



VVS

# QVC Heavy Duty Plastic Lined Chemical Process Pumps



Reinforced Shaft and Heavy Bearing  
Frame for Long Service Life.



Available in  
PP/PPH/PPCP/PVDF/FEP/PFA

## Fields of Application

- **Corrosive, pure and contaminated media in the chemical, pharmaceutical and petrochemical industries, in metal processing, waste disposal and recycling etc.**
- When stainless steel is not sufficiently resistant.
- Alternative to expensive Hastelloy, Monel, tantalum pumps.
- When anti-adhesive surfaces are important.

### The VVS is particularly economical and reliable with

- **Less environmentally critical or hazardous media** as pumps with single mechanical seals are lower priced than sealless pumps.
- **High solids-laden, gas-containing or other problematic media** especially when sealless pumps are unsuitable.
- **Badly lubricating media:** gas-lubricated mechanical seals.





## Design

Single stage, plastic lined, frame mounted chemical process pump of heavy duty design. Flanges with holes drilled to ANSI B16.5 Cl.150.

## Wetted Materials

### Lining :

PP / PPH / PPCP / FEP / PFA antistatic

### Mechanical Seal :

Single, Double, Inside, Outside etc.

## Operating Range

50 Hz Operation

Flow Rates 1-100 m<sup>3</sup>/hr

Delivery Heads Upto 60m

**Performance curve of particular model available on request.**

### Operating Temperatures :

-60/+180 °C (-75/+360°F) with PFA/PTFE

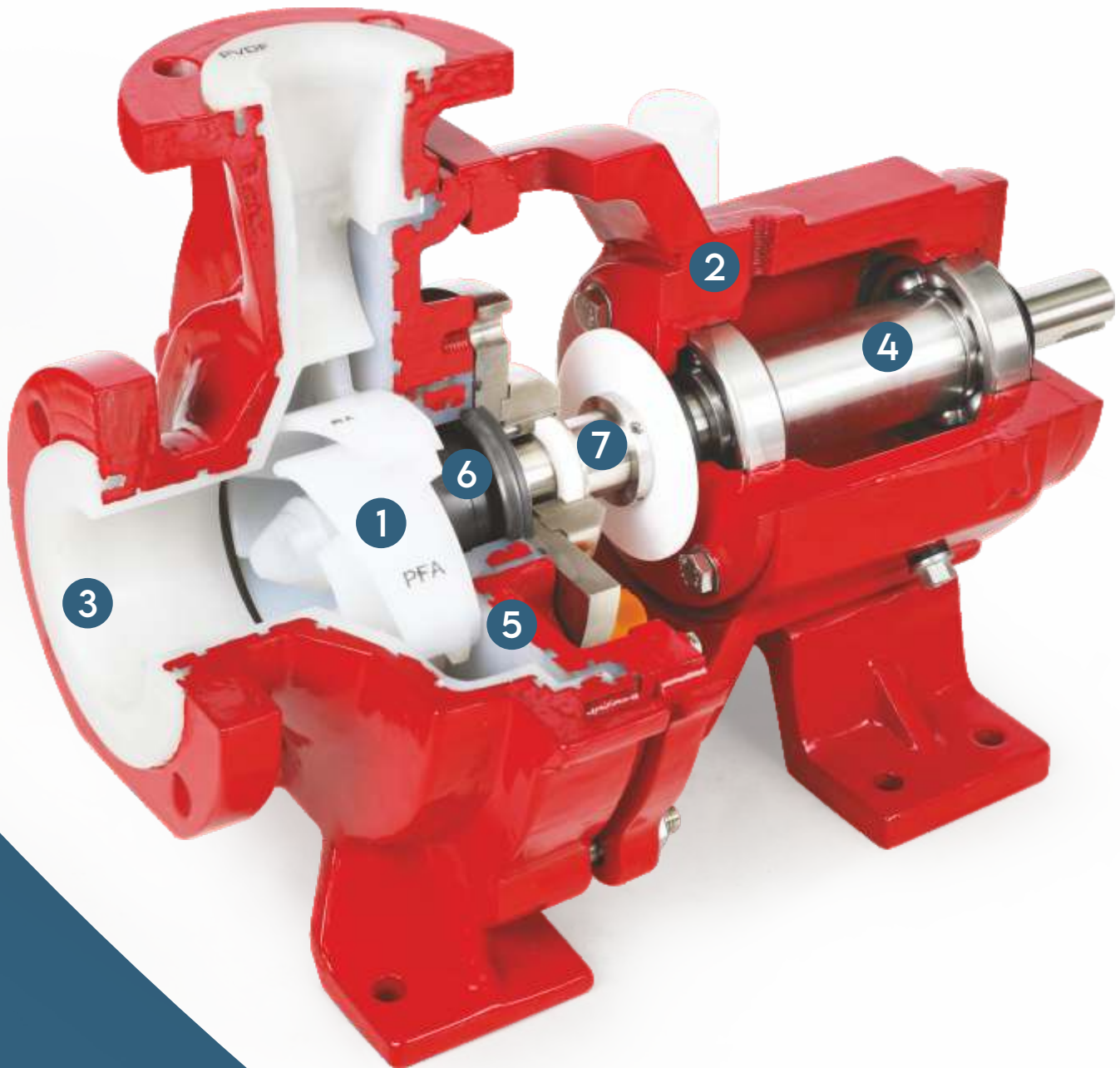
### Operating Pressure :

