

**Heavy Duty
Process Pumps
BB2 Type**

KSMK

**API 610 10th ed.
ISO 13709**



Marelli Pumps:

More than 40 years of experience in centrifugal pumps design, development, manufacturing and servicing to comply the latest standards for petrol, petrochemical process and heavy duty processing industries, as full compliance machinery.

Applications

Marelli Pumps, based onto its high skilled experience, has developed tailor made solutions, matching the most exigent customer specifications regarding all heavy industries as:

- Refineries
- Petrochemical
- Oil and gas pipelines
- Off-shore and on-shore installations for petrol and gas
- Reverse osmosis
- Sump salted water injection
- Synfuels
- Heavy-duty industry applications
- Other intensive services and systems, where it is demanded high reliability and efficiency.

Design

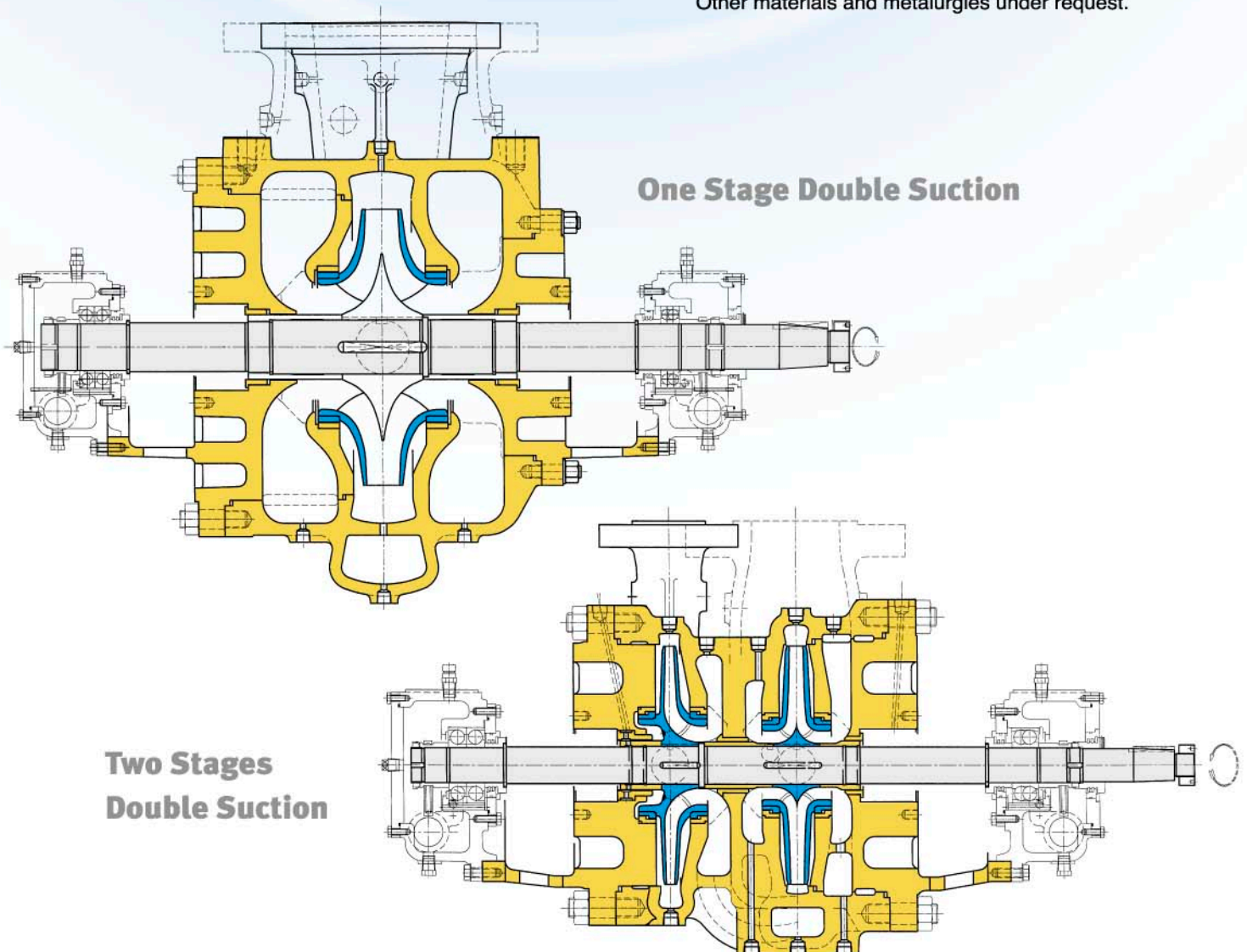
Marelli's KSMK pumps series are horizontal radially split one and two stages between bearings, centreline mounted, double volute centrifugal pumps. KSMK BB2 pumps fully comply API 610 10th edition/ISO 13709.

