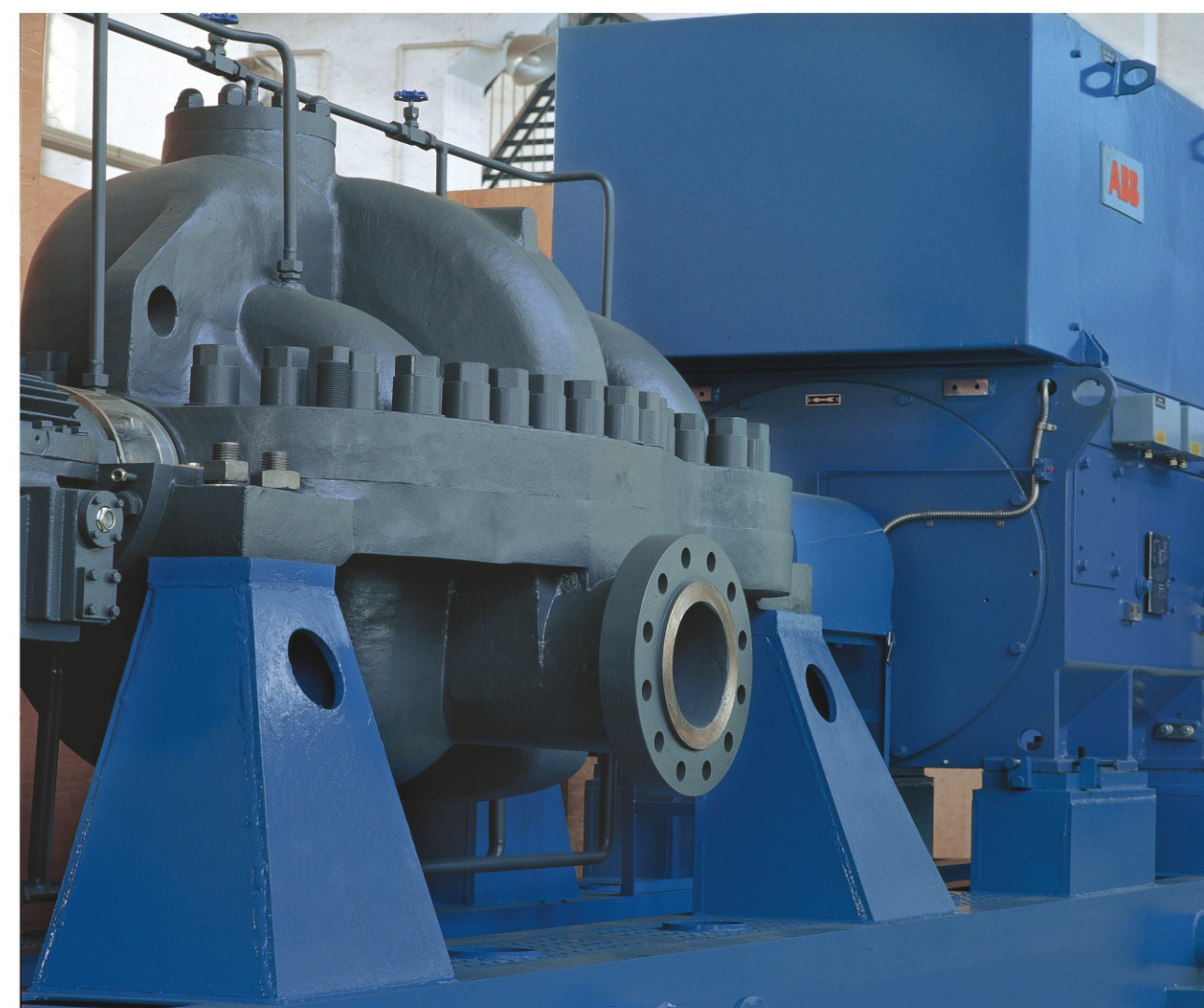




Heavy Duty Multistage Axially Split Casing Centrifugal Pump (API610-BB3)



