



About Us

AVIATEST Research and Testing Centre is a part of the LNK Aerospace branch of the LNK Group holding company. The Centre specialises in the full-scale bench testing of aviation equipment (aircraft and helicopter airframes and their units), airport equipment, and various building structures. Another important field of the enterprise's activity is the design, manufacture and supply of specialised aircraft equipment testing rigs.

The strength testing of aviation equipment was organised in Riga in 1973 by the decree of the Ministry of Aircraft Industry and Civil Aviation of the Soviet Union.

Over these years, AVIATEST specialists have conducted static and endurance tests for almost all types of civil aviation aircraft and helicopter airframes. These tests result in structure design improvements and the extension of the aircraft service life. Today, AVIATEST is the only laboratory in the Baltic region that has such extensive experience in full-scale bench testing of aircraft equipment.

The centre conducts various testing: from basic samples to full-scale in-situ products (Mi-26, Mi-38, Ka-62, Ansat, SSJ100, and several other units). More than 60 highly qualified specialists are working in the laboratory of the Research and Testing Centre. Modern multi-channel loading systems, testing systems and automated data collection and processing systems are used in the testing process.

After 1991, the company became part of the LNK Group holding company. Due to the fact that the Centre is certified by both the European Union (EASA) and the Russian Federation (IAC AR) standards, the company provides unique aviation equipment certification services both within the European Union and the Russian Federation.

AVIATEST Centre has implemented dozens of projects in the field of design, manufacture and supply of test equipment, including the successful implementation of unique projects for the design and manufacture of multi-purpose electrically and mechanically closed rigs for the testing of helicopter frame system gearboxes. In addition, numerous rigs have been constructed for aircraft unit testing.

An important fact is that all the rigs supplied by AVIATEST Centre are supported with certificates of the Federal Agency for Technical Regulation and Metrology of the Russian Federation.



Aleksander Borisovich Milov

Founder and Executive Chairman of AVIATEST, D. Eng. Sc.



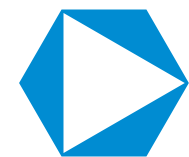
Gegam Arturovich Hanamiryan

General Director of LNK Aerospace



AVIATEST
LINK GROUP





LNK AEROSPACE

LNK GROUP

Strength calculations, tests
and manufacture of testing equipment



CENTRE COMPOSITE

JOINT VENTURE OF LNK GROUP AND PROGRESSTECH

Strength calculations of the most important aircraft
equipment components made of composite
materials.



AVIATEST

LNK AEROSPACE

Full-scale bench testing of aviation equipment and
the manufacture of testing equipment.

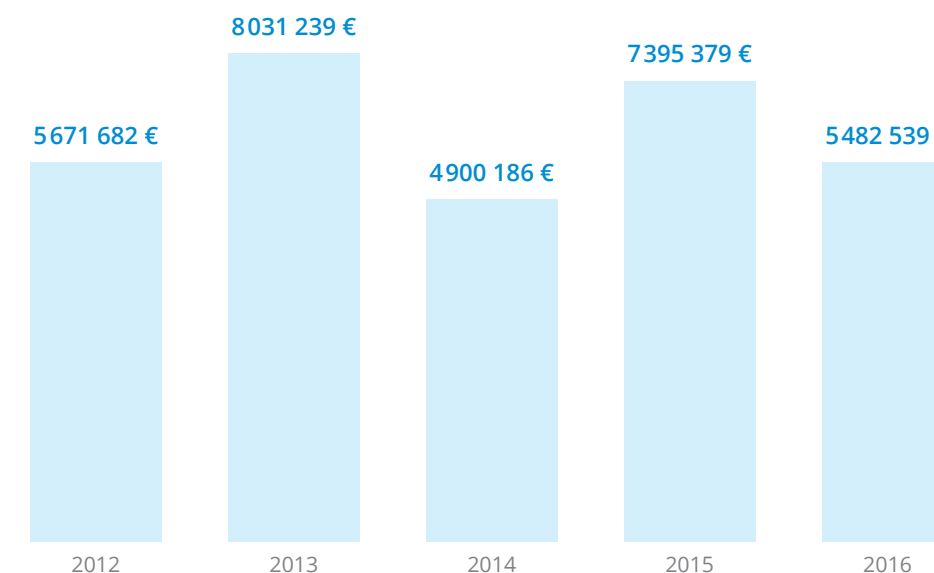


AVIATECH BUREAU

LNK AEROSPACE

Organisation and support of international
aircraft certification.

Turnover of the enterprise



5500 M²

Total area of the
test facility

2000 M²

Hangar extension
2018

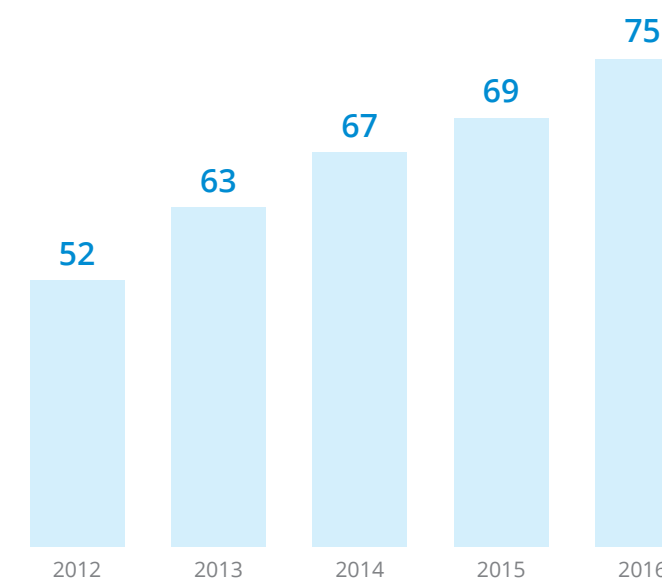
30+

Quantity of the test rigs
for full-scale tests

5

High-precision
manufacturing machines

Number of employees



53 Engineers

14 Doctors
of Science

8 Administrative
officers

41 30 to
50 years old

20 Over 50 years
old

14 Up to 30 years old

Our team



Aleksei Nasibullin

Executive Director, D. Eng. Sc.

It is important to remember those who created this unique enterprise. Working in AVIATEST is an investment of each employee in the development of the company!



Andrei Baranovskii

Research and Development Director, D. Eng. Sc.

Flexible structure, unique experience and innovative thinking of several generations of AVIATEST experts allows the enterprise to develop and to solve even the most unusual tasks as effectively as possible. Together we make the biggest dream of humanity — to be able to fly — a reality.



Aleksander Sorokin

Test and Research Director, D. Eng. Sc.

Flexibility and realism in problem solving during the testing of aviation equipment. We prolong the service life of aeroplanes and helicopters while making them safer.



Farit Nasibullin

Technical Director, D. Eng. Sc.

Going to work in an excellent mood every day for 38 years is priceless.



Maksim Smolyaninov

Executive in Charge, D. Eng. Sc.

One of the main characteristics of the AVIATEST employee is striving for progress.



Aleksei Chepusov

Executive in charge, M. Eng. Sc.

The main goal of the Project Leader is to achieve the goal of the Customer and provide a result, as well as successfully supervise the project from its conception to full completion



Aleksander Nevsky

Executive in charge, C. Eng.

Each new project is always a novelty. We never stop in our technical improvement.



Vladislav Turko

Deputy Executive Director for Science, D. Eng. Sc.

Here in AVIATEST we put science into life.



Victor Kontsevoi

Head of Design Department, C. Eng.

The ability to fantasise is the essential quality for a designer, while knowledge and skill are mere tools for the implementation of what is devised.



Tatyana Ivanova

Quality Manager, D. Eng. Sc.

One of the main conditions for project success is strict quality control during all stages of its realisation.



Aleksei Kulakov

Head of the Technical Control Department, C. Eng.

Sound experience of our specialists and modern innovations guide us in our project work.



Igor Lebedev

Executive in charge, M. Eng. Sc.

No engineering creation can be perfect from the start, so that is why our company exists.



Evgeny Zhemelev

Chief Metrologist, C. Eng.

Measurement accuracy is the basis of safety and quality.

