

# Ventilation









# VENTILATION



Poultry houses are getting bigger day by day and production costs continue to increase. Increasing chicken density due to enlarging poultry houses makes necessary to have a good ventilation system.

In breeder houses the main target of the farmer is to get the highest number of eggs by supplying the best climate conditions inside the house.

Due to the increasing feed costs, keeping FCR rates at a minimum level became the common target of the farmers.

It is also important to keep the heating cost at acceptable levels, which is one of the most important costs after feed.

Tavsan introduces Minimum-Transition-Tunnel ventilation concept to its customers, which has proven its efficiency after long researches. This ventilation concept targets the birds to grow up in a more comfortable environment by minimizing the transition between the levels of ventilation. Appropriate ventilation system equipments start working according to a intelligent analyze of parameters such as temperature, humidity, static pressure, age and weight of the bird to create the most suitable climate.

Side-wall fans and air inlets for minimum ventilation, tunnel fans and air inlets for transition ventilation, tunnel fans and cooling pads for tunnel ventilation works automatically from the first day until the end.

Ventilation systems in closed poultry houses is becoming much more important every day.

A good ventilation will offer the following;

- The extra heat is exhausted from the house.
- Humidity over than needed will be exhausted.
- Carbon dioxide and ammonia will be exhausted.
- Fresh air will be supplied for the birds.
- Number of birds per square meter will increase which will increase the production capacity.
- An efficient climate will be supplied which will effect the yield.

## VENTILATION FANS

- Long life with high galvanization ratio.
- High air flow with special designed stainless steel blades.
- Shutters with centrifugal system.
- Air tight isolation with plastic edges on the louvers.
- Exhaust fan groups have automatic centrifugal system where the shutters are being opened instantly when the fan starts running.
- For safety regulations, a front grill is placed in front of the blades in all of the fans.
- The bottom of the fan frame is equipped with a water outlet for ease of cleaning.
- All of our fans are equipped with 6 stainless steel blades obtaining a high airflow with low electricity consumption.



### TVS FAN 1400

It is an exhaust fan with high air flow capacity used for tunnel and transition ventilation. It offers the needed air speed to ventilate and cool the house. Preferred with it's low maintenance need and long life.



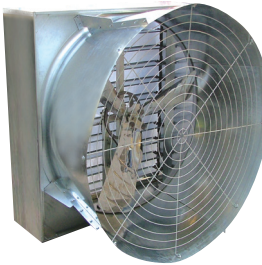
### TVS FAN 1150 TVS FAN 810

Having the same structure of TVS 1400 and TVS 960 these fans are mostly used for other applications.



### TVS FAN 960

It is ideal for minimum ventilation. It is placed all along the long walls of the house and it supplies the requested fresh air without cooling the house. Its structure is the same as TVS 1400.



### CONIC FAN

The special design with 3 blades provide more air flow for tunnel ventilation. Its conic funnel which stays outside of the house increase the air capacity. The shutter system is similar to the TVS 1400 Fan.



