glasses (no risk of glass breaking).

*Do not require any maintenance.*

witschi



-0.1 ... -0.7 bar  
0.1 ... 10 bar

MSA	Version	Voltage	Size	Kg
19.217	Standard version	230 V	149 x 305 x 243 mm	5.800
19.216	PRO version with software	230 V	149 x 305 x 243 mm	5.800

The PROOFMASTER tests the water resistance of watches conveniently with a fully automatic closing and test sequence. With its high level of operating convenience, the PROOFMASTER is the ideal tightness testing device for the following areas: watch service centres, watch retailers, watchmaking and watchmaking laboratories.

Compressor with tank releasing pressurised air immediately, allowing waterproof tests to proceed quicker.



16 bar  
40 dB

MSA	Voltage	Capacity	Size	Kg
19.455	230 V	50 litres/minute	500 x 460 x 600 mm	30.000

Compressor ABSOLUTE AIR with automatic draining, high performance (50 Hz/0.34 kW) and very quiet.  
25 litre tank.

Drier with warm air.



MSA	Voltage	Size	Kg
19.750	220 V	190 x 175 x 120 mm	2.810
19.750-110	110 V	190 x 175 x 120 mm	2.810

T8 drier with hot air ventilator for drying watches, jewellery, etc.  
Power 600 W.

Automatic cleaning machine VIBRATO.



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MSA	Voltage	Size	Kg
19.705	230 V	480 x 480 x 860 mm	63.000

With its modern and secure design, the fully automatic cleaning machine VIBRATO has been developed for cleaning movement components and any other small watch parts.

- Certified ATEX according to the European directive 2014/34 UE (ATEX 2014) in IIB T4 class
- Ensures maximum safety and allows the use of watchmakers solvents such as rectified benzine
- Its conception with 6 baths (including 1 adjustable ultrasonic tank) + forced air heating system offers unrivalled flexibility and efficiency
- THE ONLY MACHINE enabling watchmakers to use it for washing, drying and epilame coating in 1 cycle.

The several possibilities of movements of the basket and the speed adjustment from 1 up to 1200 rpm guarantee maximum care and efficiency. The drying process is optimized to avoid residues of "dry drops".

The machine is equipped with a 7" touch-screen display to manage all operations. Its intuitive and ergonomic presentation allows an easy-to-use interface by the operator.

The wash programming, baths management and various configurations are made directly on the touch-screen.

Ditto for the management of possible failures, which facilitates the after-sales service on-site by the user himself.

A USB2 input allows implementing configurations and wash programs remotely.

A rear exit is provided to connect the VIBRATO to an external exhaust or an active carbon filter.

The machine is compatible with all existing baskets Ø 80 mm.

Approval institute  
ATEX marking  
IEC marking  
Number of baths

TÜV SÜD Schweiz AG  
Ex II 3/-G  
EX h b IIB T4 Gc  
6 (including 1 ultrasound)

Drying station  
Cleaning baskets  
Cleaning actions

1 forced air station (adjustable up to 65° C)  
Ø 80 mm, up to 5 baskets height 10 mm  
Rotation, oscillation, vertical agitation, ultrasound

Rotation speed  
Vertical oscillation  
Ultrasound

From 0 up to 1200 rpm / Adjustable acceleration  
Up to 10 mm, adjustable  
50 W adjustable from 10 to 100%, 40 KHz with "Sweep" function

Principle  
Interface  
Voltage

Turntable with 7 positions  
7" touch-screen display  
230 V or 115 V

Accessories :

MSA	Item
19.708	(1) Active carbon filter module
19.715	(2) Active carbon cartridge for MSA19.708
19.705-A	(3) Vapour collector, for connecting to an external aspiration
19.706	(4) Portable surveying instrument PPM atex certified, with charger 230 V
19.711	(5) Glass tank with cover, Ø 114 x height 175 mm

Active carbon filter module.  
The VIBRATO machine must be connected to a valid external extraction system or to our activated carbon filter module to ensure a safe environment in terms of occupational health and fire protection.  
At the same time, the working room must be regularly ventilated. In any case, we advise you to analyse the environment room by a local accredited specialist.



VIBRATO



MSA	Voltage	Size	Kg
19.708	230 V 30 W	720 x 260 x 260 mm	15.000

The module is fixed to the rear of the VIBRATO machine. It is equipped with an independent fan to ensure permanent operation. It allows the recovery of almost all the solvent vapours coming out of the machine and ensures a long-lasting use in complete safety.  
The active carbon cartridge is easily replaceable (bayonet system). Its lifetime depends on the intensity of use of the machine.

Fan capacity : 235 m3/hour.

Spare part :

MSA	Item	Kg
19.715	Active carbon cartridge for MSA19.708	3.540

VOC sensor (PID).



MSA	Size	Kg
19.706	61 x 66 x 59 mm	0.111

Compact and accurate PID sensor to monitor and optimise cartridge lifetime by simple reading.  
It is estimated that under heavy use, the cartridge has a lifetime of 4-6 months.

Sensitivity	0.001 ppm
PID lamp	10.6 eV
Range	0.001 - 5000 ppm
Alarm	Yes
Output	USB 2.0

Vapour collector, for connecting to an external aspiration.



MSA
19.705-A

The collector is attached to the rear of the machine and must be connected to an external suction device (Ø 100 mm sleeve).

Baskets for cleaning machine, in polished stainless steel 304.



MSA	Size	Kg
19.572	Ø 80 x 53 mm	0.037

Lower basket holder.  
Useful height 44 mm, total 53 mm.



MSA	Size	Kg
19.544	Ø 80 x 74 mm	0.060

Lower basket holder.  
Useful height 66 mm, total 74 mm.



MSA	Size	Kg
19.705-P1	Ø 80 x 74 mm	0.110

Stainless steel upper basket holder.  
Height 74 mm.



MSA	Size	Kg
19.795	Ø 80 x 3.20 mm	0.017

Cover for cleaning basket.  
Height 3.20 mm ; mesh 0.20 mm.



MSA	Size	Kg
19.563	300 x 60 mm	0.029

Wave-breaker for glass beakers of cleaning machines.





MSA	Size	Kg
19.794	Ø 80 x 30.5 mm	0.022

Cleaning basket without division.  
Useful height 26 mm, total 30.5 mm.



MSA	Size	Kg
19.790	Ø 80 x 14 mm	0.020

Cleaning basket without division.  
Useful height 10 mm, total 14 mm.



MSA	Size	Kg
19.791	Ø 80 x 14 mm	0.026

Cleaning basket with 4 divisions.  
Useful height 10 mm, total 14 mm, steel sheet separations thickness 0.5 mm.



MSA	Size	Kg
19.792	Ø 80 x 14 mm	0.037

Cleaning basket with 8 divisions.  
Useful height 10 mm, total 14 mm, steel sheet separations thickness 0.5 mm.



MSA	Size	Kg
19.793	Ø 80 x 14 mm	0.038

Cleaning basket with 12 divisions + centre Ø 40 mm.  
Useful height 10 mm, total 14 mm, steel sheet separations thickness 0.5 mm.

VIBRASONIC ACS-900 ultrasonic cleaning machines.



