Engineered Pump Catalog
60 Hz Performance Curves
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AS SIMPLE AS 1-2-3

Find the right Vertical Turbine Pump (VTP) for your application using the Neptuno Pumps® VTPSelector™.

Simply select your system design point, fluid characteristics and NPSH ratings and the VTPSelector™ will create a dynamic pump curve. From there you can adjust operating speeds, view/save electronic curves and data sheet reports in a PDF format, generate system curves, simulate multiple pumps/speeds, request quotes and much more.

www.vtpselector.com
ABOUT US
NEPTUNO PUMPS® is a world-class manufacturer of centrifugal pumps for industrial and heavy-duty applications, delivering a comprehensive line of innovative products and engineered pumping solutions to satisfy and exceed your most demanding needs with the highest quality and lowest lead-times in the market.

TECHNOLOGY
NEPTUNO PUMPS® counts with a highly skilled team of engineers and well-trained personnel; state-of-the-art computer assisted design softwares and advanced manufacturing technologies complemented with rigorous quality control systems that guarantee high quality products and services with its emphasis on total customer satisfaction.

RESEARCH & DEVELOPMENT
NEPTUNO PUMPS® is continually working with business partners and most prestigious universities and institutions in the areas of mechanical, hydraulic, aerospace engineering and material science. Our active in-house R&D Department is permanently doing research for new designs and developing new technologies always focusing on maximizing efficiency and delivering innovative pumping solutions, to keep your business going strong.

QUALITY, ENVIRONMENT, SAFETY & HEALTH PROGRAM
The principals of Quality Management System (QMS) are the foundation of our business. That is why all our Design and Manufacturing Processes are certified under:

- ISO 9001: 2008
- ISO 9906: 1999
- ISO 14001: 2004
- OHSAS 18001: 2007

And conforms or meets most recognized specifications, including:

- ANSI/HI
- ANSI/AWWA E101

TESTING
ISO 9906 certified state-of-the-art Testing Facility, in accordance with Hydraulic Institute Standards and ISO 13709/API 610.

APPLICATIONS
- Primary Water Supply – Fresh water or Sea water
- Solvent Extraction/Electro-Winning (SX/EW): Raffinate, Pregenate Leach Solution (PLS), Heap Leach, Dump Leach, Acid Water Pressure Boosting and Transfer
- Dewatering – Sump, Deep Well, Ponds
- Tailings – Post Processed Solutions
- Seepage Water – Sump or Can/Booster
- Oil & Gas Production – Onshore, Offshore and Pipeline
- Marine
- Pulp and Paper
- Municipal Water & Wastewater
- Agriculture - Irrigation
Vertical Turbine Pumps (VTP)
Vertical Turbine Pumps (VTP)

Versatility is one of the main characteristics of NEPTUNO PUMPS® VTP: flanged bowl construction, single or multiple stage design, depending on your total head requirements, for continuous service. Heavy duty design for long term operation in industrial applications.

VERTICAL PUMPS MODELS
- VERTICAL Turbine Pumps (VTP)
- VERTICAL CAN TYPE (VC)

OPERATING PARAMETERS
- Capacities up to 40,000 gpm (7,500 m³/h)
- Head up to 1,200 Feet (400 m)
- Power through 2000 hp (1500 kW)
- Pressures up to 590 psi (4,067 kPa)
- Frequency 50/60 Hz
- Temperatures to 400 °F (200°C)
- Bowls sizes from 8" to 40"  

DESIGN FEATURES
- NEPTUNO PUMPS® high-efficiency design
- High-quality investment cast impellers and bowls
- Maximum versatility and reliability
- Low NPSH first stage construction
- No priming required
- Thrust balanced impellers available
- Product lube or enclosed lineshaft
- Minimum space requirement
- Special material selection for standard or abrasive/corrosive service
- Packing or mechanical seal
- Independent axial-thrust bearing assembly
- Multiple discharge configurations and sizes

SERVICES
- Primary Water Supply – Fresh water or Sea water
- Solvent Extraction/Electro-Winning (SX/EW): Raffinate, Pregnate Leach Solution (PLS), Heap Leach, Acid Water Pressure Boosting and Transfer
- Dewatering – Sump, Deep Well, Ponds
- Tailings – Post Processed Solutions
- Seepage Water – Sump or Can/Booster
- Oil & Gas Production – Onshore, Offshore and Pipeline
- Marine
- Pulp and Paper
- Municipal Water & Wastewater
- Agriculture - Irrigation
Vertical Turbine Pumps (VTP)