### PLASTIC SHUTTER FAN

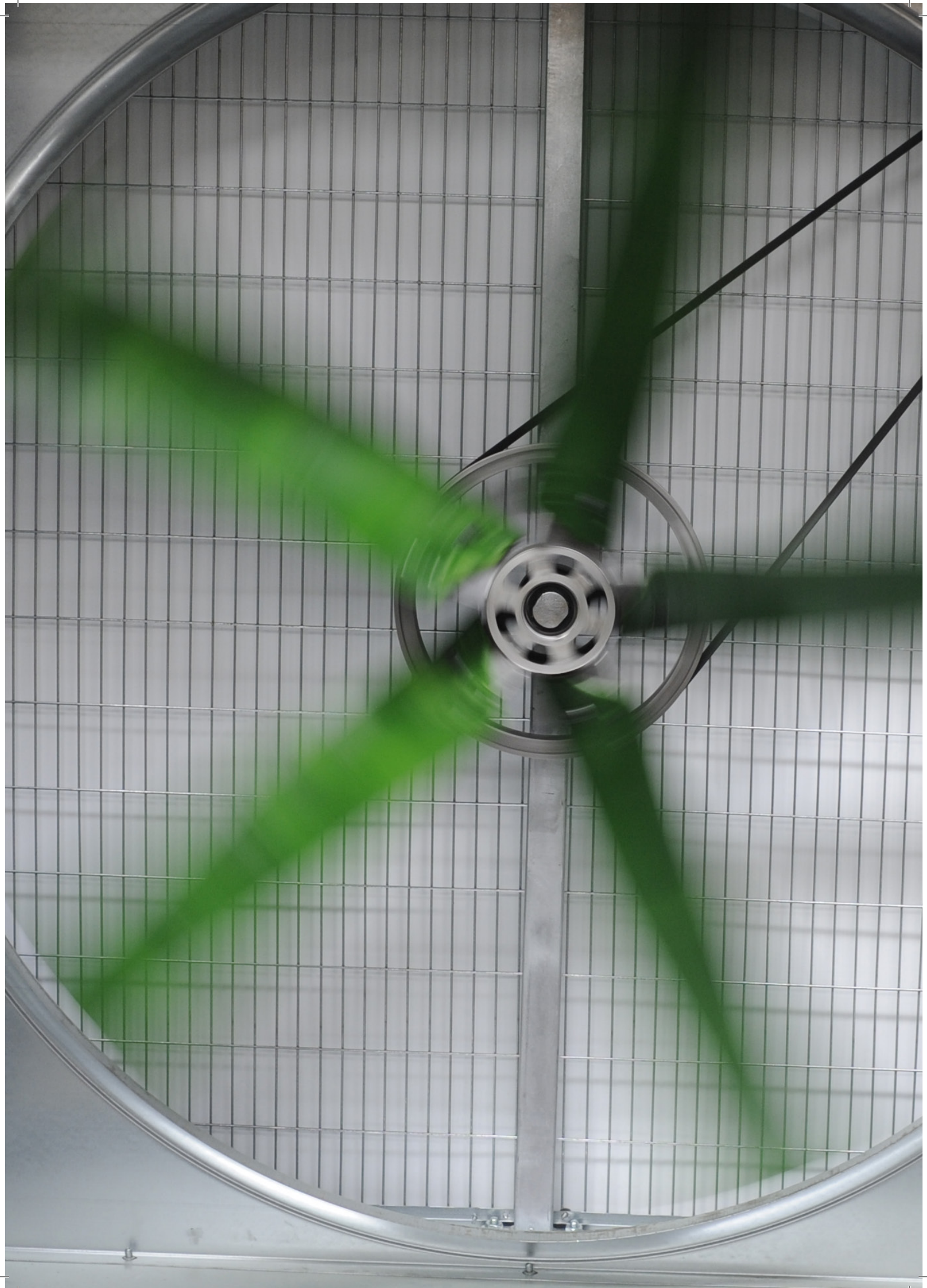
- Made of plastic louvers with long life
- Instead of centrifugal system, opening with air power
- Less maintenance cost
- Easy cleaning feature



### AIR CIRCULATION FANS DOUBLE GRID FAN

These fans are designed with double grid in order to be used for air circulation and air movement. They are not used exhausting the air.







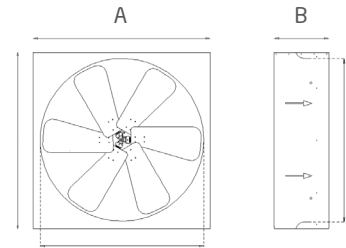
## FAN



With the help of the centrifugal system the louvers are opened and closed automatically. The louvers does not let the sunlight to go inside the house. It allows easy installation and cleaning.

FAN TYPE		A	B	C	POWER	VOLTAGE	Hz*
TAVSAN FAN 1400	Grid/Louver	1380	424	50"	HP 1,50 KW 1,10	380V	50
TAVSAN FAN 1400	Grid/Grid	1380	360	50"	HP 1,50 KW 1,10	380V	50
TAVSAN FAN 1150	Grid/Louver	1140	424	39"	HP 0,75 KW 0,55	380V	50
TAVSAN FAN 1150	Grid/Grid	1140	360	39"	HP 0,75 KW 0,55	380V	50
TAVSAN FAN 960	Grid/Louver	959	424	31"	HP 0,55 KW 0,37	380V	50
TAVSAN FAN 960	Grid/Grid	959	360	31"	HP 0,55 KW 0,37	380V	50
TAVSAN FAN 810	Grid/Louver	810	424	26"	HP 0,55 KW 0,37	380V	50
TAVSAN FAN 810	Grid/Grid	810	360	26"	HP 0,55 KW 0,37	380V	50

\* Other motor specification are available upon request.

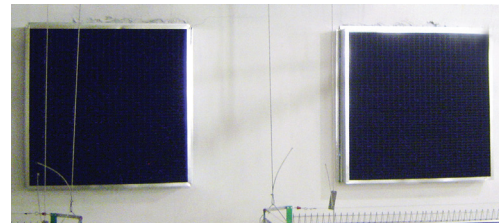


### LIGHT TRAP

In light controlled breeders houses the light traps are installed in front of the fans and air inlets to stop the light go inside the house. With its design it allows an easy cleaning.

