

Low-Emissions Compressor Rod Packing

Cook Low-Emissions rod packing provides the enhanced sealing capabilities of gapless rings in a cool-running packing assembly that lasts longer and improves efficiency.

SOLID SEALING

The patented, gapless design of Low-Emissions packing eliminates leak paths, sealing more effectively and reducing fugitive emissions below measurable limits. This helps operators comply with EPA requirements (GHG Reporting rule: Subpart W, 40 CFR Part 98) and boosts profitability by retaining valuable gas that would otherwise be lost through the vent.

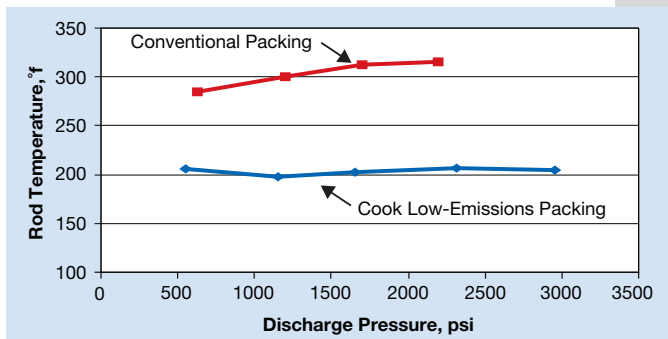
LONGER LASTING

Cook Low-Emissions packing lasts longer than conventional packing because it runs cooler and decreases opportunities for wear.

Reduces Points of Contact. Gapless rings seal more effectively than ordinary segmented rings. Compared to conventional packing, fewer cups are required and there are fewer rings per cup. This reduces the total number of rings and grooves in contact with the compressor rod, decreasing frictional heating.

Loads Sequentially. Each ring in a Low-Emissions set loads sequentially during suction and discharge cycles, limiting the amount of time any single ring is in contact with the rod and further decreasing temperatures and wear.

Unloads Other Rings. With Low-Emissions packing, only one groove of seal rings is required to create a seal. This relieves gas pressure to other cups in the assembly, which prevents their rings from loading and eliminates wear. Only rings secured with garter springs remain in contact with the rod, but their load is significantly less than loading by gas forces.



Comparison of rod temperatures with conventional packing and Cook Low-Emissions packing

ADVANTAGES

- Extends packing operating life
- Improves emissions compliance
- Decreases maintenance costs
- Reduces downtime
- Increases unit efficiency
- Retains valuable gas

HOW IT WORKS

A Low-Emissions ring set consists of either a BT (radial and butt tangent) or C (radial and true tangent) pair, plus two backup rings (uncut or gapless radial). The design of the compressor rod determines whether radially cut or uncut backup rings are used.

The entire ring set is single acting, allowing gas to flow out of the cup on the suction stroke. Each ring in the assembly is engineered to load at a different pressure.

Low. At low gas pressures, the BT or C ring pair loads and seals. The backup rings remain unloaded and do not contact the rod.

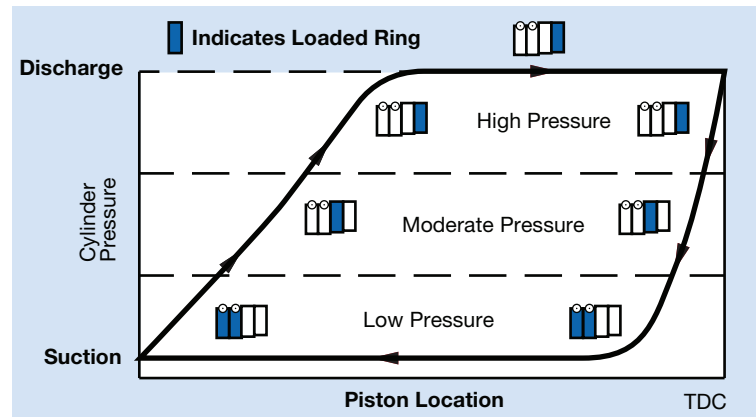
Moderate. As pressure increases to more moderate levels, the first backup ring loads and seals. This unloads gas pressure from the BT or C ring pair so that only the force of the garter spring loads it against the rod.

High. At higher pressures, the second backup ring loads and seals. This unloads the first backup ring, which does not contact the rod, while the BT or C ring pair loads only with garter spring force.

Moderate. As pressure decreases to moderate levels, the first backup ring loads and seals, which unloads the second backup ring.

Low. As pressure decreases to low levels, the BT or C ring pair loads and seals due to gas pressure and the first backup ring unloads.

SEQUENTIAL LOADING



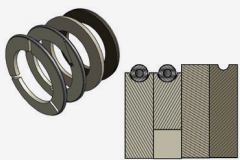
EFFICIENCY & MAINTENANCE SAVINGS

Cook Low-Emissions packing increases machine and overall unit performance by improving sealing efficiency and extending run times. Longer packing life decreases routine maintenance expenses associated with component replacement and labor. Reconditioning costs during overhauls are also lower because Cook Low-Emissions packing requires fewer cups and rings for each assembly.

FEWER RINGS REQUIRED		
	Conventional Ring Set	Cook Low-Emissions Ring Set
2000 (+) psi	5-7 rings	4-5 rings
800-2000 psi	4-6 rings	3-4 rings
300-800 psi	3-5 rings	3-4 rings
Below 300 psi	2-4 rings	2-3 rings

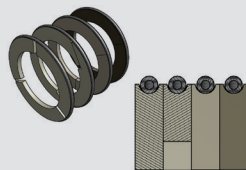
BTUU

- Radial ring, butt tangent ring, and two uncut backup rings



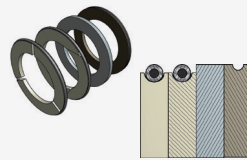
BTRR

- Radial ring, butt tangent ring, and two gapless radial backup rings



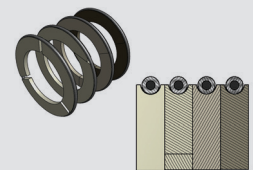
CUU

- Radial ring, true tangent ring, and two uncut backup rings



CRR

- Radial ring, true tangent ring, and two gapless radial backup rings



Low-Emissions rod ring styles