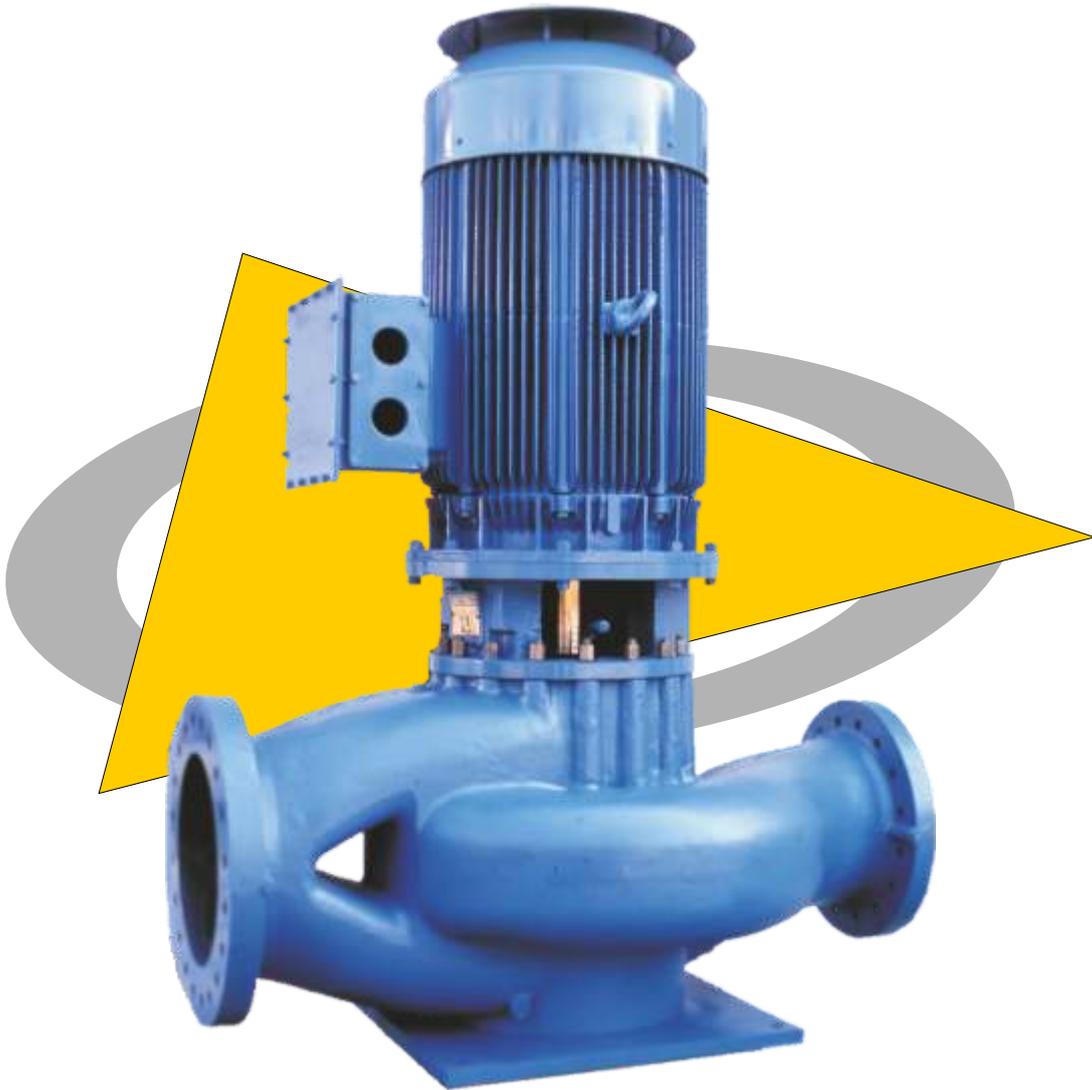


IN-LINE CENTRIFUGAL PUMPS  
FOR CHEMICAL SERVICE



# GENERAL FEATURES

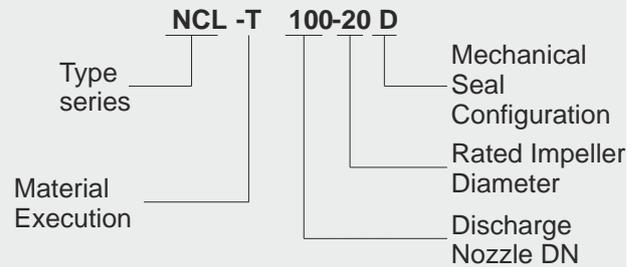
Process-type pump, close coupled to the motor. Removal of motor support nuts allows complete rotating element and motor to be withdrawn upwards for inspection and maintenance, without disturbing connection between pump and pipes. Volute type casing with suction passage designed for minimum NPSH requirements. Ribbed to ensure absence of deformation from pipe stresses and provided with a foot which can be used for supporting heavy motors.



## APPLICATIONS

- Acid transfer
- Caustic and chlor-alkali
- Man made fibers
- Polymers
- Slurry processing
- Solvents
- Volatile organic compounds
- Waste processing

## DESIGNATION



## OPERATING PARAMETERS

- Flows to 1500 m<sup>3</sup>/h (6600 US gpm)
- Heads to 140 m (460 ft)
- Pressures to 25 bar (365 psi)
- Temperatures from -80°C (-110°F) to 350°C (660°F)
- Discharge size from 20 mm (¾ in) to 300mm (12 in)