#### ADVANTAGES

- Easy to assemble
- Easy to clean
- Long service life



### FAN ISOLATION PANEL

Energy saving for the poultry house during winter terms.

Light. Easy remove and fix options provide ease of assembly.

Permanent usage possibility through physical life feature.



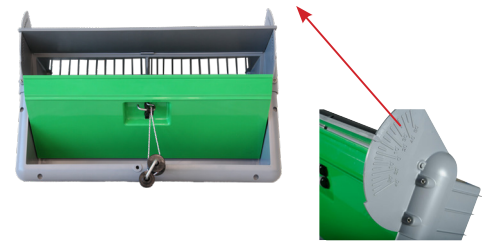


### TOROS AIR INLET

The TOROS Air inlet can be controlled through the climate controller and can be activated according to the static pressure in order to let the fresh air go inside the house. The air deflectors guide the air with the requested angle.

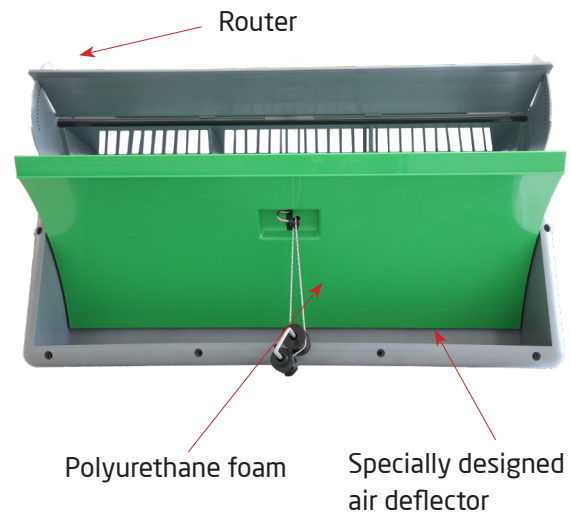


Inlet type	Air flow m³/h (Pascal)			Power (kg)	Stroke (mm)	Weight (kg)
	10 (pa)	20 (pa)	40 (pa)			
Toros	1000	1500	2000	4.0	300	3.38



### ILGAZ AIR INLET

Due to its capacity it is used in low quantities in the house which keeps in minimum the isolation losses in the houses. The special design of the door guides the air flow. Ventilation of the poultry houses can be made more economically with the increased airflow capacity of Ilgaz Air Inlet. Ilgaz air inlet's flap also has an insulation material and aluminum profile for maximum strength.

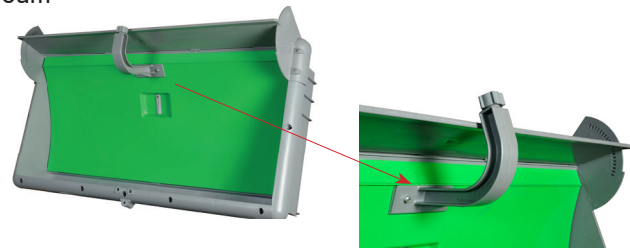
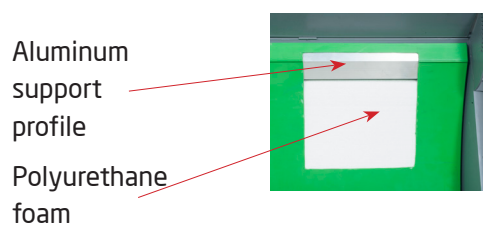


### ADVANTAGES

- Less mounting holes through big dimensions, less isolation problem
- Opening and closing options from inside and outside of house
- Providing minimum ventilation all the time with the option of adjusting

### COMMON SPECIFICATIONS

- Manufactured from high quality plastic.
- Isolation foam inside the air inlet door offers high isolation.
- The handle on the airinlet door lets the user to open the airinlet door in two steps.
- Stainless steel springs offer perfect air tightness.
- Aluminum profiles inside the air inlet door .



Inlet type	Outer Dimensions		Flange Dimensions	
	Length	Height	Length	Height
Ilgaz inlet	908	454	857	388
Toros inlet	595	325	545	260

An ideal solution to control the air in minimum and transitional ventilation.



## AIR INLET TYPES

### Air inlet opening from the bottom

Air flow m <sup>3</sup> /h (pascal)			Power (kg)	Stroke (mm )	Place of use
10 (pa)	20 (pa)	40 (pa)			
2500	3100	4800	7	440	Used only in houses with no columns and pumps on walls.



