



Vignate Site

Vignate, January 2025

THE CAMPUS



THE CAMPUS



Total area: 63.000 m^2

Offices: 4.000 m^2

Mfg/WH covered floor space: 14.000 m^2

Employees in the Campus: 350+ (*all Entities and brands*). IR = 250+

Factory Entrance & Offices

Activities in the Campus:

- Operations & Manufacturing*
- Distribution & Logistics Center*
- Engineering and R&D*
- Product Management*
- Project Management*
- Remanufacturing Technology Center*
- Customer Training Center*
- Customer Service*
- Marketing*
- Sales and Service*



Production Building

ISO 9001, ISO 14001, ISO 45001, ISO 50001 Certified Plant

THE PLANT - Overview

- Products:
 - Centrifugal Air Compressors
 - Rotary Oil Free Screw
 - Highly Engineered Solutions Packages
 - Vacuum pump

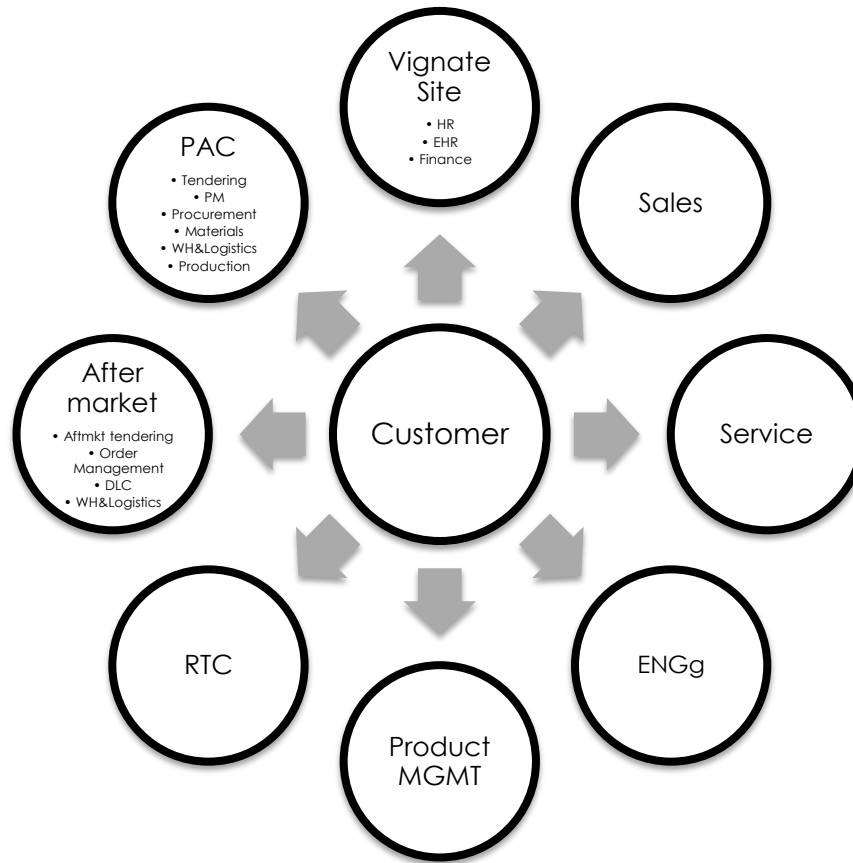


THE CAMPUS - History

- **1960:** First offices established in Milan, Italy to market IR Products
- **1964:** Factory built to expand Ingersoll Rand capabilities (stationary compressors & construction equipment)
- **1968:** Moved into design and manufacturing of Centrifugal Air Compressors
- **2001:** Vignate is the world-wide Center of Excellence for Large Units
- **2007:** More than 7.500 units produced
- **2009:** Started Assembly of Single Stage Oil Free Screw Blowers
- **2010:** reached 20 years of ISO9001 certification
- **2010:** C1000 model
- **2013:** C800 model
- **2016:** 9000+ Centac produced (>22000 worldwide)
- **2017:** TA2000/3000/6000 assy and test
- **2018:** ISO 9001:2015 transition
- **2018/2019:** TA NX assy and test
- **2020:** TA high pressure
- **2021:** NX5000
- **2022:** Elmo Ritsche/Robuschi
- **2022:** Garo
- **2023:** TA1500, 5-axis impeller machining
- **2024:** ISO 50001 Certification, C700E, Ecoplant
- **2025:** Kira, C2000...