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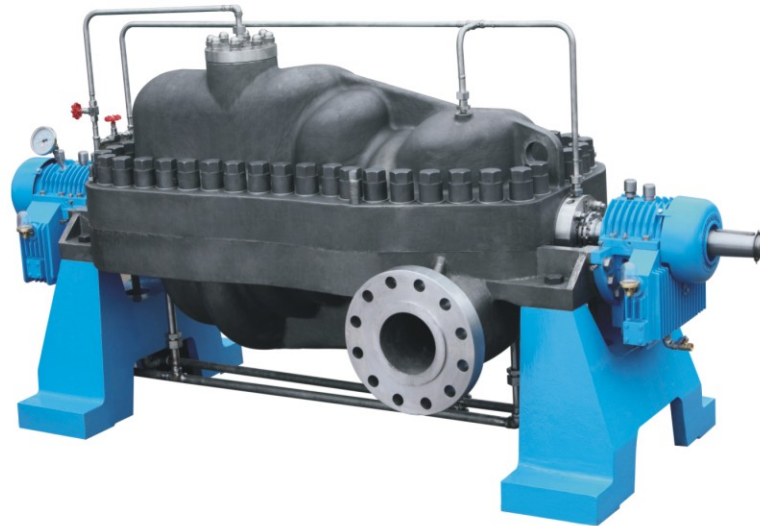
Pumping Water Pumping Honor



Water is vital for all known forms of life. As the population of the world continues to grow, so does the need for advanced, quality systems of water treatment, irrigation, drainage, and sewage treatment. Industrial growth, so vital to economic stability all over the world, must also embrace responsible, safe, efficient waste disposal methods in order to comply with regulatory agencies and protect the environment in which we live from water and air pollution. CNP has helped many companies attain this goal through decades of experience, incorporating sophisticated planning, engineering, and other support services to pumping stations around the world. Innovative fluid handling solutions that enhance reliability while lowering energy consumption and maintenance costs, reduce carbon emissions, and provide value are what CNP has built its reputation on.

Application

- Crude oil both in and offshore
- Remote pipelines
- Process plants
- Refineries
- Sewage water with oil and solid
- Boiler feed
- General water supply
- Mine dewatering
- Sea water pumping
- Water injection



Operating Data

- Capacity to 2400m³/h
- Head to 1200m
- Temperatures to 200°C
- Working pressure to 170bar

Model Code

KY is a two stages pump with two single suction impellers.(API)

KSY is a two stages pump with two double suction impellers.(API)

KDY is a multistage pump with three or more impellers.(API)

NDS is a multistage pump with three or more impellers.(Non-API)

Instrumentation

Pump can be furnished with instrumentation options to measure vibration, temperature and seal leakage.