### Air inlet opening from the top side

Air flow m <sup>3</sup> /h (pascal)			Power (kg)	Stroke (mm)	Place of use
10 (pa)	20 (pa)	40 (pa)			
2500	3100	4800	0,4	600	Rope system will operate with air inlets. It is convenient for doors etc.



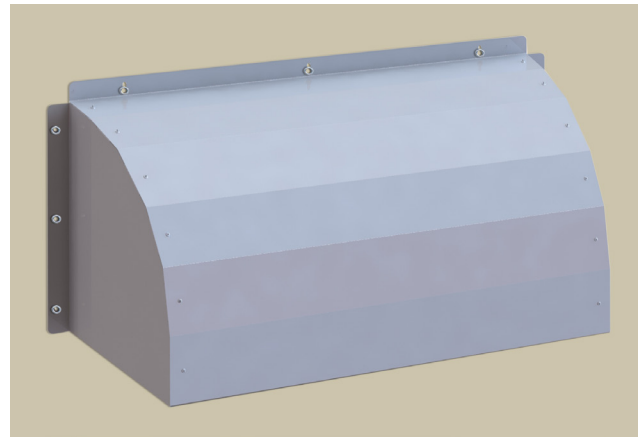
### Air inlet opening from the top outside

Air flow m <sup>3</sup> /h (pascal)			Power (kg)	Stroke (mm)	Place of use
10 (pa)	20 (pa)	40 (pa)			
2500	3100	4800	2,5	400	In case any pumps inside the house, it is used from the outside of the house.



### ILGAZ AIR INLET COVER

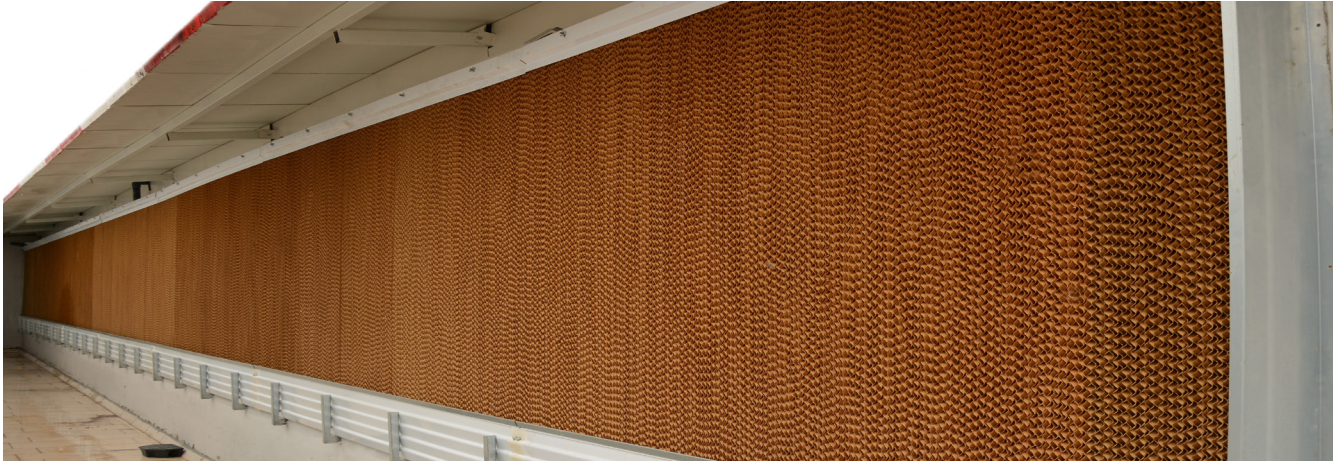
- Prevent rain, light and dew
- Long psychical life in outdoor environment.
- Provides isolation and protection.











### PAD COOLING SYSTEM WITH INTEGRATED WATER SUPPLY

The bottom gutter is manufactured from PVC which is also used as a water tank. This compact system is offered with a high efficiency water circulation pump and filter



### PAD COOLING FRAME

It is an economic and easy to install product with high cooling efficiency. It is offered with many different dimensions



### COOLING PAD DIMENSIONS

Height: 100 / 150 / 200 cm\*

Width: 60 cm

Thickness: 10 / 15 cm



### LOUVER MOTOR VENTILATION

Can be opened and closed thanks to self-powered. Provides air intake control in tunnel ventilation. Works with automation according to standart pressure.





## COOLING

### TUNNEL DOORS

It is recommended to build a dog house (cooling pad room) in poultry houses. The cooling pad room offers an efficient cooling since only the cooled air goes inside the house not the water drips. The tunnel doors let the incoming air to be under control to offer a stable air pressure and speed.