Vignate Site, Complexity



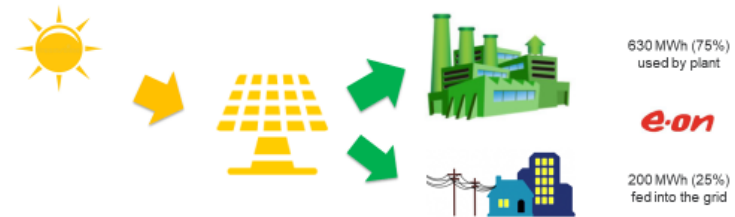
		Service	RTC	Aftermarket	Production
Centac					
TA/NX					
Rotary					
MSG					

PLANT – Path towards environmental sustainability

Enviromental projects on going

VIGNATE Plant Analysis – Solution proposed

	E-ON
Power installation	751 kWp
Solar energy production in a year	830 MWh
Solar energy used by plant in a year	630 MWh
Out of annual coverage used by plant	75%
Annual electricity consumption of the plant	2315 MWh
Portion covered by photovoltaic production	27%

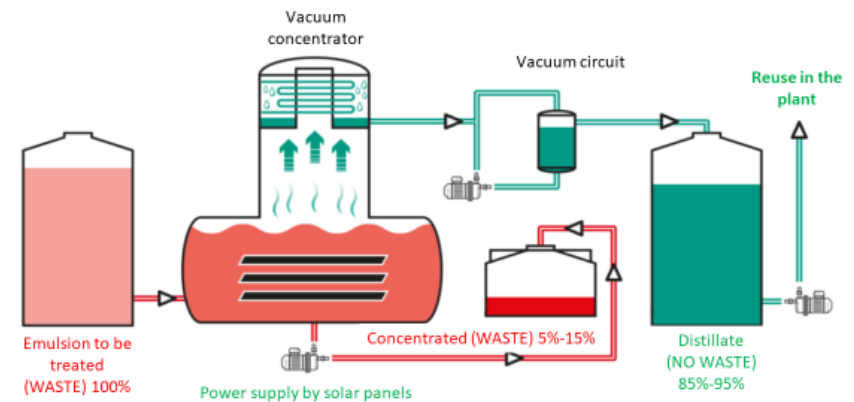


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MLB - Italian Plants Solar Project

IR Ingersoll Rand.

Wastewater concentrator - Vignate Plant



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IR Ingersoll Rand.

IR Ingersoll Rand

Reduction of the plant's environmental footprint

- **Water consumption: -75%** from 2012 to 2021
- **Hazardous waste to landfill: Zero** since 2007
- **Electricity consumption: -30%** from 2012 to 2021
- **Natural gas: -20%** from 2012 to 2021
- **Air emissions: -30%** from 2015 to 2022

THE PLANT - Management Systems Certification



Current issue date: 27 April 2023
Expiry date: 26 April 2026
Certificate identity number: 10511585

Original approval(s):
ISO 9001 - 27 April 1990

Certificate of Approval

This is to certify that the Management System of:

Ingersoll-Rand Italiana Manufacturing S.r.l.

