

# SprayPod

A self-contained spray pod system



An integrated spray pod system that enables a suitable aircraft to be converted to a spraying role within hours.

The system is highly versatile and is suitable for use in migrant pest control, public health spraying and pollution control operations.

- A fully self-contained spraying system
- Can be mounted onto suitable aircraft within hours
- No risk of chemical contamination to the cabin
- Rotary CDA atomisers produce evenly-sized droplet pattern
- Adjustable droplet size
- Aerodynamic shape ensures minimum drag



## Versatile and easy to install

The Micronair Spray Pod System enables a suitable aircraft to be converted to a spraying role within hours.

Two completely self-contained spray pods are mounted on standard underwing pylons, thus eliminating any need for structural modification of the aircraft. As the entire spray system is external to the fuselage, there is no risk of chemical contamination of the cabin.

The versatile pod system has many applications, ranging from locust and mosquito spraying to pollution control.

Micronair Spray Pod System has been installed on many aircraft types including:

- **Pilatus Britten-Norman BN-2 series**
- **Dornier Do-228 series**
- **De Havilland DH-2 Beaver**
- **Partenavia P-68**
- **Pilatus PC-7 and PC-9**
- **Douglas DC-3**

Micron Group can provide a detailed proposal and installation kit for any other suitable type.

## A self-contained spraying system

Each spray pod combines three functions to provide a completely self-contained spraying system:

- **Chemical Tank**
- **Rotary Atomiser**
- **Monitoring System**

## High quality chemical tank

The body of the pod forms the chemical tank. This is manufactured from glass reinforced plastic (GRP) composite material for light weight, durability and chemical resistance.

The aerodynamic profile ensures minimum drag. Pods are provided with internal baffles and a cross-over vent to ensure stability and freedom from pillage at all flight altitudes.

## Rotary CDA atomiser for optimum performance

Each pod is fitted with a Micronair AU4000 atomiser which uses a rotating wire gauze cage to break the chemical into evenly sized spray droplets.

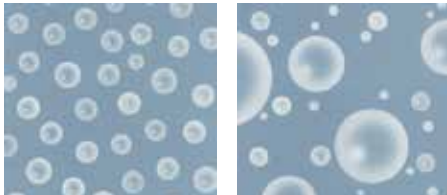
This unique approach ensures that all the spray volume is concentrated into a narrow range of droplet sizes. The size of the spray droplets can be adjusted by varying the rotational speed of the atomiser, thus producing the optimum size droplet for the chemical and application technique being used.



## The importance of droplet size

Conventional spray nozzles produce spray droplets of widely varying sizes. Some droplets may be too small and liable to drift and evaporate, whilst others are too large, potentially resulting in a substantial amount of chemical waste.

For example, one droplet twice the size of the optimum diameter contains the same amount of chemical as eight droplets of the correct size. This droplet would give one eighth of the coverage and would be eight times heavier, reducing the probability of it being carried into dense foliage.



Left: Evenly-sized spray droplets from a Micronair atomiser

Right: Widely varying sizes from a conventional spray nozzle

## Monitoring system

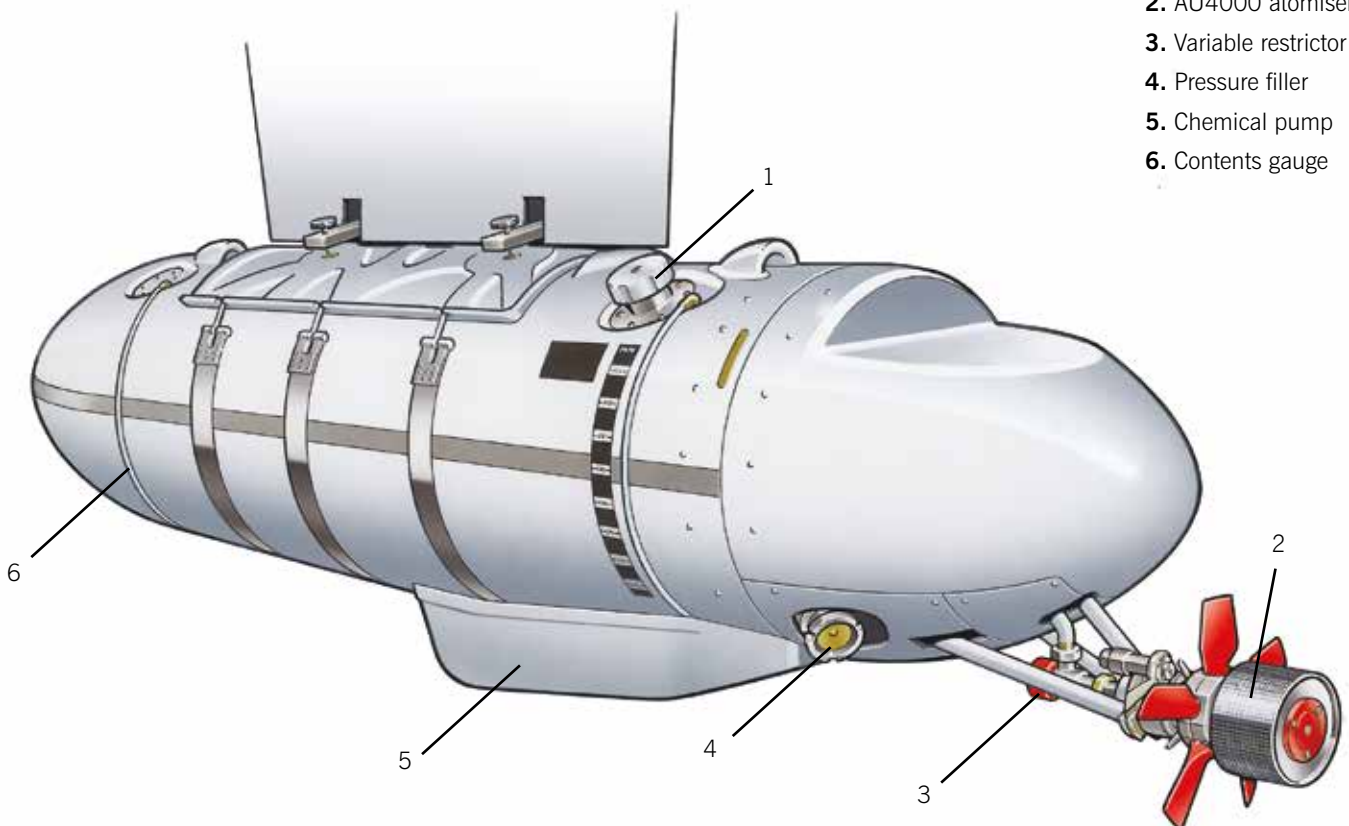
The system is controlled and monitored from a panel which is installed in the cockpit of the aircraft.