The tunnel doors let the incoming air to be under control to offer a stable air pressure and speed.

The tunnel doors guide the coming air to the ceiling in order not to let the cold air go on the birds.

Isolated doors offers perfect air tightness which does not allow cold air to go inside the house in winter.



Tunnel Doors



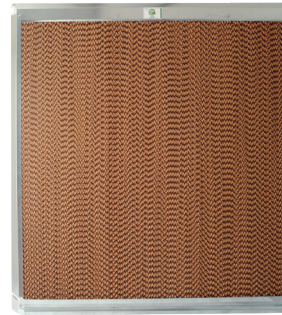
Tunnel inlet w/rack&pinion system



Tunnel inlet system mt

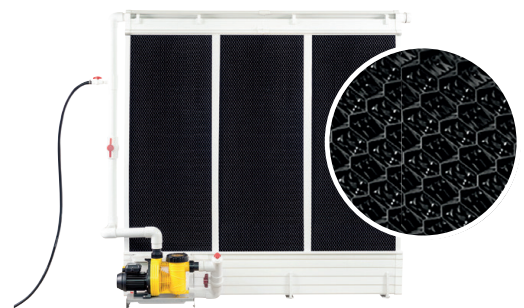
### PAINTED COOLING PAD

- Salt and moss development is decreased.
- It is cleaned by high water pressure and gathered a reinforced product for evaporation.
- Prevention of light transition by dark color and placement of microorganism on cooling pad.
- Doubling of product usage life in case less watering and essential maintenance.



### PLASTIC PAD

- Its special design provides excellent water dispersion of solid surfaces and mesh structures. This offers excellent wetting, less splashing and therefore excellent cooling capacity.
- The use of high-resistance polymer sheets allows the Plastic Pad to be easily cleaned without damage.
- Joining polymer sheets by thermal welding guarantees the best stability and a long service life.
- The use of UV stabilizer additives provides high UV resistance.
- Thanks to its polypropylene material, it is highly resistant to many chemicals.









## CLIMATE CONTROLLERS



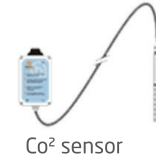
Inside temperature  
sensors up to 12pcs



Outside  
Temperature



Humidity  
Sensor



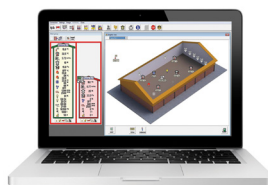
Co<sup>2</sup> sensor



Static  
pressure  
sensor

### TAURUS

- 3" LCD Monitor
- 8 group fan control
- 3 ea. internal temperature sensor
- 1 ea. external temperature sensor
- 1 ea. humidity sensor
- 1 ea. pressure sensor
- 1 ea. CO2 sensor (optional)
- 1 ea. water consumption tracking
- 1 ea. inlet and curtain control according to pressure
- 1 ea. water pump control for pads
- 4 ea. heating control
- Silo weighing control (optional)
- Live weighing (optional)
- Lighting control and 0-10 volt dimmer control
- Digital batch weigher
- Computer connection, remote control and reporting
- Remote control option with smart phones
- Enter weight of livestock and temperature data according to calendar, automatic calculation of intake air as m<sup>3</sup>
- Minimum ventilation option according to air intake as m<sup>3</sup> to the house or stated starting and stopping time.





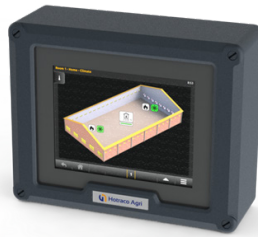
## ORION

- 7" LCD Monitor
- 16 group fan control
- 4 ea. internal temperature sensor
- 1 ea. external temperature sensor
- 1 ea. humidity sensor
- 1 ea. pressure sensor
- 1 ea. CO<sub>2</sub> sensor (optional)
- 1 ea. water consumption tracking
- 1 ea. inlet and curtain control according to pressure
- 1 ea. water pump control for pads
- 3 ea. heating control
- Feed weighing system with electronic batch
- Lighting control and 0-10 Volt Dimmer control
- Computer connection, remote control and reporting
- Remote control option with smart phones
- Enter weight of livestock and temperature data according to calendar, automatic calculation of intake air in terms of m<sup>3</sup>
- Minimum ventilation option according to air intake as m<sup>3</sup> to the house or stated starting and stopping time.