## STANDARDS COMPLIANCE

The NCL are CE marked and compliant with applicable European directives, such as ATEX.



# CONSTRUCTION

## CASING

One piece volute casing which has sturdy integrally cast feet

## IMPELLER

Closed with six blades, closed with three blades or open types are available.  
Axial thrust balanced with holes or dorsal vanes. Single or double wear ring.



## SEAL HOUSING

Seal chamber accommodates many seal types including single, double and tandem arrangements. The double and tandem seals are available for more severe and environmentally sensitive applications.

All seals can be backed up by a range of flush plans and auxiliary systems.

Conventional and double cartridge seals can be fitted in accordance with the manufacturer's standard or with those designed to meet the latest ISO or DIN standards.

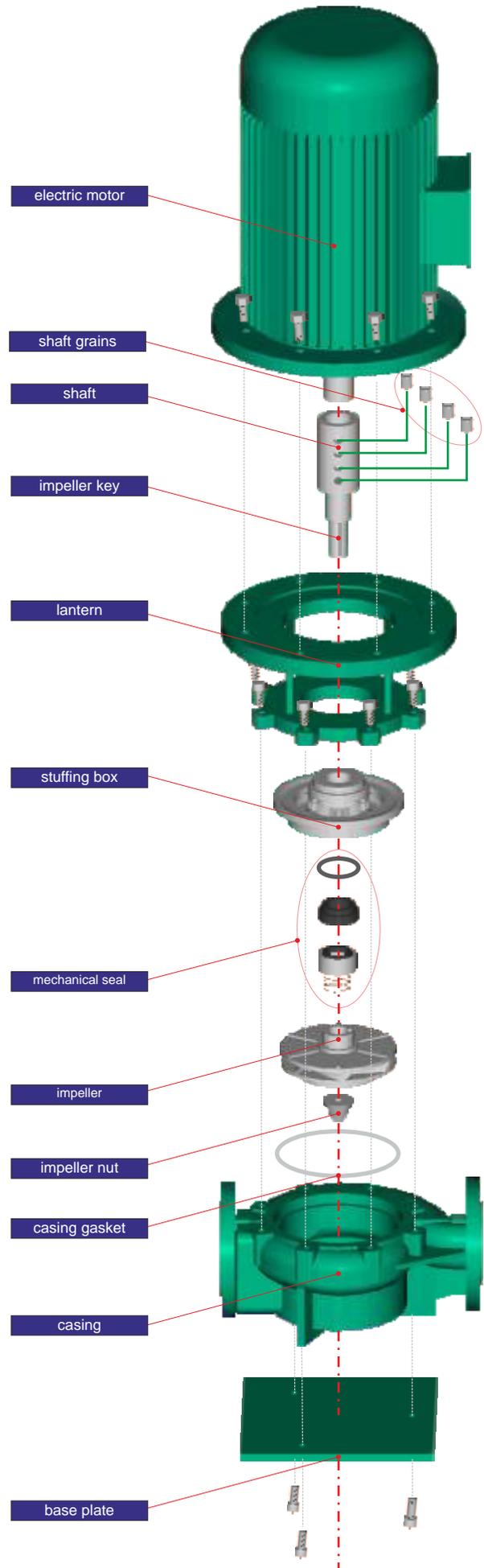
External seals and gland packing are optional, as is the seal housing jacket which controls the seal environment.