Operating data

- Capacities: up to 3000 m³/h (50 Hz)
- Heads: up to 550 meters (50 Hz)
- Temperatures: -150 °C to 450 °C
- Pressures: up to 80 bars
- Rotational speed: up to 4000 rpm

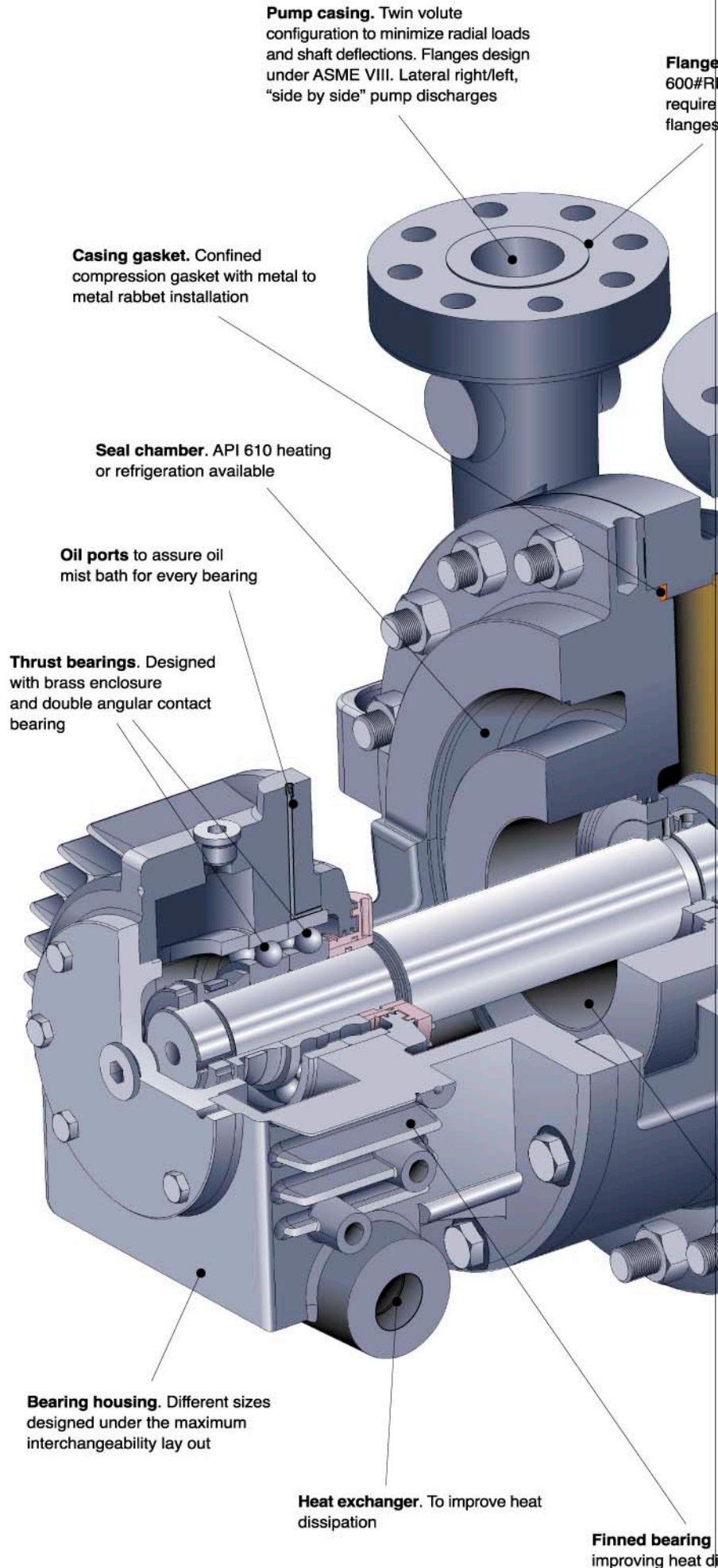
Materials

According to H1 - API 610 10th Edition.
Other materials and metalurgies under request.



