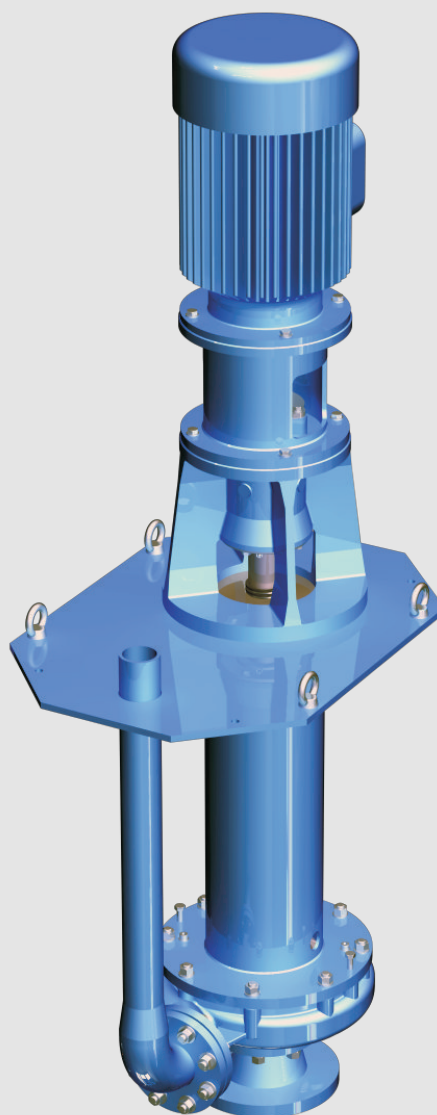


► The power of proven technology

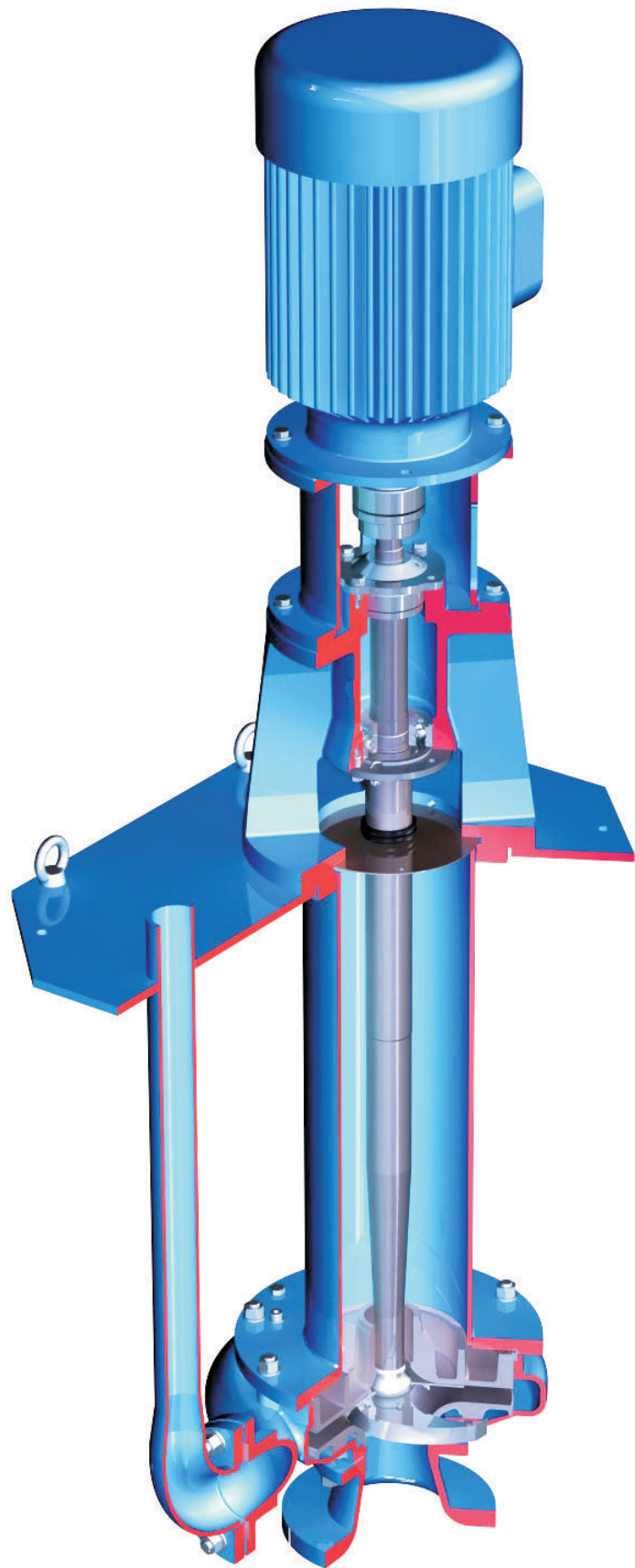
TCE



Type VS5, vertical suspended  
Single casing volute cantilever pumps  
Acc. ISO 13709 (API 610)

## General design description

Cantilever pumps, type TC/TCE complies with the requirements of the ISO-13709 (API 610) VS5, a non API execution will be available. TCN/TCF and TCE vertical cantilever type of pumps are used in applications with liquids containing solids or abrasive slurries, when no intermediate bearings inside the liquids are allowed. The submersible pumps of the type T range feature different bearing and hydraulic designs. The cantilever pump range TC, are equipped with bearings that are not in contact with the medium. They are suitable for overall lengths of 2.5 m, range TB for overall length up to 3.5 m.



### Performance range

Discharge capacity up to 2000 m<sup>3</sup>/h  
Delivery head up to 80 m.l.c.  
Temperature range up to 200 ° C  
Pressure range up to 10 bar  
Maximum speed 1750 rpm.



### **General characteristics**

- Heavy-duty roller bearings, non floating shaft will guarantee long bearing lifetime.
- Permanently aligned double row bearings take trust in either direction.
- Materials: exceeding all ISO-13709 (API 610) material executions.
