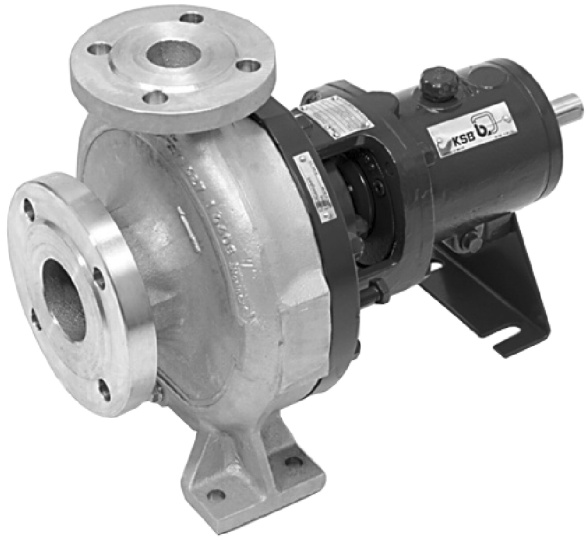
CPKN



Standardized Chemical Pumps

to EN 22858/ISO 2858/ISO 5199

Automation products available:

- PumpExpert
- PumpDrive (MM)
- Hyamaster
- hyatronic

Fields of Application

For handling aggressive organic and inorganic fluids in the chemical and petrochemical industries.

They are also used in:
refinery off-sites, the paper and cellulose industries, the foodstuffs industry, the sugar industry, sea water desalination plants, absorption equipment in environmental engineering, power stations, etc.

Design

Horizontal, radially split volute casing pump in back pull-out design, with radial impeller, single-entry, single-stage, to EN 22 858/ISO 2858/ISO 5199.

Complemented by pumps of DN 25, DN 200 and above.

Benennung

CPKN- C F 40 - 200

Type series
Material of wetted parts
Additional code
Discharge nozzle DN
Nominal impeller diameter in mm

Additional codes:

H = Heated model
O = Open impeller
F = Off-standard flange design
K = Intensively cooled shaft seal chamber
X = Special design

Operating Data

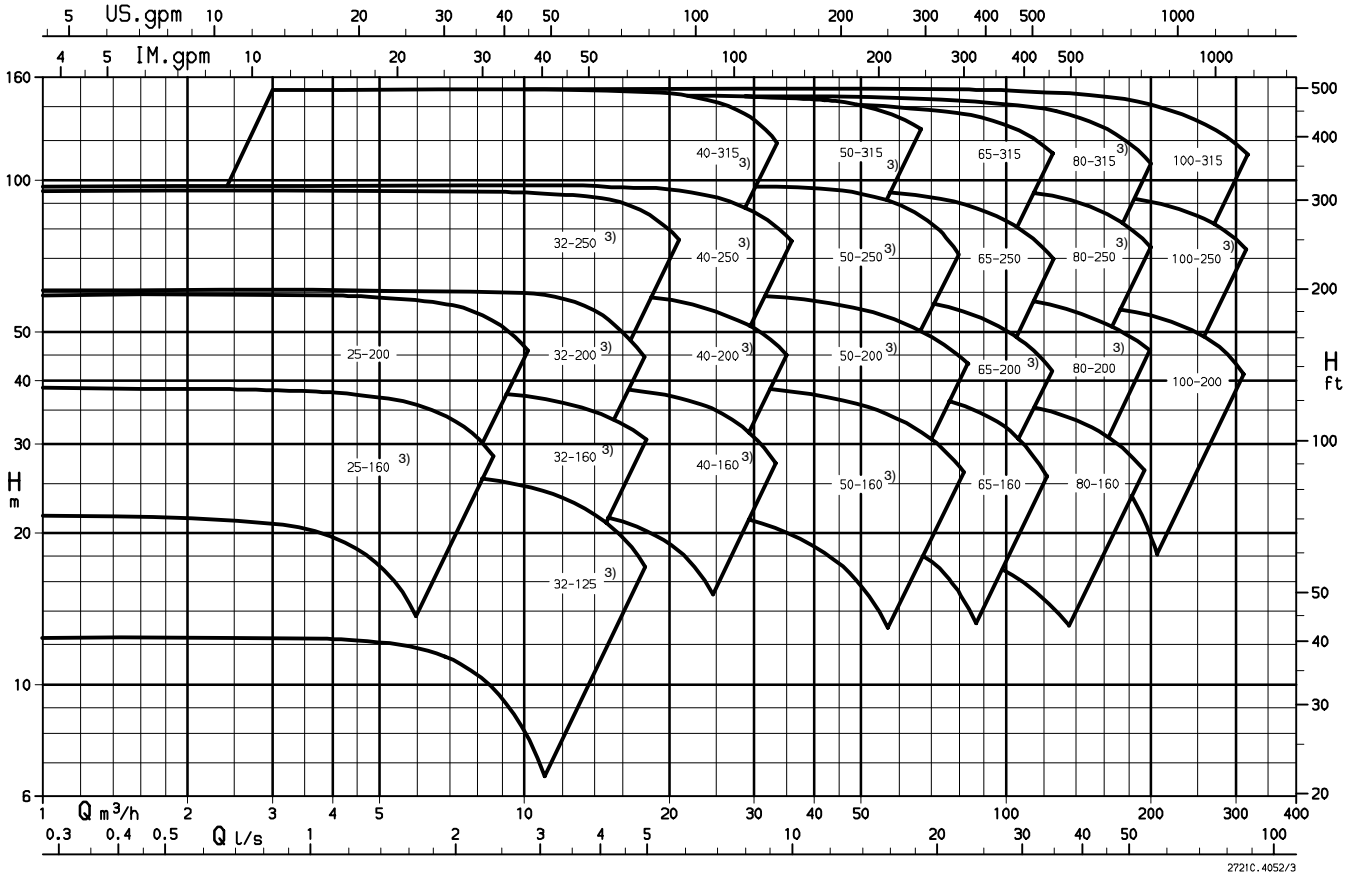
Capacity	Q	up to	4150 m^3/h (1150 l/s)
Heads	H	up to	185 m
Pump sizes	DN		25 to 400
Operating pressures	p	up to	25 bar
Operating temperatures	t		-40 to +400 °C
Operating temperatures	t		-40 to +400 °C