Pump and baseplate design conforms with the API610 latest edition

Material

Pump's material according to API610

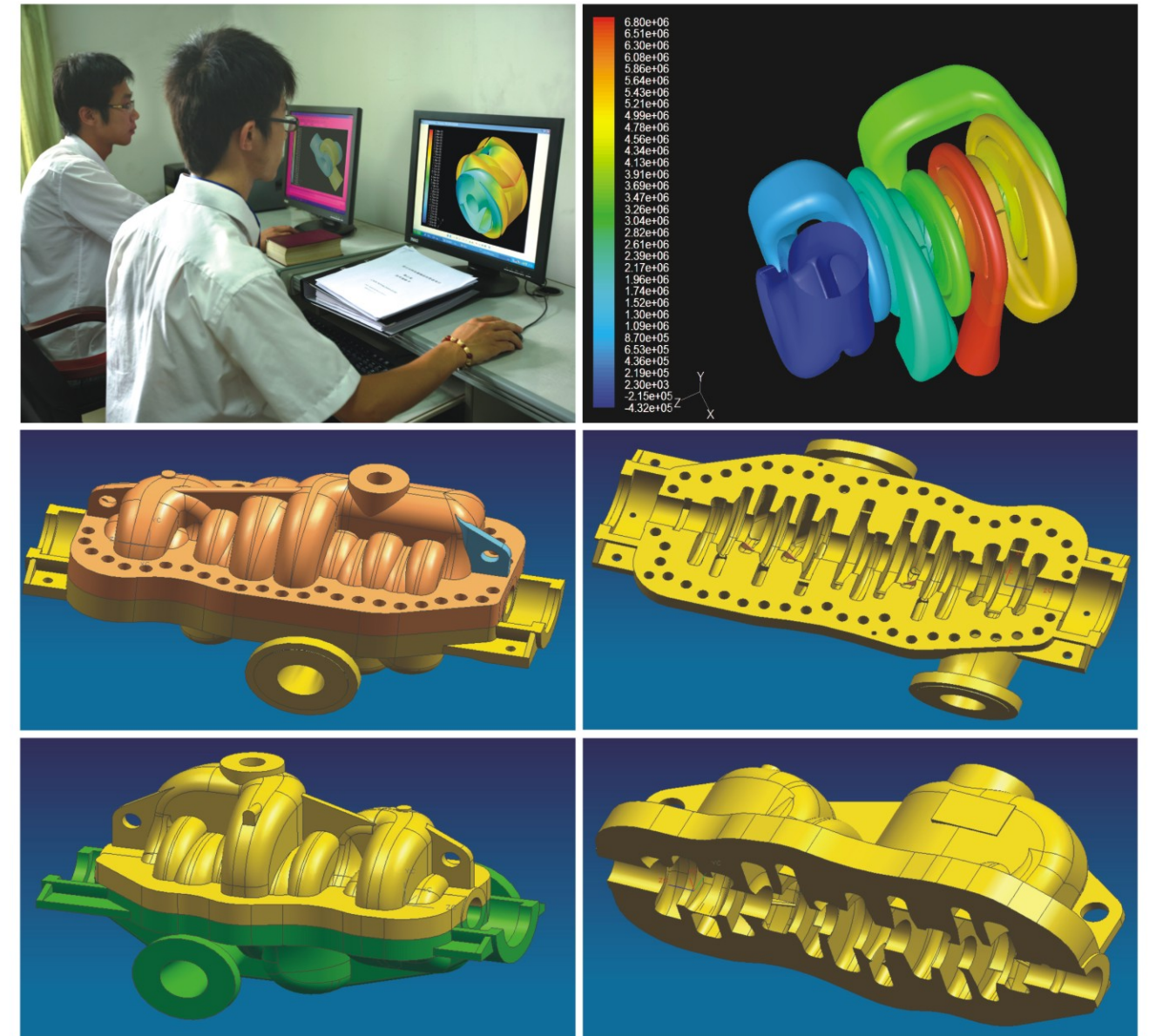
(I-1, I-2, S-1,S-3,S-4,S-5, S-6 ,S-8, C-6, A-8 and D-1)



Design, Engineering and R&D

Technical requirements and specifications are carefully studied by competent design engineers allocated to these jobs, in order to cover a wider aspect in their documentation. Extensive experience and advanced technology backed-up by its research and development activities are the winning factors in successful design of CNP pumps, computers assist our engineers by given detailed design data, the products are designed with the help of CAD system, Pro-E & CFD.

The study and adoption of computer technology has enabled us make various in-house analyses of computation fluid dynamics, stress, structure and water hammer.It guarantees the best pump performance and ensures that all the CNP pumps are energy-saving, high efficiency, high reliability, provide the best solutions and finally create value for the customers.



Design Features and Advantages

A. Casing

1. Axially split casing for extreme ease of maintenance
2. Dual volute design balance hydraulic radial thrust at each stage for extended seal/bearing life
3. Integral compact crossovers minimize flow losses, maximize efficiency
4. Heavy duty single row bolting, all nuts located on top for ease of maintenance
5. ANSI B16.5 flanges class 900RF standard on suction and discharge, other classes available as options