## SHAFT AND SHAFT SLEEVE

NCL shafts are designed to improve pump reliability. The robust and stiff solid shaft ensures less than 0.05 mm deflection at the seal face and low L/D ratio to maximize mechanical seal life.

As standard shaft is available in AISI 316 stainless steel.

To meet application requirements shaft can be provided with shaft sleeve. Shaft sleeve as well as shaft are available in a wide range of corrosion resistant alloys.



# MATERIALS

Construction	Casing & Seal Housing	Impeller	Solid Shaft	Sleeved Shaft Option		Lantern
				Shaft	Sleeve	
<b>G</b>	Cast Iron	Cast Iron	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	Cast Iron/ Steels
<b>F</b>	Carbon Steel	Carbon Steel				
<b>H</b>	304 Stainless Steel	304 Stainless Steel				
<b>T</b>	316 Stainless Steel	316 Stainless Steel				
<b>TX</b>	Duplex Stainless Steel	Duplex Stainless Steel	-		Duplex Stainless Steel	
<b>W</b>	Alloy 20	Alloy 20	-		Alloy 20	
<b>NC</b>	Alloy C	Alloy C	-		Alloy C	
<b>NB</b>	Alloy B	Alloy B	-		Alloy B	

Other metallic alloys are available depending on medium handled

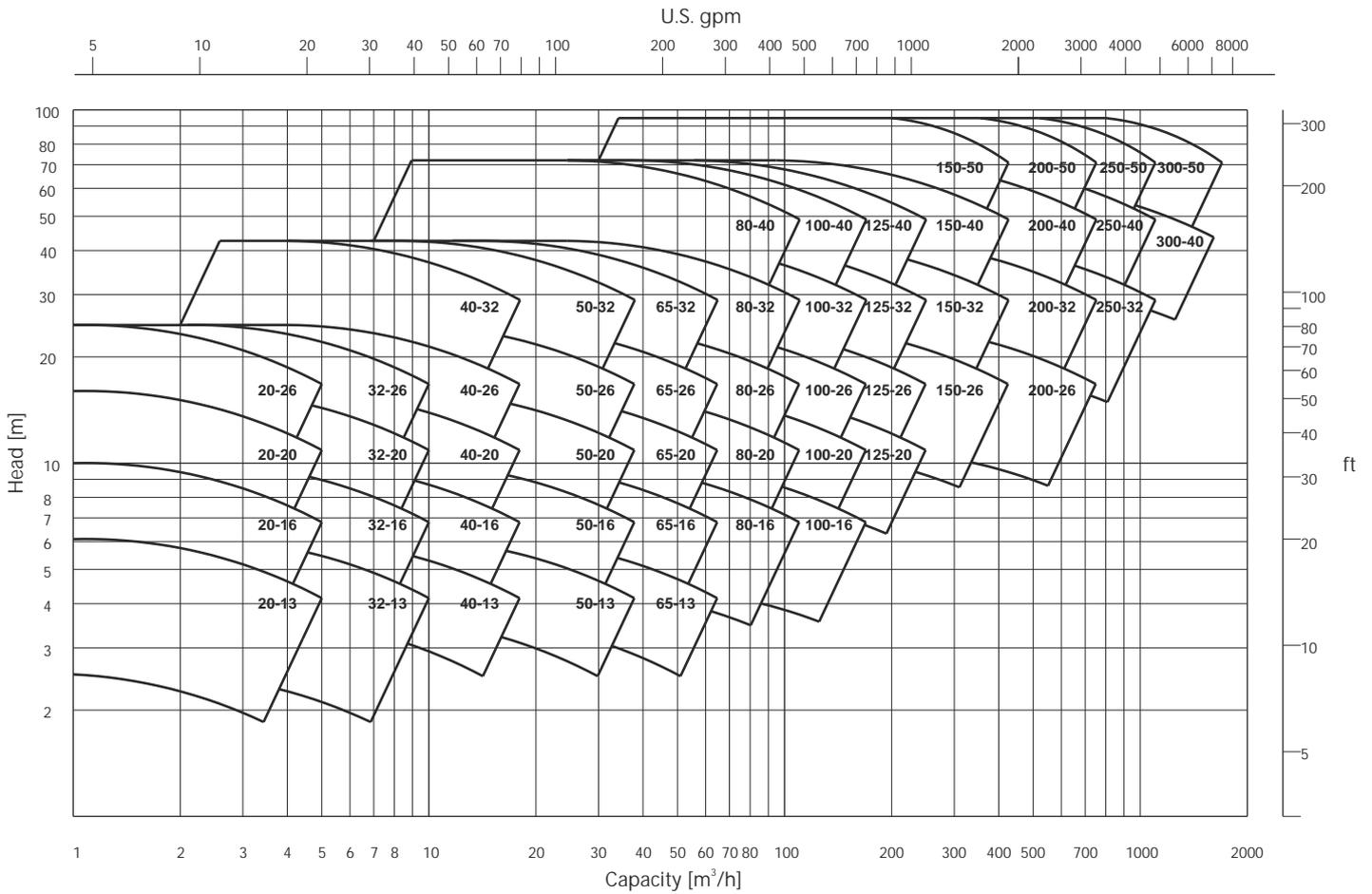
Idrochemical collaborates with foundries which are widely regarded as among European best. They pour alloys from common austenitic stainless steel to light reactive alloys such as titanium or zirconium.



