



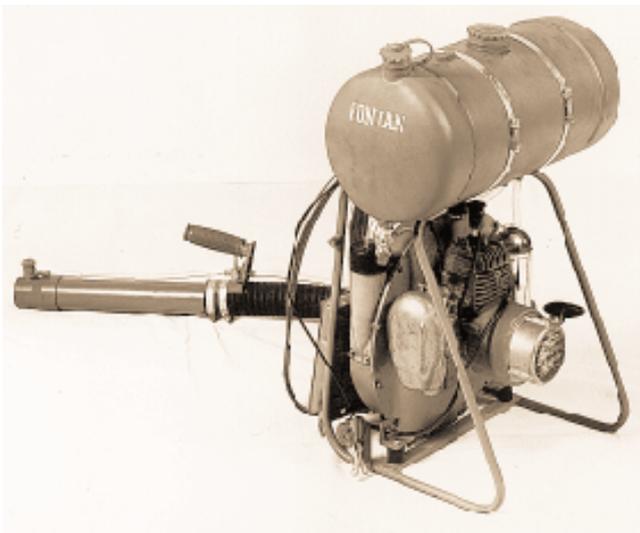
Swingtec GmbH
P.O. Box 1322, D-88307 Isny, Germany
Tel.: ++49 7562 708-0, Fax: ++49 7562 708 111
e-mail: info@swingtec-gmbh.de

ULV Cold Fogging Applicators



Portastar
Mobilstar





One of the first FONTAN knapsack mistblowers

The first engine driven FONTAN mist blower was designed and developed more than 50 years ago. At that time, it was already possible to equip the machines with a ULV (Ultra Low Volume) attachment for the generation of fine aerosol droplets.

Our engineers and specialists recognized, at an early stage, the high application potential of aerosol spraying technology and subsequently developed this further. In 1978, the FONTAN ULV-R was introduced into the market. This proved to be a milestone in cold fogging technology, because it was the first motorized device in the world that could be used in the form of a knapsack and that was designed specially for ULV applications.

Today, our activities are concentrated on ULV technology and



thousands of our products are successfully in use throughout the world with health organizations in the combat of mosquitoes and in vector control.

It is our belief that the FONTAN Portastar and the FONTAN Mobilstar are currently the most modern and technically advanced devices of their type.



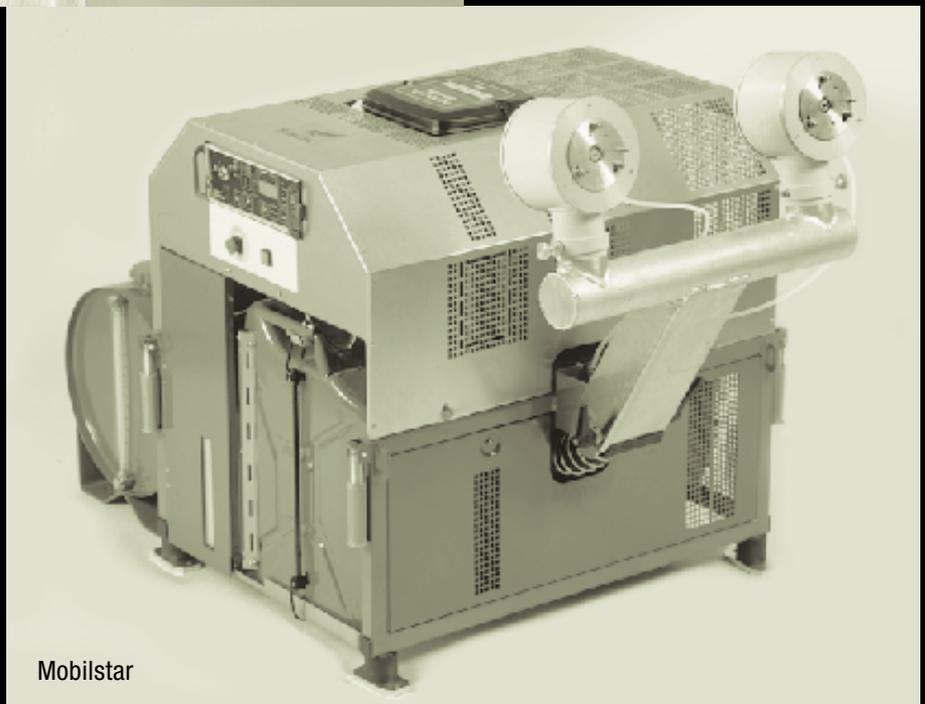
Portastar

FONTAN Portastar
Knapsack ULV aerosol applicator,
equipped with:

- 1.8 hp two-stroke engine
 - Maintenance-free, low pressure compressor
 - Ergonomically designed spraying pistol with a trigger for intermittent or continuous spraying
- Delivery of the spraying liquid is achieved through a negative pressure in the spraying tank. The flow rate (l/h) is determined by easily interchangeable nozzles:
- Nozzle 30 – 1 l/h
 Nozzle 45 – 2 l/h
 Nozzle 58 – 3 l/h
 Nozzle 68 – 4 l/h
 Nozzle 84 – 6 l/h
- The droplet size is approximately between 2–20 µm.

FONTAN Mobilstar
Vehicle mountable ULV aerosol applicators, equipped with:

- A 16 or 18 hp four-stroke engine with electrical starter (also fitted with a manual backup starter)
- A fuel tank with a capacity of 20 l and level indicator
- A dry running side channel compressor
- Two universally adjustable spraying heads
- An illuminated control panel/remote control for operating all functions of the applicator
- A flushing tank for automatic cleaning of the feed lines and spraying heads
- Spraying modes and flow rates:
 - ULV - flow rate 5 – 50 l/h
 - ULV-Plus - flow rate 51 – 100 l/h
 - LV - flow rate 5 – 100 l/h



Mobilstar

Model M

The flow rate (l/h) is set manually using the flow meter. Delivery of the spraying mixture is achieved by a positive pressure in the spraying tank. The output quantity is calibrated manually.

Model E

The flow rate (l/h) is entered, via buttons, on the control panel/remote control and shown on the display.

Delivery of the spraying mixture is achieved by a chemical resistant stainless steel gear pump which draws the spraying mixture from a conventional spraying tank. The output quantity can be calibrated electronically.

Model ER

This top of the range model is equipped the same as the model E, however the flow rate of the spraying liquid can either be set to l/h or

l/km. The applicator is fitted with a radar system which enables the flow rate to be synchronized to speed when the device is set to l/km. The radar system operates in a speed range of between 3 and 25 km/h. Within this speed range, the output quantity is controlled exactly such that an even coverage is achieved, independently from the vehicle speed.



FONTAN Mobilstar and Portastar, our solution for an efficient, economical and target orientated ULV application:

- Mosquito and pest control over extensive areas
- Application of larvicides
- Locust control
- Plant protection measures in large tropical plantations
- Disinfection and deodorization of garbage dumps

The knapsack FONTAN Portastar is specially designed for use in ULV applications.

The FONTAN Mobilstar can be used, not only in the ULV (Ultra Low Volume) mode, but also in the ULV-Plus mode with a reduced droplet drift range. It can also be used in LV (Low Volume) mode.



Ergonomically designed spraying pistol of the FONTAN Portastar with a trigger for intermittent or continuous spraying.

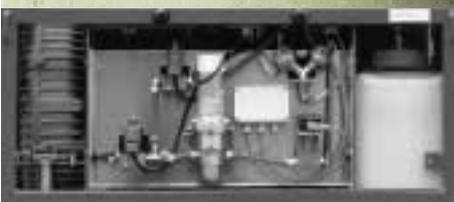


Flow meter with regulating valve of the FONTAN Mobilstar model M. Flushing and fuel tank with level indicator.

Wind Force	Description	Observations	Wind Speed		Effective Swath Width / in m*		
			m/s	km/h	ULV	ULV-Plus	LV
0	calm	smoke rises vertically	0.0 - 0.2	0.0 - 0.7	25 - 50	20 - 40	15 - 30
1	light whiff	observable drift of smoke	0.3 - 1.5	1.1 - 5.4	35 - 70	25 - 50	20 - 40
2	light breeze	rustle of leaves	1.6 - 3.3	5.8 - 11.9	50 - 100	35 - 70	25 - 50
3	soft breeze	leaves and twigs are moving constantly	3.4 - 5.4	12.2 - 19.4	75 - 150	50 - 100	30 - 60
4	moderate breeze	movement of small branches, whirl of dust and paper	5.5 - 7.9	19.8 - 28.4	Application possible with certain reservations (e.g. larger droplets with a reduced droplet drift range)		

