



Single-Stage Centrifugal Compressors

■ A HISTORY OF INNOVATION AND SUCCESS

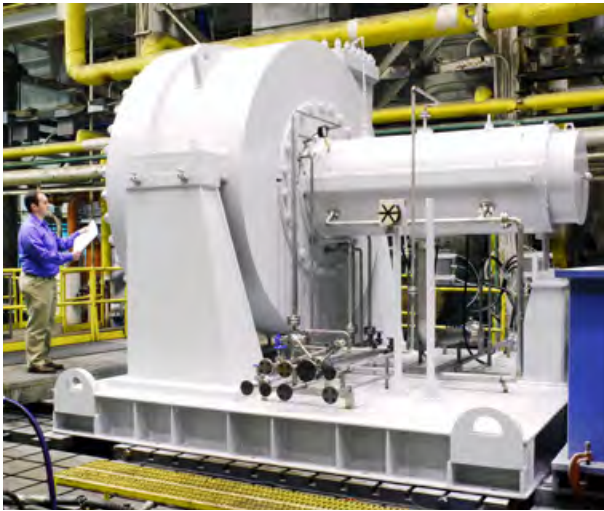
Since 1910, Elliott Group has earned a reputation for providing innovative solutions, unmatched expertise and first-class service to the global turbomachinery market. Elliott has designed, manufactured, tested and installed some of the industry's most rugged and dependable equipment. Throughout our history, we've been on the cutting edge of technology, consistently delivering performance improvements in aerodynamics, rotor dynamics, process simulation and metallurgy. Elliott is committed to providing new approaches, processes, and technology while maintaining the quality and reliability our customers expect.

Elliott has been manufacturing single stage centrifugal compressors for over 90 years. They are designed for long life, low maintenance, and continuous service in dirty and corrosive applications such as petrochemical plants, refineries, natural gas processing, coal gasification, and power stations. We maintain quality management systems in our global manufacturing operations in accordance with the ISO 9001 standard.



■ UNRIVALED PERFORMANCE AND RELIABILITY

Elliott single stage compressors feature a sophisticated design that meets API specifications for handling demanding applications.



■ FEATURES AND BENEFITS

High efficiency design reduces operating costs.

Elliott's impeller design ensures smooth gas passage with greater accuracy. Efficiencies up to 90 percent have been proven in production performance tests.

Ease of maintenance minimizes down time.

Elliott single stage compressors are designed for ease of maintenance. Simple, rigid construction for lower maintenance requirements and less time required to replace parts.

Smooth operation ensures reliable performance.

Tilting-pad bearings effectively prevent the oil whirl often associated with lightly-loaded high-speed bearings.

Design simplicity streamlines gas flow.

Elimination of stagnation points ensures minimum fouling during gas entrainment.

Standardization enables quick design response.

Standardization ensures that drawings are readily available, allowing quick selection and design of foundations and structures.

Flexible design supports application-specific aerodynamics.

