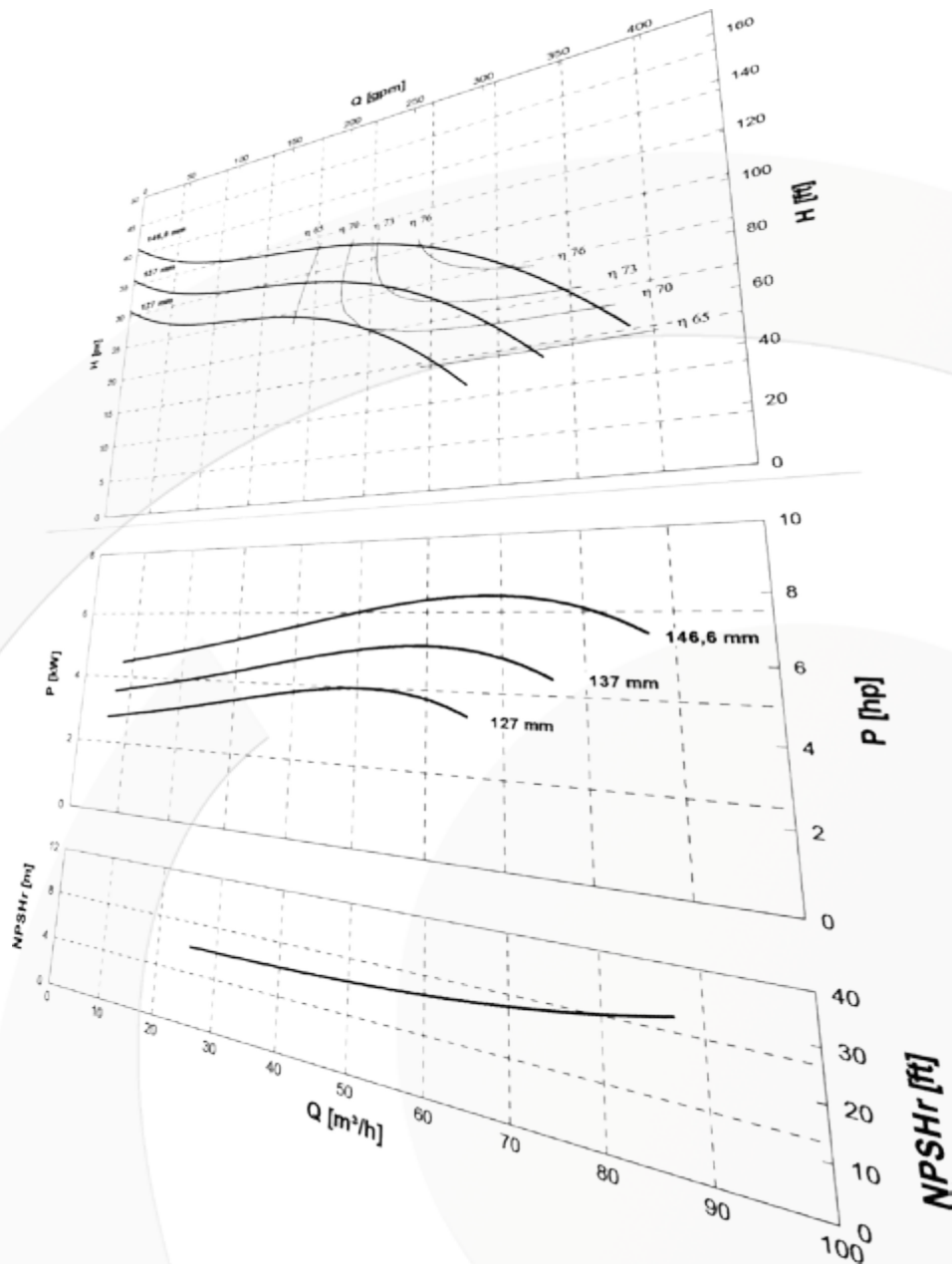




Engineered Pump Catalog 50 Hz Performance Curves



ENGINEERED PUMP CATALOG

50 Hz Performance Curves

Neptuno Pumps®
Engineered Pump Catalog 50 Hz Performance Curves
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056016 Edition
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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.



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:

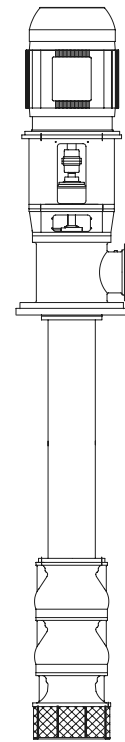
- **ANSI/HI**
- **ANSI/AWWA E101**
- **ISO 13709/API 610 Latest Edition.**

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
- Mining Processes: Cooling Water, Thickener Overflow, Reclaim Water, Mine Seepage, Well Pumps-Process, Water Supply, Mine De-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
- 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
- Mining Processes: Cooling Water, Thickener Overflow, Reclaim Water, Mine Seepage, Well Pumps-Process, Water Supply, Mine De-Watering, Electrolyte, Pressure Boosting and Transfer
- 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

Duty	Heavy	Medium	Low
	●	●	●
Capacity	High	Medium	Low
	●	●	●
Head	High	Medium	Low
	●	●	●
Fluid	Clean	Process	Slurry
	●	●	●
Flexibility	High	Medium	Low
	●		

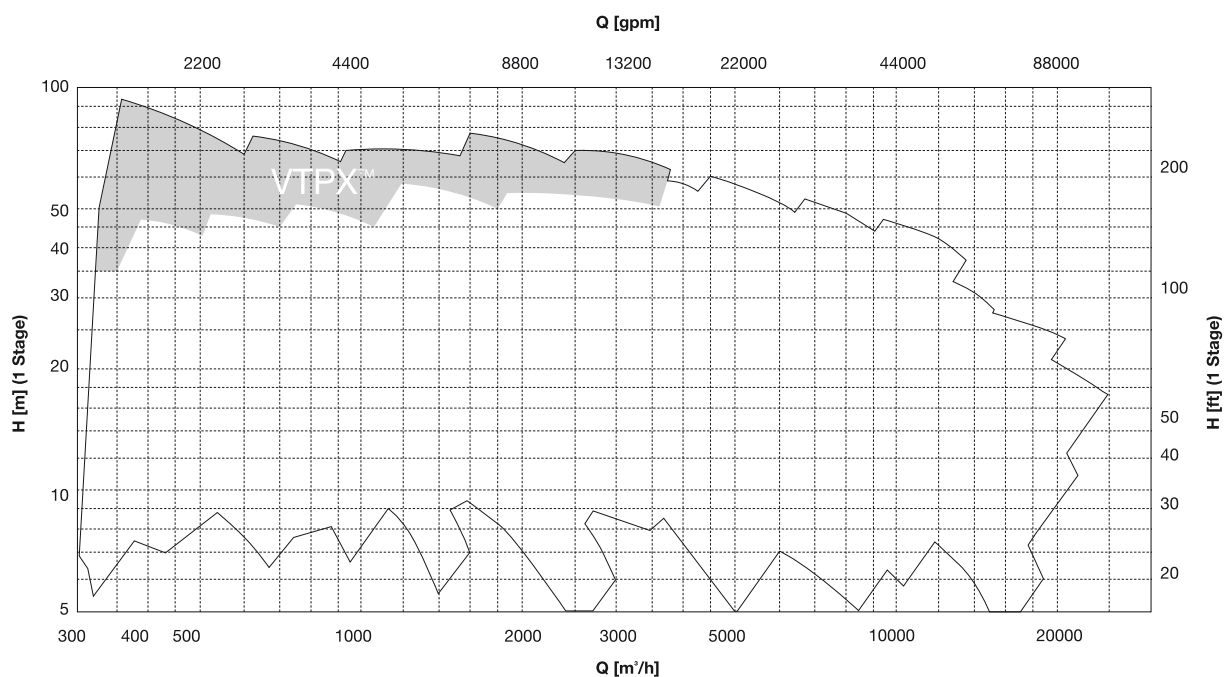
Vertical Turbine Pumps (VTP) Main Components & Materials

Components	Material					
	Cast Iron	Carbon Steel	Brass	Stainless Steel	Duplex	Polymer
Suction Bell	●		●	●	●	
Bowl	●		●	●	●	
Impeller	●		●	●	●	
Wear Rings	●		●	●	●	●
Shaft				●	●	
Discharge Head	●	●		●	●	
Stuffing Box / Mechanical Seal	●					

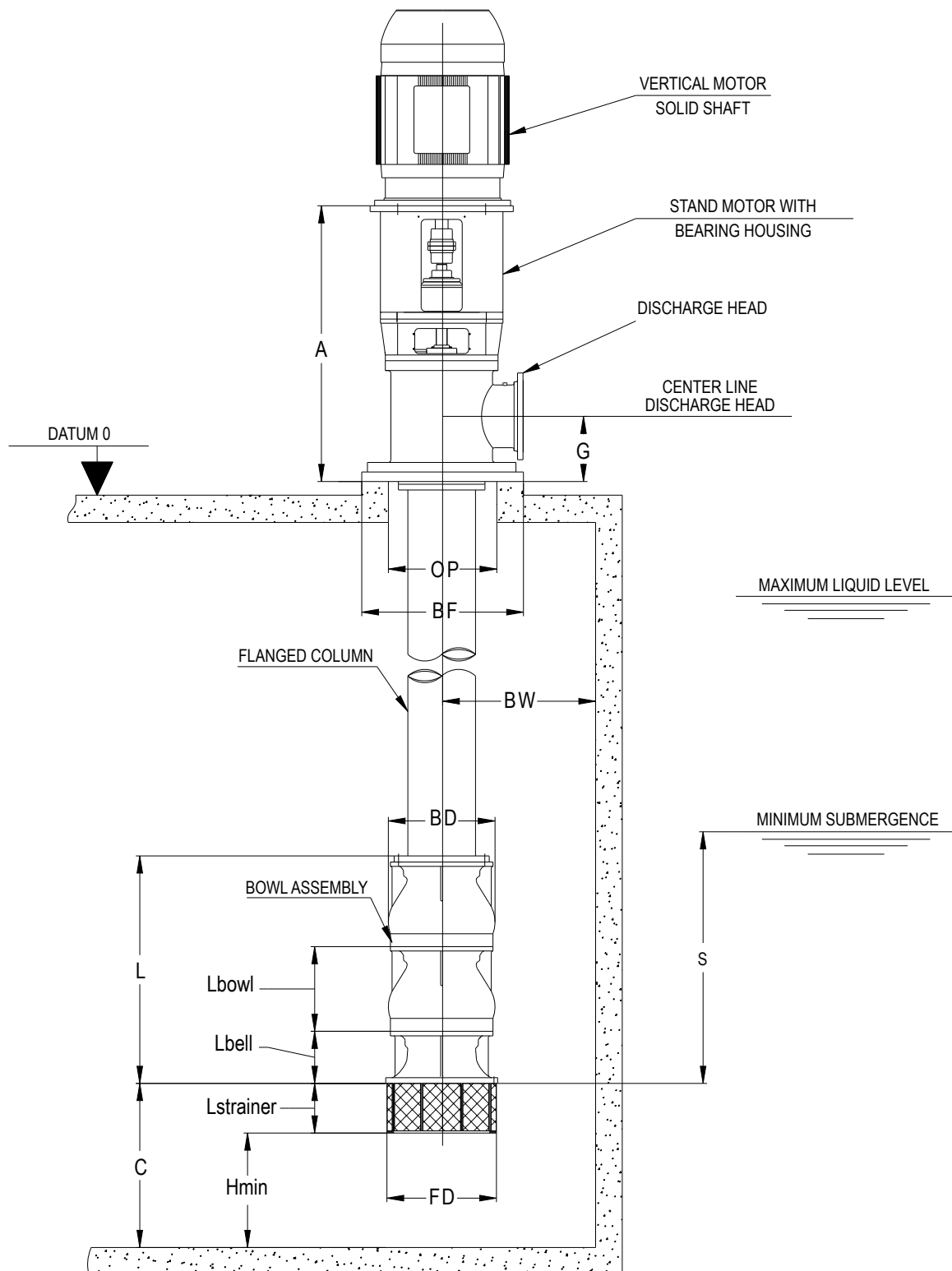
Vertical Turbine Pumps (VTP) Available Models

VTP 30	VTP 50	VTP 60M	VTP 80C
VTP 100	VTP 110	VTP 130	VTP 135X
VTP 170	VTP 170M	VTP 180	VTP 180M
VTP 250	VTP 290	VTP 300	VTP 300MH
VTP 325	VTP 325X	VTP 360	VTP 400M
VTP 450	VTP 500	VTP 500M	VTP 500X
VTP 650	VTP 700	VTP 750	VTP 750M
VTP 800	VTP 850	VTP 850M	VTP 850X
VTP 850XB	VTP 1000	VTP 1000X	VTP 1250
VTP 1300	VTP 1350	VTP 1500	VTP 1500L
VTP 1500LH	VTP 1500KM	VTP 1800M	VTP 1800X
VTP 2200	VTP 2200M	VTP 3000	VTP 3400
VTP 3400M	VTP 6500		

Vertical Turbine Pumps (VTP) Range Chart - 50 Hz - 1 Stage



Vertical Turbine Pumps (VTP) Diagram



Vertical Turbine Pumps (VTP)

Main Dimensions

Pump Model	Column Diameters [In]	Pump's Principal Dimensions							Bowl Assembly Dimensions				Discharge Head Principal Dimensions		
		FD [mm]	BD [mm]	OP] mm]	S min [mm]	C [mm]	H min [mm]	BW min [mm]	L [mm] (1st Stage)	Lbowl [mm] Each add Stage	Lbell [mm]	Lstrainer [mm]	G [mm]	BF [mm]	A [mm]
30	4	197	197	240	230	159	59	148	160	60	100	100	216	480	1000
50	4	181	240	288	325	167	54	136	267	187	80	113	216	480	1300
60M	4	180	180	216	266	169	54	135	180	80	100	115	216	480	1300
80C	4	245	245	294	252	334	74	184	265	185	80	260	216	480	1300
100	6	241	255	293	325	204	72	181	338	214	125	132	216	480	1300
110	4	235	250	288	339	191	71	176	226	165	61	120	216	480	1300
130	4	197	210	242	389	179	59	148	226	165	61	120	216	480	1300
135X	4	295	295	339	362	209	89	221	255	165	90	120	216	480	1300
170	6	241	255	293	417	204	72	181	338	213	125	132	216	480	1300
170M	6	241	255	293	500	204	72	181	338	213	125	132	216	480	1300
180	8	241	310	357	430	204	72	181	358	233	125	132	250	658	1300
180M	6	355	377	434	417	378	107	266	455	254	201	271	216	480	1300
250	8	240	326	375	524	212	72	180	266	169	97	140	250	658	1800
290	8	233	294	375	588	270	70	175	360	225	135	200	250	658	1300
300	10	350	355	450	506	380	105	263	483	318	165	275	295	819	1300
300MH	10	426	423	490	537	430	128	320	619	356	263	302	342	1210	1200
325	6	450	378	518	506	400	135	338	585	280	305	265	216	480	1300
325X	8	445	490	556	564	434	134	334	363	216	147	300	250	600	1300
360	8	241	326	375	667	204	72	181	358	233	125	132	250	658	1300
400M	8	350	540	621	424	405	105	263	450	265	185	300	250	658	1300
450	10	431	445	511	590	414	129	323	570	345	225	285	295	819	1300
500	10	350	361	450	656	353	105	263	528	350	178	248	295	819	1300
500M	10	550	520	633	838	465	165	413	550	285	265	300	309	814	1450
500X	10	520	520	598	607	421	156	390	471	287	184	265	295	819	1450
650	12	519	445	512	686	528	156	389	725	419	305	372	340	972	1450
700	12	615	615	707	718	502	185	461	725	450	275	317	340	972	1450
750	14	505	705	811	730	502	152	379	730	445	285	350	380	1067	1450
750M	14	615	652	750	734	567	185	461	615	395	220	382	380	1067	1450
800	12	500	407	468	750	341	150	375	541	378	163	191	320	1067	1450
850	14	445	476	547	802	384	134	334	744	474	270	250	380	1067	1450
850M	14	470	470	541	787	341	141	353	600	300	300	200	380	1000	1450
850X	16	615	615	707	718	502	185	461	725	450	275	317	340	972	1450
850XB	16	615	615	707	718	502	185	461	725	450	275	317	340	972	1450
1000	14	457	505	581	870	368	137	343	804	464	340	231	380	1067	1450
1000X	14	730	730	840	834	669	219	548	725	325	400	450	380	1000	1450
1250	12	483	570	656	967	711	145	362	786	457	329	566	340	972	1450

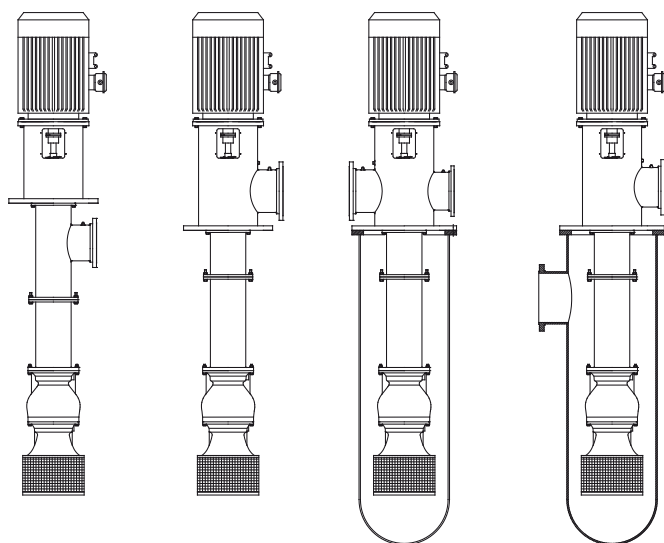
Vertical Turbine Pumps (VTP)

Main Dimensions (cont.)