Applications

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Vertical Turbine Pumps (VTP)

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Vertical Turbine Pumps (VTP)

Diagram
# Vertical Turbine Pumps (VTP)

## Main Dimensions

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### Notes:
- All dimensions are in inches.
- Values underlined indicate standard models, while values in parentheses indicate optional models.
- The discharge head is calculated based on the first stage and each additional stage.
- The column diameters are listed for the bowl assembly dimensions.
### Vertical Turbine Pumps (VTP)

#### Main Dimensions (cont.)

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</table>

#### Discharge Configurations

Multiple discharge configurations and sizes

![Discharge Configurations](image-url)
Vertical Turbine Pumps (VTP)
3600 rpm

VTP 30
Curve #: 11063-140207-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
3600 rpm

VTP 60M
Curve #: 11086-151123-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O T=18\,^\circ C$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)

3600 rpm

VTP 130

Curve #: 11004-081121-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 135X
Vertical Turbine Pumps (VTP)
3600 rpm

Pump Performance Curves 60 Hz

Notes:

Vertical Turbine Pumps (VTP)

Pump Performance Curves 60 Hz

VTP 135X
Curve #: 11076-141114-S1

Vertical Turbine Pumps (VTP)
Vertical Turbine Pumps (VTP)  
3600 rpm

VTP 170  
Curve #: 11005-080704-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O$ $T=18$ [$^\circ$C], $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 170M
Curve #: 11006-090721-S1

Vertical Turbine Pumps (VTP)
3600 rpm
Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \ T°=18 [°C], H_2O \ Density = 998 [kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 180M

Vertical Turbine Pumps (VTP)

1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water \( (H_2O \ T^\circ = 18 \ [\degree C], \ H_2O \ Density = 998 \ [kg/m^3]) \)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)  
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H2O T°=18 [°C], H2O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C; H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 325
Curve #: 11012-100701-E1

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<table>
<thead>
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<th>NPSHr [ft]</th>
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</tr>
<tr>
<td>300</td>
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<table>
<thead>
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Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O 7°F=18°C, H₂O Density = 988 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 325X
Curve #: 11070-140513-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Vertical Turbine Pumps (VTP)
1200 rpm
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 360
Vertical Turbine Pumps (VTP)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Pump Performance Curves 60 Hz
Vertical Turbine Pumps (VTP)
1200 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($\text{H}_2\text{O} T^°=18°C, \text{H}_2\text{O} \text{Density} = 998 \text{[kg/m}^3\text{])}
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O$ $T=18$ [°C], $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water \( (H_2O \ T^\circ=18 \ [^\circ C], \ H_2O \ Density = 998 \ [kg/m^3]) \)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 500M
Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
Vertical Turbine Pumps (VTP)
1200 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 500X
Curve #: 11016-121116-E1

Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)  
1800 rpm

Pump Performance Curves 60 Hz

VTP 650  
Curve #: 11017-070713-E1

Notes:

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2

Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])

Power and efficiency losses are not reflected on the curve

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 700
Curve #: 11018-070713-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60%-80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Notes:

Pump Performance Curves 60 Hz

VTP 750
Curve #: 11019-090112-S1

Vertical Turbine Pumps (VTP)
1800 rpm
Vertical Turbine Pumps (VTP)
1200 rpm

VTP 750M
Curve #: 11020-081103-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 750M
Curve #: 11020-081103-S1

Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance
   acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated
   water ($H_2O$ $T°=18°[°C]$, $H_2O$ Density $=998[kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Vertical Turbine Pumps (VTP)
1800 rpm

VTP 800
Curve #: 11043-120227-S1

Notes:

- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water ($H_2O$ $T°=18°[°C]$, $H_2O$ Density $=998[kg/m^3]$)
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance are not included
- Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
- Consider 2.0% efficiency derate if using balanced impellers
- Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 850M
Curve #: 11071-140616-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \ T°=18 [°C], H_2O \ Density = 998 [kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 850X
Curve #: 11022-101104-E1

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 850X
Curve #: 11022-101104-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \ T°=18 \ [°C], \ H_2O \ Density = 998 \ [kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 850XB
Curve #: 11047-130213-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

