

RIKT 71

Isothermal Turbocompressor

Engineering the Future – since 1758.

MAN Diesel & Turbo



RIKT 71 – Isothermal Turbocompressor

MAN's RIKT isothermal turbocompressor family has a new member: the RIKT 71.

In 2001, MAN introduced the RIKT to the market and many clients soon recognized the high efficiency and reliability of the unique design. With the RIKT 71, the advantages of our inline, isothermal design are now available for flow rates between 95,000 and 165,000 m³/h.

Your Application

- Plant air
- Air separation industry
- Fertilizer industry
- Nitric acid
- Enhanced oil recovery
- Compressed air energy storage
- Liquid air energy storage
- All industries in which large volumes of air are needed

Our Solution

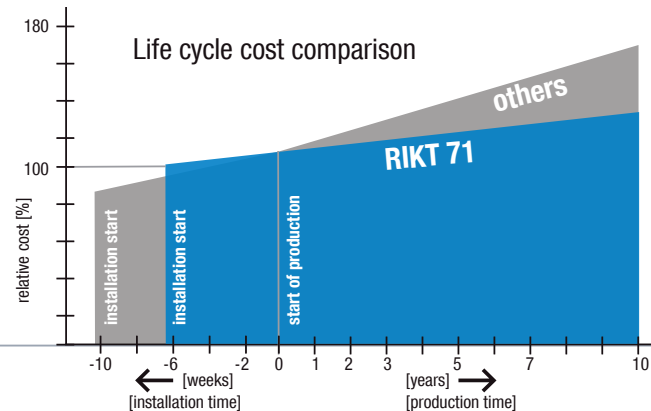
The RIKT 71 is based on the proven RIKT series of which 200 units have already been sold with a track record of over 3 million operating hours. The latest technology (RIKT 2nd generation) is used for all components. The RIKT 71 uses pre-engineered modules that are configured to match client's requirements. Several standard rotors cover the flow and pressure range and are combined with optimized coolers and stator parts. Auxiliary components and instrumentation are selected for maximum availability and various customizing options are available.

Features

- Skid-mounted, single-lift unit for quick and easy installation
- Unique inline, isothermal design, referenced over 1400 times
- Standardized rotors with referenced impellers: excellent performance predictability and possibility to exchange rotors
- All 3D RIKT 2nd-generation impellers for maximum efficiency and wide operating range
- Inline shaft with robust mechanical running behavior
- No external intercoolers or piping
- Long overhaul intervals
- Simple and easy maintenance
- Bearing inspection and maintenance without opening of casing
- Rotor disassembly not required for regular maintenance
- Compact design and small footprint



Advantages



Easy to maintain

The unique design allows for long overhaul intervals and reduces maintenance time and costs. All components are easy to maintain. The bearings are accessible through a man-hole, without removing the top half of the casing. The coolers can be easily lifted through the top covers. The inlet guide vanes have maintenance-free bearings and sliders. An optional impeller on-line washing system is available to ensure long-term efficient operation. There are no wearing parts requiring regular replacement.



Reliable

With only one moving part, this machine is very robust and ensures long-term efficient operation. The small number of moving parts result in a safer, more reliable compressor with less downtime and less maintenance as compared to standard multi-shaft compressors. The rotor is heavy, and thus insensitive to imbalance due to accumulated fouling. The rotor is dynamically balanced to ensure low vibration. Each impeller must pass a 15% overspeed test. In addition, each open impeller must pass a ring test to ensure resonance-free operation.



Low total cost of ownership

Over time, the energy required to power a compressor system is the largest operating cost. However, to evaluate the return on investment over the entire life cycle, the initial investment, energy consumption and maintenance must be considered. MAN isothermal compressors have a lower total life cost of ownership than other models. Due to their unique design, long-term efficient operation is ensured. And with low wear and tear, the maintenance intervals are long, with short downtimes. Many of our compressors have run for 40 or more years to our customers' full satisfaction!



Minimized footprint

Since no external coolers are needed, the footprint of this unit is minimized compared to other standard multi-shaft compressors.



