

FrostBoss™
C49

product
brochure

FrostBoss™
C59



NEW ZEALAND
frost fans



www.nzfrostfans.com



CABINET + ENGINE FEATURES

- Designed and built from powder coated aluminium alloy
- Fully enclosed and lockable making it pest and rodent proof
- Louvres for noise attenuation and cooling
- Easy access for maintenance and servicing
- 500 litre integral fuel tank (*lockable*)
- Self contained engine assembly, simple removal for ancillary use
- Rubber isolation mounts
- External engine air intake for peak performance
- Centrifugal clutch with torsional isolation coupling



PERFORMANCE

During a radiation frost, frost fans are used to draw down the warmer inversion layer air above the orchard and blow it through the orchard. The fan needs to blow as much air as it can, to the greatest distance possible. This will give the most economical coverage for the frost fan.

In order to reach the greatest distance, the fan needs to produce a strong wind momentum, which is the product of both the wind speed and the volumetric flow rate of the wind. The coverage, or effectiveness, of a frost fan depends not only on the machine's ability to move air, but also the warmth of the inversion temperature and the degree of frost that is present.

Coverage is typically 6-8 hectares depending on the conditions.

NOISE

Noise resulting from the operation of a frost fan is derived from two primary sources, the fan and the engine.

Noise from the engine has been attenuated by designing an effective engine enclosure and muffler.

Noise from the fan results from the tip speed of the blades and the efficiency of the blades as they pass through the air.

The blades are pitched to run as slow as possible while operating in the fuel efficient region of the engine power curve.

The advantage of the FrostBoss™ blades are that the more efficient blade shape works to increase the airflow of the fan, at a lower speed and reduced noise level.

The blade design and operating speed have been optimised to provide maximum coverage and minimum noise.



BLADES

FROSTBOSS™ C49 ~ 4 BLADE
FROSTBOSS™ C59 ~ 5 BLADE

- CNC machined taper locked hub (*no welding*)
- The composite blades are an advanced technology composite structure
- An optimised pitch from hub to tip
- Optimised blade area to improve inboard wind momentum
- Significantly thinner tips to reduce noise
- Optimal structural detailing for improved fatigue strength
- Statically balanced for smooth running
- Manufactured utilising the latest Resin Transfer Moulding (RTM) technology
- An uncompromised aerodynamic design engineered for low operating engine speeds of 1750 to 1800 rpm



FROST FAN UPGRADES

We have an upgrade package for most brands of frost fans. We can upgrade your existing frost fan with a new 2,3,4, or 5 blade system. This saves fuel and is noise compliant. Ask us for more information.



CONTROLLER

FROSTBOSS™ AUTO START/STOP

- Intelligent controller to auto start and stop at operator selected temperatures
- Wireless temperature sensor (i.e. no cable to get damaged)
- Anemometer stops the fan in winds above 10kph, then restarts the fan when the wind drops below 8kph
- Engine protection shut down for over speed, low oil pressure, high temperature and low fuel level
- LCD display for operating status, warnings and faults
- Regulated Solar Panel for prolonged battery life
- Simple, single switch operator control
- Tower mounted instruments and warning light
- In the unlikely event of controller damage a separate key start is fitted as standard



OPERATION

AUTO START/STOP MACHINES

In automatic mode, FrostBoss™ fans start and stop automatically at operator selected temperatures.

Whenever the fan is running, the ambient wind is monitored to make sure the fan is prevented from running in winds above 10 kph.

The Frost fan can always be operated in manual mode if required.

INSTALLATION + MAINTENANCE

We offer a complete siting and turnkey installation package, backed up by ongoing servicing over the life of the fan.



FrostBoss™ fans are guaranteed against defects in materials and workmanship for a period of 2 years from the date of installation when operated under normal operating conditions, provided annual maintenance has been carried out by an authorised FrostBoss™ service agent.

We recommend annual servicing even on low hour machines as lack of use can cause a number of minor issues which may eventually cause unreliable operation.