		Pump's Principal Dimensions							Bowl Assembly Dimensions				Discharge Head Principal Dimensions		
Pump Model	Column Diameters [In]	FD [mm]	BD [mm]	OP] mm]	S min [mm]	C [mm]	H min [mm]	BW min [mm]	L [mm] (1st Stage)	Lbowl [mm] Each add Stage	Lbell [mm]	Lstrainer [mm]	G [mm]	BF [mm]	A [mm]
1300	16	432	635	730	1060	362	130	324	729	395	334	232	420	1219	1600
1350	14	648	648	745	1067	499	194	486	757	482	275	305	356	1200	1300
1500	16	513	635	730	1047	416	154	385	693	455	238	262	420	1219	1800
1500L	16	535	535	615	1029	423	161	401	614	372	242	262	420	1219	1750
1500LH	16	535	535	615	1029	423	161	401	614	372	242	262	420	1219	1750
1500KM	14	648	570	745	967	499	194	486	734	482	252	305	353	1118	1710
1800M	16	580	580	700	1100	374	174	435	710	410	300	200	420	1300	1750
1800X	16	570	640	736	1144	571	171	428	686	425	261	400	420	1300	1750
2200	20	840	822	946	1120	632	252	630	975	610	365	380	530	1524	1850
2200M	20	840	822	946	1120	628	252	630	991	621	370	376	530	1524	1850
3000	24	915	943	1084	1266	594	275	686	1242	733	509	320	640	1830	2000
3400	24	920	878	1010	1337	746	276	690	1137	724	413	470	640	1830	2000
3400M	24	920	955	1098	1337	671	276	690	1112	724	388	395	640	1830	2000
6500	26	990	1100	1265	1663	854	297	743	1225	732	493	557	700	1980	2500

Discharge Configurations

Multiple discharge configurations and sizes



Underground

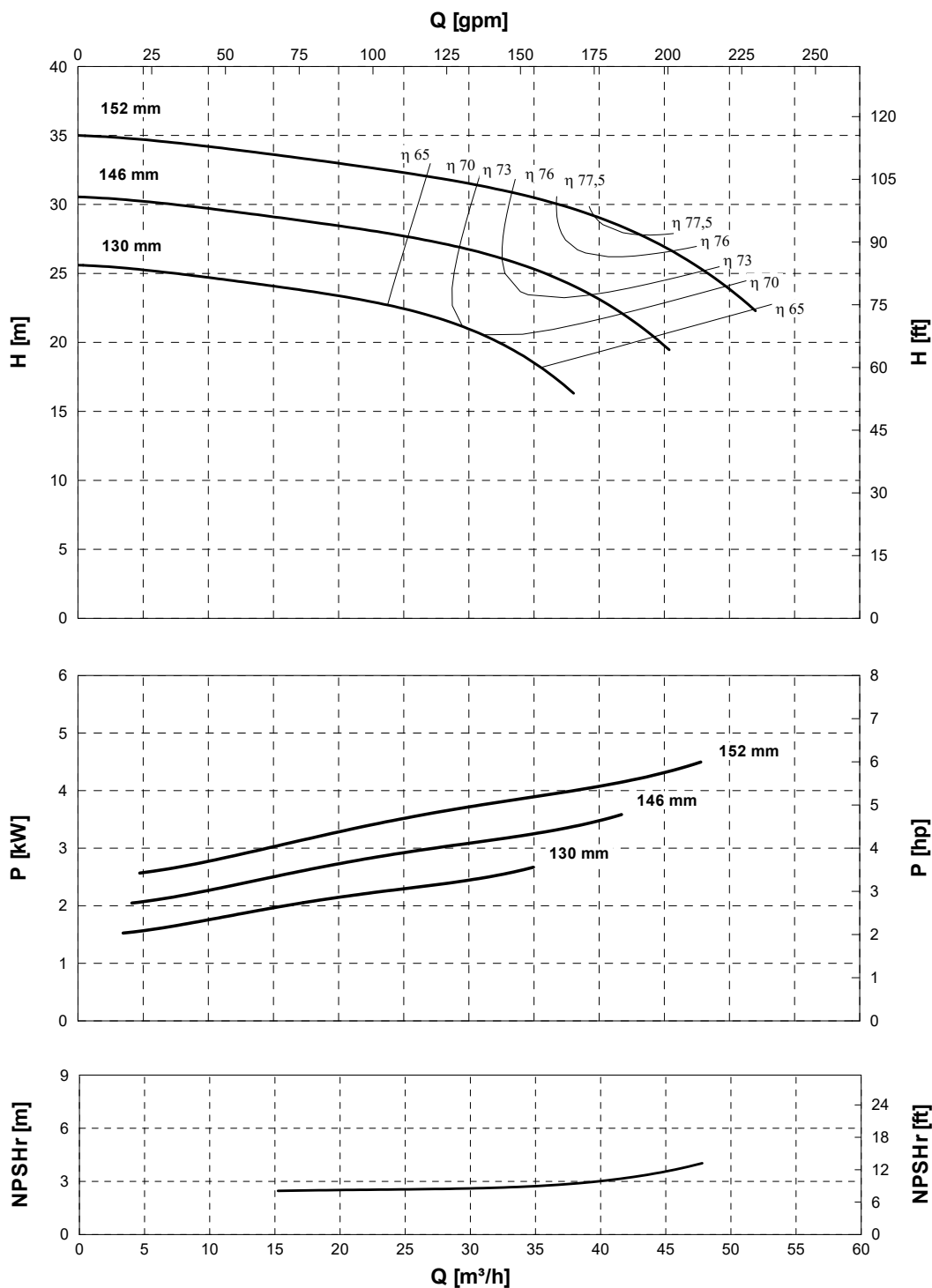
Above ground

Inlet in the head

Inlet in the can

Vertical Turbine Pumps (VTP) 3000 rpm

VTP 30 Curve #: 11063-140207-S1



Notes:

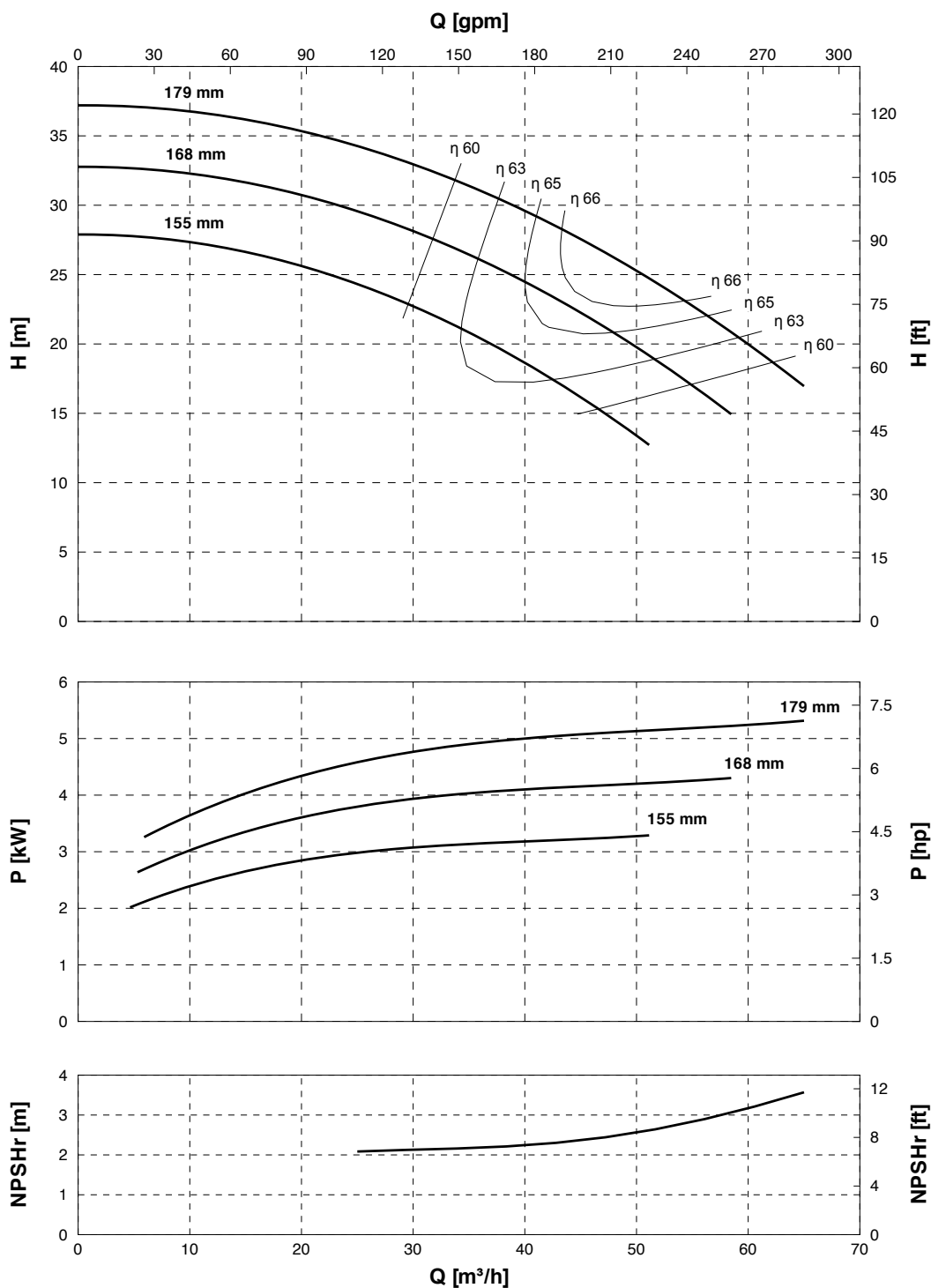
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 50

Curve #: 11001-110214-S1

Vertical Turbine Pumps (VTP)
3000 rpm

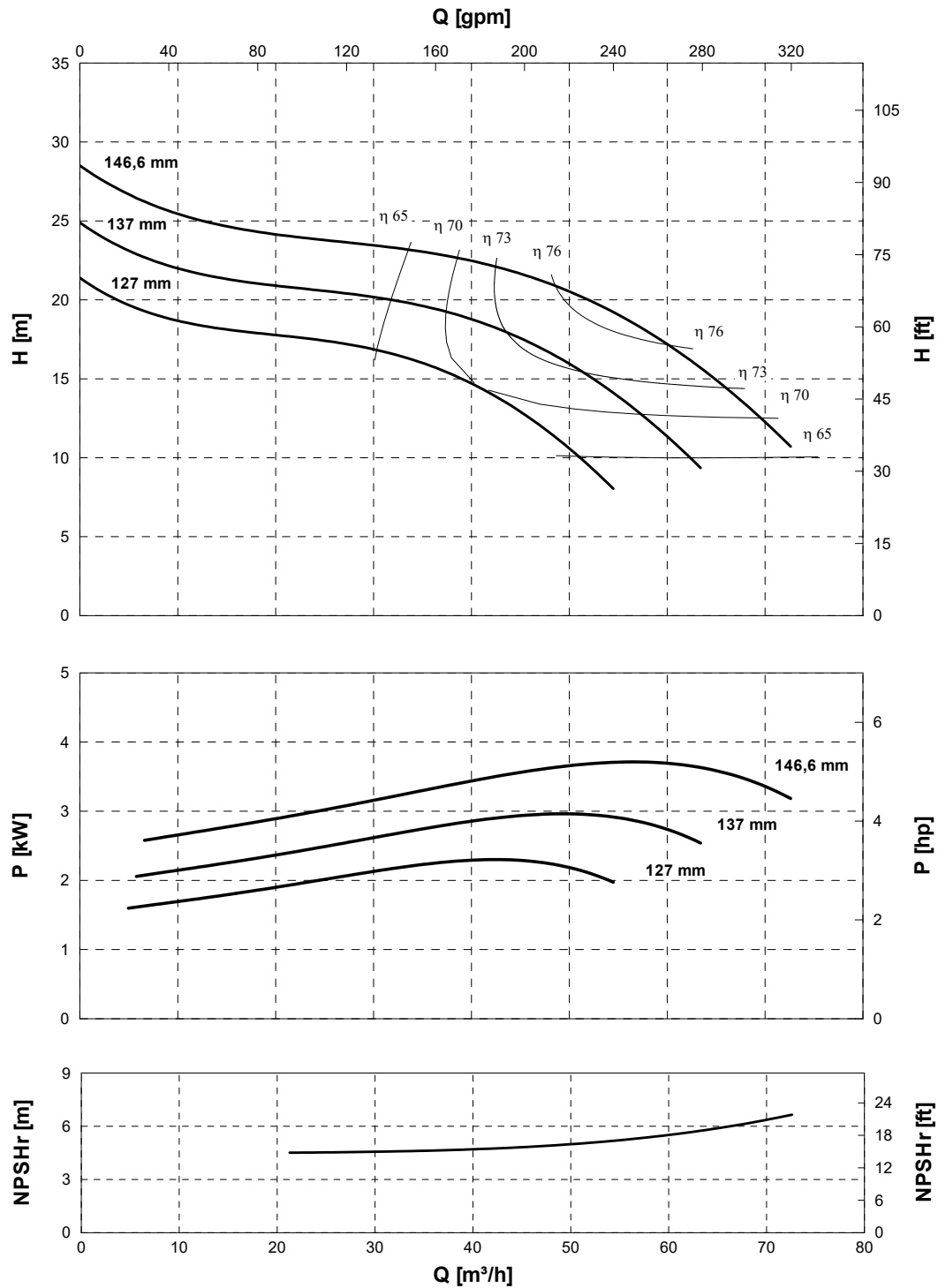


Notes:

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) 3000 rpm

VTP 60M Curve #: 11086-151123-S1



Notes:

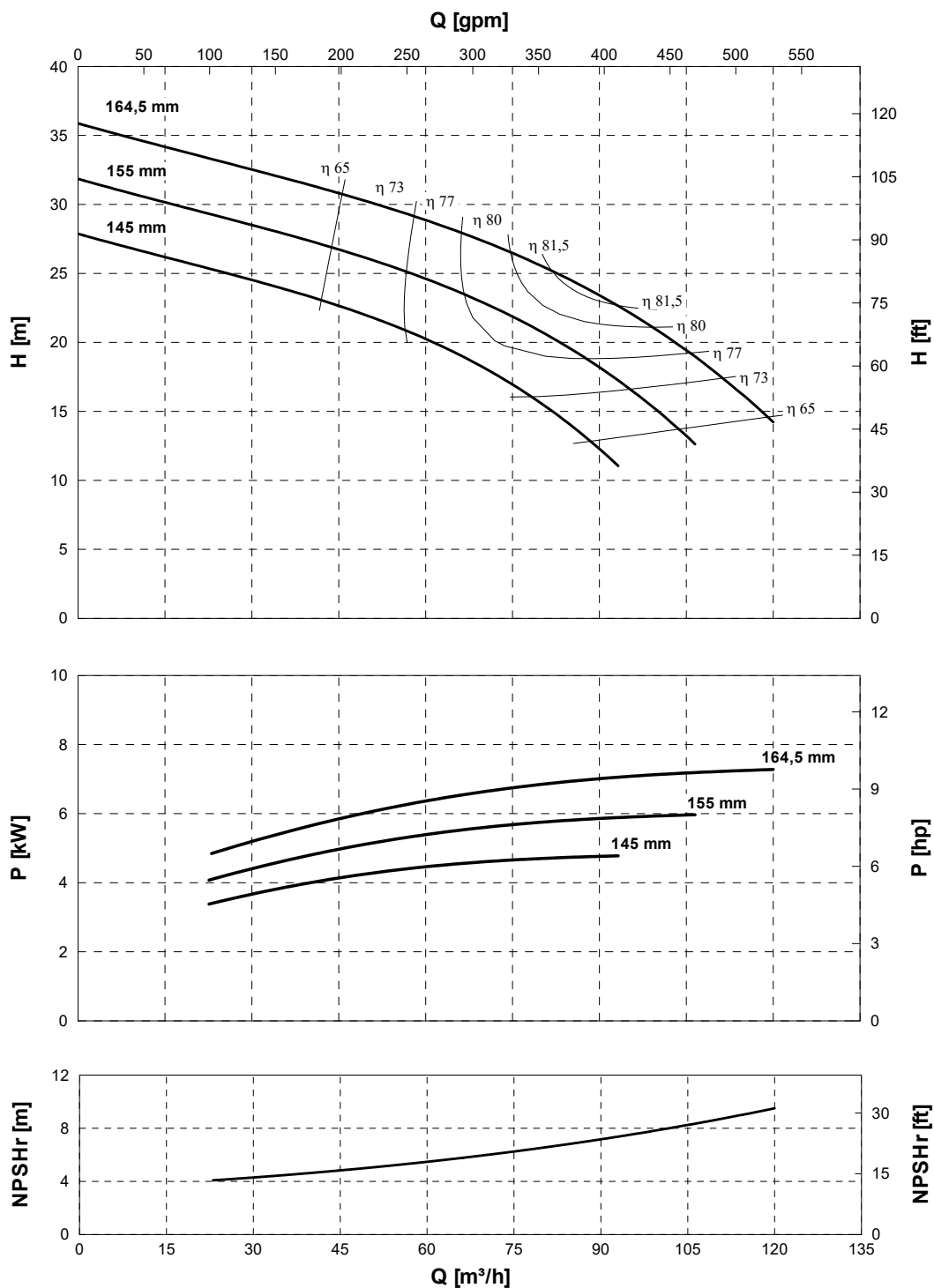
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 80C

Curve #: 11055-130718-F1

Vertical Turbine Pumps (VTP)
3000 rpm



Notes:

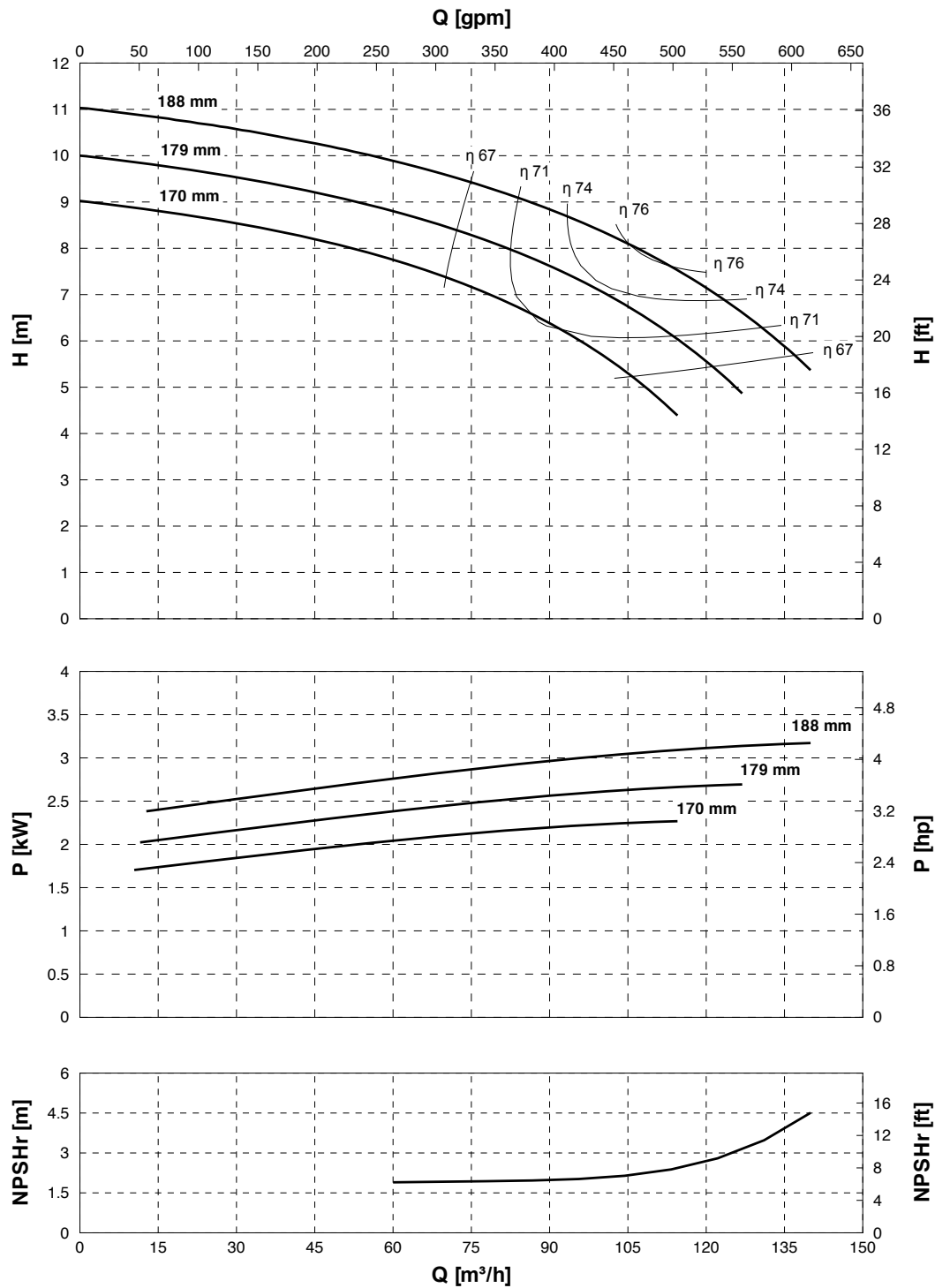
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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) 1500 rpm

VTP 100

Curve #: 11002-070713-F1



Notes:

- 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
- 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.