Aeroplane, helicopter, and their component testing



Russian Certificate for the right to conduct testing all kinds of aircraft equipment



European Certificate for the right to conduct testing of all kinds of aircraft equipment

Aeroplane testing

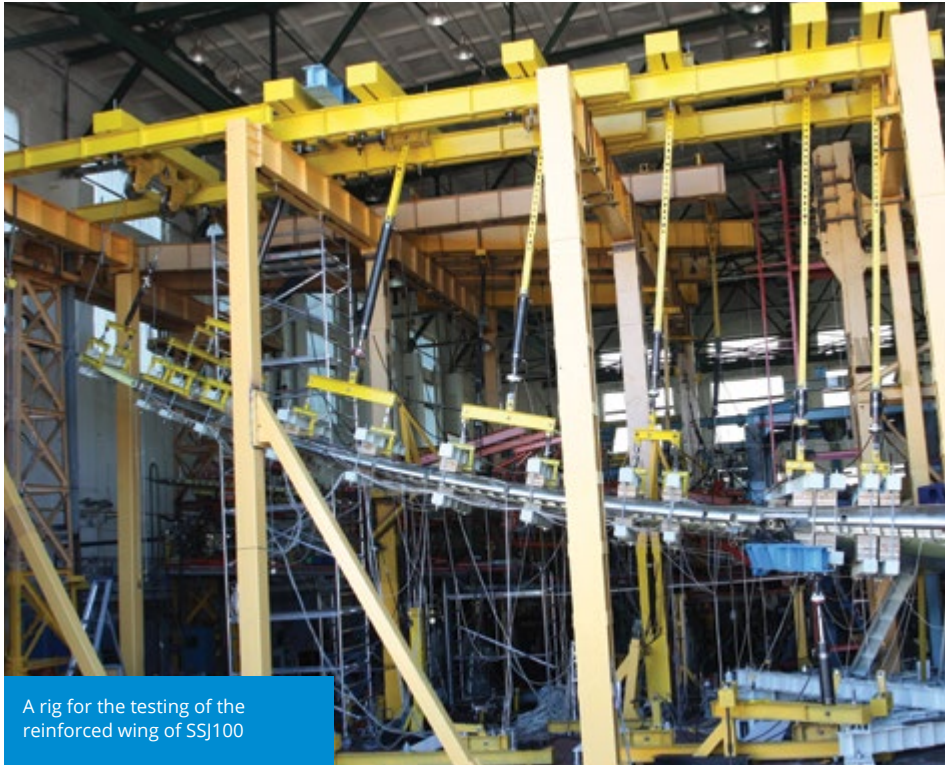
Over the years, AVIATEST Research and Testing Centre has performed full-scale aeroplane tests such as Il-18, Yak-40, Yak-18, and An- 24. The Centre's laboratory also tested 4 airframes of Tu-134 (both A and B), the wing with flap/slat system of Tu-334, the fuselage and the wing with flap/slat system of SSJ100, and units of MC-21.



Endurance tests of SSJ100 fuselage's front section



The arrangement of the fuselage sections of SSJ100 and MC-21 at the static testing shop of the AVIATEST laboratory



A rig for the testing of the reinforced wing of SSJ100



A rig for the flap/slat system testing on the wing semispan of SSJ100



SSJ100 Aeroplane

Helicopter testing

The AVIATEST experts tested airframes, units and components of helicopters such as Mi-1, Mi-2, Mi-4, Mi-6, Mi-38, Mi-26T, Ka-126/226T and Ka-62. In recent years, the laboratory has been performing the testing of the helicopter units and components for the major European manufacturers - AgustaWestland and Airbus Helicopters - that are cooperating with us within the international NICETRIP programme.



A test rig for static tests of the Ka-62 helicopter's fuselage



The arrangement of the test rigs for Mi-26T, Mi-38 and Ka-62 helicopters at the static testing shop of AVIATEST



Ka-62 helicopter project



A test rig for fatigue tests of the full-scale fuselage and tail boom of the Mi-26T helicopter

Aeroplane and helicopter component testing

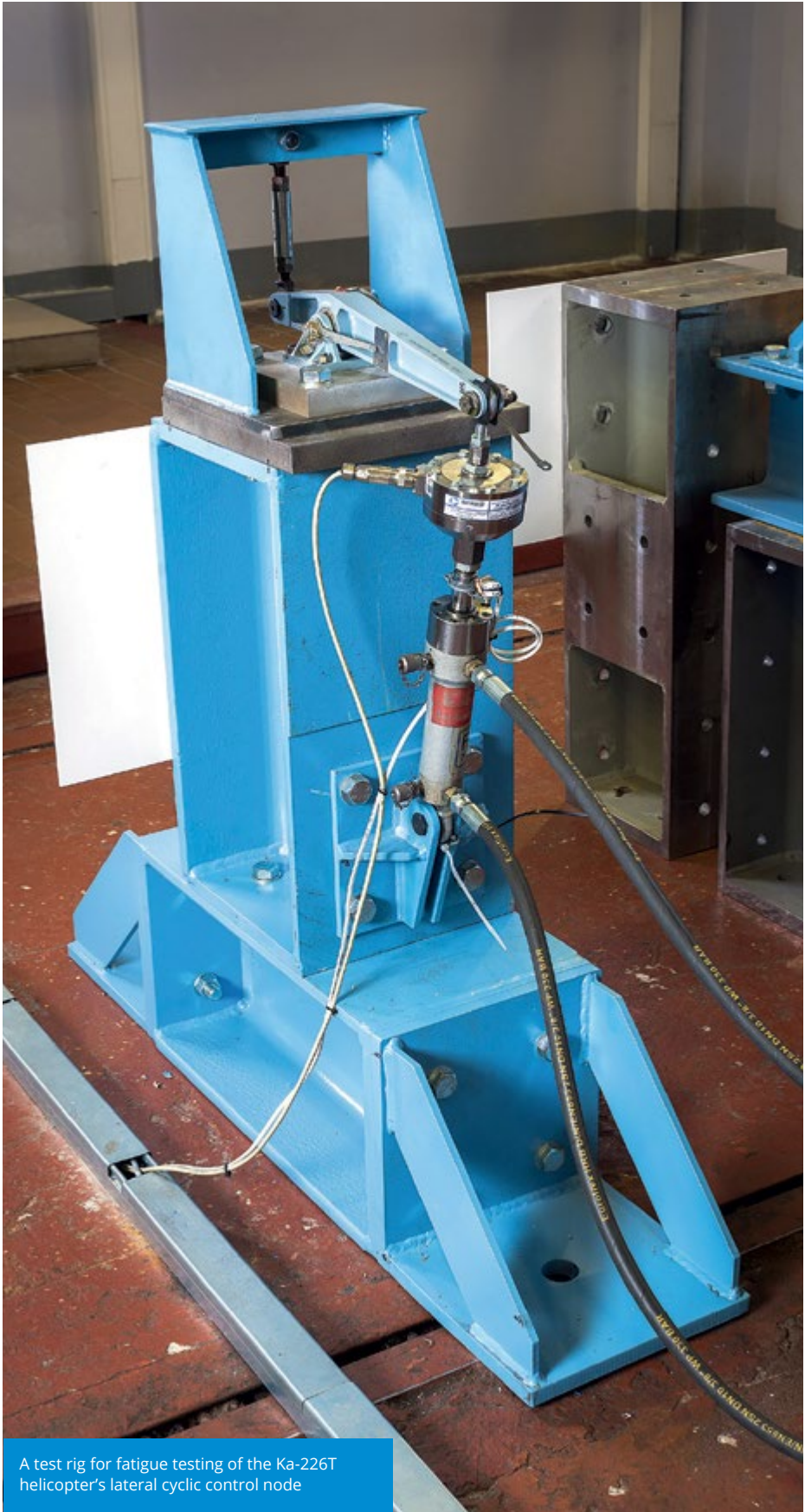
AVIATEST Research and Testing Centre conducts a whole spectrum of trials that provide a life span and certification of aircraft equipment, including trials of basic samples of individual units. For aggregate trials, AVIATEST offers a full package of services that includes: design and construction of test rigs (mechanical structure and control and measurement systems) and trials that correspond to the customer's technical assignment. Aggregate trials are accompanied with all the necessary measurements, sensor monitoring of the trial subject and analysis of behaviour and reasons for destruction.



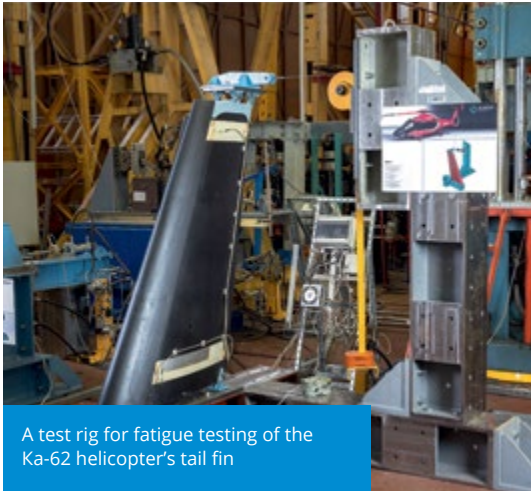
A test rig for wall niches of nose landing gear as part of the front compartment



A test rig for fatigue testing of the Ka-62 helicopter's tail rotor housing



A test rig for fatigue testing of the Ka-226T helicopter's lateral cyclic control node



A test rig for fatigue testing of the Ka-62 helicopter's tail fin

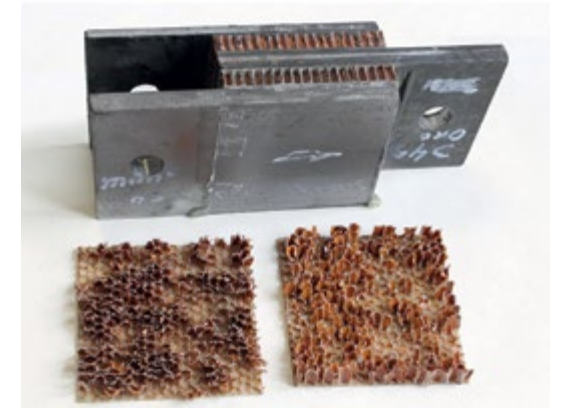
Sample testing

The modern equipment of the AVIATEST laboratory allows our specialists to conduct a wide spectrum of fundamental sample testing. In order to achieve most unbiased results, samples are tested under different loads and temperatures. In cooperation with Centre Composite enterprise, AVIATEST conducts tests of the layered composite materials to determine their physical and mechanical properties under static and high-speed force loads, considering the impact of temperature, humidity, and time factors. AVIATEST also performs the computational and analytical support of the full-scale testing for the composite material industrial units and aggregates. The Centre's testing machinery and plants used in trials have all the necessary certificates.