Upto 16 bar

### Solids :

Depends On Pump Design.

## Cut View of Pump



## Features & Specifications

### 1 Impeller

- Open impeller with curved vanes as a standard feature.
- Optional closed impeller with **optimized hydraulics** when a particularly low pump NPSH is required.
- **Large metal core** for reliable torque transmission.
- **Secured against loosening** if the pump is started up in the wrong direction of rotation.
- With back vanes to offset axial thrust.

### 2 Bearing Frame

- Very sturdy one piece cast iron bearing frame with oil bath lubrication.

### 3 Casing

- Thick walled plastic lining on mild steel armour.
- Armouring bears system pressure and pipe forces. No need for expansion joints.
- Virgin lining without fillers.

### 4 Pump Shaft

- Deflection resistant pump shaft large shaft diameter, also in the area of the mechanical seal, ensures **very smooth running and low shaft deflection** – even in Q/H boundary conditions.

### 5 Back Plate

- A **special back plate** was designed for the stationary internal seals.
- **Open seal chamber** promotes the discharge of solids.
- **Flushing bores** ensure good medium circulation.

### 6 Mechanical Seal Options

- Internal and external mechanical seal.
- Cartridge seal.
- Double seal for solids laden and crystallising media.

### 7 Shaft Sleeve

- Shaft sleeve made of  $\text{Al}_2\text{O}_3$ , SiC, Hastelloy, Alloy-20 etc are options available.



## Pump Hydraulics

### The Pump Casing

With mild steel armouring to absorb all hydraulic and pipe forces, in contrast to partially or non armoured plastic pumps, no expansion joints are required. Flanges holes as per ISO/DIN, ASME/ANSI etc.

**Available on request :**

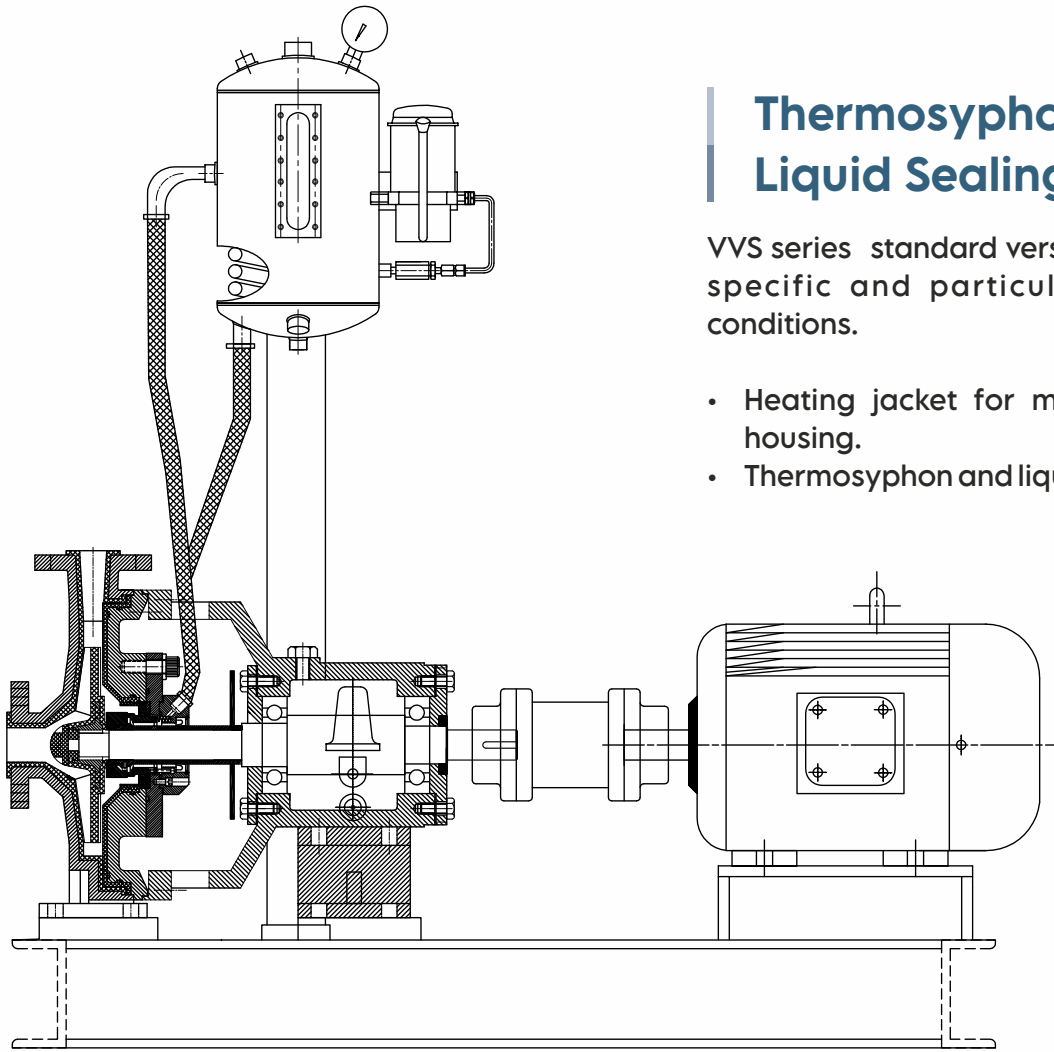
- Housing drain, can also be used as a flushing and monitoring connection.
- Heating jacket for crystallising or polymerising media can also be fabricated.



