

MUNCKHOF



TOWER SPRAYERS

TOWER

Even distribution is achieved by creating a smooth, laminar column of air, uninterrupted by any obstructions; this is one reason why the booms and nozzles are kept outside of the tower air outlets.

Droplets are first formed to the correct size and patter, and then injected into the airstream, preserving the integrity of the patter and providing even coverage; another reason nozzles should be kept outside the air column.

Our air column allows air flow to come out of the entire length at a 12 degree, upwards angle, and blowing back. This angle works in correlation with the plants for ideal coverage of the top and bottom of the leaves.

The nozzles are non-drip and swiveling, giving the operator a choice between either two different size nozzle tips or the off position. This way the machine can be easily configured for use throughout the year without having to take apart and re-calibrate the booms.

Albuz ATR aluminium oxide spray tips are extremely hard, and have a long service



SPRAY CONCENTRATE

Lower than ideal

Ideal

Higher than ideal



PERFECT DROPLET

A small droplet size is known to give exponentially more coverage than larger droplets; for instance by taking a droplet and dividing its diameter in half you are able to produce 8 times as many droplets with the same volume of water. This allows a surface to be covered more evenly and more effectively distributes the active material.

However a “perfect balance” must be found, where the droplet size is made as small as possible, but still is large enough to effectively reach and be deposited over its target area.

Several factors affect this process including evaporative effect, wind drifts, terrain type and plant density/development. The operator has a variety of tools to compensate for these including groundspeed, RPM (fan velocity) pressure, and nozzle size/selection.

We make our sprayer as easy and intuitive to use as possible by supplying high quality rollover nozzles that allow the operator to easily select the proper size and number of nozzles required and a heavy duty smooth flow pressure regulator allowing for the widest verity of pressures to be selected at the RPM needed for the application whether it the first tender shoots of the year, or a thick full canopy. a hot, dry, windy day or a cool spring morning.

Table 2. Effect of temperature and wind velocity on droplet size at the end of flight of various size water droplets discharged downward at 65 ft/second toward a target 18 inches below point of discharge. (Relative humidity = 50%)

Initial Droplet size (Micron)	Wind Velocity (MPH)	Final droplet size (micron) and drift distance (feet)					
		Temperature (degrees F)					
		50°		68°		86°	
		DS#	DD#	DS#	DD#	DS#	DD#
50	1.1 MPH	0.0	11.58*	0.0	9.84*	0.0	9.74*
50	5.6 MPH	0.0	53.14*	0.0	32.80*	0.0	23.52*
50	11.1 MPH	0.0	105.94*	0.0	61.34*	0.0	41.32*
50	22.4 MPH	0.0	208.61*	0.0	117.75*	0.0	75.76*
70	1.1 MPH	59.4	5.18	43.6	6.30	0.0	12.50*
70	5.6 MPH	59.2	26.14	42.7	32.14	0.0	38.70*
70	11.1 MPH	59.0	52.48	41.9	64.61	0.0	70.19*
70	22.4 MPH	58.8	105.94	40.4	132.18	0.0	132.51*
100	1.1 MPH	96.7	2.13	93.7	2.13	88.7	2.36
100	5.6 MPH	96.7	10.53	93.7	10.73	88.7	11.64
100	11.1 MPH	96.7	19.48	93.7	21.48	88.6	23.39
100	22.4 MPH	96.6	42.97	93.5	43.62	88.3	47.56
150	1.1 MPH	149	0.59	148	0.59	147	0.59
150	5.6 MPH	149	2.72	148	2.85	147	2.98
150	11.1 MPH	149	5.58	148	5.74	147	6.04
150	22.4 MPH	149	11.97	148	12.27	147	12.82
200	1.1 MPH	200	0.13	199	0.13	199	0.13
200	5.6 MPH	200	0.56	199	0.56	199	0.56
200	11.1 MPH	200	1.18	199	1.18	199	1.18
200	22.4 MPH	200	2.69	199	2.69	199	2.69
300	1.1 MPH	300	0.03	300	0.03	299	0.03
300	11.1 MPH	300	0.33	300	0.33	299	0.33
300	22.4 MPH	300	0.69	300	0.69	299	0.69

* - Droplet completely evaporated before deposition.

#DS - Droplet diameter (micron) at end of flight.

##DD - Drift distance (ft)

“Effect of Major Variables on Drift Distances of Spray Droplets”

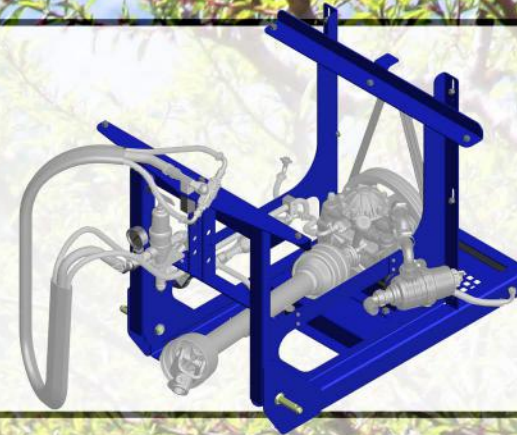
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CHASSIS

The 3 point hitch design of the sprayer has some distinct advantages; firstly, it costs less to produce a 3 point hitch unit because there are no wheels, undercarriage hitch tongue, etc. Secondly, there is reduced wear on the sprayer; by removing the pivot, the PTO stays straight behind the tractor at all times, and the hitching points move far less. Thirdly, because it is shorter, and attached directly to the tractor, it reduces the turning radius, allowing you to maneuver with greater ease.

A short frame is essential for keeping the weight of the material close to the rear tires of the tractor. This helps to increase carrying capacity and provide a more comfortable ride for the operator.



PUMP

On our 3pt hitch sprayers, we use a twin diaphragm, high pressure pump. This is not to be confused with centrifugal pumps, which only produce proper pressure at 540PTO RPM. The diaphragm pump is pressure adjustable at any rpm, which allows the operator to reduce RPM and therefore fan speed, which can prevent blowing material through a light canopy.

It is equipped with a suction filter as well as a pressure filter to prevent foreign matter from entering the pressure system. Maintenance is made simple by having the filters easily accessible. The suction filter can even be removed and cleaned without draining the tank.

Pressure is adjusted using our own Munckhof heavy duty pressure regulator. It is designed to create smooth, even material flow over a wide range of input/output pressures, and give the operator maximum flexibility in any configuration.

OPTIONS

Tower Size	8 feet, spray height 10 feet, spray height
Tank Size	200LT / 50GAL 300LT / 80GAL 400LT / 100GAL 600LT / 160GAL
Valve Type	Ball Electric

All of our tanks are made out of fiberglass and can be combined with either tower size or valve.

TANK



The material used in the tanks construction is an important factor that you'll need to consider. Typically there are three options in tank material, plastic, stainless steel, or fiberglass. We use fiberglass, which is a UV resistant material and impervious to chemical contact. It is stronger as well as more durable than polyethylene, the material used in other sprayers, and if it does happen to become damaged or break, it is easily repaired.

On the top of the tank are two openings; a large one to provide easy access and allows for quicker fill time, and a smaller one to hold hand wash water.

The bottom of our tank is rounded. This allows for the water to push any sediment up, off the floor and keep it suspended in the mixture.

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