The certificates were issued in correspondence with the standards of the accreditation laboratory of the United Kingdom Accreditation Service. They provide measurement uniformity of acknowledged national standards and unite the measurements implemented in the National Physical Laboratory or any other acknowledged laboratory that corresponds with the national standards. The above mentioned mechanical device was tested under the following criteria and modes specified below, only with increasing force for ISO 7500-1 while using test machinery calibrated for ISO 376. The enterprise's specialists are certified according to the international standard EN ISO 9712:2012.



Servo-hydraulic testing systems INSTRON 8802



CERTIFICATE OF CALIBRATION

ISSUED BY: INSTRON CALIBRATION LABORATORY

CERTIFICATE NUMBER: 018600101402202-6

0179

INSTRON

Instron Calibration Laboratory

Coronation Road
High Wycombe, Buckinghamshire HP12 3BY
Telephone: +44 (0) 1494 458815
Fax: +44 (0) 1494 458827
Email: Calibration_Europe@instron.com

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APPROVED SIGNATURE

[Signature]

Digitally signed
by Colin Eadsen

Date: 2014.04.09
16:59:23 +0100

Type of Calibration: Force
Relevant Standard: ISO 7500-1: 2004
Date of Calibration: 05-Mar-14

Customer

Name: SIA „Aviastar“
Location: 1 Bordenas Ido
Rta 17-1073
Larvik
Country: Norway
Ambient Temperature: 20.7 °C
P.O. Contact No.: 00000000000000000000
Contact: Aleksander Sandvik

Email: aviastar@tnt.no

Machine

Manufacturer: Instron
System ID: 80002115.4752
Type: Servo-Hydraulic
Single Range
Year of Mfg: 2013

Transducer

Manufacturer: Instron
Transducer ID: 2007-115 / 120474
Capacity: 2500 kN
Type: Instron Compression

Classification

The above testing machine has been verified with the indicators and in the modes shown below for increasing force only to 100% F_{max} using verification apparatus calibrated to ISO 17025.

Indicator 1 - Digital Readout - Comak ver K7.206.6/0

Force Full Scale	Total Force Range	Machine	System
200	200	Model	Class *
100	5 (100075) to 200 (4025)	Linearity	0.5
	1 (60075) to 200 (345)	Compression	0.5

* Force Class (see for a range in detail) from assessment of the following areas: repeatability, return to zero, resolution and pressing force characteristic.

Method of Verification

The constant indicated force method was used to effect the calibration of these data points where masses were not utilized. The masses were utilized, the constant true force method is used and specifically indicated in the Verification Equipment Usage section of this report.

The testing machine was verified in the 'no load' condition.

Instron CalComp Version 1.27

This certificate is issued in accordance with the Metrology Accreditation Certificate of the United Kingdom Accreditation Service. It provides details of measurement uncertainty as required by the UKAS standard, and also details of measurement uncertainty as required by the International Organization of Standardization (ISO) standard. The certificate may be used to demonstrate compliance with the requirements of the International Organization of Standardization (ISO) standard. The certificate may be used to demonstrate compliance with the requirements of the International Organization of Standardization (ISO) standard. The certificate may be used to demonstrate compliance with the requirements of the International Organization of Standardization (ISO) standard.

Helicopter frame system gearbox testing



A test rig for testing the gearboxes and components of the Ka-226T helicopter's transmission (electrically closed loop)



A multi-purpose test rig for testing coaxial gearboxes up to 5,400 kW and transmission components (mechanically closed loop)



A rig for testing the gearboxes and components of the Ansat helicopter's transmission (electrically closed loop)



A rig for the full-scale testing of the Mi-38 helicopter (including the transmission as part of the product)



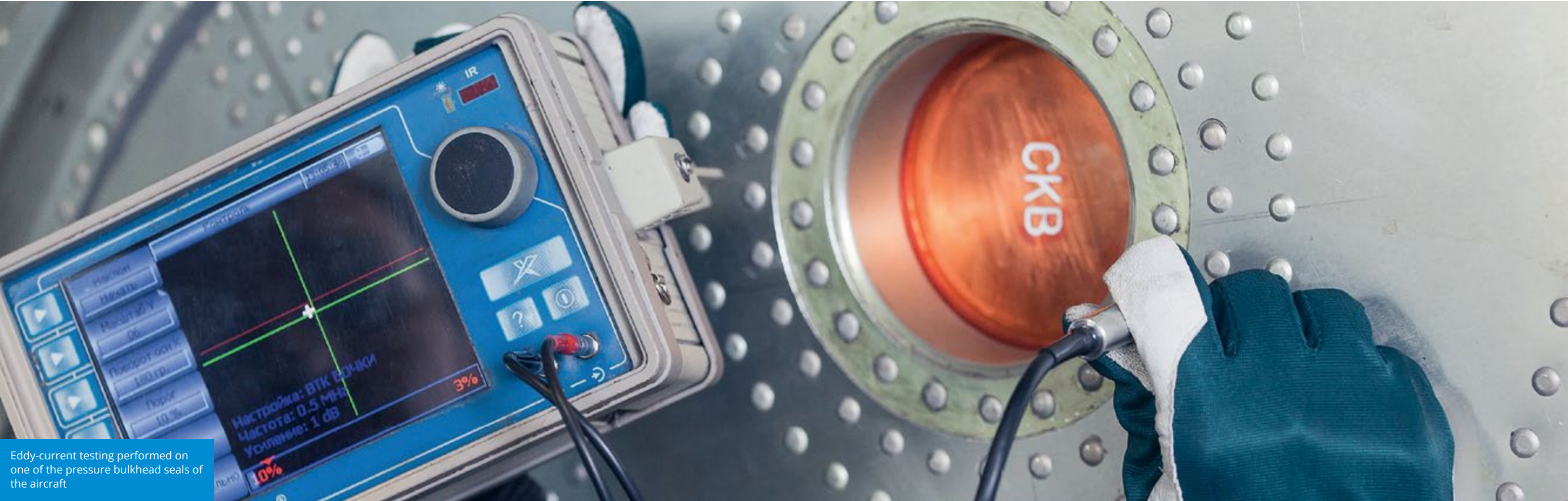
A rig of for the functional testing of the convertiplane's rotor and gearbox as part of the NICETRI Project



A rig for the full-scale testing of the Ka-62 helicopter (including the transmission as part of the product)

Non-destructive testing

AVIATEST Research and Testing Centre provides its clients with non-destructive testing of the subject's main working properties or its separate components without the necessity for shut-down or disassembly. The AVIATEST specialists use the whole spectrum of modern of non-destructive testing methods. We use ultrasonic, capillary, magnetic powder, x-ray and other diagnostic methods to perform quality control of welds, identify geometric deviations, measure residual stress, determine increased stress condition spots and develop structure monitoring procedures.



Eddy-current testing performed on one of the pressure bulkhead seals of the aircraft



Non-destructive testing of the mock-up engine's welding joint

Design, manufacture, supply and maintenance of testing equipment



All the rigs' measuring systems are registered in the State Register of the Russian Federation and receive a corresponding certificate



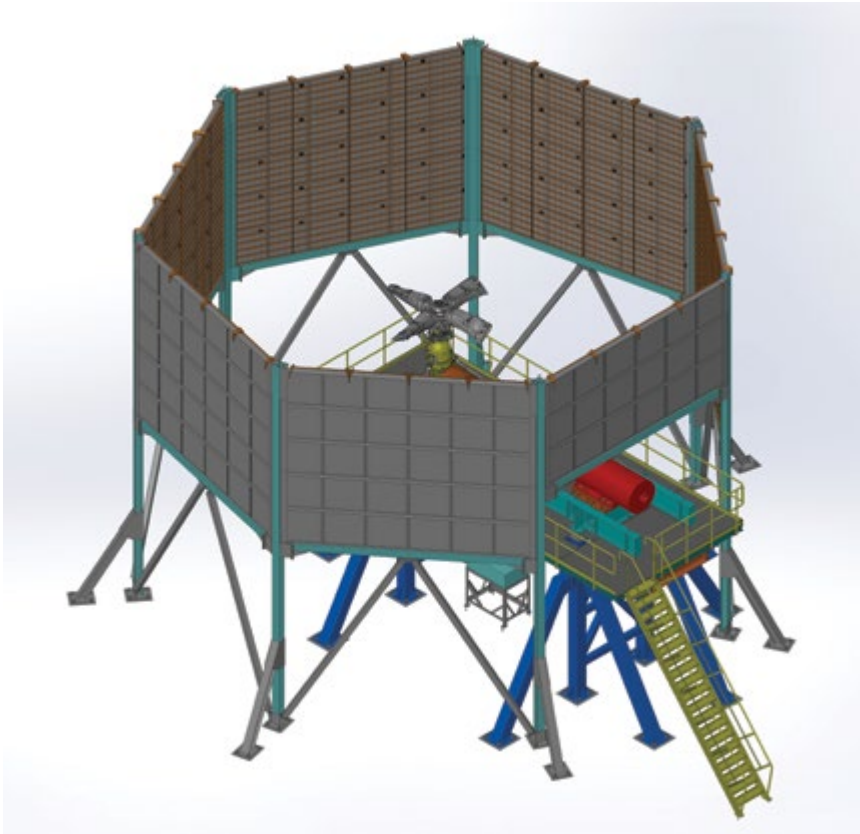
AVIATEST supplies its customers with the test rigs certified in accordance with the requirements of the Federal Agency for Technical Regulation and Metrology

Gearbox test rigs

In cooperation with the TTS factory (a manufacturing enterprise that is a part of the LNK Group holding company), AVIATEST Research and Testing Centre offers the design, manufacture and further commissioning of various test rigs. Our specialists create structures for securing the test subject and electrical systems for controlling trials and conducting measurements. After the completion of the whole work cycle, AVIATEST offers ready-made solutions developed specifically for each individual case. Before the test rig commissioning, all the necessary tests are performed, and our specialists carry out supervised installation and all subsequent warranty maintenance of equipment.