DELIVERED WITHOUT BASKETS

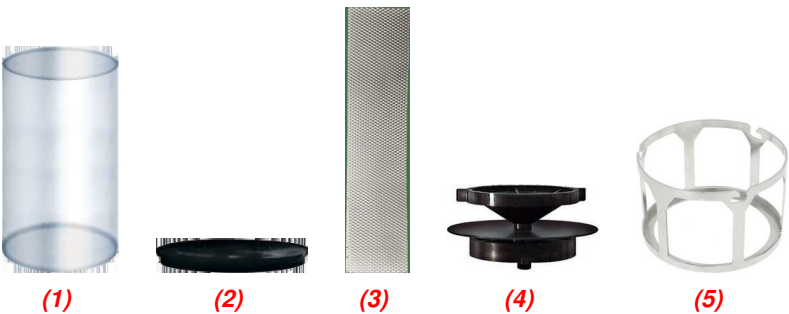
MSA	Voltage	Size	Kg
19.545	230 V	430 x 430 x 610 mm	32.900

VIBRASONIC ACS-900 automatic cleaning machine with 4 baths (including 1 ultrasonic bath).  
Fully automatic and electronically activated alternative rotation.

Suitable with accessories Ø 80 mm.

Contents (Ø 80 mm) :

MSA	Item
19.550-U	Ultrasonic tank
19.551	(1) 3x Glass beaker
19.553	(2) 4x lid for glass beakers
19.563	(3) 3x wave-breaker for glass beakers, 300x60 mm
19.565	(4) Upper basket holder, for baskets Ø 80 mm
19.572	(5) Lower basket holder, for baskets Ø 80 mm



Spare parts :

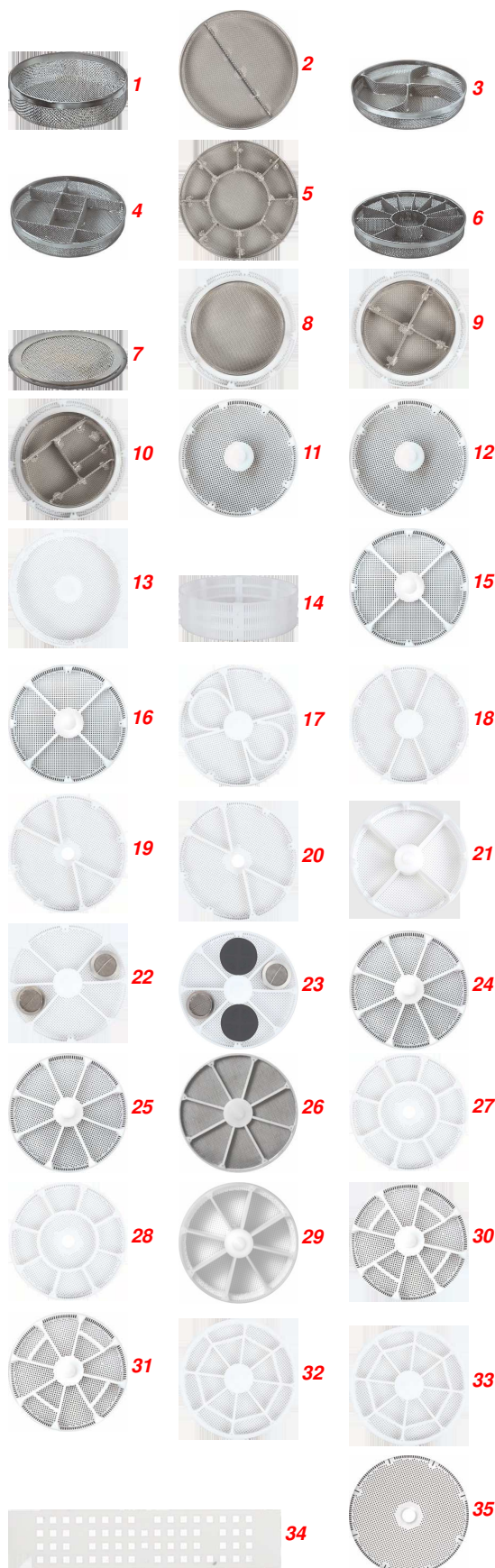
MSA	Item
19.540-A	(1) Flexible hose, length 20...100 cm
19.540-B	Flexible hose, length 50...250 cm
19.540-P	Hose clamp
19.540-R	Fitting with screws



Special optional accessories available for MSA19.545 in Ø 80 mm :

MSA	Item	Kg
19.549	(1) Basket for 14 large dimensions main plates, thickness from 0.90 to 1.60 mm	0.090
19.549-A	(2) Set of main plates supports for MSA19.549	0.005

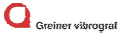




Optional accessories available for MSA19.545 in Ø 80 mm :

MSA	Item
19.569	1 Metal basket without divisions, height 10 mm
19.542	2 Metal basket with 2 divisions, height 10 mm
19.570	3 Metal basket with 4 divisions, height 10 mm
19.568	4 Metal basket with 8 divisions, height 10 mm
19.584	5 Metal basket with 9 divisions + centre Ø 40 mm, height 10 mm
19.567	6 Metal basket with 12 divisions, height 10 mm
19.571	7 Metal cover for metal baskets
19.580	10 Plastic basket without divisions + 1 metal basket MSA19.557, height 8 (14) mm
19.581	11 Plastic basket without divisions + 1 metal basket MSA19.556, height 8 (14) mm
19.582	12 Plastic basket without divisions + 1 metal basket MSA19.562, height 8 (14) mm
19.574	8 Plastic basket without divisions, height 8 mm
19.574-D	9 Plastic basket without divisions, height 8 mm, double wall
19.586	13 Plastic basket without divisions, height 16 mm
19.589	14 Plastic basket without divisions, height 24 mm
19.575	15 Plastic basket with 4 divisions, height 8 mm
19.587	16 Plastic basket with 4 divisions, height 8 mm, double wall
19.592	17 Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 25 mm
19.593	18 Plastic basket with 4 divisions, height 8 mm for 4 main plates Ø 31 mm
19.591	19 Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 38 mm
19.591-D	20 Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 38 mm, double wall
19.596	21 Plastic basket with 4 divisions, height 16 mm
19.578	22 Plastic basket with 6 divisions + 2 baskets MSA19.564, height 8 mm
19.579	23 Plastic basket with 6 divisions + 2 baskets MSA19.564 + 2 capsules MSA19.552, height 8 mm
19.576	24 Plastic basket with 8 divisions, height 8 mm
19.583	25 Plastic basket with 8 divisions, height 8 mm, double wall
19.599	26 Plastic basket with 8 divisions, height 8 mm, tight mesh
19.594	27 Plastic basket with 8 divisions + centre Ø 39 mm, height 8 mm
19.594-D	28 Plastic basket with 8 divisions + centre Ø 39 mm, height 8 mm, double wall
19.597	29 Plastic basket with 8 divisions, height 32 mm
19.577	30 Plastic basket with 12 divisions, height 8 mm
19.577-D	31 Plastic basket with 12 divisions, height 8 mm, double wall
19.595	32 Plastic basket with 16 divisions, height 8 mm
19.595-D	33 Plastic basket with 16 divisions, height 8 mm, double wall
19.590	34 Long plastic division for baskets MSA19.575 /19.576
19.573	35 Plastic cover for basket





MSA	Voltage	Size	Kg
19.550	230 V	420 x 420 x 560 mm	29.000
19.550-110	115 V	420 x 420 x 560 mm	29.000

VIBRASONIC ACS-900 automatic cleaning machine with 4 baths (including 1 ultrasonic bath).  
Fully automatic and electronically activated alternative rotation.

Suitable with accessories Ø 64 mm.