B. Impeller and Rotor

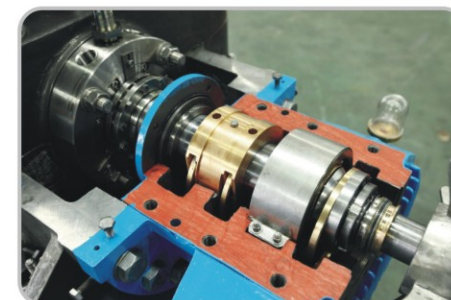
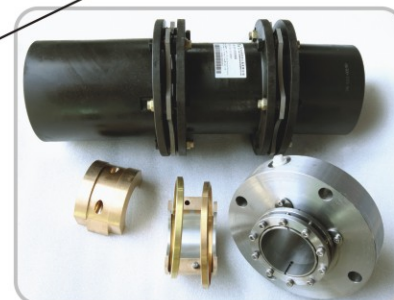
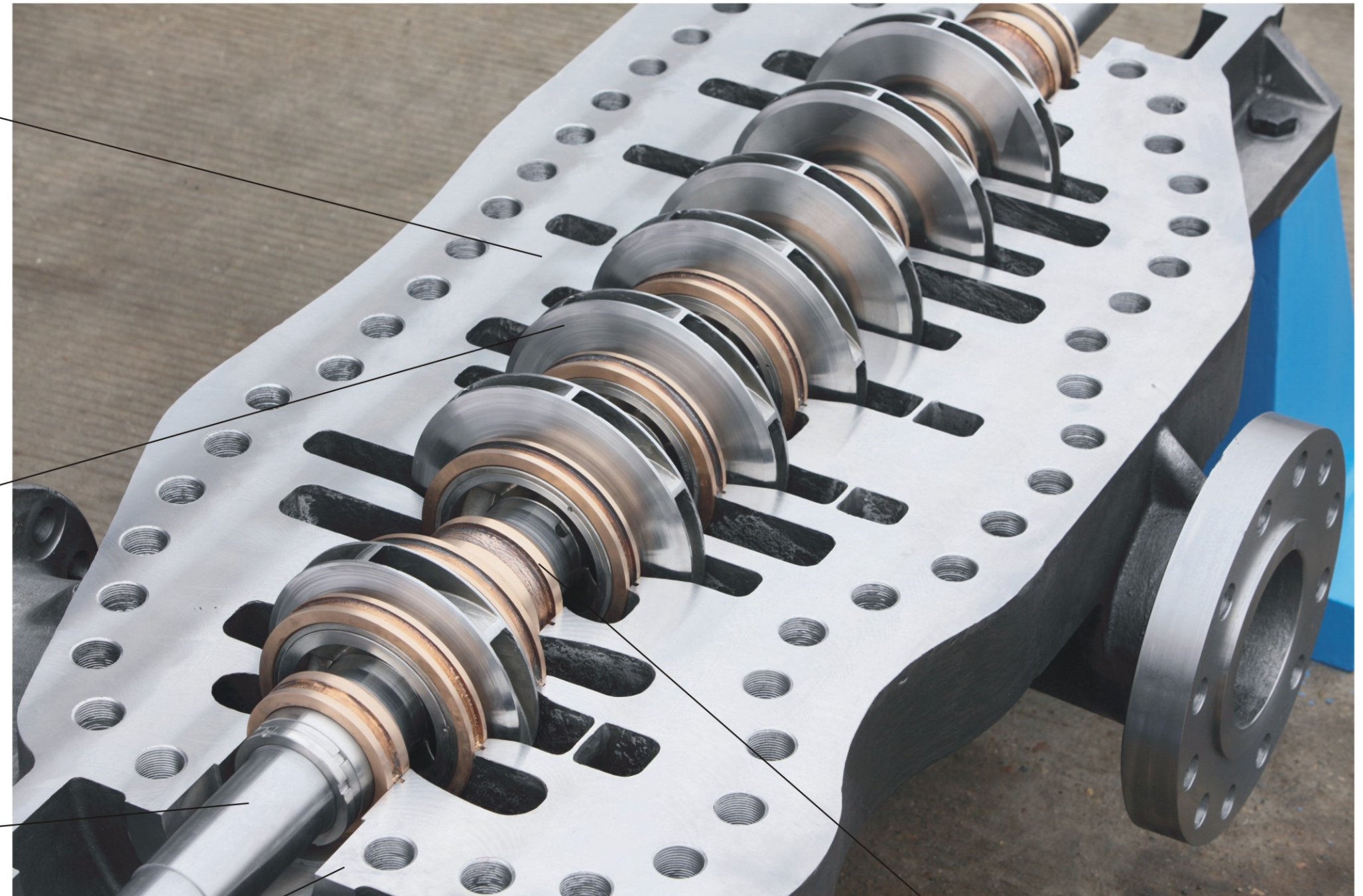
1. Precision impeller individually balance for smooth operation
2. Opposed impeller arrangement provides permanent axial hydraulic balance
3. Impeller staggered on shaft to minimize vane-pass vibration
4. Key driven with shrink fit impellers independently secured against axial movement
5. Double suction first stage impeller for low NPSH service requirement
6. Inducer design are available
7. Entire rotating assembly can be removed without disturbing piping
8. Impellers and rotating equipment element dynamically balanced to API610 requirement

