

CS A2 PROCESS PUMP

Centrifugal | Single stage

Designed in accordance with API 610 11th edition

CZ

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 **RENETRA**[®]
PUMP UNIT MANUFACTURER



KEY FEATURES

CS A2 pumps are used in several types of industry where full compliance with API 610 11th is requested. For oil & gas, petrochemical and chemical industries and also for using in power plants. The CS A2's are API 610 OH2 type pumps. Heavy duty design without rear support.

FLANGES

- ASME B16.5 Class 300RF and ISO flanges are available.

ENCLOSED IMPELLER

- dynamically balanced
- designed according to the best possible NPSH3 values and efficiency.

MECHANICAL SEALS

- API 682 cartridges are standard.
- length of sealing chamber is higher than requested value in API 682 4th.
- sealing chamber is designed for all types of mechanical seals.

HEAVY DUTY RADIAL AND ANGULAR CONTACT BEARINGS

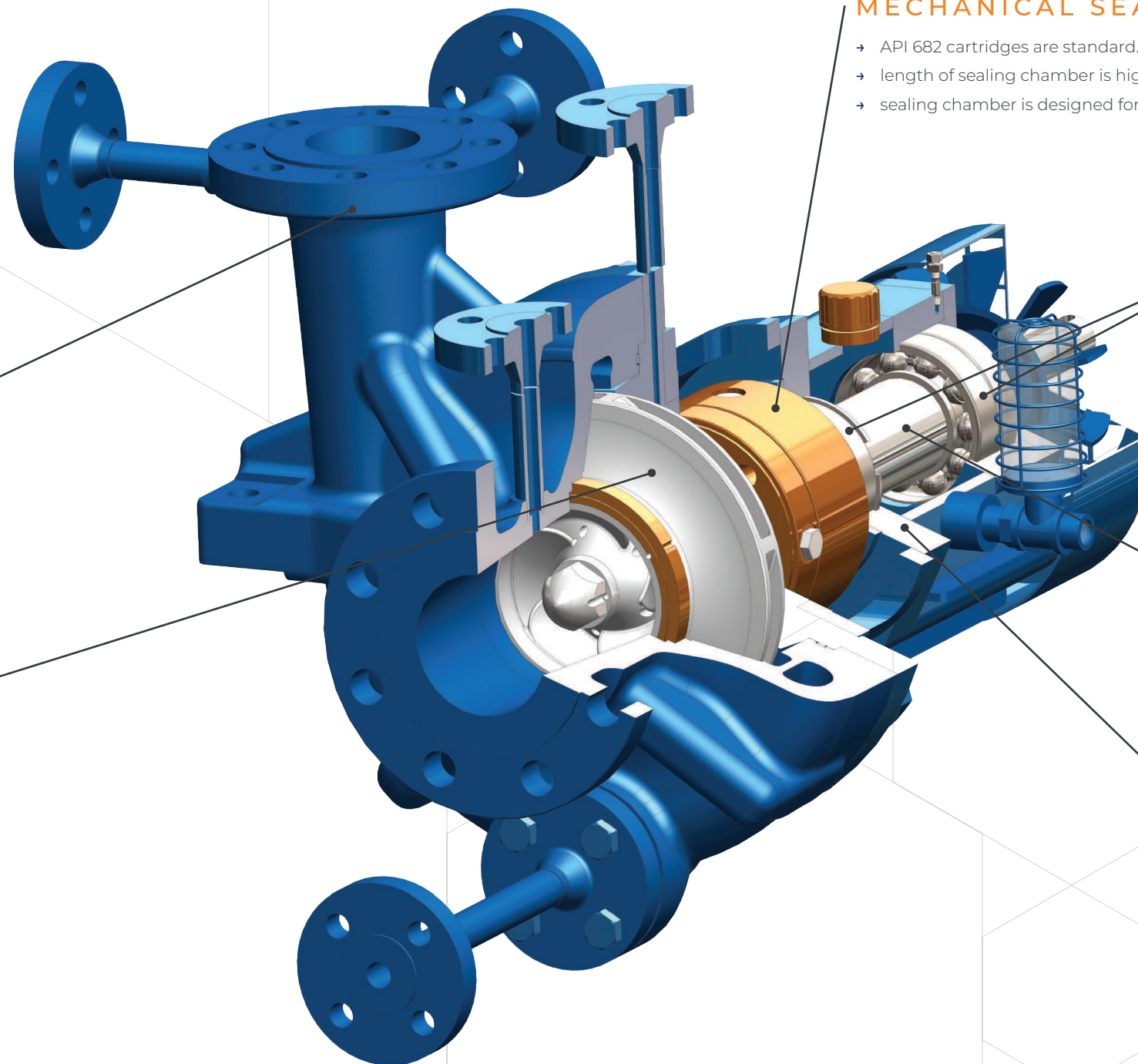
- long life of bearings even under the most demanding operations.
- designed according to API long life specifications.
- radial ball bearing can be supplied according to customer's specifications.

