

GHADIR INDUSTRIAL TURBINES COMPANY



Manufacturer of Components and Auxiliary Systems for Gas Turbines



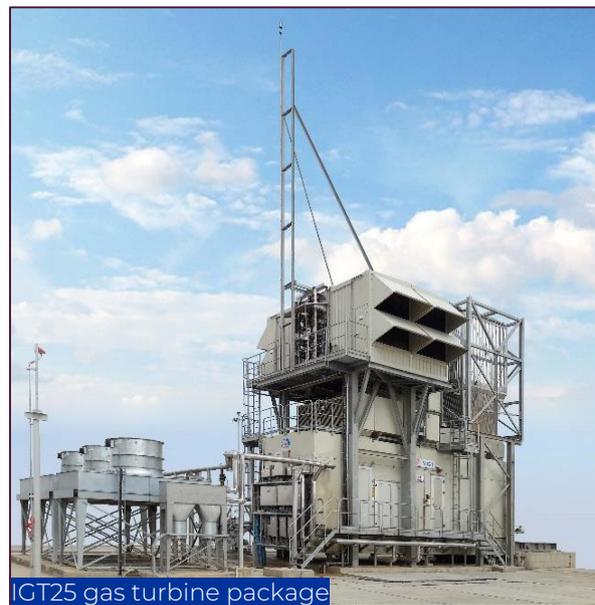
Address: Zoroastrians Dakhmeh District, Yazd, Iran,
P.O. Box: 1115, Postal Code: 8914145151, Tel: (+98 35) 38280241-3
www.gitco.ir, info@gitco.ir

ABOUT US

COMPANY PROFILE

Ghadir Industrial Turbines Company (GITCO) specializes in the manufacturing of auxiliary and accessory systems, parts and components for turbines and compressors used in power generation plants and oil & gas industries. The original company was founded in 1993 to manufacture textile machines under the license of Swiss Sulzer Company and continued its activities in this field until 2008. Since 2008, this company with a change of use has been owned by Oil Turbo Compressor (OTC) Group to complete OTC's supply chain in gas turbines technology.

OTC Group is a holding company consisting of 15 subsidiary companies, which was founded in 2000 in IRAN with the aim of designing, producing and installing industrial turbines and compressors in the power range of 5 to 70 MW. For this purpose, OTC has entered into collaborative business relationships with well-known international operating companies in Europe. The products of this group are used in oil, gas and petrochemical industries, gas boosting stations, desalination plants, and small power plants. Currently, the 25-MW Iranian gas turbine (IGT25) and its upgraded variants as turbo-generator and turbo-compressor are the main products of OTC group.



IGT25 gas turbine package

GITCO is a private enterprise with the fixed capital of 12 million dollars and covers a total area 400,000 square meters whose 70,000 square meters are related to the production plants. The company has more than 300 employees which 60% of whom are highly skilled experts and technicians.



Our company is located in Yazd, a historical city in center of IRAN, which is known as “City of Windcatchers”. Yazd has been recognized as a World Heritage Site by UNESCO since 2017.



Furthermore, the company is located adjacent to the IRAN north-south transit route which provides convenient to access heavy/wide load roads for our clients.



GITCO currently manufactures more than 90 types of auxiliary and accessory systems as well as a wide range of rotating and stationary parts (more than 1000 types) for gas turbines. This company as an OEM manufacturer of OTC group, is one of the biggest and the most highly qualified manufacturers of gas turbines parts in IRAN. All of our products are produced in accordance with the latest international and European standards and are able to strictly meet customer's technical specifications and requirements. Stringent product inspections are performed by our quality control on every item prior to shipment. Our extensive understanding of the industry assures that our clients are receiving the highest quality parts at competitive pricing.

Please take a moment to review the following brief scope of our abilities.

VISION & MISSION

The mission of our company is to manufacture of auxiliary and accessory systems and parts for turbines and compressors used in power generation plants and oil, gas and petrochemical industries. Our orientation is based on continuous improvements of product quality, fulfilling customer expectations, responding to market demands and strengthening our brand. Commitment to quality is not only voluntary, but also it is the foundation of our business as we strive to be the best, not the biggest.

