

# SPO

## API 610 12th Edition ISO 13709 Process Pumps



SPO Rev.05.03.2024

### Application Areas and Pumped Liquids

Petroleum industry, power plants and chemical industry. Fuel oil, motorin, gasoline, LPG, lubricants, kerosene, etc.

### Technical Data

Discharge Flange \_\_\_\_\_ NPS 1" -NPS 10"

Capacity \_\_\_\_\_ up to 1000 m<sup>3</sup>/h

Head \_\_\_\_\_ up to 350 m

Speed \_\_\_\_\_ up to 3600 m

Design Temperature \_\_\_\_\_ up to +350 °C(\*)

Design Pressure \_\_\_\_\_ 51 bar (\*)

Design Type \_\_\_\_\_ OH2

(\*) The Material of pump differs according to the type of pumped liquid, operating temperature and pressure. Contact for detailed information.

### Design Features

- According to API 610 12th edition (ISO 13709).
- Center line volute casing design for high pressure and temperature.
- Tangential outlet design for high efficiency at the volute casing.
- For special application double volute casing can be applied.
- Due to the back-pull-out design, the complete bearing assembly including impeller and casing cover can be dismantled without removing the volute casing from the pipe system. With spacer coupling application, also possible to take out the rotor group without dismantling the electric motor.

### Pump Designation

Pump Type \_\_\_\_\_

Discharge Nozzle (inch) \_\_\_\_\_

Suction Nozzle (inch) \_\_\_\_\_

Nominal Impeller Diameter (inch) \_\_\_\_\_



• The suction and discharge flanges are capable for handling the forces and moments which are mentioned in API 610.

• In standard manufacturing, pump flanges are as per ANSI/ASME

• The material of casing gasket is spiral wound gasket for handling high pressure.

• In case of pumping hot liquid there is cooling devices on bearing housing and special construction for mechanical seal.

• Heavy duty type shaft and bearings.

• All impellers are balanced dynamically or statically according to ISO 1940 grade 2.5.

• In case of preventive maintenance, temperature and vibration sensors can be applied.

• For high bearing life time, the constant level oilers are supplied in order to keep oil level in proper level.

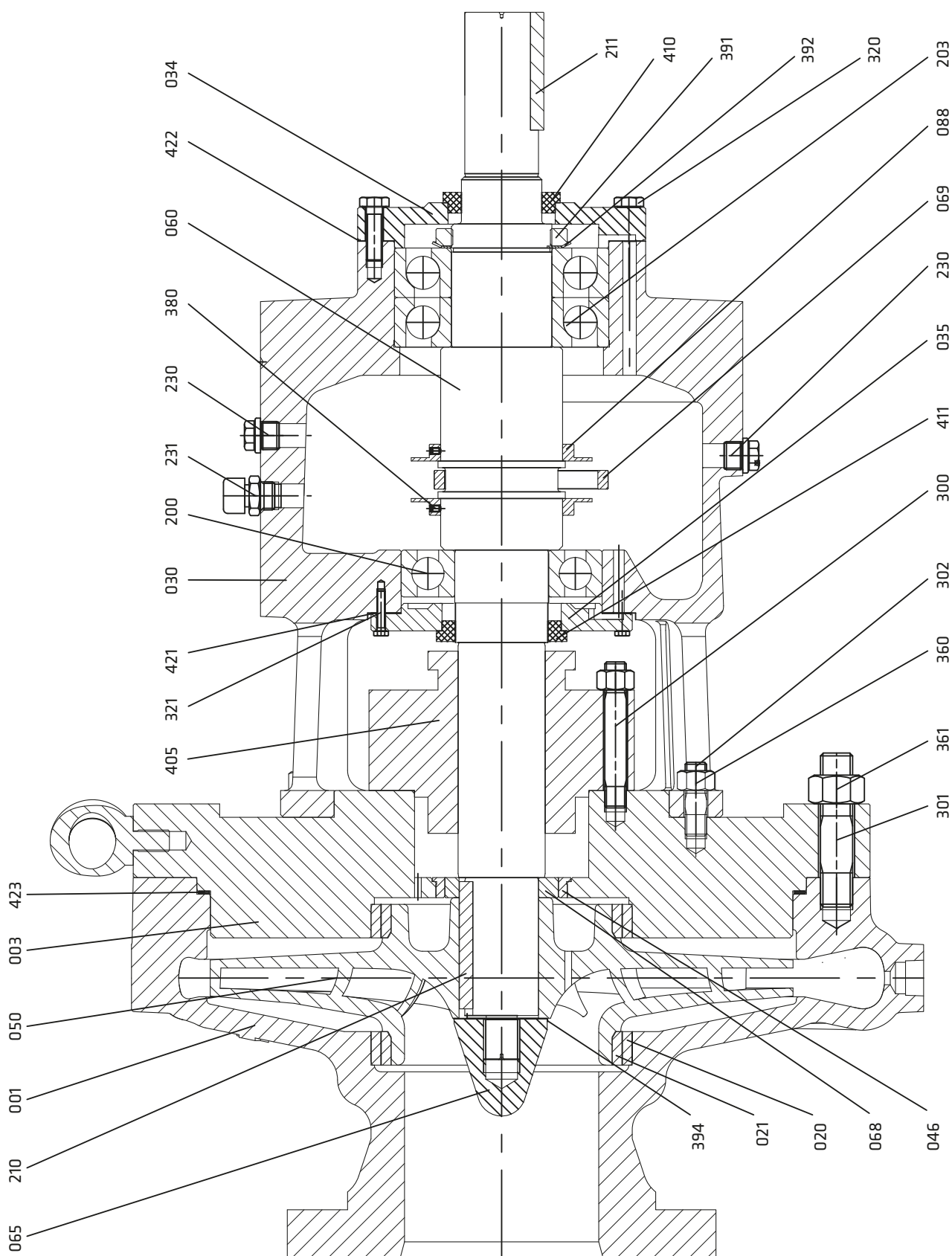
• Oil ring is used in standart production and these rings prevent oil foaming.