- Standard sealing execution; double v-ring construction, grease filled.
- Accommodates all API 682 mechanical seal cartridge configurations.
- Rigid constructed base frame and support housing assures precise and accurate mounting.
- Suction and discharge flanges conform to ANSI B16.5 Class 125 and 150.
- Rigid designed one piece shaft will guarantee straightness and easy assembling.
- No support bearing inside the liquid and no shaft seal needed resulting in a reliable operation.
- Pressure reducing impeller front vanes prevent fibers from entering the cap between the impeller and sideplate and reduce internal flow losses.

## Applications

- For duties in the chemical and petrochemical industries.
- In the production of paper and fluting paper.
- In cement works, steel works and rolling mills.
- In processes with abrasive media.

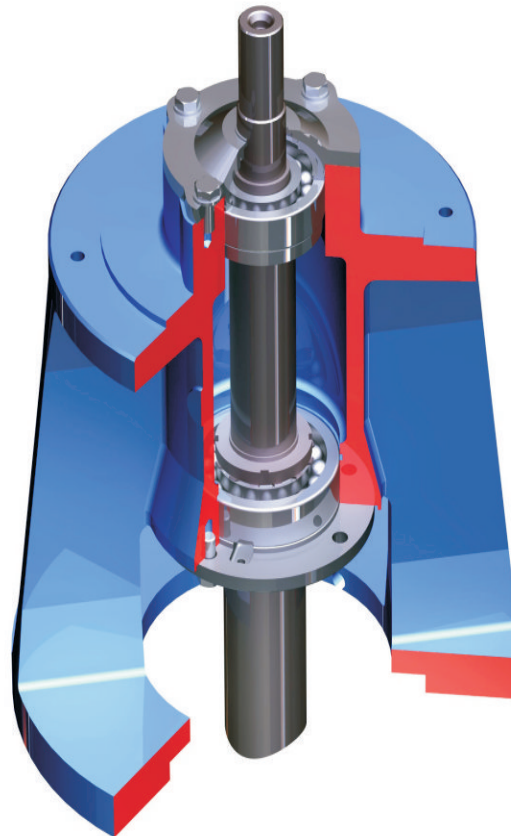


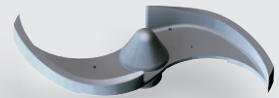
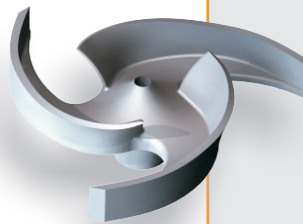
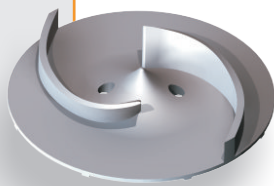
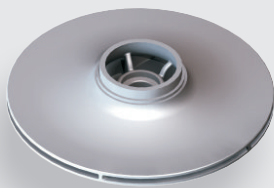
- Where leakages are forbidden for environmental protection reasons.
- For the transport of explosive media, where the bearings are not to be in contact with the medium.
- Where a failure of the pump could lead to production losses.