C. Shaft

1. Large diameter shaft stepped for ease of assembly
2. Sized to satisfy rotor dynamics and power transmission
3. NEMA shaft taper for ease of coupling removal

D. Shaft Sealing and Seal Chambers

1. Soft packing or mechanical seals
2. Seal chambers meet API610 dimensional requirement and accept a wide range of cartridge type mechanical seals
3. Seal flush system according to API682 plans

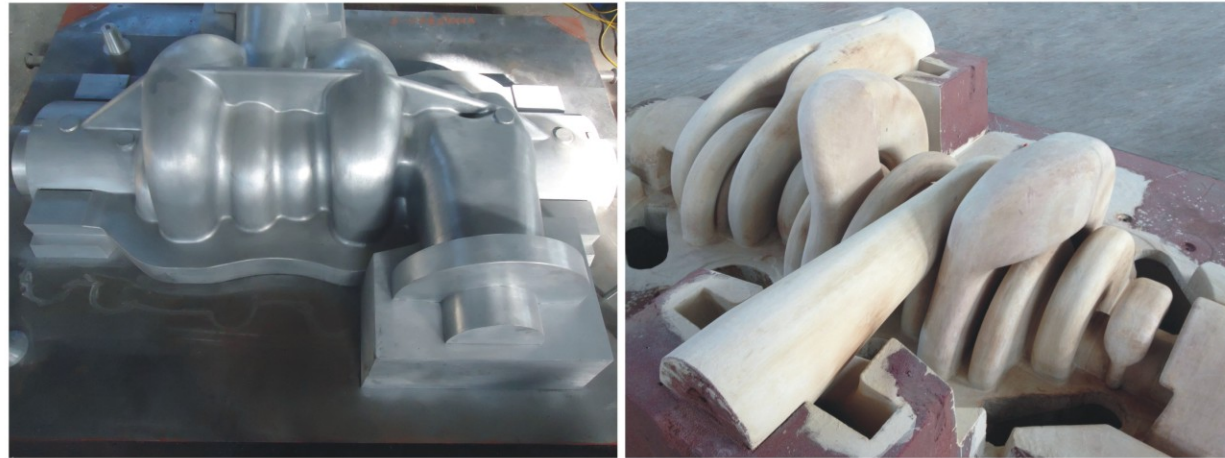


E. Bearing and Bushing

1. Oil lubricated air cooling or water cooling, duplex ball thrust/ball radial bearing, sleeve radial bearing and tilting pad thrust bearing can be furnished to meet customer or operating requirements
2. Split stage pieces and center case bushing can be removed for inspection of wear surface without disassembling rotor assembly

Casting, Fabrication and Machining

All the casings are made by metal pattern and resin sand, impellers are precision cast. Patterns are made by the 3D technology and CNC machining center to ensure that the excellent hydraulic model can be transformed into the high-efficiency products.



Most of the casing are made at CNP's own foundry to ensure a high standard of quality. Materials which have been thoroughly inspected are placed on the machining line where they are turned, drilled, bored, milled and ground into various precision components.



