

Pumping

- Aggressive, explosive and toxic liquids
- Acids & lyes
- Hydrocarbons
- Heat transfer liquids
- Liquid gases
- Liquids difficult-to-seal
- Potable and Produced Water

Applications

- Refineries
- Offshore Platform
- Petrochemical and chemical industries
- Refrigeration and heat engineering
- Gas Processing Plants
- Power Stations
- Tank Farms
- Pharmaceutical Industries
- Fibers Industries

HEAVY DUTY VERTICAL IN LINE OH3 PUMPS SINGLE ENTRY OVERHUNG IMPELLER API 610 11TH EDITION - ISO 13709:2009



CN SEAL-MV API

Manufactured by:



A unit of
Mischiatti
GROUP

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CN SEAL-MV Series

The CN SEAL-MV, are heavy duty centrifugal pumps for petroleum, petrochemical and natural gas industries, according to API 610, 11th ed. / ISO 13709-2nd edition.

General

CN SEAL-MV line heavy duty process pumps are vertical in line, single entry overhung impeller, designed in a back pull-out configuration according to latest edition of API 610 Std.



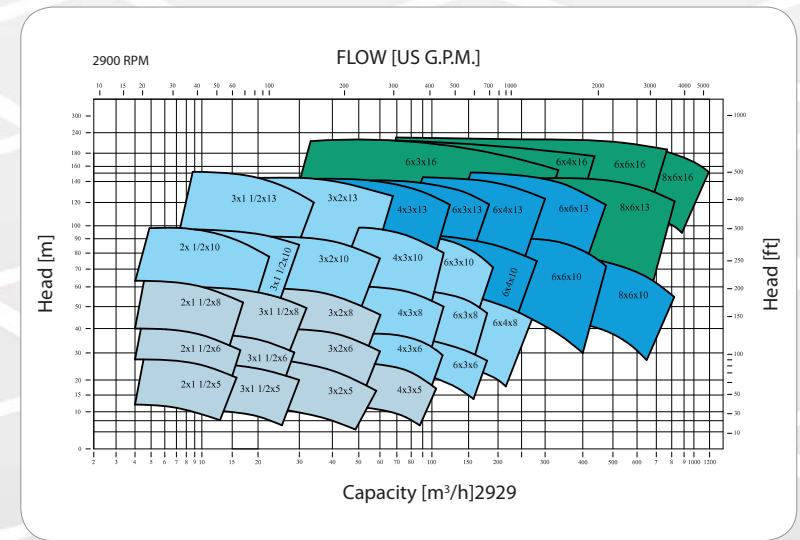
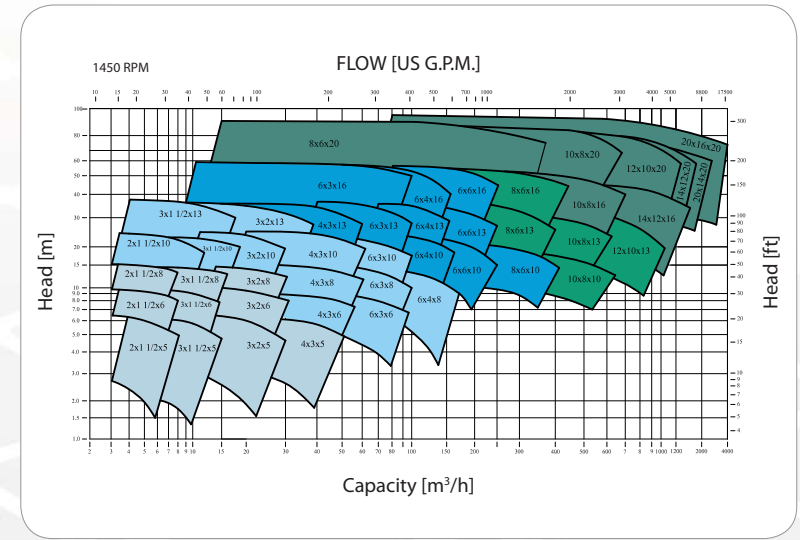
Construction

Main design features of CN SEAL-MV series are:

- Back pull-out construction for easy maintenance.
- Choice of multiple impellers for optimum efficiency over a wide operating range. Coverage includes more than 100 different hydraulics.
- Twin volute configuration over 8" impeller and 2" discharge nozzle size, to minimize radial loads and shaft deflections.
- Excellent space-saving solution.
- Engineered and built for reliable and safe performance in cryogenic, high temperature and high working pressure services.
- Optimized bearing bracket geometry in order to eliminate water cooling system, even for high temperature applications up to 750 °F (400 °C).
- Casing, bearing frame and baseplate stiff enough to assure minimum shaft deflections under heavy nozzle load conditions, to improve seal and bearings life.
- Wear rings and balance holes optimized for an extended life under the most adverse suction conditions.
- Seals and sealing systems in accordance to API 682 Std.



Performance curves



Options

The following pump executions can be provided:

- Casing and cover with full cooling or heating jackets.
- Inducer to reduce NPSH requirements.
- Stuffing box cooling water or heating jacket, easily accessible for inspection and mechanical cleaning.
- Standard or special bearing isolators at either bearing housing ends (only for grease version).
- Oil mist lubrication system.
- Oil bath or grease lubrication system
- Water cooling for bearing bracket.
- Noise reduction insulation panels.
- Same side ports configurations.
- Special painting or metallization coating.

Bearing bracket design optimized with FEA calculation, in order to ensure the maximum stability, even for high temperature applications up to 400 °C.



Pump size 6x3x6 provided of stainless steel baseplate and noise reduction enclosure.



Pump size 12x10x16 in same side configuration.

Materials

Available in a wide range of materials including all API 610 constructions and custom application needs.
Engineered Hydraulics: Comprehensive hydraulic coverage to better match your process for efficiency and reliability.
Custom hydraulics are available.

Engineered Packaging with a wide range of drivers, seals, piping, nozzle configurations, flanges, base plates and QC testing.

Applications

The performance range of the CN SEAL-MV pumps is subdivided such that acceptable efficiencies can be achieved for all service conditions. The maximum capacity goes up to 4000 mc/h. Differential head up to 350m

With a wide selection of materials and the possibility to install all shaft sealing systems according to API 682, M PUMPS CN SEAL-MV pumps are suitable to convey nearly all kinds of liquids which are in the process industries.



CN MAG-MV 16x16x16 magnetic drive version close couple.

Upgrade

Thanks to M PUMPS smart design, all the pumps of CN SEAL-MV range have an equivalent magnetic driven, of the range CN MAG-MV.

In fact, the two pump ranges have been designed by the M PUMPS engineers to give the best answer to customer needs, and are absolutely interchangeable.

For this reason is always possible to upgrade your CN SEAL-MV process pump to CN MAG-MV API 685 2nd Edition, OH3 for plant upgrade and vice versa. It is also possible to switch to CN MAG-MV OH5 close couple version, the most versatile version.

Service

Years of experience allow to M PUMPS to easily handle any pump in any condition.

Benefit from these exclusive quality services:

- Quality rebuilds/repairs ensure maximum reliability from your M PUMPS unit in very short time.
- One-year warranty on all rebuilds/repairs.
- Upgrade old designs to latest technology to maximize reliability, compliance with codes and regulatory.

Your local M PUMPS service offers solutions to lowering Total Cost of Ownership of your pumping systems. This can be achieved by upgrading your older style API 610 process pumps to today's high performance API 685 standard.

The question of whether to Replace or Upgrade your existing equipment is a challenge faced by most end users today. When casing, piping, and foundation are in good shape, upgrading your existing pump to comply with latest API 685 standards can be economically attractive compared to new pump installation, but only exploring all options, the best decision can be made.

PUMP DETAILS

Fan cooling

Fan cooling designed to reduce bearing temperature in any condition is standard. This feature contribute to maximize bearing life.

Labyrinth oil seals

Labyrinth seal design prevents oil leakage and contaminants from intruding. INPRO™ vertical isolators is the standard protection adopted.

Pump shaft

The pump shaft is sized to transmit the full driver output and is machined by CNC throughout his entire length and has a proper finish on bearing mating surfaces.