Contents (Ø 64 mm) :

MSA	Item
19.550-U	Ultrasonic tank
19.551	(1) 3x Glass beaker
19.552	(3) 3x pair of plastic capsules, Ø 22 x 6 mm
19.553	(2) 4x lid for glass beakers
19.554	(4) Upper basket holder, for baskets Ø 64 mm
19.555	(5) Lower basket holder, for baskets Ø 64 mm
19.556	(6) 2x metal basket with 4 divisions, height 15 mm
19.557	(7) Metal basket without divisions, height 15 mm
19.558	(8) Metal cover for baskets MSA19.556 and 19.557
19.559	(9) Support with 1 axis for 5 movement holders
19.560	(10) 5x movement holder for 3 movements
19.563	(11) 3x wave-breaker for glass beakers, 300x60 mm

DELIVERED WITH BASKETS Ø 64 mm



Special optional accessories available for MSA19.550 in Ø 64 mm :

MSA	Item
19.541	(1) Movement holder for 6 movements
19.561	(2) Upper basket holder with clamp (also suitable for Ø 80 mm)
19.562	(3) Basket with 5 divisions, height 14 mm
19.564	(4) Basket with lid, Ø 20 x height 13 mm





**Spare parts :**

MSA	Item
<b>19.540-A</b>	<b>(1)</b> Flexible hose, length 20...100 cm
<b>19.540-B</b>	Flexible hose, length 50...250 cm
<b>19.540-P</b>	Hose clamp
<b>19.540-R</b>	Fitting with screws



**(1)**

**(2)**

**(3)**

**(4)**

**Other accessories for cleaning machines :**

MSA	Item	Kg
<b>19.531</b>	<b>(1)</b> Brass cleaning basket with screw-on cover without division, Ø 14 - height 8.30 mm	0.005
<b>19.725</b>	<b>(2)</b> Brass cleaning basket with screw-on cover without division, Ø 16 - height 12.50 mm	0.007
<b>19.726</b>	<b>(3)</b> Brass cleaning basket with screw-on cover without division, Ø 14 - height 9.50 mm	0.004
<b>19.727</b>	<b>(4)</b> Brass cleaning basket with screw-on cover without division, Ø 23 - height 12.50 mm	0.010

Ultrasonic cleaning machines SONOSWISS®.

# SONO SWISS®

High Quality Ultrasonic Systems



MSA	Model	Volume	Voltage	Power	Int. size (tank)	Heating	Drain	Cover	Handles	Kg
19.880	SW 1H	0.80 L	220-240 V	90 W	190x85x60 mm	With	Without	Without	Without	2.000
19.880-110	SW 1H	0.80 L	100-120 V	90 W	190x85x60 mm	With	Without	Without	Without	2.000
19.881	SW 3H	2.75 L	220-240 V	280 W	235x134x97 mm	With	Without	Without	With	2.800
19.881-110	SW 3H	2.75 L	100-120 V	280 W	235x134x97 mm	With	Without	Without	With	2.800
-	-	-	-	-	-	-	-	-	-	-
19.882	SW 3H	2.75 L	220-240 V	280 W	235x134x97 mm	With	With	Without	With	2.800
19.882-110	SW 3H	2.75 L	100-120 V	280 W	235x134x97 mm	With	With	Without	With	2.800
19.883	SW 6H	5.75 L	220-240 V	550 W	298x150x150 mm	With	With	Without	With	4.800
19.883-110	SW 6H	5.75 L	100-120 V	550 W	298x150x150 mm	With	With	Without	With	4.800
-	-	-	-	-	-	-	-	-	-	-
19.884	SW 12H	12.75 L	220-240 V	1000 W	297x238x200 mm	With	With	Without	With	7.300
19.884-110	SW 12H	12.75 L	100-120 V	1000 W	297x238x200 mm	With	With	Without	With	7.300
-	-	-	-	-	-	-	-	-	-	-
19.885	SW 18H	18 L	220-240 V	1000 W	330x300x200 mm	With	With	Without	With	8.200
19.885-110	SW 18H	18 L	100-120 V	1000 W	330x300x200 mm	With	With	Without	With	8.200
-	-	-	-	-	-	-	-	-	-	-
19.886	SW 30H	28 L	220-240 V	1500 W	500x298x200 mm	With	With	Without	With	11.200
19.886-110	SW 30H	28 L	100-120 V	1500 W	500x298x200 mm	With	With	Without	With	11.200

Ultrasonic cleaning apparatus PRESET.

- Programmable ultrasonic generator : possibility to save a wash program
- DEGAS function : the special deformation of the ultrasonic wave accelerates the degassing of the liquid
- BOOST function : this mode is used to temporarily increase the ultrasound power in case of persistent contaminants
- SWEEP function : the frequency scanning is automatically switched for a better distribution of the ultrasonic power
- The heating temperature is adjustable in 5° C increments up to 80° C
- The ultrasound duration from 1-5 minutes in 1-minute increments or 5-30 minutes in 5-minute increments.

*Stainless steel tank. Delivered without lid or basket.*



Accessories for SONOSWISS® ultrasonic cleaning machines.

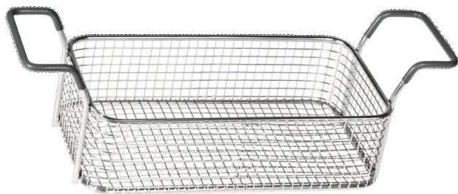
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High Quality Ultrasonic Systems



MSA	For
19.660-A	MSA19.880 (SW 1H)
19.662-A	MSA19.881 + MSA19.882 (SW 3H)
19.664-A	MSA19.883 (SW 6H)
19.665-A	MSA19.884 (SW 12H)
19.885-A	MSA19.885 (SW 18H)
19.666-A	MSA19.886 (SW 30H)

Plastic cover, can also be used as a tray for the wet basket.

SONO  SWISS  
High Quality Ultrasonic Systems



MSA	For
19.660-B	MSA19.880 (SW 1H)
19.662-B	MSA19.881 + MSA19.882 (SW 3H)
19.664-B	MSA19.883 (SW 6H)
19.665-B	MSA19.884 (SW 12H)
19.885-B	MSA19.885 (SW 18H)
19.666-B	MSA19.886 (SW 30H)

Stainless steel basket.



MSA	Size
19.655	Ø 59 x 60 mm
19.680	Ø 78 x 60 mm

Stainless steel immersion basket.



MSA	For
19.612	(a) MSA19.880
19.652	(b) MSA19.881 + MSA19.882
19.681	(b) MSA19.883 + MSA19.884 + MSA19.885 + MSA19.886

Stainless steel tray for 2 beakers.

(a) For beakers Ø 80 mm

(b) For beakers Ø 95 mm.



MSA
19.633-C

Flexible plastic jewellery rack with 8 adjustable hooks.  
Length 305 mm.



MSA	Size
19.614	Ø 80 mm (600 ml)
19.640-F	Ø 95 mm (600 ml)

Glass beaker with cover and ring.

Spare parts :

MSA	Item
19.683	Cover for MSA19.640-F
19.686	Cover for MSA19.614

SONO+SWISS  
High quality Ultrasonic Systems



MSA
19.682

Set of 2 glass beakers Ø 80 mm (600 ml) with lids and 1 tray for MSA19.880.

Professional steam cleaner XRVAP PRO.



(1) : using the 5-litre water supply tank provided.  
(2) : via a direct connection to the public water mains supply.  
In both cases, the hot filling is possible.