[Graphs of pump performance curves including Q [gpm], H [ft], P [hp], NPSHr [ft] vs. Q [m³/h], η [%] vs. Q [m³/h]]
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water \((H_2O T^\circ=18 [^\circ C], H_2O Density = 998 [kg/m^3])\)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 1000
Curve #: 11024-080704-S1
Vertical Turbine Pumps (VTP)
1800 rpm
Vertical Turbine Pumps (VTP)
1200 rpm

Pump Performance Curves 60 Hz

VTP 1000X
Curve #: 11053-131114-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 1000X
Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 1250
Curve #: 11025-080520-S1

Vertical Turbine Pumps (VTP)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O °T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Notes:

VTP 1300
Curve #: 11026-081111-S1

Horizontal Turbine Pumps (VTP)
1200 rpm

Pump Performance Curves 60 Hz
Vertical Turbine Pumps (VTP)
1800 rpm

VTP 1300
Curve #: 11026-081111-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 1350
Curve #: 11087-160202-F1
Vertical Turbine Pumps (VTP)
1200 rpm
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18° C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)  
1800 rpm

VTP 1500  
Curve #: 11027-081205-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H_2O °T=18 [°C], H_2O Density = 998 [kg/m^3])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
**Vertical Turbine Pumps (VTP)**

**1800 rpm**

**VTP 1500KM**

Curve #: 11089-160405-F1

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**Notes:**

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)

1800 rpm

VTP 1500LH
Curve #: 11029-080830-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18[°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T° = 18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

VTP 1800M
Vertical Turbine Pumps (VTP)
1800 rpm
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water \((H_2O T=18 \, ^{\circ}C, \, H_2O \text{Density} = 998 \, \text{kg/m}^3)\)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2

Performance based on single stage pumping clean non-aerated water \( (H_2O) \text{Temp}=18 \text{[°C]}, H_2O \text{Density}=998 \text{[kg/m}^3])

Power and efficiency losses are not reflected on the curve

Elevated temperature effects on performance are not included

Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)

Consider 2.0% efficiency derate if using balanced impellers

Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)  
900 rpm  

**Curve #: 11030-080728-S1**

Notes:

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2  
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])  
3. Power and efficiency losses are not reflected on the curve  
4. Elevated temperature effects on performance are not included  
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)  
6. Consider 2.0% efficiency derate if using balanced impellers  
7. Specifications are subject to change without previous notice.
VTP 2200
Vertical Turbine Pumps (VTP)
1200 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)  
900 rpm  

VTP 2200M  
Curve #: 11032-080723-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \, 18^\circ C$, $H_2O$ Density $= 998 \, [kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1200 rpm

VTP 3000
Curve #: 11033-080813-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \, T°=18 \,[°C], \, H_2O \, Density = 998 \,[kg/m^3]$)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H2O T=18 [°C], H2O Density = 998 [kg/m^3])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEF (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
1200 rpm

VTP 3400
Curve #: 11034-080723-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T = 18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
900 rpm

VTP 3400M
Curve #: 11035-080702-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O$ $^T=18$ [°C], $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 3400M

Vertical Turbine Pumps (VTP)
1200 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Turbine Pumps (VTP)
600 rpm

VTP 6500
Curve #: 11036-090310-S2

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VTP 6500
Curve #: 11036-090310-S2

Vertical Turbine Pumps (VTP)
720 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O °T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
**Vertical Turbine Pumps (VTP) 900 rpm**

**VTP 6500**

**Curve #: 11036-090310-S2**

### Notes:

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

### Diagrams:

- **Q [gpm]** vs. **H [m]**
- **P [kW]** vs. **Q [m³/h]**
- **NPSHr [m]** vs. **Q [m³/h]**

### Specified Dimensions:

- 870 mm
- 830 mm
- 780 mm

### Performance Indicators:

- **η 78**
- **η 83**
- **η 86**
- **η 88**

### Units:

- **Q [gpm]**
- **H [ft]**
- **P [hp]**
- **NPSHr [ft]**

---

*Pump Performance Curves 60 Hz*

*NEPTUNO PUMPS® innovation that flows.*
Vertical Submersible Pumps (VS)
Vertical Submersible Pumps (VS)

Equipment is completely submersed, ideal for deep well applications where lineshaft pumps can not be used. Flanged bowl construction, single or multiple stage design, depending on your total head requirements, for continuous service. Heavy duty design for long term operation in industrial applications.

