GENER

WIND MACHINES

WHAT IS FROST?

Frost is a major abiotic stress and one of the principals limiting factors for agricultural production worldwide. Frost usually occurs for a short time when the weather is cold and causes great damage in orchards when the temperature drops below 0 degrees.

GENER frost guards consist of a tower, and engine placed in a sealed enclosure, a fuel tank, a control panel and a propeller on the tower.

Wind machines work in harmony with nature to absorb hot air into the garden or to increase the temperature and protect crops in the agricultural field.

There are two types of frost that can affect crops; advection and radiant. Advection frosts occur when cold air blows into an area to replace warmer air that was present before the weather change.

It is associated with cloudy conditions, moderate to strong winds, no temperature inversion and low humidity.

Radiant frost events occur when plants and soil absorb the sunlight during the daytime then radiate and rise the heat during the night when cooler air moves in.

Dense chilled air settles into the lowest areas of the canopy, where the most serious frost damage happens. The warmer air that rose above during the night is often trapped in a layer above the crops which is known as an inversion layer.

GENER wind machines perform heat transfer with forced convection as they pull the warmer air trapped down into the orchard and mix it with the cooler air down on the surface to raise temperatures and save crops. Thus, transmission of air mass to a specific distance. Due to being able to rotate also in vertical axis, wind machines circulate the air as to scan an area of 360 degrees and enable the wind movement. Wind machines have proven to be the most effective solution against frost damages.

GENER
WIND MACHINES

STATIONARY MODELS

DOUBLE BLADE

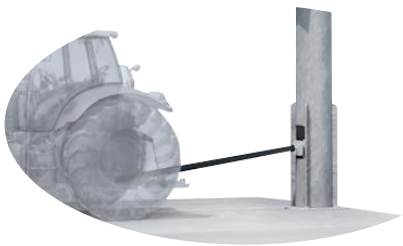
CARBON BLADES

- High efficiency design
- Much stiffer and resistant compared to other alternatives
- Expected lifetime exceeds all other options
- Balanced with an accurate measurement of static moment

PTO VERSION

MODEL

- **Tractor (+100hp) PTO version**



GALVANIZED

TOWER

- 6 or 8mm thickness according to the model
- 510mm diameter
- Integrated safety equipments
- Optional lay-down tower

KOMPAKT

CABIN

- Specially designed for easy transportation
- Durable against external conditions
- Integrated fuel tank

ALTERNATIVE

DIESEL AND LPG ENGINE OPTIONS

- Famous with low fuel consumption
- Low dB level
- Maximum power and torque generation at low rpm

SMART

DCU

- Deep Sea Electronics DCU
- User friendly
- Optional remote control

GENER
WIND MACHINES

TECHNICAL SPECIFICATIONS

BLADE
- Carbon blades
- High efficiency design
- Much stiffer and resistant compared to other alternatives
- Expected lifetime exceeds all other options
- Balanced with an accurate measurement of static moment

TOWER
- 10.50mt length
- 510mm diameter
- 6 or 8 mm according to the model
- Hot dip galvanized
- 4 maintenance frames

DIESEL AND LPG ENGINE OPTIONS
- Famous with low fuel consumption
- Low dB level
- Maximum power and torque generation at low rpm

GEARBOXES
- Cast iron frame
- TIMKEN bearings
- Top gearbox pivots through 360° around the tower in 4.5min

CABIN
- Designed with cold-formed galvanized sheets
- Electrostatic power painted
- Durable against external conditions
- Integrated 450lt fuel tank

CONTROL SCREEN
- Deep Sea Electronics DCU
- Auto and manual mode
- User friendly
- Notification of potential malfunctions

DRIVE-LINE
- Three sections (3x3.02 mt in length)
- 100mm in diameter

SAFETY EQUIPMENT AND SENSORS
- Completely integrated with DCU
- Anemometer for safe operation in windy conditions
- Vibration switch equipped on towers to disable potential tower failures
- Temperature sensor integration

CENTRIFUGAL CLUTCH
- 10'' diameter
- Specifically produced with industrial standards

FOUNDATION
- Concrete C30 quality
- Volume: 8 m^3

OPTIONS

LAY DOWN TOWER
- Two pieces, (1,75 mt + 8,75 mt in height)
- Epoxy painted
- Hydraulic lay-down system

REMOTE CONTROL
- Monitor and control through smart devices.
- Available on IOS and Android.