A test rig for testing gearboxes and transmissions of helicopters and their modifications

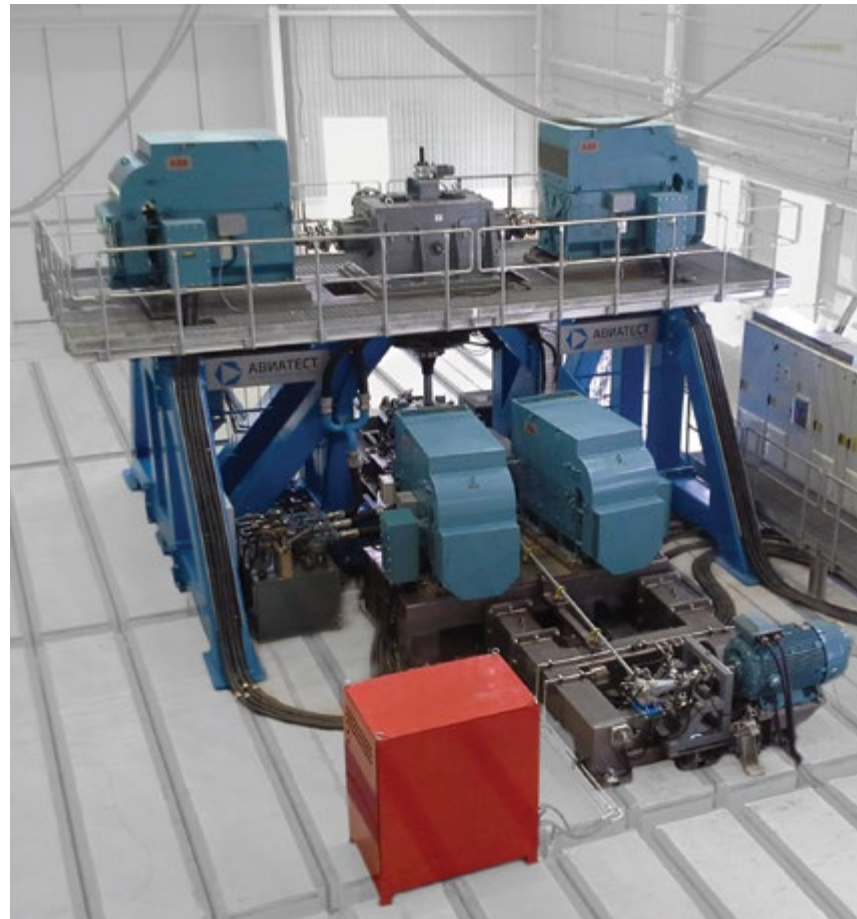


The preparation of the tower for the full-scale testing of the gearbox and rotor as part of the NICETRIP project



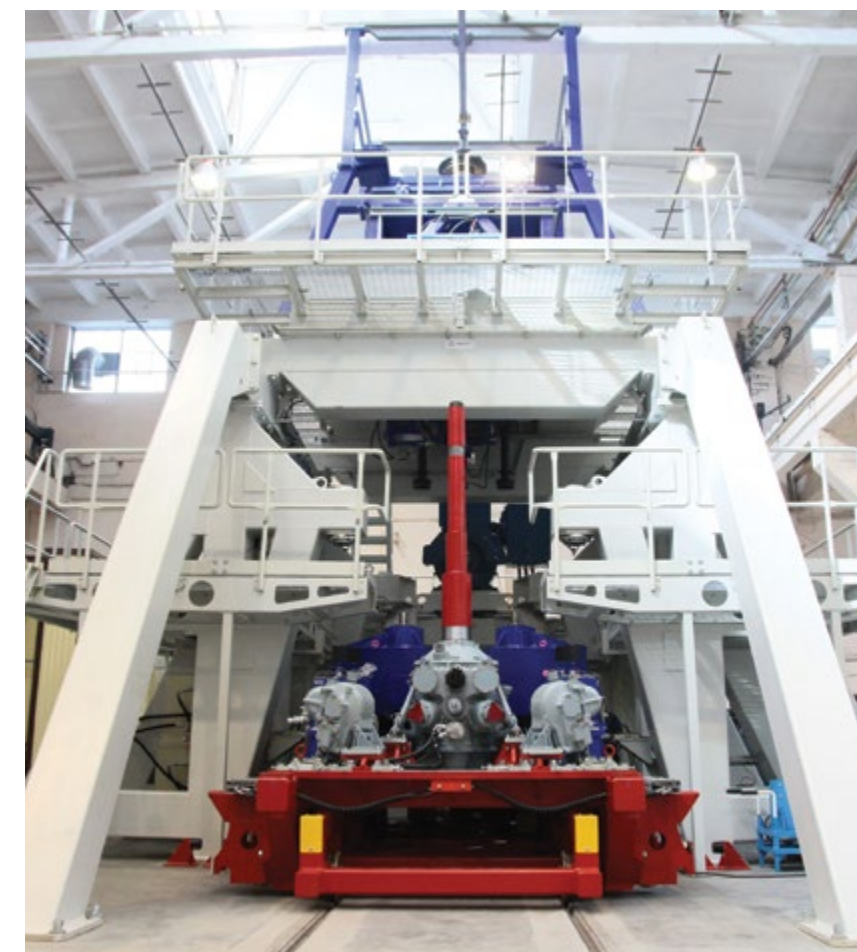
**A multi-purpose
energy-saving
electrically closed
test rig for the
certification,
endurance and
technological
testing of the
Ansats helicopter's
transmission
components and
its modifications**

Customer: JSC "Kazan Helicopters"



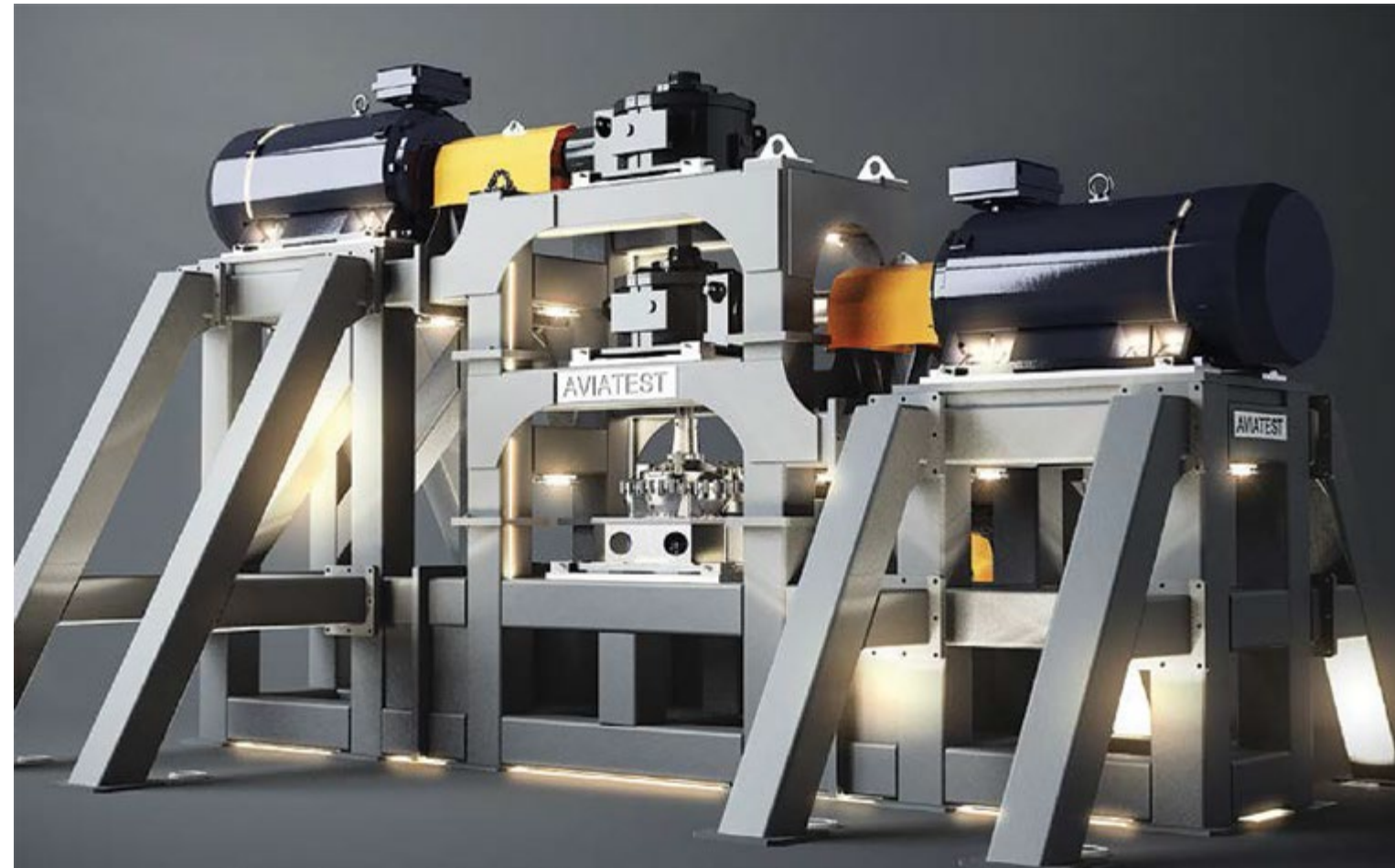
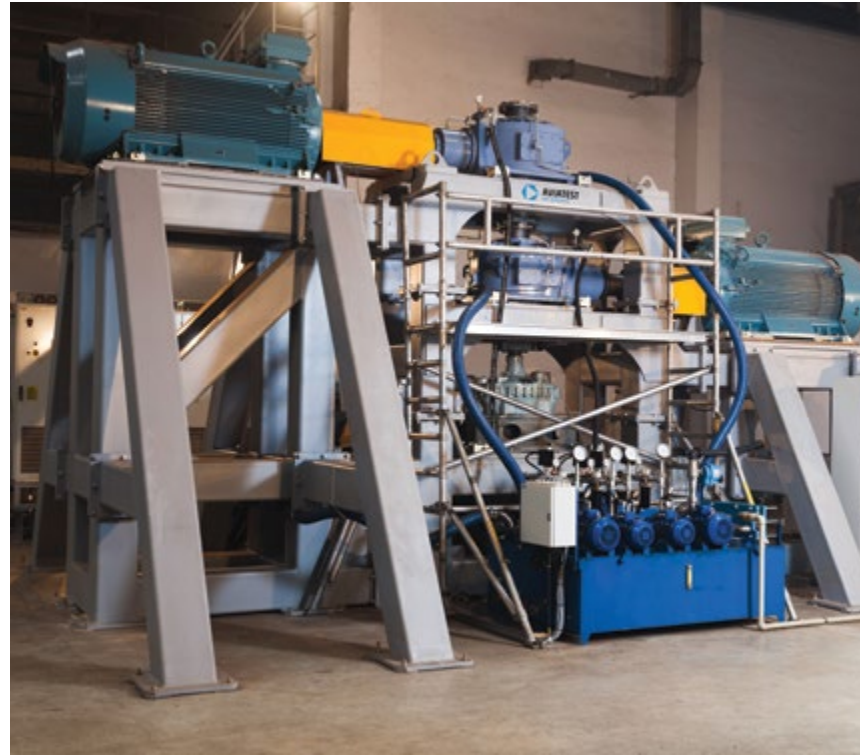
**A multi-purpose
power-saving
mechanically-
closed test rig for
the coaxial-type
helicopter gearbox
testing of up to
5,400 kW**