• The base plate construction is highly rigid as defined in to API 610 standard.

### Shaft Sealing

• Mechanical seal cover is designed according to API 610. This mechanical seal cover is suitable to assemble every kind of mechanical seal according to API 682.

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|     |                               |     |                          |
|-----|-------------------------------|-----|--------------------------|
| 423 | CASING GASKET                 | 230 | SCREW                    |
| 422 | GASKET                        | 211 | COUPLING KEY             |
| 421 | GASKET                        | 210 | IMPELLER KEY             |
| 411 | LIP SEAL                      | 203 | ANGULAR BALL BEARING     |
| 410 | LIP SEAL                      | 200 | BALL BEARING             |
| 405 | MECHANICAL SEAL               | 088 | THROWER                  |
| 394 | LOCK WASHER                   | 069 | OIL RING                 |
| 392 | LOCK WASHER                   | 068 | SHAFT SLEEVE             |
| 391 | LOCK NUT                      | 065 | IMPELLER NUT             |
| 380 | SETSCREW                      | 060 | SHAFT                    |
| 361 | CASING NUT                    | 050 | IMPELLER                 |
| 360 | NUT                           | 046 | THROUTLING BUSH          |
| 321 | SCREW                         | 035 | BEARING COVER            |
| 320 | SCREW                         | 034 | BEARING COVER            |
| 302 | STUD                          | 030 | BEARING HOUSING          |
| 301 | CASING STUD                   | 021 | WEAR RING (CASING COVER) |
| 300 | STUD                          | 020 | WEAR RING (CASING)       |
| 231 | OIL FILLING PLUG AND BREATHER | 003 | CASING COVER             |
|     |                               | 001 | VOLUTE CASING            |

## Material Options

| Part No |                          | API 610 MATERIAL CLASS |            |        |            |        |
|---------|--------------------------|------------------------|------------|--------|------------|--------|
|         |                          | S-5                    | S-6        | S-8    | C-6        | A-8    |
| 001     | VOLUTE CASING            | STEEL                  |            |        | %12 Chrome | 316 SS |
| 050     | IMPELLER                 | STEEL                  | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 003     | CASING COVER             | STEEL                  |            |        | %12 Chrome | 316 SS |
| 060     | SHAFT                    | AISI 4140              |            | 316 SS | 420 SS     | 316 SS |
| 030     | BEARING HOUSING          | STEEL                  |            |        |            |        |
| 065     | IMPELLER NUT             | STEEL                  | 316 SS     |        |            |        |
| 034     | BEARING COVER            | STEEL                  |            |        |            |        |
| 035     | BEARING COVER            | STEEL                  |            |        |            |        |
| 069     | OIL RING                 | Bronze                 |            |        |            |        |
| 411     | LIP SEAL                 | Bronze / Viton         |            |        |            |        |
| 410     | LIP SEAL                 | Bronze / Viton         |            |        |            |        |
| 046     | THROUTLING BUSH          | 420 SS                 |            | 316 SS | 420 SS     | 316 SS |
| 020     | WEAR RING (CASING)       | %12 Chrome             | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 021     | WEAR RING (CASING COVER) | %12 Chrome             | %12 Chrome | 316 SS | %12 Chrome | 316 SS |
| 423     | CASING                   | 316 SS Spiral Wound    |            |        |            |        |
| 301/361 | STUD AND NUT (CASING)    | AISI 4140              |            |        |            |        |