Moreover, our priority is based on gaining long-term customer and associate trust, as well as enhancing quality of business relationships with our partners. To stay competitive in gas turbine industry, a lean manufacturing system is also being employed in GITCO.

The well-being of employees in the company, their training and development, is a big importance to us, as well. In that way, we are also improving our services and the overall experience.

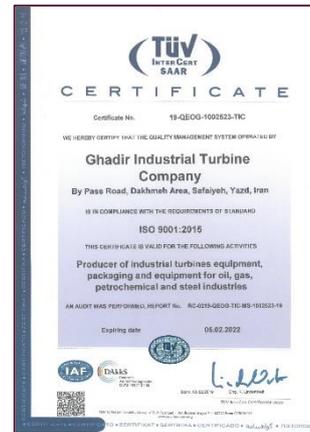


STANDARDS AND CERTIFICATIONS

Implementing the management systems and standards contributes to company's high level of quality and competitive position in local and global markets. Currently, GITCO has implemented the following systems:

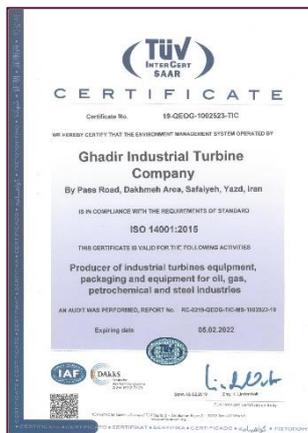
QUALITY MANAGEMENT

GITCO pursues customer satisfaction. For this reason, we have built a quality management system according to ISO/TS 29001:2010 and ISO 9001:2015 standards. GITCO's managers and employees commit themselves to comply with the stipulations of the ISO/TS 29001:2010 and ISO 9001:2015 quality management systems when fulfilling their individual tasks.



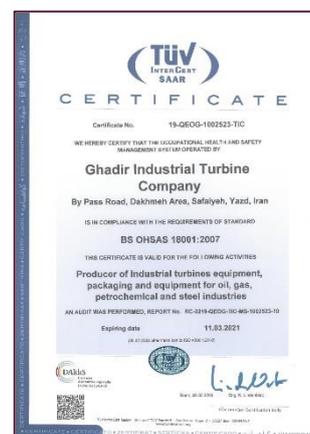
ENVIRONMENTAL MANAGEMENT

GITCO believes that businesses are responsible for achieving best environmental practices and operating in a sustainable manner. We are therefore committed to reducing our environmental impact and continually improving our environmental performance as an integral and fundamental part of our business strategy and operating methods. To do this, we comply with the requirements of current legislation and codes of practice of ISO 14001:2015 standard.



HEALTH & SAFETY MANAGEMENT

GITCO commits to protect the health and safety of its staff and other people affected by its business activities, such as customers, suppliers and visitors. For this purpose, we comply with the requirements of current legislation and codes of practice of BS OHSAS 18001 standard.



QUALITY ASSURANCE NOTIFICATION (QAN)

For hazardous area products, GITCO has an ATEX Quality Assurance Notification or QAN (Module D) which falls under the European ATEX Directive 2014/34/EU.



ENTERPRISE RESOURCE PLANNING (ERP)

Since 2010, we have implemented an Enterprise Resource Planning (ERP) system in GITCO to help improve internal processes, enhance efficiencies, reduce costs and support our predominant business operations.



