

Pioneer P750/49

The Premium 750 KW Wind Turbine



Pioneer Wincon



**Pioneer Wincon
P750**



Transforming the Power of Wind

Corporate Profile

Pioneer Wincon Private Limited (PWPL) is a member company of the Pioneer Asia Group having diverse interests in safety matches, chemicals, non-ferrous, forgings, textiles, information technology etc. The promoters of Pioneer Asia Group are the first in India to install and connect private wind farms to the state electricity board as early as 1989. PWPL was incorporated in the year 1996 and has over the last two decades become a trusted name and an emerging market leader in wind energy. The core business consists of design, manufacture, marketing and maintenance of wind power systems that harness the energy of wind to generate green power. PWPL is an ISO 9001:2008 certified company and our turbines are certified by appropriate agency. The corporate office is in Chennai and the manufacturing facility is in Pondicherry, 160 km from Chennai.

Technical know-how

Pioneer Wincon Private Limited was formed as a joint venture between Pioneer Asia Group and Wincon West Wind of Denmark (as a division of Vest Frost, A/s Denmark) well known for their turbine's simple and sturdy design and advanced power electronics. Following the exit of the Joint Venture partners in 2003, PWPL is now a wholly owned Indian Company with the design and technology ownership to manufacture and market the wind turbines globally.

Market Leaders

PWPL has installed more than 950 numbers of 250 KW and 750 KW WTGs in Tamil Nadu, Karnataka, Andhra Pradesh, Madhya Pradesh, Maharashtra and Gujarat. Pioneer Wincon Pvt Ltd recently added one more wind farm to its long list of installations when it commissioned a 25 MW project at Nanimatli Village in Gujarat's Jamnagar District.

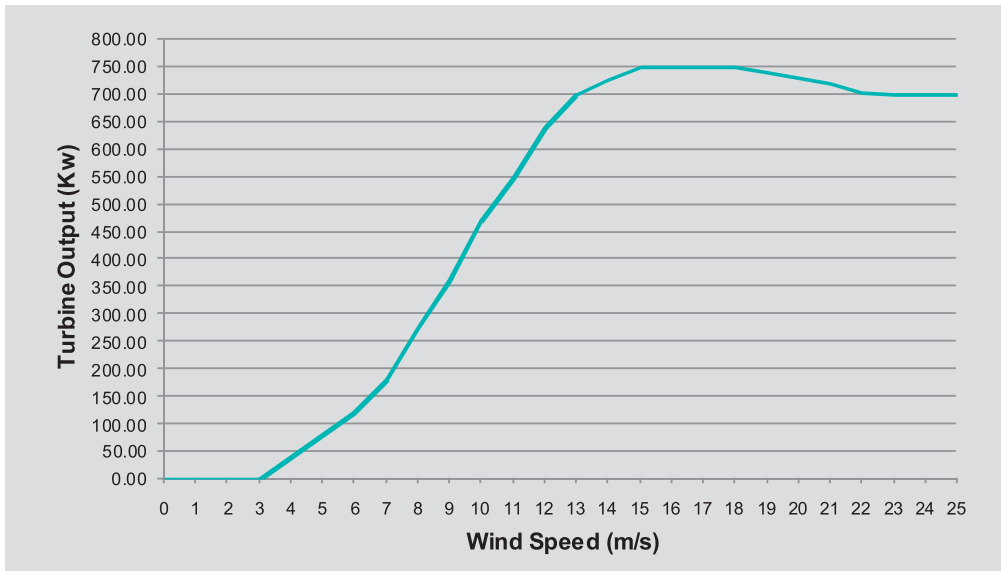
A stylized map showing the geographical locations of Pioneer's wind installations. The map is divided into two main regions: Turkey and India. Turkey is highlighted in a dark grey color. India is also highlighted in a dark grey color, with several states labeled: Gujarat, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, and Tamil Nadu. The map is set against a light grey background with white outlines for the countries and states. A green curved line arches over the top of the map.