Certification

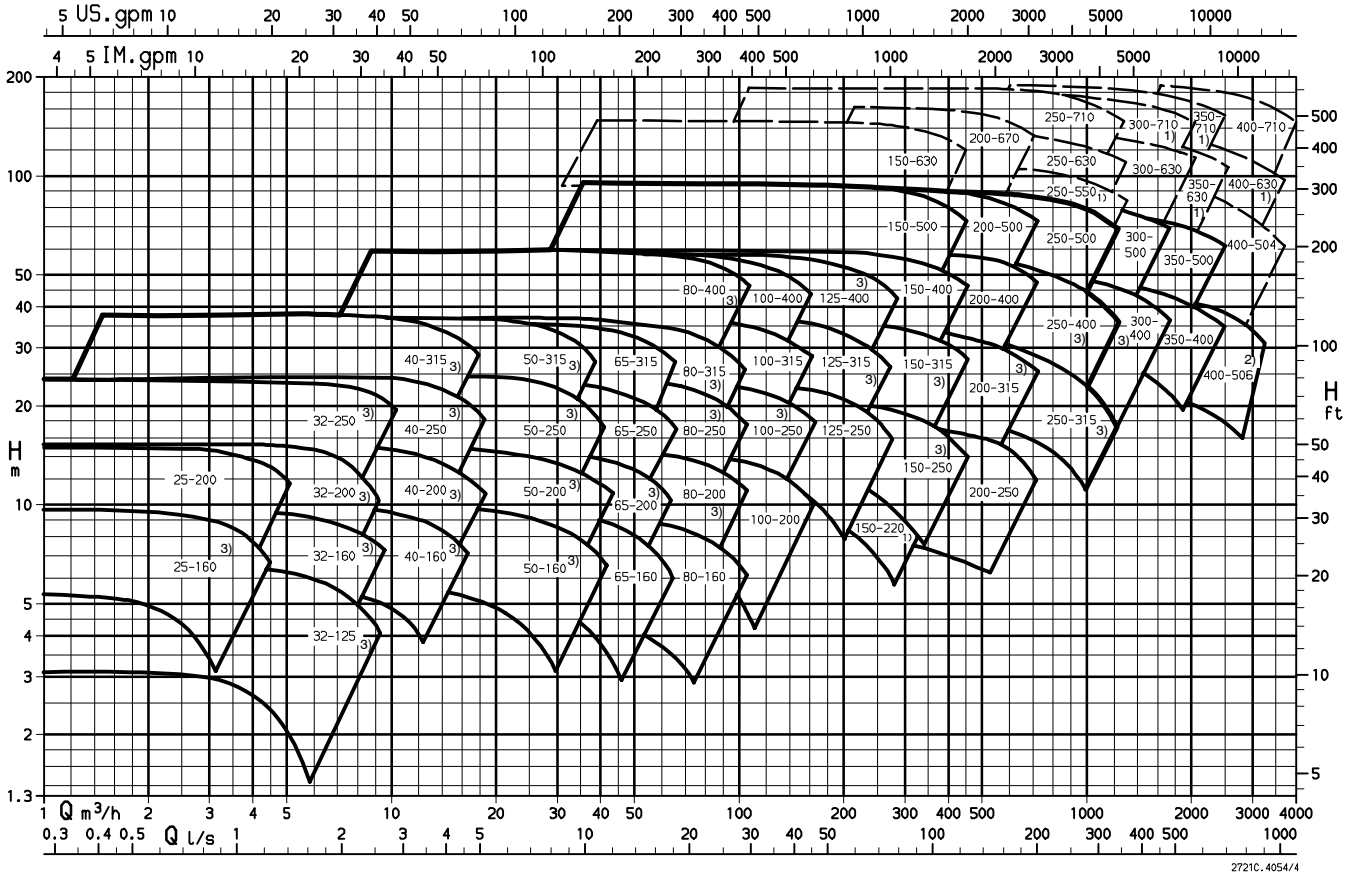
Certified quality management ISO 9001.