FACILITIES

GITCO production facilities are well equipped and staffed to meet any custom-engineered parts and equipment needs - small or large. Our production workshops are listed as follows:

METALWORKING WORKSHOP

Our metalworking workshop, covering an area of about 2,000 square meters, is used for cutting and forming the metals and is equipped with various types of the following machines:

- Band and disc saws machines
- CNC plasma cutting machines
- Sheet metal straightening machines
- Guillotine machines for sheets up to 25 mm thick with length 6 m
- Press brake machines for sheets up to 20 mm thick with length 6 m
- Rolling machines



MACHINING WORKSHOP

The company has a large independent machining workshop in an area of about 10,000 square meters. This workshop which are equipped with more than 100 various machines, is able to carry out most of the tasks within our competences. Also, from time to time, we invest in new machinery in order to fulfill customer needs. In this workshop we able to work on all kinds of materials such as carbon steels, stainless steels, superalloys, non-ferrous metals (aluminum, titanium, brass, bronze, copper) or many others. Our machining workshop comprise the following sections:

- Turning Machines
- Milling Machines
- Drilling Machines
- Grinding Machines
- Gear Cutting Machines
- EDM Wire cut machine
- Hand Finishing
- Vibratory Finishing



WELDING WORKSHOPS

Welding is one of our primary fields of work. Skill, quality and accuracy are the three basic principles in our welding workshops. Our welding technicians supported by modern equipment possess a high level of expertise. This enables us to present a wide range of different welding procedures. In our company, all weld joints are assessed for quality in accordance with ISO 5817. We can weld most types of metal, regardless of dimension, size or shape. We also make large and small prototypes and batch runs.

We currently have 36 professional welders who all are audited and certified by an independent third party according to ISO 9606-1&2. Our welders have certificates in many different groups and categories (80 different certificates, currently). If required for highly specialized work, we will be happy to have our welders certified to the exact specification you need.



In addition, we work according to welding procedure specifications (WPS) supported by a welding procedure qualification record (WPQR).

WELDING OF CARBON STEEL

Welding of all products made of carbon steel are dedicatedly performed in three equipped halls in an area of 9000 square meters. Our welding department can carry out many welding tasks using stick welding (SMAW), MAG, MIG and resistance welding processes. We can weld everything particularly in for gas turbine, oil and gas industries, and also industrial steel structure from small components to large structures weighing more than 30 tones. Our metalworkers are certified welders who are accustomed to welding according to rigorous requirements.



WELDING OF STAINLESS STEEL

GITCO welds and manufactures stainless steel products in an independent hall covering an area of more than 6000 square meters. We perform all types of welding process including TIG welding, resistance welding and MIG welding. Our trained and experienced stainless steel welders are skilled in both pipe and sheet welding in almost any metal thickness available. We use Kemppi welding machines for our TIG and MIG stainless steel welding processes.



WELDING OF ALUMINIUM

Aluminum welding is an area where our experienced welders use MIG welding to pipe-weld and sheet-weld large aluminum structures. MIG welding is often used to weld metal thicknesses of more than 3–4 mm. TIG welding is the most highly controlled welding method, requiring great expertise and a steady hand. At GITCO, we are certified to carry out TIG welding on large and small work pieces. We use Kemppi welding machines for our TIG and MIG aluminum welding processes.

HEAT TREATMENT WORKSHOP

GITCO has its own production equipment to carry out all the heat treatments required by the customers, with the highest quality standards. The heat treatments can be performed at GITCO are as follows:

- +N (Normalizing)
 - +T (Tempering)
 - +QT (Quenching and tempering)
 - +AT (Solution Annealing)
 - +A (Annealing)
 - +N+T (Normalizing and tempering)
 - Solution and precipitation hardening
 - Surface hardening
 - Stress relief
- and its different combinations



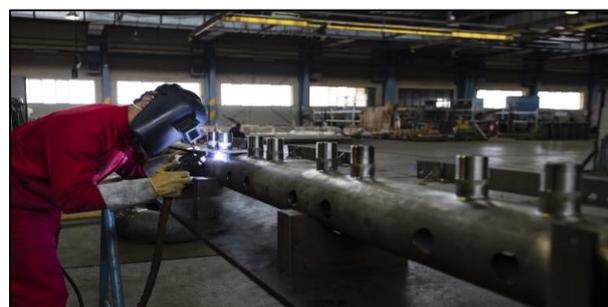
SANDBLASTING, PICKLING AND PAINTING WORKSHOPS

In addition to the main workshops, we have separate workshops, for sandblasting, pickling and painting of our products in an area about 2000 square meters.