GENER
WIND MACHINES

PORTABLE MODELS

DOUBLE BLADE

CARBON BLADES

- High efficiency design
- Much stiffer and resistant compared to other alternatives
- Expected lifetime exceeds all other options
- Balanced with an accurate measurement of static moment

ALTERNATIVE

DIESEL AND LPG ENGINE OPTIONS

- Famous with low fuel consumption
- Low dB level
- Maximum power and torque generation at low rpm

EPOXY PAINTED

TOWER

- 6 mm thickness
- 510mm in diameter
- Integrated safety equipments
- Lay-down handle

KOMPAKT

CABIN

- Specially designed for easy transportation
- Durable against external conditions
- Integrated fuel tank

SMART

DCU

- Deep Sea Electronics DCU
- User friendly
- Optional remote control

CERTIFICATED

TRAILER

- Designed for easy installation
- S2-A drawing certificate

kertcenter.com

GENER
WIND MACHINES

TECHNICAL SPECIFICATIONS

BLADE
- Carbon blades
- High efficiency design
- Much stiffer and resistant compared to other alternatives
- Expected lifetime exceeds all other options
- Balanced with an accurate measurement of static moment

TOWER
- 5.75 mt length
- 510mm diameter
- 6 mm thickness
- Epoxy painted
- Lay-down handle

DIESEL AND LPG ENGINE OPTIONS
- Famous with low fuel consumption
- Low dB level
- Maximum power and torque generation at low rpm

GEARBOXES
- Cast iron frame
- TIMKEN bearings
- Top gearbox pivots through 360° around the tower in 4.5min

CABIN
- Designed with cold-formed galvanized sheets
- Electrostatic power painted
- Durable against external conditions
- Integrated 320lt fuel tank

CONTROL SCREEN
- Deep Sea Electronics DCU
- Auto and manual mode
- User friendly
- Notification of potential malfunctions

TRAILER
- S2-A drawing certificate
- 7 tons capacity axle with brake
- 4 adjustable jacks with gears for balancing

SAFETY EQUIPMENT AND SENSORS
- Completely integrated with DCU
- 2-axis tilt sensor integration for stable operation
- Temperature sensor integration

DRIVE-LINE
- Two sections (1.70 + 3.02 mt in length)
- 100mm in diameter

CENTRIFUGAL CLUTCH
- 10’’ diameter
- Specifically produced with industrial standards

OPTIONS

REMOTE CONTROL
- Monitor and control through smart devices.
- Available on IOS and Android.

GENER
WIND MACHINES

MODELS

	S-60 MODEL	**S-45** MODEL	**S-35** MODEL	**P-45** MODEL
TYPE	Stationary	Stationary	Stationary	Portable
PROPELLER	- 2 Blade - 6.00m length	- 2 Blade - 5.80m length	- 2 Blade - 5.60m length	- 2 Blade - 5.80m length
TOWER	8mm thickness	6mm thickness	6mm thickness	6mm thickness
MOTOR	129 kW (175 Hp)	105 kW (143 Hp)	Tractor (+100 Hp) PTO version	105 kW (143 Hp)
PROTECTION AREA COVERAGE				
SAFETY EQUIPMENT	✓ Vibration sensor ✓ Anemometer	✓ Vibration sensor ✓ Anemometer	N/A	✓ Vibration sensor ✓ 2-axis tilt sensor
OPERATION	✓ Automatic ✓ Manuel	✓ Automatic ✓ Manuel	✓ Manuel	✓ Automatic ✓ Manuel
FOUNDATION	$8m^3$ (Note: $10m^3$ for lay-down tower opt.)	$8m^3$ (Note: $10m^3$ for lay-down tower opt.)	$8m^3$	N/A
OPTIONS	× Lay-down tower × Remote control × Burner *	× Lay-down tower × Remote control × Burner *	N/A	× Remote control

BURNER *

6 meter tower powered from PTO of engine which is used as a support heater for wind machines to distribute heated air down on the orchard.

GENER

WIND MACHINES

Hacı Sabancı OSB 23 Nisan Cad.
No:8 Sarıçam/Adana

+36 20 311 3805

info@kertcenter.com

kertcenter.com