REP HOLDING

REP Holding Centrifugal Compressors New Technologies

Integrally-Machined Axial – Radial Impellers

with 3D Blades for Centrifugal Compressors

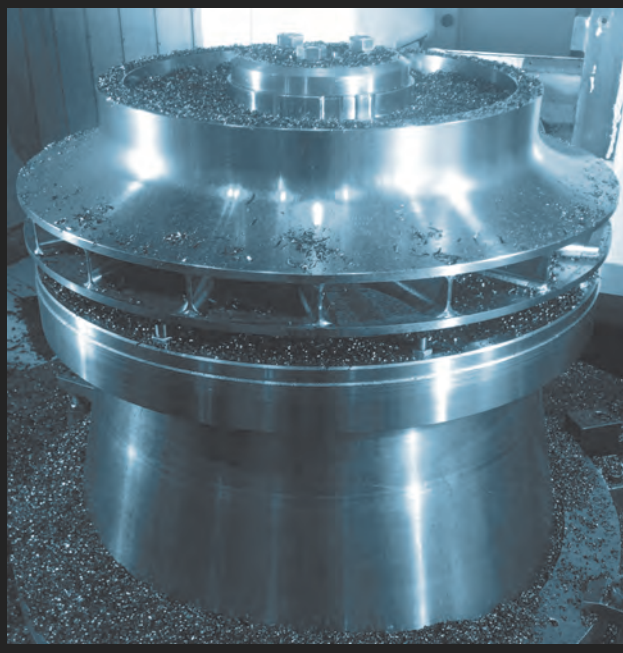
Integrally-machined axial – radial impellers with 3D blades are innovative high-technology flow path elements shaped to significantly increase compressor polytrophic efficiency and reliability. The impellers are produced on a special machining center from a solid stock, with no welding and riveting operations being applied which leads to overall impellers' and compressors' reliability growth. The axial – radial impellers were designed for centrifugal compressors applied on the gas trunk lines and booster compressor stations.

Centrifugal compressor 910-41-1 СМП is the first unit with 3D blade integrally-machined axial – radial impellers developed by REP Holding specialists. The compressor is designed for associated gas compression and transportation. It is applied in assembly with gas-pumping units at gas producing industry booster compressor stations.

Technical characteristics

Value description	UOM	Nominal mode	Additional mode
Capacity referred to 20°C and 0.1013 MPa	MMNCMD	13,0	16,4
Capacity referred to initial conditions	m3/min	910	1015
Final gas pressure, abs., at the discharge branch pipe outlet	MPa	2,058	2,058
Pressure ratio		2,2	1,96
Power consumed by compressor	MW	15,2	18,4
Compressor rotor speed	rpm	5150	5150
Polytropic efficiency, no less than		0,820	0,725

In order to manufacture integrally-machined axial -radial impellers with 3D blades “Nevsky Zavod” re-designed its production lines and purchased the up-to-date turning-and-milling machining center with five-axis machining capability (“OKUMA VTM-YB”). The reduced production cycle time and extended machining accuracy is the current (working) center major advantage.



Main advantages

- Efficiency increase by 5%
- Improved reliability
- Expanded range of capacity and head characteristics
- Reduced mass and overall dimensions of the design
- Reduced operational life

REP Holding is a leading Russian power engineering holding, designer, manufacturer and supplier of new generation power equipment.

The supplied equipment is widely used for upgrading the gas transportation system, in the construction of up-to-date power units and power plants, for small-scale power generation, in the LNG market and in some other industries.

REP Holding incorporates a large industrial enterprise of Saint-Petersburg - Nevskiy Zavod. It provides strong foundation for engineering and production of high quality competitive products. REP Holding also includes its own Engineering Center which carries out R&D activities and innovative development.

Since 2019 REP Holding is incorporated in Gazprom Energoholding Group.

Vast design experience, modern production facilities and in-house R&D base enables REP Holding to develop wide range of new generation compressor equipment with extended field of application in oil & gas, chemical and metallurgical industries, as well as within comprehensive upgrading programs implementation.

The equipment features up to 89% polytrophic efficiency, reliability and improved environmental performance.

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