Inspection and Assembly

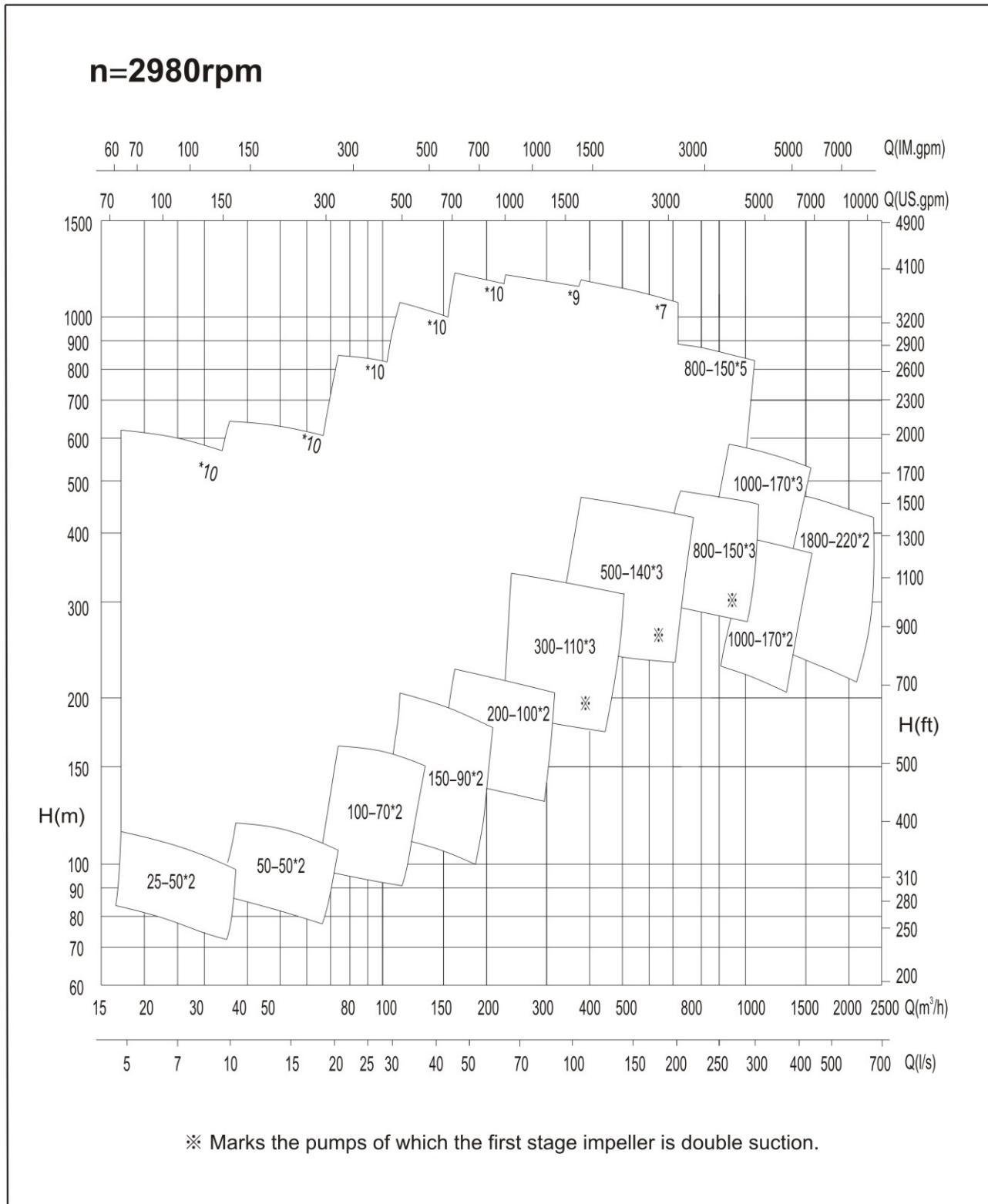
The rigid inspection performed after each step of the production process, from raw material to finished products assures the highest quality in products. After machining and inspection, pump parts are forwarded to the assembly lines which are directly connected to the machining lines to attain efficient production. CNP has various assembly line for different pumps.



The test pool volume 8000 m³, Max. testing power 5000kw. It can also do the 60HZ test. The test bed is available for all kinds of pumps such as the centrifugal pumps, vertical turbine pumps etc. All the pumps are tested with the test system which adopting the most advanced testing technology and computer assisted testing system, which guarantees the convenience, accuracy and reliance.



Hydraulic Coverage (50Hz)



Hydraulic Coverage (50Hz)