Special purpose vehicles are positioned in all major growing regions dedicated to maintenance and service.

TECHNICAL SPECS

	FrostBoss™ C49	FrostBoss™ C59
FAN ASSEMBLY	C49 4 blade composite	C59 5 blade composite
Operating speed	1750 rpm	1800 rpm
Fan speed	418 rpm	365 rpm
Coverage	6 – 8 ha	6 – 8 ha
NOISE LEVELS (LAeq)		
Distance for 55dB	240m	180m
Noise Level at 300m	51dB	49 dB
GEAR BOX	Amarillo	Amarillo
Overall drive ratio	4.19	4.91
Fuel consumption	21 litres per hour	20 litres per hour
ENGINES		
Model	John Deere 6068T Diesel	
Maximum Rating	170Hp @ 2500 rpm	
Type	6 cylinder Turbo	
Engine Management	Mechanical	
Model	Perkins 1106D-70TA Diesel	
Maximum Rating	150Hp @ 2200rpm	
Type	6 cylinder Turbo	
Engine Management	Mechanical Tier 3	
ENGINE ENCLOSURE		
Type	Powder coated aluminium, fully enclosed with integral fuel tank	
Fuel Capacity	500 litres approx	
CONTROLLER	FrostBoss™ Auto Start/Stop Wireless temperature sensor Remote internet monitoring option by Loncel Technologies	
TOWER		
Dimensions	500mm diameter, 6.4 mm seamless smooth wall pipe with 32 mm base plate & 1200 mm gussets	
Height	10.38 m	
Finish	Hot dipped galvanised	
DRIVE LINE ASSEMBLY		
Drive Shaft	Balanced 3 piece drive shaft with industrial universal joints	
Clutch	Industrial 10" centrifugal clutch & torsional isolation coupling	

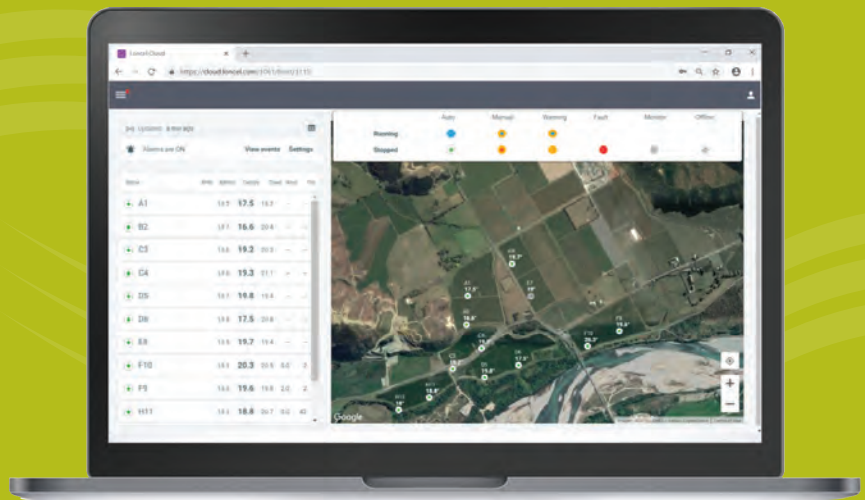


REMOTE FROST FANS MONITORING + TEXT ALARMS

Our fans can be monitored with each fan displayed on a Google map and the data relating to each fan displayed in tabular and graphical form.

This system can be used to check the frost fans are armed and ready before a frost, to check on operation during a frost and to analyse historical data after the frost (see example graph).

In addition, alarms can be sent to a cell phone, based on operator selected criteria (e.g. run signal, canopy temp).



Showing the canopy temperature for each fan on the map as well as controller status, battery voltage, engine RPM, inversion temperature, ambient wind speed and fan running time for each fan.



www.brand-new.co.nz



1429 Omahu Road, Hastings, New Zealand

Ph: +64 6 879 8312

Email: info@nzfrostfans.com

www.nzfrostfans.com

