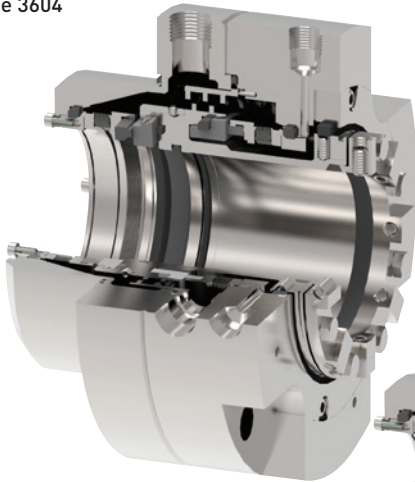


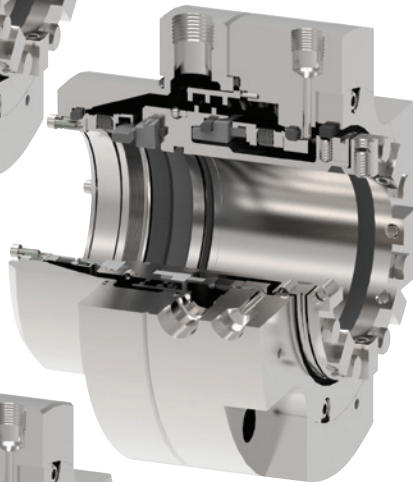
TYPE 3604, 3604HTC AND 3604HTCDP

METAL BELLOWS SEAL

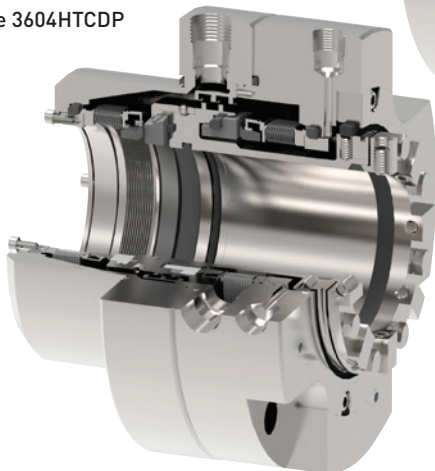
Type 3604



Type 3604HTC



Type 3604HTCDP



DESIGN BENEFITS

- Proven performance
API 682 qualified
- HTC technology for superior
face stability
- Withstands full reverse
pressurization
- Incorporates dual scroll pumping
device for maximum flow
- Double-ply bellows for higher
pressure applications

PRODUCT DESCRIPTION

■ ■ ■ ■ The Type 3604/3604HTC/3604HTCDP dual pressurized, stationary API 682 Type C, Arrangement 3 cartridge seals provide a reliable means of sealing fluids in harsh high temperature corrosive environments.

The Types 3604HTC and 3604HTCDP incorporate John Cranes patented HTC technology which provides exceptional seal face stability at elevated temperatures. The seals are normally supported with API Plan 53 (A, B, C) or can be provided in an alternate non-internal circulation device arrangement used with API Plan 54.



Your Name
Is How We Make Ours

TYPE 3604, 3604HTC AND 3604HTCDP

METAL BELLOWS SEAL

HTC Technology and Excellent Corrosion Resistance

The HTC seals provide an effective solution in sealing corrosive fluids at elevated temperatures by using a unique all-Inconel® face seal technology that provides exceptional stability across a wide range of pressure/temperature conditions. The HTC has proven to be a superior design for high temperature corrosive applications up to 800°F /425°C and is ideally suited for applications that contain organic acids (naphthenic acids) or sulfur compounds that attack most other alloys in aggressive, hot, sour crude environments.

Full Reverse Pressure Containment Capability

This inherently safe design provides process fluid containment safety against system upsets and/or loss of barrier fluid pressure on dual seal systems.

Double-ply Technology

John Crane double-ply bellows available in the Type 3604HTCDP utilizes a laminated double-ply construction that greatly improves strength and pressure carrying capability with a relatively low spring rate. This double-ply construction is combined with our effective nesting ripple plate shape and 45° tilt angle capable of sealing higher pressure applications.

Dual Scroll Pumping Device

An optimized dual scroll pumping device delivers significantly more flow over single scroll and other pumping devices, especially in high temperature applications with high heat loads or low shaft speeds. This dual scroll pumping device with tapered-bore-inner-gland improves seal performance by removing more heat, so extending the life of barrier fluids, and reducing the bulk temperature thus reducing coking of hot hydrocarbons. Additionally, it can provide effective cooling in large shaft, slower speed equipment.

Stationary Design

The Type 3604/3604HTC/3604HTC cartridge seals have a stationary design that accommodates any high shaft-to-seal chamber misalignment and higher shaft speeds.

Performance Capabilities

Temperature	Pressure	Speed
-100° to 800°F/-75° to 425°C	Single-ply: Vacuum to 300 psig/20 barg Double-ply: Vacuum to 600 psig/42 barg <i>(Consult basic pressure rating curves. Consult John Crane Engineering for maximum double-ply pressure rating for your application).</i>	Up to 10,000 fpm/50 ms ⁻¹

Together, we will work with you to keep your mission-critical operations up and running with support and guidance from our experienced team.

Consult John Crane Engineering for your specific seal selection.



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Middle East & Africa

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Fax: 971-488-62830

Asia Pacific

Singapore
Tel: 65-6518-1800
Fax: 65-6518-1803

If the products featured will be used in a potentially dangerous and/or hazardous process, your John Crane representative should be consulted prior to their selection and use. In the interest of continuous development, John Crane Companies reserve the right to alter designs and specifications without prior notice. It is dangerous to smoke while handling products made from PTFE. Old and new PTFE products must not be incinerated. ISO 9001 and ISO 14001 Certified, details available on request.