

**Vertical, High Pressure  
Centrifugal Pumps  
(Design as per  
API 610 10<sup>th</sup> edition  
Category VS6)**

## Applications

WKTR pumps can be used for Hydrocarbons for refinery and petrochemical applications, as well as for Ammonia, condensate handling where NPSHA is critical.

## Design

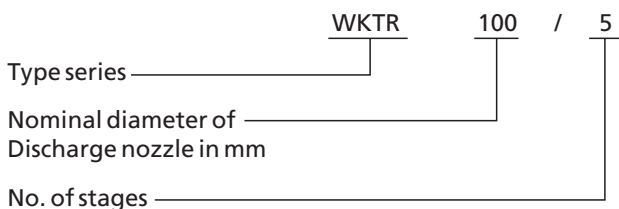
Vertical, radially split, ring section pump with radial single entry impellers, multistage. The stages are sealed off against each other by O-rings & clamped together by tie rods.

Provision is made on Can to mount complete pump on separate mounting plate for better structural stability.

The suction and discharge nozzles are always horizontal and inline.

WKB : Without Can execution, available on request.

## Designation

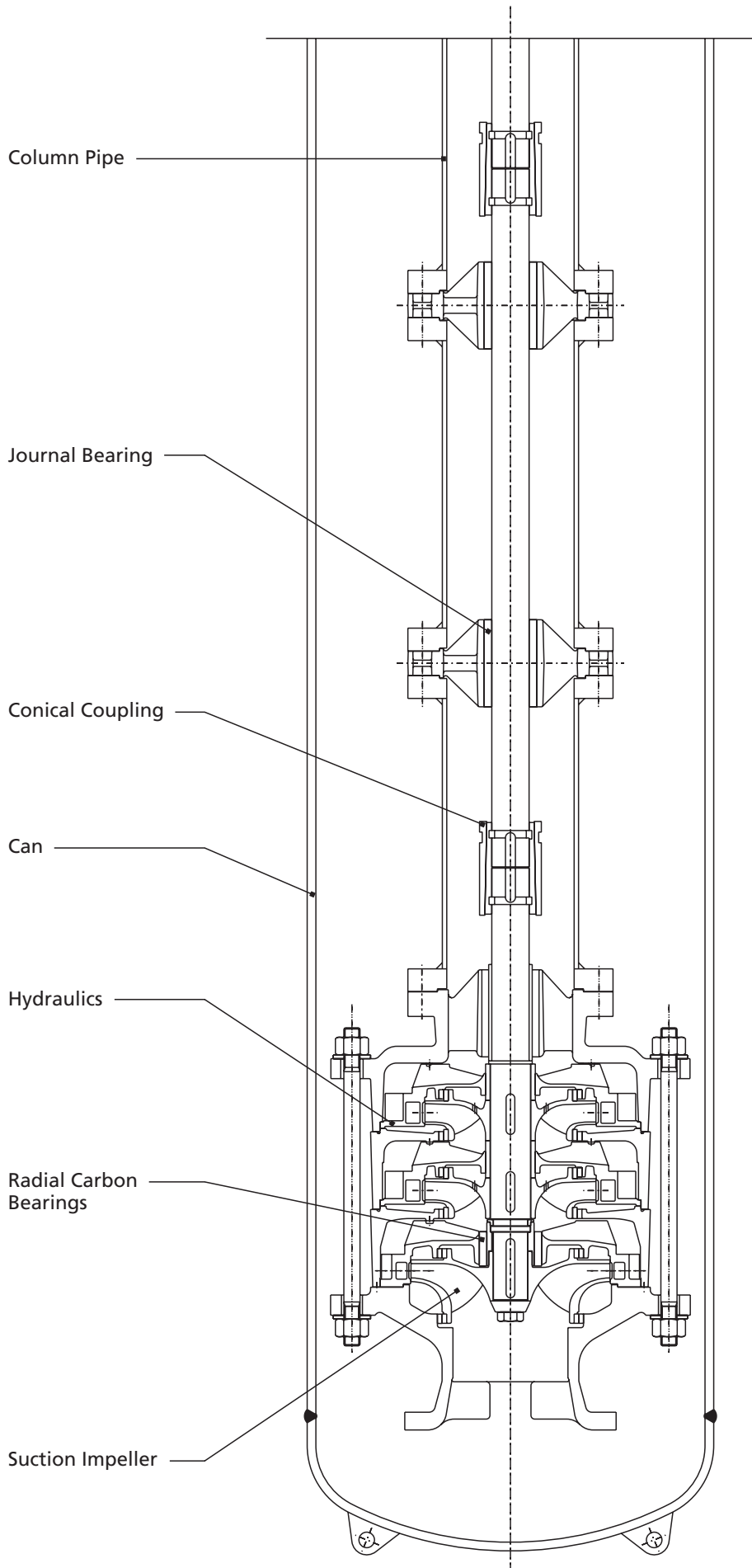


## Operating Data

Pump sizes	: DN 40 to DN 150
Capacity	: Q upto 111 l/s (400 m <sup>3</sup> /h)
Total head	: H upto 500 m
Speed	: n upto 3600 rpm
Operating pressure	: Upto 51 kg/cm <sup>2</sup>
Operating temperature	: -40 to 200°C

## Materials

Part Description	Materials
Distributor casing & Can	ASTM A 516 Gr. 70, ASTM A 516 Gr. 60, SS 304 / SS 316 (on request)
Suction casing	WCB, CA6NM, CF8M
Discharge casing	WCB, CA6NM, CF8M
Stage casing	WCB, CA6NM, CF8M
Stuffing box housing	WCB, CA6NM, CF8M
Diffuser suction	CA6NM, CF8M
Diffuser	CA6NM, CF8M
Pump/Intermediate/Drive shaft	AISI 410
Impeller suction	CA6NM, CF8M
Impeller (stage)	CA6NM, CF8M