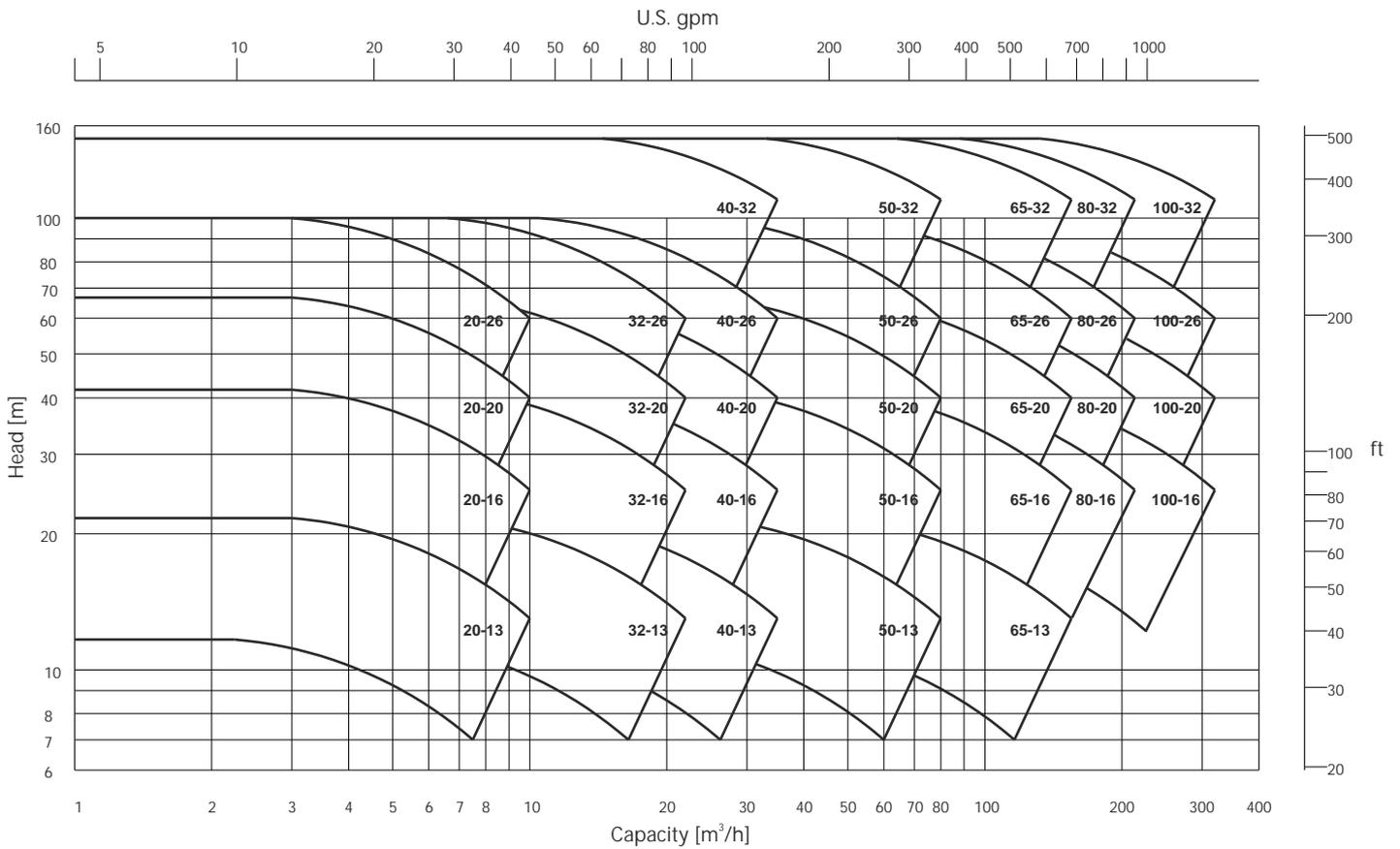
Material	Max Temperature [°C]	Max Pressure [bar]	Max Suction Pressure[bar]	Hydrostatic Test [bar]
Cast Iron	-27÷290 (-16.6÷554°F)	16 (232 psi)	14 (203 psi)	21 (305 psi)
Bronze	130 (266°F)	14 (203 psi)	11 (160 psi)	18 (261 psi)
Carbon Steel	300 (572°F)	25 (365 psi)	16 (232 psi)	36 (522 psi)
Stainless Steel/ Corrosion Resistant Alloys	-80÷350 (-112÷662°F)	25 (365 psi)	16 (232 psi)	36 (522 psi)

