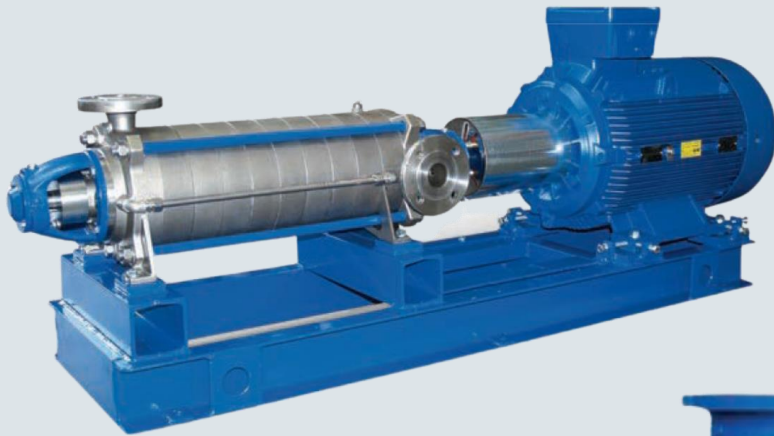




Horizontal Multistage Pumps TK & VTK Series



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Multistage Centrifugal Pumps

TK Series

TKR Series

VTK Series

TTK Series

TK-VTK-TKR-TTK are high pressure multistage pumps.

Connection to the driving machine (generally an electrical motor) is through a flexible coupling.

Design

Multistage centrifugal ring section pumps with modular design. The stage elements are in series configuration and are sealed by O-rings tightened by sturdy outer tie bolts.

The supporting feet on delivery side are integrated in the delivery nozzle casing for all sizes.

For sizes up to 65-100 (included), the suction side pump feet are integrated in the first stage casing in order to allow to turn the suction nozzle in steps of 90° (left or right side or top). For larger sizes the pump feet are mounted under the suction nozzle casing, accordingly the position of the suction nozzle has to be defined when ordering.

The axial thrust is balanced by the hydraulic and dynamic balancing of each single impeller.

TK series are horizontally and between bearings mounted. PN16 Suction flange and PN40 Delivery flange. The shaft is supported by two, grease lubricated, antifriction bearings.

VTK series are vertically mounted. Suction flange PN16 and Delivery flange PN40. The shaft on the suction side is led in slide bearing lubricated by the pump liquid, on the delivery side is supported by the motor bearing. Motor and pump are connected by a stool and a rigid coupling.

TKR series are horizontally and between bearings mounted. Suction flange PN16 and Delivery flange PN64. The shaft is supported by two, oil lubricated, antifriction bearings.

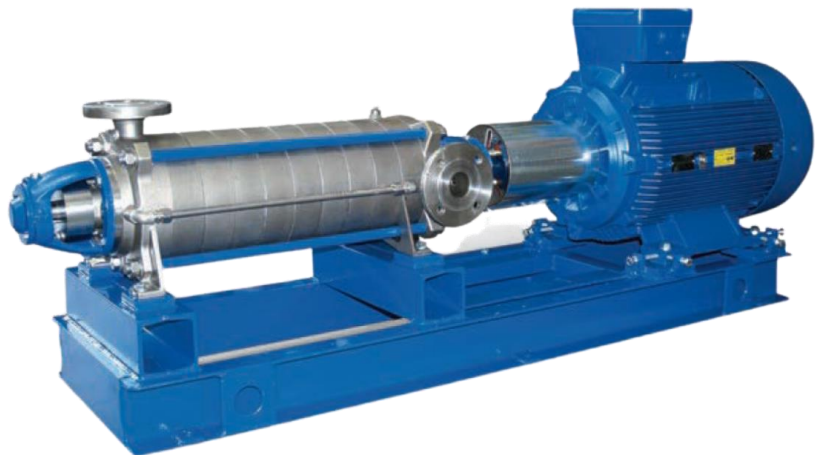
Fields of Application

TK – VTK Pumps are used for:

- Irrigation and land reclamation plants
- Water supply
- Power plants
- Hot and cold water circulation
- Condensate transportation
- Snow gun
- Fire-Fighting equipment

TKR – TTK Pumps are used for:

- Boiler feed
- Pressure boosting
- Osmosis and ultra filtration



Materials

TK / VTK Series

| Description | Standard | Option |
|---------------------------|--|---|
| Pump Casing | Cast Iron (EN-GJL-250) | Stainless Steel (GX6CrNiMo1810) |
| Radial Impeller | Cast Iron (EN-GJL-250) Bronze (G-CuSn10) | Stainless Steel (GX6CrNiMo1810) |
| Diffuser | Cast Iron (EN-GJL-250) Bronze (G-CuSn10) | Stainless Steel (GX6CrNiMo1810) |
| Wear Rings | Bronze (G-CuSn10) For size 125-150 and higher | Bronze (G-CuSn10) Stainless Steel (AISI 316) |
| Suction / Delivery Casing | Cast Iron (EN-GJL-250) (*) | Stainless Steel (GX6CrNiMo1810) |
| Shaft Sleeves | Chromium Steel (AISI 420B) | Stainless Steel (AISI 316) |
| Shaft | Chromium Steel (AISI 420B) | Stainless Steel (AISI 316) |
| Seal: | | |
| TK | Soft Packing (PTFE) | Mechanical seal |
| VTK | Mechanical seal (Ca/Sic/EDPM) | Mechanical seal (Sic/Sic/VITON) |
| Bearings | Grease lubricated | Oil lubricated (only TK series) |

(*) Exceeding 25 bar: Delivery Casing Materials, Nodular Cast Iron or Carbon Steel



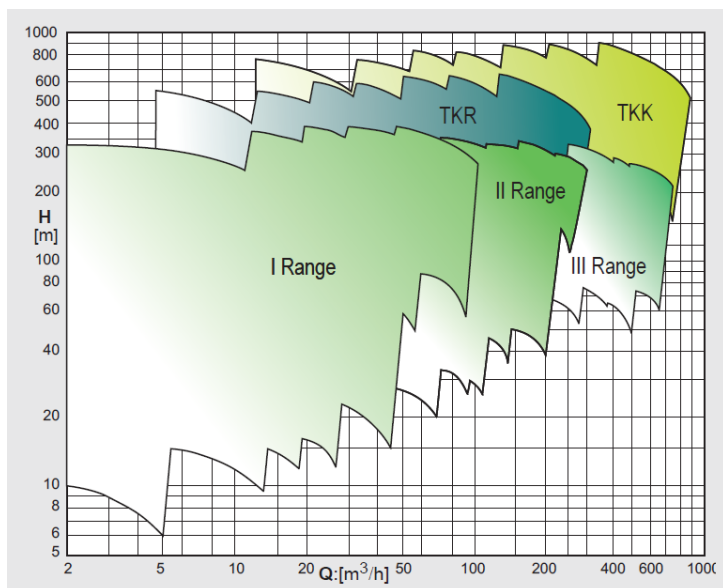
TK / VTK Series

| Description | Standard | Option |
|-----------------|--|---|
| Pump Casing | Nodular Cast Iron (EN-GJS-400-15) | Stainless Steel (GX6CrNiMo1810) |
| Radial Impeller | Cast Iron (EN-GJL-250) Bronze (G-CuSn10) | Stainless Steel (GX6CrNiMo1810) |
| Diffuser | Cast Iron (EN-GJL-250) | Stainless Steel (GX6CrNiMo1810) |
| Wear Rings | Bronze (G-CuSn10) | Stainless Steel (AISI 316 + Hardening) |
| Suction Casing | Nodular Cast Iron (EN-GJS-400-15) Carbon Steel (GP240GH) | Stainless Steel (GX6CrNiMo1810) |
| Delivery Casing | Carbon Steel (GP240GH) | Stainless Steel (GX6CrNiMo1810) |
| Shaft Sleeves | Chromium Steel (AISI 420B) | Stainless Steel (AISI 316) |
| Shaft | Chromium Steel (AISI 420B) | Stainless Steel (AISI 316) |
| Seal | Soft Packing (PTFE) | Mechanical seal |
| Bearings | Oil lubricated | |