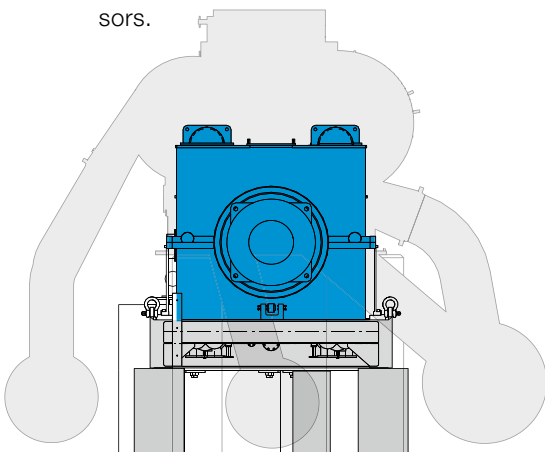
Efficient

The concept behind this machine focuses on achieving the highest possible levels of efficiency. Each component is designed in line with this aim and is coordinated to an optimized compression system. The 3-dimensional, backward leaning impellers combine maximum efficiency with a wide operating range. The integrated coolers are optimized to maximize heat transfer with minimum pressure loss.



Easy handling and installation

The compact machine comes completely packaged, together with gearbox and oil system. The skid with fully mounted machine is designed for land transportation by truck. Due to the single-lift skid design with integrated coolers, the installation time is minimized. Furthermore, no field welding of process piping is required.



Basic Scope of Supply

Compressor

Single-shaft compressor with 3 impellers and 2 integrated intercoolers

Coolers

Two pairs of extended surface, water in tubes plate fin intercooler bundles with condensate separators

Coupling

Two flexible disc type couplings with guards

Casing

Horizontally-split, welded casing, with cast inlet and outlet section

Gear

Double helical gear including a shaft-driven main oil pump

Rotor

Single-shaft rotor with 3 impellers

Bearings

Tilting pad journal bearings and combined journal and thrust bearing on the suction side

Driver

Synchronous or asynchronous motor supplied by purchaser

Instrumentation

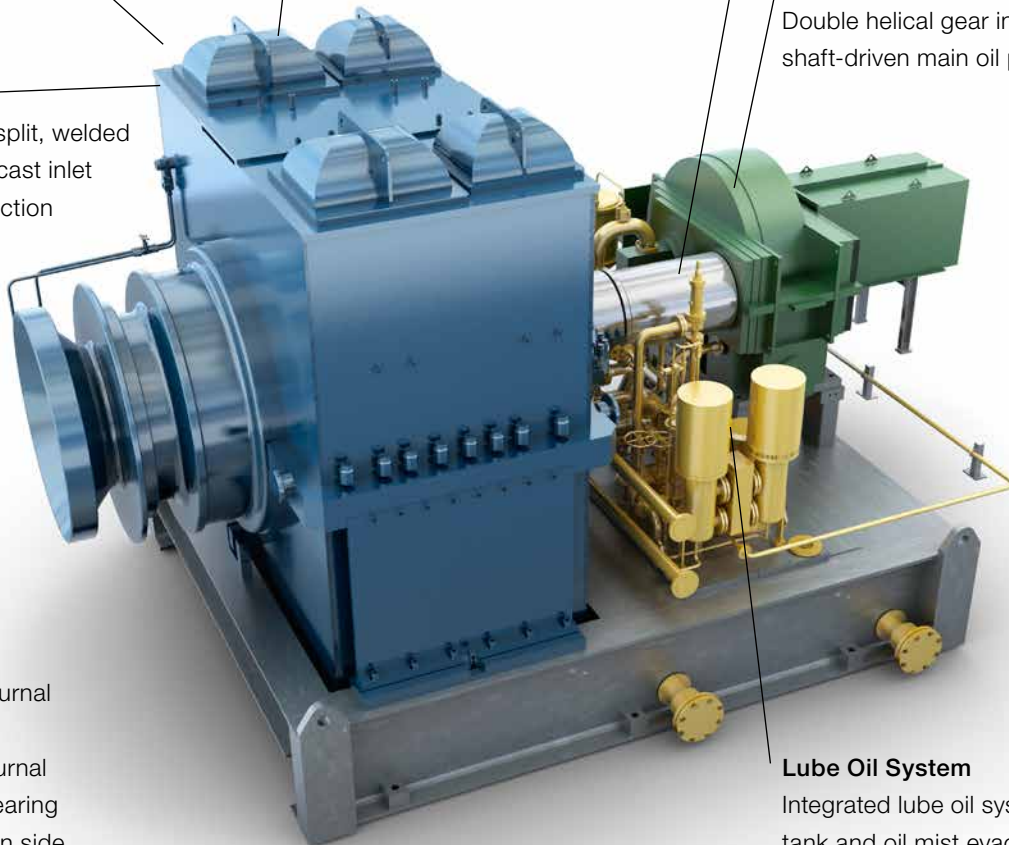
Single RTDs for all bearings and casing vibration measurements