Selection Charts

n = 2900 rpm



n = 1450 rpm



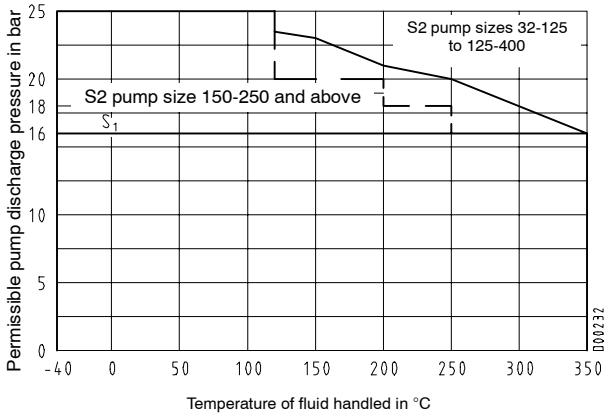
1) on request
2) n = 960 rpm
3) heated model "-CH" possible

Pressure and Temperature Limits

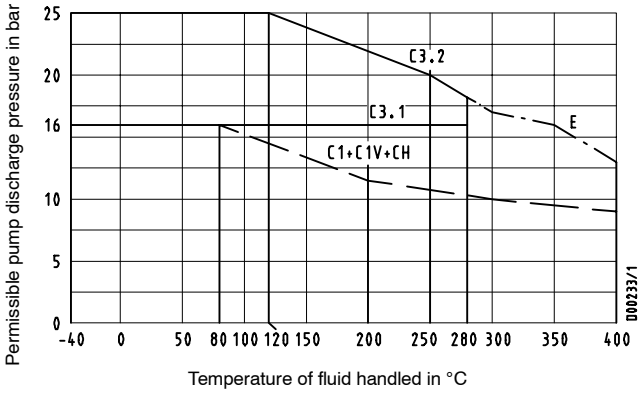
a) Where no special regulations apply (technical codes)

These pumps can be used for all fluids, except for hot water and organic heat transfer fluids.

Material variants S1 and S2

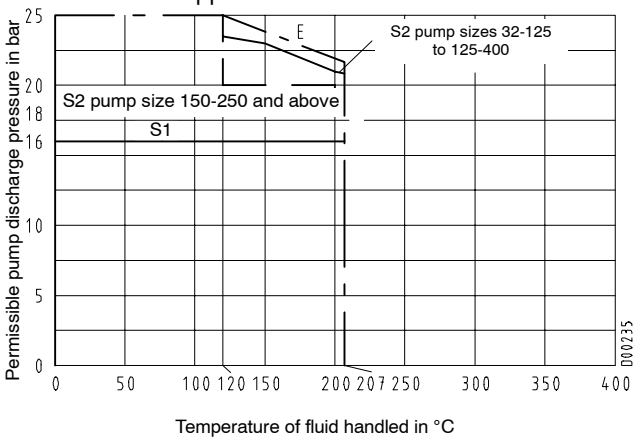


Material variants C1, C3 and E



b) Hot water applications

This applies to pumps not installed in hot water generation plants, i.e. pumps which are not subject to the regulations valid for such applications.



c) Where special regulations apply

In case of special regulations, different safety factors are required, which usually leads to a reduction of the limits stated in a).