**OPERATION PARAMETERS**
- Capacities up to 6,000 gpm (1,150 m³/h)
- Head up to 2,130 Feet (650 m)
- Power through 1000 hp (750 kW)
- Pressures up to 960 psi (6,620 kPa)
- Frequency 50/60 Hz
- Bowls sizes from 8" to 20"

**DESIGN FEATURES**
- NEPTUNO PUMPS® high-efficiency design
- Ideal for deep-well applications
- High-quality investment cast impellers and bowls
- Thrust balanced impellers available
- Maximum versatility and reliability
- Minimum space requirement
- Discharge casing with incorporated non-return valve
- Special material selection for standard or abrasive/corrosive service

**SERVICES**
- Primary Water Supply – Fresh water or Seawater
- Dewatering – Sump, Deep Well, Ponds
- Oil & Gas Production – Onshore, Offshore and Pipeline
- Agriculture – Irrigation

### Vertical Submersible Pumps (VS)

#### Available Models

<table>
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<tr>
<th>VS 50</th>
<th>VS 100</th>
<th>VS 110</th>
<th>VS 130</th>
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Vertical Submersible Pumps (VS)

Applications

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Vertical Submersible Pumps (VS)

Main Components & Materials

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Vertical Submersible Pumps (VS)
Diagram
Vertical Submersible Pumps (VS)
Main Dimensions

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Vertical Submersible Pumps (VS)
Range Chart - 60 Hz - 1 Stage

[Graph showing H vs Q]
Vertical Submersible Pumps (VS)
3600 rpm

Curve #: 11001-110214-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)
3600 rpm

Pump Performance Curves 60 Hz

VS 110
Curve #: 11003-071121-S1

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

Notes:

Vertical Submersible Pumps (VS)
Curve #: 11004-081121-S1
3600 rpm
Vertical Submersible Pumps (VS)  
3600 rpm

Curve #: 11005-080704-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)  
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9006 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)  
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O T°=18^\circ C$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
VS 290
Curve #: 11010-081103-S1

Vertical Submersible Pumps (VS)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)
1800 rpm

Curve #: 11011-070713-F1

Pump Performance Curves 60 Hz

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O$ $T^\circ = 18$ [°C], $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS) 3600 rpm

VS 360
Curve #: 11013-080614-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2

2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])

3. Power and efficiency losses are not reflected on the curve

4. Elevated temperature effects on performance are not included

5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)

6. Consider 2.0% efficiency derate if using balanced impellers

7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)  
1800 rpm  

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2  
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])  
3. Power and efficiency losses are not reflected on the curve  
4. Elevated temperature effects on performance are not included  
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)  
6. Consider 2.0% efficiency derate if using balanced impellers  
7. Specifications are subject to change without previous notice.

VS 500  
Curve #: 11015-080802-E2
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Vertical Submersible Pumps (VS)  
1800 rpm

Curve #: 11021-070713-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O °T=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Multistage Pumps (HR)
Multistage Pumps (HR)

Versatile modular design concept for ease in components interchangeability. Pumps are suitable for pumping clean or slightly polluted liquids. Equipment characterized by its application in operation with high flows and where high pressures and excellent air tightness are required.

**OPERATING PARAMETERS**

- Capacities up to 6,500 gpm (1,400 m³/h)
- Head up to 1,320 Feet (400 m)
- Power through 1000 hp (750 kW)
- Pressures up to 590 psi (4,067 kPa)
- Frequency 50/60 Hz
- Temperatures to 300 °F (150°C)
- Discharge sizes from 3” to 12”

**DESIGN FEATURES**

- NEPTUNO PUMPS® high-efficiency design
- High-quality investment cast impellers and stage diffusers
- Modular design concept for maximum interchangeability
- Maximum versatility and reliability
- Both ends bearings and axial thrust balancing
- Special material selection for standard or abrasive/corrosive service
- Different suction and discharge flange orientation
- Packing or mechanical seal

**SERVICES**

- Primary Water Supply – Fresh water or Sea water
- Mining Processes - Cooling Water, Thickener Overflow, Reclaim Water, MiSeepage, Well Pumps-Process, Water Supply, MiDe-Watering, Electrolyte, Pressure Boosting and Transfer
- Solvent Extraction/Electro-Winning (SX/EW) - Raffinate, Pregnate Leach Solution (PLS), Heap Leach, Dump Leach, Acid Water Pressure Boosting and Transfer
- Tailings – Post Processed Solutions
- Oil & Gas Production – Onshore, Offshore and Pipeline
- Marine
- Pulp and Paper
Multistage Pumps (HR)
Applications