Impeller ring	1.4024.19, CF8M, NiCi
Wearing ring	Cr HARD 400, CF8M col. Coated, 1.4024.19
Spacer sleeve	NiCi, AISI410, AISI316
Column pipe	A 105 + A 106 Gr. B, SS 304
Tie Rod	B8M



**Column Pipe :**

- Higher diameters for lower frictional losses.
- Various combinations of column pipes to meet exact requirements.

**Journal Bearing :**

- Provision of bearing spiders.
- Bearings made up of high grade carbon to support pump shaft lubricated by pumping medium.
- Reduced bearing span to increase rotor stability.

**Conical Coupling :**

- Suitable for reverse rotation.
- No special tools required for dismantling.
- Excellent alignment due to conical feature.

**Hydraulics :**

- Higher efficiency for wider range of flow.
- Interchangeability of impeller and diffuser with WK series pump.

**Radial Carbon Bearing :**

- On rear side of suction impeller to avoid possibility of dry running.

**Suction Impeller**

- Designed for lower NPSHr.

**Motor Lantern :**

- Rigid motor lantern serving as drive stool.
- For ease of installation of motor suitable controlled location diameter is provided for flange mounting.

**Protective Covers :**

- All rotating parts which are exposed are protected using protective covers for human safety.

**Thrust Bearing :**

- Oil lubricated four point contact ball bearing.
- Suitable for reverse rotation of pump.
- Bearing designed to take care of entire pump load.
- Provision of oil mist lubrication available on request.

