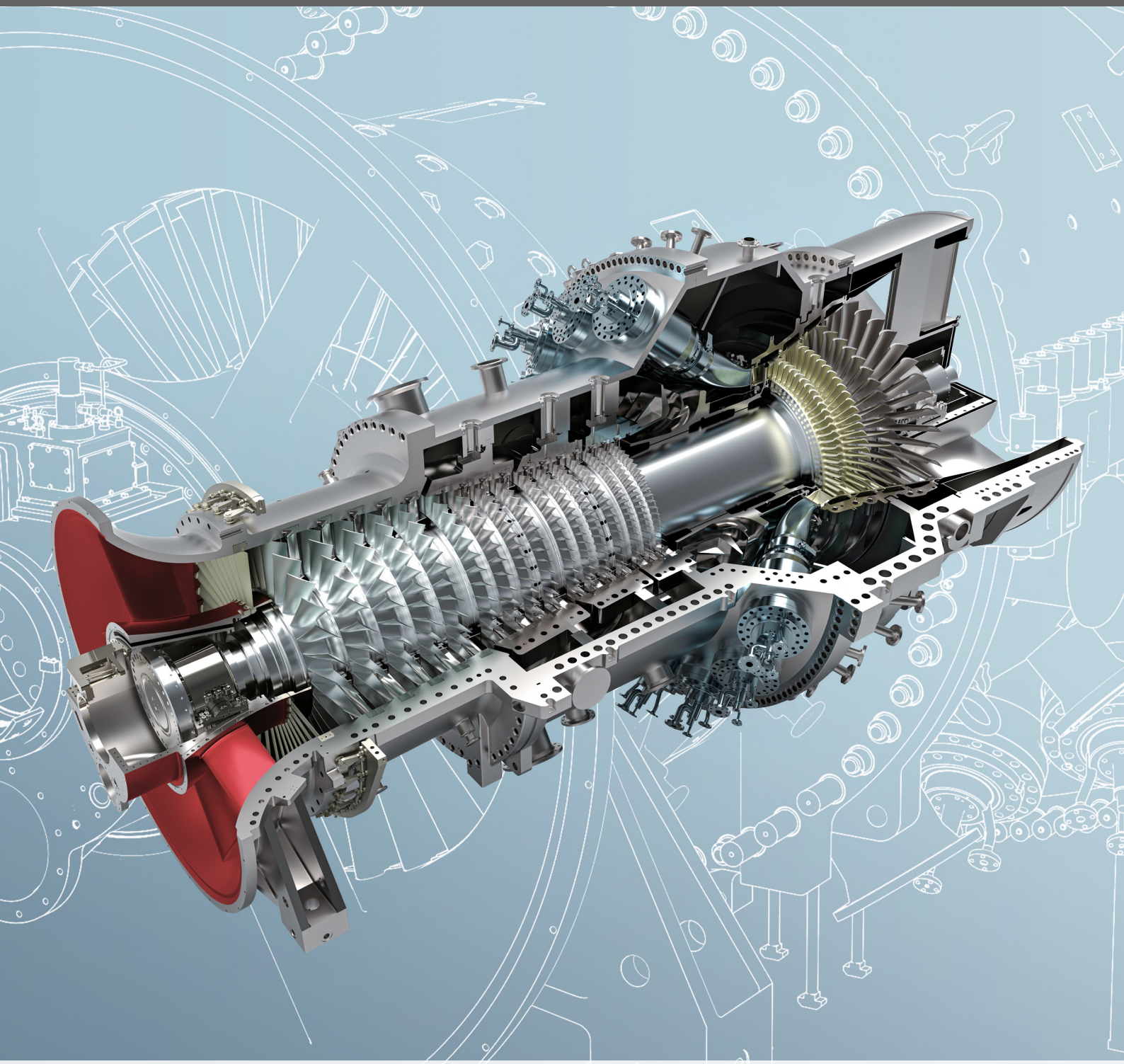


MAPNA GROUP

TUGA

MAPNA Turbine Engineering and Manufacturing Company

# MGT-75(2) GAS TURBINE

## MGT-75 gas turbine

To meet the ever-increasing demand for power, the power generation industry faces the great challenge of increasing plant efficiency. The design and development of MGT-75 F-class gas turbine was initiated in this context to provide higher power output and efficiency by making least possible dimensional variations to MGT-70 E-class model.

To meet varying market demands, TUGA used its extensive experience in manufacturing, developing, selling and servicing other heavy duty and industrial gas turbines to design MGT-75 and therefore extend its portfolio of products. The latest technologies and innovative solutions of F-class machines were used in this design to enhance operability, reliability, and life time while reducing emission levels.

