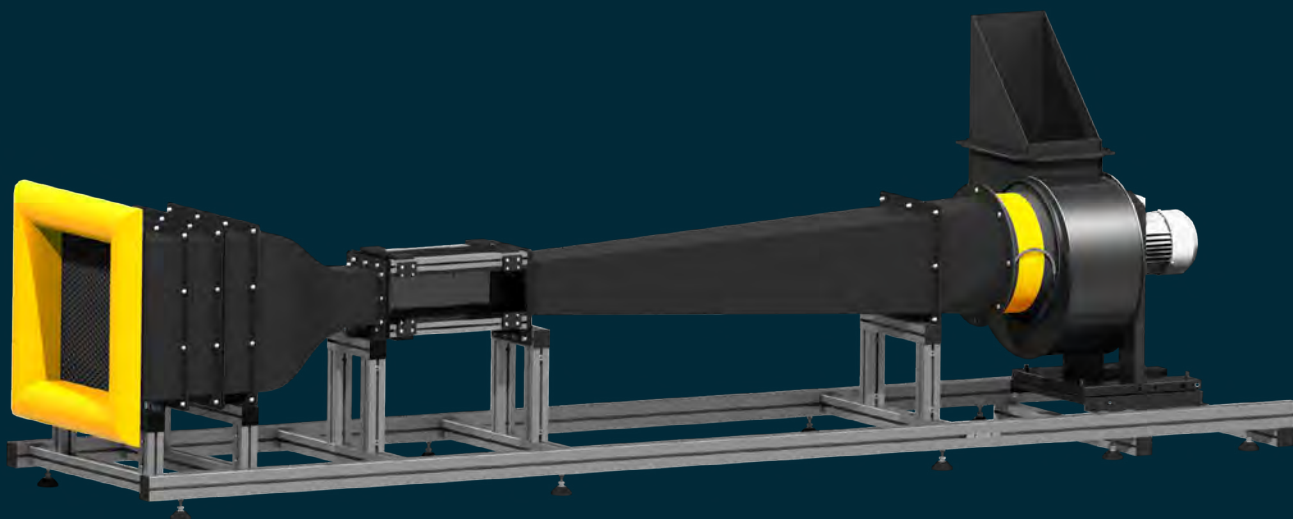




OPEN CIRCUIT WIND TUNNELS



WTTECH.CZ SPECIALISTS IN WIND TUNNELS

WTtech.CZ specializes in the development, design, and construction of wind tunnels, including open circuit models. The company comprises a well-coordinated team of engineers, designers, constructors, and aerodynamic specialists. With expert know-how and many years of experience, WTtech.CZ can offer solutions for highly specific projects executed under complex conditions.

Wind tunnels by WTtech.CZ have a wide range of applications, from aerospace research and the automotive industry to skydiving and university education. Their services are not limited to the tunnels themselves but also include testing and measuring equipment providing, software, data processing, consulting, project management, and checking research project.

In addition to wind tunnels, WTtech.CZ engages in advanced aerodynamic computations, 3D CAD system Creo design work, CFD and FEM simulations, and the development of accessories such as manipulators and aerodynamic balances. They also offer specialized measuring and control software, data processing, and analysis for optimizing design and efficiently solving aerodynamic challenges.

WTtech.CZ has been operating since 2009. It is an official system integrator for National Instruments and the exclusive representative of Scanivalve Corp. for the Czech Republic, Slovakia, and Poland. This allows WTtech.CZ access to the latest technologies and top-tier research and measurement tools.