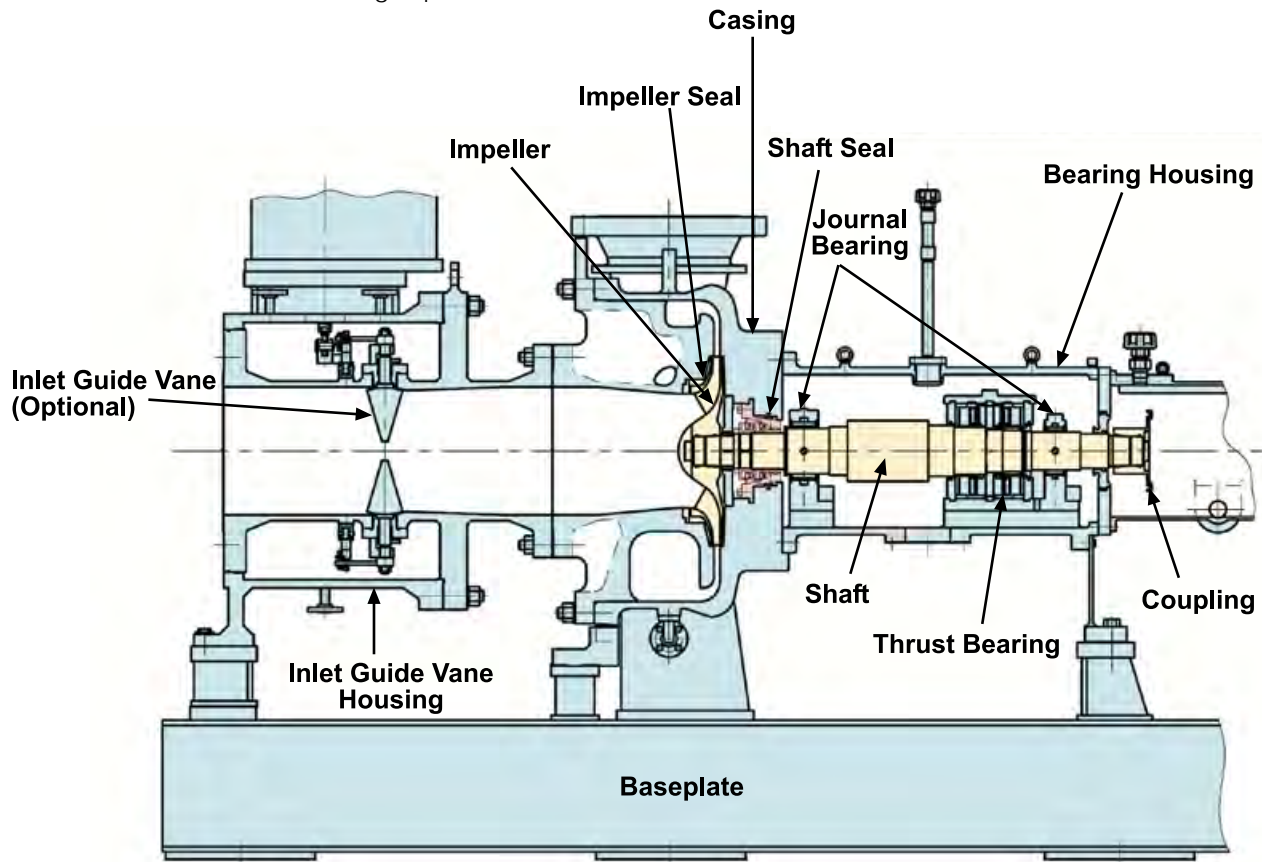
A variety of impellers within standard frame sizes meets a wide range of head and flow requirements.

Designed for high temperature applications.

Experience with inlet temperatures above 500 ° F.

TYPICAL CONSTRUCTION

Elliott single stage compressors meet API specifications for demanding applications. Components are carefully selected in accordance with design specifications.



Casing



The casing is center-line supported to maintain correct alignment under variable ambient and operating temperatures. Casing nozzles are designed to meet API specifications, incorporating a minimum 1.85 safety factor on allowable forces and moments. The casing is hydro-tested at 1.5 times the design pressure.

Impellers



Elliott high-efficiency impellers have an enclosed backward lean design.

Impeller Seal (for enclosed impeller)

To minimize internal recirculation, a variety of impeller seals are available. Special consideration is given to gases which contain particles.

Shaft

The shaft is machined from a forging and subjected to ultrasonic and magnetic particle inspections. The thrust collar is replaceable.

Shaft Seals

Elliott offers a wide variety of seal options including:

- ♦ Dry gas seals
- ♦ ISO-CARBON®/oil film seals
- ♦ Labyrinth seals

Performance and Capacity Controls

Elliott single stage centrifugal compressors operate in a wide range of conditions due to the standardized impeller design and the vaneless diffuser.