Strada Provinciale Cassanese 108, 20060 Vignate - MI, Italy

has been approved by LRQA to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 00015668

The scope of this approval is applicable to:

Design and Manufacturing of Centrifugal Compressors, and Related Accessories. Assembly and Test of Volumetric Compressors. Remanufacturing of Centrifugal Compressors and Refurbishment of Rotors. Engineering, Assembly and Test of Volumetric Compressors Packages

Cliff Muckleroy

Area Operations Manager Americas

Issued by: LRQA Limited



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EU CERTIFICATE OF CONFORMITY

**In accordance with the requirements of the Pressure Equipment
Directive 2014/68/EU .**

This is to certify that the Quality Management System of:

**INGERSOLL RAND ITALIANA MANUFACTURING S.r.l
(IRIM S.r.l.)**

Strada Cassanese 108
20060 Vignate (MI)
Italy

has been assessed against the requirements of Annex III, Module D of the Pressure Equipment Directive 2014/68/EU and conforms to the requirements for the products shown below:

**Manufacturing of centrifugal and volumetric compressors
and related assemblies
(See attached schedule)**

Approval is subject to the continued maintenance of the quality system in accordance with the requirements of the above Directive and continuing to comply with the EU Type Examination Certificate(s) as listed on the attached schedule.

Authorisation is hereby given to use the LRE Notified Body Identification Number in accordance with the requirements of the specified Directive and Regulations in relation to the products as identified above.

Certificate No: 0094/PED/MAD/0201807/01 ENG

Original Approval: 31 December 2020

Current Certificate: 12 June 2021

Certificate Expiry: 12 June 2024

LRE Notified Body Number 0094



Teresa Souto LRE Technical Manager



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0094-PED-module-D-template_R1-21 May 2021_ENG



THE PLANT - Management Systems Certification



Current issue date: 23 November 2023
Expiry date: 20 November 2026
Certificate identity number: 10565866

Original approval(s):
ISO 14001 - 21 November 2008

Certificate of Approval

This is to certify that the Management System of:

Ingersoll-Rand Italia S.r.l

Strada Provinciale Cassanese 108, 20060 Vignate - MI, Italy

has been approved by LRQA to the following standards:

ISO 14001:2015

Approval number(s): ISO 14001 – 042947

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design, sale and manufacturing of centrifugal compressors, related accessories and spare parts, and positive displacement compressor packages. Remanufacturing, refurbishing and field service of centrifugal, positive displacement compressors and accessories and refurbishment of rotors.

Paul Graaf

Area Operations Manager, Europe

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Current issue date: 23 November 2023
Expiry date: 20 November 2026
Certificate identity number: 10565870

Original approval(s):
ISO 45001 - 21 November 2020

Certificate of Approval

This is to certify that the Management System of:

Ingersoll-Rand Italia S.r.l

Strada Provinciale Cassanese 108, 20060 Vignate - MI, Italy

has been approved by LRQA to the following standards:

ISO 45001:2018

Approval number(s): ISO 45001 – 042946

This certificate is valid only in association with the certificate schedule bearing the same number on which the locations applicable to this approval are listed.

The scope of this approval is applicable to:

Design, sale and manufacturing of centrifugal compressors, related accessories and spare parts, and positive displacement compressor packages. Remanufacturing, refurbishing and field service of centrifugal, positive displacement compressors and accessories and refurbishment of rotors.

Paul Graaf

Area Operations Manager, Europe

Issued by: LRQA Limited



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THE PLANT - Management Systems Certification



Current Issue Date: 8 January 2024
Expiry Date: 7 January 2027
Certificate Identity Number: 10575291

Original approval(s):
ISO 50001 - 8 January 2024

Certificate of Approval

This is to certify that the Management System of:

**Ingersoll-Rand Italiana
Manufacturing S.r.l.**

Strada Provinciale Cassanese 108, 20060 Vignate MI, Italy

has been approved by LRQA to the following standards:

ISO 50001:2018

Approval Number(s): ISO 50001 – 00043204

The scope of this approval is applicable to:

Design and manufacturing of compressors, related accessories and spare parts. Remanufacturing of compressors and refurbishment of rotors.