# COVERAGE CHART - closed impeller

n=1450rpm



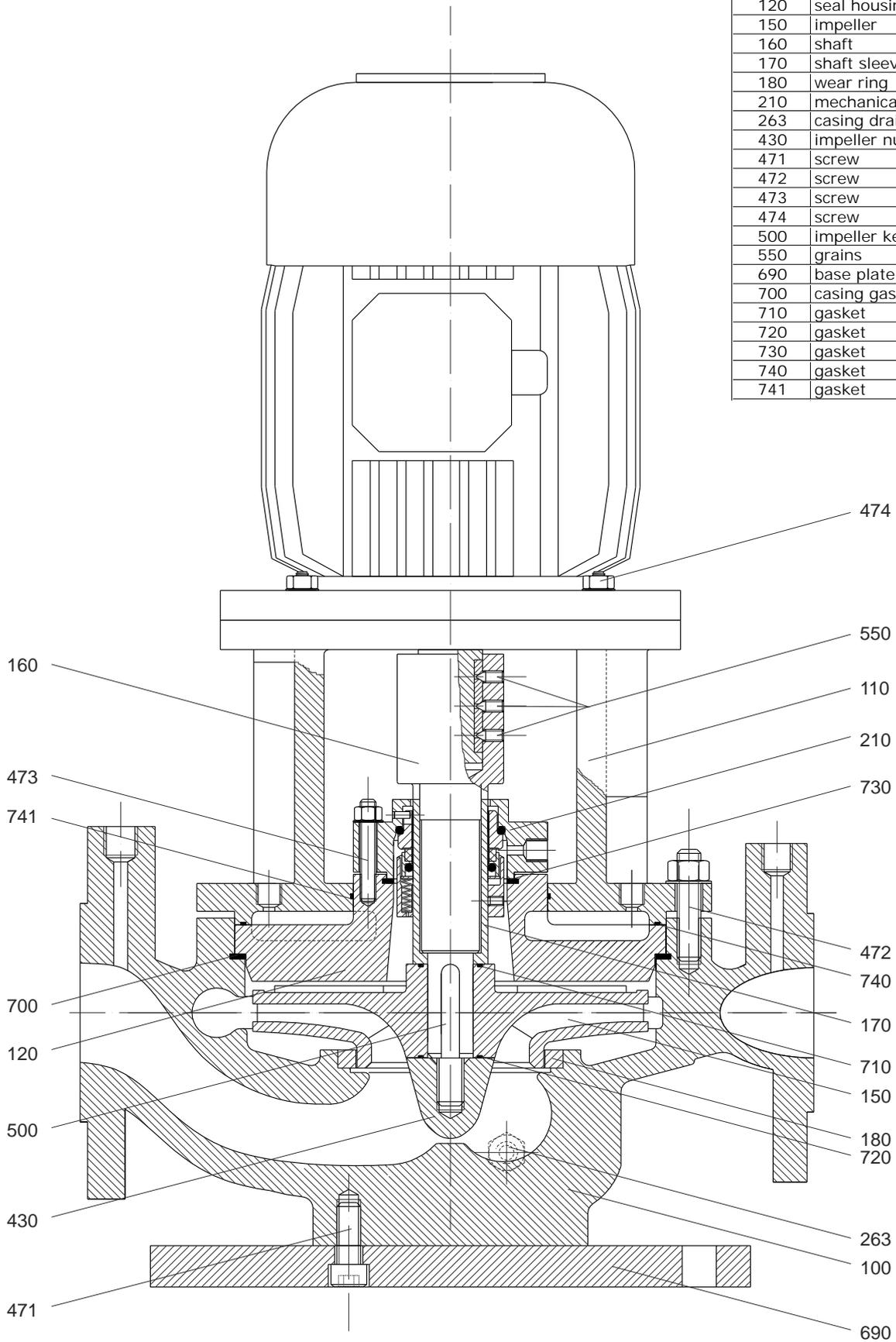
n=2900rpm



# SECTIONAL DRAWING

NCL are also available with open or vortex impeller

ITEM	DESCRIPTION
100	casing
110	lantern
120	seal housing
150	impeller
160	shaft
170	shaft sleeve
180	wear ring
210	mechanical seal flange
263	casing drain
430	impeller nut
471	screw
472	screw
473	screw
474	screw
500	impeller key
550	grains
690	base plate
700	casing gasket
710	gasket
720	gasket
730	gasket
740	gasket
741	gasket



# NCLD DOUBLE SUCTION

Double suction single stage in-line centrifugal pumps designed according to API 610.

- Low NPSH value required.
- Reduced radial load over motor bearings.
- Reduced thrust load over motor bearings due to symmetry of double suction impeller which assures a perfect hydraulic balancing.
- Increased life of mechanical seal due to vertical configuration.

