



**DICKOW
PUMPEN**



**Centrifugal Pumps acc. to DIN EN 733
with Shaft Sealing**

Type NKL

General

The DICKOW NKL-standard pumps acc. to DIN EN 733 are single stage, single flow volute casing pumps of horizontal design, with end suction flange and centerlined vertical discharge flange. The complete bearing bracket, including intermediate casing with shaft sealing and impeller, forms a back-pull-out unit.

Outline dimensions and performance range comply with the requirements of DIN EN 733. The performance range is subdivided such that the available pump sizes grant best efficiency at all service conditions.

Applications

NKL-pumps are intended as circulation pumps in municipal areas, the industry and the agriculture.

They are suitable for handling cooling water, condensate, hot water, washing lyes, solvents, hydrocarbons and similar non-volatile products.

Hazardous area

Together with the required Ex-drive motors, the NKL-pumps can be applied in hazardous area Group II, Category 2. The pumps meet the basic safety and health requirements of Explosion-proof Directive 94/9 EC and are suitable for plants with increased safety requirement.

Volute casing, flange design

The one-piece volute casing is provided with integrally cast feet for mounting on the base plate. Suction and discharge flanges are in accordance with DIN 2532 / PN 10 respectively DIN 2533 / PN 16.

Impellers

NKL-pumps have closed impellers, constructed as single piece castings, hydraulically balanced by throttle gap and relief bores to keep occurring

axial loads to a minimum. All impellers are dynamically balanced acc. to DIN ISO 1940 / part 1 with a minimum balance grade of G 6.3 that grants a smooth run of the pump free of vibrations. The impellers are keyed to the pump shaft in overhung position and are secured by shaft nuts.

Wear rings

NKL-pumps of standard design have no wear rings provided. But the construction of intermediate and volute casing allows remachining and a subsequent installation of wear rings in case of worn out casings or impellers.

Pump shafts

The pump shafts are capable of accepting full drive power. The shaft stiffness allows only minor deflection over the operating range of the pump and ensures high reliability of the unit.

The pump shafts are manufactured of corrosion resistant material.

Bearings

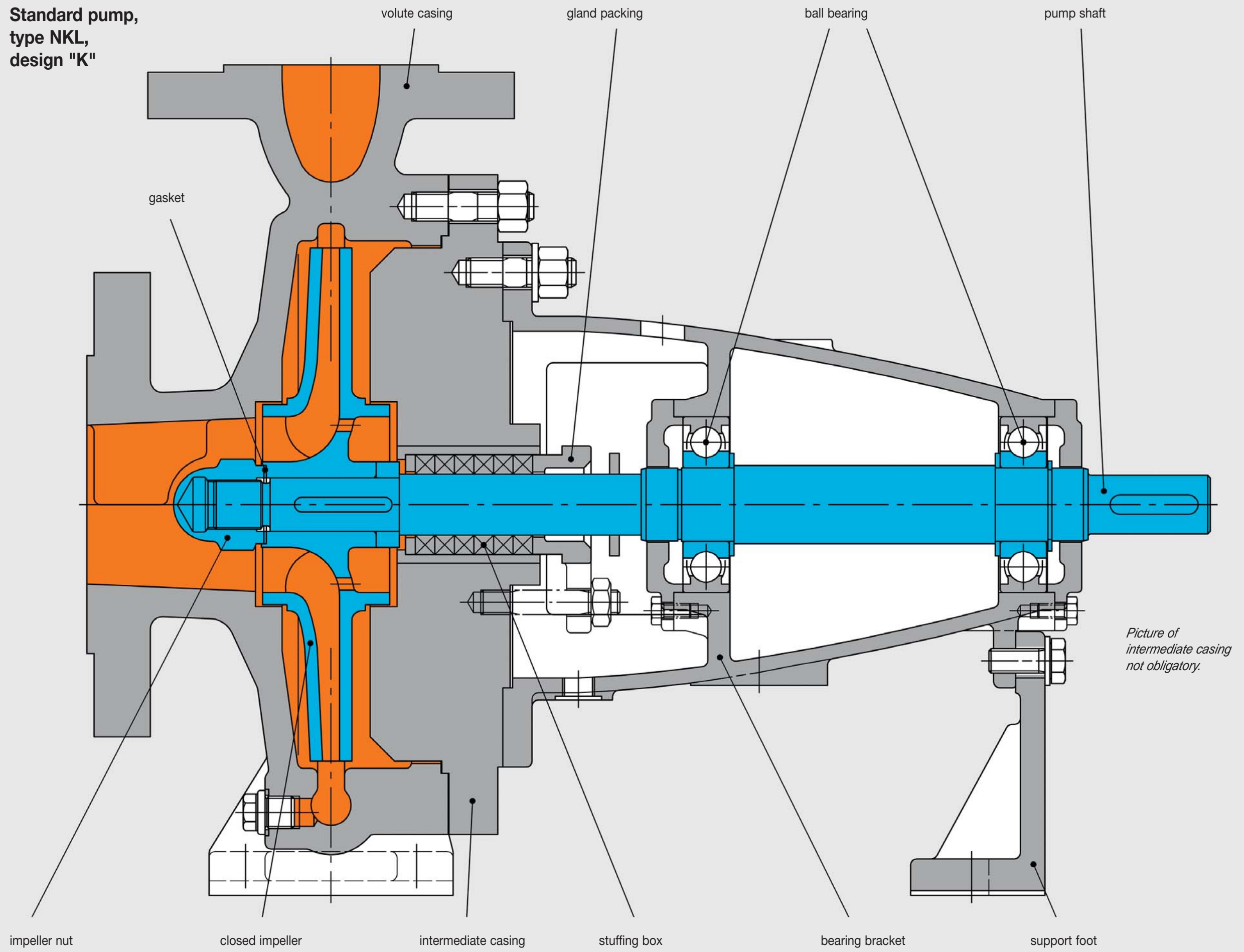
The pump shaft is carried in generously dimensioned grease lubricated antifriction bearings, located outside the pumped liquid. The bearings are greased for life.