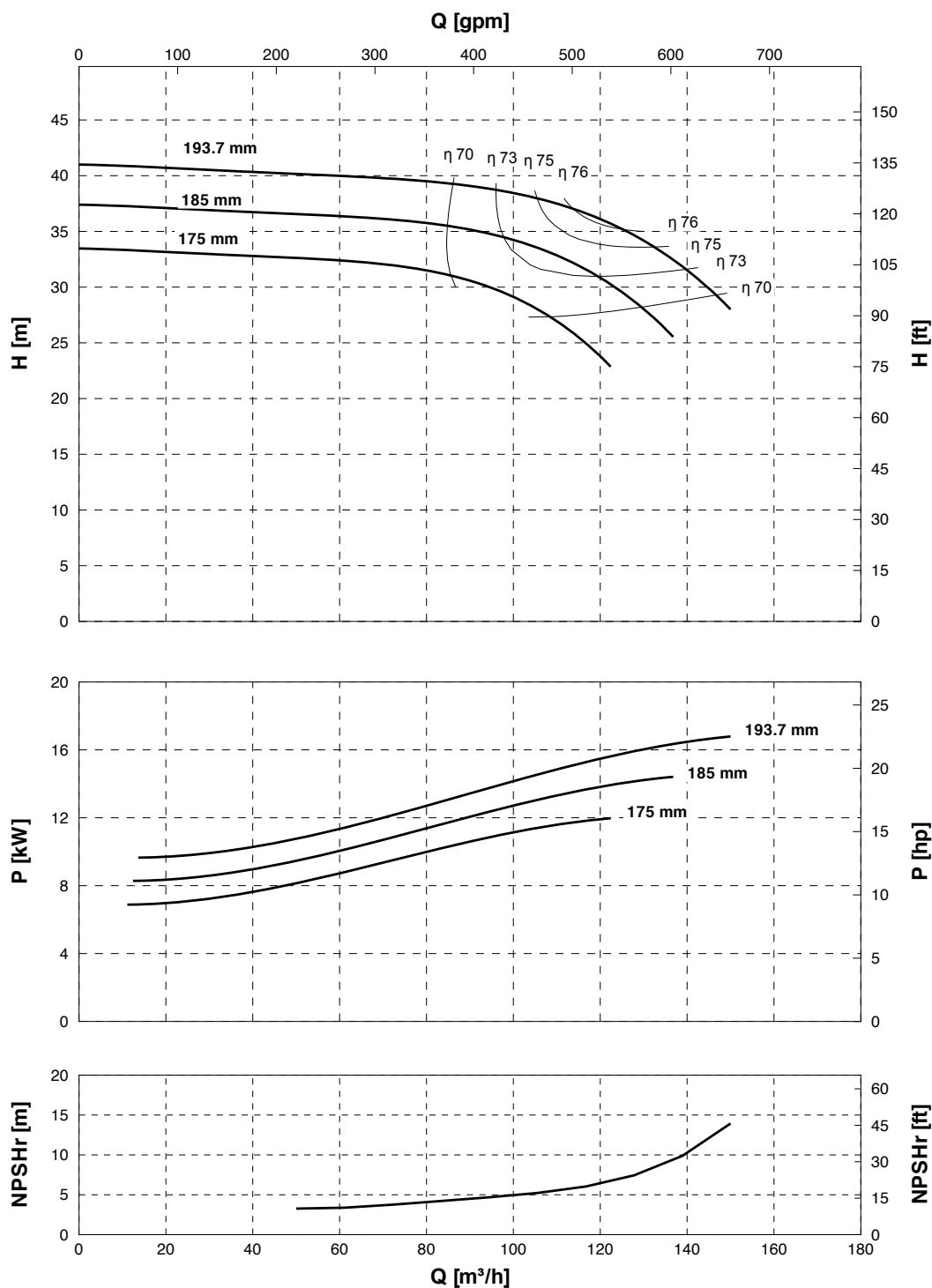


VTP 110

Curve #: 11003-071121-S1

Vertical Turbine Pumps (VTP)

3000 rpm



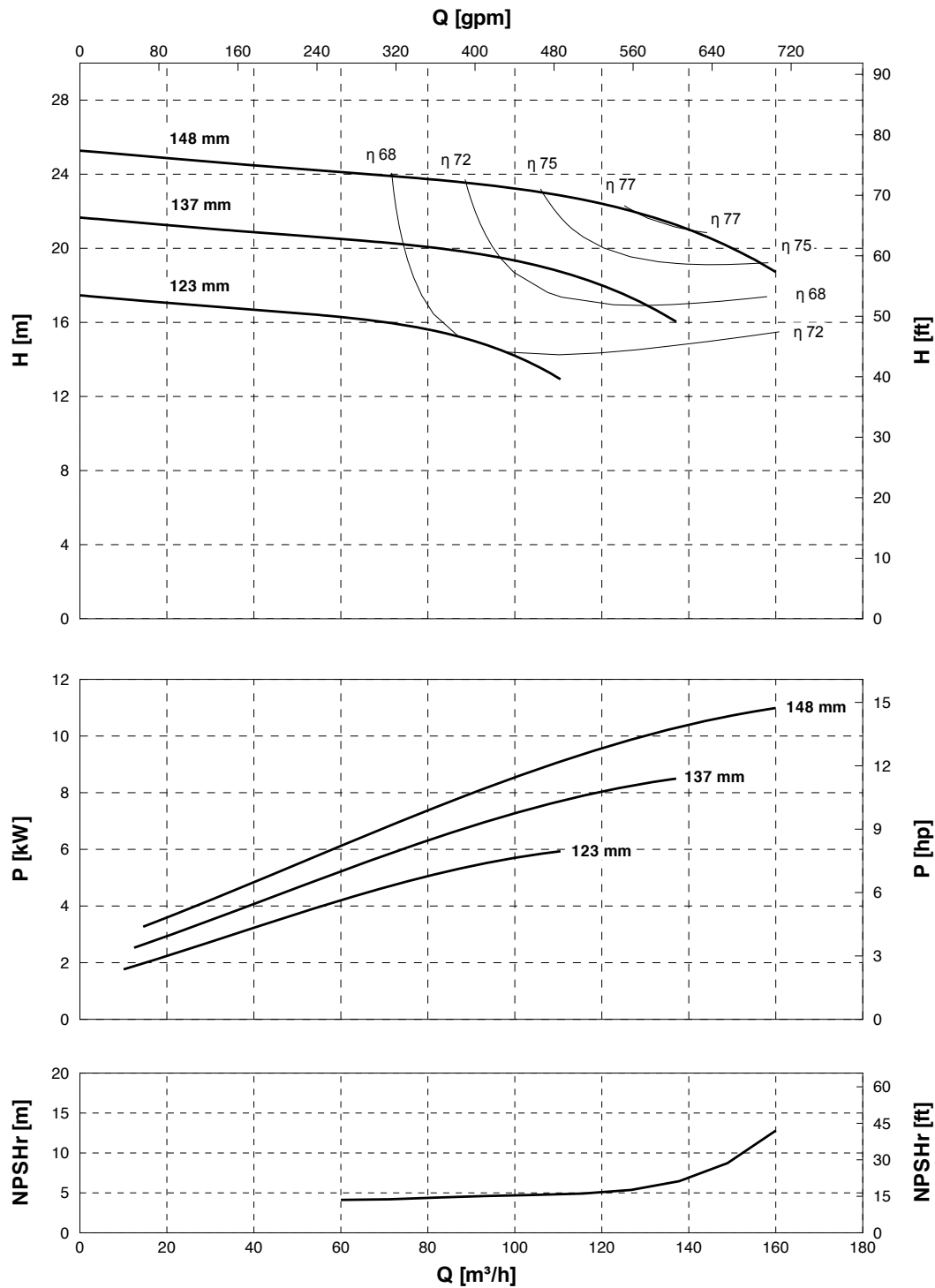
Notes:

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) 3000 rpm

VTP 130

Curve #: 11004-081121-S1



Notes:

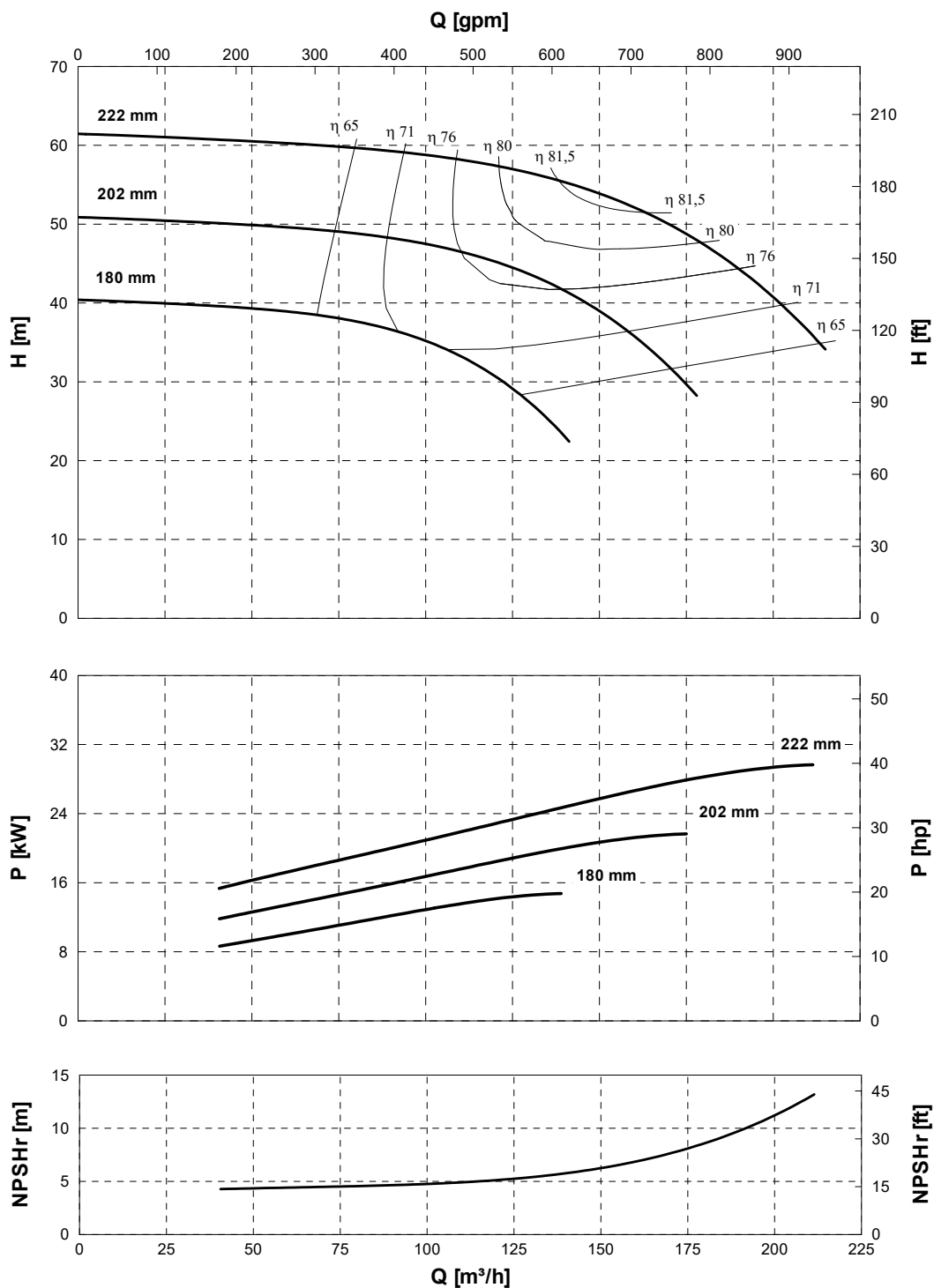
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 135X

Curve #: 11076-141114-S1

Vertical Turbine Pumps (VTP)
3000 rpm

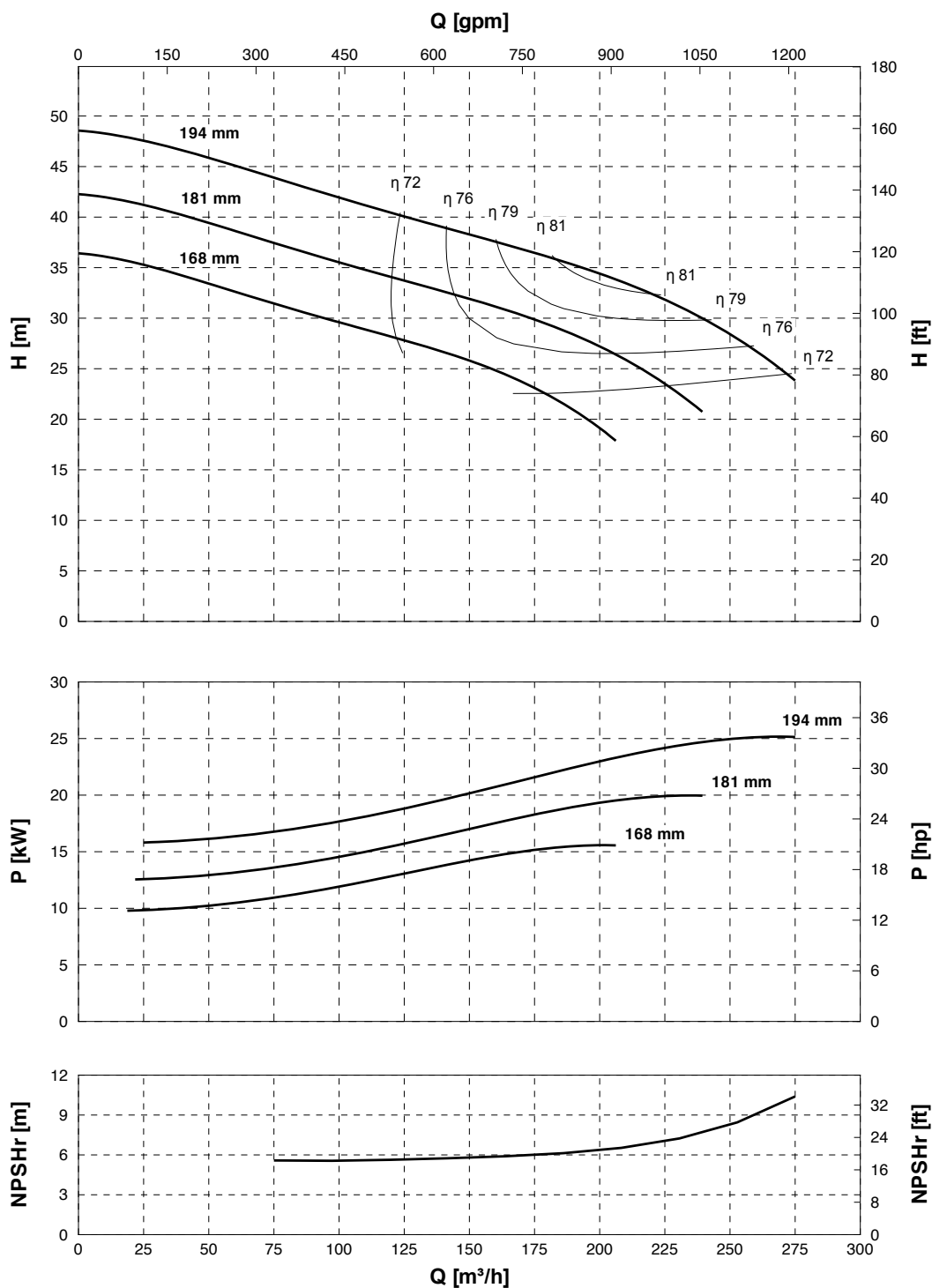


Notes:

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) 3000 rpm

VTP 170 Curve #: 11005-080704-E1



Notes:

- 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
- 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.

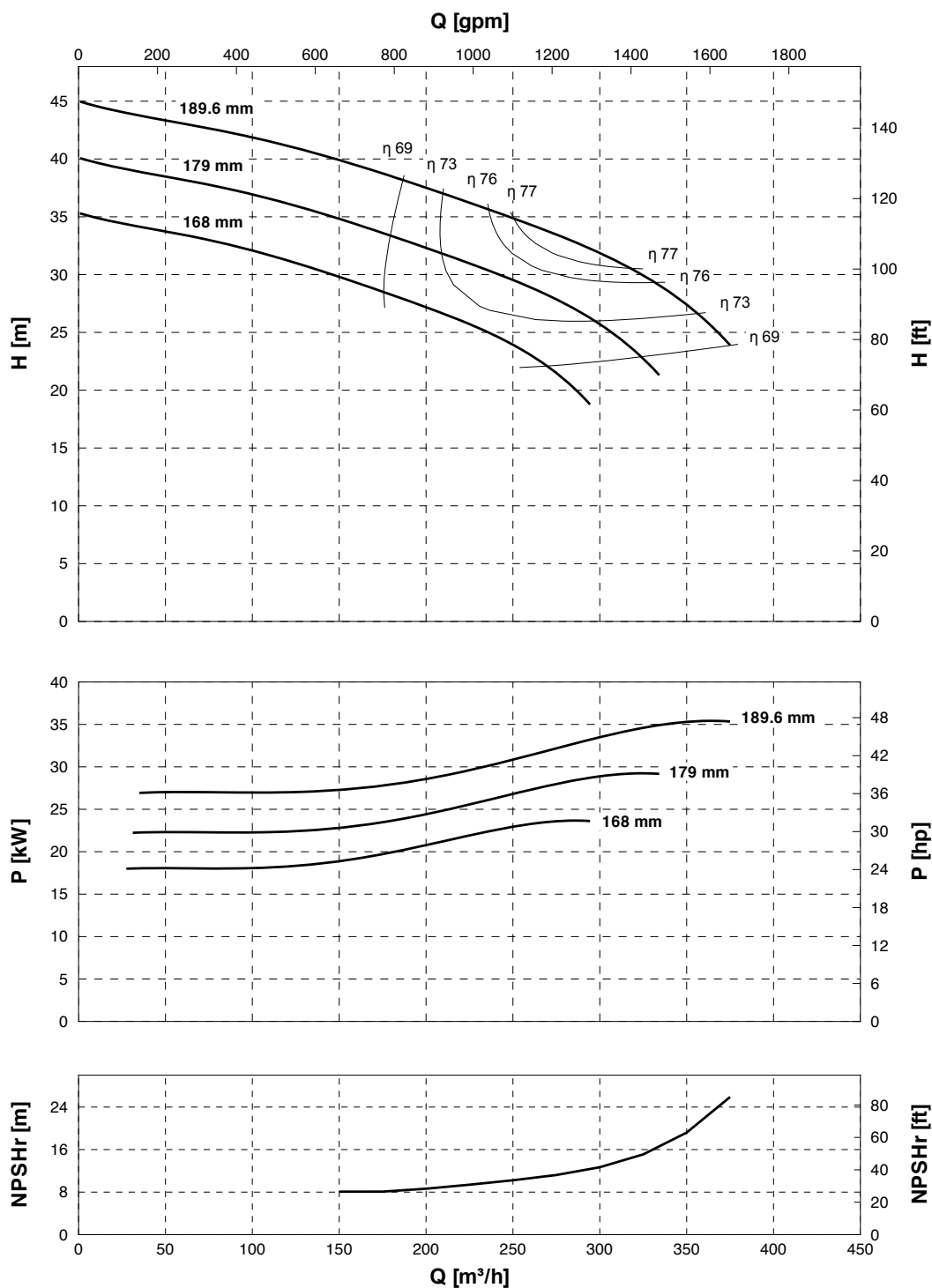


VTP 170M

Curve #: 11006-090721-S1

Vertical Turbine Pumps (VTP)

3000 rpm

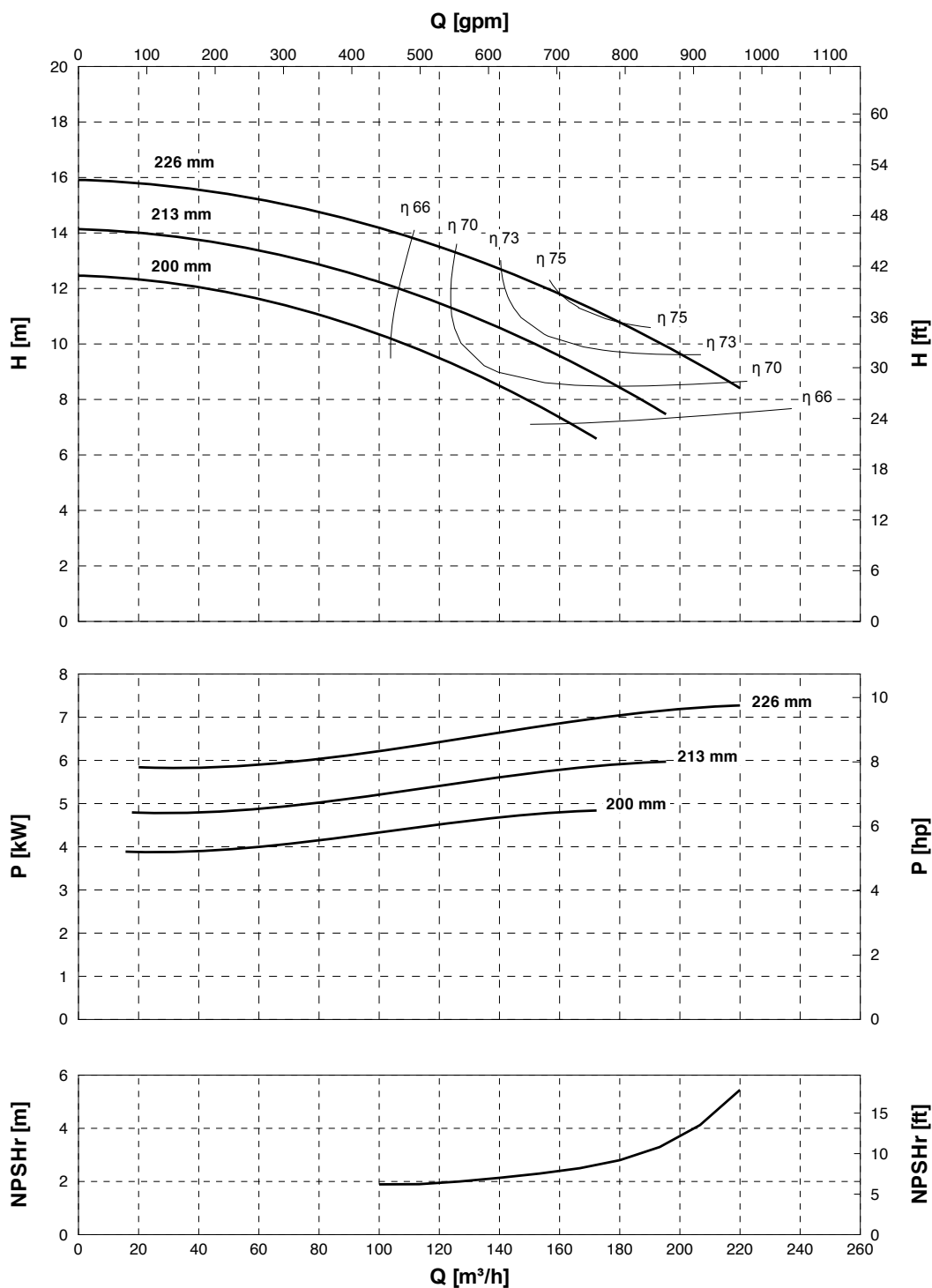


Notes:

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) 1500 rpm

VTP 180 Curve #: 11007-070717-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.

