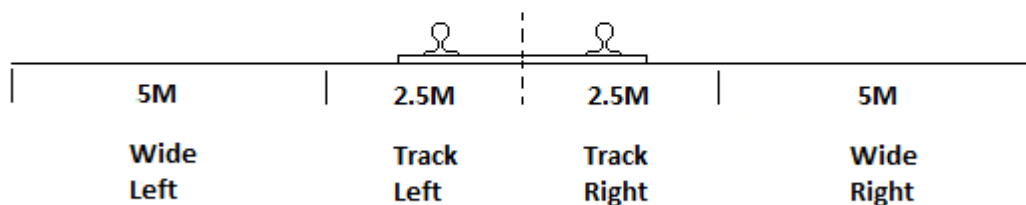


System Overview.

The Valtra T121 weed spraying tractor has been designed to apply weed killer to the operational railway at the desired rate through a range of speeds. The system is user friendly, accurate and simple to operate using proven technology combined with high quality design and manufacturing skills. Water consumption is minimised using a Radiarc type spraying head which produces a rain type droplet that penetrates the plant canopy and reduces drift (See Fig 1.3).

The herbicide product is automatically mixed as required during the application process and so unused chemical remains in its concentrated state within individual storage tank. Four zones about the track centre line can be treated which are, – 'Track' - 'Left' & 'Right', 'Wideway' - 'Left' & 'Right' (See Fig 1.0).

Application zones diagram



1.0 Application Zones

Application rates can be set to suit the product being used, the desired dosing rate and the water volume required. The system keeps these rates correct through the varying vehicle speeds and zone selection.

At the end of a spraying shift, the system is easily rinsed and shut down ready for the next shift.

When the vehicle is operating the Operator is positioned in the cab and the spray application is applied from the front mounted spraying heads. This gives the Operator good visibility of the spray pattern applied.

The system is carried on an attachment frame mounted onto the tractor front 3 point linkage and supplied with water from a 2000 litre tank mounted within the attachment frame (See Fig 1.1). The herbicide is stored in a 90 litre tank mounted within the attachment frame (See Fig 1.2).

System overview cont'd.



1.1 Weed Spray Module Mounted to Tractor



1.2 Chemical Tank



1.3 Radiarc Spray Heads

System overview cont'd.

The herbicide dosing system is a Direct Injection system which only uses the required amount of chemical while the machine is actually spraying, so the need for tank mixing is not required. This ensures that the herbicides are kept in their neat undiluted state within the storage tank and water remains un-contaminated within the water tank.

The control systems are designed to simplify sprayer operations by providing speed compensated product application regardless of the vehicle speed, while adjusting for the width and status of the programmed Radiarc swath sections and a target rate set by the operator. The Operator has a SCS 450 & Sidekick Control console which is used to control dose rate, boom selection, auto/manual etc (See Fig 1.4).



1.4 SCS 450 & Sidekick Cab Consoles

1.5 Sidekick Chemical Dosing Unit

SCS control systems improve the uniformity of product coverage for (x1) liquid (carrier) & (x1) liquid (chemical injection) products via product control systems (See Fig 1.5).

The Operator sets the target application rate for each product to be controlled by the SCS 450 console. Simply toggles the boom and master switches to the on positions and go. The console and product control unit adjust the control valves to the target application rate regardless of vehicle speed.

During product application, the Sidekick console also functions as an area monitor, speed monitor, volume totalizer, the actual volume per area and distance travelled are displayed for the product that the Operator has applied.

The SCS 450 console has the same information for the carrier product (water) plus a tank volume function.

Both control units are equipped with a self test facility that allows the Operator or Maintenance staff to test the systems static with a false speed set.