The average service life of the bearings reaches 16000 operating hours.

Standard materials

Volute casing:	EN-GJS-400-18 LT
Intermediate casing:	EN-GJS-400-18 LT / St37
Impeller:	dia < 250 mm – EN-GJL-250 dia > 250 mm – EN-GJS-400-18 LT
Shaft:	1.4021
Bearing bracket:	EN-GJL-250

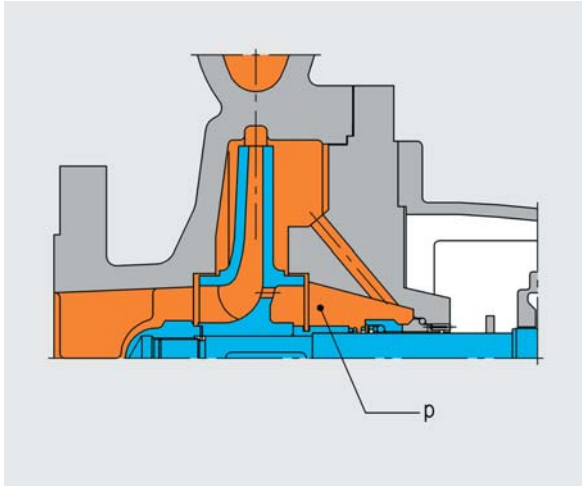
**Standard pump,
type NKL,
design "K"**



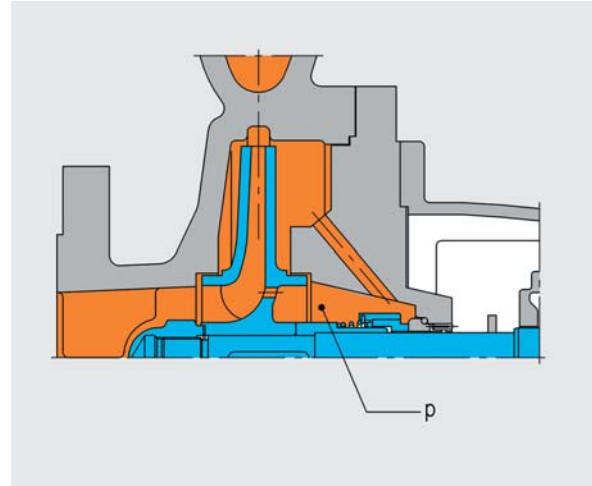
*Picture of
intermediate casing
not obligatory.*