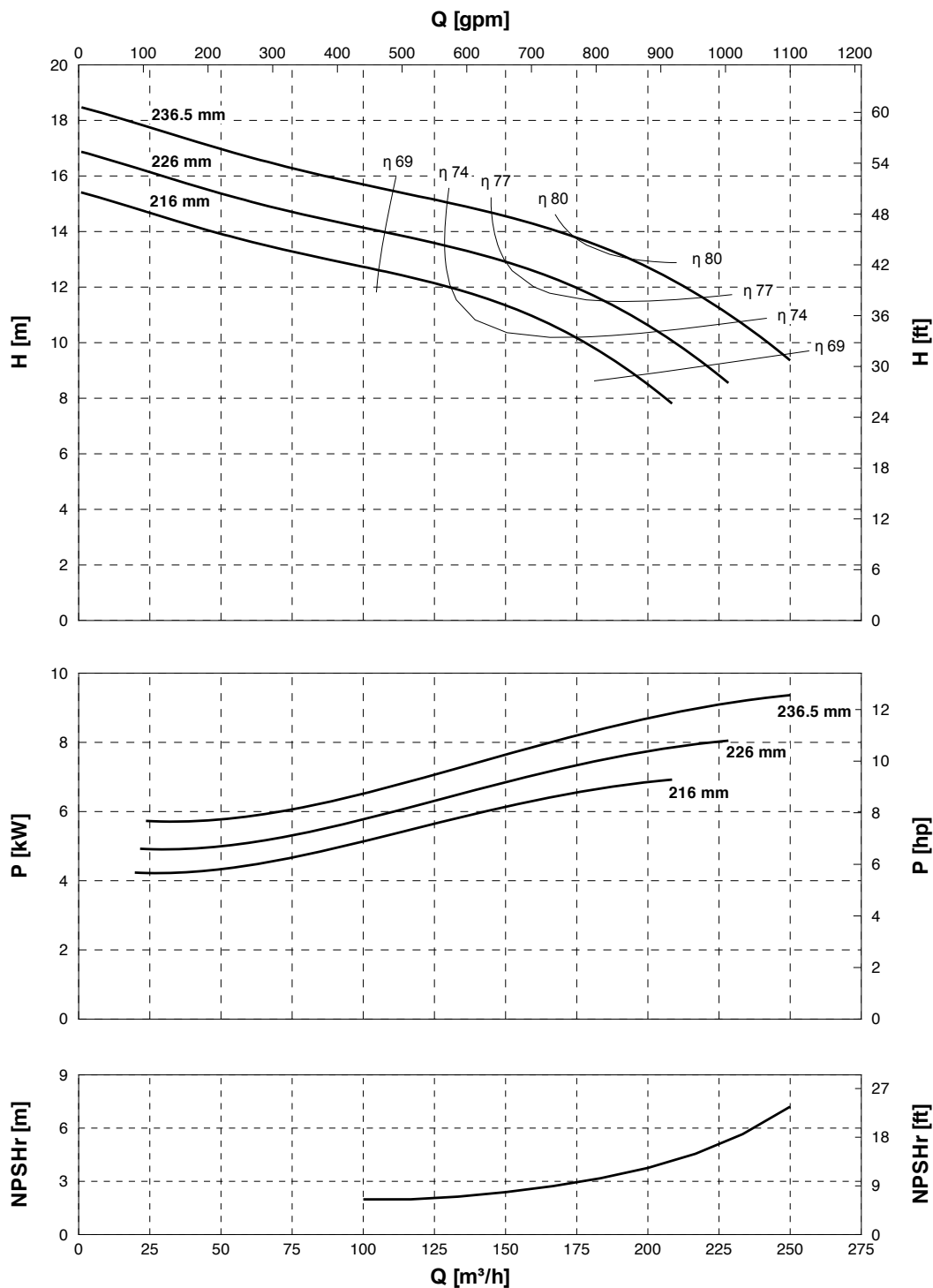


VTP 180M

Curve #: 11008-081103-S1

Vertical Turbine Pumps (VTP)

1500 rpm

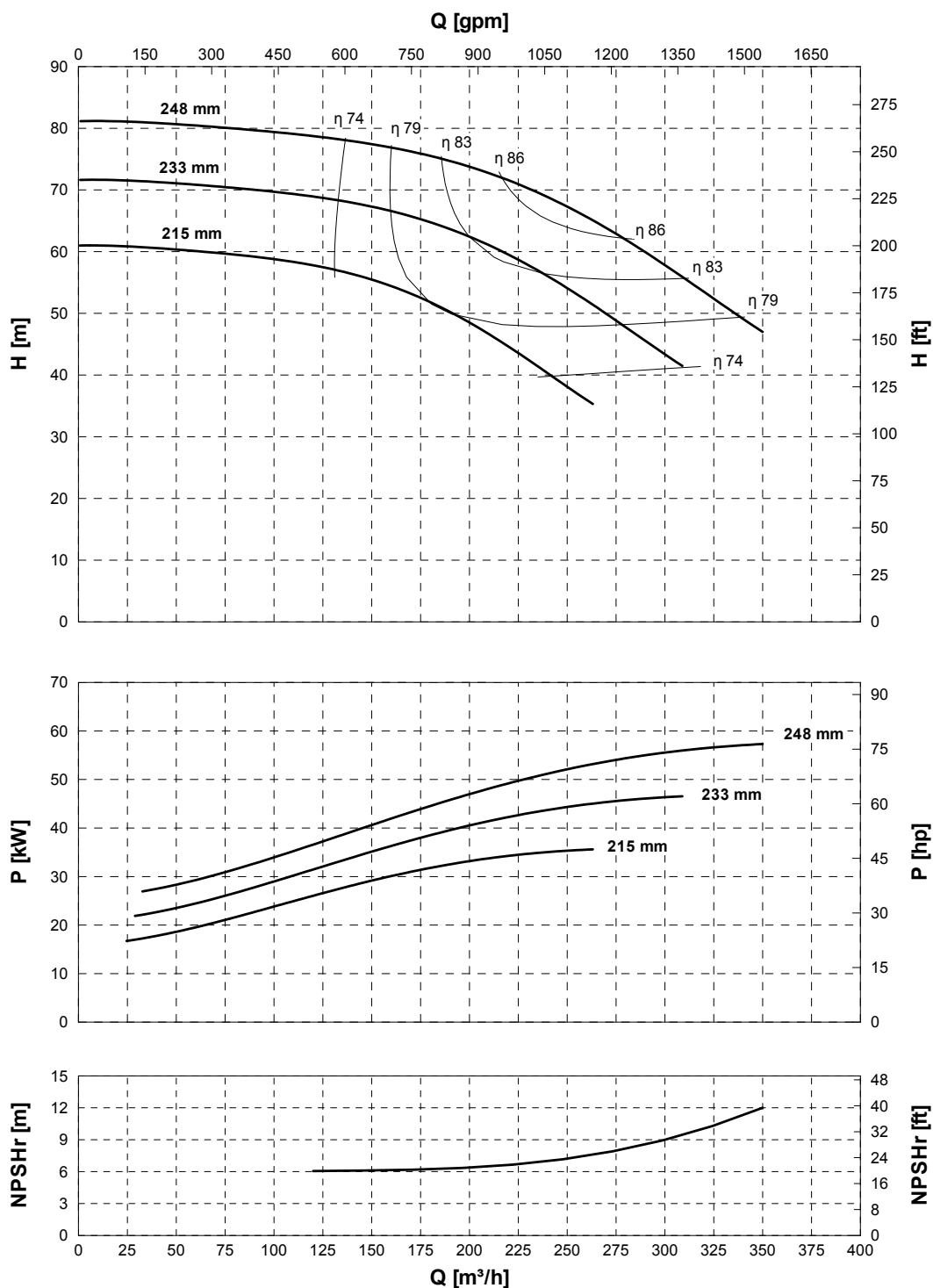


Notes:

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) 3000 rpm

VTP 250 Curve #: 11009-100625-E2



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.

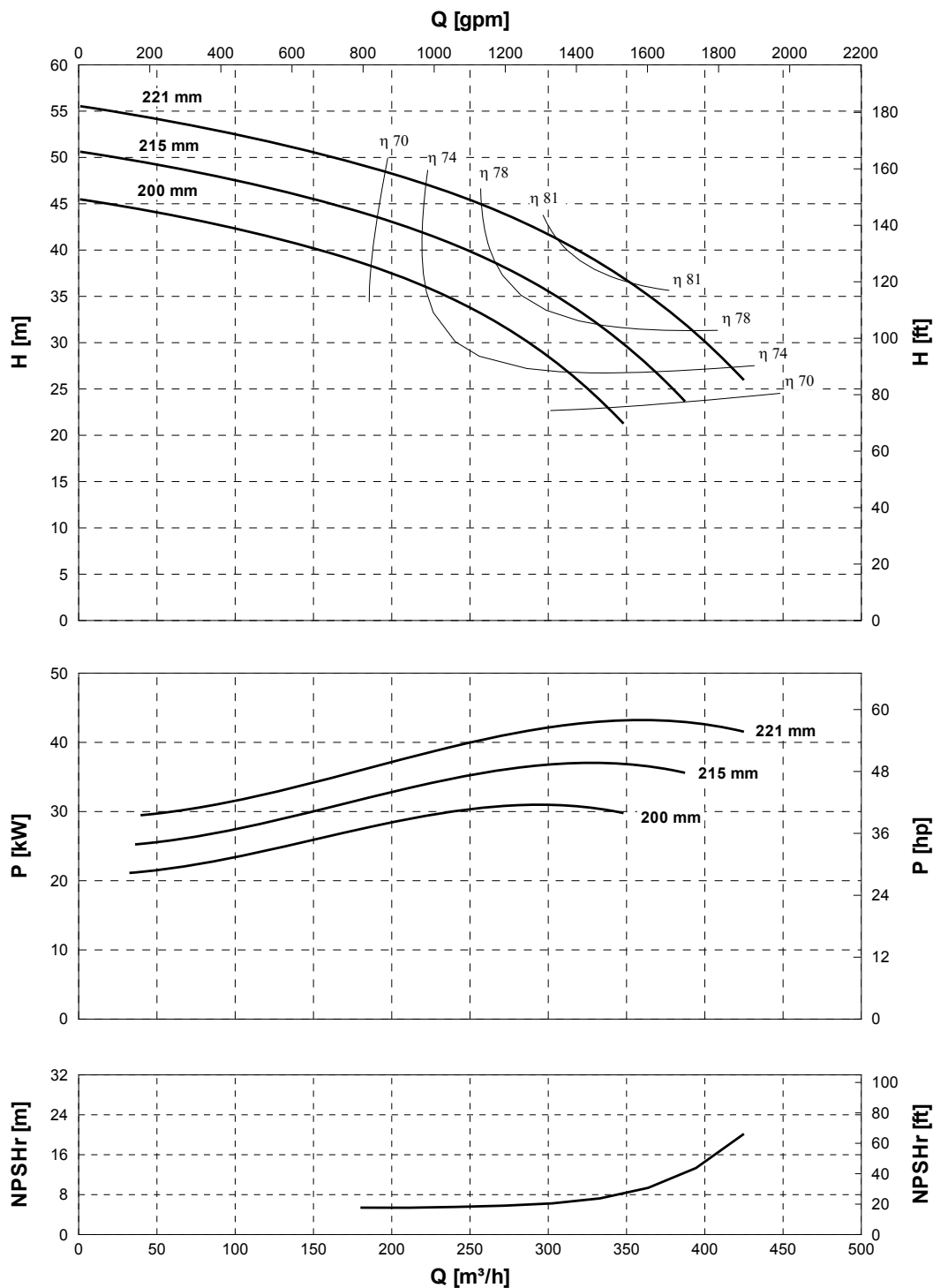


VTP 290

Curve #: 11010-081103-S1

Vertical Turbine Pumps (VTP)

3000 rpm

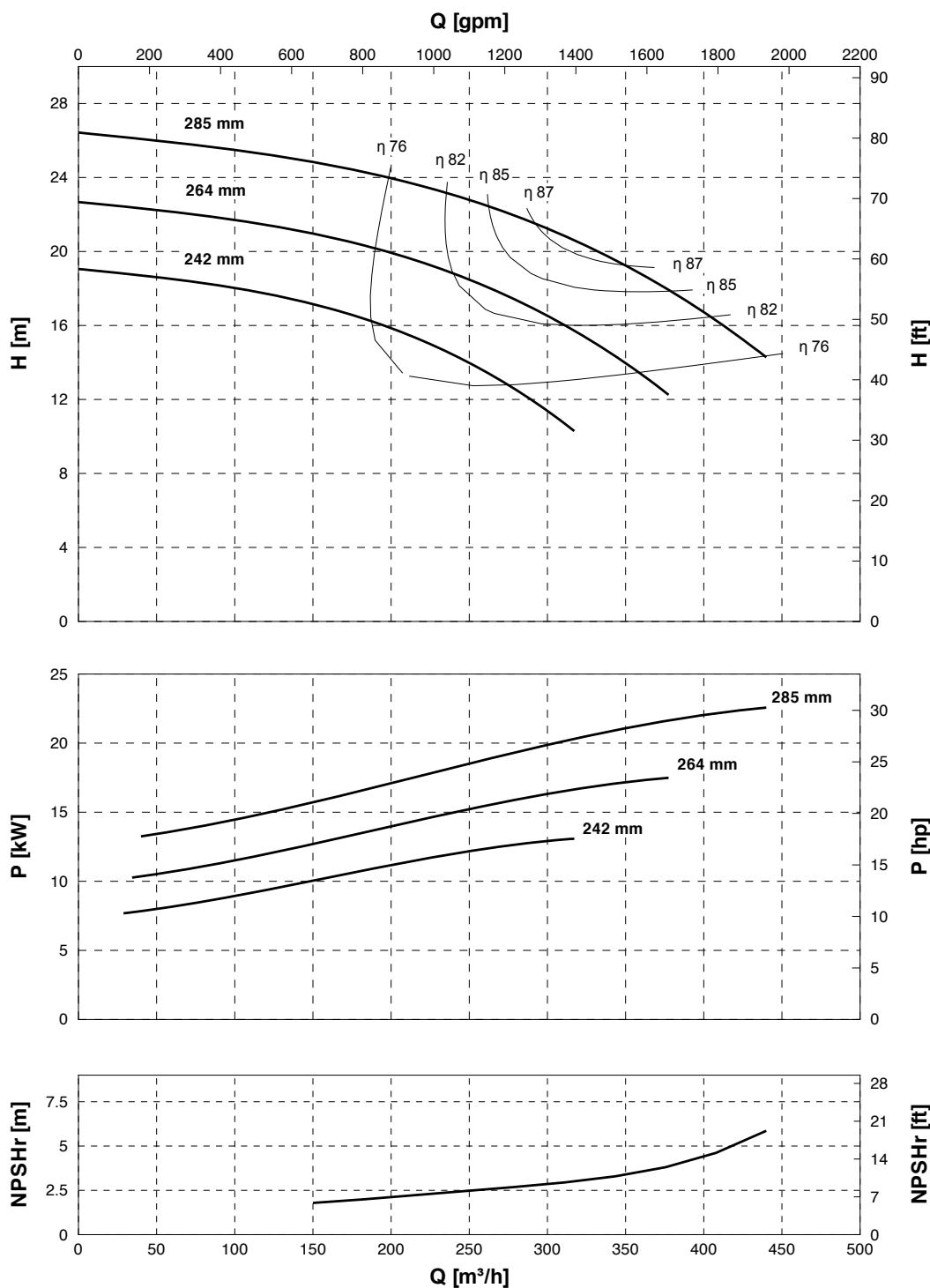


Notes:

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.

Vertical Turbine Pumps (VTP) 1500 rpm

VTP 300 Curve #: 11011-070713-F1



Notes:

- 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
- 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.