Paul Graaf

Area Operations Manager, Europe

Issued by: LRQA Limited



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ISO 50001

ENERGY MANAGEMENT

Jan 2024



- **1983:** UNI 8450 Nuclear plants QA/QC program
- **1990:** 1st ISO 9001:1985 QMS certification
- **1995:** upgrade to ISO 9001:1994 QMS certification
- **1999:** GOST – Russian approval (factory and QMS)
- **1999:** TUEV Baumusterprüfung (Germany approval)
- **2001:** upgrade to ISO 9001:2000 QMS certification
- **2002:** Pressure Equipment Directive (PED) certification
- **2002:** QMS certification extension to rebuilt units
- **2005:** Lean six Sigma program introduction
- **2007:** GOST Belarus approval
- **2007:** Ukrainian Prombezpeka approval
- **2008:** ISO 14001:2008 certification
- **2009:** upgrade to ISO 9001:2008 certification
- **2011:** OHSAS 18001:2008 certification (occupational, health, safety)
- **2014:** EAC certification
- **2018:** upgrade to ISO 9001:2015 and 14001:2015 certification
- **2020:** ISO 45001 certification
- **2024:** ISO 50001 certification

Our Journey..... (Management Systems Certifications)

PLANT – Quality Policy

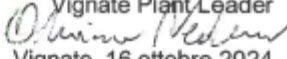


INGERSOLL RAND QUALITY POLICY

Vignate Plant

Ingersoll Rand is committed to establishing and maintaining a Quality Management System to:

- Understand and satisfy our customers' needs and support sustainable growth, adaptable to environmental challenges, consistent with its strategies by delivering innovative, high quality products and services.
- To improve our quality culture by engaging in understanding, assessing and defining the needs of our interested parties, evaluating risks and opportunities and actively demonstrating continuous Quality improvement throughout the entire value chain.
- Build a quality culture based on continuous improvement utilizing process-based management that represents a framework to achieve quality objectives, strengthen employee engagement and awareness, and satisfy customer requirements.

Adriano Verderio
Vignate Plant Leader

Vignate, 16 ottobre 2024



THE CAMPUS – Served Area





















Region



Worldwide coverage

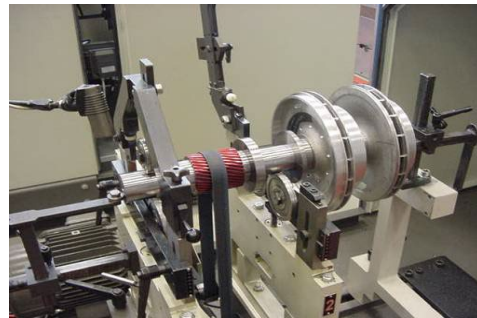
PRODUCT OVERVIEW

Contact Cooled Rotary	General purpose plant air used in assembly, manufacturing, mining and conveying industries	 Tank Mount	 Fixed Speed	 Variable Speed
Centrifugal	Large flow, high-quality Class 0, oil-free air used in continuous process industries including textile, automotive, PET and water treatment	 Plant Air	 Low Pressure	 Engineered
Oil-Free Rotary	High-quality ISO Class 0 , oil-free compressed air used in pharmaceutical, food & beverage, electronics and power generation	 Fixed Speed	 Variable Speed	 Engineered
Small Reciprocating	General purpose shop air used by contractors, pro-sumers, agriculture and light industrial industries	 Contractor	 Light Industrial	 Vacuum
Air Treatment	System components used across all major industries to ensure the right quality of air is delivered to the point of use	 Refrigerated	 Desiccant	 Filtration
OEM	Low pressure oil-free and contact cooled air used for low pressure or specialty applications that integrate Ingersoll Rand components into OEM solutions	 Airends		