Performance Range

2 – 4 Pole / 50Hz



The performance included

I RANGE

Type: from TK – VTK 25/40 to TK – VTK 65/100

Capacity: up to 100m³/h

Head: up to 400m

| Working Pressure and Temperature: | Suction | Delivery | Temperature |
|---|---------|----------|----------------|
| Soft packing | 12 Bar | 40 bar | -10°C ÷ +105°C |
| Standard mechanical seal (Ca/Sic/EPDM) | | | -10°C ÷ +120°C |
| Special mechanical seal (Sic/Sic/VITON) | | | -10°C ÷ +120°C |

Maximum admissible casing pressure (suction + shut off head): 40 bar

II RANGE

Type: from TK – VTK 80/125 to TK – VTK 125/150

Capacity: up to 300m³/h

Head: up to 350m

| Working Pressure and Temperature: | Suction | Delivery | Temperature |
|---|---------|----------|----------------|
| Soft packing | 12 Bar | 40 bar | -10°C ÷ +105°C |
| Standard mechanical seal (Ca/Sic/EPDM) | | | -10°C ÷ +120°C |
| Special mechanical seal (Sic/Sic/VITON) | | | -10°C ÷ +120°C |

Maximum admissible casing pressure (suction + shut off head): 40 bar; (125/150: 30 bar)

III RANGE

Type: from TK 150/200 to TK 250/300

Capacity: up to 800m³/h

Head: up to 300m

| Working Pressure and Temperature: | Suction | Delivery | Temperature |
|---|---------|----------|----------------|
| Soft packing | 12 Bar | 25 bar | -10°C ÷ +105°C |
| Standard mechanical seal (Ca/Sic/EPDM) | | | -10°C ÷ +120°C |
| Special mechanical seal (Sic/Sic/VITON) | | | -10°C ÷ +120°C |

Maximum admissible casing pressure (suction + shut off head): 30 bar

TKR Range

Type: from TKR 32/50 to TKR 125/150

Capacity: up to 500m³/h

Head: up to 600m

| Working Pressure and Temperature: | Suction | Delivery | Temperature |
|---|---------|----------|----------------|
| Soft packing | 12 Bar | 64 bar | -10°C ÷ +105°C |
| Standard mechanical seal (Ca/Sic/EPDM) | | | -10°C ÷ +120°C |
| Special mechanical seal (Sic/Sic/VITON) | | | -10°C ÷ +120°C |