Mechanical seals

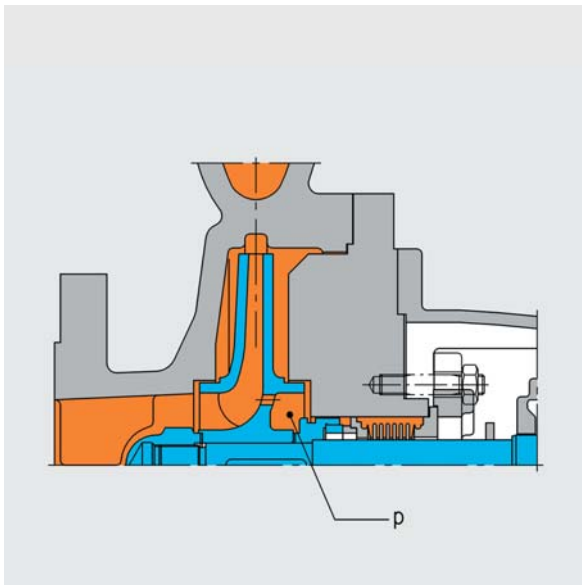
Considering the different applications, the NKL-pumps can be fitted with gland packing or single acting mechanical seals:



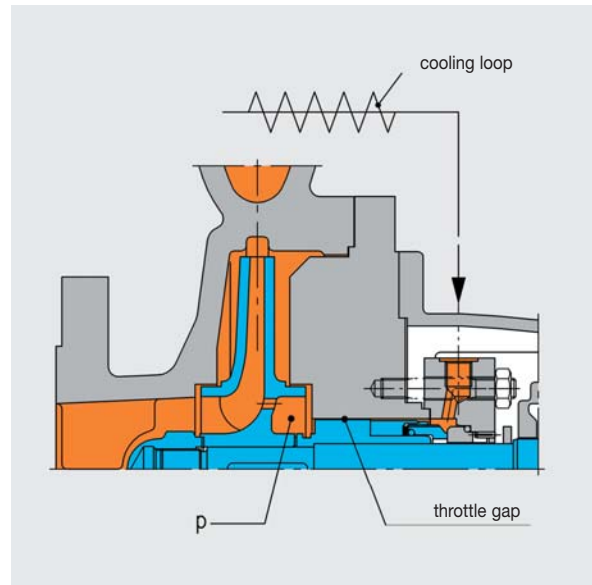
Unbalanced standard mechanical seal, design "R".
Maximum allowable pressure $p = 7$ bar.
Maximum temperature 120 °C.



Balanced standard mechanical seal, design "Re".
Maximum allowable pressure $p = 16$ bar.
Maximum temperature 140 °C.