Customer: JSC «VSK»



A power-saving test rig for VR-226N and VR-226 gearbox testing

Customer: JSC «Kamov»



A test rig for testing the Mi-26T helicopter's fuselage (tail boom and fin) aimed at service life extension

Customer: Mil Moscow Helicopter Plant



A test rig for the static testing of the Ansat helicopter's fuselage

Customer: JSC "Kazan Helicopters"



A test rig for the static testing of the Ka-62 helicopter's fuselage

Customer: JSC «Kamov»



A test rig for the certification testing of the Mi-38 helicopter's fuselage (fuselage, tail boom and fin) for fatigue and durability

Customer: JSC "Mil Moscow Helicopter Plant"



A test rig for the fatigue testing of the SSJ100 fuselage's front section by cyclic air-blowing

Customer: CJSC "SCA"



A test rig for the fatigue testing of the SSJ100 fuselage's rear section by cyclic air-blowing

Customer: CJSC "SCA"

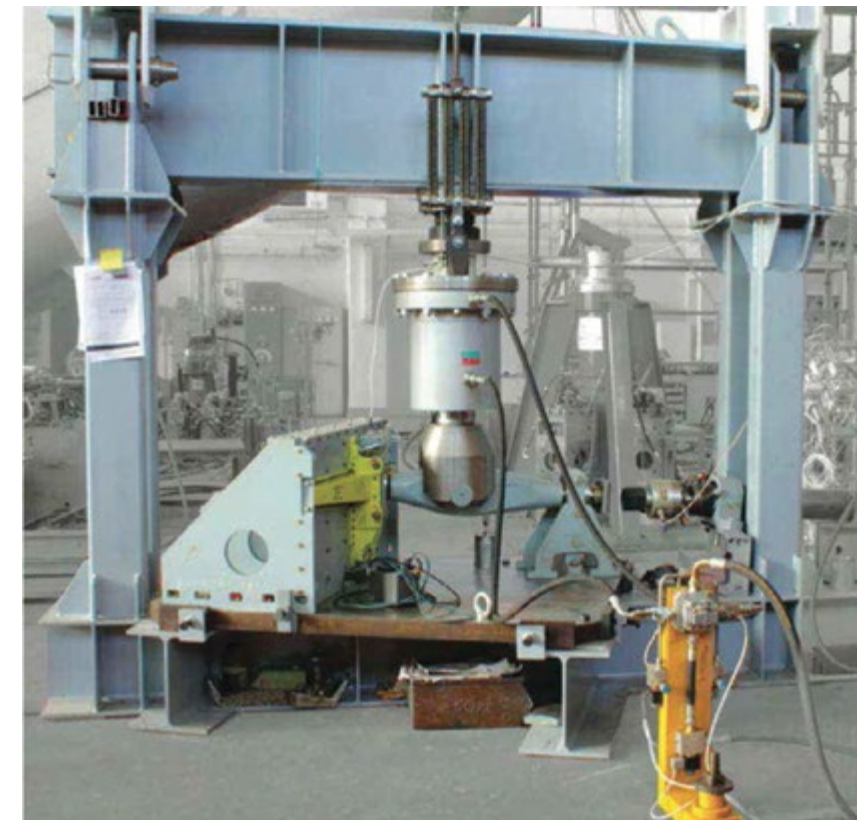
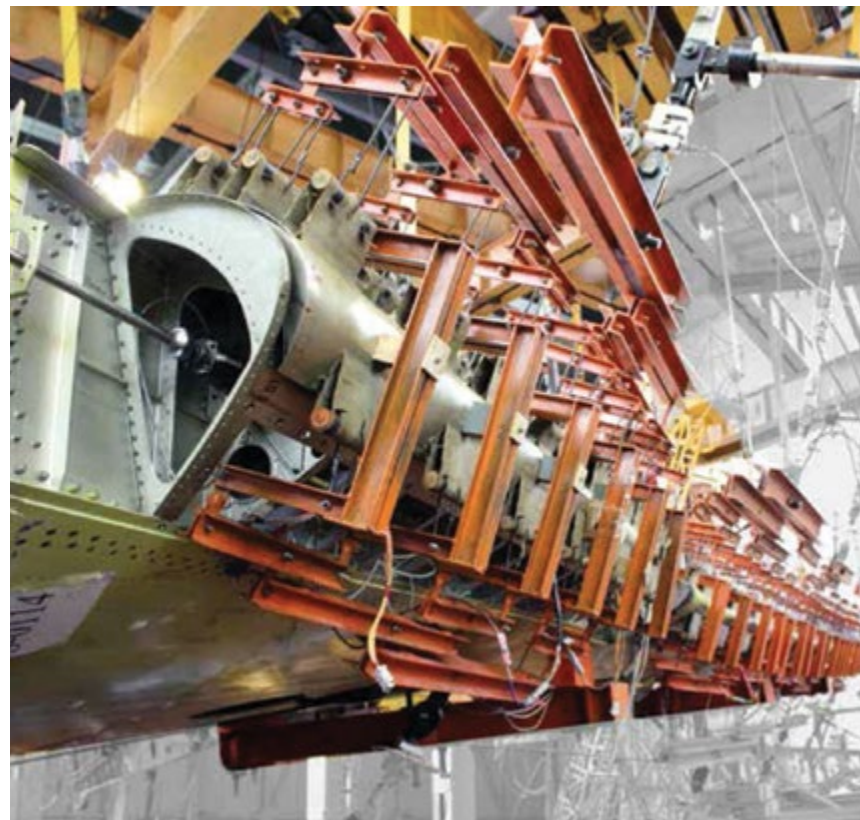


A test rig for the fatigue and durability testing of the pressure bulkhead as part of the MC-21 fuselage's rear section

Customer: "IRKUT" Corporation

A rig for flap/slat system testing

Customer: CJSC "SCA"