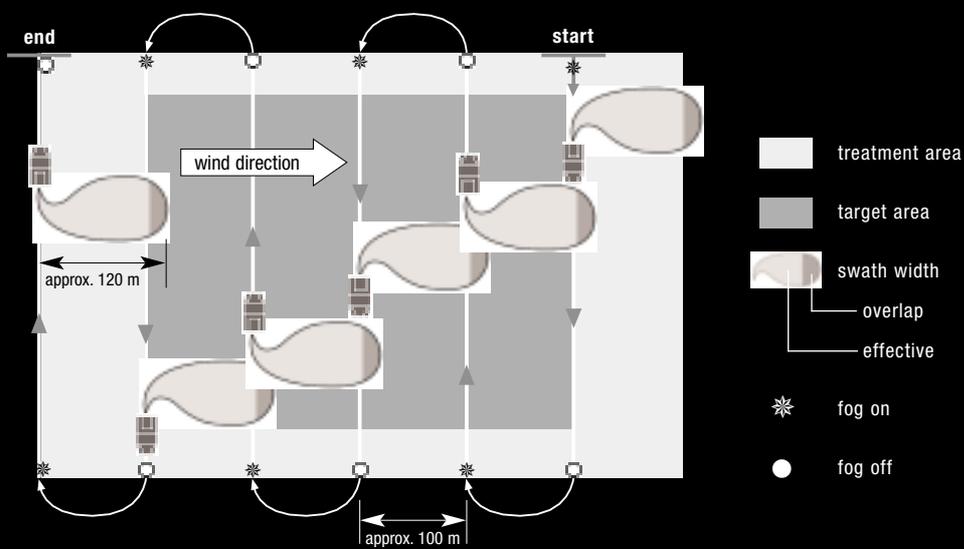
* Effective swath width = total swath width / overlap (approx. 30 %)
 The given effective swath widths refer to an application in an open area.
 For obstacles such as dense vegetation or high buildings these values are to be reduced by up to 50 %.

Effective swath widths in the ULV, ULV-Plus and LV modes, dependent on differing wind speeds according to the Beaufort scale.



The picture shows the spraying mixture delivery circuit of the FONTAN Mobilstar models E and ER. The circuit consists of a chemical resistant stainless steel gear pump which provides an electronically controlled output dependent on pump speed.

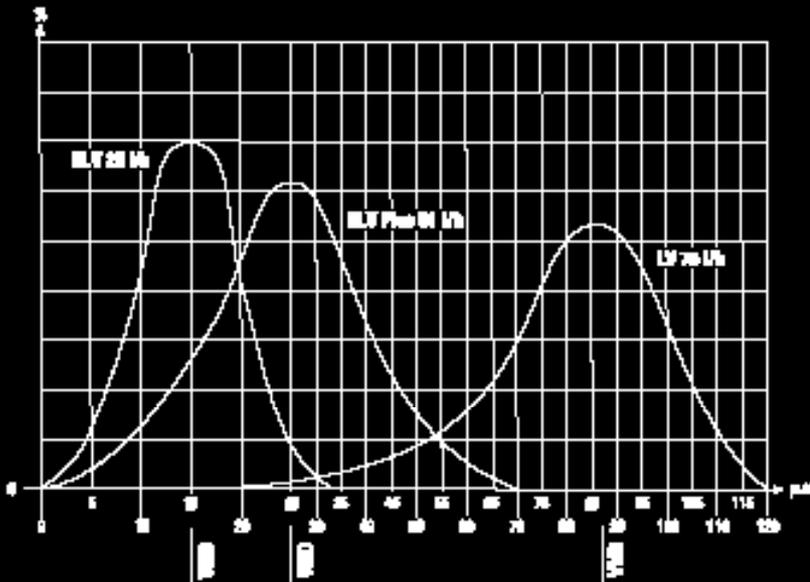
The illustration shows an example of a large area treatment using the FONTAN Mobilstar taking into account the wind direction and swath width.