PIPE FABRICATION WORKSHOP

Pipe fabrication is the process of welding piping components such as pipes, elbows, tees, flanges, etc., into engineered piping systems in exact accordance with requirements of our projects or customers' design. Thanks to skilled fitting and welding personnel, we specialize in providing the highest quality of fabricated piping across a wide range of materials and sizes.



SKID ASSEMBLY WORKSHOP

In GITCO, there is a dedicated workshop for assembling complete packages of electro-mechanical and hydraulic systems. The workshop is fully equipped with the necessary facilities to carry out piping activities, goods handling, skid assembly and testing. Our skilled assemblers, piping technician, smiths, electrical and instrument fitters form a team able to carry out all the activities related to modular and skid-based packages.



In this workshop, all skid-based products are assembled using a controlled process which is developed entirely within the company.



ELECTRICAL PANEL ASSEMBLY WORKSHOP

GITCO has a 1,000 m² dedicated workshop which is well equipped and staffed for assembling industrial electrical panels. Our trained and experienced team of electrical engineers and technicians are capable to assemble, wire and test various types of industrial electrical panels such as switchgears, distribution panels, control panels, LV, PLC, protection panels, firefighting panels and explosion-proof terminal boxes in compliance with the international standards and regulations.



TURBINE PACKAGING WORKSHOP

GITCO provides packaging services and mechanical running test for industrial turbines up to 70 MW by trained and experienced staff. For this purpose, we have a special equipped workshop in an area of over 3000 square meters with overhead cranes of 25, 10 and 10+5 tons with 15 m under the hook. Our team is proficient in package services for gas turbines, steam turbines and gas compressors.



QUALITY CONTROL

GITCO is committed to delivering high-quality products that fully meet customer expectations and regulatory standards. Quality is one of the factors that gives us an advantage over our competitors in the market. Our comprehensive quality assurance program adheres to ISO-9001:2015 certificate standards and other applicable requirements, and focuses on the continuous improvement of our quality system.



GITCO's quality control department consists of well qualified and competent professionals who have several years of industrial experience. Our highly qualified technicians are able to perform a wide range of controls in compliance with the most rigorous international standards. These auditors monitor the entire manufacturing stages to ensure the quality of the orders.

At GITCO, the QC department interacts with operations and manufacturing department on quality issues, calibration of equipment, and disposition of non-conformance. Likewise, the QC interacts with engineering department on product specifications and customer orders as well as with purchasing department on the inspection and acceptance of purchased goods.

Moreover, we invest seriously in inspection technologies and on-going training of quality inspectors. Our quality control department is equipped with all kinds of quality control tools and instruments, non-destructive testing equipment and CMM capabilities. Also, we have a calibration laboratory to calibrate precise dimensional control tools. Our quality tests are performed by our own staff and some by accredited laboratories. Non-Destructive controls, including VT, PT, MT, RT and UT, are carried out by GITCO's qualified inspectors certified according to ASNT Level II.



Additionally, our ERP system gives us full traceability of history, location and trajectory of a product or batch of products along the supply chain. Traceability is maintained under disciplined documentation practices on raw materials, manufacturing processes and quality control inspections and tests. Most documents are electronically stored for every product. We submit complete documentation of each product, all according to our customers' demands.

PRODUCTS

GAS TURBINE PARTS

GITCO produces a large variety of piece parts and components for gas turbines (more than 1000 types). Compressor blades and tilt pad journal and thrust bearings are our highlight products. In addition, our expertise and facilities enable us to manufacture many other parts of turbines such as turbine tie bolts, shims, keys, balance weight, fuel nozzle, fuel manifolds, special tools, guide collar, tension screw, lead through, eccentric shaft, taper pin, sealing rings, lock screw, and etc.