HEAVY DUTY SHAFT

- designed according to API specifications.
- smaller deflection to avoid excessive stress of mechanical seals, wear rings and bearings.

WELDED BEARING HOUSING

- can be modified according to customer's specifications.
- possibility of a fan or lubrication oil water cooling.



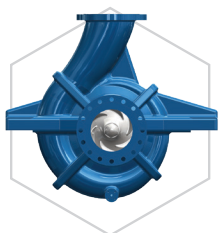
ADVANCED OPTIONS AND APPLICATIONS

1 OPTION OF INDUCER

- For application where low NPSHR is required, an inducer can be mounted. Inducer is basically an axial impeller with high specific speed and is designed specifically for requested flow.

2 DESIGN OF OUTLET FLANGES

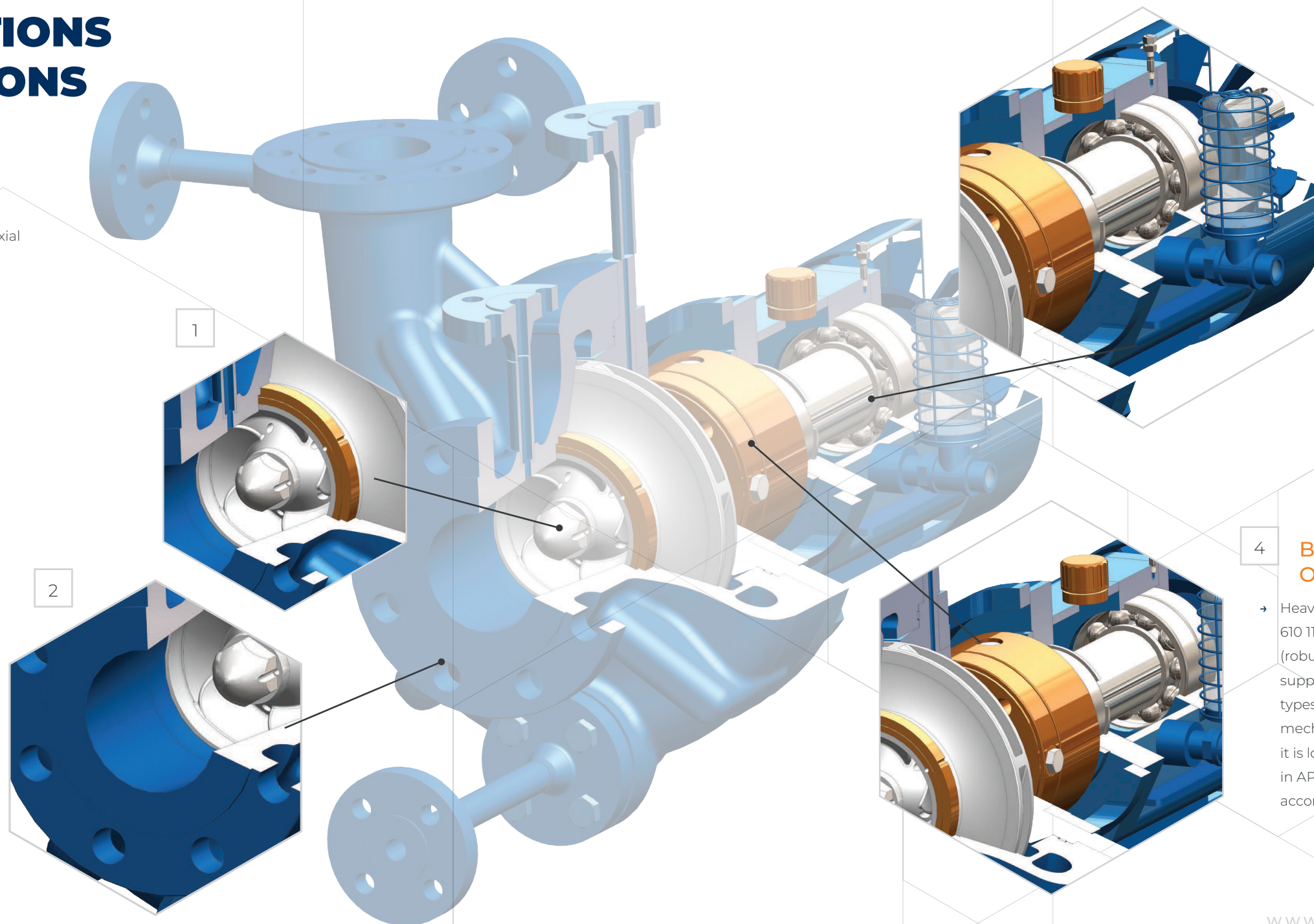
- Outlet flanges are fully designed in accordance with API 610 11th edition. Other standards can be modified on the request. OH2 or OH1 design available.



