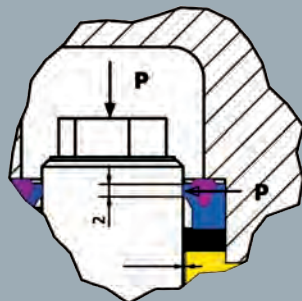
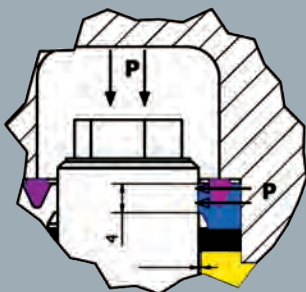


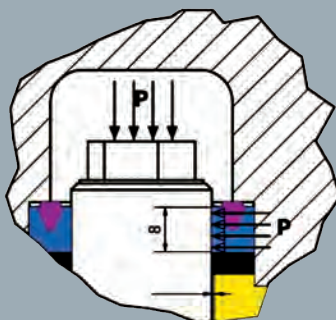
Low pressure



Medium pressure



Maximum pressure



INTELLiseal™

Three key-points for an intelligent packing sealing system

- 1 Perfect centering between piston and seal
- 2 No contact between metal-ceramic
- 3 Front Gland
- 4 Draining
- 5 Back Gland
- 6 High Pressure Seal Expandable covered with anti-friction (MoS2)
- 7 Extra thick self-lubricating anti-extrusion ring
- 8 Low Pressure Seal covered with anti-friction (MoS2) and lower tension
- 9 High Pressure Thrust Ring
- 10 Low pressure thrust ring
- 11 Piston Al₂O₃ 99%

1. High Pressure Seal

It is made from a special mixture which allows expansion, depending on the amount of pressure applied. The strength of tension progressively increases, but always maintaining the optimal value of contact pressure between the seal and the piston.

Friction is always reduced to the minimum assuring a perfect hold, in any condition for a longer period of time. The self-lubricating material which covers the seal continuously lubricates the piston, thus forming a film that increases smoothness.

2. Anti-extrusion ring

Made of PTFE and Graphite, it is thicker than normal. Thanks to its superior self-lubricating properties, it is a precise match for the piston, sliding on it without any friction, thus assuring a perfect centering to the seals. Its ability to never lose form provides an excellent support to the seal, and allows an increase in play between the piston and gland, therefore avoiding, in any condition, direct contact metal-ceramic.

3. Low Pressure Seal

Specifically designed to always work in low pressure, it has lower tension in order to reduce to the minimum friction with the piston. It is made from a special mixture containing self-lubricating materials, and covered with MoS₂ to increase lubrication of the piston.

EASYlube™

- The special oil used on shipment **SynPower Gear oil 75W-90**, thanks to its exclusive formulation and the additives, deposits a soft anti-wear film, perfectly adherent to the lubricated parts for the rest of their life.
- The detergent substances contained by the oil remove and suspend all the residues that form during the break-in period and the first few hours of pump function.
- After 50-100 hours of operation, it is sufficient to change the oil only once with a regular transmission oil **75W90** to assure an efficient lubrication for the rest of that pump's life.

LifeTimerod™

Stainless steel martensitic pistons, quenched, tempered and case hardened; polished with very high strength, without fear of wear for the rest of the pump's life.

BERTOLINI
pumps

LowStressthread™



Introduced by Idromeccanica Bertolini since 2002 this innovative design of the Valve Caps eliminates the presence of water under pressure within the threads.

Regular Valve Caps

- Pressure in the thread grooves
- Risk of loosening during operation
- High Torque in tightening
- Use of Loctite - Risk of damage during removal
- High stress on the threads
- Low security efficiency with the risk of head cracks

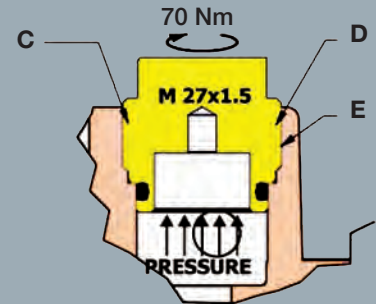
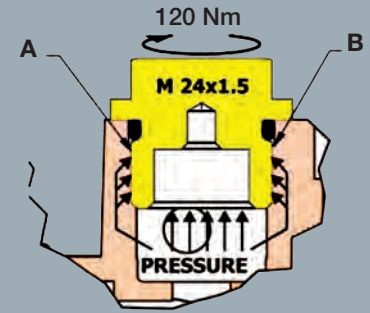
LowStressthread™

- No pressure on thread grooves
- No risk of loosening during operation
- Torque reduced by 40%
- Easy to remove without risk of damage
- Stress on threads reduced by 60%
- High security efficiency without the risk of head cracks

- A Loctite
- B High fatigue stress
- C No Loctite
- D No pressure
- E Low fatigue stress

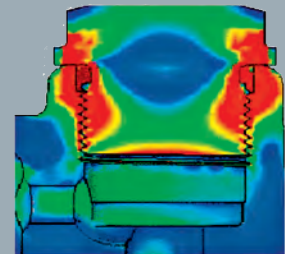
*FEM analysis results

**Regular valve caps

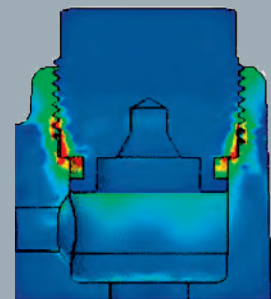


Risultati dell'analisi *
agli elementi finiti

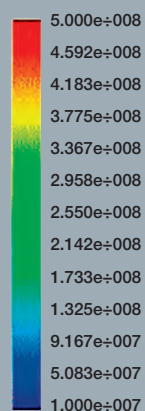
Normali tappi valvola **



LowStressthread™



von Mises (N/m²)



SuperCoolingSystem™

The pump series RA-RB are equipped with an exclusive and patented inlet water feeding system.

The breathing channel, built in the crankcase, strongly cools the oil contained, with the inlet water feed.

Another benefit is derived from the fact that the Low-Pressure Seals, being always in contact with the inlet water feed, are constantly being lubricated and cooled, giving them a duration increase by 50% higher than a seal working dry.

CorrosionFree™

The INOX series heads are constructed in stainless steel AISI 316, which is a Stainless Steel, and it's the one that guarantees maximum resistance to corrosion.

- The AISI 316 valve caps are constructed according to the exclusive label **LowStressthread™** it eliminates internal pressure within the threads and the possibility of any problems during operation.
- Screws and bolts in stainless steel AISI 316.
- High Pressure Seals (TAM) with intermediate ring in AISI 316, retainer in AISI 316 and anti-extrusion ring in PTFE.
- Rapid action check valves with spring, poppet and seat made of 316 stainless steel.

SmartCase™

The pump crankcase is constructed of an anti-corrosion light alloy, with a great mechanical resistance and high thermal conductivity efficiency. This, also thanks to the design with pronounced fins, disperses the exterior the heat generated by the pump, thus contributing to keeping the temperature low.

The workmanship done with diamond tools hardens the surface of the piston guides, making them extremely smooth and slick.