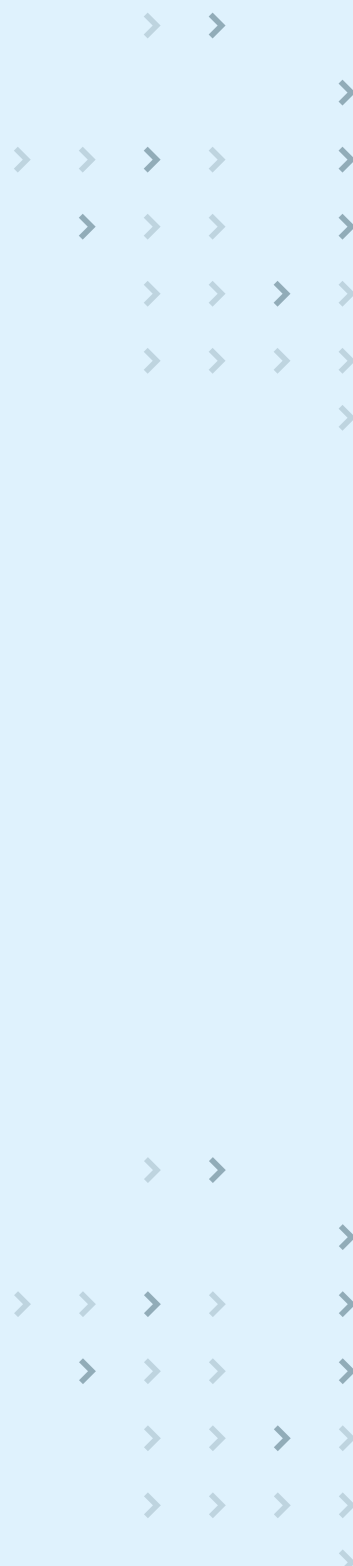
OPEN CIRCUIT WIND TUNNELS

Wind tunnels (WT) with an open loop circuit are a fundamental tool in experimental aerodynamics. Their design allows the direct flow of air drawn from the surroundings through the measuring section, eliminating the need for a return path for the air back to the fan. Due to this configuration, they are not only simpler but usually also a more economical choice for a wide range of aerodynamic tests.

Although open circuit WTs require higher power than closed WTs, they balance this with other advantages. The test section can be configured as either open or closed according to the specific testing needs. Moreover, despite their open circuit design, they minimize turbulence in the test airflow and provide stable airflow, which is crucial for measurement accuracy.

Due to their affordability, they are an ideal choice for universities and smaller laboratories seeking an efficient solution without the need to invest in more expensive closed circuit WTs.

WTtech.CZ will design, manufacture and deliver WTs tailored to your requirements. From customized dimensions of the test section to demands on the quality and speed of airflow, as well as adapting to the laboratory's spatial constraints and available power input, you will receive a tool that matches not only your research objectives but also specific applications and available resources.



HOW DOES AN OPEN CIRCUIT WIND TUNNEL WORK



In an open-circuit wind tunnel, air is drawn from the surrounding environment. The intake collector and settling chamber, equipped with honeycomb and screens to reduce turbulence and equalize the velocity profile, ensure linear airflow in the Test Section. The energy source for the airflow is the WT drive, consisting of an axial or radial fan that provides the air with the required speed before it enters the test section.

Typical WT Delivery Includes:

- Temperature and pressure sensors
- Control and measurement unit
- Interface for measurement computer communication

An open circuit WT is not only more financially accessible but also offers the possibility of using smoke or visualization particles, which is complicated in a closed circuit WT due to the need for filtration. Additionally, it doesn't have to be stationary; it can be delivered on a metal frame with wheels, providing you with a mobile wind tunnel.