Compressor Stator Vanes and Rotor Blades



Tilt Pad Bearings

TURBINE AUXILIARY SYSTEMS

In GITCO, we provide and manufacture to order different auxiliary systems for gas turbines as prototypes or batch runs:

- Base Frame
- Acoustic enclosures
- Inlet Filter Houses
- Intake Silencing Systems
- Intake Plenums
- Exhaust Diffusers / Plenums
- Exhaust Silencing Systems
- Auxiliary Skids
- Turbine Ignition System
- Turbine-Compressor Washing System
- Bypass Stack System
- Anti-Icing / Inlet Heating Systems
- Inlet Cooling Systems

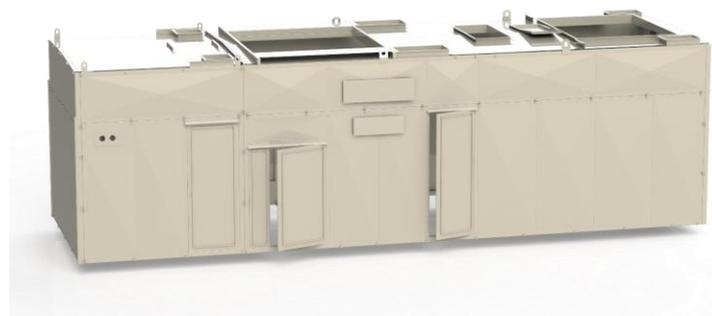
BASE FRAMES

We specialize in manufacturing all kinds of base frames according to customer's requirements. In our base frames welding stresses will be removed and the installation interfaces will be machined.



ACOUSTIC ENCLOSURES

GITCO is able to provide acoustic enclosures for gas turbines, steam turbines, generators, gas or diesel engines, compressors, pumps in accordance with customer's demands.



INLET FILTER HOUSE



INTAKE SILENCING SYSTEMS



INTAKE PLENUM



EXHAUST DIFFUSERS / PLENUMS



EXHAUST SILENCING SYSTEMS



AUXILIARY SKIDS

We specialize in producing integrated auxiliary skids for rotating machines like turbines, compressors and generators in the power generation and oil & gas industries. The auxiliary skids are made to order and we can offer manufacturing according to supplied drawings and customer's specifications, codes and rules.

Some of our products are:

- Lube oil system
- seal gas panels
- various gas skids
- pressure vessels

Many of lube oil and gas skids supplied by GITCO are currently in service for IRAN oil and gas industries. Our skilled technical team with good experience of auxiliary equipment, ensures the highest quality in fabrication, test, sales and aftermarket support.



Gas Fuel Unit



Lube oil system



GAS Ignition System



Gas Fuel skid

TURBINE-COMPRESSOR WASHING SYSTEM

GITCO's compressor washing system can be used for gas turbines 14 to 35 mw for either permanent or mobile installation applications. The system can be fitted with an optional wheel kit for mobility on flat concrete type surfaces. The System is designed to be implemented with the relevant nozzle kits and used on the following engines:

Siemens SGT500, Rolls Royce MT30, Siemens SGT600, Siemens SGT700, Siemens SGT750, Siemens SGT800



TURBINE IGNITION SYSTEMS

GITCO offers low voltage and high-energy igniters for gas turbine engines. Our products is ATEX certified and can satisfy the most rigorous standards to meet customer needs. Flameproof ignition equipment provides special protective measures to avoid accidental combustion in hazardous environments, including flammable gases, vapors and volatile liquids.