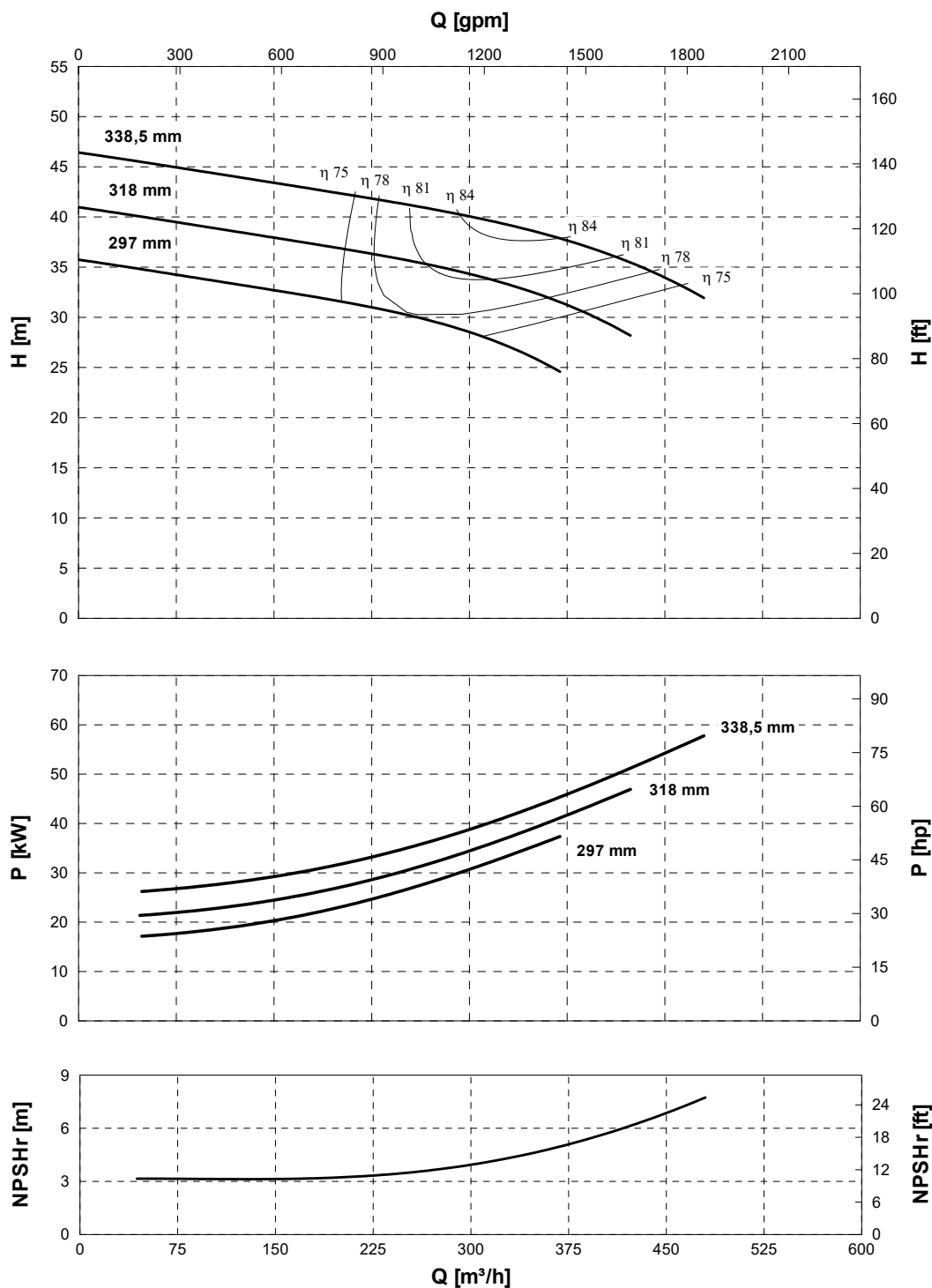


VTP 300MH

Curve #: 11090-160414-E1

Vertical Turbine Pumps (VTP)

1500 rpm



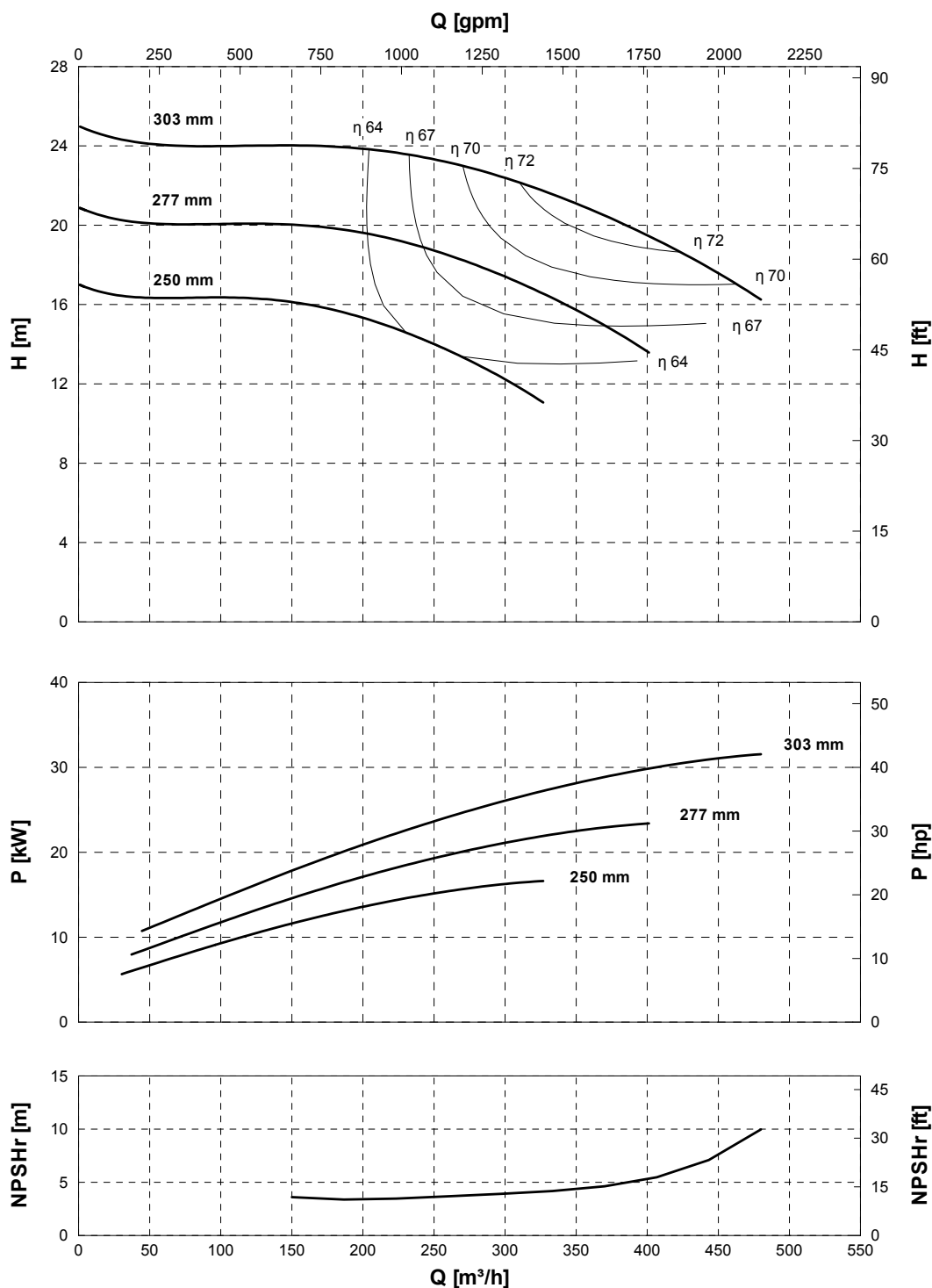
Notes:

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) 1500 rpm

VTP 325

Curve #: 11012-100701-E1



Notes:

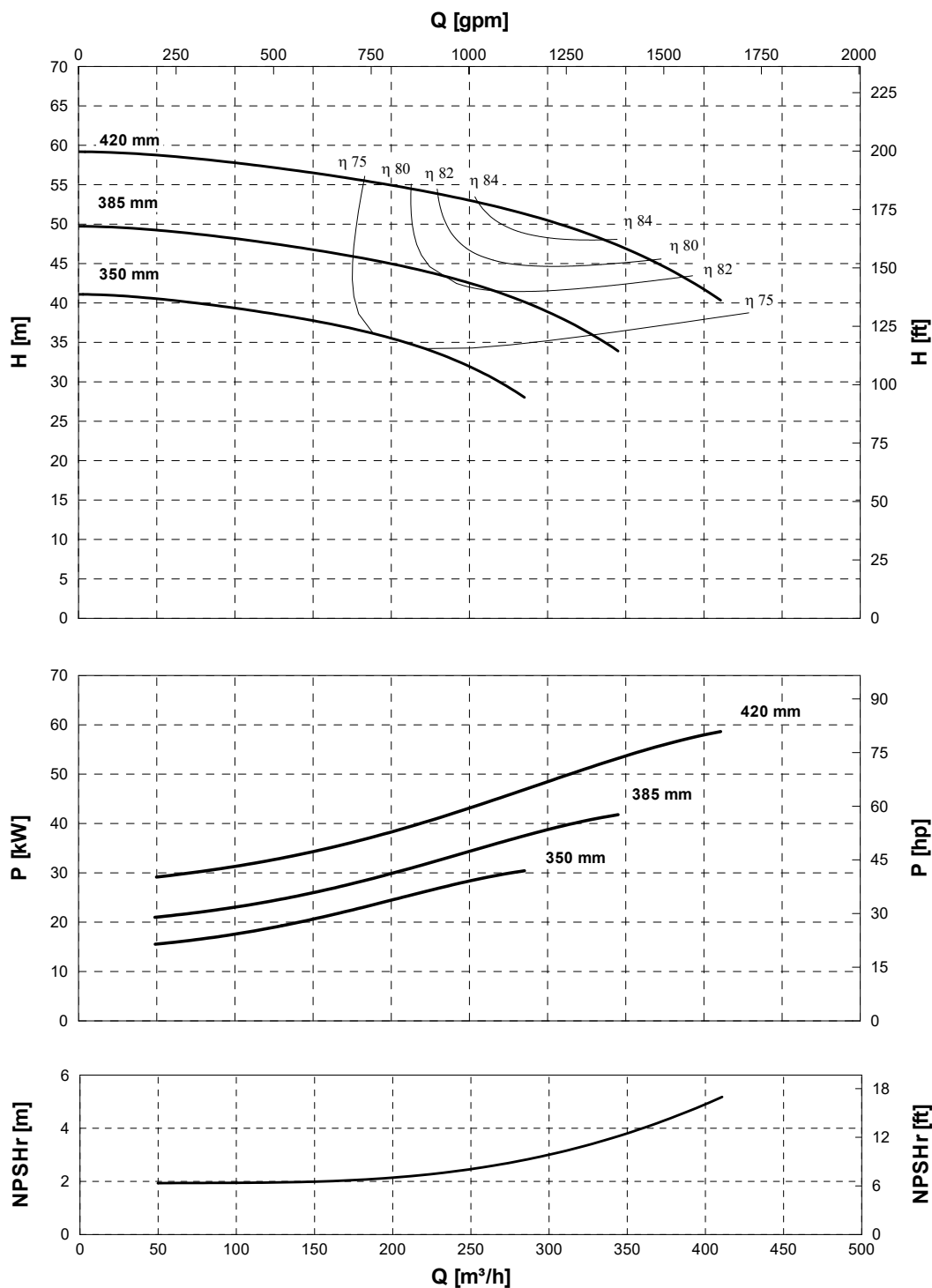
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ $^{\circ}C$), H_2O Density = 998 $[kg/m^3]$)
- Power and efficiency losses are not reflected on the curve
- Elevated temperature 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.



VTP 325X

Curve #: 11070-140513-F1

Vertical Turbine Pumps (VTP) 1500 rpm

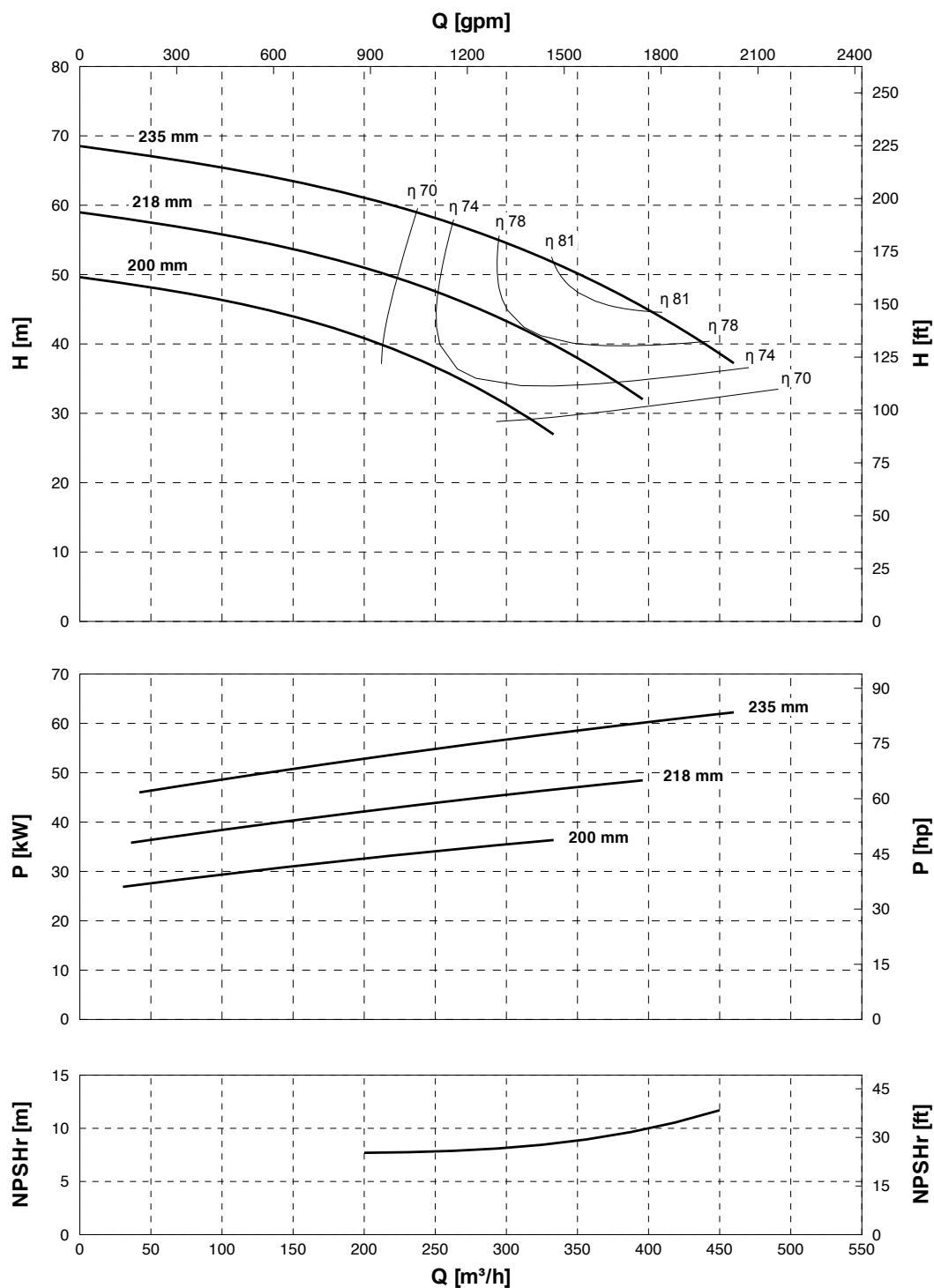


Notes:

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) 3000 rpm

VTP 360 Curve #: 11013-080614-E1



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 $T=18^\circ\text{C}$, 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.

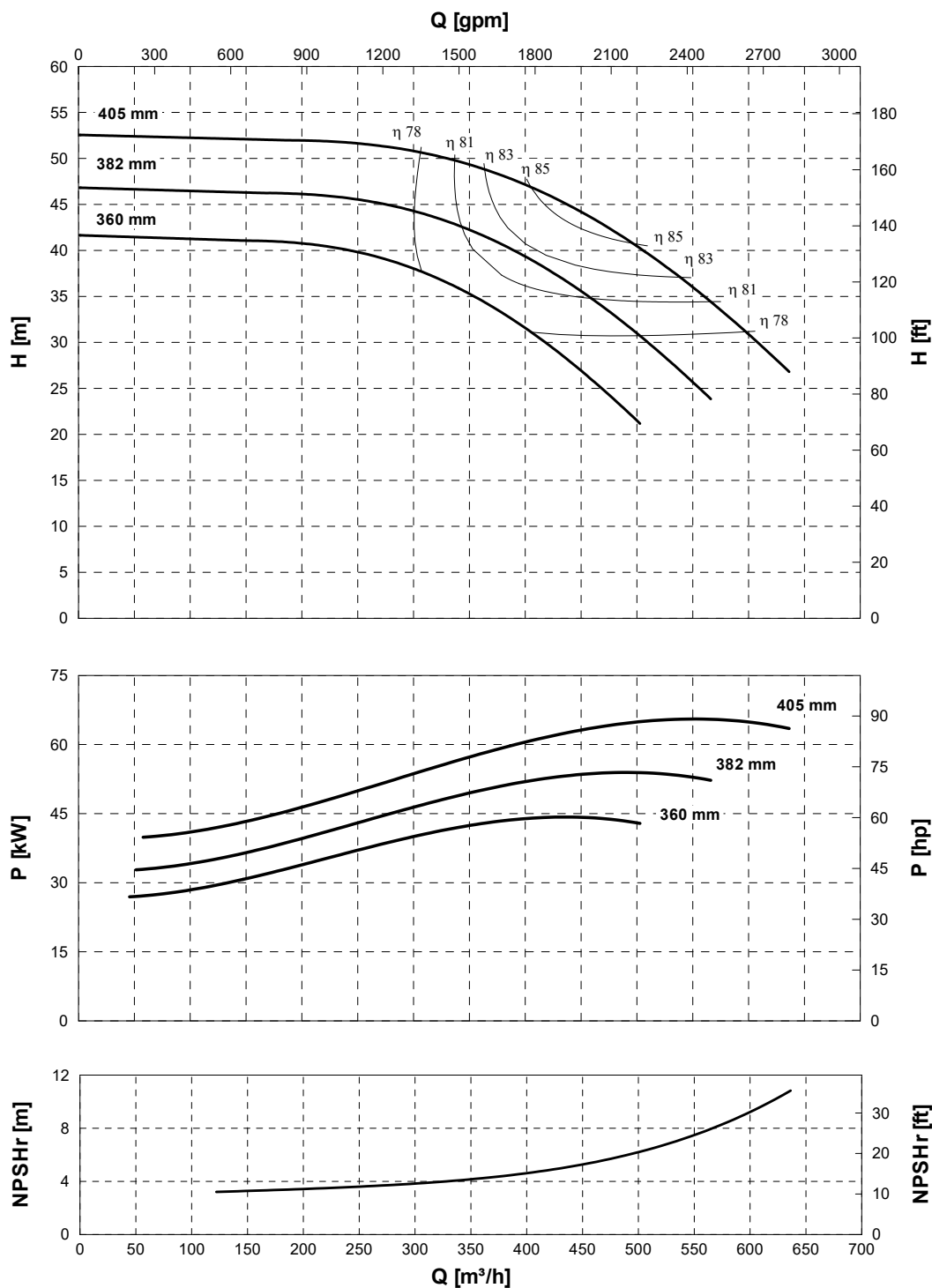


VTP 400M

Curve #: 11074-140708-S1

Vertical Turbine Pumps (VTP)

1500 rpm



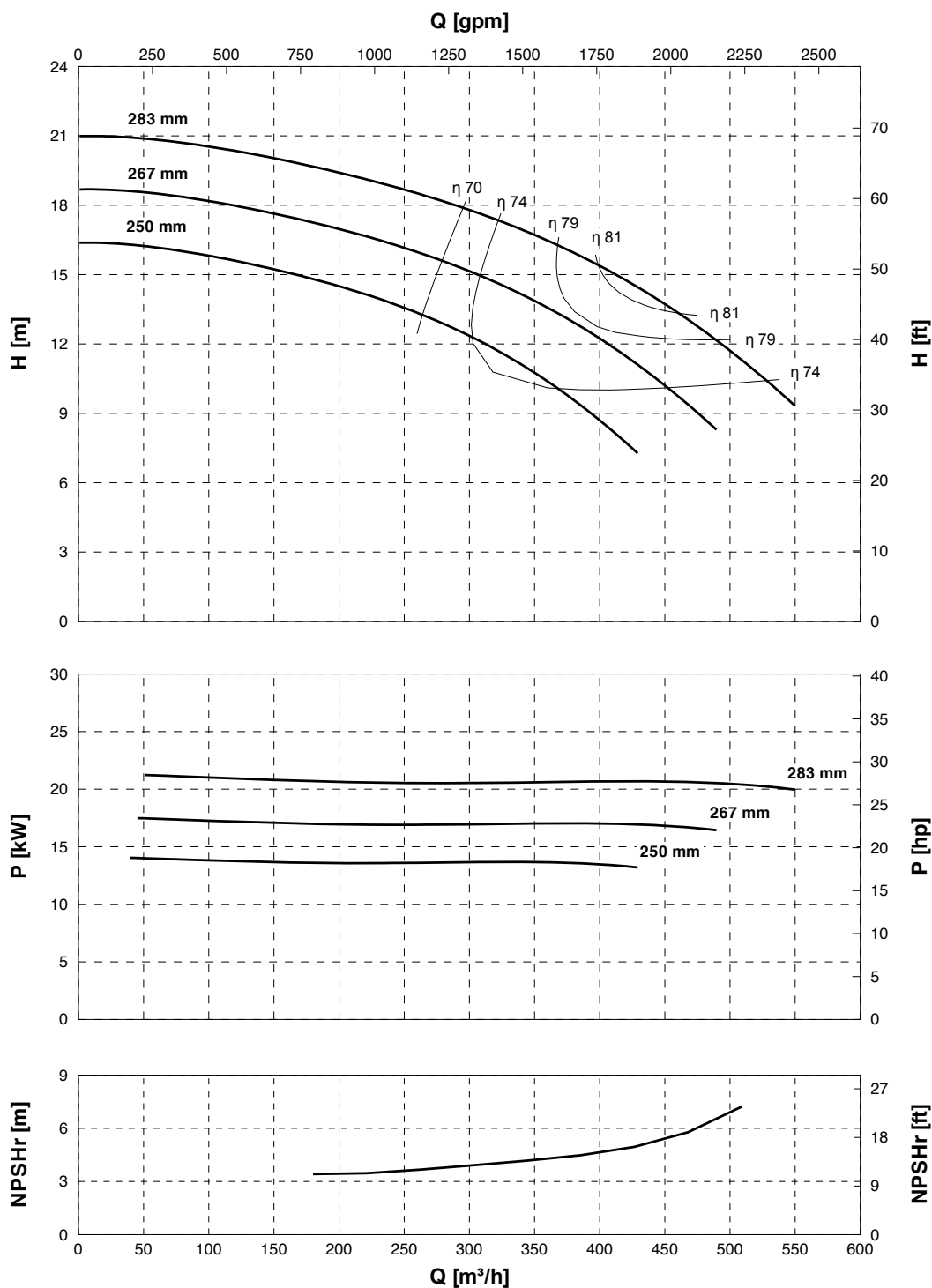
Notes:

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) 1500 rpm

VTP 450

Curve #: 11014-081103-S1



Notes:

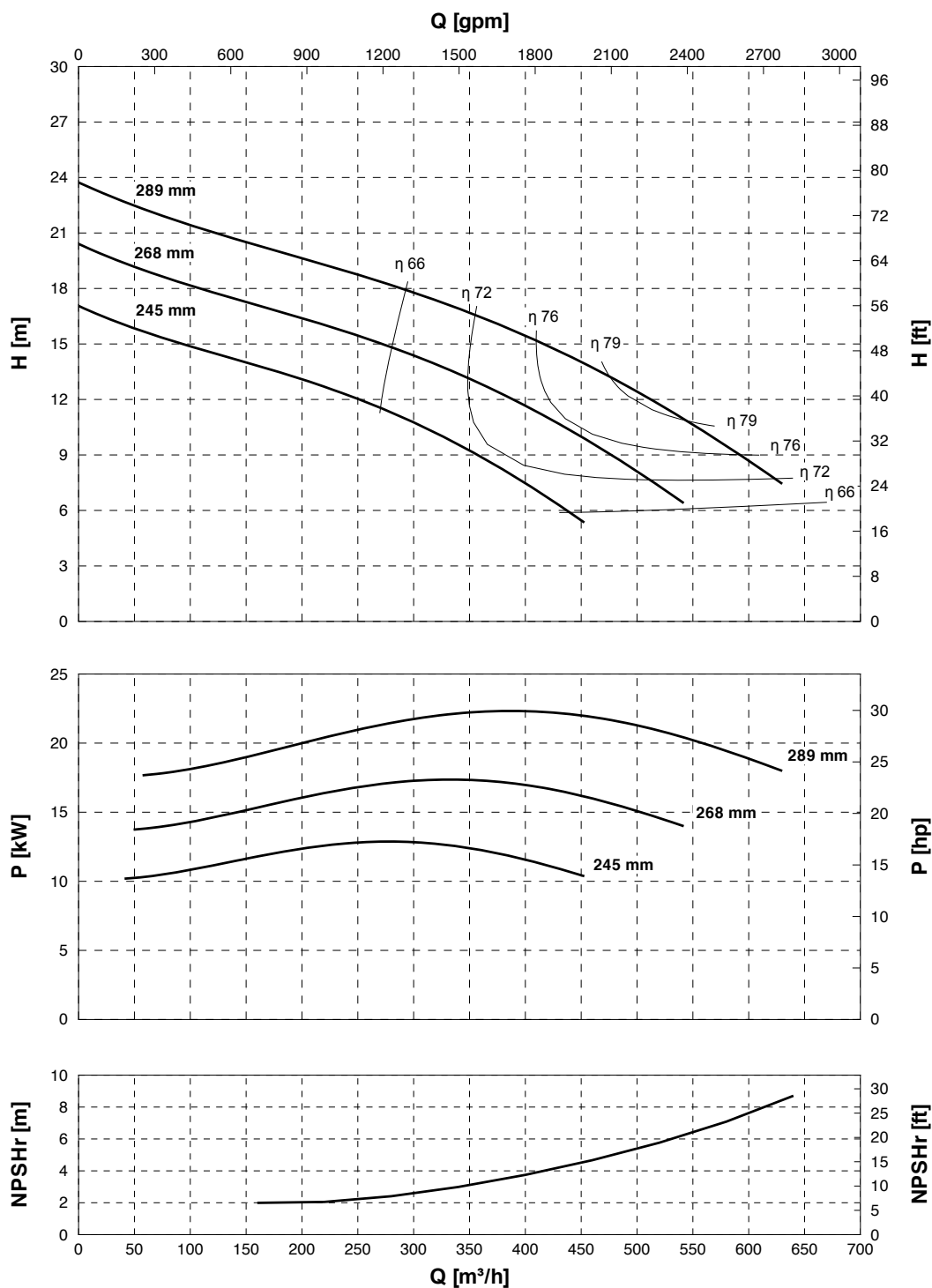
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 500

Curve #: 11015-080802-E2

Vertical Turbine Pumps (VTP) 1500 rpm

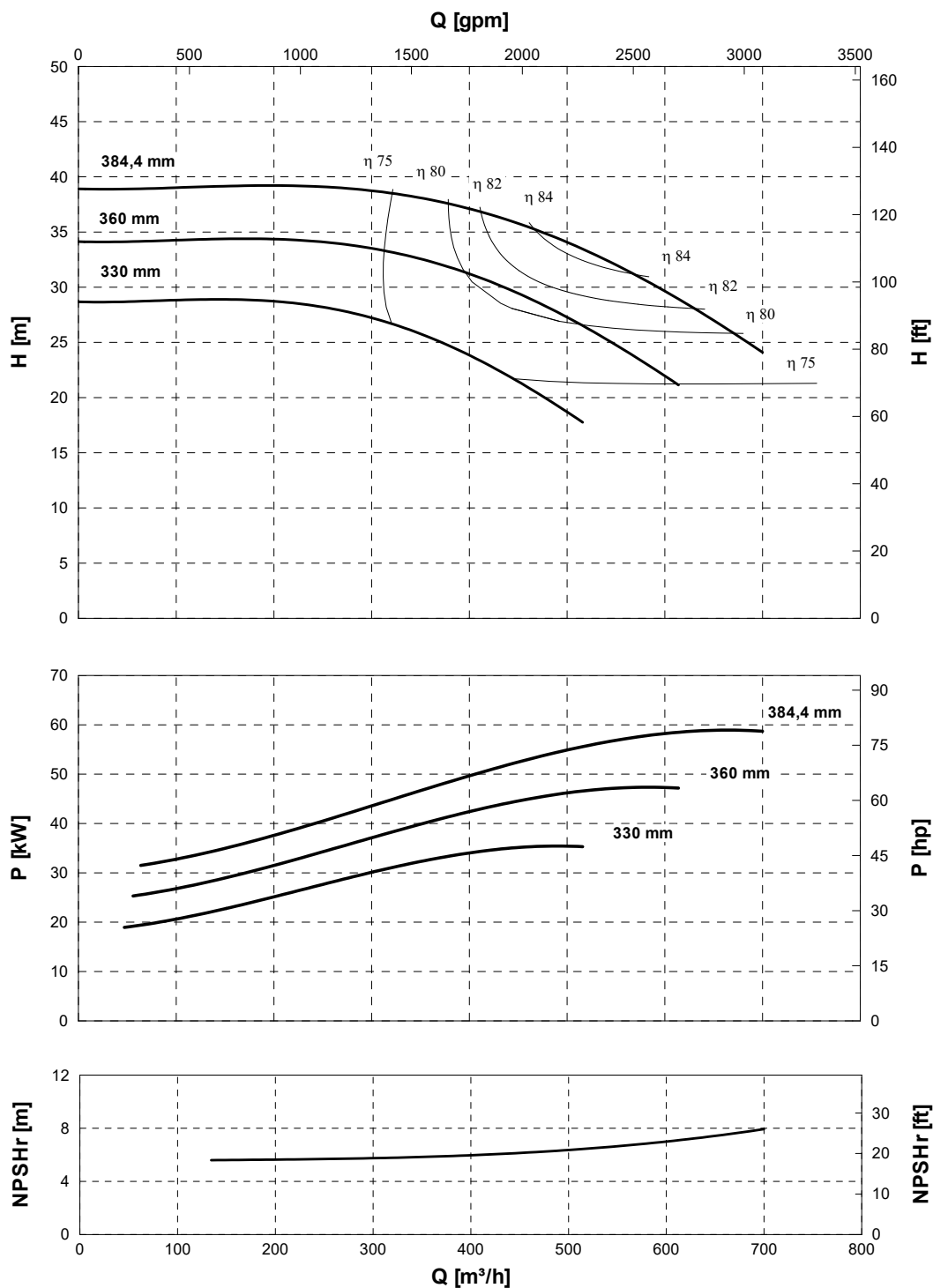


Notes:

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 $T^{\circ}=18^{\circ}C$, 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) 1500 rpm

VTP 500M Curve #: 11085-151120-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/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.

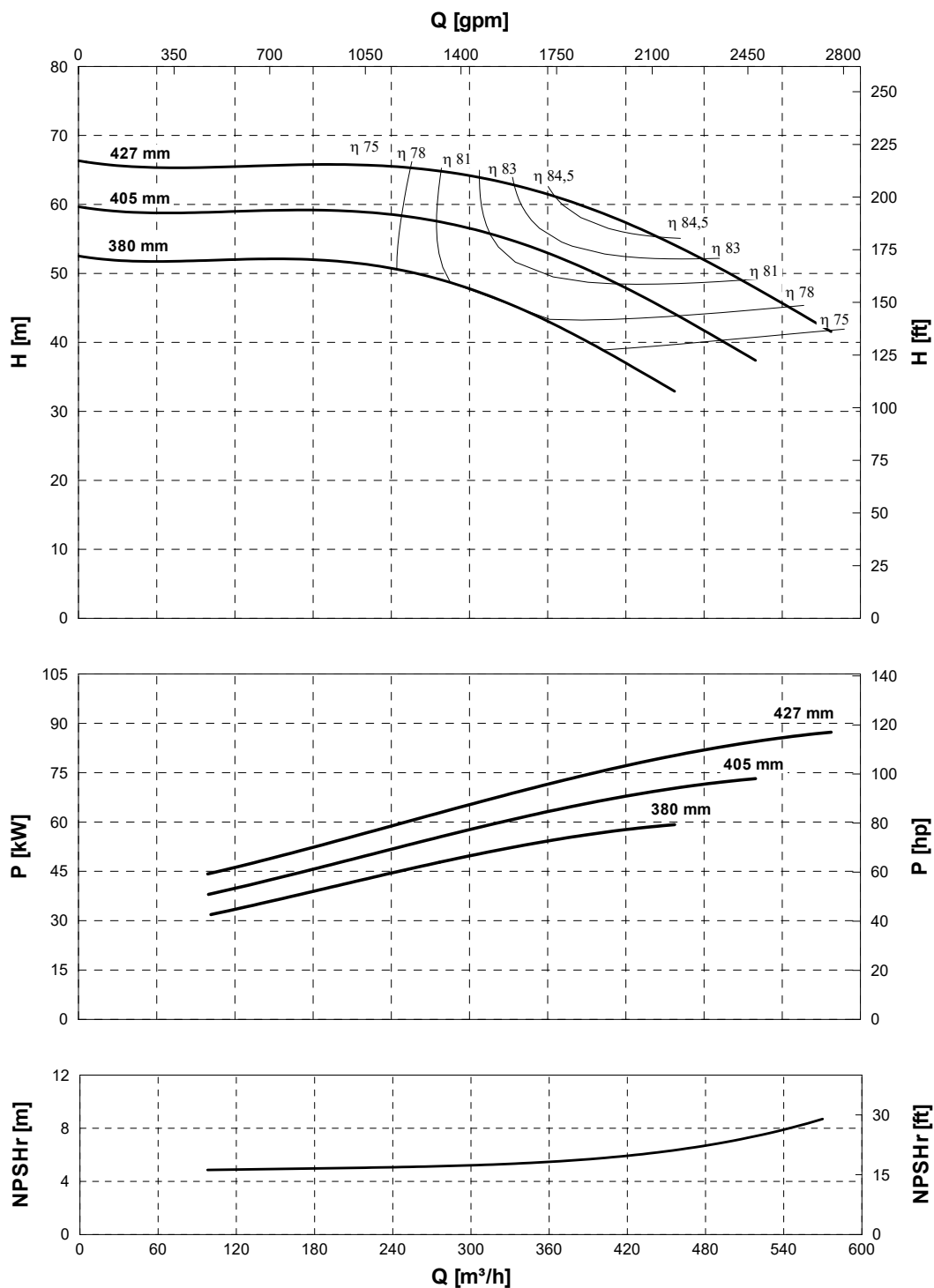


VTP 500X

Curve #: 11016-121116-E1

Vertical Turbine Pumps (VTP)

1500 rpm

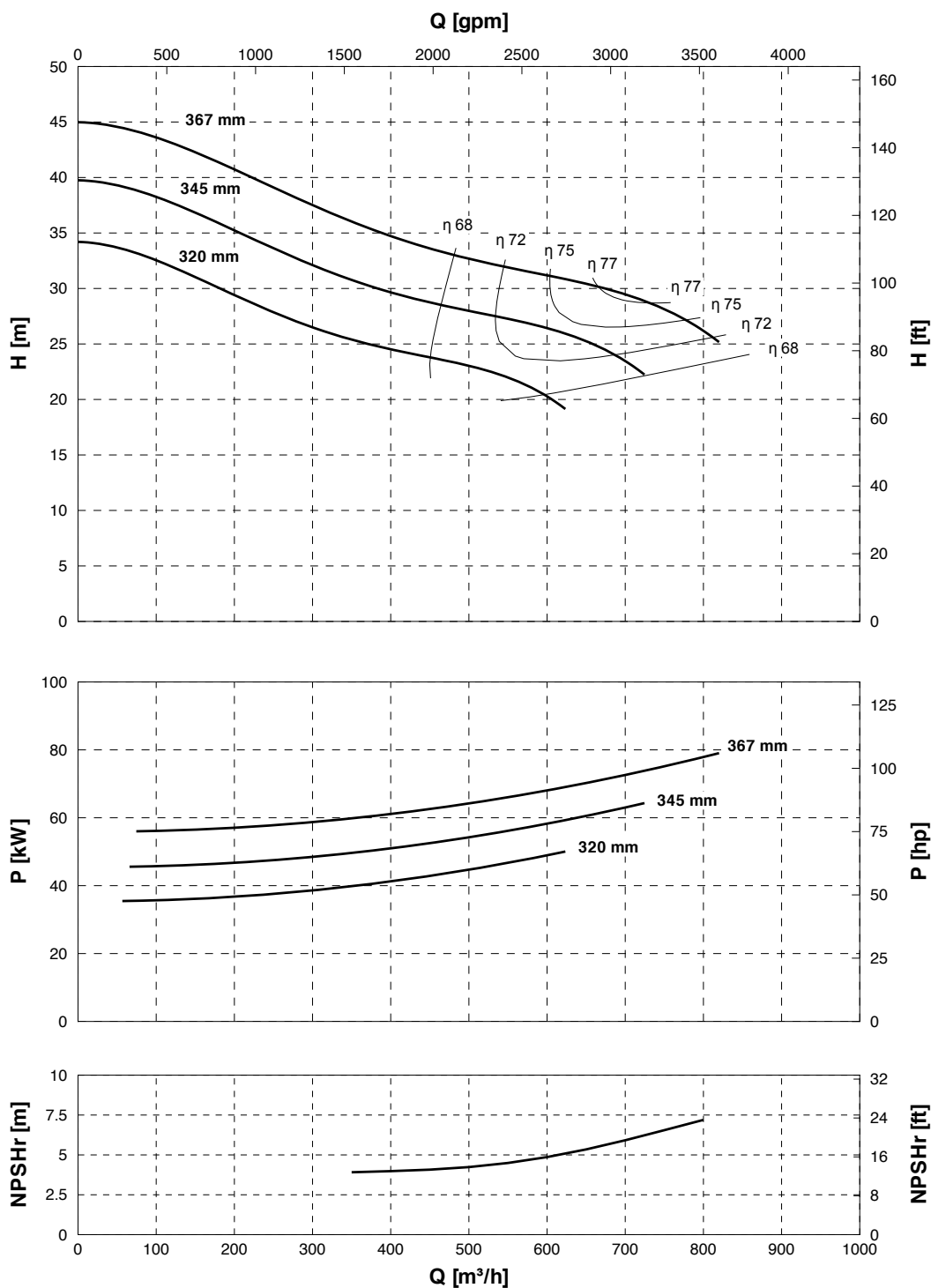


Notes:

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) 1500 rpm

VTP 650 Curve #: 11017-070713-E1



Notes:

- 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
- 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.

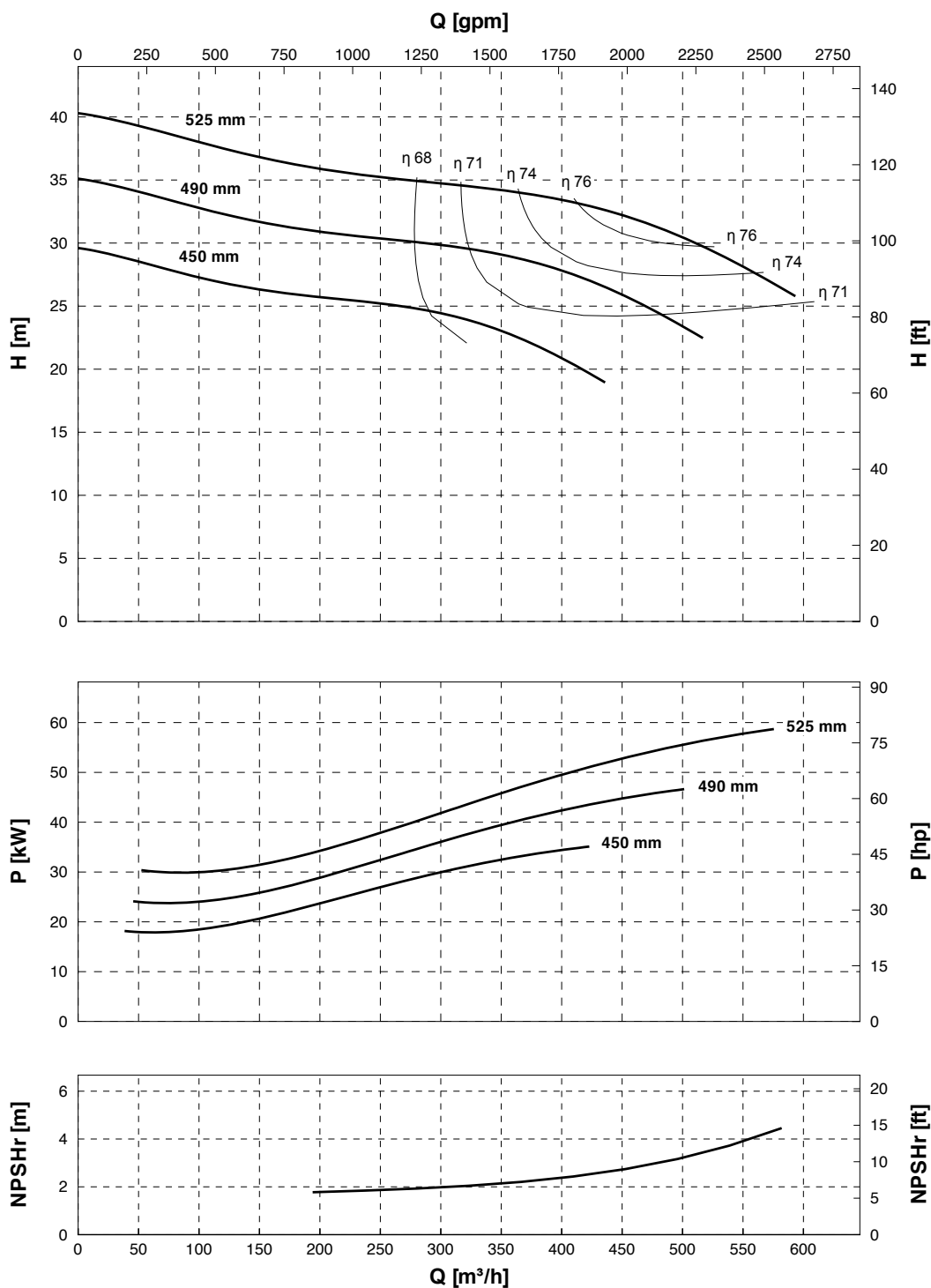


VTP 700

Curve #: 11018-070713-E1

Vertical Turbine Pumps (VTP)