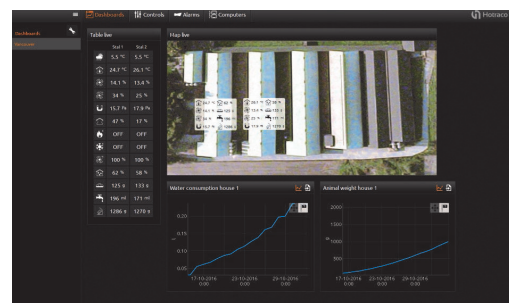


## FORTICA

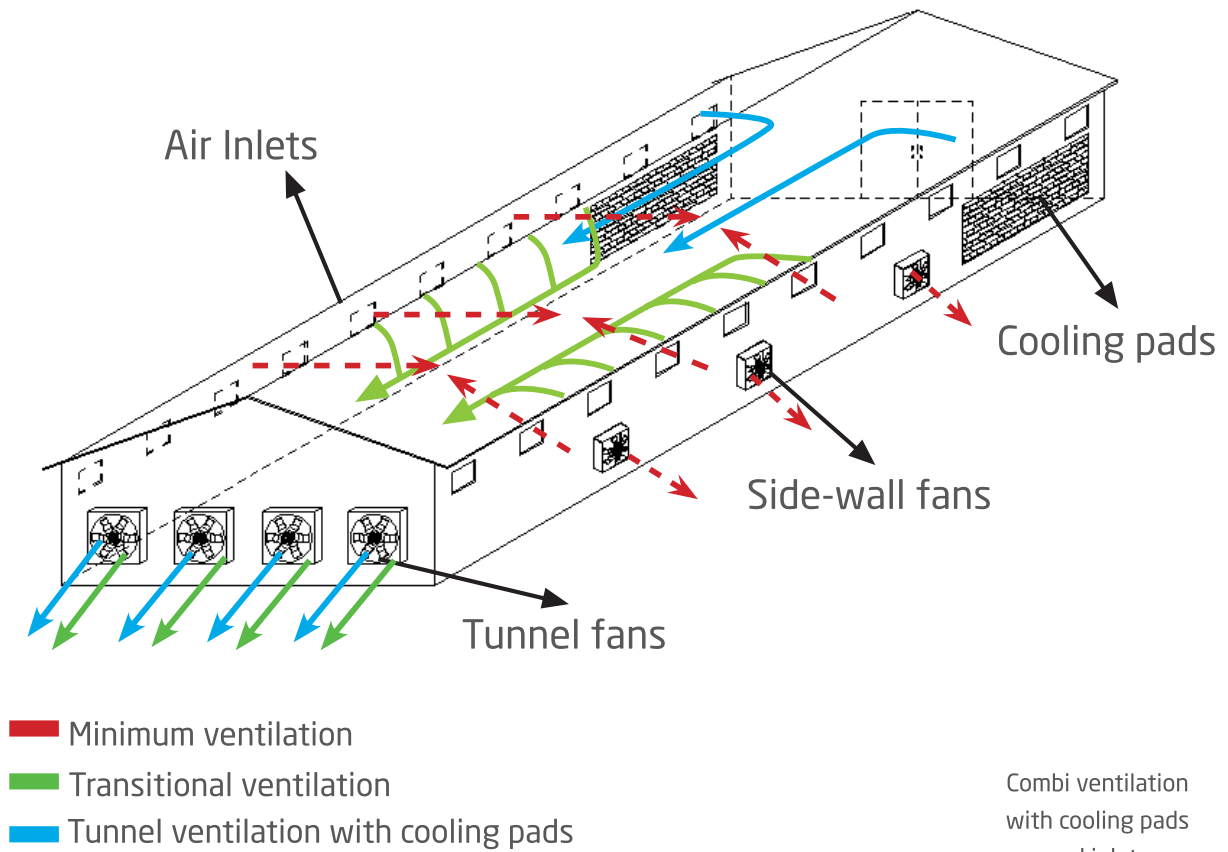
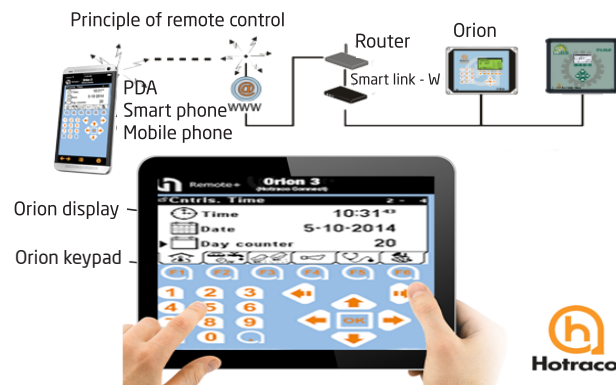
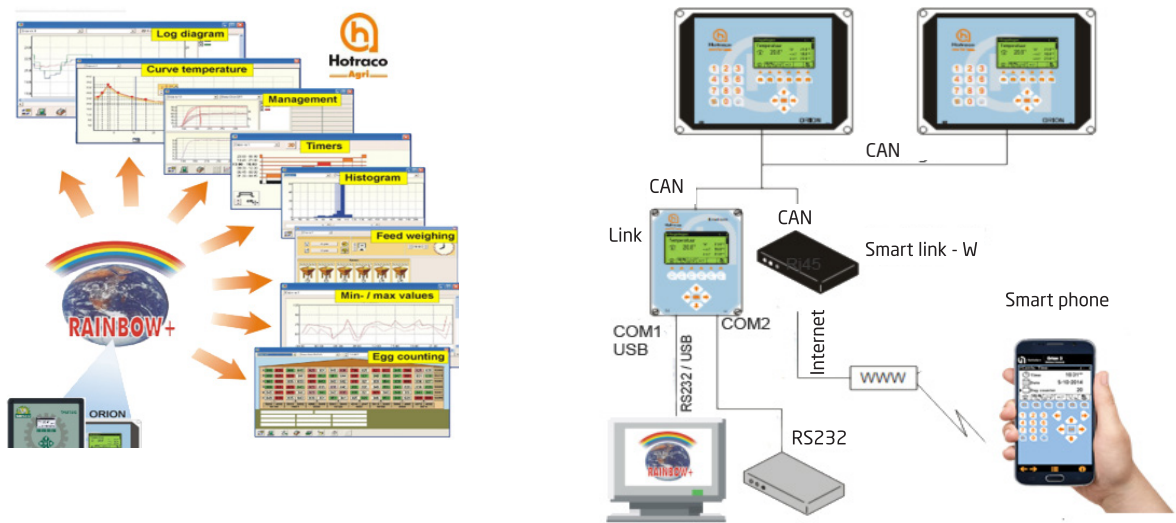
- 10" LCD touch screen
- 16 group fan control
- 4 ea. internal temperature sensor
- 1 ea. external temperature sensor
- 1 ea. humidity sensor
- 1 ea. pressure sensor
- 1 ea. CO<sub>2</sub> sensor (optional)
- 1 ea. NH<sub>3</sub> sensor (optional)
- Water consumption tracking with electronic water meter
- Air Inlet control according to pressure
- Tunnel Inlet control according to pressure
- Water pump control for cooling pads
- Fogging system control
- 4 ea. heating control
- Loadcell control (optional)