PLANT – Manufacturing Capabilities

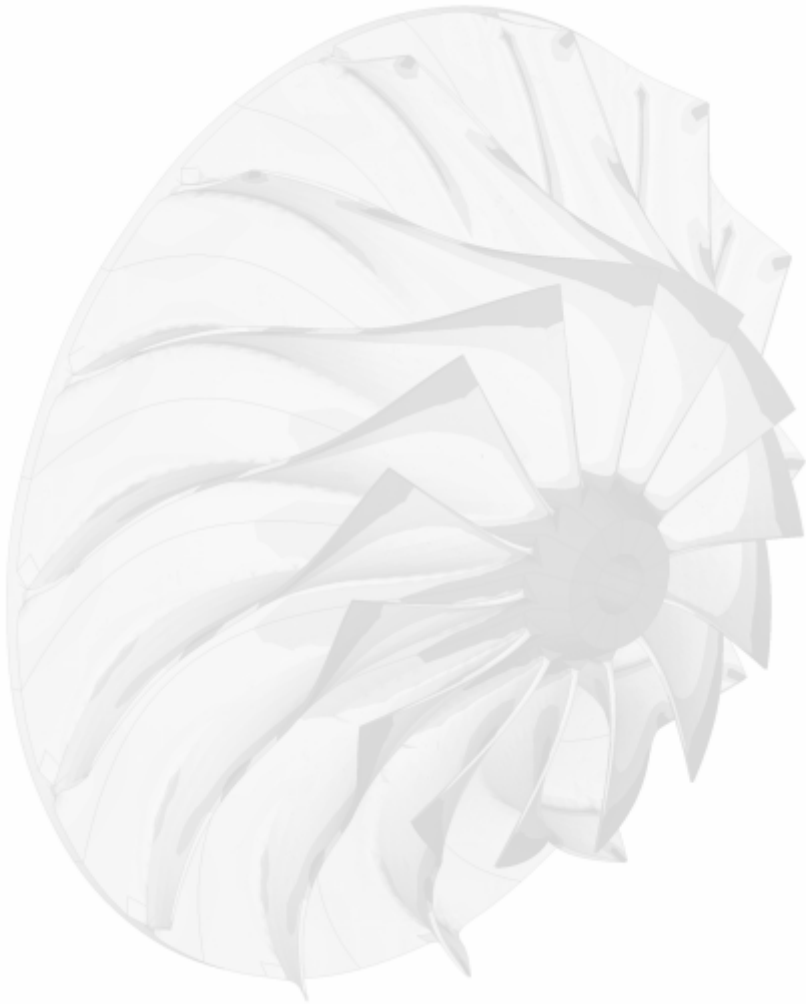
- (4) Boring-Milling CNC machines covering the entire range of Centac large machining
- (1) Diffuser and Impeller Machining Cell
- Tool Presetting Equipment
- (1) Scribing Bench
- (2) Dynamic Rotor Balancing Cells, one of which dedicated to the Aftermarket to better serve Aftermarket needs
- Assembly facility equipped with 50 tons Overhead Cranes to cover all range of Centac models
- (1) Mixed model Flow Line for Air End and Packages
- (1) Painting Cell
- (10) Test rigs with power available up to 4700 HP
- Test baseplates, motors, control panels.
- Dedicated Reman facility
- Dedicated Rotary Mixed model flow line



PLANT – Quality Lab Capabilities

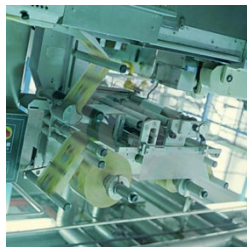
- Visual Areas Management
- Standard Room at Controlled Ambient Conditions
- Coordinate Measuring Machine (CMM)
- (2) Romer Arms
- Pneumocentric Devices
- Hardness Test Equipment
- Masters for Measuring Devices Calibration
- 1103 Measuring devices under calibration program
- (2) II Level PT Inspectors
- (4) Welding Inspectors
- Qualified lab for RX, UT, MT, PMI





CENTRIFUGAL PRODUCT OVERVIEW

MAIN AIR APPLICATIONS



- Combustion, agitation, cooling, transportation
- Petrochemical, air separation / nitrogen
- Industrial automation, pneumatic tools
- Chemical processes, fermentation
- Yarn production, spinning, texturizing
- PET blow moulding
- Food conveying, packing, cleaning
- Glass blowing, sandblasting, cooling
- Mining, drilling, ventilating
- Utilities: water treatment, soot blowing
- Snow making
- Painting, and much more...

