



MANGAN INDUSTRIAL GROUP

CENTRIFUGAL COMPRESSORS

General

Due to their rugged mechanical design, this type of machine guarantees very high reliability. Almost all gases can be handled by this type of compressor with appropriate construction materials and sealing systems.

Technical data

Flows can vary from 1,000 to 300,000 m³/h, with discharge pressure up to 120 bar.

Applicable codes and standards

Generally designed according to **API 617** and **API 672**, or customized to customer's specific needs.



Main characteristics

Several configurations are available to cover all applications of this type of machine. Impellers are 3-D, backswept, semi or full inducer, open type, overhung mounted on the shaft. The journal bearings are of the tilting-pad type. A special design, with internal spiral volutes (to avoid any dead-point in the flow), is available. Inlet Guide Vanes are available for fixed-speed units, in order to increase the operating range of the compressor while maintaining high efficiency. Seals can be dry gas, mechanical oil or labyrinth type, depending on the service requirements.

Drivers

This type of unit can be driven either by an electric motor (directly coupled or via an external gearbox to increase speed), or by a steam or a gas turbine (directly coupled or via an external gearbox to increase or decrease speed).



Package arrangement

The baseplate generally accommodates both the compressor and its driver. The lube oil system can be either integrated with the main machine baseplate or manufactured as a separate console.





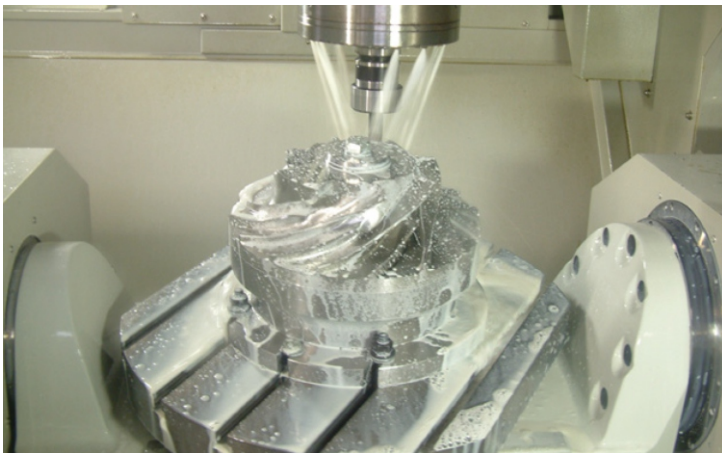
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Impeller Using 5-Axis CNC Milling

The impeller is a radial flow type with open and backward leaning blades that is machined by 5-axis CNC machine.

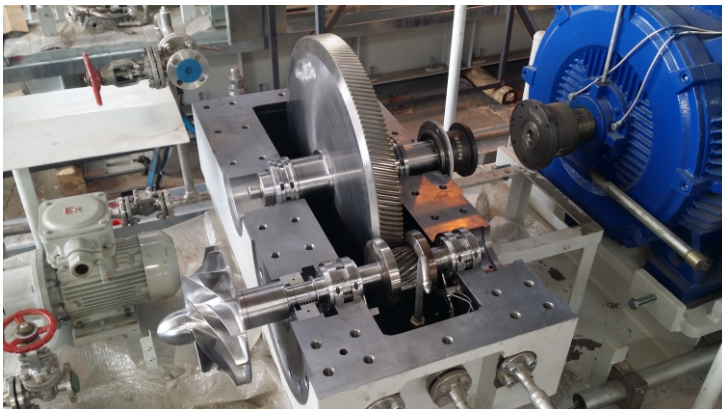
For the impeller there are some parameters such as flow coefficient, head coefficient, efficiency, blade tip speed, impeller diameters and etc., that have strong effects on the geometry of the Impeller. Following study of these parameters, MANGAN has classified its products.



Gearbox Design for Multi-stage Applications

Gearbox with helical spur gear and thrust collars are made of hardened and ground toothings.

All gears are manufactured according to AGMA standard. There is capability to design speed increasing gears for single or multi-stage centrifugal compressors.



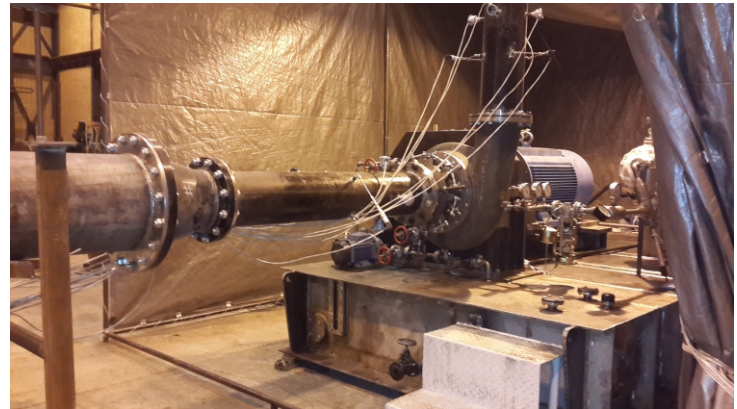
Complete Unit Tests

Aerodynamic Performance Test

- » According to ASME PTC-10
- » Pressure Measurement
- » Temperature Measurement
- » Flow Measurement

Mechanical Running Test

- » Bearing Metal Temperature Measurement
- » Vibration Measurement
- » Sound Level Measurement



Test System Features

- » Computerized Data Acquisition System Using NI LabVIEW Software
- » High Accuracy Transducers and Transmitters
- » Data Monitoring
- » Data Collection and Logging
- » Data Reduction and Analysis
- » Performance Evaluation



No. 401, Hefdah Shahrivar Ave. Km 5 Old Karaj Road Tehran-Iran

Po Code: 13787-56111

Tel: +98 21 66 80 33 64

Po Box: 13865-193

Fax: +98 21 66 80 13 75



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