Lube Oil System

Integrated lube oil system with CS oil tank and oil mist evacuation fan, single plate heat exchanger and complete piping

Options and accessories

Upgrade packages for instrumentation, process piping, auxiliary piping, lube oil system and coolers are available.

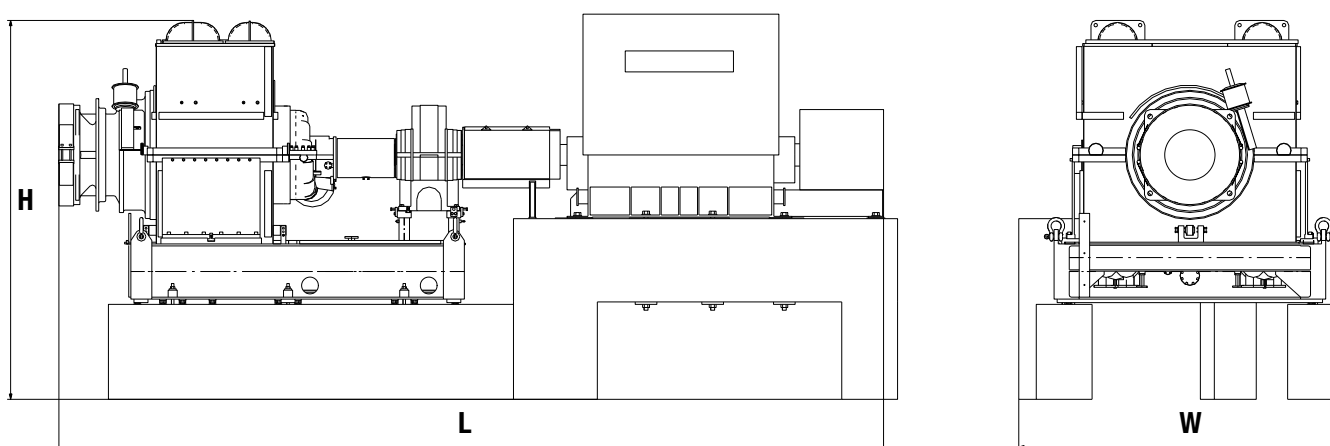


Technical Specifications

Component/Type	RIKT 71 Inline	Standard Multishaft
Rotating parts	1	many
Bearings	2	6
Shaft seals	2	6
Coolers	integrated	external
Interstage process piping	no	yes
Single-lift unit	yes	no
Footprint	Up to 40% less due to integrated coolers	Standard due to external coolers

50/60Hz	Working Pressure				Effective Flow Rate				Installed Motor Power			
	bara		psi		m ³ /h		cfm		MW		hp	
	min	max	min	max	min	max	min	max	min	max	min	max
RIKT 71	5	7.5	70	110	95,000	165,000	55,000	100,000	6	12	8,000	16,000

Size & weight



RIKT 71	Dimensions						Single-Lift Weight	
	m			in			kg	lbs
	L	W	H	L	W	H		
Overall installation (approx.)	11.9	4.6	5.5	467	183	217		
Compressor skid	5.67	3.89	3.99	223	153	157	55,000	120,000
Maintenance (approx.)			8.9			350	18,000	40,000

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