ADVANTAGES OF OPEN CIRCUIT WIND TUNNELS

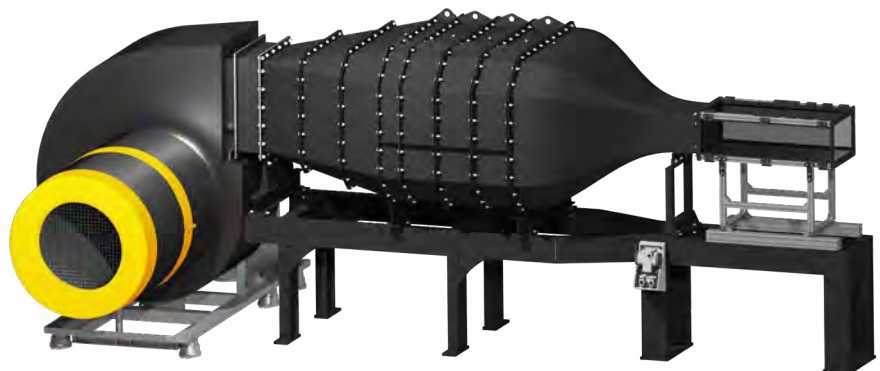
- Lower investment costs
- High flexibility in specific implementations
- Test Section configurable as both open or closed
- Easy visualization with smoke/visualization particles
- Possibility of a mobile WT solution

EXAMPLES OF SELECTED REALISATIONS

RESEARCH & CALIBRATION WIND TUNNEL

TEST SECTION: 305 MM × 205 MM

AIRFLOW VELOCITY: 90 M/S

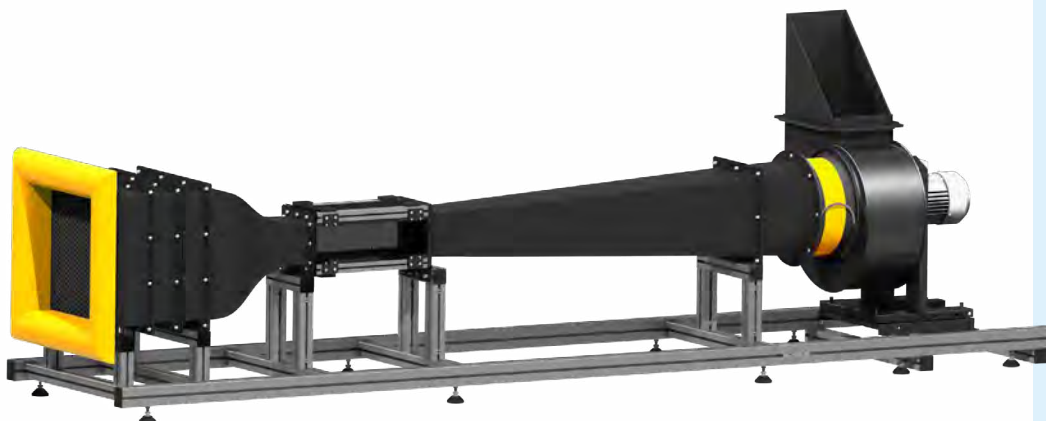


- Wind tunnel configuration: Blow down
- Test section: Closed + Open (Jet)
- Engine power: 55,0 kW

EDUCATIONAL WIND TUNNEL

TEST SECTION: 125 MM × 125 MM

AIRFLOW VELOCITY: 50 M/S



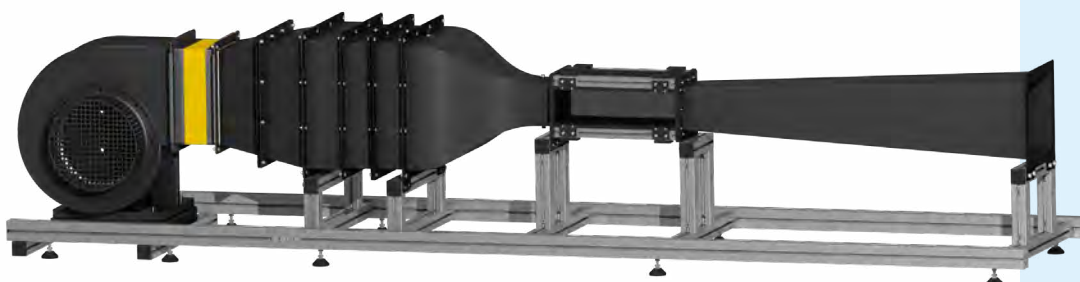
Wind tunnel configuration: Suck down
Test section: Closed
Engine power: 1,5 kW