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Multistage Pumps (HR)
Main Components & Materials

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Multistage Pumps (HR)
Available Models

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<th>HR 70</th>
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<td>HR 150</td>
<td>HR 360</td>
<td>HR 900</td>
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Multistage Pumps (HR)
Range Chart - 60 Hz - 1 Stage

Q [gpm] vs H [ft]

Q [m³/h] vs H [m]
Multistage Pumps (HR)

Diagram

![Multistage Pump Diagram]

Multistage Pumps (HR)

Main Dimensions

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</table>
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
HR 70
Curve #: 22003-070619-S1
Multistage Pumps (HR)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18[°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
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7. Specifications are subject to change without previous notice.
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2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
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2. Performance based on single stage pumping clean non-aerated water ($H_2O T=18 [^oC]$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
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2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
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4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
HR 360
Multistage Pumps (HR)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Multistage Pumps (HR)
1200 rpm

HR 900
Curve #: 22006-120214-S2

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
HR 900
Curve #: 22006-120214-S2
Multistage Pumps (HR)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O^T=18^\circ C$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Axial Split Case Pumps (HA)
Axial Split Case Pumps (HA)

The range axial split pump available pumps include both single double-suction and multi-stage designs. Our pumps are designed for high volume, high pressure heavy-duty liquid transport applications.

OPERATING PARAMETERS

• Capacities up to 17,000 gpm (3,200 m³/h)
• Head up to 2,700 Feet (800 m)
• Power through 1000 hp (750 kW)
• Pressures up to 1,180 psi (8,148 kPa)
• Frequency 50/60 Hz
• Temperatures to 300 °F (150°C)
• Discharge sizes from 3” to 14”

DESIGN FEATURES

• NEPTUNO PUMPS® high-efficiency design
• High-quality investment cast impellers and stage diffusers
• Axially split casing for ease of maintenance
• Heavy duty single row bolting
• Opposed impeller arrangement for thrust balancing
• Special material selection for standard or abrasive/corrosive service
• Different suction and discharge flange orientation
• Mechanical sealing

SERVICES

• Primary Water Supply – Fresh water or Sea water
• Mining Processes - Cooling Water, Thickener Overflow, Reclaim Water, MISeepage, Well Pumps-Process, Water Supply, MiDe-Watering, Electrolyte, Pressure Boosting and Transfer
• Solvent Extraction/Electro-Winning (SX/EW): Raffinate, Pregmate Leach Solution (PLS), Heap Leach, Dump Leach, Acid Water Pressure Boosting and Transfer
• Tailings – Post Processed Solutions
• Oil & Gas Production – Onshore, Offshore and Pipeline
• Marine
• Pulp and Paper
Axial Split Case (HA)

Applications

<table>
<thead>
<tr>
<th>Duty</th>
<th>Heavy</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
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Axial Split Case (HA)

Main Components & Materials

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<th>Cast Iron</th>
<th>Carbon Steel</th>
<th>Brass</th>
<th>Stainless Steel</th>
<th>Duplex</th>
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Axial Split Case (HA)
Available Models

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<td>HA 2400</td>
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Axial Split Case (HA)
Range Chart - 60Hz

\[ Q \text{ [m}^3/\text{h}] \]

\[ H \text{ [m]} \]

\[ Q \text{ [gpm]} \]

\[ H \text{ [ft]} \]
Axial Split Case (HA)

Diagram

Axial Split Case (HA)
Main Dimensions

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<th>Model</th>
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Axial Split Case (HA)
3600 rpm

HA 90
Curve #: 31001-070619-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
HA 140
Curve #: 31002-090923-S1
Axial Split Case (HA)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Axial Split Case (HA)
3600 rpm

HA 140
Curve #: 31002-090923-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
**HA 200**  
Curve #: 31003-080724-E1

Axial Split Case (HA)  
1800 rpm

---

**Notes:**
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Axial Split Case (HA)
3600 rpm

HA 200
Curve #: 31003-080724-E1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O$ $T=18^\circ C$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
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6. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.

Notes:

HA 250
Curve #: 31004-080704-F1
1800 rpm
Axial Split Case (HA)
3600 rpm

HA 250
Curve #: 31004-080704-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O^T=18^\circ C$, $H_2O$ Density $= 998$ [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve

Notes:
1. Elevated temperature effects on performance are not included
2. Consider 3.0% efficiency derate if operated Off-BEPT (60% - 80%)
3. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water ($H_2O \ T°=18°C$, $H_2O$ Density = 998 [kg/m$^3$])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.