- Bird Weighing Systems control (optional)
- Lighting control and 0-10 Volt Dimmer Control
- Computer connection, remote control and reporting
- Remote control option with smart phones
- Weight of livestock and requested house temperature data can be entered to the calendar at the software. It is possible to make automatic control of air intake in terms of m<sup>3</sup> according to the entered data.
- Minimum ventilation option according to air intake as m<sup>3</sup> to the house or stated starting and stopping time.



## VENTILATION ALTERNATIVES







### GA SERIES HEAT BLOWERS

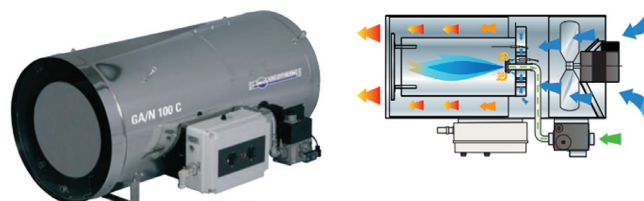
Optional: In case of applications where the heavy dust treats the heater the user can order "air inlet kit" in order to supply fresh air from outside.

#### ADVANTAGES

- IP65 Protection class electrical box
- Can work with time clock connection or with thermostat
- High quality stainless steel body
- IP55 Protection class motor
- Heater can be used as a circulation fan during the summer

### HOT AIR BLOWERS

GA/N series heaters work with natural gas or LPG. With their high air blowing capacity a uniform heating can be obtained throughout the poultry house. Air circulation fans helps the heaters to distribute the hot air in long houses.