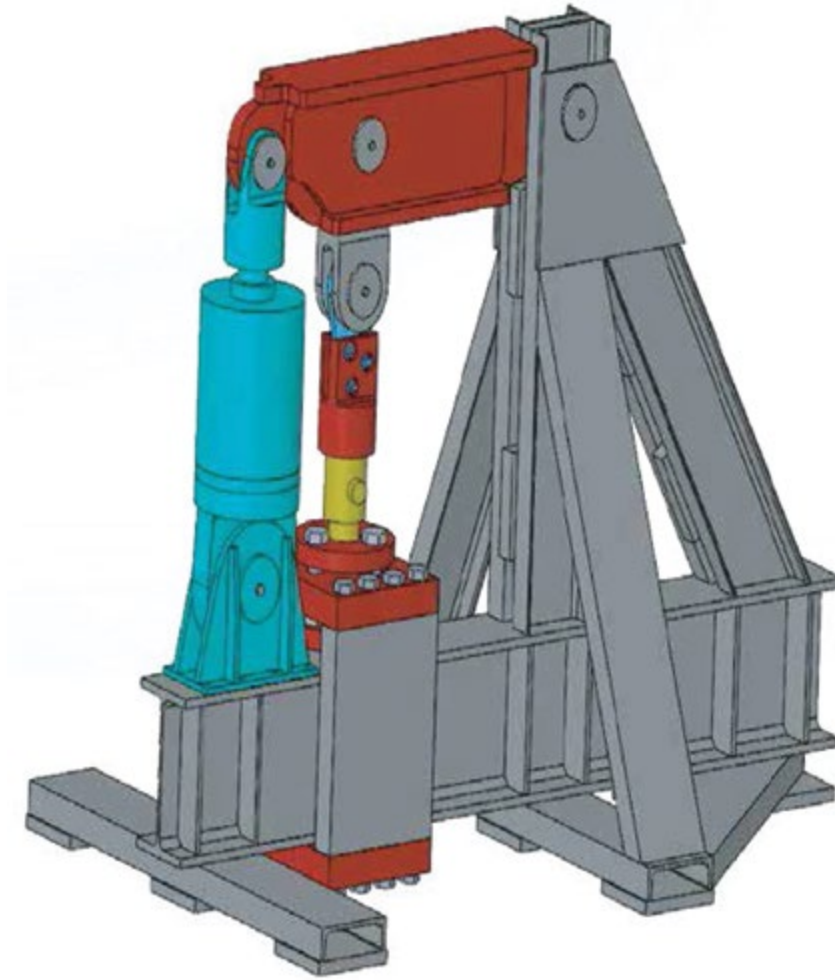


A test rig for testing the «weak link» of the SSJ100 aircraft's main landing gear

Customer: CJSC "SCA"

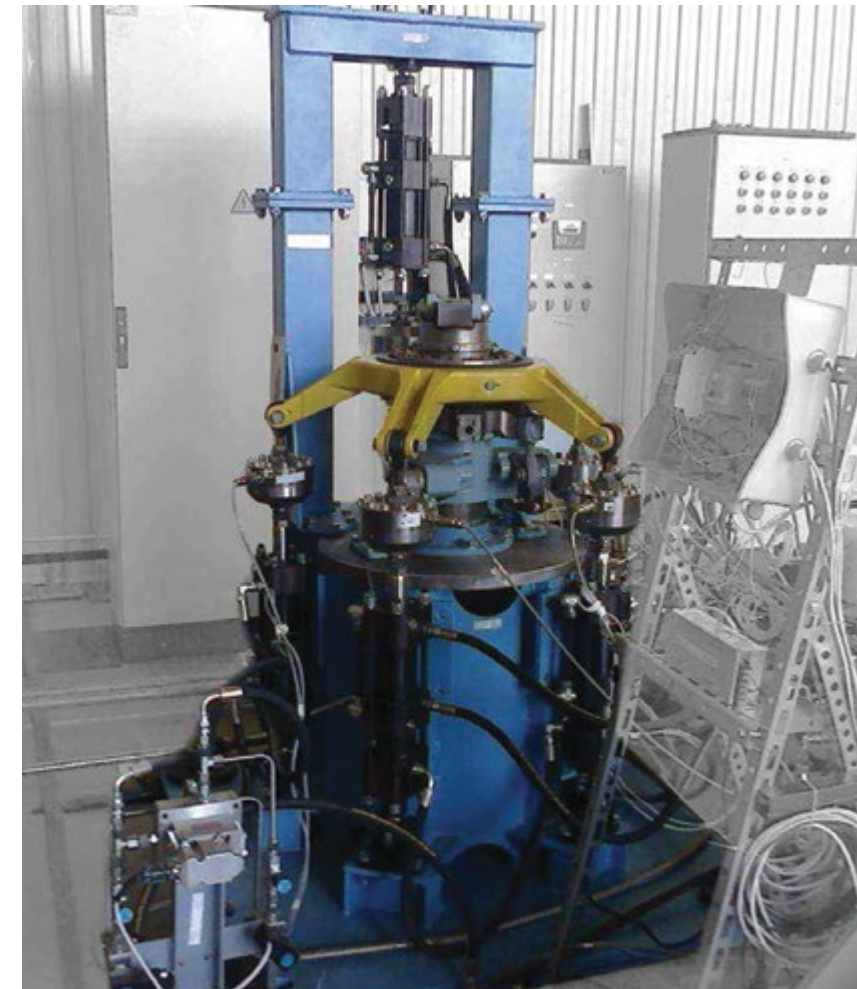
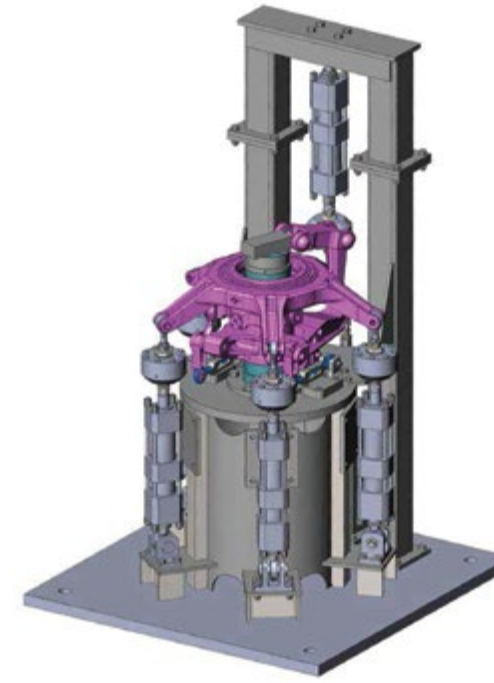
A test rig for testing the configuration of the «weak link» element of the MC-21 aircraft's main landing gear

Customer: CJSC "AeroComposit"



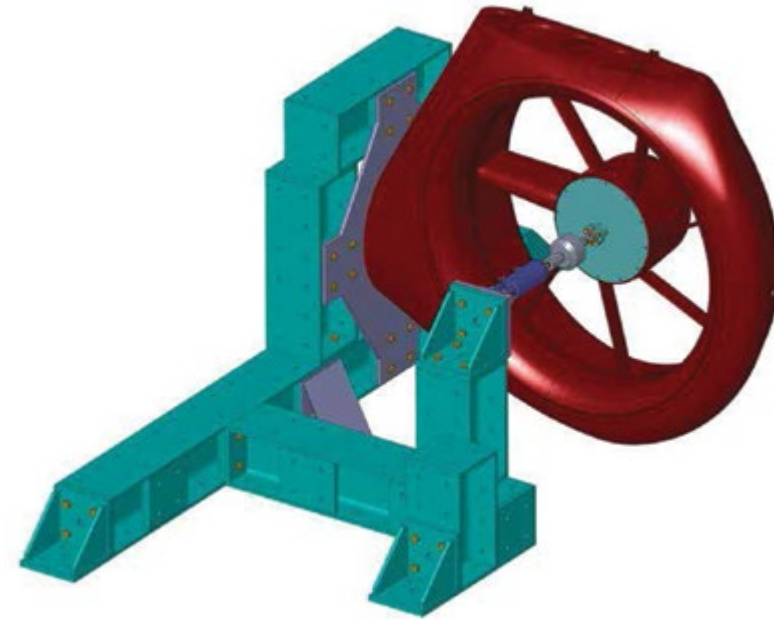
A test rig for the fatigue testing of the Ka-62 helicopter's swashplate

Customer: JSC «Kamov»