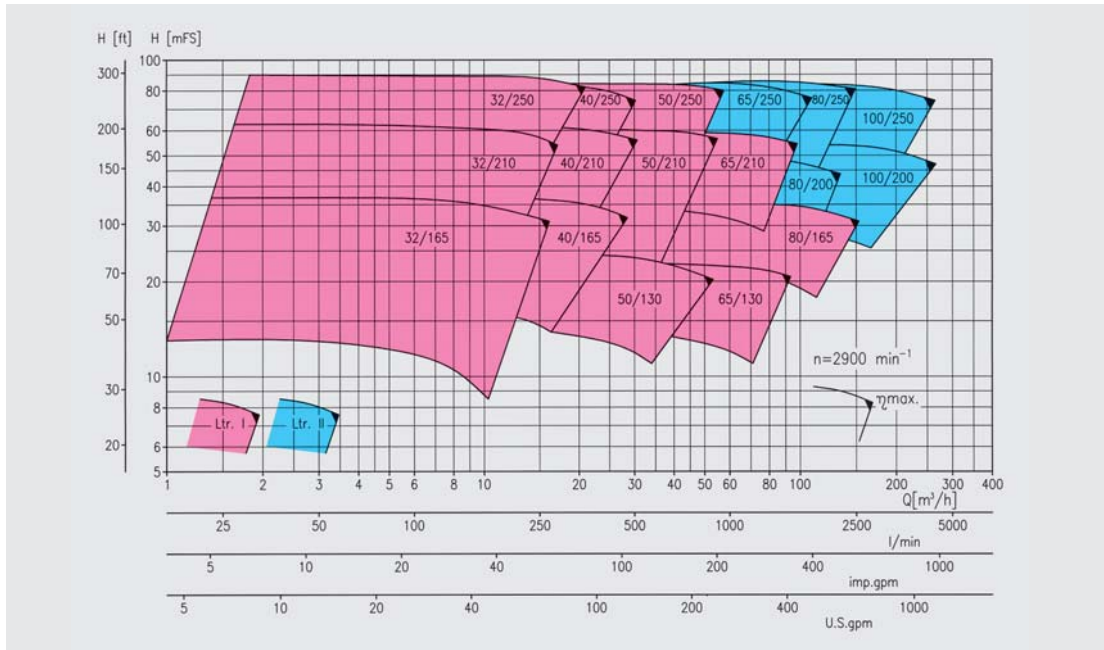
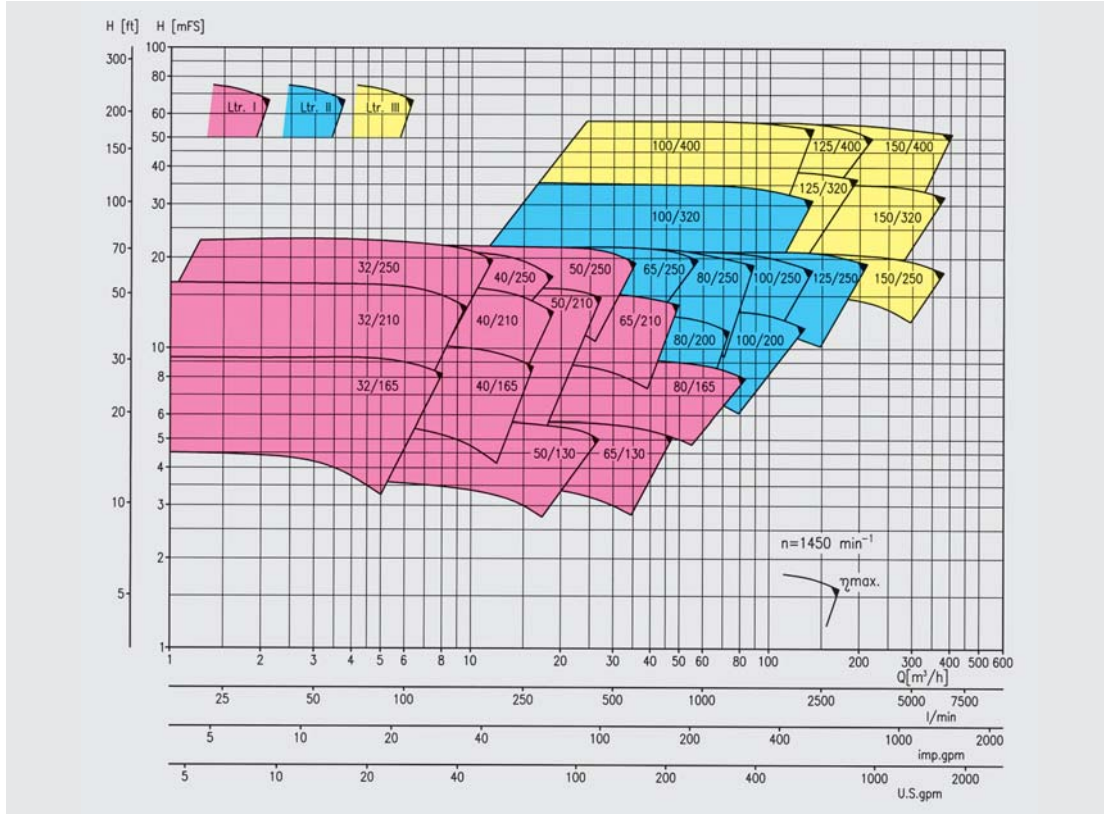


Metal bellows mechanical seal, design "N6".
Maximum allowable pressure $p = 10$ bar.
Maximum temperature 150 °C.



Balanced standard mechanical seal, design "Ge"
for hot water service with external circulation
from discharge to mechanical seal,
through air cooled cooling loop and throttle gap.
Maximum allowable pressure $p = 16$ bar.
Maximum temperature 160 °C.

Performance range



Performance curves for the different pump sizes are available on request, also for 1750 min^{-1} und 3500 min^{-1} .

