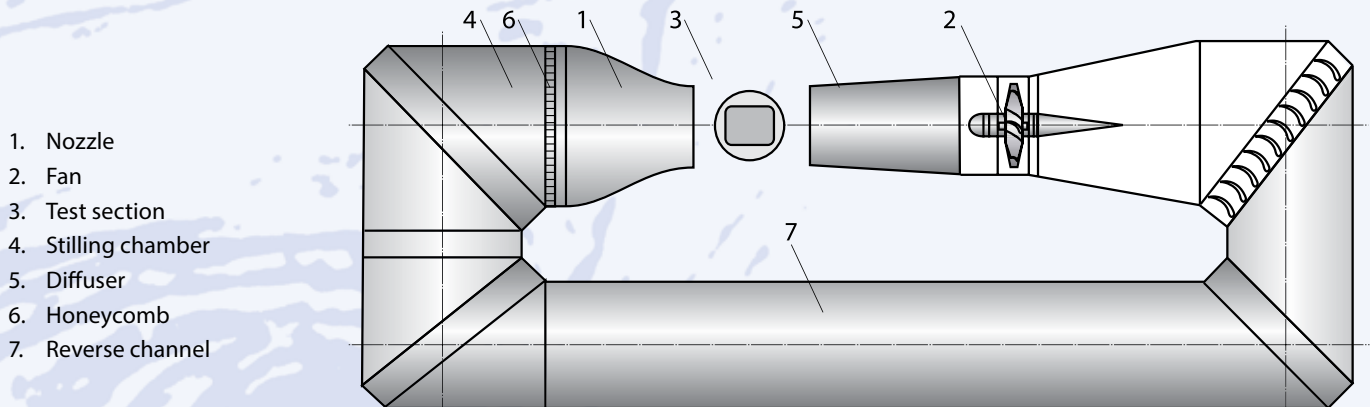




Main Technical Parameters

Flow velocity 10...80 m/s
 Re number per 1 m up to $5.5 \cdot 10^6$
 Total pressure atmospheric
 Dynamic pressure up to 4.0 kPa
 Stagnation temperature ambient

Angle of attack (α) range $-16^\circ \dots 54^\circ$
 Side slip angle (β) range $\pm 24^\circ$
 Test section sizes:
 Cross section area (elliptical) 4.0×2.33 m
 Test section length 3.8 m



General Description

T-103 is a continuous-operation, closed-layout wind tunnel with onereverse channel and an open test section designed to investigate aerodynamic characteristics of aircraft models at take-off, landing and low-speed flight. Air flow is generated by a fan driven by electric engine of constant current with total power of 4400 kW.

The main types of tests are performed with the use of an electric-mechanical balance mounted on a special platform. Different physical investigations are carried out in addition to weight tests.

Computerized measurement-and-control complex enables monitoring, data acquisition and processing during the experiment.

Models with wing area up to 0.8 m^2 , wing span up to 2.5 m, and length up to 2.5 m are tested in the wind tunnel.

Capabilities

The following types of tests can be carried out in T-103:

- Aerodynamic characteristics measurements, including simulation of ground effect and engine operation, with the use of the six-component electric-mechanical balance;
- Strain-Gauge measurement of aerodynamic loads on control surfaces carried out separately or simultaneously with the balance measurements of full model;
- Measurement of model's surface throughout electric modules;
- Investigations of the velocity field near the model;
- Different means of visualization of the flow on the model surface and near it;
- Investigations of static and dynamic aeroelasticity using special models;
- Investigations of the trajectory of the dynamically-similar model separation;
- Measurements of aerodynamic damping coefficients on a special test bench for rotation derivative measurements;
- Testing the models with cool-compressed-air simulation of turbo jets;
- Investigations of flow in air inlet channels.

Application

During 70 years the above mentioned capabilities of T-103 have been used for experimental investigations of flight vehicles of different purposes. T-103 wind tunnel plays a unique role when developing prototype layouts of domestic aircraft and their further improvement.