The control panel is connected to the pods by a wiring loom. The loom and its connectors are permanently installed in the aircraft.

There are no mechanical or fluid connections between the pods and the fuselage.



1. Top filler
2. AU4000 atomiser
3. Variable restrictor
4. Pressure filler
5. Chemical pump
6. Contents gauge





## Experts in spray system installation

Micron Group has the experience and facilities to design, manufacture and assist with the airworthiness certification of a wide range of specialised spray systems.

These systems range from simple atomiser installations to complete spray systems comprising chemical tanks, spray booms, structural modification and instrumentation.

Systems developed to date include:

- **Piper PA25 Aztec – public health and pollution control spraying**
- **Beech Baron C55 – Tsetse fly control**
- **CASA 212 – pollution control**
- **BN2 series Islander – several variants for locust control, public health and agricultural spraying**
- **Douglas DC3 – public health and forestry spraying**
- **De Havilland DHC – A4 Caribou - waterbomber system for forest fire control**
- **Aero Commander 690 – Tsetse fly control**

Micron Group 's wide experience in the design and development of these systems enables us to offer a practical and cost-effective solution to almost any specialised spraying requirement, whether it is an adaptation of an existing system or a new project to meet an exacting specification.

## A multi-functional Micronair Application Monitor

The Micronair Application Monitor draws on Micron Group's world-wide experience of agricultural operations. The robust unit provides a comprehensive range of functions:

### Application Rate

The number of litres or gallons being applied per minute.

### Flow Rate

Chemical flow rate from each pod in litres or gallons per minute.

### Total Volume A

The total number of litres or gallons of chemical sprayed from each pod. The total can be re-set at any time.

### Total Volume B

The total volume sprayed from each pod. This cannot be re-set whilst spraying and can be used to check job totals.

### Area in Hectares or Acres

The total area covered whilst spraying.

### Work Rate

The coverage of the aircraft in hectares or acres per minute.

### Spray Time

The total time for which the pods have been spraying during the job.

### Atomiser RPM

The rotational speed of the atomiser on each pod.

Specification	
<b>Pod Tank</b>	
<b>Dimensions</b>	Overall length 2.6 m (103 in) Diameter 0.5 m (18 in)
<b>Mounting</b>	Suitable for attachment to hard carriers with NATO standard 14 inch mounted centres
<b>Constructions</b>	Chemical resistant glass reinforced plastic (GRP)
<b>Capacity</b>	190 litres (50 US gallons)
<b>Weight</b>	Empty 59 kg (128 lb Full 248 kg (545 lb)
<b>Output</b>	Variable from 0 – 30 l/min (0 - 8 US Gall/min)
<b>Pump</b>	24 V DC electric centrifugal
<b>Operating Airspeed</b>	75 – 150 mph (120 - 140 km/hr)
<b>Flow Measurement</b>	Micronair stainless flowmeter turbine with tungsten carbide bearings
<b>AU4000 Atomiser</b>	
<b>Installation</b>	On tripod structure below rear of pod
<b>Flow Control</b>	By Micronair Variable Restrictor Unit
<b>Chemical Shut-off</b>	Diaphragm check valve and shut-off in atomiser
<b>Spray Droplet Size</b>	Variable between 40 – 400 microns VMD
<b>Brake</b>	Electromagnetic brake
<b>Control Panel</b>	
<b>Dimensions</b>	To suit aircraft type
<b>Input Voltage</b>	24 – 28 V DC
<b>Application Monitor</b>	
<b>Display</b>	Back-lit liquid crystal display
<b>Flowmeter Accuracy</b>	± 2%
<b>Fluid Viscosity Range</b>	1 – 40 centistokes
<b>Units of Measure</b>	Metric, US or British
<b>Note: The above specification is provided for reference purposes only. Micron Group reserve the right to alter the specication without prior notice.</b>	

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