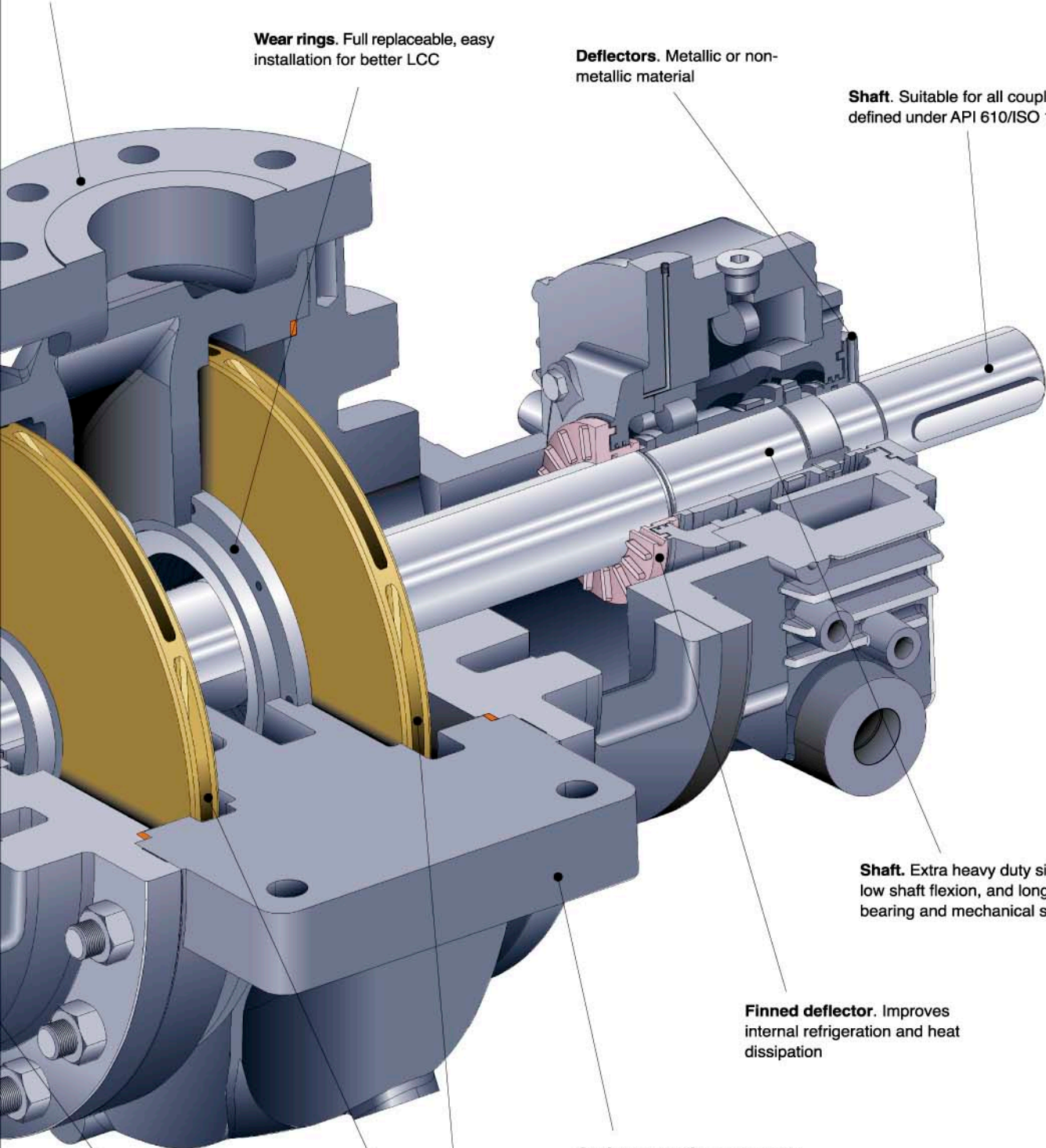
Standard features

- ❑ API 610 10th Edition/ISO 13709 **full compliance**.
- ❑ All pumps within KSMK family suitable to work at **50 Hz and 60 Hz**. (*see performance coverage attached*).
- ❑ Choice of **multiple impellers** in each hydraulic pump casing for maximum efficiency over a wide operating range.
- ❑ Centreline mounted. **Maximum stability** working at **high temperature** conditions.
- ❑ **Low Nss and low NPSHr**, based onto a wide choice of impellers for optimum efficiency over a big operating range.
- ❑ **Finned bearing housing** to perform maximum heat dissipation under API 610 compliance.
- ❑ Deflection system with fins to **improve refrigeration**.
- ❑ **Labyrinth deflector**, to avoid all kind of external contamination.
- ❑ High maintainable wear rings lay out design for cheapest, easiest substitution, then to **improve life cycle cost** of KSMK pump type.
- ❑ Mechanical seals chambers suitable for cartridges defined under **API 682 3rd Edition**. Also meeting API 610 standards.
- ❑ **Socket welded flanges** drains and venting as standard, also available gussets and bracing.
- ❑ A variety of instrumentation plugs is available for easiest installation on site. **Ready to fit** devices for monitoring all kind of operation conditions (temperature, pressure, vibrations, etc).



Two Stages Single Suction

ANSI B16.5 300#RF, 600#RF & 900#RF and their serrations. Also available ASME/DIN/ISO/JIS



Wear rings. Full replaceable, easy installation for better LCC

Deflectors. Metallic or non-metallic material

Shaft. Suitable for all couplings defined under API 610/ISO 13709

Shaft. Extra heavy duty sizing for low shaft flexion, and long life for bearing and mechanical seals

Finned deflector. Improves internal refrigeration and heat dissipation

Casing centreline to meet API 610/ISO 13709 nozzle loads. Highest mechanical stability