Maximum admissible casing pressure (suction + shut off head): 30 bar

TKK Range

Type: from TKK 40/60 to TKK 200/250

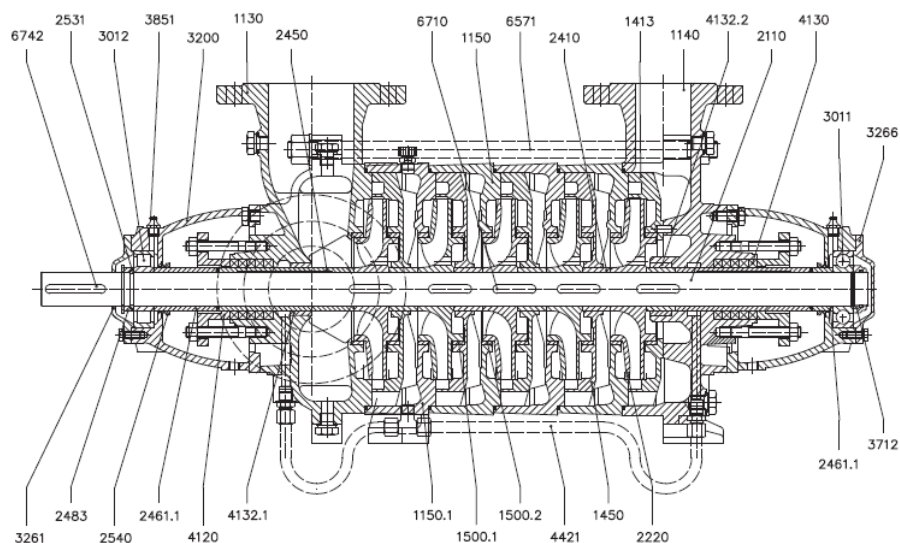
Capacity: up to 900m³/h

Head: up to 900m

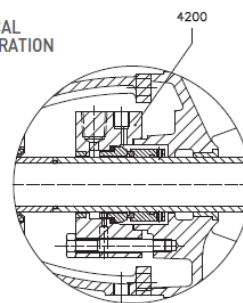
| Working Pressure and Temperature: | Suction | Delivery | Temperature |
|--|---------|----------|-------------|
| Mechanical seal (Ca/Xic/EPDM) | 25 Bar | 100 bar | +160°C |
| Maximum admissible casing pressure (suction + shut off head): 30 bar | | | |