EDUCATIONAL WIND TUNNEL

TEST SECTION: 125 MM × 125 MM

AIRFLOW VELOCITY: 50 M/S



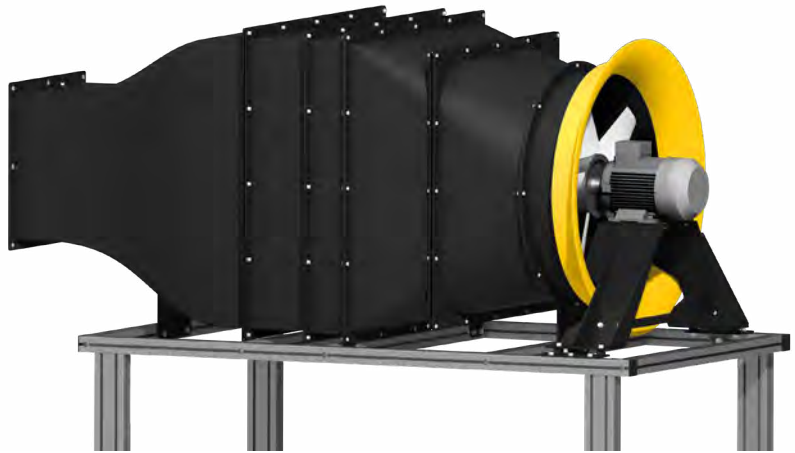
Wind tunnel configuration: Blow down
Test section: Closed + Open (Jet)
Engine power: 1,5 kW



RESEARCH & CALIBRATION WIND TUNNEL

TEST SECTION: 400 MM × 400 MM

AIRFLOW VELOCITY: 25 M/S



Wind tunnel configuration: Blow down
Test section: Open (Jet)
Engine power: 2,2 kW

RESEARCH & CALIBRATION WIND TUNNEL

TEST SECTION: 500 MM × 500 MM

AIRFLOW VELOCITY: 40 M/S

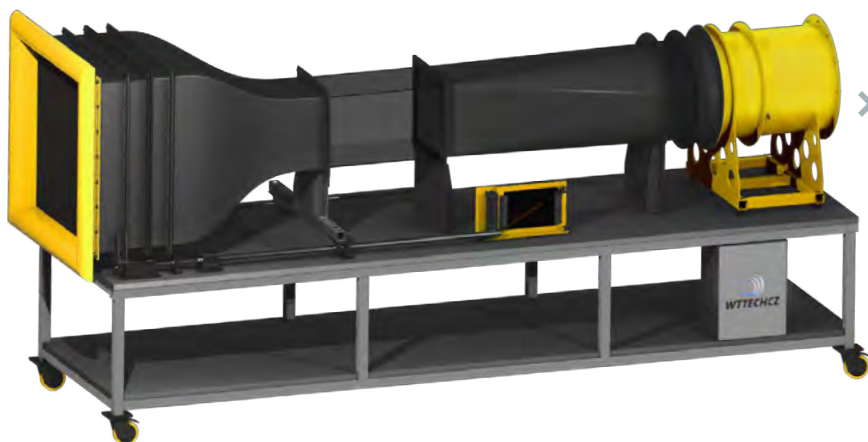


Wind tunnel configuration: Blow down
Test section: Open (Jet)
Engine power: 15,0 kW