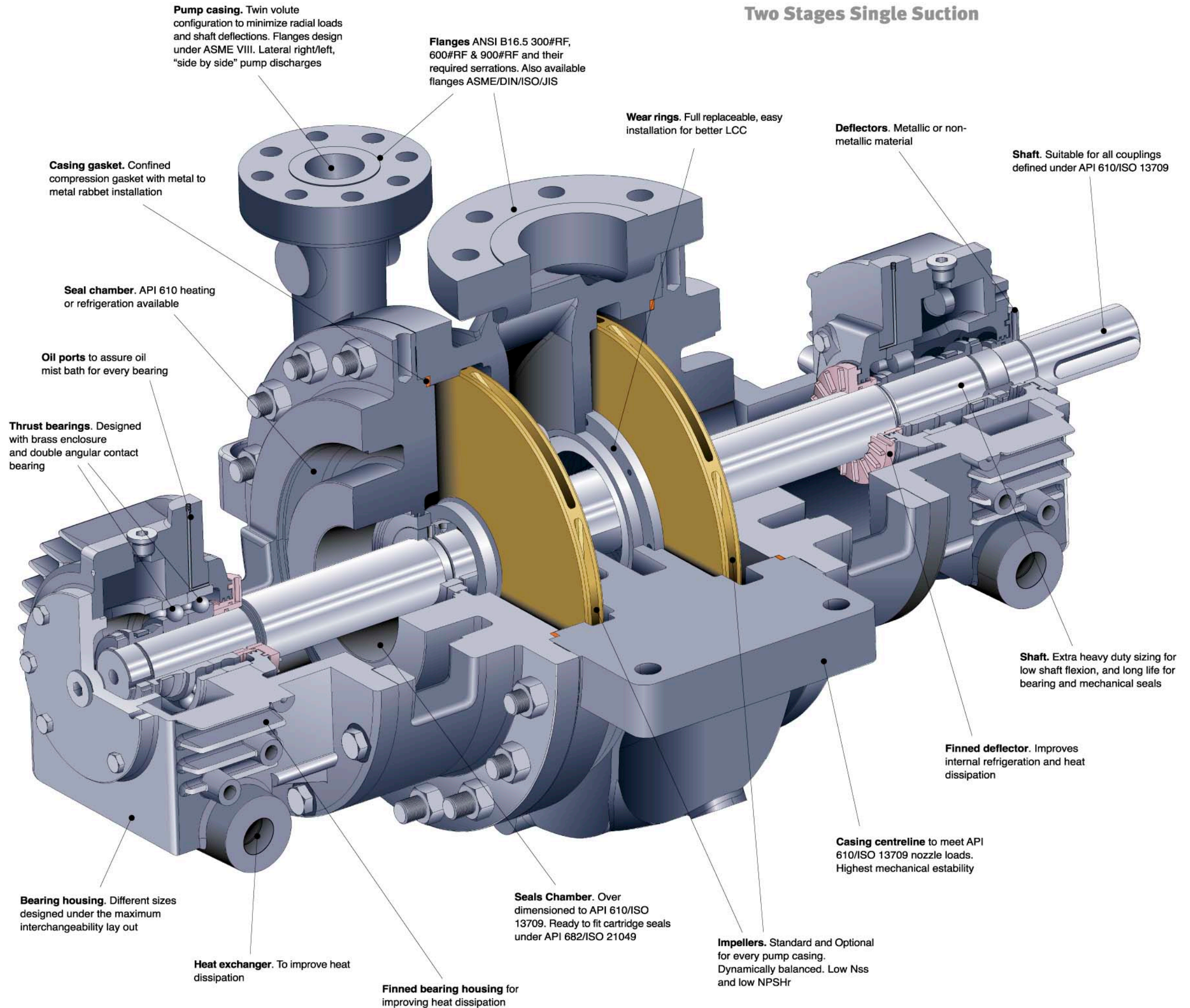
Seals Chamber. Over dimensioned to API 610/ISO 13709. Ready to fit cartridge seals under API 682/ISO 21049

Impellers. Standard and Optional for every pump casing. Dynamically balanced. Low Nss and low NPSHr

housing for dissipation

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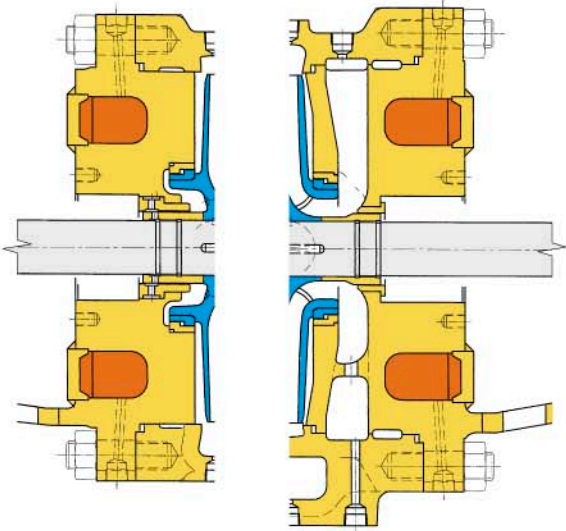
Two Stages Single Suction