## Features and benefits

- IEC standard motors, on request in explosion proof design.
- Motor and pump connected by means of flexible coupling.
- Grease lubricated bearings arranged above ground level.
- Shaft penetration not subjected to pressure by medium.
- In case of non-gassing media, no external seal is required. For special applications, gas- or smell-tight sealing of the shaft penetration.
- The strong designed shaft ensures smooth running of the pump. The pumps first critical speed exceeds the operating speed by an adequate margin.
- No venting or starting problems because the impeller is flooded when the pump is switched on.
- The pump is insensitive to intermittent medium supply and dry running. No bearings located in the pump casing.
- Pump casing and impeller adapted to the respective medium. If necessary, replaceable protective walls and wear rings can be provided and measures taken to ensure freedom of stoppages.
- The pump can be equipped with a suction pipe to permit operation in deep pits.





### Materials

Availability of materials  
per ISO 13709 (API 610)  
Table H1

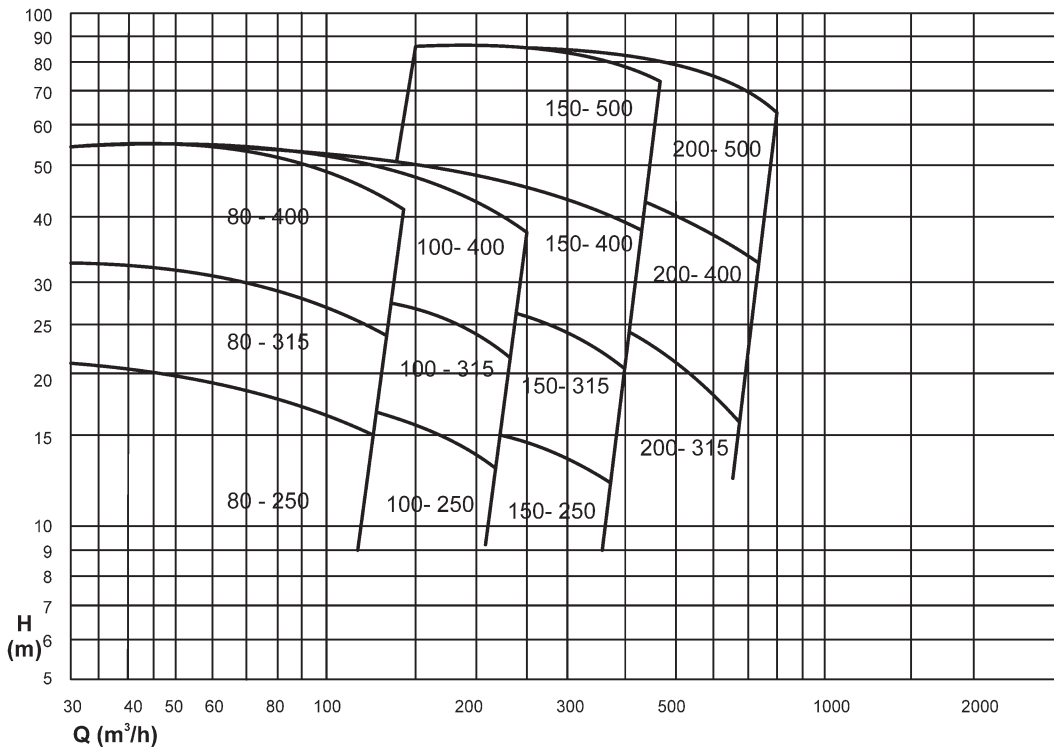
- Steel
- Stainless steel
- 12% Chromium steel
- Duplex and Super duplex

