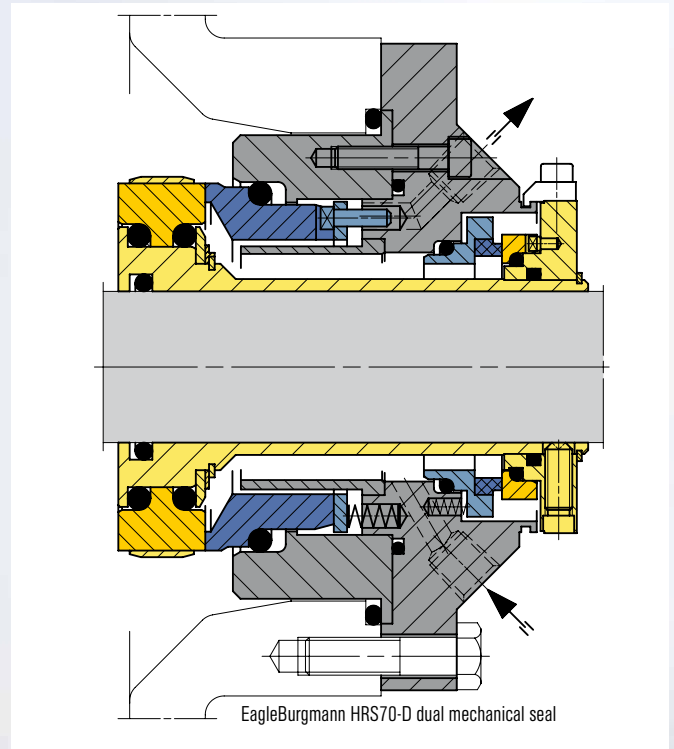


# HRS Seals in nickel and cobalt production



Minara Resources runs one of the largest nickel and cobalt refineries in Australia. The company markets refined nickel and cobalt, plus enriched sulphides, all around the world. The site is located at Murrin Murrin, some 900 km north-east of Perth. The raw materials are extracted from the ore using sulphuric acid (HPAL process).

## Operating conditions

Pressure  $p_1 = \dots 25 \text{ bar (363 PSI)}$   
Temperature  $t_1 = \dots 180 \text{ °C (356 °F)}$   
Sliding velocity:  $n = \dots 2,800 \text{ min}^{-1}$   
Chemical resistance:  $\text{pH} = 1 \dots 2$   
Relative density:  $\text{SG} = 1.3 \text{ g/cm}^3$

Most of these applications are based on dual mechanical seals. They are pressurized by a central buffer pressure system. Both demineralized water in one section and clean process water for the rest of the plant is used as buffer medium (ring main).

## Successful seal design

Over 140 slurry pumps are applied and extremely high demands are placed on them. For these, EagleBurgmann, in coordination with the pump manufacturer, developed a special type HRS70 and HRS70-D mechanical seal specifically for this application. It is primarily applied as a double seal and only rarely in a single arrangement. The basic type of this seal design has already been used successfully in large numbers in similar special applications.



## EagleBurgmann takes over service

All the slurry pumps were equipped with EagleBurgmann mechanical seals, so it was entirely logical for Minara to send all their seals to EagleBurgmann for service and repair. For 11 years we have turned over every seal within 14 days due to large stock holdings in the Western Australian service center.