EDUCATIONAL WIND TUNNEL

TEST SECTION: 300 MM × 300 MM

AIRFLOW VELOCITY: 30 M/S



Wind tunnel configuration: Suck down
Test section: Closed
Engine power: 3,0 kW



RESEARCH & CALIBRATION WIND TUNNEL

TEST SECTION: 50 MM DIAMETER

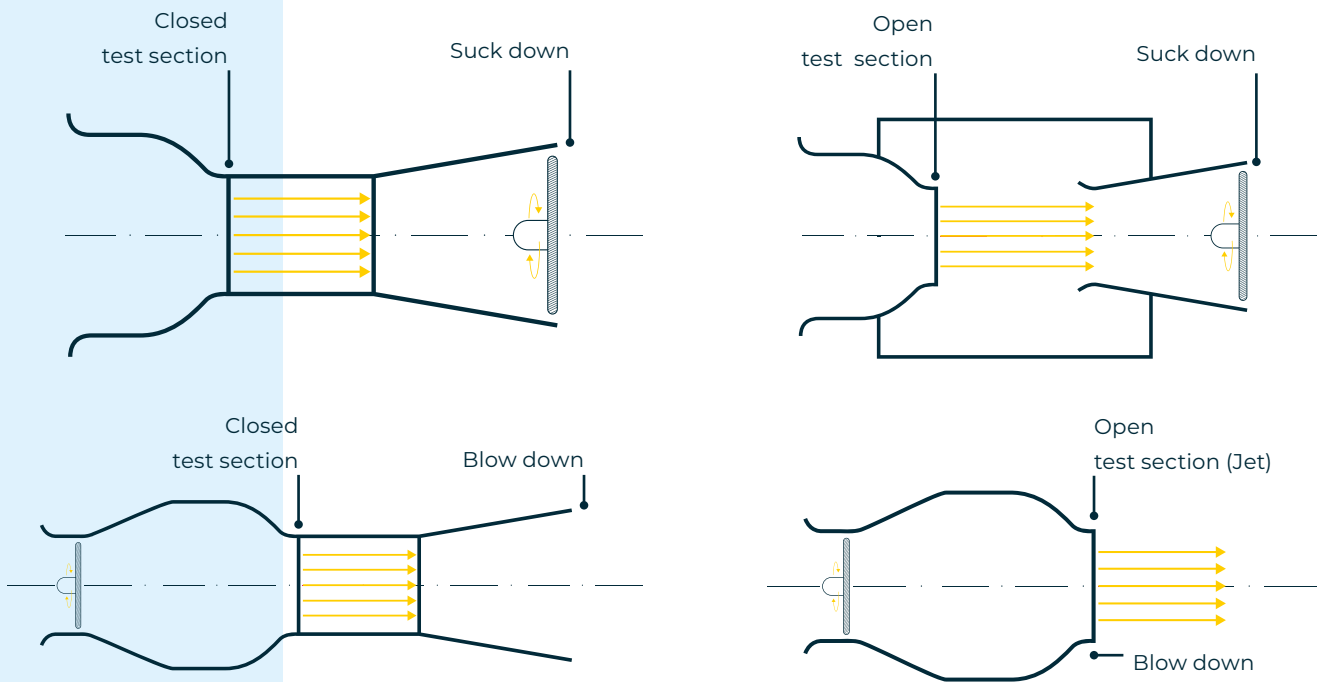
AIRFLOW VELOCITY: 160 M/S



Wind tunnel configuration: Blow down
Test section: Open (Jet)
Engine power: 11,0 kW



TYPICAL OPEN CIRCUIT WIND TUNNEL CONFIGURATIONS



WT ACCESSORIES & SERVICES

WIND TUNNEL ACCESSORIES

- Model manipulators and turn tables
- Aerodynamic multi-component balances
- Calibration devices
- Probes and traversing mechanism equipment
- Measuring and control systems
- Wind tunnel models
- Pressure and temperature sensors
- Scanivalve products

WTTECH.CZ SERVICES

- A wide range of WT customizations for specific conditions
- Custom design and manufacturing of parts
- Personnel training and education
- Project management
- Strategic research support
- Expert consultations in aerodynamics and specific testing
- Maintenance
- Modernization and improvement of existing WTs

WTTECH.CZ FURTHER SERVICES

- Modernization and technical improvement of wind tunnels
- Design and production of individual tunnel components