Axial Split Case (HA)
3600 rpm

HA 290
Curve #: 31005-080614-F1
HA 475
Curve #: 32001-100625-S2

Axial Split Case (HA)
1800 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Axial Split Case (HA)
3600 rpm

HA 475
Curve #: 32001-100625-S2

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2

Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])

Power and efficiency losses are not reflected on the curve

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
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2. Performance based on single stage pumping clean non-aerated water (\(H_2O\) \(T=18\) [°C], \(H_2O\) Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Axial Split Case (HA)  
1200 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (\( H_2O \) \( T=18 \) [°C], \( H_2O \) Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Specifications are subject to change without previous notice.
Volute Pumps (HV)

NEPTUNO PUMPS® offers a wide range Volute Pumps to satisfy a variety of head requirements and capacities, with different suction and discharge flange sizes.

OPERATING PARAMETERS

• Capacities up to 19,500 gpm (3,700 m³/h)
• Head up to 820 Feet (250 m)
• Power through 700 hp (520 kW)
• Pressures up to 370 psi (2,550 kPa)
• Frequency 50/60 Hz
• Temperatures to 300 °F (150°C)
• Discharge sizes from 3” to 12”

DESIGN FEATURES

• NEPTUNO PUMPS® high-efficiency design
• High-quality investment cast impellers and stage diffusers
• ANSI Design available
• Special material selection for standard or abrasive/corrosive service
• Maximum versatility and reliability
• Different suction and discharge flange sizes
• Packing or mechanical seal

SERVICES

• Primary Water Supply – Fresh water or Sea water
• Mining Processes: Cooling Water, Thickener Overflow, Reclaim Water, MiSeepage, Well Pumps-Process, Water Supply, MiDe-Watering, Electrolyte, Pressure Boosting and Transfer
• Solvent Extraction/Electro-Winning (SX/EW): Raffinate, Pregnate Leach Solution (PLS), Heap Leach, Dump Leach, Acid Water Pressure Boosting and Transfer
• Tailings – Post Processed Solutions
• Oil & Gas Production – Onshore, Offshore and Pipeline
• Marine
• Pulp and Paper
### Volute Pumps (HV)

#### Applications

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<tr>
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### Volute Pumps (HV)

#### Main Components & Materials

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<th>Brass</th>
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Volute Pumps (HV)
Available Models

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Volute Pumps (HV)
Range Chart - 60 Hz
Volute Pumps (HV)

Diagram

Volute Pumps (HV)
Main Dimensions

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1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
HV 62
Curve #: 43001-070620-F1
Volute Pumps (HV)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Volute Pumps (HV)
1800 rpm

HV 105
Curve #: 43002-070619-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°[°C], H₂O Density = 998[kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.

### Notes:

#### Performance Curves 60 Hz

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<th>P [hp]</th>
<th>P [kW]</th>
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<td>22.5</td>
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<td>26.25</td>
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### Volute Pumps (HV)

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<th>Q [m³/h]</th>
<th>NPSHr [ft]</th>
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<tr>
<td>50</td>
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**HV 105**

Curve #: 43002-070619-F1

3600 rpm
Volute Pumps (HV)
1800 rpm

HV 120
Curve #: 43003-090209-S1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H_2O T°=18 [°C], H_2O Density = 998 [kg/m^3])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
HV 120
Curve #: 43003-090209-S1

Volute Pumps (HV)
3600 rpm

**Notes:**

1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18 °C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Volute Pumps (HV)  
1800 rpm

HV 175  
Curve #: 43004-070619-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve  
4. Elevated temperature effects on performance are not included  
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)  
6. Consider 2.0% efficiency derate if using balanced impellers  
7. Specifications are subject to change without previous notice.
HV 175
Curve #: 43004-070619-F1

Volute Pumps (HV)
3600 rpm

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water \( (H_2O T=18 \degree C), (H_2O \text{ Density} = 998 \text{ [kg/m}^3]\))
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18°C; H₂O Density = 998 [kg/m³])
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2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
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7. Specifications are subject to change without previous notice.
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T=18°C, H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
Volute Pumps (HV)
1200 rpm

HV 3000
Curve #: 41002-070717-F1

Notes:
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
6. Consider 2.0% efficiency derate if using balanced impellers
7. Specifications are subject to change without previous notice.
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