Optional features

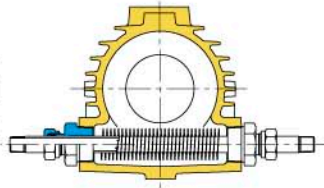
Marelli provides a **KSMK** pump series with an open range of customized improvements, matching the highest heavy duty level of performances, comprising solutions for every demand.

For High temperature

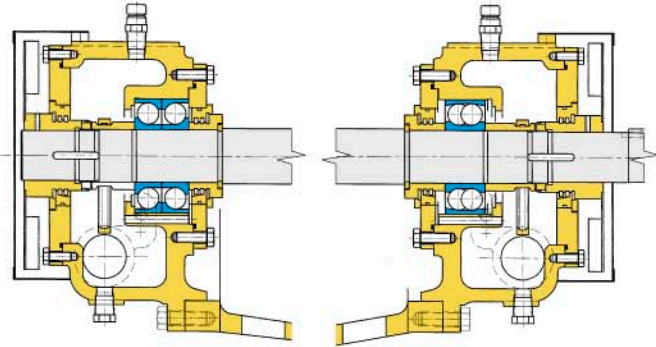
- Refrigerated mechanical seal chamber.



- External refrigeration for bearing housing with finned heat exchanger fed with inert fluid and / or water.



- Convection venting for bearing housing with a low noise fan placed at rear in coupling side.



For Lubrication system

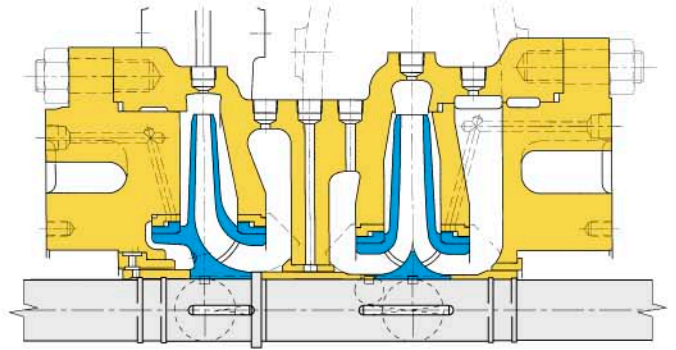
- Purge ports with drainage valve. Test gauges for conditions analysis.
- Oil mist lubrication system with purge ports are outboard for assuring mist flow through each bearing.

For High suction pressure

- Heavy duty designs of bearing housings for high intake pressure applications.
- Mechanical seals defined under particular performances matching high grade requirements.
- Pump casing and seal chamber dimensioned adequately to high suction pressure.
- Available special bearings solutions like tilting-pad thrust bearing (Kingsbury® type)

For Coking services

- Backwash system for wear rings and neck bush.



- Specific coke crusher under customer demand.

Base plates

- Pre-grouted and non-grouted for all kind of driver.
- Special larger bases design to match oversize drivers, pumps and turbines. Also special design for extra mechanical stress situations.
- Tailor made base plates for off-shore applications.
- Skid mounting type available.