CS2 A2
(OH2)



CS2 A1
(OH1)



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BEARING LUBRICATION SYSTEM

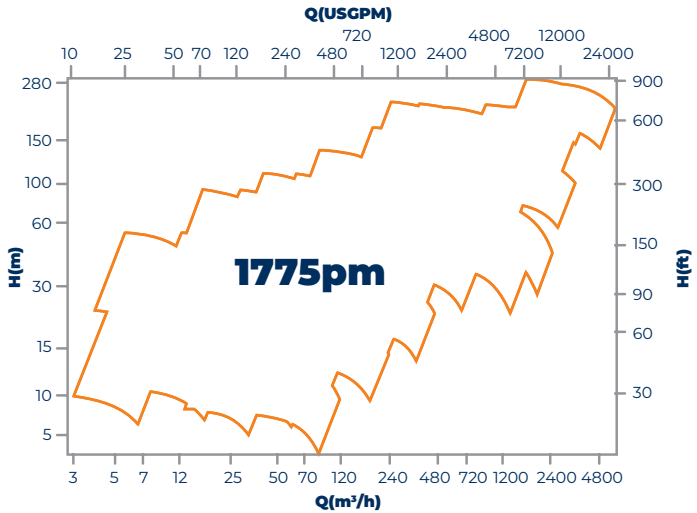
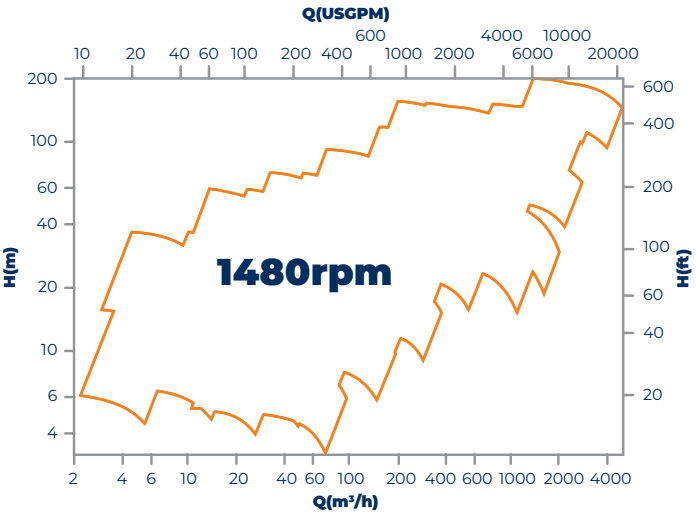
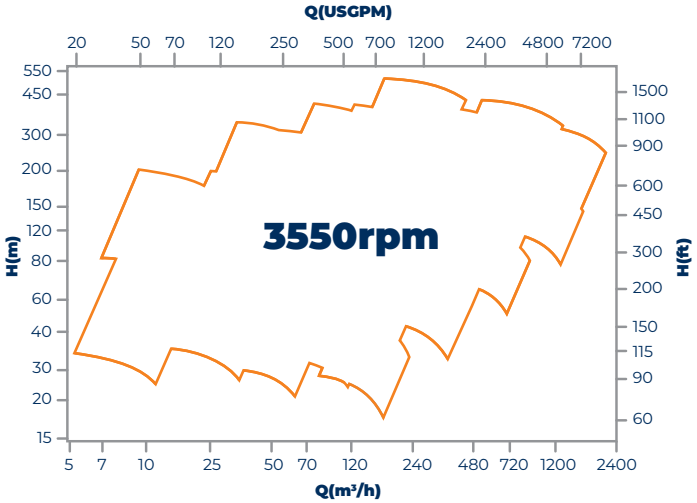
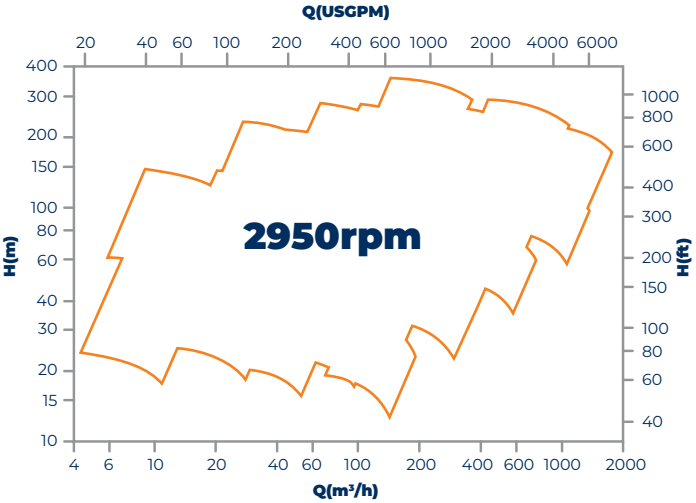
- Designed for both operating parameters in accordance with API 610 11th edition. Lifetime of bearing system is 16 000 hours for the most demanding operation parameters and 25 000 hours for BEP. Oil bath, mist and purge for continuous bearing lubrication. Air fan for cooling of bearing housing is a part of standard features. Water pipe cooling of oil filling for extreme ambient conditions is optional.