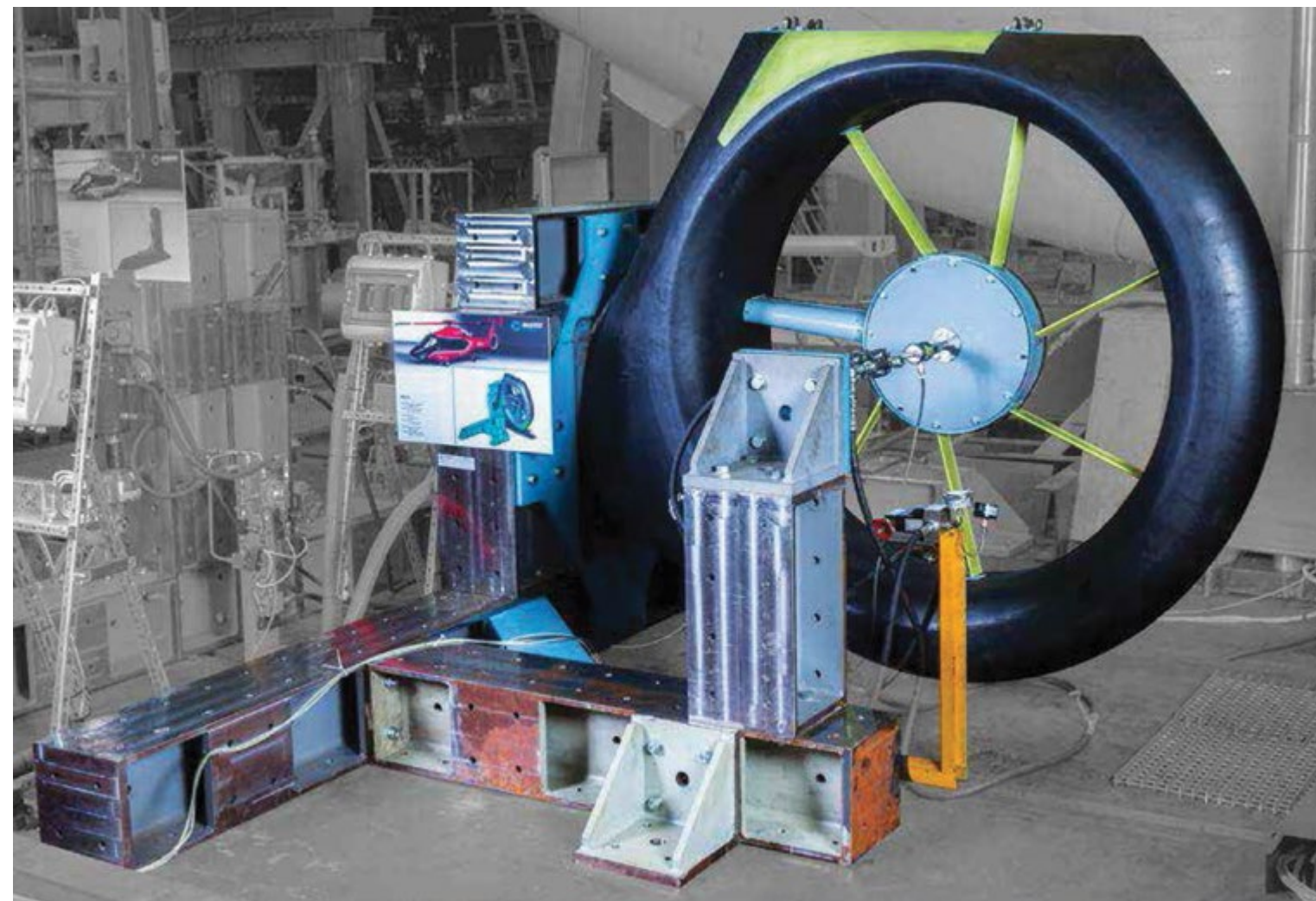
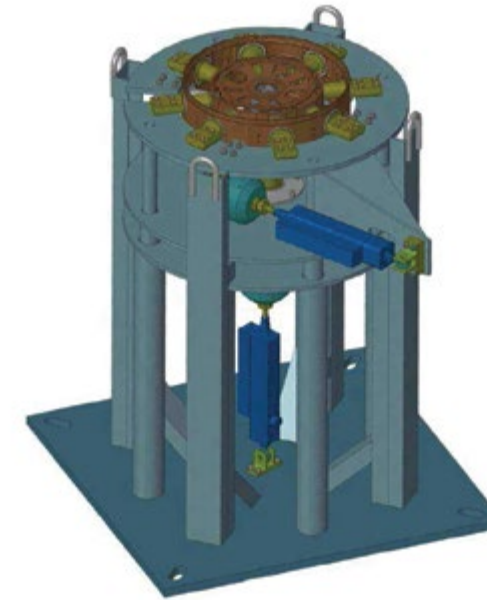
A test rig for the fatigue testing of the Ka-62 helicopter's tail rotor housing with the tail gearbox installed

Customer: JSC «Kamov»



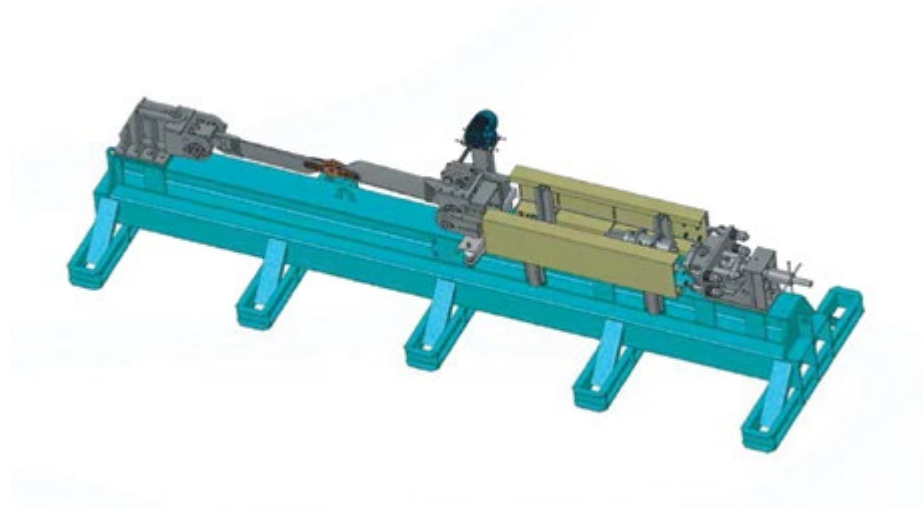
A test rig for the fatigue testing of the Ka-62 helicopter's anti-torque rotor without blades

Customer: JSC «Kamov»



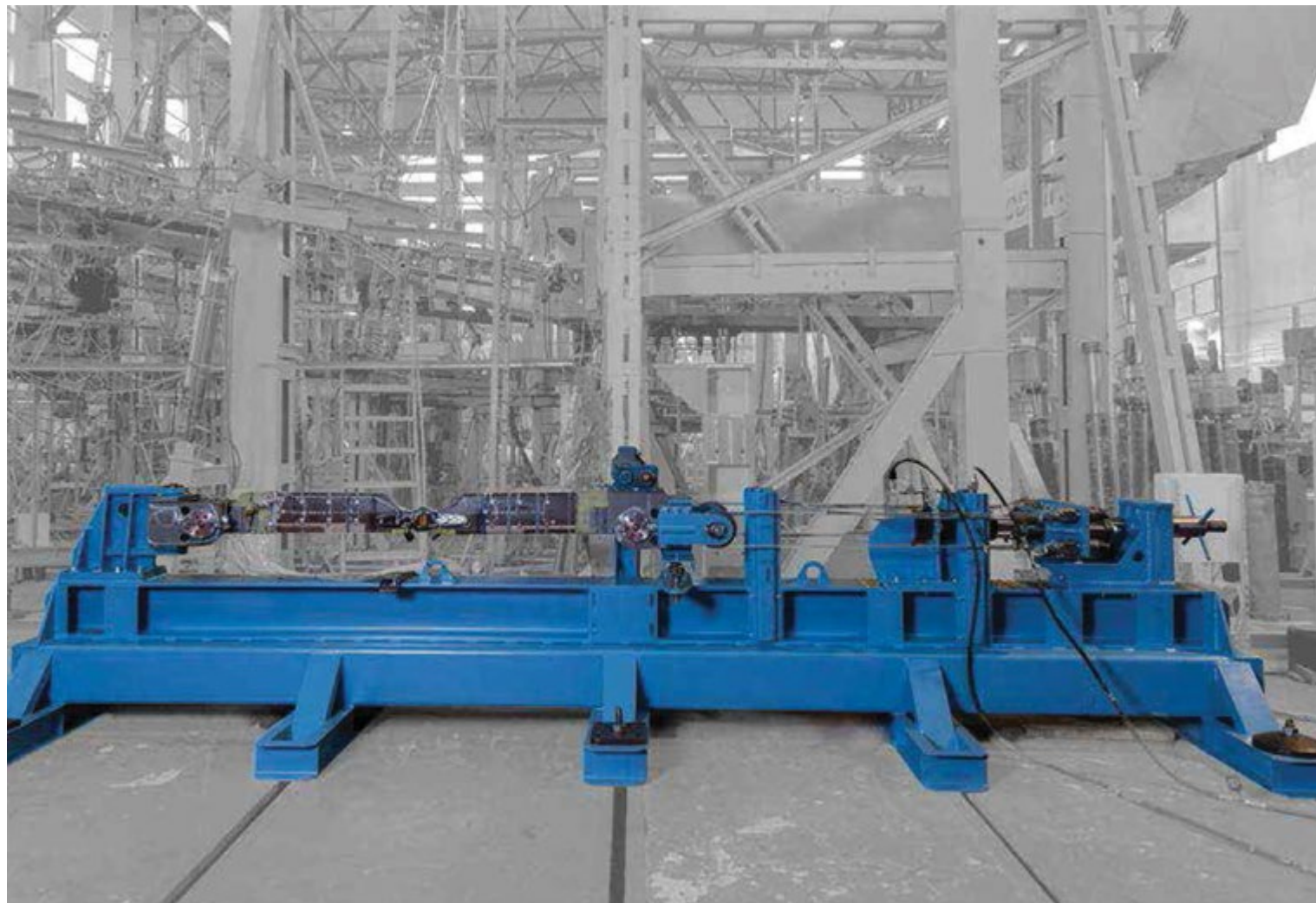
A test rig for the dynamic testing of the Ansat helicopter's main and anti-torque rotor blade samples

Customer: JSC "Kazan Helicopters"