**Shaft Sealing :**

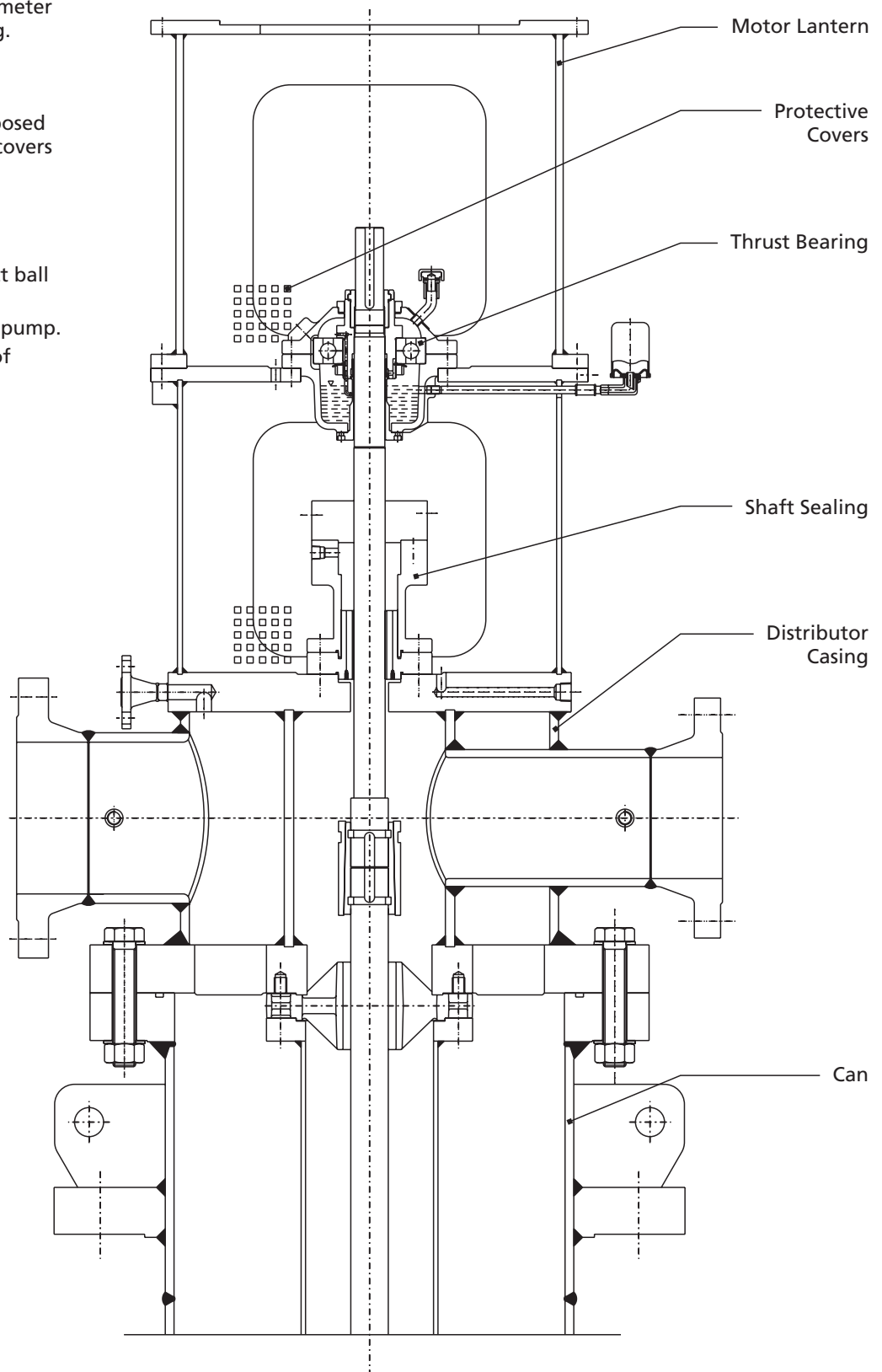
- Shaft seal housing is designed for installations of all combinations of seals as per API 682.
- Due to spacer type of coupling mechanical seal can be removed without removal of drive.
- Gland packing execution is optional.
- For high temperature cooled stuffing box.
- In-board seal is subjected to suction pressure.
- Adaptor is provided with carbon bearing which acts as a radial bearing, increases the seal life.