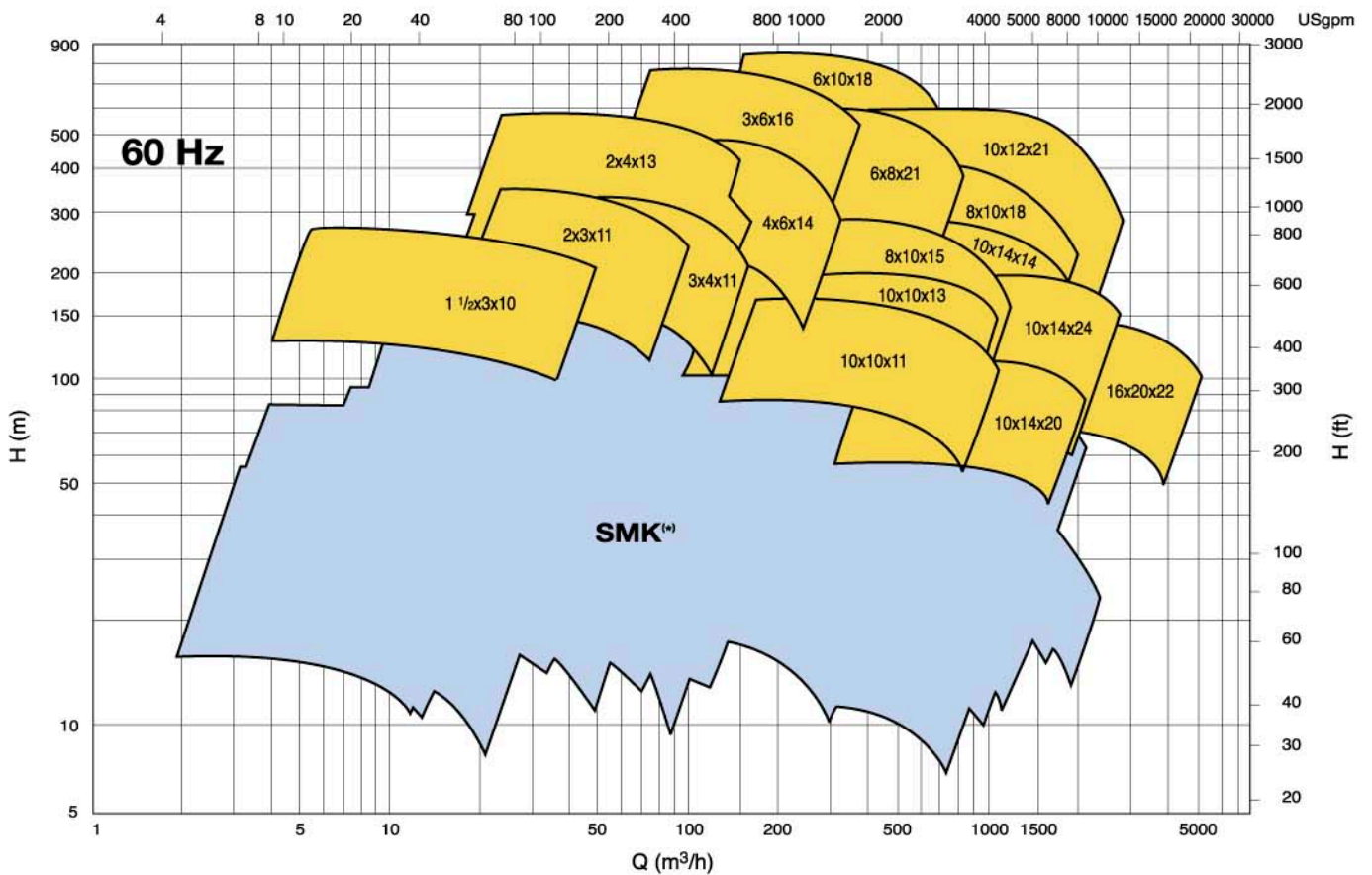
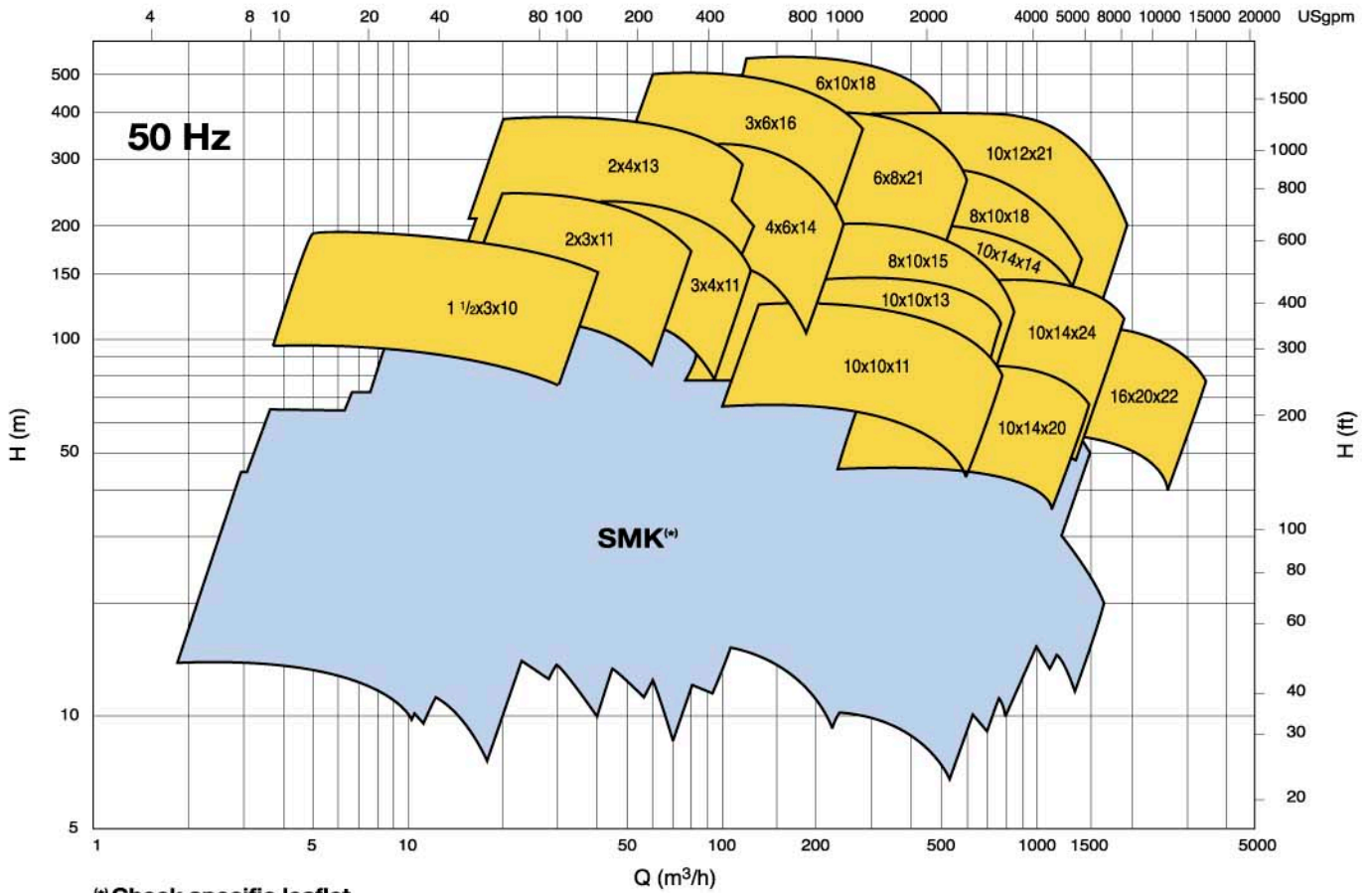
Other available solutions

- Lateral right/left side pump discharges for matching existing pipe works at plant.

Marelli KSMK series

**Pumps designed for minimizing the life cycle cost,
improving pumps MTBF.**

Performance curves



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