MSA		Voltage	Size	Kg
19.712	(1)	230 V 50 Hz	322 x 365 x 330 mm	9.000
19.713	(2)	230 V 50 Hz	322 x 365 x 330 mm	9.000

Professional steam cleaner PXRVAP PRO.  
Its use is recommended in watchmaking and jewellery for the cleaning of all types of parts. Polishing residues, resin, oil, etc., are easily eliminated and without any toxic products thanks to the adjustable steam jet from 0 to 10 bar. The device has an integrated anti-limestone system and the steam can be generated without any fear by the public water supply.  
The steam production is constant with a very low-pressure drop even in a continuous service. The device also allows generating wet or dry steam (by selection).

Delivered with 1 flexible handpiece with nozzle (1.3 metres) and 3 pre-drilled nozzles.  
Note: when ordering, remember to define the filling mode of the device.  
Delivered without pedal.

Option :

MSA	Item
19.712-01	Pedal

Technical data :

Colour	Stainless steel
Steam production	Continuous flow
Boiler stem temperature	171° C
Heating time	5 minutes
Pressure (bar)	Up to 10 bar
Boiler power consumption (W)	3200
Boiler volume (litres)	2
Steam EV1 (gr/min.)	36 gr/min. minimum regulation - 76 gr/min. maximum regulation
Boiler material	Stainless steel AISI 304
Steam regulation on steam hose	No
Total power consumption (W)	3200
Tank capacity (litres)	5
Water level alarm	Visual and acoustic
Pressure indicator	Visual
Hot water injection + steam (gr/min.)	173 gr/min. minimum regulation - 224 gr/min. maximum regulation
Water pump power	48 W
Low tension voltage on handgrip	9 V
Power cable	7 metres
Certification reached	CE



MSA	Volume	Kg
26.754	500 ml	0.540

Anti-limestone product.

Cleaning machines ELMA® ELMASOLVEX.



DELIVERED WITHOUT BASKETS

MSA	Voltage	Size	Kg
19.501	230 V	502 x 516 x 650 mm	19.000
19.501-110	115 V	502 x 516 x 650 mm	19.000

ELMASOLVEX SE is a manual multiple chamber cleaning machine for watch movements and mechanical precision parts. Water and solvent based cleaning and rinsing media. Equipped with four cleaning chambers and one drying chamber with fine filter hot air technology, this machine achieves perfect cleaning results.

*Delivered with basket holders, beakers and wave-breaker.*



DELIVERED WITHOUT BASKETS

MSA	Voltage	Size	Kg
19.502	230 V	515 x 542 x 650 mm	28.000
19.502-110	115 V	515 x 542 x 650 mm	28.000

ELMASOLVEX RM is a completely automatic multiple chamber cleaning machine with integrated explosion protection. For watch movements and other mechanical precision parts. Water and solvent based cleaning and rinsing media. Cleaning and rinsing are performed completely automatically or alternatively with individually adjustable parameters in the rotation or oscillation process in four cleaning chambers. An integrated drying chamber with fine filter hot air technology completes the residue-free cleaning.

*Delivered with basket holders, beakers and wave-breaker.*

Spare parts for MSA19.501 and MSA19.502 in Ø 64 mm :

MSA	Item
19.521-A	Beaker lid with cork gasket
19.521-B	Cork gasket for lid
19.521-D	CPL heating plate
19.521-E	Heater/Motor switch
19.530-B	Set including basket holder MSA19.530-L, basket MSA19.530-M, 2 baskets MSA19.530-J, small basket MSA19.530-G, lid MSA19.530-F, lid MSA19.530-H
19.530-C	Basket Ø 64 mm, height 15 mm, with 4 divisions
19.530-D	Basket Ø 64 mm, height 15 mm, with 9 divisions
19.530-E	Basket Ø 64 mm, height 45 mm, without division
19.530-F	Lid Ø 64 mm for baskets
19.530-G	Small basket Ø 20 mm, without lid
19.530-H	Lid Ø 20 mm for small basket
19.530-J	Basket Ø 64 mm, height 15 mm, with 5 divisions
19.530-L	Lower basket holder
19.530-M	Basket Ø 64 mm, height 15 mm, without division
19.530-N	Movement holder for 6 movements
19.530-P	Small basket Ø 20 mm, with lid
19.530-S	Beaker with lid + gasket + wave-breaker, volume 600 ml
19.530-T	Beaker, volume 600 ml
19.530-U	Lid for beaker MSA19.530-S
19.530-V	Gasket for beaker MSA19.530-S
19.530-W	Wave-breaker for beaker MSA19.530-S

## Drying units ELMA® ELMADRY.



MSA	Voltage	Working capacity	Heating power	External size mm	Internal size mm	Max. load	Kg
<b>19.617</b>	220 - 240 V	1.9 L	480 W	300 x 186 x 219	240 x 137 x 100	1 Kg	3.600
<b>19.617-110</b>	110 V	1.9 L	480 W	300 x 186 x 219	240 x 137 x 100	1 Kg	3.600
-	-	-	-	-	-	-	-
<b>19.618</b>	220 - 240 V	9.0 L	550 W	362 x 285 x 322	300 x 240 x 200	7 Kg	6.100
<b>19.618-110</b>	110 V	9.0 L	550 W	362 x 285 x 322	300 x 240 x 200	7 Kg	6.100
-	-	-	-	-	-	-	-
<b>19.619</b>	220 - 240 V	20.6 L	1100 W	568 x 347 x 322	505 x 300 x 200	12 Kg	10.200
<b>19.619-110</b>	110 V	20.6 L	1100 W	568 x 347 x 322	505 x 300 x 200	12 Kg	10.200

ELMADRY TD drying unit is available in 3 sizes (30, 120 and 300) and designed for use in production, workshop and service. After ultrasonic cleaning, the parts are first rinsed in the basket with running water and then simply placed in the drying unit. Fitted with cold and hot air blower (70° C), sensitive parts can also be dried gently. In cold air operation, the parts to be dried can also be cooled quickly.

The hot air function is activated while the cover is on. The cover has ventilation slots, ensuring that maximum air turbulence is produced, and the moist air is conducted to the outside. At the same time, the cover reduces energy consumption. The dust filter on the underside is replaceable and prevents re-soiling of the cleaned parts by the dust in the room air.

## Optional :

MSA	Item
<b>19.611-A</b>	Perforated silicone mat for MSA19.617
<b>19.611-B</b>	Perforated silicone mat for MSA19.618 and MSA19.619
<b>19.626</b>	Dust filter for MSA19.617, MSA19.618 et MSA19.619

## Optional baskets available :

- For MSA19.617 (TD 30): MSA19.660-B (1 litre) and MSA19.662-B (3 litres)
- For MSA19.618 (TD 120): MSA19.664-B (6 litres) and MSA19.665-B (12 litres)
- For MSA19.619 (TD 300): MSA19.666-B (30 litres).

## MULTIVAC® professional chamber machine.



MSA	Type	Voltage	Chamber size
19.741	(a) P200 without gas	220-240 V / 50 Hz	305 x 300 x 110 mm
19.742	(a) P200 with gas	220-240 V / 50 Hz	305 x 300 x 110 mm
19.743	(a) C100 without gas	220-240 V / 50 Hz	330 x 310 x 120 mm
19.744	(a) C100 with gas	220-240 V / 50 Hz	330 x 310 x 120 mm
19.745	(b) C200 without gas	220-240 V / 50 Hz	490 x 355 x 150 mm
19.746	(b) C200 with gas	220-240 V / 50 Hz	490 x 355 x 150 mm
19.747	(c) C250 without gas	220-240 V / 50 Hz	490 x 285 x 150 mm
19.748	(c) C250 with gas	220-240 V / 50 Hz	490 x 285 x 150 mm

Professional chamber machine.

