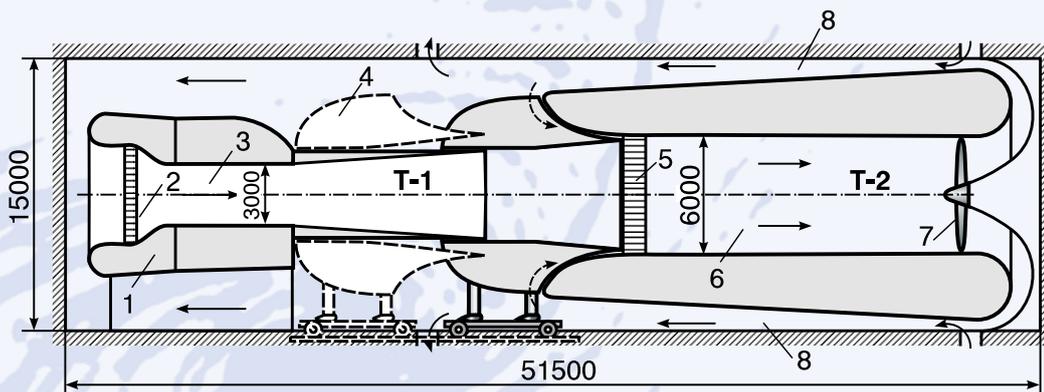




## Main Technical Parameters

	<b>T-1</b>	<b>T-2</b>
Flow velocity	5...55 m/s	5...27 m/s
Re number per m	up to $3.8 \cdot 10^6$	up to $2.8 \cdot 10^6$
Total pressure	atmospheric	atmospheric
Dynamic pressure	up to 1.85 kPa	up to 1 kPa
Stagnation temperature	environmental	environmental
Inner diameter	3 m	6 m
Test section length	6 m	14 m
Cross section shape	octagon	octagon

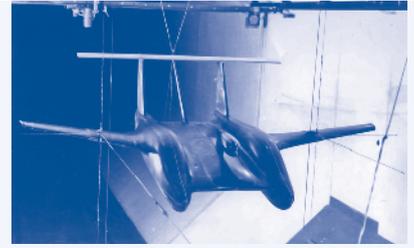


1. T-1 nozzle
2. T-1 honeycomb
3. T-1 test section
4. Moving part
5. T-2 honeycomb
6. T-2 test section
7. Fan
8. Reverse channel

## General Description

T-1-2 WT is an integrated continuously-operating closed-layout wind tunnel with T-1 and T-2 closed test sections that have octagon cross section shape and inner diameters of 3 and 6 m correspondently. Fan driven by 1000 kW DC electromotor generates the flow inside the wind tunnel. T-1 test section is equipped with four-component mechanical balance with suspension wire, screen, mirror and non-stable aerodynamic properties investigating device. The models with wing area up to 0.48 m<sup>2</sup>, wing span of up to 1.6 m and length of 2.5 m are possible to be tested through four-component mechanical balance with suspension wire and translational vibrations device in T-1 test section. The inclination angle range is  $\alpha = -20^\circ \dots +40^\circ$ .

T-2 test section is equipped with devices to test the vertical and horizontal wind-driven powerplants.



## Capabilities

The following main types of experiments are possible to be performed in T-1:

- determination of total aerodynamic characteristics through mechanical balance, of the local strain-gauging and of ground proximity influence included;
- measuring the pressure distribution on models surfaces, as well as the flow visualization through various methods;
- determination of rotational derivatives and of other aerodynamic damping parameters through specified translational vibrations devices.

The following main types of experiments are possible to be performed in T-2:

- testing the vertical and horizontal wind-driven powerplants.



## Technological Advantages

In T-1 test section the mirror method application enables investigating the ground proximity influence on aircraft aerodynamic characteristics at extremely low altitudes. The special translational vibrations device may be used for direct determining the high-rise buildings wind-resistance.

In T-2 test section the unique screwed device enables obtaining the vertically axial wind turbine properties for a total range of its specific speed.



## Application

T-1: the wind tunnel is used to determine the stable and non-stable aerodynamic properties of aircraft and vessels, to study the wind stresses of industrial objects and methods to damp them.

T-2: the wind tunnel is used to optimize the wind-driven powerplants and their models under flow velocity of up to 27 m/s.