**Distributor Casing :**

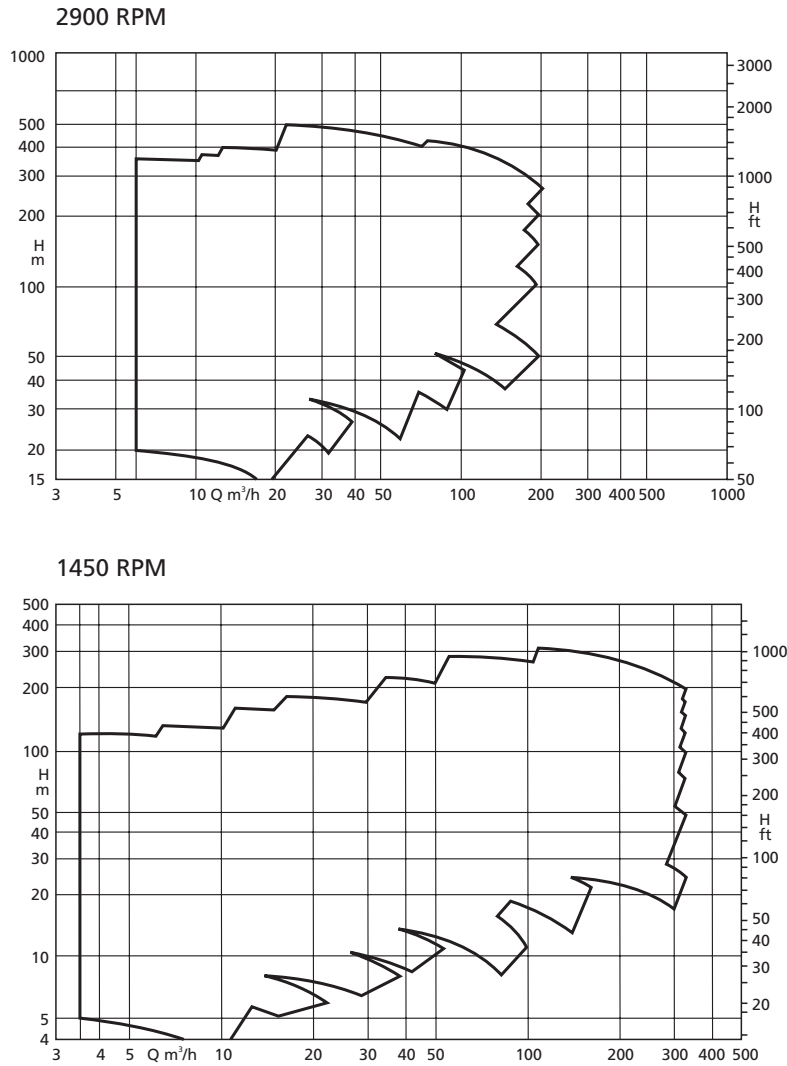
- Designed to meet API requirements.
- Suction and discharge flanges as per ASME and in-line.
- Suction and discharge chamber designed for same pressure rating.

**Can :**

- Designed for separate mounting plate arrangement.
- Through bolting between can and distributor casing.
- Designed for discharge pressure.



Selection Chart (50 Hz)



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**Zonal Offices:**  
 Chennai - Guindy House, 2nd Floor, 95, Anna Salai - 600 032.  
 Kolkata - 30, Circus Avenue, 2nd Floor - 700 017.  
 Mumbai - 126, Maker Chambers III, Nariman Point - 400 021  
 NOIDA - "KSB House", A-96, Sector IV, NOIDA 201 301, Dist. Gautam Budh Nagar, U. P.

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**Service Stations:**  
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 Howrah - 142/1, Foreshore Road, Near Ramkrishnapur Launchghat - 711 101.  
 Chennai - No. 4 (old no. 18) Chakrapani Road, Guindy, 600 032.

**Telephone No.**  
 (020) 2710 1000  
 (020) 2740 9100  
 (0422) 2468222  
 (02426) 272534, 272528, 272074  
 (02551) 230252, 53, 230255

(022) 6658 8787

(044) 2235 2571-2, 2235 5673  
 (033) 2287 0473, 2290 0117  
 (022) 6658 8787  
 (0120) 254 1091-93, 254 1501-3

(079) 22900372  
 (0120) 2541091-92  
 (033) 26382909  
 (044) 22550704

**Fax**  
 (020) 2742 6000  
 (020) 2747 0890  
 (0422) 2468232  
 (02426) 272043  
 (02551) 230254

(022) 6658 8788

(044) 2235 2749  
 (033) 2287 0588  
 (022) 6658 8788  
 (0120) 255 0567



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