ISO 8573
Class 0
Oil-Free Air



MSG® Centac® & MSG® Turbo-Air®

A Unique Value Proposition

TECHNOLOGY

- State-of-the-art aerodynamic design and system controller
- Advanced controllers with latest control algorithms to lower energy consumption
- Predesigned package flexibility
- Patented solutions

BRAND

- 50+ years of experience
- 40000+ install base
- Industry leading reputation
- Worldwide Aftermarket support

HSE

- ISO Class 0 certified
- Leak free lube system
- Compliant to latest safety regulations & standards (ASME, CE/PED, ISO/EN, China Code)



SERVICEABILITY

- Reduced maintainability requirements
- Improved access to all critical components
- Informative and intuitive web-enabled controller
- Complete control, protection & diagnostic system

RELIABILITY

- Aircraft quality gearing & aero
- Robust/long life component design
- Few moving parts

LIFECYCLE COSTS

- Top class performances and efficiency
- Wide turndown range for great flexibility
- Latest control algorithms to lower energy consumption
- Inlet Guide Vanes for low energy consumption at partial loads
- Advanced seal design for minimized air leaks

THE CAMPUS – Products

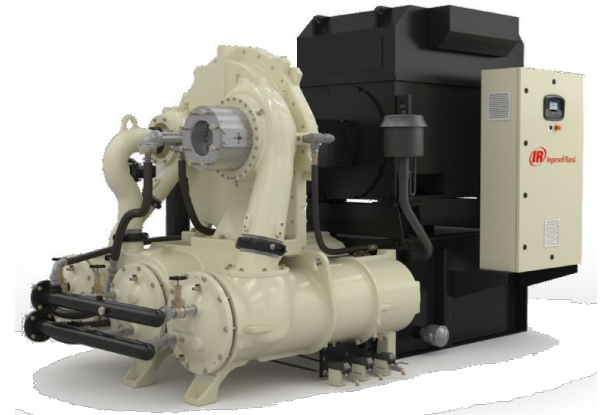
Standard CENTAC Compressors Configurations



C400



C700E/n



C800



4CI



5CII

THE CAMPUS – Products

Standard TURBO-AIR Compressors Configurations

TURBO-AIR® NX1500



TURBO-AIR® COOLED 2000



air cooled: specifically
designed for applications
where there is a limited supply
or no water available



