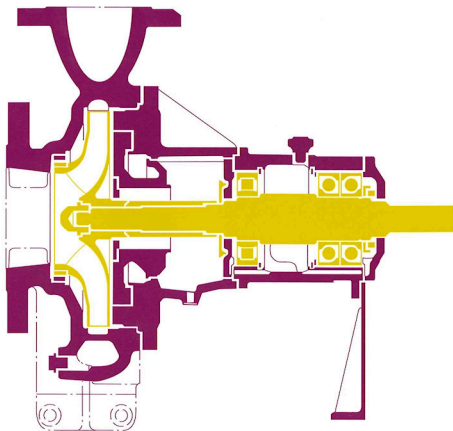


# CPW

Hot Water Circulating Pumps

Pump size	40 to 250mm (1½ to 10in)
Capacity	up to 400l/s (6340 U.S.gpm)
Total head	up to 210m (690ft)
Operating pressure	up to 6.3MPa (896psig)
Temperature	up to 280°C (536°F)



## General

The CPW pump series are used mainly as feed pumps or circulating pumps in high pressure hot water generating plants.

CPW hot water circulating pumps represent a complement to existing series of single entry and single stage pumps of process type construction. The casing can remain connected with the piping when the rotor is dismantled. If a spacer-type flexible coupling is fitted, the driving motor can also remain set on the baseplate, and the timewasting re-alignment of pump and motor after re-assembly of the pumping set can be dispensed with.

The well-proven module construction system already adopted on several pump series has again been adopted for the CPW series. The 18 available pump sizes offer economic operating conditions at the duty point and favourable NPSH values over the entire performance range.

## Casing

One-piece volute casing open to the discharge end, with integrally cast pump feet at shaft centreline height.

The inner compartment of the pump, which is under pressure, is sealed off towards the drive end by a bearing bracket lantern. A stuffing box housing is arranged in this bearing bracket lantern; it can be adapted to accommodate various types of shaft seal, and it forms a cooling chamber in conjunction with the bearing bracket lantern. This cooling chamber is easily accessible for the cleaning off of deposit.

Nozzle orientation:

Suction nozzle at shaft centreline height.

Radial discharge nozzle pointing vertically upwards.

Flange machining:

Suction and discharge nozzle

ANSI, BS, JIS and other standards are also available.

## Impeller

Closed radial impeller with double curvature vanes, hydraulically balanced, protected in the region of the sealing gap by a renewable impeller wear ring.

## Shaft Seal

Standard pump construction fitted with balanced single-acting mechanical seal of various manufactures.

All mechanical seals are fed with cooled product pumped by product circulation (from the seal compartment via a heat exchanger back to the seal compartment). The circulation is assisted by conveying devices (pumping ring, conveyor screw).

The design of the pump enables the mechanical seal to be accommodated in the stuffing box housing insert in the form of a cartridge, which facilitates the quick dismantling of the seal unit in case of overhaul or repair.

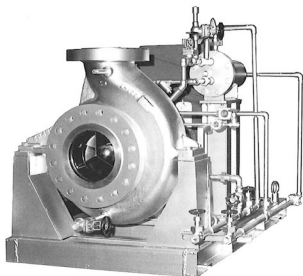
## Bearings

On standard version, the fixed bearing at the drive end consists of a pair of matched angular contact ball bearings whilst the loose bearing at the pump end consists of a radial roller bearing. Automatic oil level control by constant level oiler.

The bearing bracket is available in a cooled version if desired.

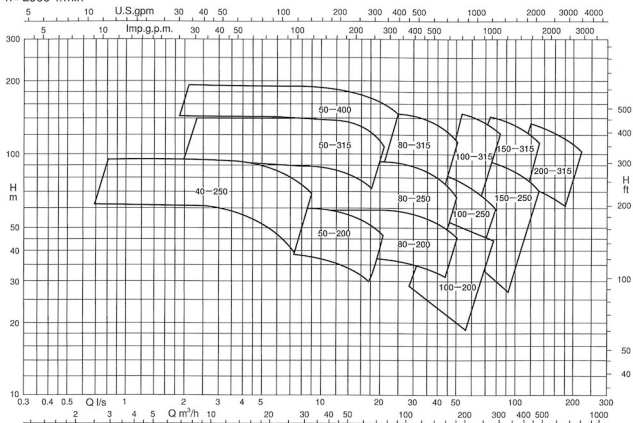
## Materials

Part designation	Materials
Volute casing	Cast Cr-Mo steel
Casing cover with stuffing box housing	Cast Cr-Mo steel
Cooling housing	Cast iron
Impeller	Cast 13% chrome steel
Casing wear ring	Ni-cast iron
Impeller wear ring	13% chrome steel
Bearing bracket	Cast iron
Shaft	Cr-Mo steel
Shaft protecting sleeve	13% chrome steel