Sectional Drawings

TK Series

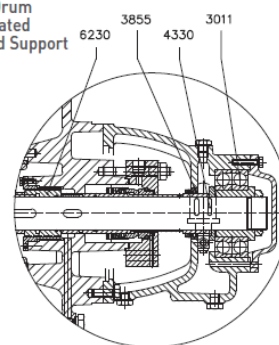


MECHANICAL SEAL CONFIGURATION

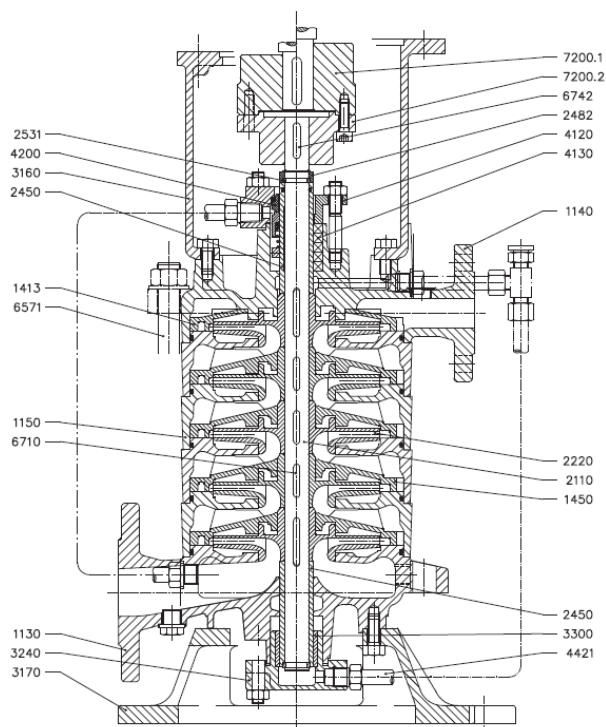


TKR CONFIGURATION

- Balance Drum
- Oil Lubricated
- Reinforced Support



VTK Series



| POS | Parts Name | POS | Parts Name |
|------------|---------------------------------|--------------|-----------------------------|
| 1130 | Suction Casing | 3240 (5) | Bearing Carrier |
| 1140 | Delivery Casing | 3261 | Bearing Cover Suction Side |
| 1150 | Stage Casing | 3266 | Bearing Cover Delivery Side |
| 1150.1 (3) | First Stage Casing | 3300 (5) | Bearing Bush |
| 1413 | Diffuser Last Stage | 3712 | Thrust Bearing Nut |
| 1450 | Diffuser | 3851 | Grease Cup |
| 1500.1 (1) | Casing Wear Ring, Suction Side | 3855 (4) | Constant level Oil |
| 1500.2 (1) | Casing Wear Ring, Delivery Side | 4120 | Packing Gland |
| 2110 | Pump Shaft | 4130 | Packing Seal |
| 2220 | Impeller | 4130 | Packing Seal Delivery Side |
| 2410 (1) | Impeller Spacer Sleeve | 4132.1 (1) | Neck Bush Suction Side |
| 2450 | Spacer Sleeve, Suction Side | 4132.2 (1-2) | Neck Bush Delivery Side |
| 2461.1/2 | Bearing Spacer Sleeve | 4200 | Mechanical Seal |
| 2483 | Locating Sleeve | 4330 (4) | Labirint ting |
| 2531 | Retaining Ring Split | 4421 | Shaft Seal Pipe |
| 2540 | Trower | 6230 (4) | Balance Drum |
| 3011 | Thrust Ball Bearing | 6571 | Tie Bolt |
| 3012 | Radial Roller Bearing | 6710 | Impeller Key |
| 3160 (5) | Motor Stool | 6742 | Coupling Key |
| 3170 (5) | Pump Stool | 7200.1 | Half Coupling |
| 3200 | Bearing Housing | 7200.2 | Half Coupling |