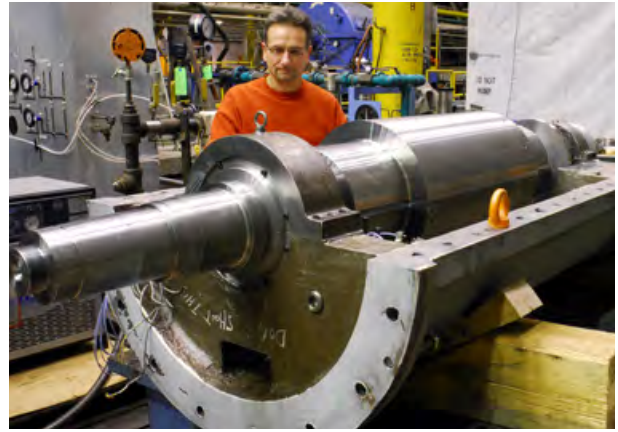
There are four ways to provide capacity control:

- ♦ Suction throttling
- ♦ Discharge throttling
- ♦ Adjustable inlet guide vanes
- ♦ Speed variation



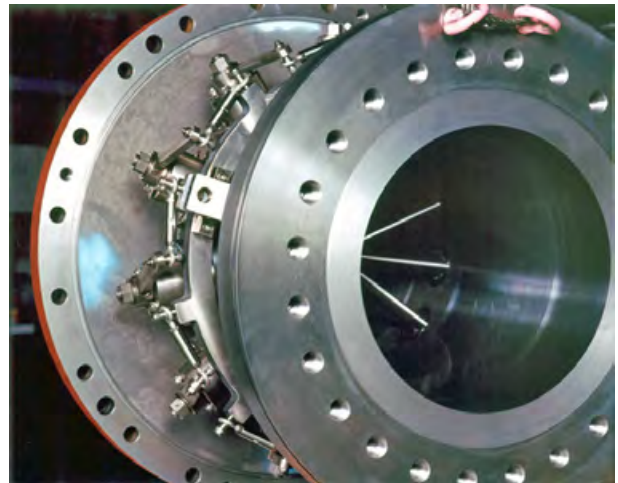
Bearings

Steel-backed, babbitted tilting-pad journal bearings ensure rotor stability. This type of bearing eliminates the potential for oil whirl and other associated vibration problems. The thrust bearings are double acting and self-equalizing.



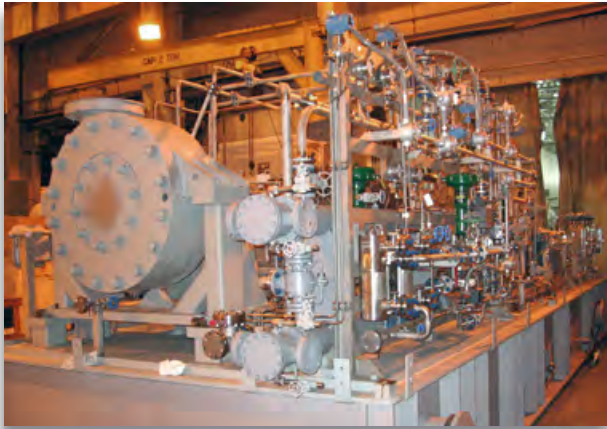
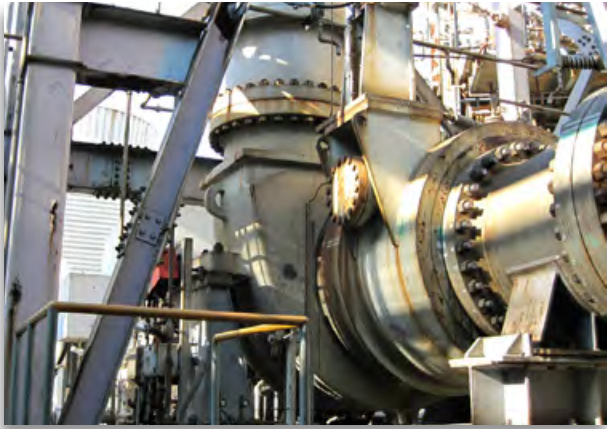
Bearing Housing

The bearing housing is separate from the compressor casing and is horizontally split for the oil-lubricated design. The bearings can be inspected and serviced without removing the coupling hub or breaking the casing joint.