(a) 2 nozzles (b) 4 nozzles (c) 8 nozzles

Type P : time regulated vacuum level

Type C : probe regulated vacuum level in %.

### Spare parts :

MSA	Item
19.738	Nitrogen pressure regulator with 2-metre hose
19.739	Argon pressure regulator with 2-metre hose

### Technical information of the chamber machines MSA19.74x :

Equipment	MSA19.740 (1)	MSA19.741 (1)	MSA19.742 (1+2)	MSA19.743 (1)	MSA19.744 (1+2)	MSA19.745 (1)	MSA19.746 (1+2)	MSA19.747 (1)	MSA19.748 (1)
Sealing bar	Snap-in 205 mm	Snap-in 305 mm	Snap-in 305 mm	305 mm	305 mm	465 mm	465 mm	465 mm (2 parallel bars)	465 mm (2 parallel bars)
Double sealing with underside pre-cutting	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm	1x 3 mm 1x 1 mm on the 2 bars	1x 3 mm 1x 1 mm on the 2 bars
Vacuum pump	4 m3/h	8 m3/h	8 m3/h	MRP 15	MRP 15	MRP 25	MRP 25	MRP 25	MRP 25
Filling plate in resin	✓ (2x)	✓ (2x)	✓ (2x)	✓	✓	✓	✓	✓	✓
Transparent plexiglas cover	✓	✓	✓						
Window control in the safety glass lid				✓	✓	✓	✓	✓	✓
Electronic control	MCB 01	MCB 01	MCB 01	MC06-K20	MC06-K20	MC06-K20	MC06-K20	MC06-K20	MC06-K20
Automatic progressive atmosphere	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vacuum quick- stop button				✓	✓	✓	✓	✓	✓

### Accessories :

(1) Mobile stand, 4 wheels ( 2 swivels), with pouch shelf

(2) Gas flushing system





1

2

**In a 500-piece bag :**

MSA	Quantity	Size 1 x 2
17.706-250X500	500	250 x 500 mm
17.706-250X600	500	250 x 600 mm
17.706-260X450	500	260 x 450 mm
17.706-300X500	500	300 x 500 mm
17.706-300X600	500	300 x 600 mm
17.706-300X700	500	300 x 700 mm

Special plastic bag (PA/PE 20/70) for chamber machines.

**In a 1000-piece bag :**

MSA	Quantity	Size 1 x 2
17.706-100X250	1000	100 x 250 mm
17.706-100X300	1000	100 x 300 mm
17.706-120X120	1000	120 x 120 mm
17.706-120X160	1000	120 x 160 mm
17.706-120X200	1000	120 x 200 mm
17.706-120X270	1000	120 x 270 mm
17.706-120X300	1000	120 x 300 mm
17.706-120X400	1000	120 x 400 mm
17.706-130X180	1000	130 x 180 mm
17.706-130X200	1000	130 x 200 mm
17.706-130X280	1000	130 x 280 mm
17.706-130X300	1000	130 x 300 mm
17.706-130X380	1000	130 x 380 mm
17.706-140X200	1000	140 x 200 mm
17.706-140X210	1000	140 x 210 mm
17.706-140X270	1000	140 x 270 mm
17.706-150X180	1000	150 x 180 mm
17.706-150X200	1000	150 x 200 mm
17.706-150X230	1000	150 x 230 mm
17.706-150X260	1000	150 x 260 mm
17.706-160X200	1000	160 x 200 mm
17.706-160X300	1000	160 x 300 mm
17.706-165X210	1000	165 x 210 mm
17.706-165X250	1000	165 x 250 mm
17.706-170X250	1000	170 x 250 mm
17.706-170X400	1000	170 x 400 mm

MSA	Quantity	Size 1 x 2
17.706-180X230	1000	180 x 230 mm
17.706-180X240	1000	180 x 240 mm
17.706-180X250	1000	180 x 250 mm
17.706-180X260	1000	180 x 260 mm
17.706-180X280	1000	180 x 280 mm
17.706-180X350	1000	180 x 350 mm
17.706-200X220	1000	200 x 220 mm
17.706-200X250	1000	200 x 250 mm
17.706-200X300	1000	200 x 300 mm
17.706-200X350	1000	200 x 350 mm
17.706-200X400	1000	200 x 400 mm
17.706-200X500	1000	200 x 500 mm
17.706-200X600	1000	200 x 600 mm
17.706-220X300	1000	220 x 300 mm
17.706-225X350	1000	225 x 350 mm
17.706-230X380	1000	230 x 380 mm
17.706-250X280	1000	250 x 280 mm
17.706-250X300	1000	250 x 300 mm
17.706-250X350	1000	250 x 350 mm
17.706-250X400	1000	250 x 400 mm
17.706-260X350	1000	260 x 350 mm
17.706-270X300	1000	270 x 300 mm
17.706-300X300	1000	300 x 300 mm
17.706-300X350	1000	300 x 350 mm
17.706-300X400	1000	300 x 400 mm
17.706-320X320	1000	320 x 320 mm

Special plastic bag (PA/PE 20/70) for chamber machines.



MSA	Version	Voltage	Size	Kg
19.850	Up to 10 benches	220 V	500 x 700 x 800 mm	100.000

AIRcenter is a system which combines air pressure and vacuum in 1 machine adapted to final watch assembling as well as the after sales service using small and medium quantity of air. All-in-one concept, which doesn't require fixed air main masonry and electricity settlement. Flexible and easy to move wherever in the watch shop.

Bench air supply is made with soft pipes and individual pedal for each work place. Oil free motor which gives high air quality. It functions without using any pedals.

Technical data :

- Air pressure max. : 8 bar
- Vacuum : 800 mbar
- Air tank volume : 16 litres
- Vacuum tank volume : 40 litres
- Noise level : 50 dB
- Connections : 2x AC and 1x vacuum.

Delivered with air drier MSA19.850-02 (8) and recovery bowl MSA19.850-01.

(8) Accessories : see following pages.

**This machine is only available on the Swiss market.**



MSA	Version	Size	Kg
19.875	1 work station	160 x 220 x 85 mm	1.700

Air flow/vacuum device for 1 work station.

This device requires a compressor to operate.

The integrated Venturi system transforms the forced air in vacuum.

Delivered with :

- 1 pedal MSA19.875-B
- 1 filter MSA19.875-A
- 1 hose Ø 6x4 mm MSA19.826, length 3 metres
- 1 hose Ø 8x5.5 mm MSA19.851, length 3 metres
- 1 transparent hose Ø 10x6 mm MSA19.812, length 3 metres.

**Accessories :**

MSA	Item	Kg
19.875-A	Filter	0.004
19.875-B	Pedal	0.200
19.875-C	Male manometer 1/8 Transair	0.035

See following pages for other accessories.

(a) Vacuum pencil not included in delivery



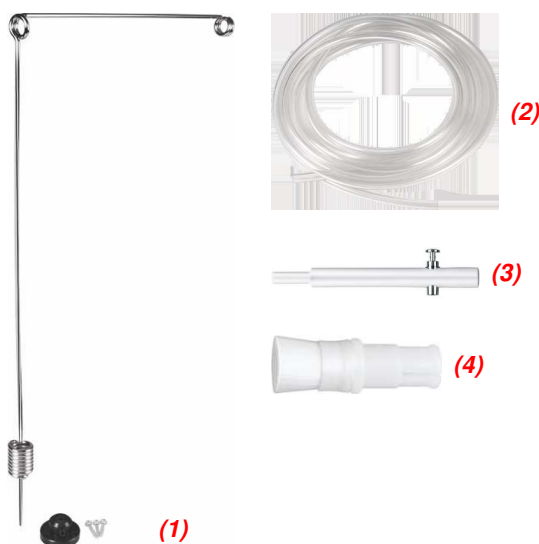
MSA	Version	Voltage	Size	Kg
19.808	2 work stations	220 V	295 x 200 x 220 mm	8.300
19.808-110	2 work stations	110 V	295 x 200 x 220 mm	8.300

System with vacuum. Oil free engine, very noise-less and compatible for use in a white room.