TURBO-AIR® 3000



THE CAMPUS – Products

Standard TURBO-AIR Compressors Configurations



TURBO-AIR® NX5000



TURBO-AIR® NX8000

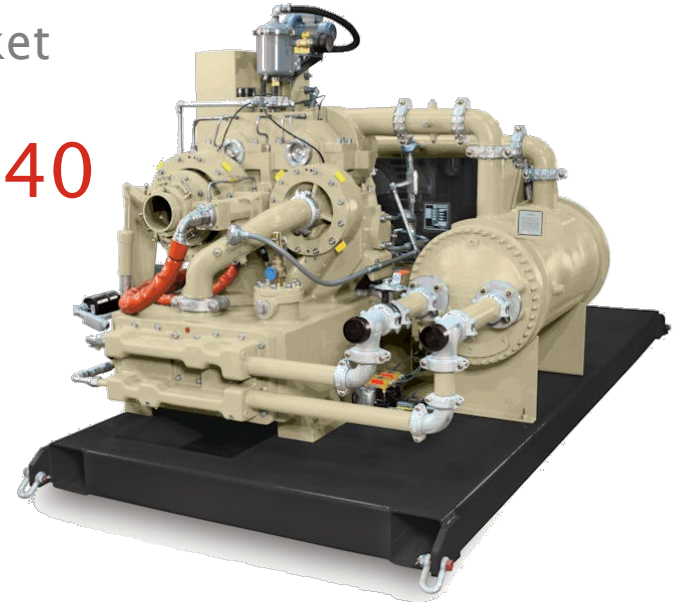


TURBO-AIR® NX12000

THE CAMPUS – Products

High Pressure, for PET market

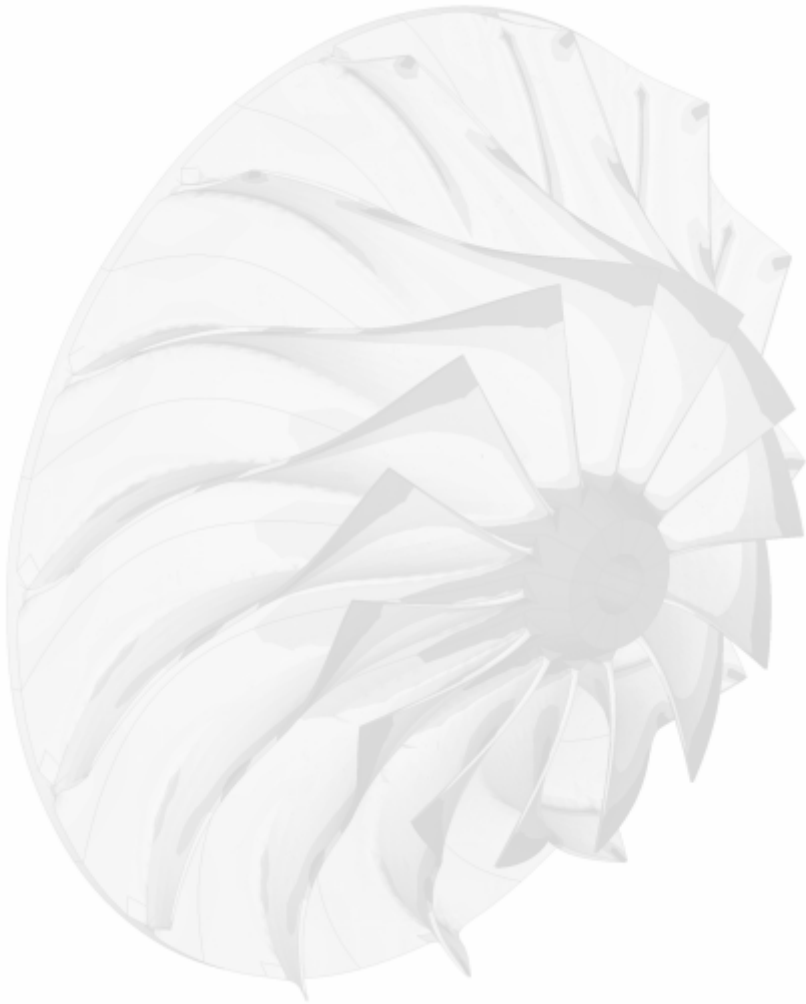
TURBO-AIR® 2040



CENTAC C750

TURBO-AIR® 6040





ENGINEERED / API672

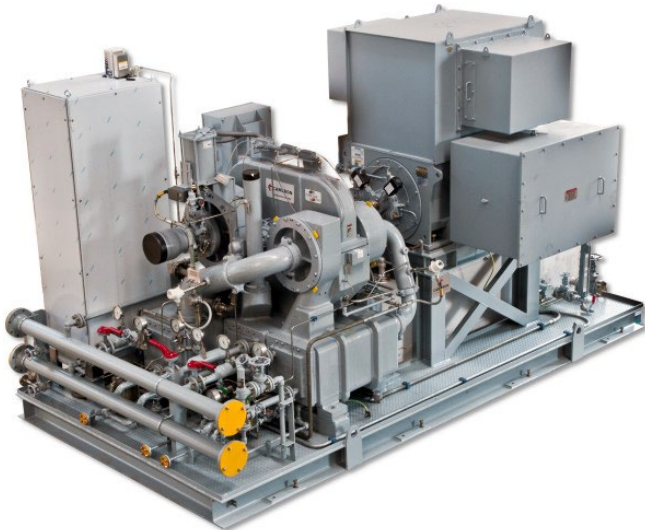
PRODUCT OVERVIEW

THE CAMPUS – Clients, End Users & EPC Contractors



THE CAMPUS – Products

Highly Engineered and API 672 packages



THE PLANT – Products

Engineered & Highly Engineered Package Configurations



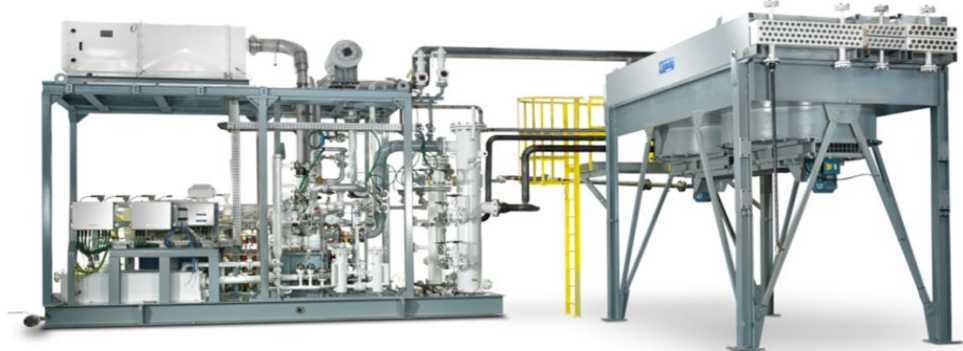