### Open Impeller With Curved Vanes

- The metal core ensures the dimensional stability of the impeller, even at elevated temperatures and high flow rates.
- In case of low NPSH, closed impellers are also available on demand.
- Back vanes reduce axial forces to increase the service life of the rotating Components.
- The metal core is protected by thick walled plastic. The plastic lining is seamless.
- The impeller is secured against loosening if the pump is started up in the wrong direction of rotation or in the case of back flowing media.





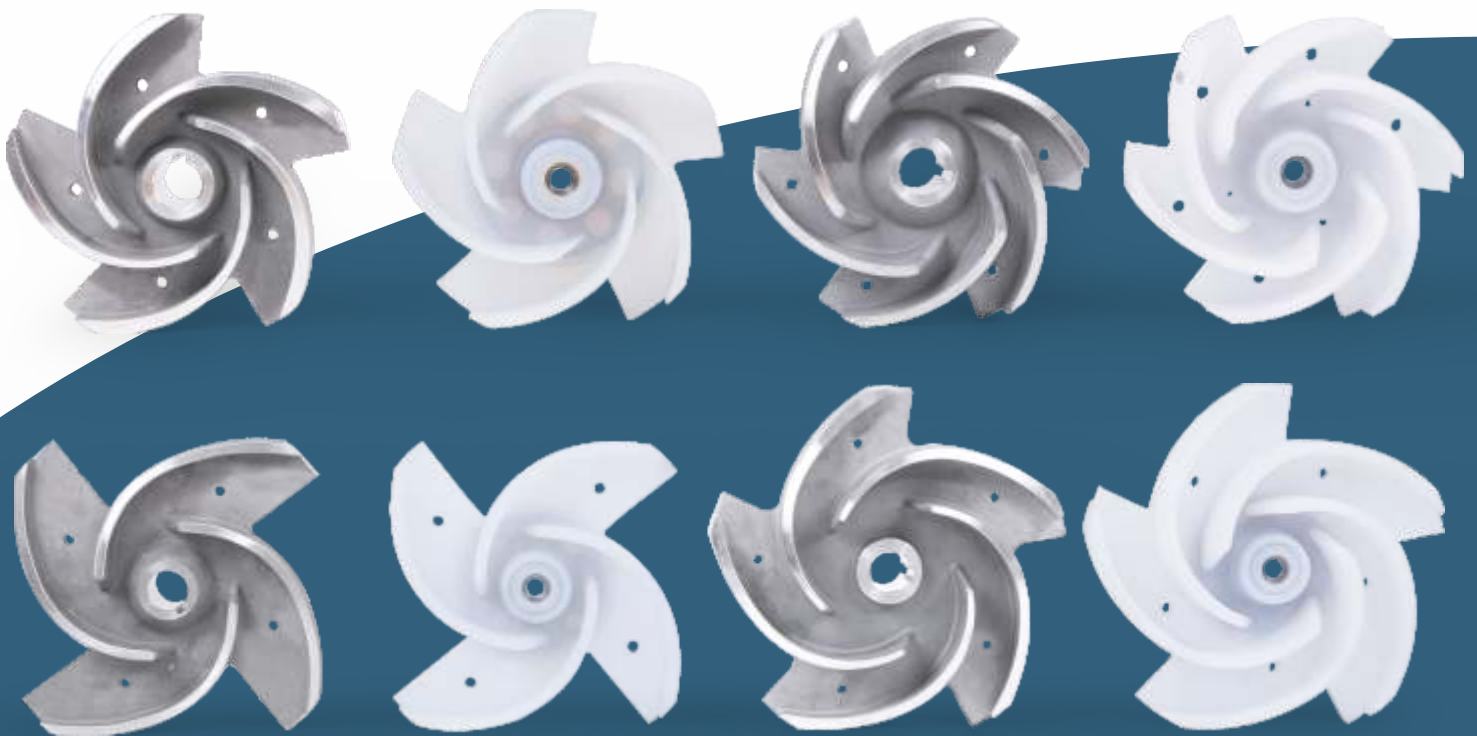
## Thermosyphon And Liquid Sealing Systems