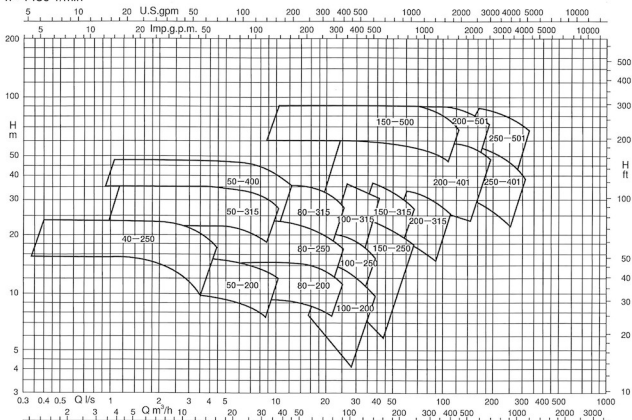


## Selection Charts

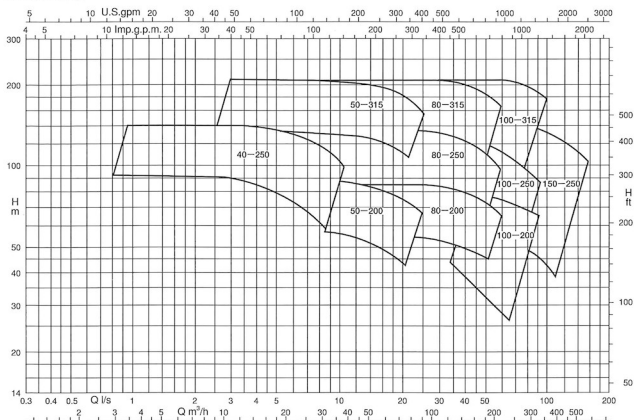
$n = 2900$  1/min



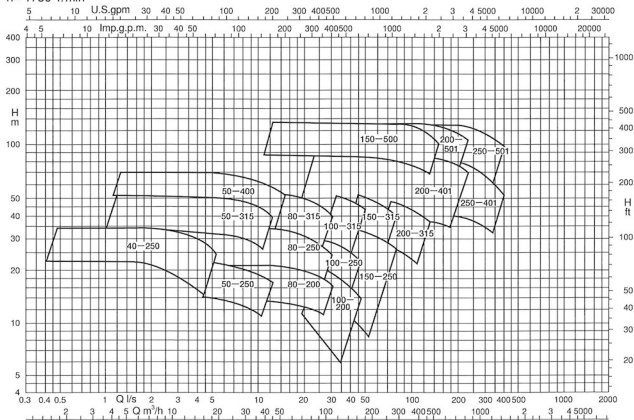
$n = 1450$  1/min



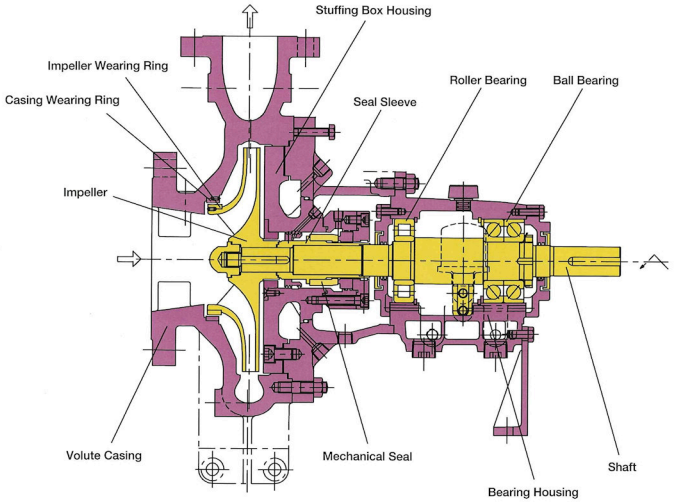
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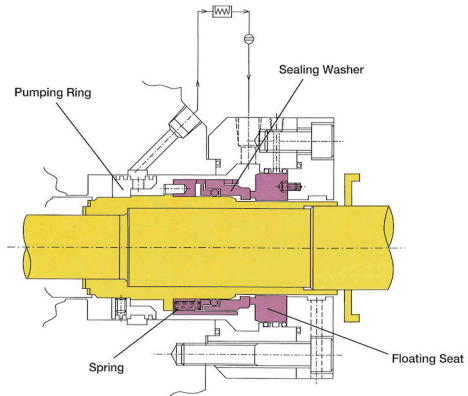
$n = 1750$  1/min



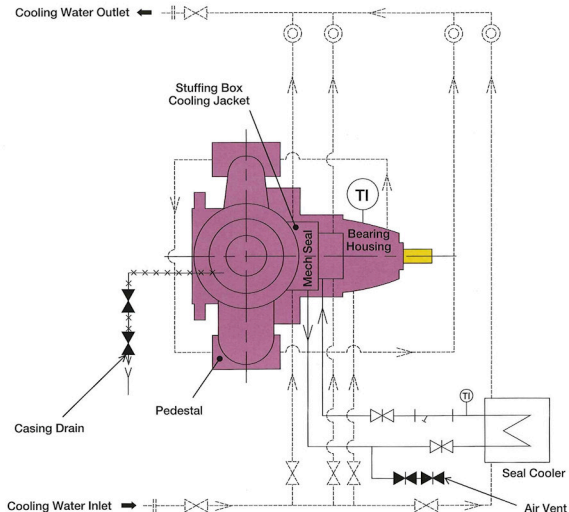
Typical Cross-section



Mechanical seal



## Typical Auxiliary Piping Diagram



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