

Automatic cleaning machine VIBRATO.



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	TÜV SÜD Schweiz AG
ATEX marking	Ex II 3/-G
IEC marking	EX h b IIB T4 Gc
Number of baths	6 (including 1 ultrasound)
Drying station	1 forced air station (adjustable up to 65° C)
Cleaning baskets	Ø 80 mm, up to 5 baskets height 10 mm
Cleaning actions	Rotation, oscillation, vertical agitation, ultrasound
Rotation speed	From 0 up to 1200 rpm / Adjustable acceleration
Vertical oscillation	Up to 10 mm, adjustable
Ultrasound	50 W adjustable from 10 to 100%, 40 KHz with "Sweep" function
Principle	Turntable with 7 positions
Interface	7" touch-screen display
Voltage	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.



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	0.165

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.



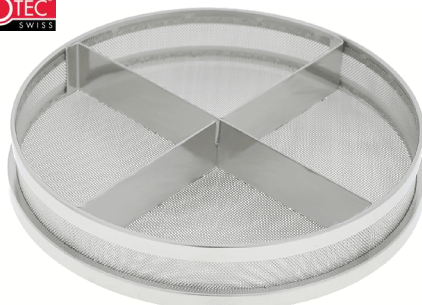
MSA	Size	Kg
19.794	Ø 80 x 30.5 mm	0.022

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



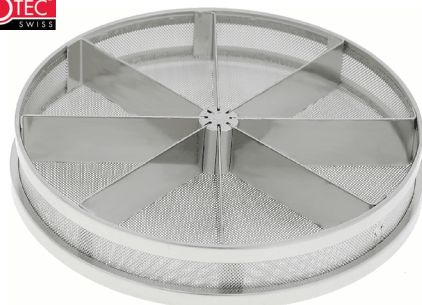
MSA	Size	Kg
19.790	Ø 80 x 14 mm	0.020

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



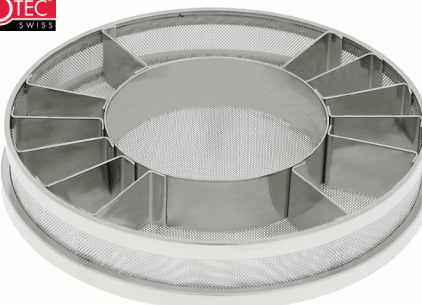
MSA	Size	Kg
19.791	Ø 80 x 14 mm	0.026

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.

Greiner vibrograf



DELIVERED WITHOUT BASKETS

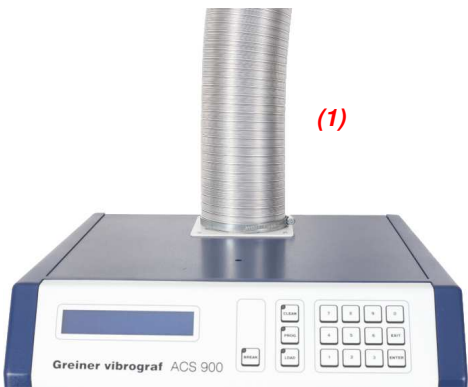
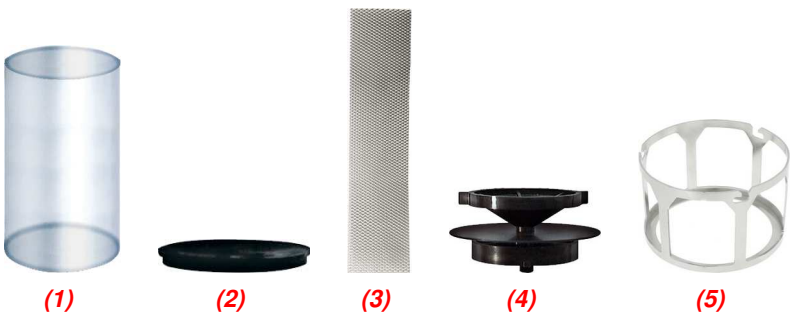
MSA	Voltage	Size	Kg
19.545	230 V	430 x 430 x 610 mm	32.900

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) :

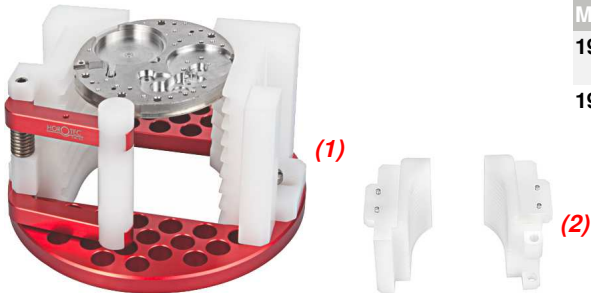
MSA	Item
19.551	(1) 3x Glass beaker
19.553	(2) 4x lid for glass beakers
19.563	(3) 3x wave-breaker for glass beakers, 300x60 mm
19.565	(4) Upper basket holder, for baskets Ø 80 mm
19.572	(5) Lower basket holder, for baskets Ø 80 mm