VVS series standard versions can also be tailored to specific and particularly difficult operating conditions.

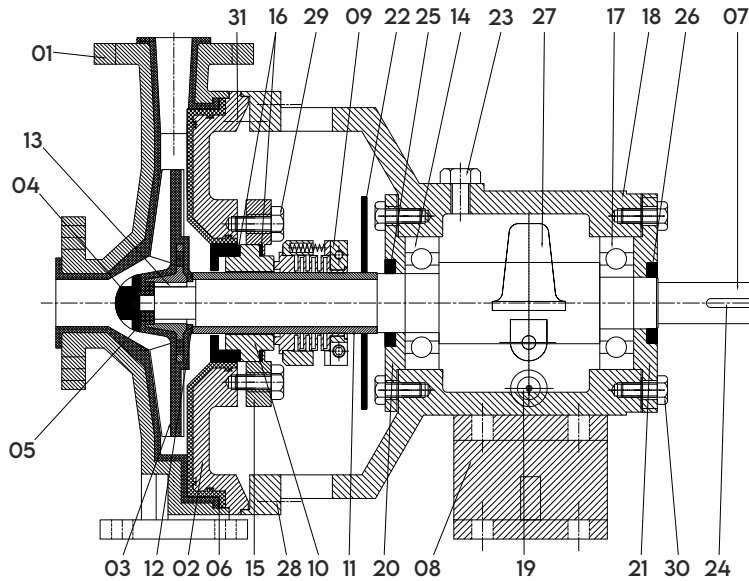
- Heating jacket for mechanical seal and pump housing.
- Thermosyphon and liquid sealing systems.



This series is inspired by the proven concept and design of ANSI impellers which have been and are used in chemical industries over centuries.







## Part List

Part No.	Part Name	Material	Qty. Reqd.
01	Casing	CS LINED PVDE/PEA/FEP	1 NO.
02	Back Plate	CS LINED PVDF / PFA/FEP	1 NO.
03	Impeller	CS LINED PVDFY PEA /FEP	1 NO.
04	Impeller Nut	CS LINED PVDF/PFA/FEP	1 NO.
05	Impeller Nut o-ring	FKM/TTV/FFKM	1 NO.
06	Casing Gasket	PTFE	1 NO.
07	Shaft	EN-8/SS-316	1 NO.
08	Bearing Block Leg	Cast Iron	1 Set.
09	Rotary Unit	GFT	1 NO.
10	Stationary Unit	Ceramic	1 NO.
11	Shaft Sleeve	Ceramic	1 NO.
12	Impeller o-ring	FKM/TTV/FFKM	1 NO.
13	Impeller Key	SS-316	1 NO.
14	Bearing Inboard (6308)	Steel	1 NO.
15	Locating Flange	Hylam	1 NO.
16	Stationary Gasket	PTFE	2 NOS
17	Bearing Outboard (6308)	Steel	1 NO.
18	Bearing Block	Cast Iron	1 NO.
19	Bearing Oil Drain Plug	Steel	1 NO.
20	Bearing Cover Inboard	Cast Iron	1 NO.
21	Bearing Cover Outboard	Cast Iron	1 NO.
22	Deflector	PTFE	1 NO.
23	Oil Breather	Steel	1 NO.
24	Key Coupling	SS-316	1 NO.
25	OilSeal Inboard (40X55X7)	Neoprene	1 NO.
26	Oil Seal Outboard (40X55X7)	Neoprene	1 NO.
27	Constant Level Oilier	Polycarbonate/Aluminium	1 NO.
28	Stud/Nut-Casing	SS-316	6 Nos.
29	Locating Flange Clamp Bolt	MS Coated PP	6 Nos.
30	Bolt-Brg Cover to Bry Block	MS	8 Nos.
31	Back Plate Lock	SS	2 Nos.

# Other QVC Process Pumps

Open impeller metallic pumps | Closed impeller metallic pumps  
Non metallic injection moulded pumps | Non metallic lined pumps  
Horizontal self priming pumps | Vertical self priming pumps  
ANSI Open impeller metallic pumps



## QVC CHEMICAL EQUIPMENTS

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