### Impellers

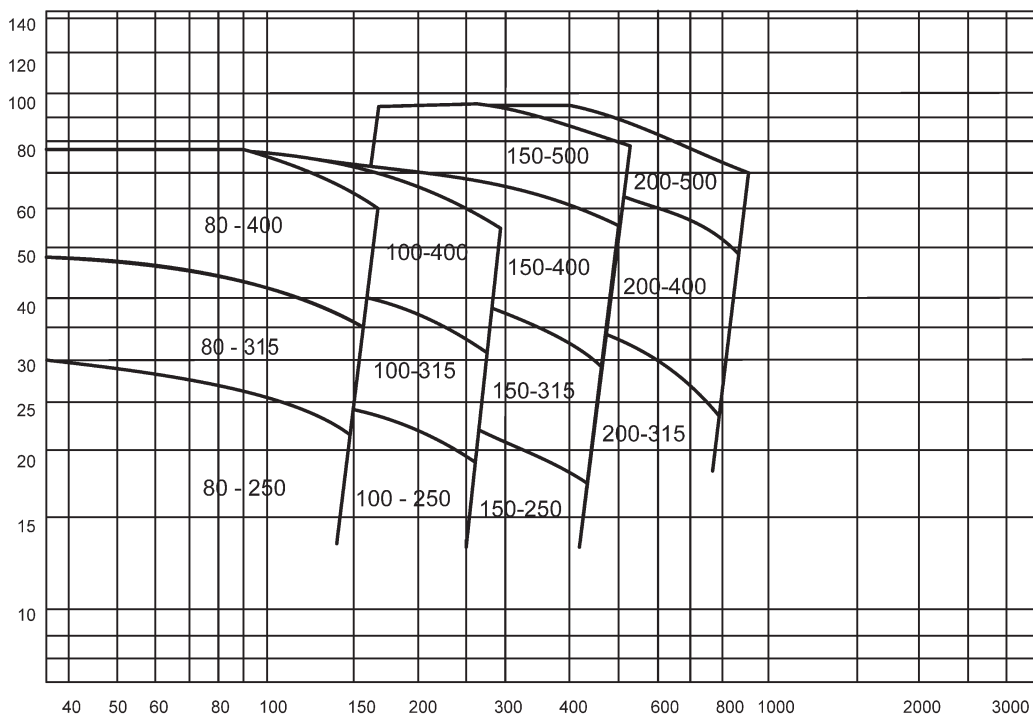
- Available impeller types: closed impeller, open impeller and vortex impeller
- Anti rotation device at impeller inlet
- Optimised hydraulic performance
- Suitable for a wide range of liquids
- Suction strainer

# Curves

N=1450 rpm  
50 Hz



N=1750 rpm  
60 Hz



# Materials

<b>TCE</b>						
<b>Material class</b>	<b>Standard</b>	<b>1.8.A.5</b>	<b>1.8.B.5</b>	<b>1.8.C.5</b>	<b>8.8.7</b>	
<i>Pump casing</i>	EN	EN-GJL-250	EN-GJL-250	EN-GJL-250	GX 5 CrNiMo 19-11-2	
	ASTM	A 278 Class 30	A 278 Class 30	A 278 Class 30	A 743 Grade CF8M	
<i>Impeller</i>	EN	X 3 CrNiMoN 27-5-2	X 3 CrNiMoN 27-5-2	X 3 CrNiMoN 27-5-2	X 3 CrNiMoN 27-5-2	
	ASTM	A 240 Type 329	A 240 Type 329	A 240 Type 329	A 240 Type 329	
<i>Stuffing box cover</i>	EN	EN-GJL-250	EN-GJL-250	X 3 CrNiMoN 27-5-2	X 3 CrNiMoN 27-5-2	
	ASTM	A 278 Class 30	A 278 Class 30	A 240 Type 329	A 240 Type 329	
<i>Shaft</i>	EN	X 39 CrMo 17-1	X 39 CrMo 17-1	X 39 CrMo 17-1	X 2 CrNiMo 17-12-2	
	ASTM	SA-815 WP430	SA-815 WP430	SA-815 WP430	A 479 Type 316L	
<i>Column pipe</i>	EN	S 235 JR C	S 235 JR C	S 235 JR C	X 2 CrNiMo 17-12-2	
	ASTM	A 311-1018	A 311-1018	A 311-1018	A 479 Type 316L	
<i>Discharge pipe</i>	EN	S 235 JR C	S 235 JR C	S 235 JR C	X 2 CrNiMo 17-12-2	
	ASTM	A 311-1018	A 311-1018	A 311-1018	A 479 Type 316L	





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