Technical data :

- Flow 2300 litres/hour
- Absolute empty value : 80 mbar
- Pressure 1 bar uninterrupted (maximum 2.8 bar)
- Noise level : 48 dB.

## VACUUM FUNCTION



### Items delivered with MSA19.808 :

MSA	Item	Kg
19.811	(3) Vacuum pencil (2x)	0.011
19.812	(2) Transparent PVC hose, Ø int. 6 x Ø 10 mm (2x 3 metres)	0.100
19.813	(4) Soft brush (2x)	0.005
19.816	(1) Stand with base and fixing screws (2x)	0.080



MSA	Version	Voltage	Size	Kg
19.807	1 work station	220 V	295 x 200 x 220 mm	8.300
19.807-110	1 work station	110 V	295 x 200 x 220 mm	8.300

System with vacuum. Oil free engine, very noise-less and compatible for use in a white room.

Technical data :

- Flow 2300 litres/hour
- Absolute empty value : 80 mbar
- Pressure 1 bar uninterrupted (maximum 2.8 bar)
- Noise level : 48 dB.

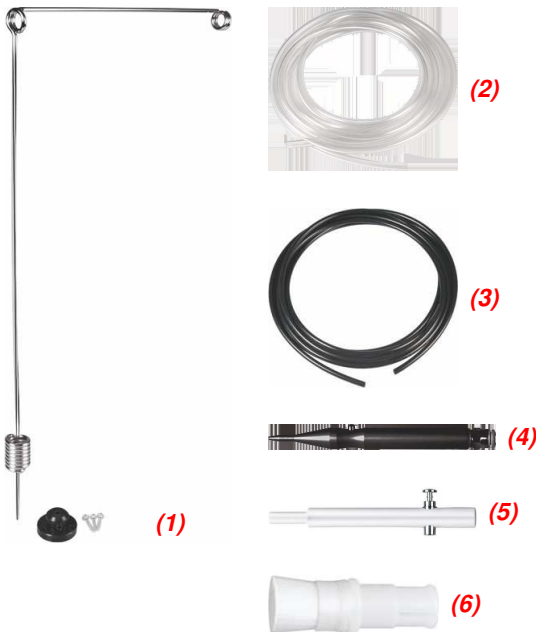
### Items delivered with MSA19.807 :

MSA	Item	Kg
19.811	(3) Vacuum pencil (1x)	0.011
19.812	(2) Transparent PVC hose, Ø int. 6 x Ø 10 mm (1x 3 metres)	0.100
19.813	(4) Soft brush (1x)	0.005
19.816	(1) Stand with base and fixing screws (1x)	0.080

## VACUUM FUNCTION



DOUBLE FUNCTION  
AIR PRESSURE AND VACUUM



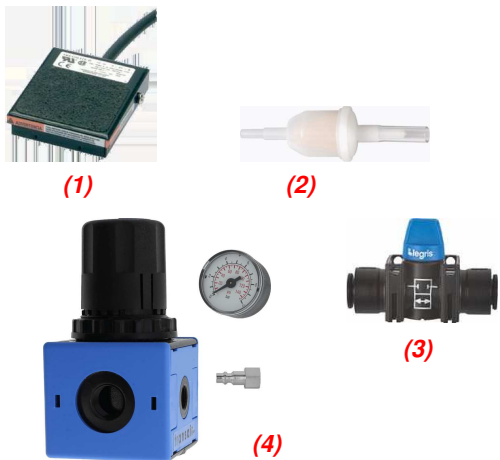
MSA	Version	Voltage	Size	Kg
19.820	1 work station	220 V	295 x 200 x 220 mm	9.400
19.820-110	1 work station	110 V	295 x 200 x 220 mm	9.400

System with double function air pressure and vacuum.  
Oil free engine, very noise-less and compatible for use in a white room.  
One work station with 2 foot switches and 1 recovery bowl.

Technical data :  
- Flow 2300 litres/hour  
- Absolute empty value : 80 mbar  
- Pressure 1 bar uninterrupted (maximum 2.8 bar)  
- Noise level : 48 dB.

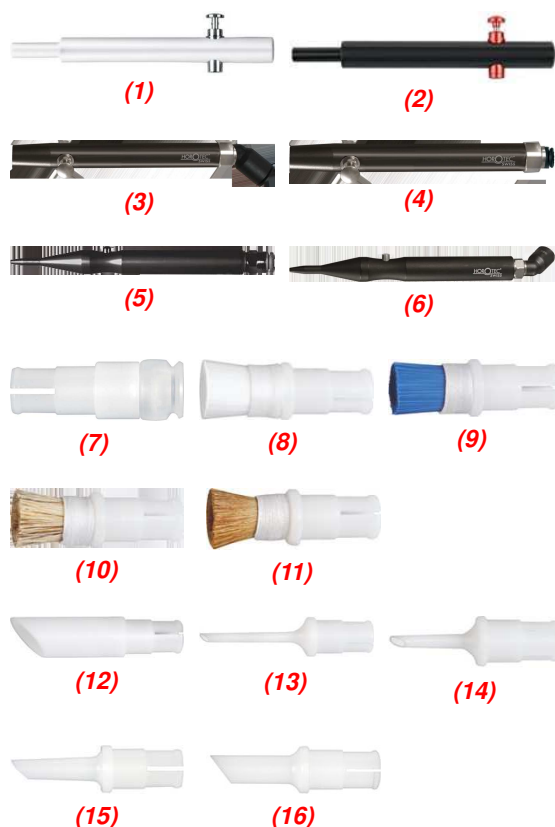
Items delivered with MSA19.820 :

MSA	Item	Kg
19.811	(5) Vacuum pencil (1x)	0.011
19.812	(2) Transparent PVC hose, Ø int. 6 x Ø 10 mm (1x 3 metres)	0.100
19.813	(6) Soft brush (1x)	0.005
19.816	(1) Stand with base and fixing screws (2x)	0.080
19.817	(4) Blower (1x)	0.016
19.826	(3) Black hose, Ø 6x4 mm (1x 1 metre)	0.045



Accessories (regulation and filtration) for MSA19.807, MSA19.808, MSA19.820 and MSA19.850 :