Turkey

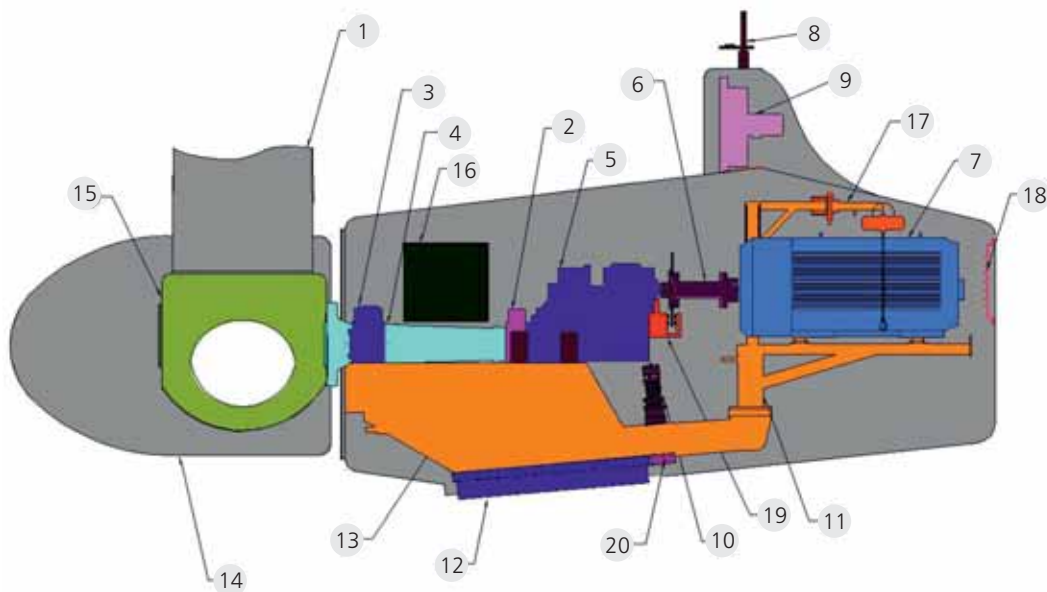
Pioneer Installations



Power curve chart for P750/49 WTG



Nacelle diagram with components



- | | | |
|--------------------|--------------------------|----------------------------|
| 1. Blade | 8. Anemometer & Windvane | 15. Hub |
| 2. Shrink Disc | 9. Gear Box Cooler | 16. Top Panel |
| 3. Bearing Housing | 10. Yaw Motor | 17. Material Lifting Crane |
| 4. Main Shaft | 11. Generator Console | 18. Rear Louver |
| 5. Gear Box | 12. Yaw Flange | 19. Mechanical Brake Unit |
| 6. CD Coupling | 13. Bottom Frame | 20. Yaw Pinion |
| 7. Generator | 14. Nose Cone | |



Technical Specifications* - P750/49 WTG

1. General Data

Nominal power _____ 750 KW
Rotor diameter _____ 49.0 m
Swept area _____ 1886.5 m²
Hub height _____ 61.1 m

2. Operational Data

Cut-in, wind speed _____ 3.0 m/s
Rated wind speed _____ 15.0 m/s
Cut- out, wind speed _____ 25.0 m/s
Survival, wind speed for 2 sec max _____ >52.5 m/s

3. Rotor

No. of blades _____ 3
Rotor position _____ Up wind
Rotor speed _____ 22.36 RPM
Rotor diameter _____ 49 m
Swept area _____ 1886.5 m²
Tip speed, blade _____ 58.0 m/s
Regulation _____ Stall
Weight, rotor _____ 14000 Kg.

4. Blade

Type _____ HT24
Profile data _____ NACA 63-4xx y FFA-W3
Length _____ 24.0 m
Material _____ Fibre glass reinforced polyester
Weight _____ 3400 kg

5. Hub

Type _____ Cast
Material _____ GGG 40.3

6. Main Shaft and Bearings

Type, shaft _____ Forged
Material _____ Steel alloy, 34CrNiMo6
Type, bearings _____ Spherical roller bearings
No. of bearings _____ 1

7. Gearbox

Type _____ Helical-Cum-Planetary
Ratio _____ 1:67.68
Lubrication _____ Forced Circulation
Oil volume _____ 157 lts.

8. Brake Systems

Mechanical brake _____ Hydraulically activated disc brake
Brake position _____ High-speed shaft
Aerodynamic brake _____ Hydraulically activated
blade Tip Brake

9. Couplings

Main shaft - gearbox _____ Shrink disc
Gearbox - generator _____ Composite disc

10. Generator

Type _____ 6 - pole / 4 - pole induction
Rated power _____ 200 KW / 750 KW
Voltage _____ 690 V, 3 phase, AC
Frequency _____ 50 Hz
Synchronous speed _____ 1000 / 1500 RPM
Insulation class _____ H
Protection class _____ IP 55
Weight _____ 4500 Kgs.

11. Bedplate

Type _____ Welded
Profiles, steel _____ L & RHS
Surface treatment _____ Zinc spray coating

12. Yaw System

Yaw top _____ Flange Type
Yaw drives, motor _____ Electric (2 x 1.5 KW)
Yaw drives, gear _____ Planetary (x 2)
Dampening system _____ Yaw arms with friction pads (5nos)
Yaw speed _____ 1.5 ° per sec

13. Wind Turbine Controller

Type _____ Microprocessor
Power factor _____ Cos phi > 0.95
Control and monitoring of: _____ Imbalance
_____ Generator overload
_____ Yaw drives overload
_____ Automatic cable untwisting
_____ Activation of brake systems
_____ Voltage fluctuations, grid
_____ Grid failure
_____ Generator overspeed
_____ Rotor overspeed
_____ Automatic adjustment of power factor

Temp. measurements on: _____ Control panel, Gear oil
_____ High-speed shaft bearings
_____ Generator windings & Bearings

Optional _____ Temp, main bearings
_____ Transformer windings

14. Tower

Type _____ Lattice
Height _____ 60 m
Surface treatment _____ Hot dip Galvanized
Weight, total. (Including Foundation stubs) .55000 kgs.
Tubular tower available on request.

15. Nacelle

Weight, excl. rotor _____ 25000 kgs.

16. SCADA

Type: 1) GPRS based remote monitoring, real time
2) SMS based monitoring of all turbine functions

* In view of continuous product improvement, specifications are subject to change without prior notice.



Pioneer Wincon

Pioneer Wincon Private Limited

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