Model	Heating power		Flow rate
	kW	kcal/hour	m <sup>3</sup> /hour
GA/N 45	45	38.700	2.600
GA/N 95	95	83.500	6.700
GA/N 115	115	100.500	8.700

### ELECTRIC HEATING SYSTEM / THE DX-EH IS AN ELECTRIC AIR HEATER

Besides the use of "free" energy, electric heating also has a positive influence on the stable climate. No moisture or CO<sub>2</sub> is added which needs to be ventilated as with traditional gas heaters. The air humidity remains low and so do the ammonia emissions. This is also beneficial to animal health

Heating capacity high	39,6 kW
Heating capacity low	19,8kW
Electrical connection	40kW
Maximum electrical current per phase high	59.0A.
Maximum air output (warm)	3500 m <sup>3</sup> /h
Throw horizontal (max)	40m
Voltage	(50 Hz) 400V+N
Dimensions & Height	1400x550x795mm / 65kg
Max. sound level	(at 5 metres) 62 dB(A)
Installation	Suspended or on a pedestal

#### CHARACTERISTICS DX-EH:

- Sustainable heating
- Simple maintenance
- High air output
- Optimal use of own power generation
- Low noise level
- 100% efficiency
- Splash waterproof / Stainless steel casing



**DXB DIRECT HEATERS** The DXB heater is a direct fired heaters with an open flame combustion. The efficiency is 100 % as all heat generated remains in the building and is a cost effective heating solution.



#### FEATURES

- Oil-fired heater
- Reliable combustion
- Automatic restart
- High air output
- Ventilation-only option
- Easy to install and maintain
- Up to 8 heaters from 1 controller
- Splash-proof stainless steel casing
- Also natural gas and lpg options are available

## HEATING

BH100



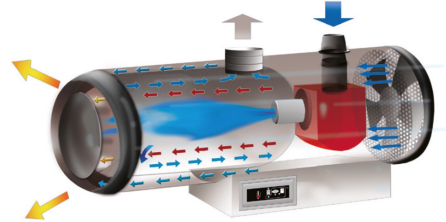
BH50



### BH HEATERS

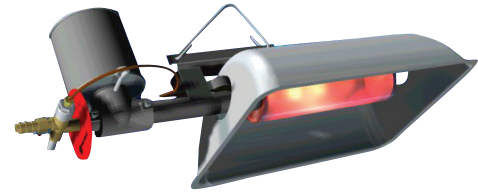
Gas and Diesel Versions available

- Two Thermal Power: 50kW to 100kW
- Integrated Riello burner (gas or diesel)
- Snorkel kit for fresh air intake
- Housing in Stainless-Steel 430
- IP55 protection
- Full set of accessories



### M8 HEATER

A well controlled environment is essential in the first days of the chicks. Experts agree that infrared heat produced from gas fired heaters provide young birds with their best start. Infrared heaters allows you to heat directly the animals and the floor.

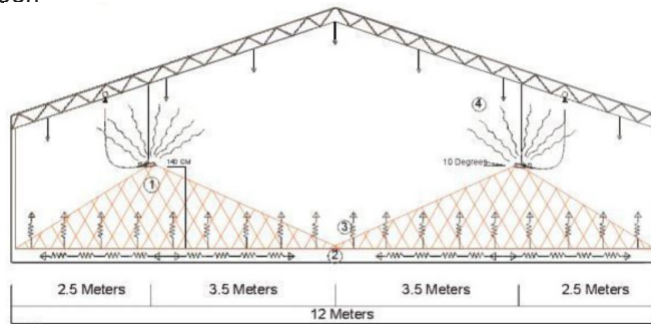
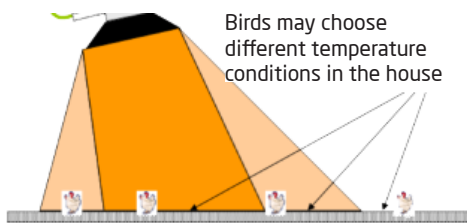


### BENEFITS

- Stainless steel construction
- Wide operating range
- High efficiency with low gas consumption
- Low maintenance
- Withstands high pressure washing
- Gives the heat directly on the house floor.
- Offers clean and efficient heating.

### SPECIFICATIONS

Maximum capacity	5,0 Kw/hour
Heating range	6 m
Hanging height	0,90 - 1,50 m
Gas types	Propane, Butane, LPG, Natural Gas
*The operating pressure can be adjusted according to the gas type	



Gas Pressure Regulator

### CIRCULATION FAN

Made of stainless steel  
IP55 protection level  
Air flow regulator option  
Low maintenance



### AIR CIRCULATION FANS

In poultry house where heat blowers are used these 6 blade double grid fans are offered for air circulation.

Product	Motor power	Motor Speed	Air Flow	Flap Diameter	Amper
Circulation Fan	0.27 kW	940 g/min	8000 m³/h	550 mm	1.4 A











**Tavsan Tavukçuluk Ekipman San. ve Tic. A.Ş.**

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TAVSAN reserves the right, without prior notice or liability, to make changes in the equipment design and technical specifications.