An important aspect of our company's philosophy is the continuous improvement of the existing product range. In the fields of engineering, design and development we employ highly qualified people, using the most modern computer technology, to optimise our products and to develop new projects. We pay much attention to continuous consultation of our customers, users and suppliers. Careful controls applied during material procurement, production processing and final acceptance testing ensure that we maintain our well acknowledged standard of quality. We are certified as compliant with DIN EN ISO 9001.



The illustration shows a typical droplet distribution using the ULV mode (FONTAN Mobilstar and Portastar) as well as the ULV-Plus and LV modes (FONTAN Mobilstar).



Spraying head of the FONTAN Mobilstar with adjusting disc for ULV and LV. In the "LV" position, the air volume at the nozzle is reduced, thus producing larger droplets.





Control panel/remote control of the FONTAN Mobilstar model M

- Key switch, to start the engine
- Stand-by indicator
- Spraying button
- Flushing button
- Spraying mode indicators (ULV/LV)
- Failure indicator



Control panel/remote control of the FONTAN Mobilstar models E and ER for programming and operating all functions

- Key switch, to start the engine
- Stand-by indicator
- Spraying mode selector button (ULV/ULV-Plus/LV) with LEDs
- Operation selector button l/h or l/km (only Mobilstar ER)
- Output quantity entry buttons

- Display to indicate the flow rate and, if required, the operating hours, the distance driven in km (only Mobilstar ER) or the vehicle speed (only Mobilstar ER)
- Correct vehicle speed indicators (only Mobilstar ER)
- Confirmation button for the selected spraying programme
- Spraying button
- Flushing button
- Failure indicators for the spraying system and for the engine/compressor system. Failure codes are shown on the display.

The control panels are mounted on the applicator but can be detached and used as a remote control.

Technical Data (approx.)	FONTAN Mobilstar		
Engine	Briggs & Stratton, type Vanguard V-TWIN OHV, air cooled two cylinder four-stroke engine with alternator		
Silencer	Super-lo-tone		
Cubic capacity	480 cm ³ (16 hp engine) or 570 cm ³ (18 hp engine)		
Power	11.76 kW/16 hp or 13.24 kW/18 hp at 3,600 min ⁻¹ . Operation at 3,000 min ⁻¹ (preset)		
Starter	Electrical (with additional manual starter), ignition by Magneton system		
Battery	Special accessory, requirement 12V/36 Ah (maximum dimensions W x L 255 x 175 mm)		
Fuel consumption	4 l/h, regular grade petrol/gasoline, leaded or unleaded		
Fuel tank	20 l, steel with level indicator (jerrycan)		
Compressor	Dry running side channel compressor with air filter		
Air volume	Spraying mode ULV/ULV-Plus, 320 m ³ /h		Spraying mode LV, 400 m ³ /h
Pressure	Spraying mode ULV/ULV-Plus, 0.35 bar		Spraying mode LV, 0.26 bar
Spraying Device	Low pressure system with two adjustable spraying heads, made from corrosion resistant material		
Droplet processing	High velocity air stream		
Flushing Tank	UV light resistant polyethylene, 5 l		
Spraying Data (water)			
Spraying mode ULV	Flow rate	5 - 50 l/h	
	Droplet size	85 % < 20 µm	
	Range	drift of up to 100 - 200 m, dependent on wind speed	
Spraying mode ULV-Plus	Flow rate	51 - 100 l/h	
	Droplet size	80 % < 40 µm	
	Range	drift of up to 100 m, dependent on wind speed	
Spraying mode LV	Flow rate	5 - 100 l/h	
	Droplet size	VMD 75 - 100 µm, dependent on flow rate	
	Range	20 - 50 m, drift effect reduced, dependent on wind speed	
Weight, empty	FONTAN Mobilstar M with standard spraying tank, 140 kg FONTAN Mobilstar E and ER, without spraying tank, 128 kg		
Dimensions (L x W x H) (without spraying tank)	87 x 75 x 95 cm		
Control System	FONTAN Mobilstar M	FONTAN Mobilstar E	FONTAN Mobilstar ER
Output capacity	Up to 100 l/h through positive pressure in the spraying tank, 0.35 bar	Up to 100 l/h, by a stainless steel gear pump with dry running protection	Up to 100 l/h, by a stainless steel gear pump with dry running protection
Flow rate setting	Flow meter with regulating valve, l/h (with temperature gauge)	Programmable at the control panel, electronically controlled, l/h	Programmable at the control panel, electronically controlled - l/h or - l/km (speed synchronized by radar control in a speed range between 3 and 25 km/h)
Calibration	Manual	Automatic, electronically controlled	Automatic, electronically controlled
Control panel/remote control for all operational functions	Electrical, illuminated, with optical and acoustic warning signals; can be detached from the device and be used as a remote control	Electrical, programmable and illuminated, with optical and acoustic warning signals; can be detached from the device and be used as a remote control	Electrical, programmable and illuminated, with optical and acoustic warning signals; can be detached from the device and be used as a remote control
Emergency shutdown and engine starter	Push buttons	Push buttons	Push buttons
Failure diagnosis	–	Failure code on the display	Failure code on the display
Accessories	FONTAN Mobilstar M	FONTAN Mobilstar E	FONTAN Mobilstar ER
Spraying tank, stainless steel, 68 l, with level indicator and mounting lugs	•	○	○
Spraying tank, UV light resistant polyethylene, 80 l, with level indicator and mounting straps	–	○	○
Fuel tank, steel, 20 l (jerrycan), with level indicator	•	•	•
Flushing tank, UV light resistant polyethylene, 5 l	•	•	•
Tool kit	•	•	•
Spraying mixture funnel with strainer	•	•	•
Fuel funnel with strainer	•	•	•
Gasket set	•	•	•
Extension hose for use with conventional spraying tanks	–	•	•
Instruction manual	•	•	•
Instruction manual, Briggs & Stratton engine	•	•	•
Heavy duty sealed dry battery, 12V/36 Ah	○	○	○

