



Mixed refrigerant centrifugal compressor K905-71-1C

REP Holding designed and manufactured Russia's first ever K905-71-1C centrifugal compressor for refrigerant cycle in 2017. It is being used in natural gas liquefaction process. The compressor includes high-tech flow passage components such as integrally-machined axial-radial impellers with spatial blades. REP Holding was the only company in Russia to master production technology of current components and widely uses them in its novel solutions.

Design features

- Two sections compressor with "barrel" type casing;
- 7 compression stages: 4 – for the first section, 3 – for the second;
- Dry gas dynamic seals;
- Roll-out device, tool set.

K905-71-1C compressor technical characteristics

Parameter	The 1st section	The 2nd section
Volume efficiency, related to 0°C and 0,1013 MPa, ths. nm ³ /h	147,000	134,492
Volume efficiency, related to the initial conditions, m ³ /h	54146	8077
Initial gas pressure (abs.), on the inlet, bar	3,0	17,7
Final gas pressure (abs.), on the exhaust, bar	18,2	51,0
Pressure index	6,067	2,881
Inlet gas temperature, °C	33,0	35,0
Polytropic efficiency, not less than	0,825	0,805
Power, consumed on the turbine coupling, MW	17,230	
Rotor speed, rpm	6200	

The mixed refrigerant compressor was successfully tested at Nevskiy facility and confirmed contractual specifications. REP Holding became Russia's first and world's third manufacturer of this type of compressor equipment. Mixed refrigerant compressor manufacturing for medium-tonnage LNG production mastered by REP Holding will help to create Russian natural gas liquefaction technology, increase a share of local high-tech equipment application in large-capacity plants construction, and reduce the dependence on foreign service programs.

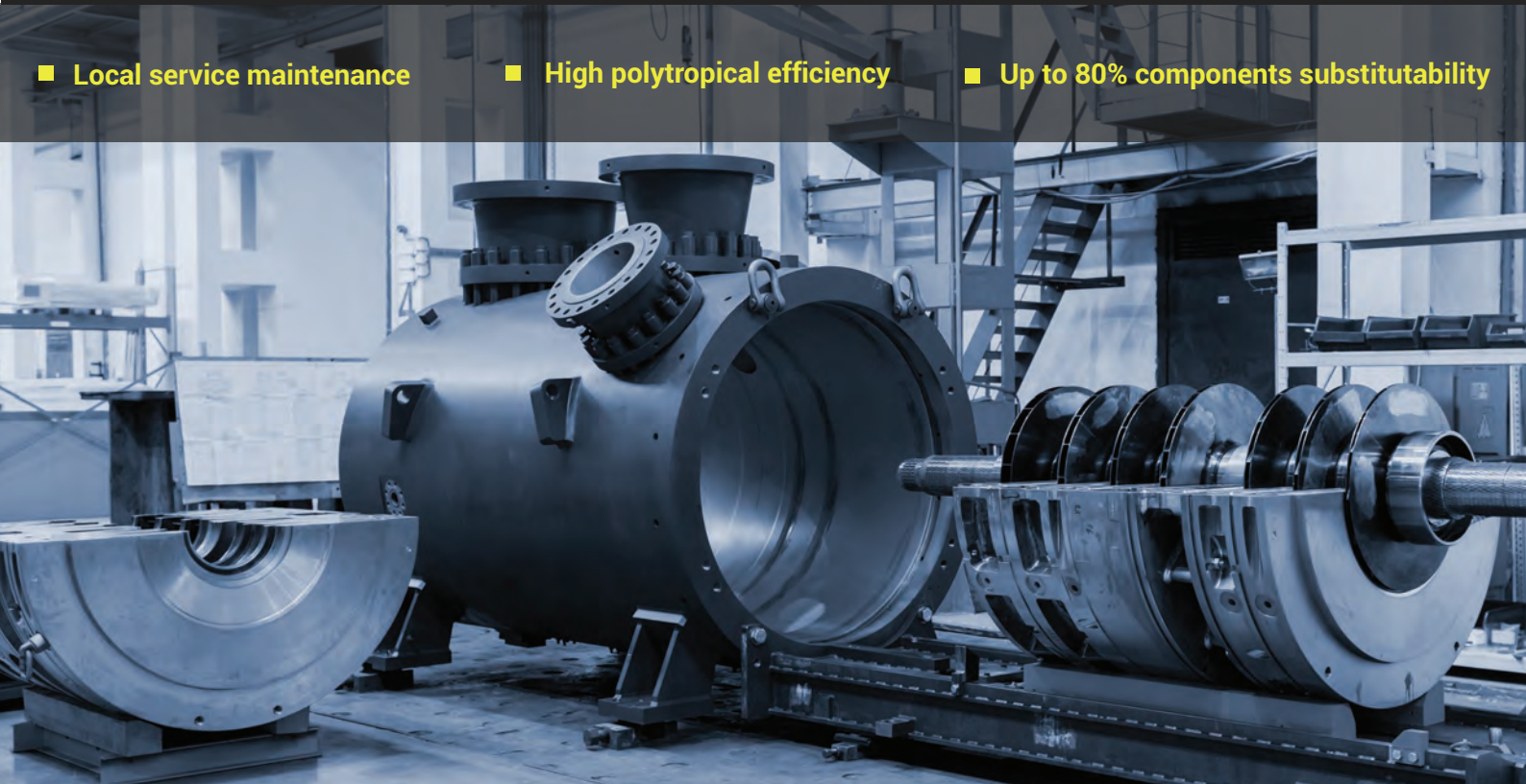
K905-71-1C compressor advantages

- Reduced operational costs and quantity of additional equipment;
- Operational life increase and design reliability improvement by using single piece produced part (weld and riveting free);
- 2-4% stage efficiency increase by 3D flow passage design;
- Standardized assemblies and components;
- Capacity range and pressure load extension;
- Weight and dimension parameters decrease.

■ **Local service maintenance**

■ **High polytropical efficiency**

■ **Up to 80% components substitutability**



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.

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