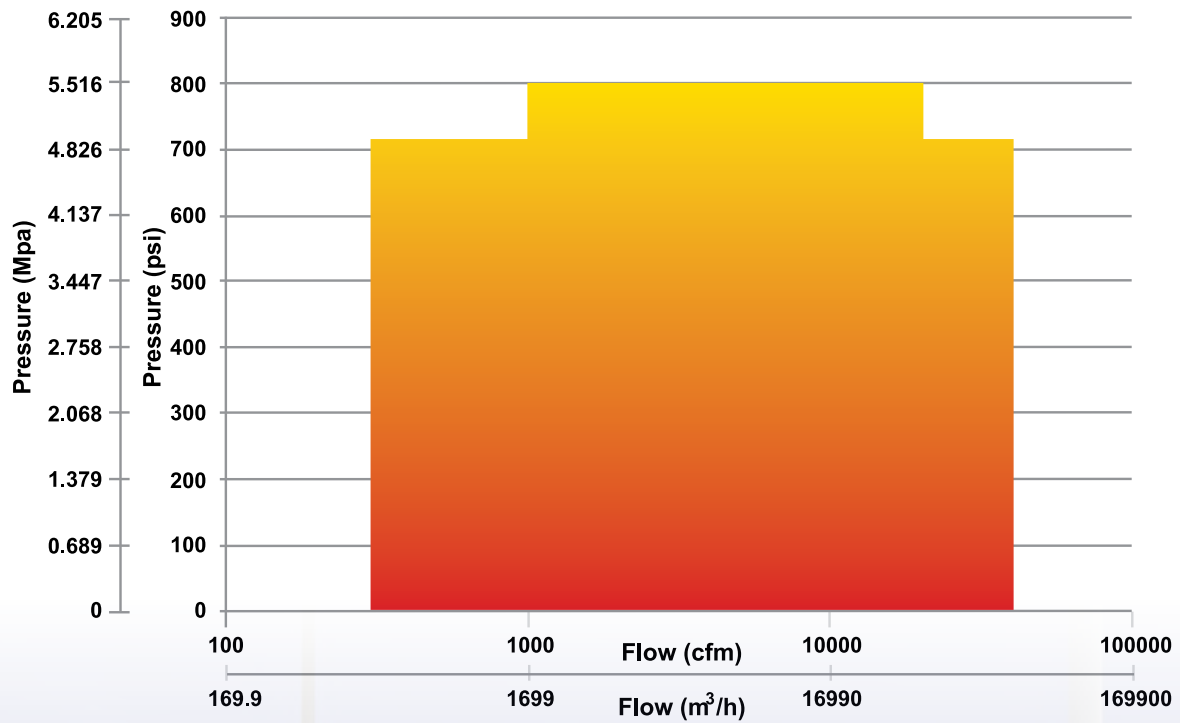
Inlet Guide Vanes (Optional)

On some models, inlet guide vanes can be installed to improve performance at partial load conditions. The inlet guide vane assembly is flanged to the casing cover.



APPLICATION RANGE

The chart below shows the flow rate and pressure ranges covered by standard Elliott single stage centrifugal compressors.





Elliott Group is a global leader in the design, manufacture, and service of technically advanced centrifugal compressors, steam turbines, power recovery expanders, cryogenic pumps and expanders, and axial compressors used in the petrochemical, refining, oil & gas, liquefied gas, and process industries, as well as in power applications.

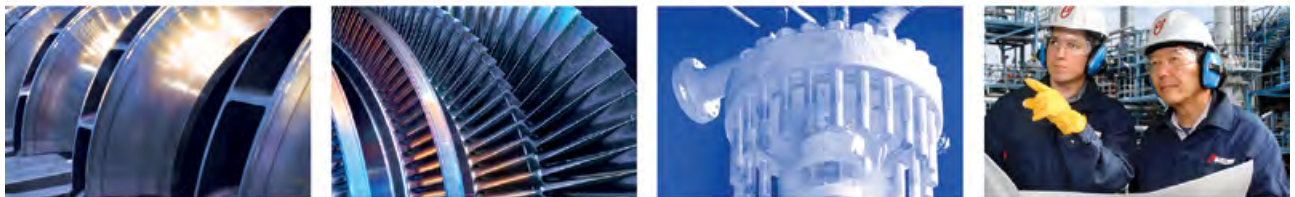
Elliott Group is a wholly owned subsidiary of Ebara Corporation, a major industrial conglomerate headquartered in Tokyo, Japan.



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T H E W O R L D T U R N S T O E L L I O T T



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