## MATERIALS

STEELS

STAINLESS STEELS

CORROSION RESISTANT ALLOYS

## APPLICATIONS

CHEMICAL AND PETROCHEMICAL INDUSTRY

MINING AND METALLURGIC PLANTS

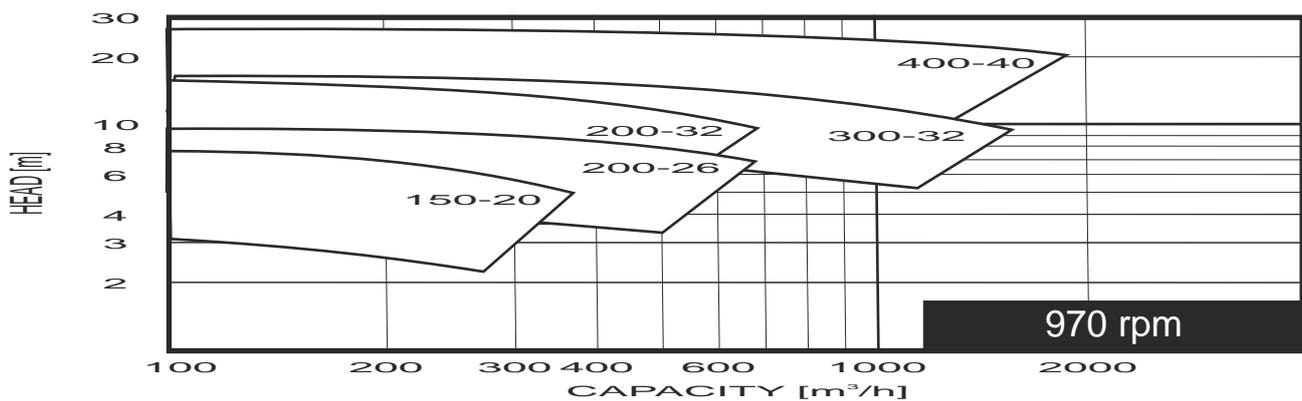
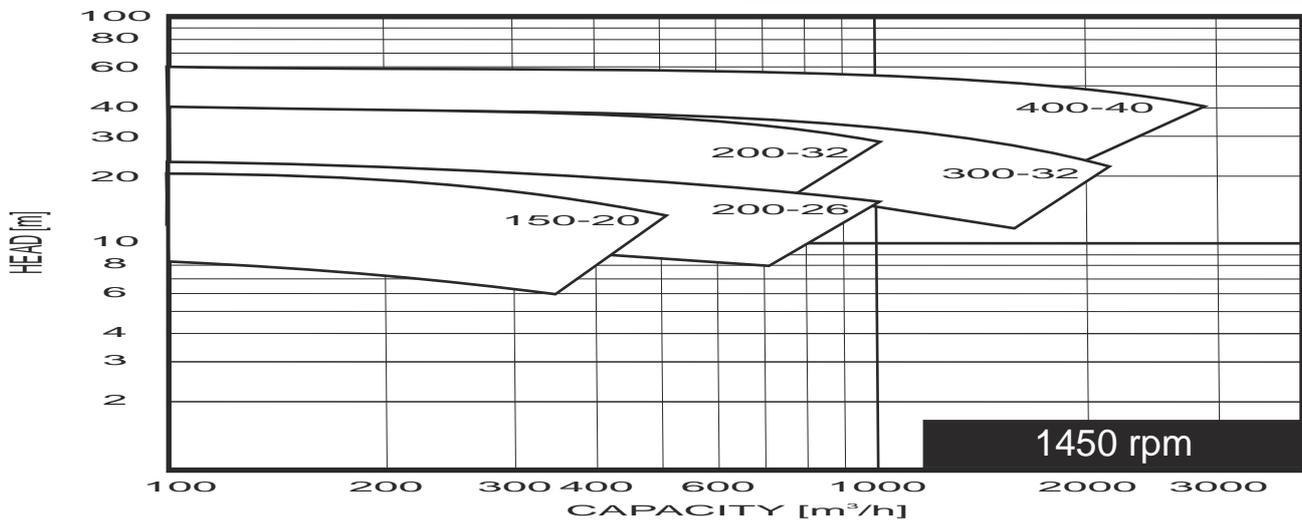
PAPER INDUSTRY

PHARMACEUTICALS

TEXTILE AND DYEING INDUSTRY

FOOD INDUSTRY

DESALINATION PLANTS



# NCLH HEAVY DUTY

Vertical, single stage, single suction in-line with heavy duty process pump with rigid spacer coupling.  
Also available in double suction version (NCNd).

NCLH and NCLHd hydraulic part, materials and performances are identical respectively to NCL and NCLd



# NCN

Vertical, single stage, single suction in-line with rigid spacer coupling with increased ease of maintenance.  
Also available in double suction version (NCNd).

NCN and NCNd hydraulic part, materials and performances are identical respectively to NCL and NCLd

## MAINTENANCE

The NCN configuration allows rotating element to be dismantled for inspection or maintenance without disconnecting flanged connection and wires. the NCN provides a compact, space-saving arrangement ideal for industrial processes or installations when space is at a premium

