

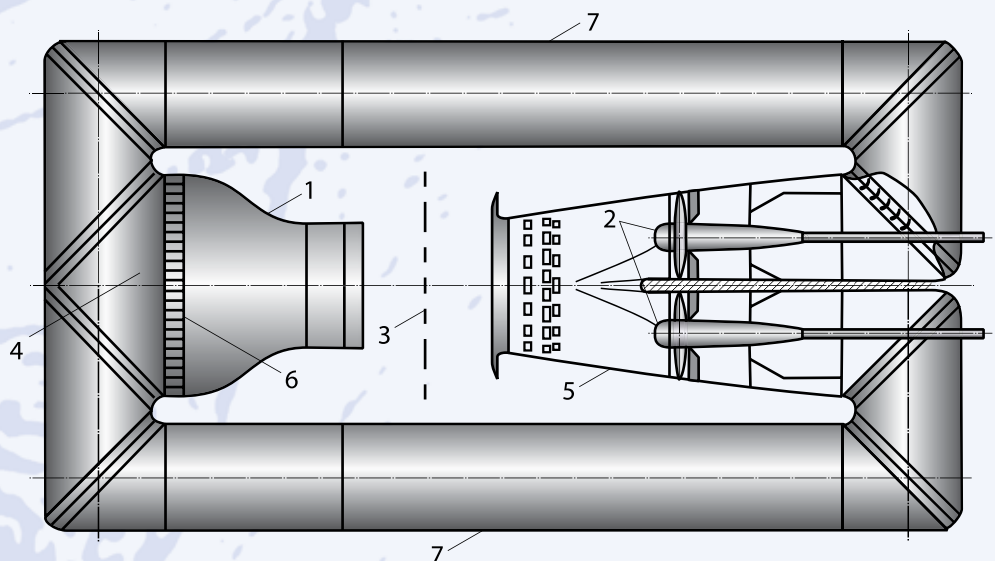


Main Technical Parameters

Flow velocity 10...55 m/s
 Re number per 1 m up to $3.8 \cdot 10^6$
 Total pressure atmospheric
 Dynamic pressure up to 1.9 kPa
 Stagnation temperature ambient

Angle of attack (α) range $-16^\circ \dots 40^\circ$
 Side slip angle (β) range $\pm 26^\circ$
 Test section sizes:
 Cross section area (elliptical) 4.0×2.33 m
 Test section length 4 m

1. Nozzle
2. Fans
3. Test section
4. Stilling chamber
5. Diffuser
6. Honeycomb
7. Reverse channel



General Description

T-102 is a continuous-operation, closed-layout wind tunnel with two reverse channels and an open test section designed to investigate aerodynamic characteristics of aircraft models at take-off, landing and low-speed flight. Two fans, each driven by a constant-current electric motor of 250 kW, generate the flow. The main types of measurements are performed with electric-mechanical balance. Computerized measurement-and-control complex enables data monitoring, acquisition, registration, and result processing during the experiment.

Models with wing area up to 0.8 m², 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-102:

- Determination of total aerodynamic characteristics, including simulation of ground effect and engine operation, using six-component electric-mechanical balance;
- Determination of total and local aerodynamic loads on model elements, including hinge moments of control systems, using one- or multi-component balance;
- Measurement of pressure distribution along a model surface throughout electric models;
- Investigations of downwash and stagnation of the flow behind the model;
- Investigations of the models with cool compressed-air simulation of turbo jets;
- Visualization of the flow on the model surface using tufts, oils and etc.

Application

Above mentioned capabilities of T-102 wind tunnel are used for experimental research of different-application aircraft models during 70 years.