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BENEFITS OF CS A2 PUMPS

- Heavy duty design fully in line with API 610 11th edition without rear support (robust design sufficient even without rear support). Seal chamber is designed for all types of mechanical seals even for a double mechanical seal with pressure barrier and it is longer than the recommended length in API 610 11th. Designed for all API plans according to API 682 4th.

PERFORMANCE RANGE CHARTS



OPERATING PARAMETERS AND DIMENSIONS (in SI and imperial units)

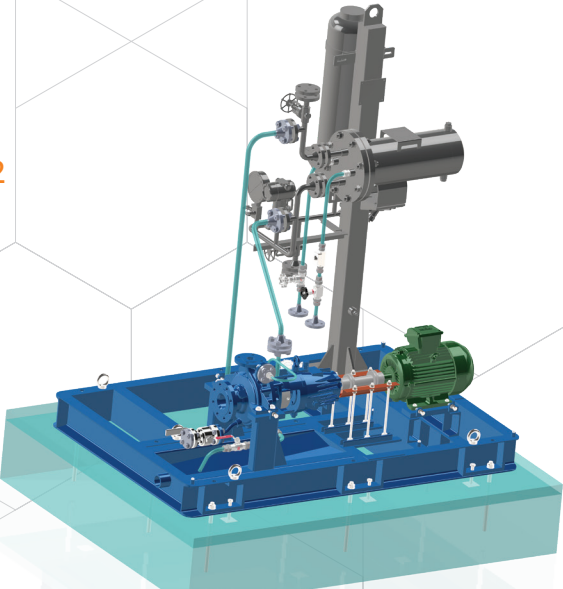
OPERATING FREQUENCY	→ 50 and 60 HZ	→ 50 and 60 HZ
OPERATING FLOW	→ up to 5.600 m³/h	→ up to 24.655 USGpm
OPERATING HEAD	→ up to 500 m	→ up to 1640 feet
OPERATING PRESSURES	→ up to 50 bar (at 20° C)	→ up to 725,188 psi (at 68° F)
INLET FLANGES	→ from 40 mm to 400 mm	→ from 1,575 in to 15,748 in
OUTLET FLANGES	→ from 25 mm to 400 mm	→ from 0,984 in to 15,748 in
DIAMETER OF IMPELLER:	→ from 160 mm to 728 mm	→ from 6,3 in to 28,661 in
OPERATING TEMPERATURES	→ from -160° C to 450° C	→ from -256° F to 842° F

Materials according to API 610 11th

MATERIAL CLASSES:
S-4, S-5, S-6,
S-8, S-9, C-6,
A-7, A-8, D-1,
D-2

EXAMPLES OF USING OUR CS A2 PUMPS: CS 150-400A2 PUMP

- hot hydrocarbon application
- medium temperature 290°C
- petrochemical industry especially refinery
- material class S6 fully according to API 610 at low temperature mainly -41°C ambient temperature, NACE certificates
- certificated for Zone 1 in accordance with ATEX 94/9
- double mechanical seal and seal support system API Plan 53B fully according to API 682 4th (brand according to client´s vendor list)



We manufacture industrial pump units that we sell to customers worldwide and we also have our own team of research and development experts who use modern technologies, diagnostics and software (3D Solidworks, Solidworks Flow Simulation, FEAT software Solidworks Simulation, OpenFoam, Adash Vibration Analyzer).



We offer a broad portfolio of pumps even for the most demanding applications and most extreme use. We aim to be a reliable and professional partner in constructions of new investment units and refurbishments of already existing plants.

RENETRA s. r. o. is a holder of the quality certificates ISO 9001:2016, ISO 14001:2016, ISO 18001:2008, TP TC 004/2011, TP TC 010/2011, TP TC 012/2011, ATEX 94/9/EC and the CE mark



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