(1) Only for pumps, $\geq 125-150$

(2) Only for pumps, 80-125 and 100-150

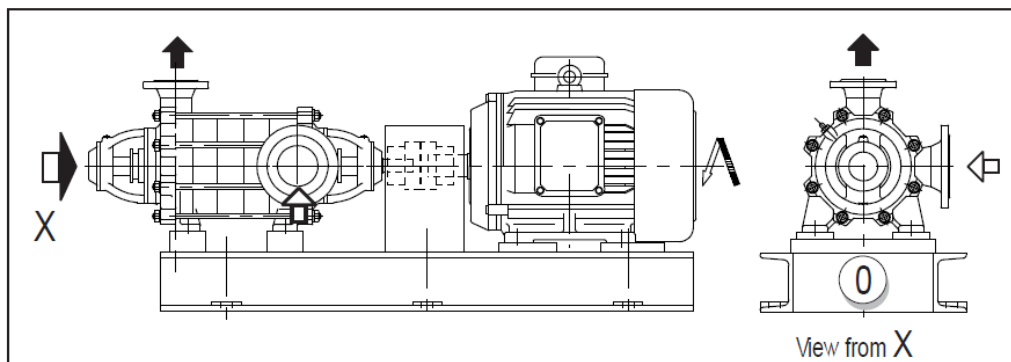
(3) Only for pumps, $\leq 65-100$

(4) only for pumps, TKR Pumps

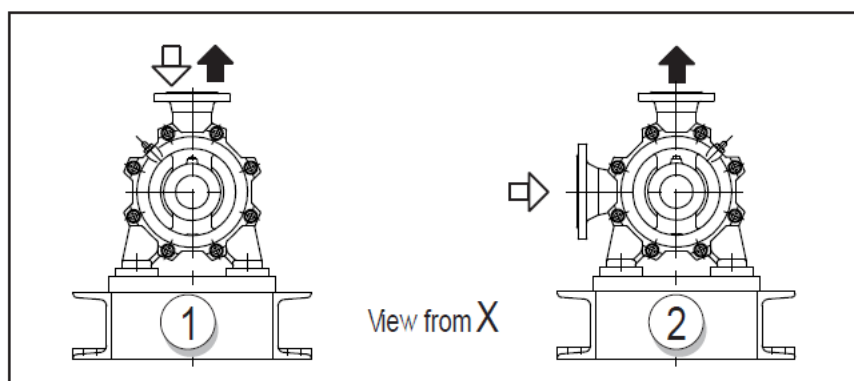
(5) Only for VTK Pumps

Installation Type

TK – TKR Horizontal Installation



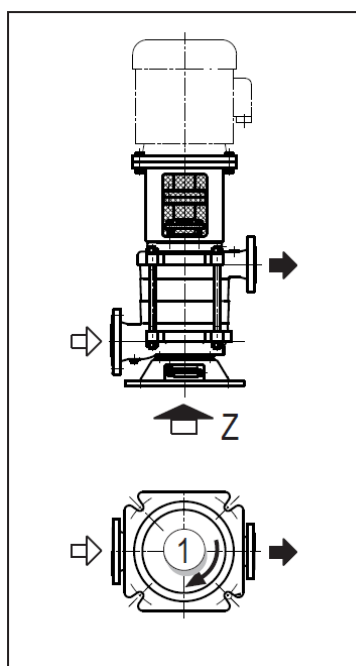
Standard Installation



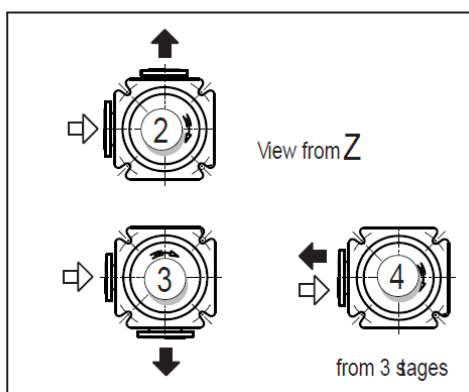
On Request

VTK Vertical

Installation



Standard



On Request

Special Executions

In Tank

TKV Vertical Pump

TKV pumps are vertical, centrifugal multistage pumps connected to the drive (generally and electric motor) by flexible coupling.

Alignment and drive of line shaft is ensured by bush bearing located in the pump casing and by the column pipe joints.
Pressure seal at shaft connection is ensured by packaging seal.
The impeller is centrifugal type.

- The pump is composed of:**
- Pump casing
 - Column pipe
 - Thrust bearing housing
 - Motor stool

- Applications:**
- Water distribution
 - Underground service
 - Lube oil systems



In Barrel

TKVB Vertical Pump

TKVB pumps are canned centrifugal multistage vertical pumps.

Vertical axis alignments ensured by special smooth bearings in the pump, in the support and in the guides interposed on connection pipe.
Axial and radial thrusts are borne respectively by two bearing balls 3010 placed in the support housing.
Coupling between pump and motor is created through two half couplings joined by a spacer.

Shaft seating is created through mechanical member.

- The set is composed of:**
- Pump casing
 - Connection column
 - Casing
 - Motor stool
 - Barrel containing pump casing

- Applications:**
- LPG transfer
 - Volatile chemicals
 - Condensate systems

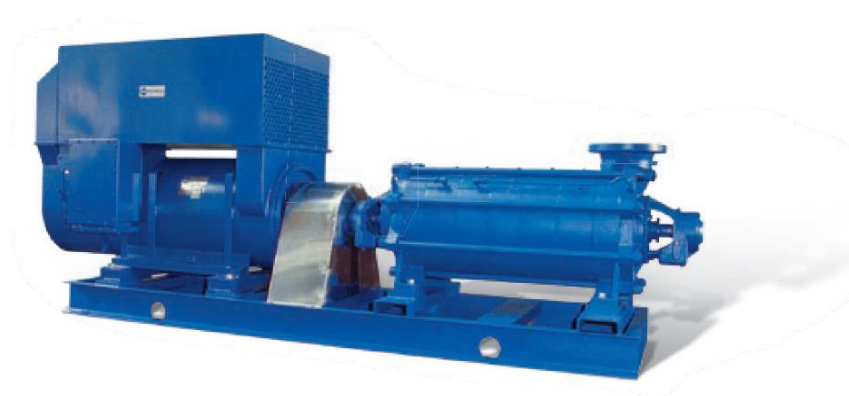


Power & Process

TKRC Horizontal Multistage Pump

TKRC pumps are centrifugal multistage pumps for high pressures.
Coupling to the drive, generally an electric motor is ensured by a flexible joint

- Applications:**
- Steam boiler power plants
 - Thermal energy generating systems
 - District heating systems





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