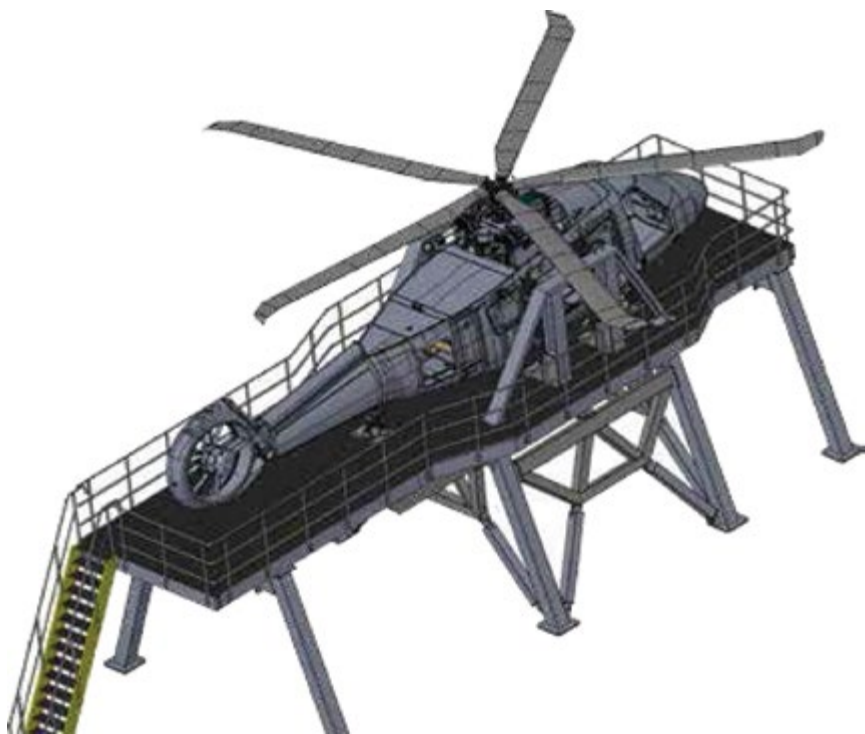
A racing pad test rig for the testing of the Mi-38 helicopter's transmission

Customer: Mil Moscow Helicopter Plant



A test rig for the full-scale testing of Ka-62 (Kumertau)

Customer: JSC «Kamov»

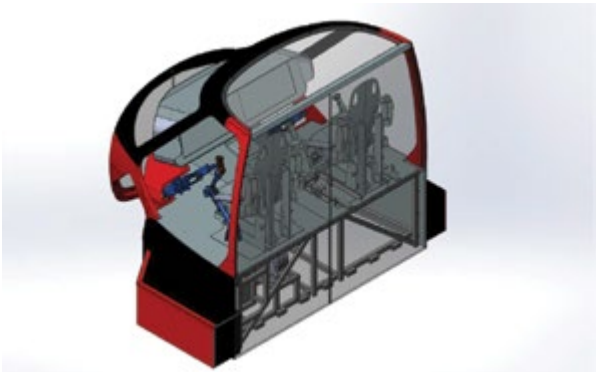
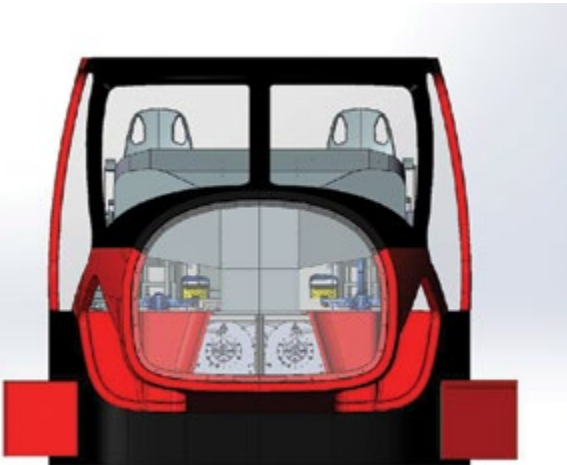


AHSH (Advanced High-Speed Helicopter) Flight Simulator

Customer: Mil Moscow Helicopter Plant



A flight simulator for the flight training and piloting of the Advanced High-Speed Helicopter



Manufacturing of high-precision parts for aircraft equipment enhancement

AVIATEST provides a wide range of services for the production of parts and assembly components. Solved production tasks: machining, heat processing, electroplating, welding, assembly, various types of controls including non-destructive control (magnetic powder, radiological), measuring of geometrical dimensions using a gantry coordinate measuring machine and a microscope.

AVIATEST has all the required machining equipment, including a 3-5 axis milling, lathe and grinding machining centres, wire and die sinking erosion for the manufacturing of complex and precise parts from almost any material. It is possible to manufacture lengthy component parts up to 2,700 mm long. Our specialisation: parts and assembly units for aircraft construction, instrument making, machine construction and forming tools.



Robofil 240cc – electrosparking wire cutting 5-axes centre and Roboform 350 – electrosparking piercing 4-axis centre



High-speed machining centre MIKRON HSM 600 U

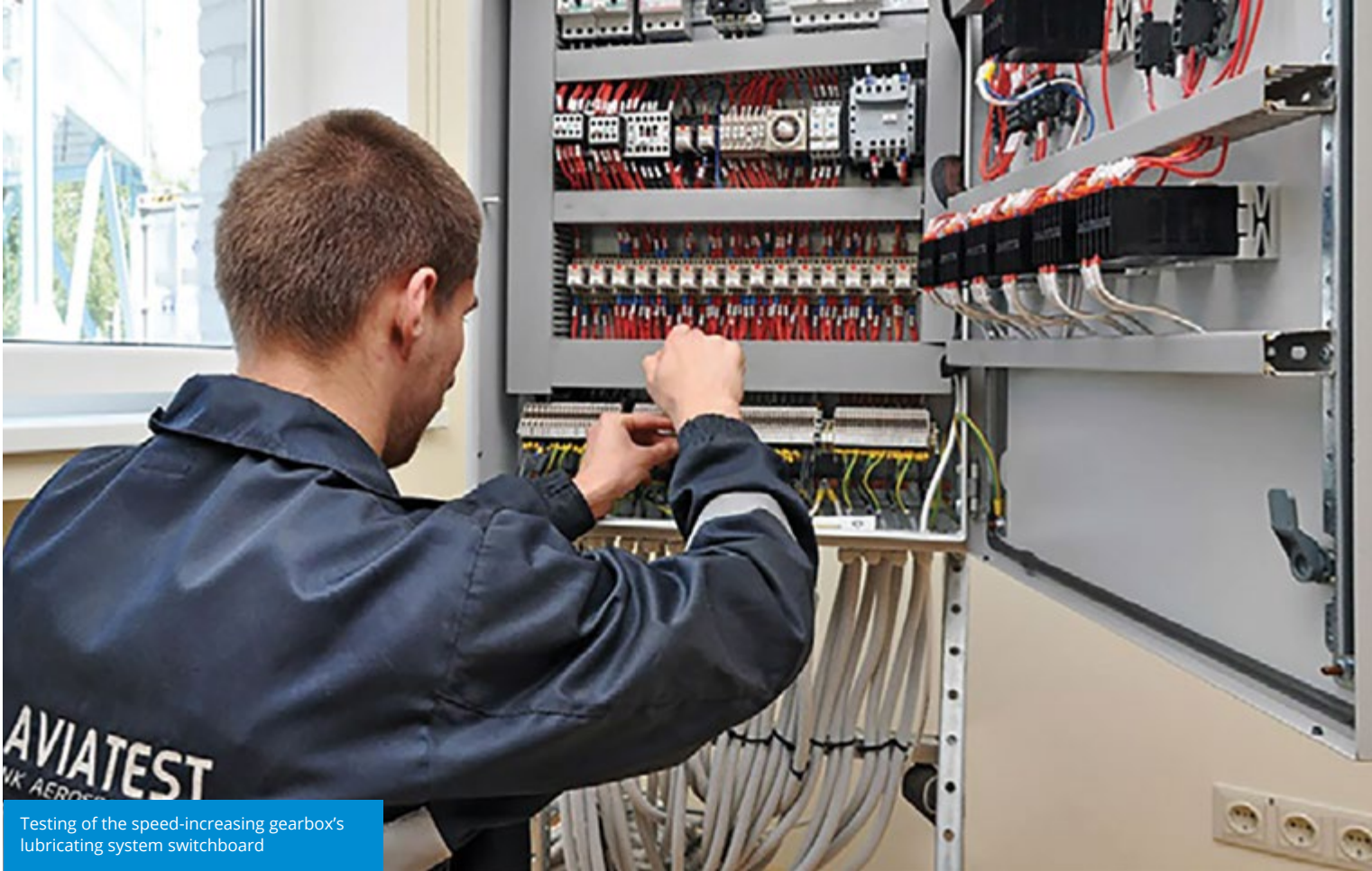
Industrial Automation Group

The automation of technological and manufacturing processes is performed to increase productivity and the level of labour safety and reliability. The advantages of industrial automation are: significant increase in the overall productivity and improvement of product quality.

As part of the performed automation works, AVIATEST offers its clients the installation and setting of coordinated work of the following elements: computing and controlling devices (controllers), signal receiving and conversion tools (sensors), information display and registration devices (operator's workstation, recorders), and actuators (electric, pneumatic and hydraulic drives).



Preparation for the electric jack controlling system start-up



Testing of the speed-increasing gearbox's lubricating system switchboard



A flight simulator for the flight training and piloting of the Advanced High-Speed Helicopter



A test rig for testing gearboxes and transmissions of helicopters and their modifications

Partners

AVIATEST Research and Testing Centre regularly conducts product testing for leading European and Russian manufacturers. Currently our partners are:



AVIATEST project geography



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