Information about the revision of the application limits has to be requested for each individual case, stating the acceptance specifications.

d) Heated model, CPKN-CH

Design	Heated by			
	Hot water/ saturated steam		Thermal oil	
	t_{max}	p_{max}	t_{max}	p_{max}
Lantern (344) JL1040 [1] O-ring (412.01)- material EPR	183 °C	10 bar	--	--
Lantern (344) JS1025 [2] O-ring (412.01)- material PTFE/alloyed steel	250 °C	20 bar[4]	300 °C	6 bar
Welded casing cover	300 °C	20 bar[4]	300 °C	6 bar

1) except for pump sizes 250-315, 80-400 and 200-400: p_{max} = 12 bar, for higher pressures please contact KSB.

e) Pressure and temperature limits for shaft seals

The application limits of shaft seals depend on the circumferential speed, the material and the fluid handled. They have to be checked in each individual case on the basis of the manufacturer's documentation, taking into account the actual operating conditions.

Materials [1]

Part description	Material variant - standard programme			
	C1/C1.V [2] / CHs[2]	S1/S2	E	C3.1/C3.2
Volute casing	1.4408	JS1025 [3]	GP240GH+N	Noridur 1.4593
Casing cover	1.4408	GP240GH+N / JS1025 [4]	GP240GH+N [4]	Noridur 1.4593
Support foot	S235JRG2 [5]	S235JRG2 [5]	S235JRG2 [5]	S235JRG2 [5]
Shaft	C 45+N [6]	C 45+N [6]	C 45+N [6]	C 45+N [6]
Impeller	1.4408	JL1040 [7][8]	JL1040 [7][8]	Noridur 1.4593
Bearing bracket	JL1040 [8]	JL1040 [8]	JL1040 [8]	JL1040 [8]
Bearing bracket lantern	JL1040 [8][9]	JL1040 [8][9]	JL1040 [8][9]	JL1040 [8][9]
Seal cover	1.4571	1.4571	1.4571	1.4539
Casing wear ring	-	JL1040 [8]	-	-
Shaft protecting sleeve - gland packing	1.4571	1.4122	1.4122	1.4539
Shaft protecting sleeve - mechanical seal [10]	1.4571	1.4571	1.4571	1.4539
Impeller nut	1.4571	1.4571	1.4571	1.4539

1) Special materials available, depending on the fluid handled
2) C1.V in compliance with VDMA 24276
3) EN 1563: GJS-400-18-LT
4) for pump design with conical seal chamber: P250GH
5) from bearing bracket UP05 JS1030
6) for wet shaft or T < -10 °C : 1.4462
   T < -40 °C: 1.5680
   T > 250 °C: 1.7709VS
7) on bearing bracket UP04: JS1025
   at T >350 °C or circumferential speed >48 m/sec: 1.4408
8) EN 1561: GJL-250
9) for hot water >183 °C, for organic heat transfer fluid >200 °C, for all T>350 °C and if special regulations apply: JS1025 (EN 1563: GJS-400-18-LT)
10) not fitted on wet shaft