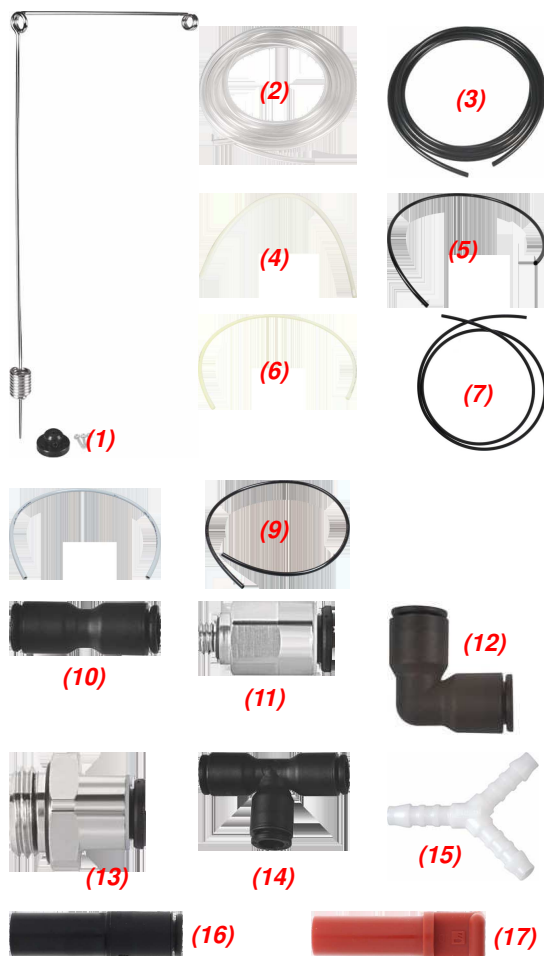
MSA	Item
19.808-P	(1) Pedal for MSA19.807 and 19.808
19.822	(2) Pump filter
19.838	(3) Mini-ball valve 2/2 instant in-line, Ø 10 mm
19.859	(4) Pressure regulateur with manometer and fitting Ø 6 mm



Accessories for vacuum/compressed air devices :

MSA	Item	Kg
19.811	(1) Vacuum pencil, Ø 10 x L90 mm	0.011
19.833	(2) Air proof vacuum pencil for MSA19.850 only	0.015
19.877	(3) Vacuum pencil with fitting 45° for hose Ø 8 mm	0.015
19.878	(4) Vacuum pencil with straight fitting for hose Ø 8 mm	0.015
19.817	(5) Blower	0.016
19.856	(6) Blower with fitting 45°	0.022
19.846-10	(7) Suction end piece for vacuum pencil, Ø 10 mm	0.004
19.846-15	(7) Suction end piece for vacuum pencil, Ø 15 mm	0.004
19.846-20	(7) Suction end piece for vacuum pencil, Ø 20 mm	0.004
19.846-25	(7) Suction end piece for vacuum pencil, Ø 25 mm	0.005
19.813-A	Soft brush white nylon, Ø 6 mm	0.005
19.813	(8) Soft brush white nylon, Ø 10 mm	0.005
19.823	(8) Soft brush white nylon, Ø 15 mm	0.005
19.867	(8) Soft brush white nylon, Ø 25 mm	0.005
19.868	(8) Soft brush white nylon, Ø 35 mm	0.005
19.814	(9) Hard brush blue nylon, Ø 10 mm	0.005
19.814-A	Soft brush blue nylon, Ø 6 mm	0.005
19.847	Very hard brush red nylon, Ø 10 mm	0.005
19.825	(10) Badger-hair brush, Ø 10 mm	0.005
19.825-15	(10) Badger-hair brush, Ø 15 mm	0.005
19.819	(11) Marten-hair brush, Ø 10 mm	0.005
19.832	(11) Marten-hair brush, Ø 15 mm	0.005
19.821	(12) Beak 45° with nylon filter	0.006
19.824	(13) Thin long beak 25 mm, Ø 2.3 mm	0.004
19.824-A	(14) Thin short beak, Ø 2.3 mm x L15 mm	0.003
19.824-C	(14) Thin long elbow 45° beak, Ø 2.3 mm x L45.20 mm	0.004
19.829	(15) Medium short beak, Ø 4 mm x L15 mm	0.003
19.829-A	(16) Medium short beak, Ø 6 mm x L15 mm	0.003





## Connections for vacuum/compressed air devices :

MSA	Item	Kg
19.816	(1) Stand with base and fixing screws	0.080
19.812	(2) Transparent PVC hose, Ø int. 6 x Ø 10 mm x 1 metre	0.100
19.826	(3) Black hose, Ø 6x4 mm x 1 metre	0.045
19.834	(4) Transparent hose, Ø 14x12 mm x 1 metre	0.030
19.840	(5) Soft black PVC hose, Ø 10x7 mm x 1 metre	0.022
19.841	(6) Semi-rigid white polyamide hose, Ø 4x2.7 mm x 25 metres	0.046
19.842	(7) Soft black PVC hose, Ø 4x2.5 mm x 1 metre	0.013
19.848	(8) Soft grey hose, Ø 12x8 mm x 1 metre	0.090
19.851	(9) Black hose, Ø int. 5.5 x Ø 8 mm x 1 metre	0.040
19.828-A	(10) Straight fitting, Ø 6 mm	0.005
19.828-B	(10) Straight fitting, Ø 10 mm	0.005
19.830	(11) Straight male fitting D6 for blower, M5	0.005
19.830-B	(12) 90° angle fitting, Ø 10 mm	0.006
19.830-D	(12) 90° angle fitting, Ø 14 mm	0.015
19.830-G1/4	(13) Quick fitting G 1/4, Ø 6 mm	0.010
19.827-A	(14) "T" fitting, Ø 6 - 6 - 6 mm	0.005
19.827-B	(14) "T" fitting, Ø 10 - 10 - 10 mm	0.011
19.827-C	(14) "T" fitting, Ø 14 - 14 - 14 mm	0.008
19.827-D	(14) "T" fitting, Ø 12 - 12 - 12 mm	0.022
19.815	(15) "Y" fitting, Ø 6 mm	0.005
19.839-A	(16) Reducer, 10-6 mm	0.003
19.839-B	(16) Reducer, 14-10 mm	0.006
19.839-C	(16) Reducer, 12-6 mm	0.006
19.835-A	(17) Hose plug Ø 6 mm	0.001
19.835-B	(17) Hose plug Ø 10 mm	0.002
19.835-C	(17) Hose plug Ø 14 mm	0.006
19.835-D	(17) Hose plug Ø 12 mm	0.004
19.811-F	Intermediate filter for vacuum brush	0.005
19.873	In-line filter for compressed air with straight fittings Ø 6 mm	0.054

## Automatic adhesive dispenser system.



MSA	Voltage	Size	Kg
19.770	DUAL 110 - 220 V	150 x 165 x 178 mm	1.200

Automatic dispenser TS250, which accurately and consistently dispenses low, medium and high viscosity fluids and adhesives thanks to syringes of 10 ml. This dispensing system includes digital display timer allowing a deposit time precision of 0.001 second.

Works in manual, sequence and automatic modes and is able to dispense in drops, lines and pot filling.

### Technical data :

DUAL power source 110/220 V, air source maximum 6.9 bar (100 PSI) and applicable air pressure 0.1-6.9 bar (1-100 PSI).

Delivered with foot switch, 1 syringe barrel stand, 1 connection kit for syringes 10 ml, 1 assortment of syringes, air hose and operation instructions.

## Assortment of tips for MSA19.770.



### MSA

#### 19.770-KIT

Assortment of tips in a box for MSA19.770.