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

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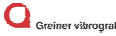
Special optional accessories available for MSA19.545 in Ø 80 mm :

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	<b>1</b> Metal basket without divisions, height 10 mm
19.542	<b>2</b> Metal basket with 2 divisions, height 10 mm
19.570	<b>3</b> Metal basket with 4 divisions, height 10 mm
19.568	<b>4</b> Metal basket with 8 divisions, height 10 mm
19.584	<b>5</b> Metal basket with 9 divisions + centre Ø 40 mm, height 10 mm
19.567	<b>6</b> Metal basket with 12 divisions, height 10 mm
19.571	<b>7</b> Metal cover for metal baskets
19.580	<b>8</b> Plastic basket without divisions + 1 metal basket MSA19.557, height 8 (14) mm
19.581	<b>9</b> Plastic basket without divisions + 1 metal basket MSA19.556, height 8 (14) mm
19.582	<b>10</b> Plastic basket without divisions + 1 metal basket MSA19.562, height 8 (14) mm
19.574	<b>11</b> Plastic basket without divisions, height 8 mm
19.574-D	<b>12</b> Plastic basket without divisions, height 8 mm, double wall
19.586	<b>13</b> Plastic basket without divisions, height 16 mm
19.589	<b>14</b> Plastic basket without divisions, height 24 mm
19.575	<b>15</b> Plastic basket with 4 divisions, height 8 mm
19.587	<b>16</b> Plastic basket with 4 divisions, height 8 mm, double wall
19.592	<b>17</b> Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 25 mm
19.593	<b>18</b> Plastic basket with 4 divisions, height 8 mm for 4 main plates Ø 31 mm
19.591	<b>19</b> Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 38 mm
19.591-D	<b>20</b> Plastic basket with 4 divisions, height 8 mm for 2 main plates Ø 38 mm, double wall
19.596	<b>21</b> Plastic basket with 4 divisions, height 16 mm
19.578	<b>22</b> Plastic basket with 6 divisions + 2 baskets MSA19.564, height 8 mm
19.579	<b>23</b> Plastic basket with 6 divisions + 2 baskets MSA19.564 + 2 capsules MSA19.552, height 8 mm
19.576	<b>24</b> Plastic basket with 8 divisions, height 8 mm
19.583	<b>25</b> Plastic basket with 8 divisions, height 8 mm, double wall
19.599	<b>26</b> Plastic basket with 8 divisions, height 8 mm, tight mesh
19.594	<b>27</b> Plastic basket with 8 divisions + centre Ø 39 mm, height 8 mm
19.594-D	<b>28</b> Plastic basket with 8 divisions + centre Ø 39 mm, height 8 mm, double wall
19.597	<b>29</b> Plastic basket with 8 divisions, height 32 mm
19.577	<b>30</b> Plastic basket with 12 divisions, height 8 mm
19.577-D	<b>31</b> Plastic basket with 12 divisions, height 8 mm, double wall
19.595	<b>32</b> Plastic basket with 16 divisions, height 8 mm
19.595-D	<b>33</b> Plastic basket with 16 divisions, height 8 mm, double wall
19.590	<b>34</b> Long plastic division for baskets MSA19.575 /19.576
19.573	<b>35</b> 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
19.551	(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	Kg
19.541	(1) Movement holder for 6 movements	0.125
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



**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.

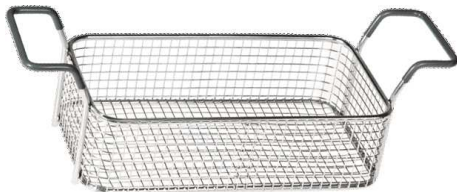
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MSA	For
19.660-A	MSA19.880 (SW 1H)
19.662-A	MSA19.881 + MSA19.882 (SW 3H)
19.664-A	MSA19.883 (SW 6H)
19.665-A	MSA19.884 (SW 12H)
19.885-A	MSA19.885 (SW 18H)
19.666-A	MSA19.886 (SW 30H)

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

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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	Kg
19.614	Ø 80 mm (600 ml)	-
19.640-F	Ø 95 mm (600 ml)	0.220

Glass beaker with cover and ring.

Spare parts :

MSA	Item	Kg
19.683	Cover for MSA19.640-F	0.029
19.686	Cover for MSA19.614	-

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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.  
It is recommended for use in watchmaking, jewellery and related industries for the cleaning 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, which allows the steam to be tolerated by the treatment plants of 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.



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.*

**DELIVERED WITHOUT BASKETS**

**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).