Benefits at a Glance

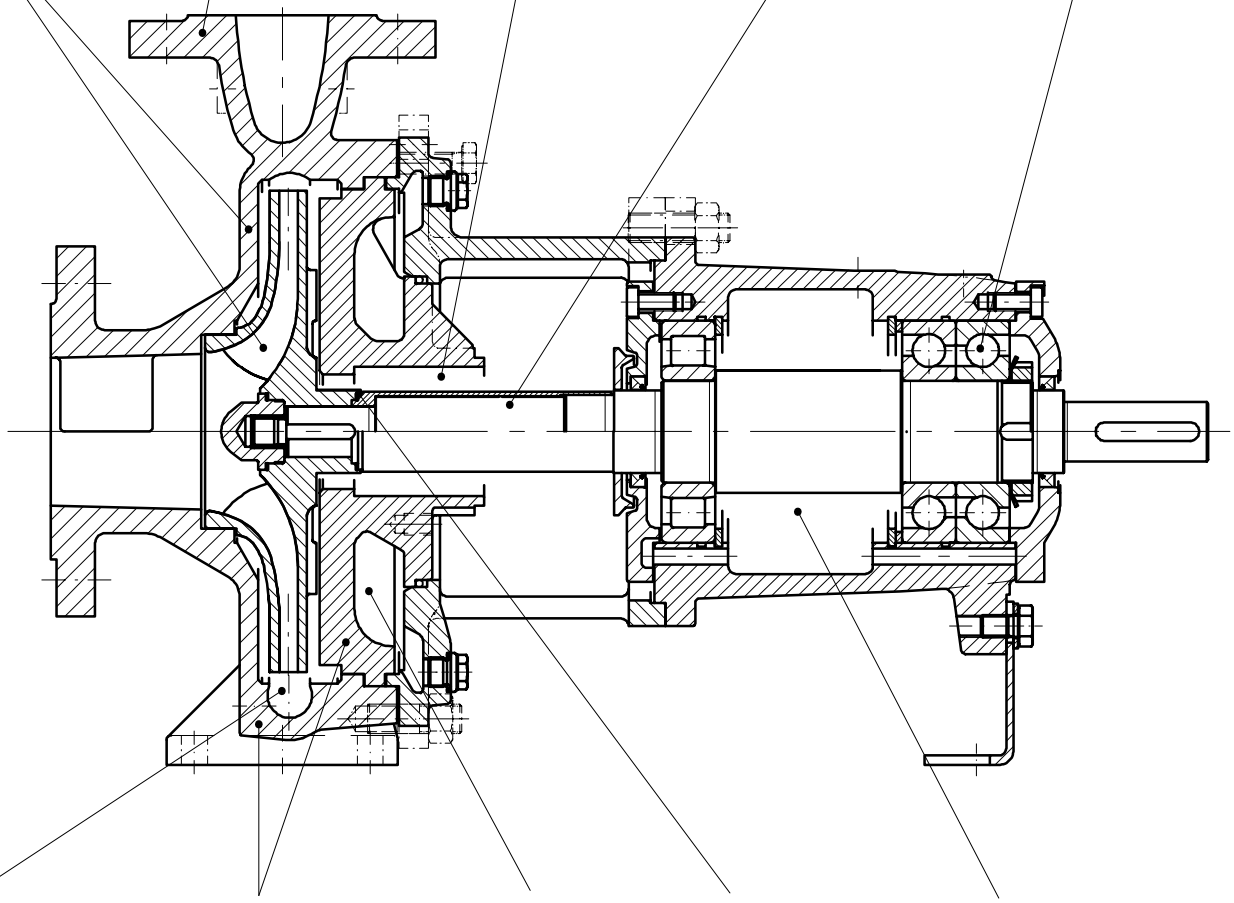
Reliable
thanks to well-proven hydraulic system

Easy to replace
thanks to standardized design and flange variants

Universal
installation chamber for standardized and cartridge-type mechanical seals

Reduced shaft deflection
due to reinforced shaft with or without shaft protecting sleeve

Reliable operation
due to sturdy bearing assembly and oil lubrication;
Bearing life of more than 25,000 operating hours



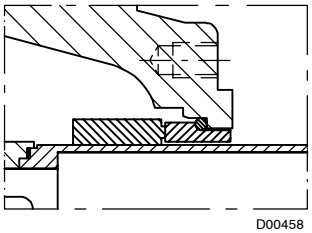
Long service life
of bearings and mechanical seals due to low radial forces

Small stock of spare parts
due to the modular design system

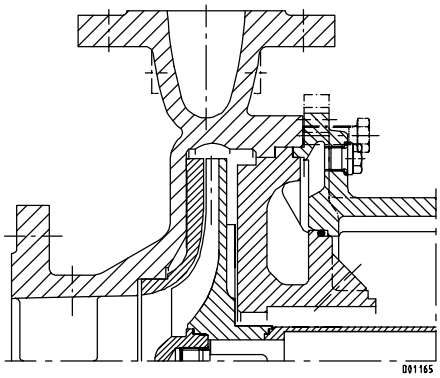
Wide variety of applications
due to a wide range of pump materials and many variants, e.g. cooled discharge cover

Safety
thanks to impeller attachment with metal-to-metal contact

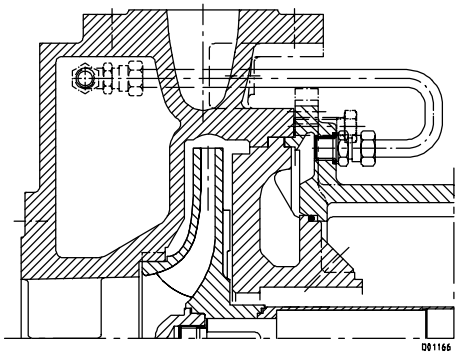
Easy maintenance
due to constant-level oiler: constant lubrication, easy to check



Conical seal chamber (A-type cover)



Model with open impeller (CPKNO)



Heatable model (CPKN-CHs)

15.10.2006
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