• Standard accessory (supplied with every machine) ○ Optional accessory (available at extra cost) – Not applicable
Subject to technical modifications.

Technical Data (approx.)	FONTAN Portastar
Engine	Two-stroke engine, air cooled
Cubic capacity	43.2 cm ³
Maximum Power at 7,000 min ⁻¹	1.32 kW/1.8 hp
Power during operation at 5,500 min ⁻¹	1.21 kW/1.6 hp
Fuel	Regular grade petrol/gasoline, leaded or unleaded
Engine oil	Two-stroke oil
Oil/fuel mixture	1:25
Fuel consumption	0.95 l/h
Ignition	Electromagnetic
Carburettor	Diaphragm carburettor
Starter	Manual recoil starter
Compressor	Oil and maintenance-free rotation pump
Air volume	35 m ³ /h
Pressure	0.4 bar
Drive	Direct drive with centrifugal clutch
Spraying System	Spraying pistol with a trigger for intermittent or continuous spraying, with interchangeable nozzles
Spraying Tank	Polyethylene, UV light resistant, 2.8 l
Fuel Tank	Polyethylene, UV light resistant, 1 l
Spraying Data	
Range	Indoor, 8 m Outdoor, 14 m (at 0.2 m/sec wind speed)
Fog distribution by drift	50 m
Flow rate at an engine speed of 5,500 min ⁻¹ , measured with diesel oil (temperature 20° C)	Nozzle 30 – 1 l/h Nozzle 45 – 2 l/h Nozzle 58 – 3 l/h Nozzle 68 – 4 l/h Nozzle 84 – 6 l/h
Droplet Size	2 - 20 µm
Air Velocity at the nozzle	200 m/sec
Weight, empty	12 kg
Dimensions (L x W x H)	40 x 40 x 48 cm
Accessories	
Set of nozzles, nozzle 45 (installed)/30/58/84	•
Spraying mixture funnel with strainer	•
Fuel funnel with strainer	•
Tool kit	•
Instruction manual	•
Nozzle 68	○

- Standard accessory (supplied with every machine) ○ Optional accessory (available at extra cost)
Subject to technical modifications.



Spraying tank, stainless steel, 68 l, with attachment lugs, level indicator, quick fit coupling for spraying hose, draining and large cleaning aperture (standard accessory, Mobilstar M, optional accessory, Mobilstar E and ER)



Spraying tank, UV light resistant polyethylene, 80 l, with mounting straps, level indicator, quick fit coupling for spraying hose, large filling and cleaning aperture, drain (only available for Mobilstar E and ER as optional accessory)

Note:
Any type of conventional chemical resistant container may be used as a spraying tank for the Mobilstar E and ER, by means of the feed line extension which is supplied with these devices as a standard accessory.