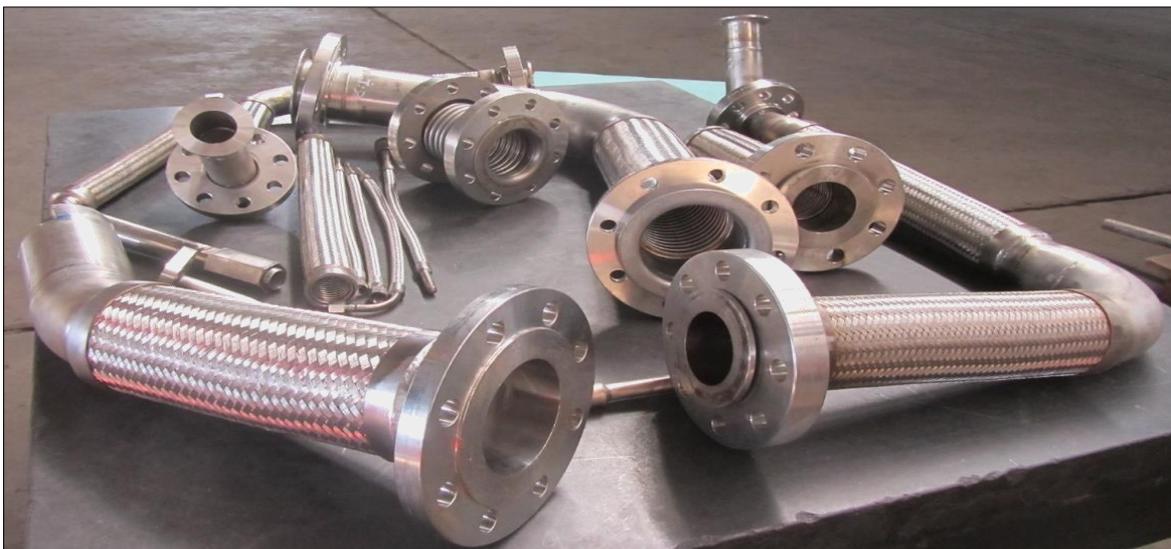
Ignition systems for gas turbines consist of three main components: the exciter box, the ignition lead, and the igniter. The exciter box sends high-voltage current to the ignition lead, which transfers the high voltage to the igniter.



FLEXIBLE METAL EXPANSION JOINTS

Metal expansion joints are flexible connections, installed in piping and ducting systems to accommodate expansion and vibration caused by changes in temperature, pressure and/or media. We can provide flexible hose with stainless steel parallel spirals, with outer single or double reinforcement braid wires in AISI 304 or AISI 316 stainless steel, equipped with fittings or flanges end connections, used for conveying fluids in presence of vibrations, high pressures and temperatures.

Thanks to an efficient TIG welding center, we are able to provide metal expansion joints from the size DN 10 to DN 500, for the most sophisticated applications, according to the customer's drawing or by our design by following the most modern assembly procedures.



EXPLOSION-PROOF ELECTRICAL ENCLOSURES

GITCO produces a series of explosion-proof electrical enclosures manufactured in either stainless steel or mild steel can be used in hazardous areas. The enclosures are designed and certified by ATEX as increased safety and intrinsically safe enclosures for a wide range of industrial applications in hazardous areas zone 0 and 1 and ambient condition -30°C to + 65°C. These enclosures can be fitted with an arrangement of components or can be supplied empty as component approved for the clients own certification requirements. The enclosures may be employed as:

- Junction boxes fitted with approved EEx e terminals or blue EEx i terminals for intrinsic safe circuits according to customer requirements
- Enclosures for customer built applications and as an instrument or apparatus box.
- Control or Power Distribution Box
- Monitoring & Signaling Box
- High Voltage Junction Box
- Splicing Wires Box
- Marshalling Panel
- Pull Box

These enclosures are available in a wide variety of size (more than 80 sizes). Our certified high voltage range of the junction boxes can be used for maximum rated working voltages of 11 kV.



ELECTRICAL PANELS

GITCO supplies types of electrical panels used in power generation, oil and gas and related industries. The panel types that we have manufactured include:

- UPS/UMD cubicles which are related to uninterruptible system and prepare system performance continuity; such as BPA05, 10, 30.
- Control cubicles based on SIEMENS S7 PLC technology regarding to Gas turbine and Compressor I/O's and Instrumentation control signals; such as CJD10, CJP10, 20, 30 CJU10.
- MCC (Motor Control Center) cubicles based on withdrawable type switchgears in compliance with IEC61439; such as BFA10-13.



All panels manufactured by GITCO are fully inspected by our quality team. GITCO provides all levels of inspections and testing, from simple continuity and leak checks to complete functional tests, calibrations and programming.

HOW TO REACH US

We warmly welcome you to visit our company and establish cooperation!

GITCO is close to Yazd city and easily reachable from YAZD Airport and train station.

Please visit our website at www.gitco.ir



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CONTACT US

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