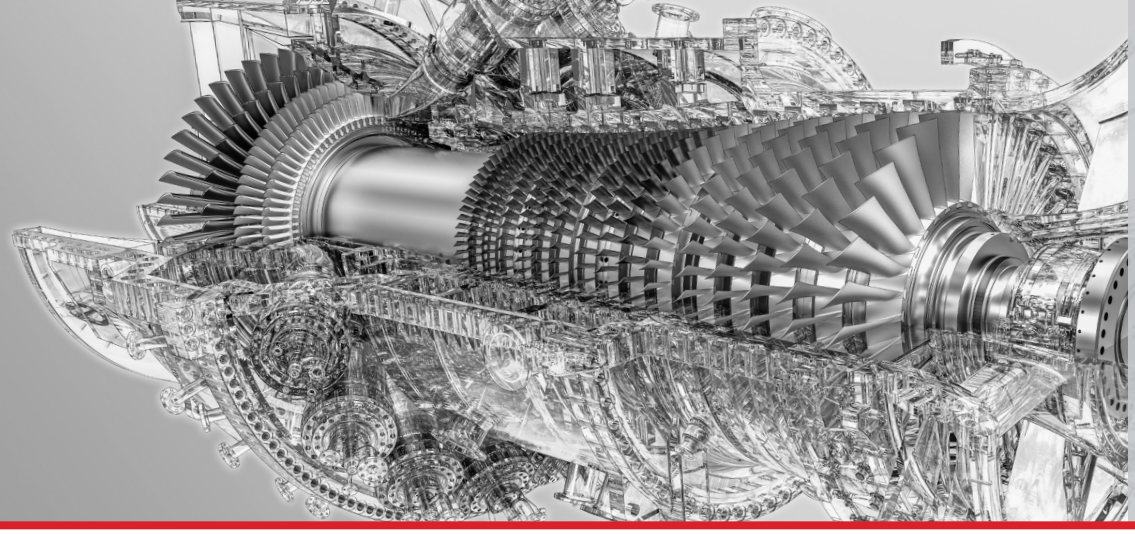
Building upon a proven experience in the design and operation of F-class gas turbines, the MGT-75 enables both single and multi-shaft applications of the machine so as to provide enhanced flexibility for combined-cycle arrangements.

Aligned with low-carbon energy markets, our new gas turbine is capable of operating with a mixture of 40% hydrogen and 60% natural gas contributing to reduced CO2 emissions and greenhouse effects.

## Product Specification

| No. | Parameters | Unit | Value |
|---|---|---|---|
| 1 | Gross Power Output* | MW | 222 |
| 2 | Gross Efficiency* | % | 39.5 |
| 3 | Shaft Speed | rpm | 3000 |
| 4 | Exhaust Gas Temperature | °C | 571 |
| 5 | Exhaust Mass Flow Rate | kg/s | 558 |
| 6 | No. of Compressor Stages | EA | 16 |
| 7 | No. of Turbine Stages | EA | 4 |
| 8 | Pressure Ratio | - | 18 |
| 9 | Type of Combustors | - | Reverse Can-annular |
| 10 | NOx Emissions | ppmvd@15%$O_2$ | 25 |
| 11 | CO Emissions | ppmvd@15%$O_2$ | 10 |
| 12 | Frequency | Hz | 50 |
| 13 | Weight (Core Engine) | tonnes | 233 |
| 14 | Dimensions (Length×Width×Height) | m | 10.3 x 5.1 x 5 |

* Standard ISO Conditions



## Advantages

- 4-stage design of the turbine using advanced cooling techniques as well as materials and coatings that are more resistant to greater heats, leads to higher heat resistance, longer life time, and better performance compared with E-class gas turbines
- Optimal design of gas turbine blades to deliver maximum power with the least amount of cooling air flow rate
- High-performance, 16-stage, axial-flow compressor with three-dimensional blades producing a pressure ratio of 18:1 and delivering more smooth and stable operation of the machine over the entire operating range including start-up, full and partial loads utilizing inlet variable guide vanes
- Advanced methodologies in designing a highly efficient combustion system with 16 individual can-annular combustion chambers leading to reduced NOx and CO emissions
- Single and multi-shaft arrangements providing more operational flexibility in combined-cycle applications
- Green design, running on a fuel containing up to 40% Hydrogen.

## Other Key Features

- Advanced aerodynamic design of all compressor stages minimizing power and efficiency drops in hot desert climates
- Cold-end (compressor side) power transmission contributing to reduced thermal expansion-induced misalignments, eliminating the need to deploy a flexible coupling
- Annular combustion chamber design leading to much more uniform flame temperature as well as gas temperature distribution at the turbine inlet for reduced emissions
- Designed for ease of maintenance, reducing the time required for inspections and major overhauls

**Factory:**
Mapna blvd., Fardis, Karaj,
I.R.Iran
Tel: +98 26 36630010
Fax: +98 26 36612734

**Head Office**
231 Mirdamad Ave., Tehran, I.R. Iran
P.O.Box15875-5643
Tel: +98 21 22908581-3
Fax: +98 21 22908654

www.mapnaturbine.com
info@mapnaturbine.co.ir
Enquiry & Orders:
Enquiry@mapnaturbine.co.ir