To obtain satisfactory seal performance, proper shaft stiffness limits the deflection.

This is the result of the combination between shaft diameter, shaft span or overhang and casing design.

The shaft design guarantees that the first try bending critical speed is at least 20% above the pump's maximum continuous operating speed.

Outer ball bearings

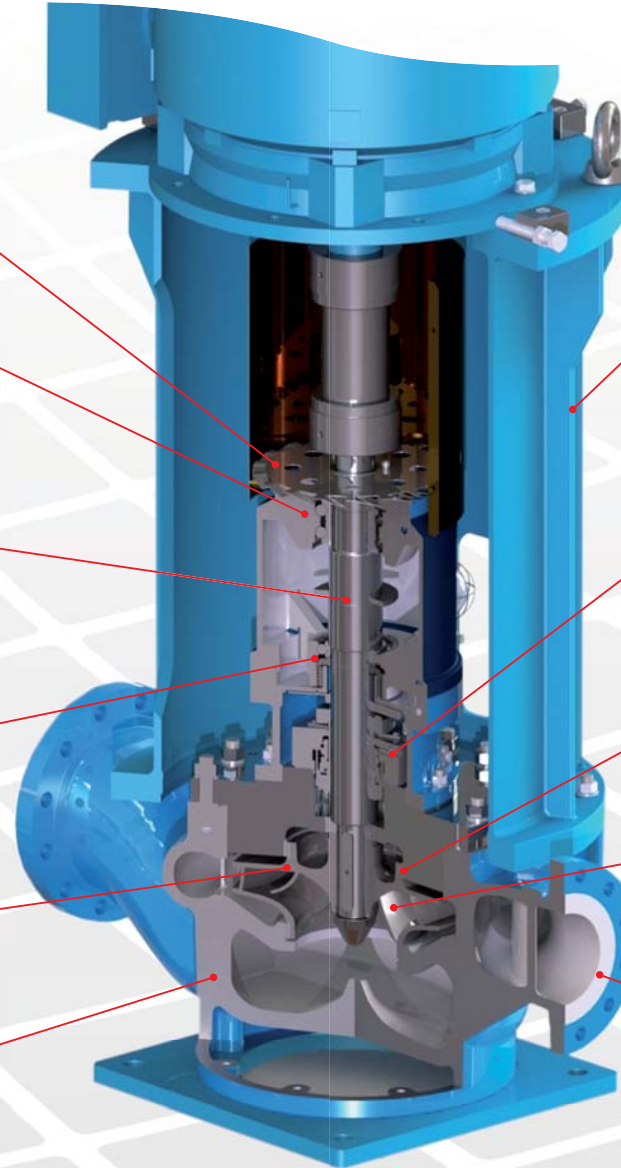
Thrust bearing of 7300 series 40° angular contact, Radial bearing of 6200 series ball radial bearing C-3 clearances according to ISO 13709 (API 610)

Radial balance

Radially balanced for minimum shaft deflection.

Pump casing

Vertical inline construction according to ISO 13709 (API 610)
Single or double volute depending on size Designed for 3 mm (0.12") corrosion allowance, 2 times ISO 13709 (API 610) Table 4 nozzle loads 300# R.F.



Motor Support

Heavy-Duty Motor brackets features a registered fit motor mount without need of spacer plates. It is possible to install NEMA, IEC. Oversized openings allow easy access to all bolting and permit the entire wet end assembly, including mechanical seal, to be removed without disconnect casing or motor.

Shaft Mechanical seals

CN SEAL-MV pumps will be equipped with mechanical seals and sealing systems in accordance with API 682 category 2/3 - ISO 21049. The seal chamber dimensions conform with API 610, paragraph 5.8.3 (Figure 25, Table 6).

Renewable wear rings

Full comply to ISO 13709/API-610 running clearances. Positively locked.

Impeller

Several different closed impeller designs for most casings to meet specific hydraulic requirements. Balanced to stringent requirements of API-610/ISO 13709.

Construction materials:

Pump Casing & Impeller made of high quality casting components:

- CF8M,
- Hastelloy® C276,
- Incoloy® 825,
- Duplex,
- Titanium,
- Others materials and/or NACE compliance available on request.