Floating LNG special application with
“gimbals” isostatic supports



API 672 Centrifugal Compressor Package



Diesel engine driven unit



API 619 Screw compressor - air to air cooled

THE PLANT – Products

Engineered & Highly Engineered Package Configurations



Nitrogen compressor



MSG centrifugal compressor for natural gas



API 672 Centrifugal compressor



Compressor on truck

THE PLANT – Products

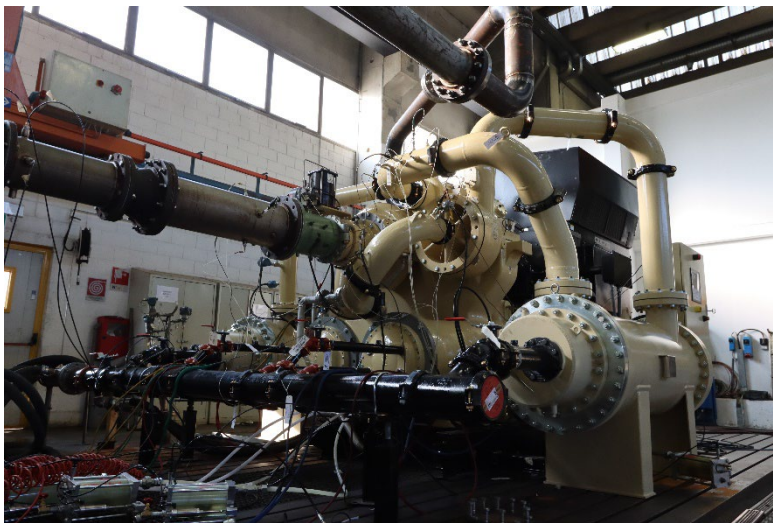
Engineered & Highly Engineered Package Configurations



Screw compressor



API 672 Centrifugal compressor
for Samsung



NX8000 Centrifugal compressor
ready to be tested