## Accessories for MSA19.770.



(1)



(2)



(3)



(4)

MSA	Items
19.774-03	Adapter for syringe 3 ml + hose 90 cm
19.775-A	Adapter for syringe 5 ml + hose 90 cm
19.775-B	Adapter for syringe 10 ml + hose 90 cm
19.760-O	Cap for MSA19.760-Q, 30 pieces
19.773-03-B	Cap for MSA19.773-03
19.775-05-B	(1) Cap for MSA19.775-S
19.760-S	(2) End cap for MSA19.760-Q, MSA19.760-R, MSA19.773-03 and MSA19.775-S, 50 pieces
19.774-04	O'Ring gasket for adapter 3 ml
19.775-05	O'Ring gasket for adapter 5 ml
19.775-10	(3) O'Ring gasket for adapter 10 ml
19.773-03-P	Piston for MSA19.773-03, 50 pieces
19.775-05-P	Piston for MSA19.775-S, 50 pieces
19.773-03	Transparent syringe 3 ml
19.775-S	Transparent syringe 5 ml
19.760-Q	Transparent syringe 10 ml
19.760-R	(4) Black syringe 10 ml
19.772	Syringe holder

## Dispensing tips for MSA19.770.



MSA	Needle	Colour	Ø	Kg
19.770-M007	Straight metal	Green	0.07 mm	0.001
19.770-M010	"	Yellow	0.10 mm	0.001
19.770-M015	"	Lavender	0.15 mm	0.001
19.770-M020	"	Transparent	0.20 mm	0.001
19.770-M025	"	Red	0.25 mm	0.001
19.770-M033	"	Orange	0.33 mm	0.001
19.770-M041	"	Blue	0.41 mm	0.001
19.770-M051	"	Purple	0.51 mm	0.001
19.770-M061	"	Pink	0.61 mm	0.001
19.770-M084	"	Green	0.84 mm	0.001
19.770-M137	"	Amber	1.37 mm	0.001
19.770-M160	"	Olive	1.60 mm	0.001
-	-	-	-	-
19.770-C020	Conical plastic	Transparent	0.20 mm	0.001
19.770-C025	"	Red	0.25 mm	0.001
19.770-C041	"	Blue	0.41 mm	0.001
19.770-C061	"	Pink	0.61 mm	0.001
19.770-C084	"	Green	0.84 mm	0.001
19.770-C119	"	Grey	1.19 mm	0.001
19.770-C160	"	Olive	1.60 mm	0.001
-	-	-	-	-
19.770-A015	Metal 90°	Lavender	0.15 mm	0.001
19.770-A020	"	Transparent	0.20 mm	0.001
19.770-A025	"	Red	0.25 mm	0.001
19.770-A033	"	Orange	0.33 mm	0.001
19.770-A041	"	Blue	0.41 mm	0.001
19.770-A051	"	Purple	0.51 mm	0.001
19.770-A061	"	Pink	0.61 mm	0.001
19.770-A084	"	Green	0.84 mm	0.001
19.770-A137	"	Amber	1.37 mm	0.001
19.770-A160	"	Olive	1.60 mm	0.001
-	-	-	-	-
19.770-B015	Metal 45°	Lavender	0.15 mm	0.001
19.770-B020	"	Transparent	0.20 mm	0.001
19.770-B025	"	Red	0.25 mm	0.001
19.770-B033	"	Orange	0.33 mm	0.001
19.770-B041	"	Blue	0.41 mm	0.001
19.770-B051	"	Purple	0.51 mm	0.001
19.770-B061	"	Pink	0.61 mm	0.001
19.770-B084	"	Green	0.84 mm	0.001
19.770-B137	"	Amber	1.37 mm	0.001
19.770-B160	"	Olive	1.60 mm	0.001

Volumetric dosing machine.

**LOCTITE**



MSA	Voltage	Size	Kg
19.761	DUAL 110 - 220 V	192 x 210 x 90 mm	3.000

The timing and the dosing rate are freely programmable. It is possible to take the product directly from a bottle or other recipient.

*Technical data :*  
 DUAL power source 110 - 220 V (different cable for 110 V network) and consumption of 10 W.

*Delivered with dosing box, several types of pipes and the corresponding adapters and a user's manual.*

**LOCTITE**

MSA	Voltage	Size	Kg
19.762	220 V	305 x 525 x 575 mm	17.000

The UVALOC 1000 is a modular tabletop unit for curing adhesives and sealants.

The system has a parabolic reflector, a pneumatically operated screen, a polycarbonate chamber door (UV filter) with a safety lock.

The control unit has a programmable control with a display. The lamp is changed by a drawer system.

The system is equipped with a 1000 W lamp in accordance with current standards in order to achieve the required 1000 W lamp to achieve deep curing and dry surfaces. The service life of the lamps varies depending on the type chosen, from 700 to 1500 hours.

*Technical data : 220 V power supply, power consumption approx. 1200 W and emission spectrum 200 to 400 nm.*

*Delivered with 1 controller, 1 polymerisation chamber, 1 lamp compartment connection cable, 1 power cord, 1 foot switch and 1 instruction manual.*

#### Spare parts :

MSA	Item	Kg
19.762-A	000	0.100
19.762-B	000	0.100
19.762-C	000	0.100

**KVT**  
 SOLUTIONEERING  
 A BOSSARD COMPANY


MSA	Voltage	Size	Kg
19.751	220 V	255 x 155 x 485 mm	5.800
19.751-110	110 V	255 x 155 x 485 mm	5.800

Apparatus for polymerisation of UV-active adhesives and resins. Suitable for optics, jewellery and watch industries as well as Watch Lab, workshop and small series for sealing case glasses.

It is equipped with a safety device, which stops UV radiation in case the drawer is opened.

*Technical data : power source 220 or 110 V (upon request), consumption 75 W and emission spec-trum from 350 to 400 nm.*

**PRECITEC**  
 QUALITY


MSA	Voltage	Size	Kg
19.765	220 V	215 x 240 x 100 mm	1.800

UV lamp tunnel for fast drying watch glass UV glue. Power 36W.

3 programmable timing modes :

Position (I) : 90 seconds

Position (II) : 120 seconds

Position (0) : stop.

*Delivered with 4 tubes of 9 W (should work simul-taneously).*

#### Spare part :

MSA	Item	Kg
19.765-A	9 W UV tube	0.040

















## Demagnetisation, detection of magnetism and control of magnetic remanence.



MSA	Voltage	Size	Kg
19.910	DUAL 115 - 230 V	155 x 172 x 55 mm	1.235

Electronic device MAGTEST for the detection of magnetism in  $\mu$ Tesla, demagnetisation and control of magnetic remanence of watches, movements, tools and watch parts.

## Functions :

-  - Magnetism detection
-  - Demagnetization
-  - Automatic mode activated
-  - Activate or deactivate the sound
-  - Connected to the power sector 115 - 230 V
-  - Operates on the battery
-  - 1. Compass mode display.
-  - 2. Calibration of the north of the compass
-  - Return to the main menu
-  - Parameters/settings
-  - Selection between silent or sound mode
-  - Display of the hardware and software version
-  - Resetting the sensors
-  - Activate or deactivate the automatic mode.



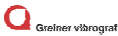
Detection sensors : there are 5 sensors and one of them is located in the centre of the detection surface. The others are located in the corners of a 1.5 cm square. They can measure the magnetism force as well as its position. A dot on the LCD screen shows a sensor with its position and the dot size is proportional to the magnetic force.

Demagnetisation.



MSA	Voltage	Size	Kg
19.908	DUAL 115 - 230 V	195 x 130 x 140 mm	2.500

The MAGNOMASTER is powerful enough to demagnetise the movement directly inside the case.  
Demagnetisation is done simultaneously on both sides. Extremely powerful two-coil device.  
Objects must be rotated by 90° to completely remove the magnetism by pressing the button again. The light of the lamp indicates demagnetisation.



MSA	Voltage	Size	Kg
19.901	230 V	230 x 180 x 120 mm	1.170
19.901-110	115 V	230 x 180 x 120 mm	1.170

ANTIMAG AM 2 device for demagnetising watches and small watch parts.  
*Delivered with operating instructions.*