1000 rpm

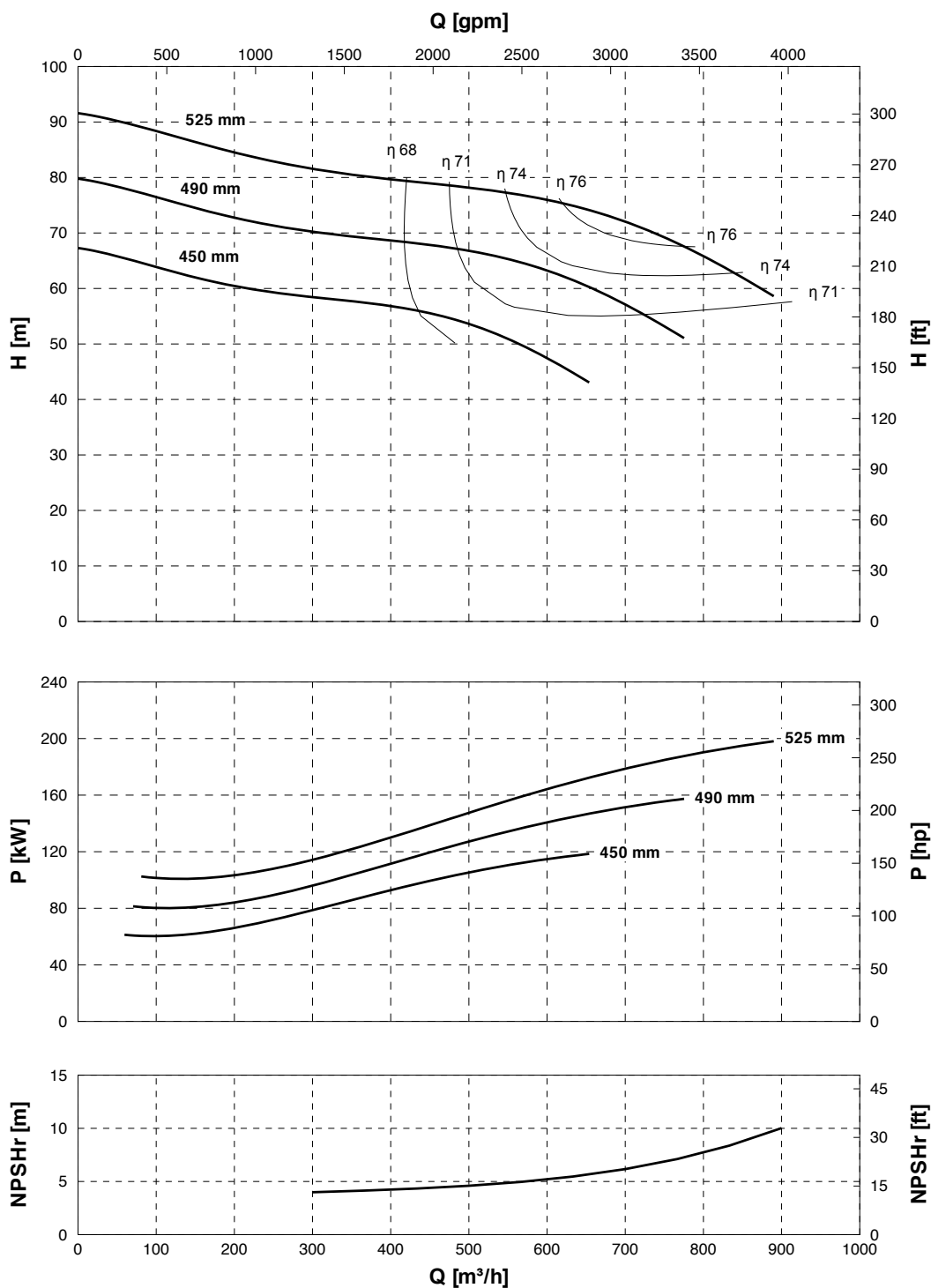


Notes:

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) 1500 rpm

VTP 700 Curve #: 11018-070713-E1



Notes:

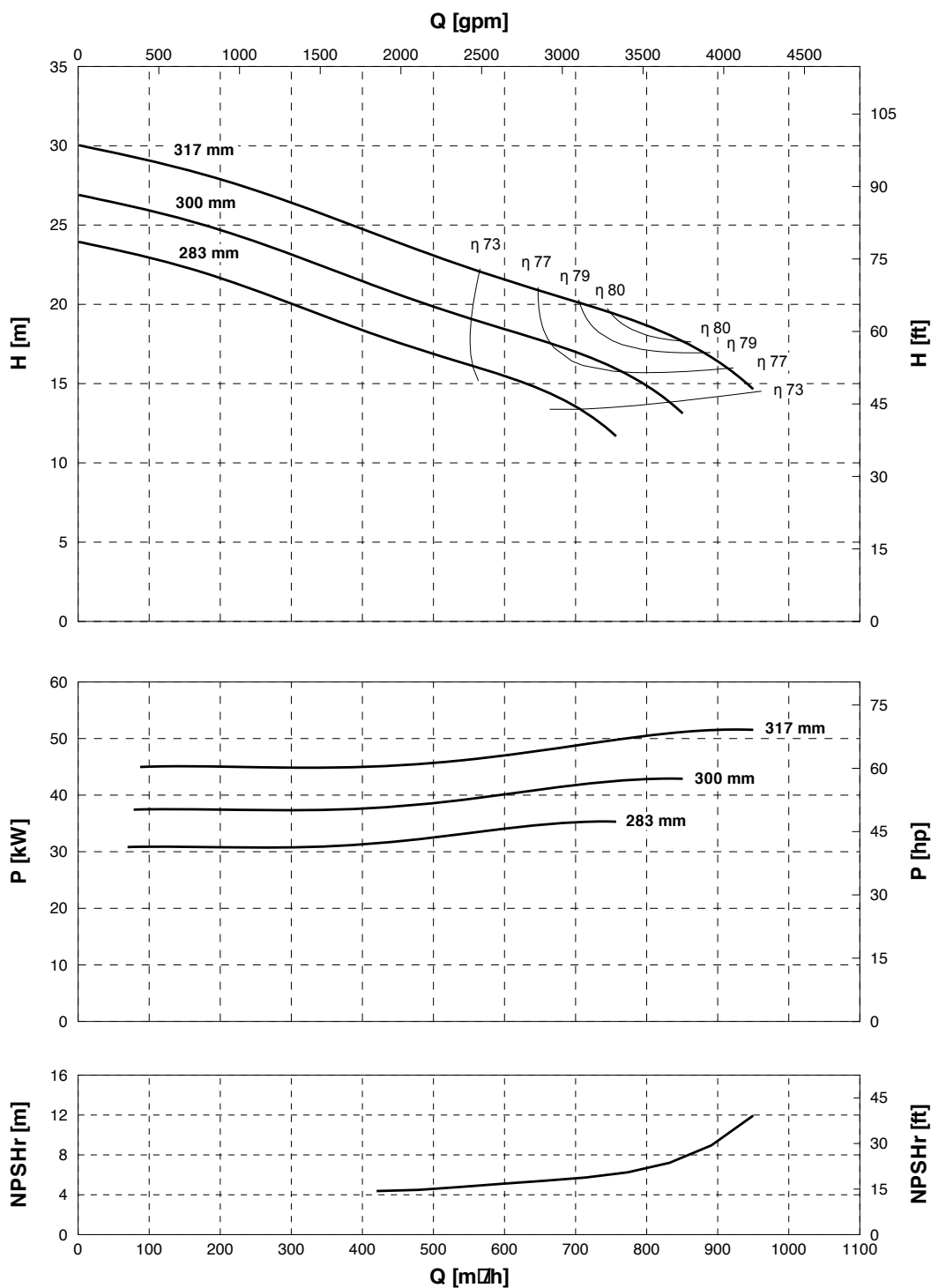
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 750

Curve #: 11019-090112-S1

Vertical Turbine Pumps (VTP)
1500 rpm

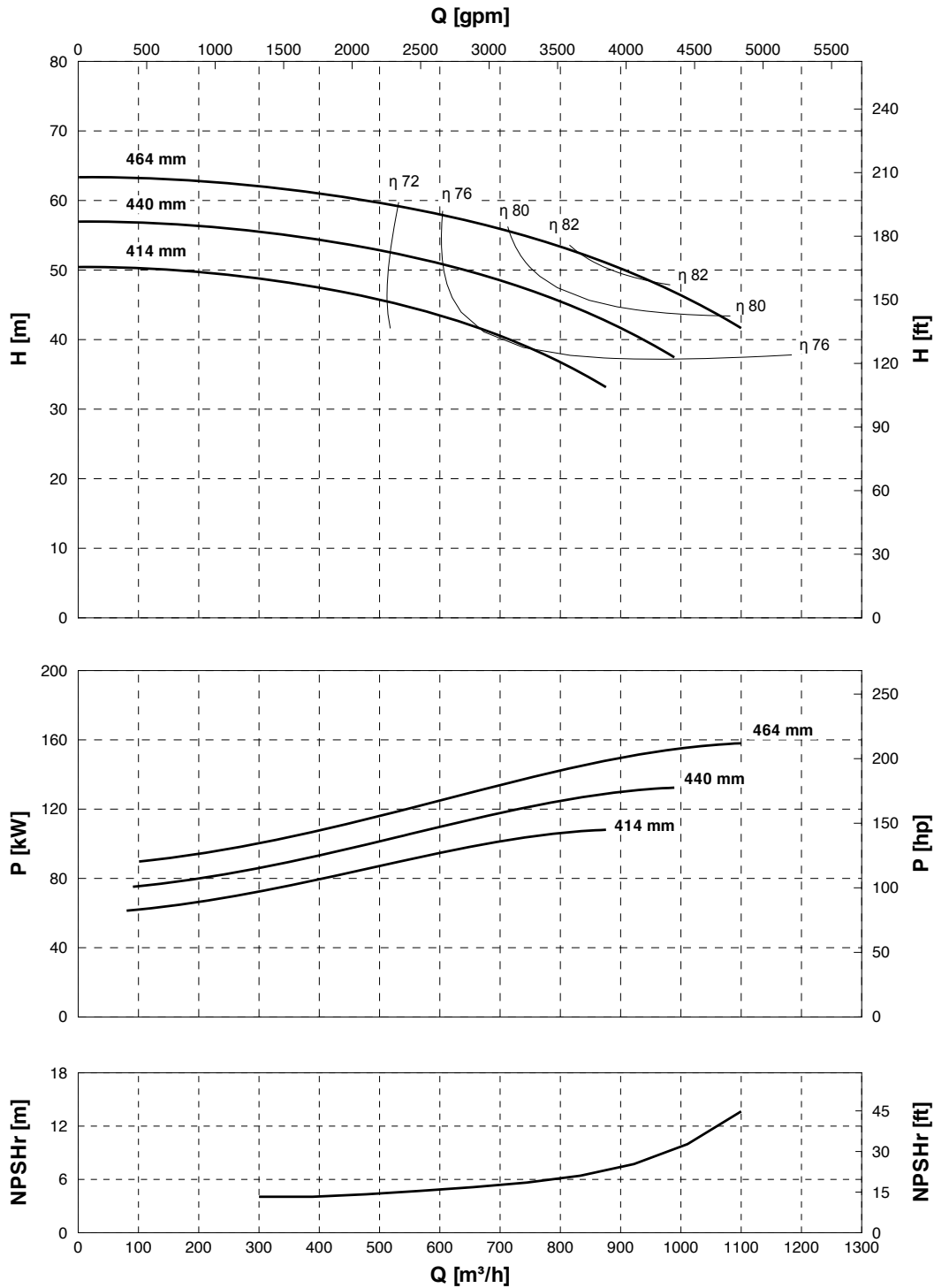


Notes:

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 $T^{\circ}=18^{\circ}C$, 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) 1500 rpm

VTP 750M Curve #: 11020-081103-S1



Notes:

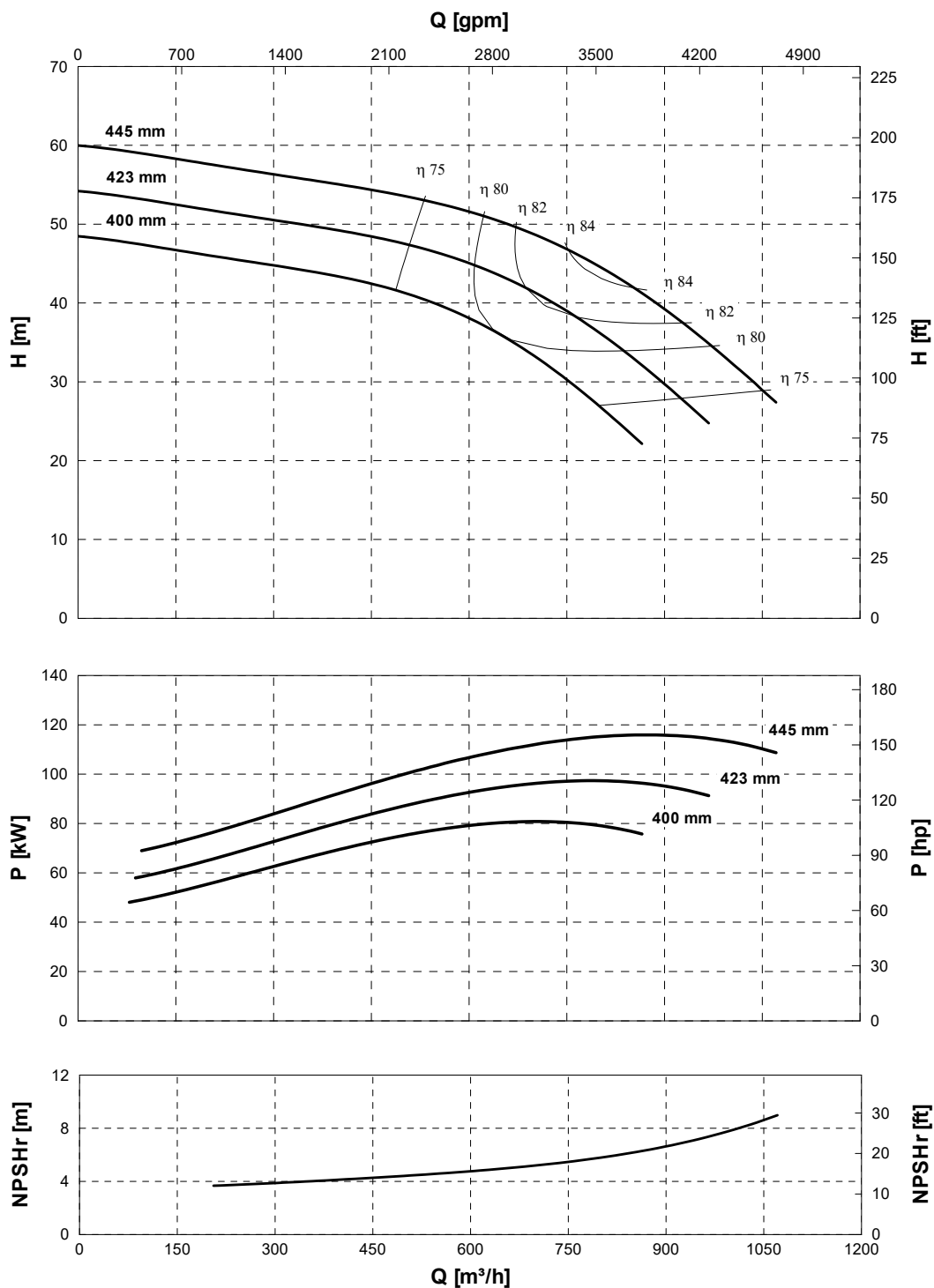
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ °C, H_2O Density = 998 $[kg/m^3]$)
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects 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.



VTP 800

Curve #: 11043-120227-S1

Vertical Turbine Pumps (VTP)
1500 rpm



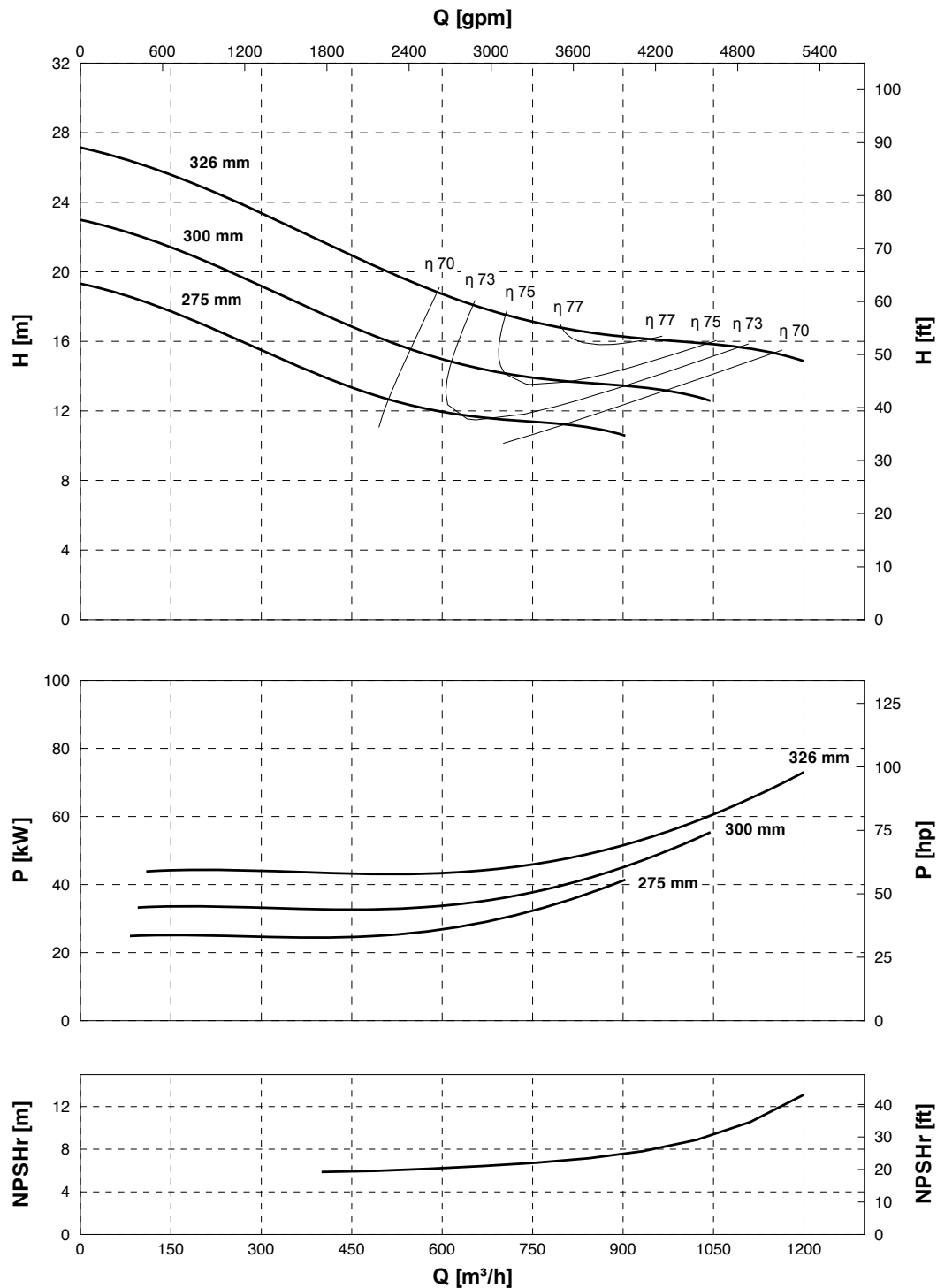
Notes:

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) 1500 rpm

VTP 850

Curve #: 11021-070713-E1



Notes:

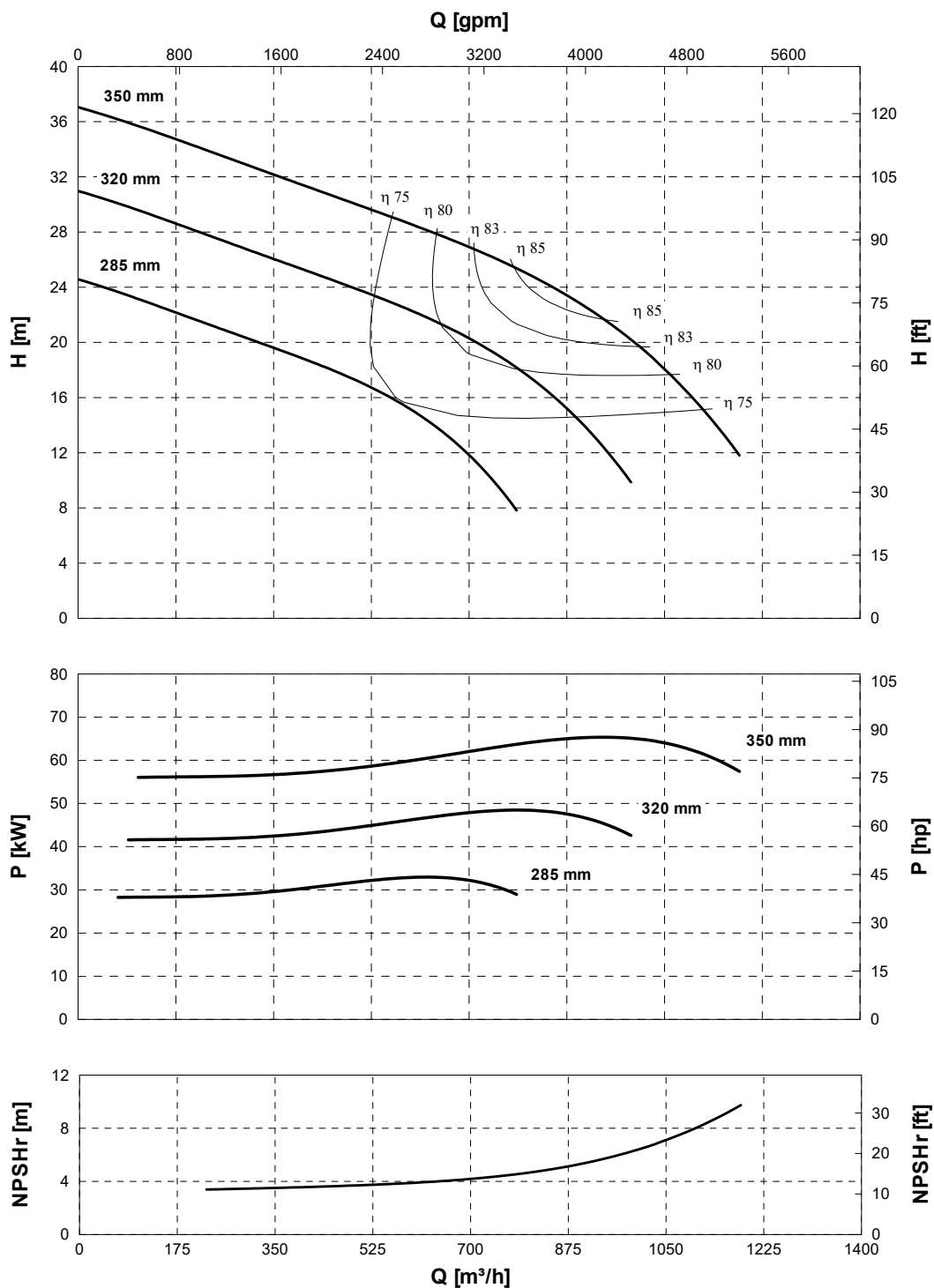
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ $^{\circ}C$), H_2O Density = 998 $[kg/m^3]$
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature 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.



VTP 850M

Curve #: 11071-140616-S1

Vertical Turbine Pumps (VTP)
1500 rpm

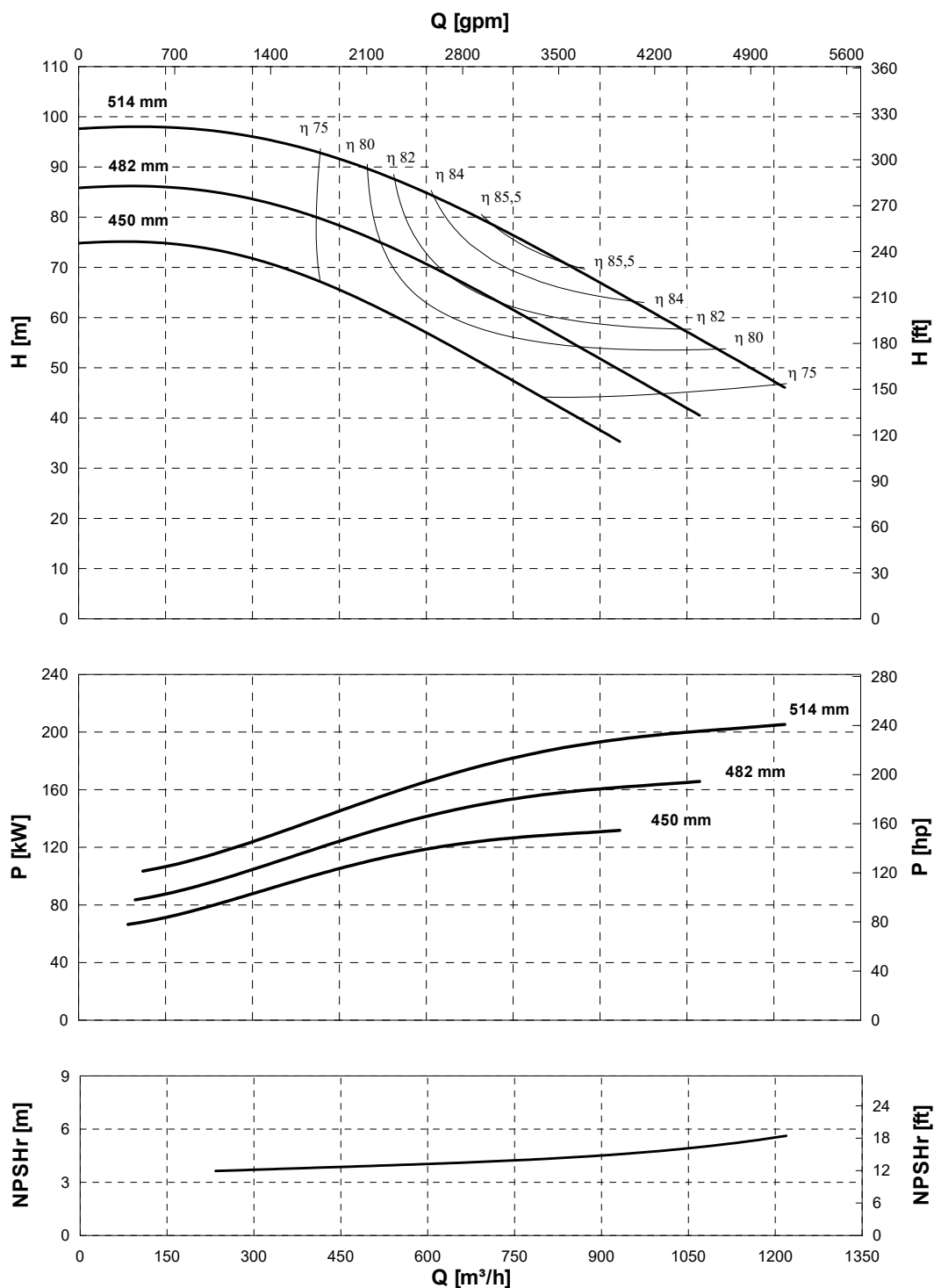


Notes:

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) 1500 rpm

VTP 850X Curve #: 11022-101104-E1



Notes:

- 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
- 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.

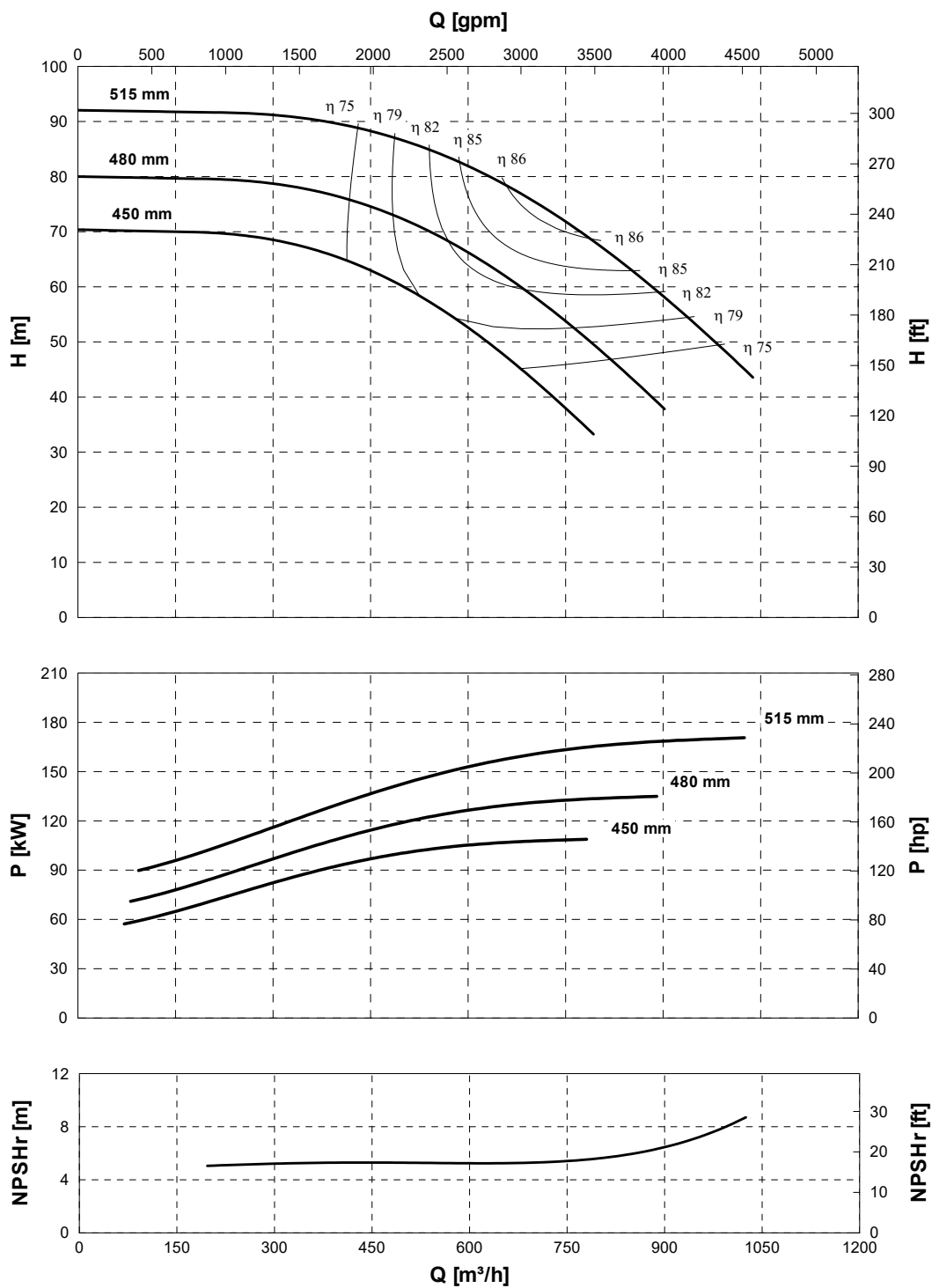


VTP 850XB

Curve #: 11047-130213-E1

Vertical Turbine Pumps (VTP)

1500 rpm

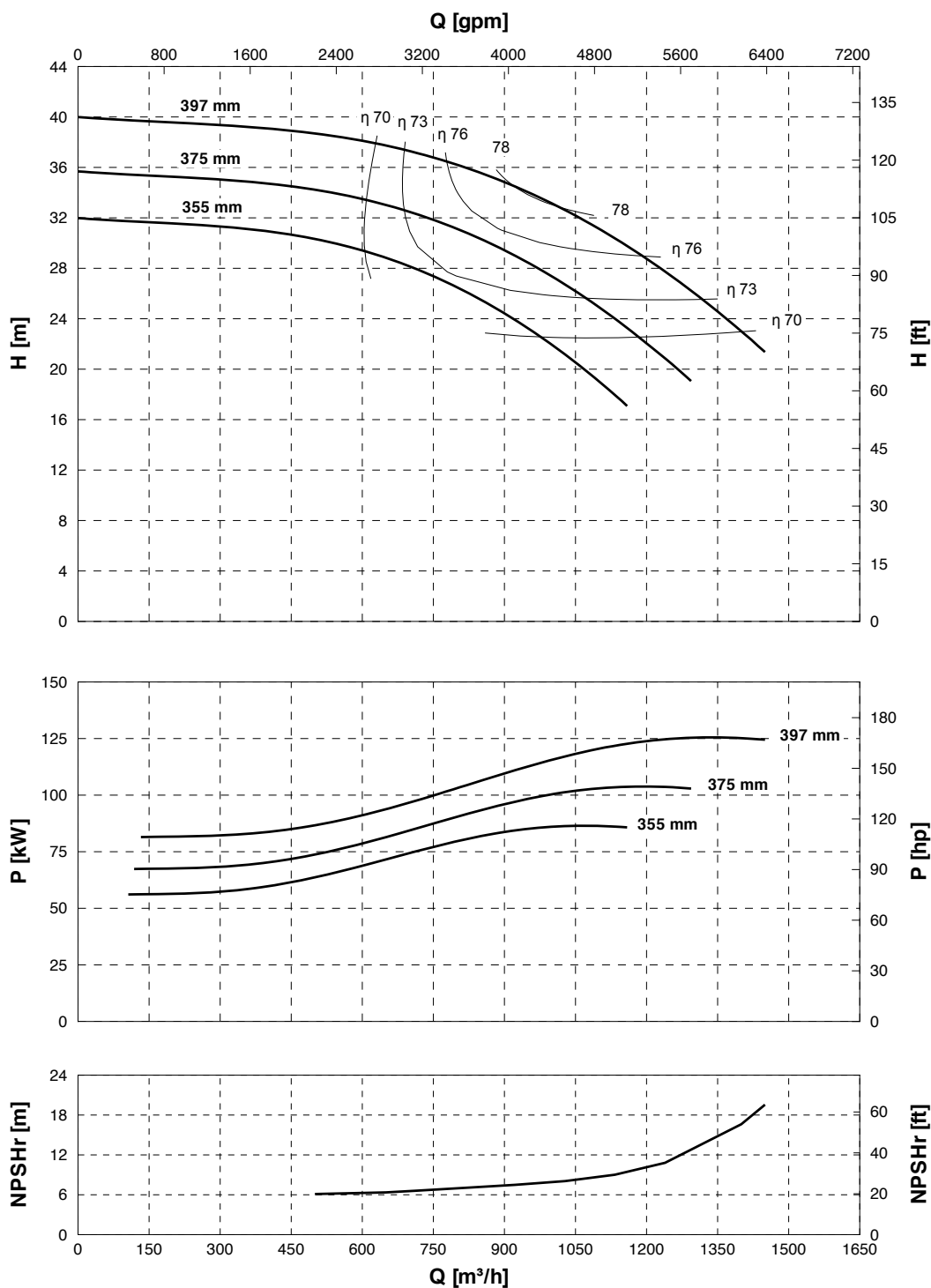


Notes:

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) 1500 rpm

VTP 1000 Curve #: 11024-080704-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 $T=18$ $^{\circ}C$, 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.

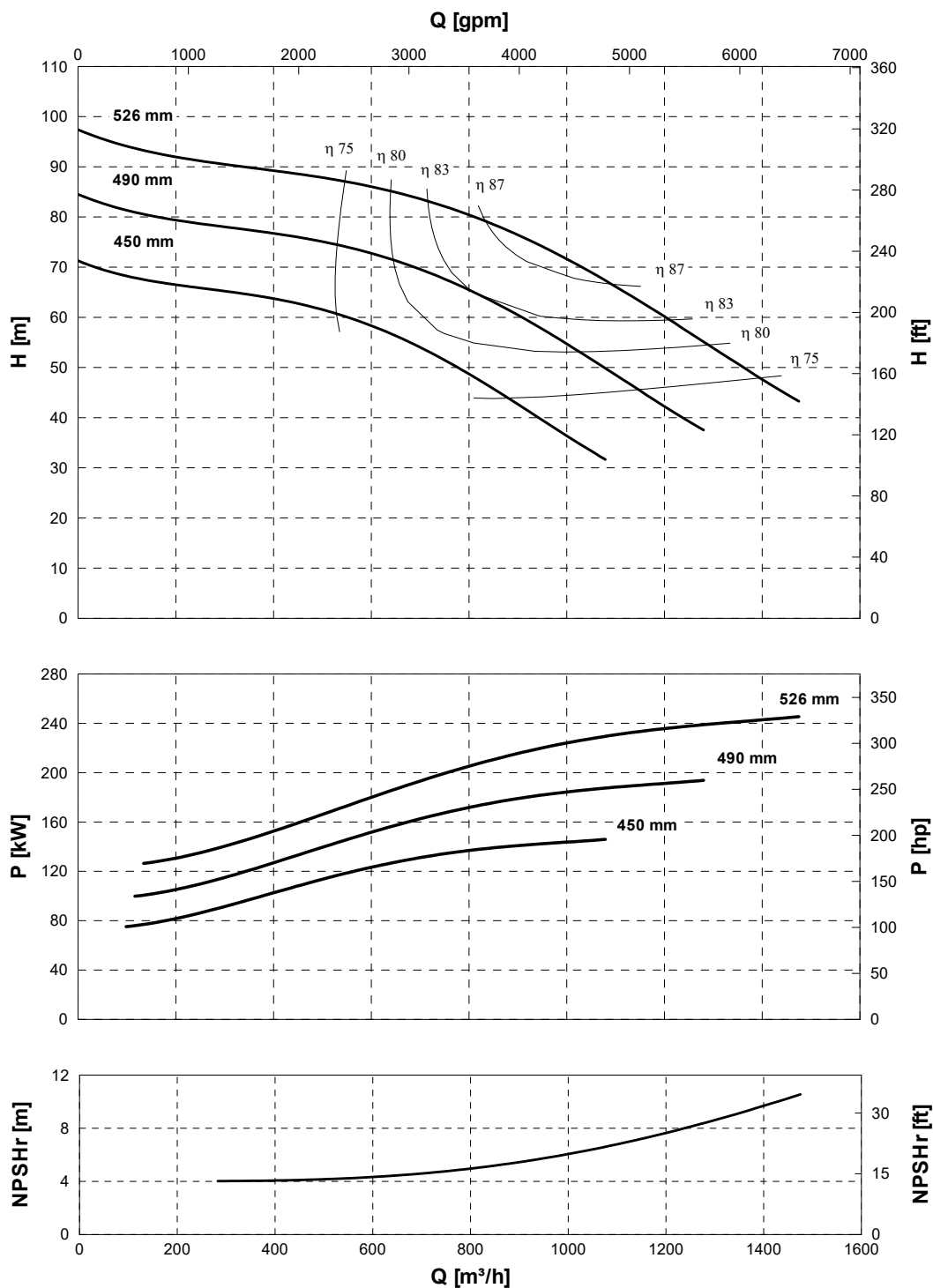


VTP 1000X

Curve #: 11053-131114-E1

Vertical Turbine Pumps (VTP)

1500 rpm



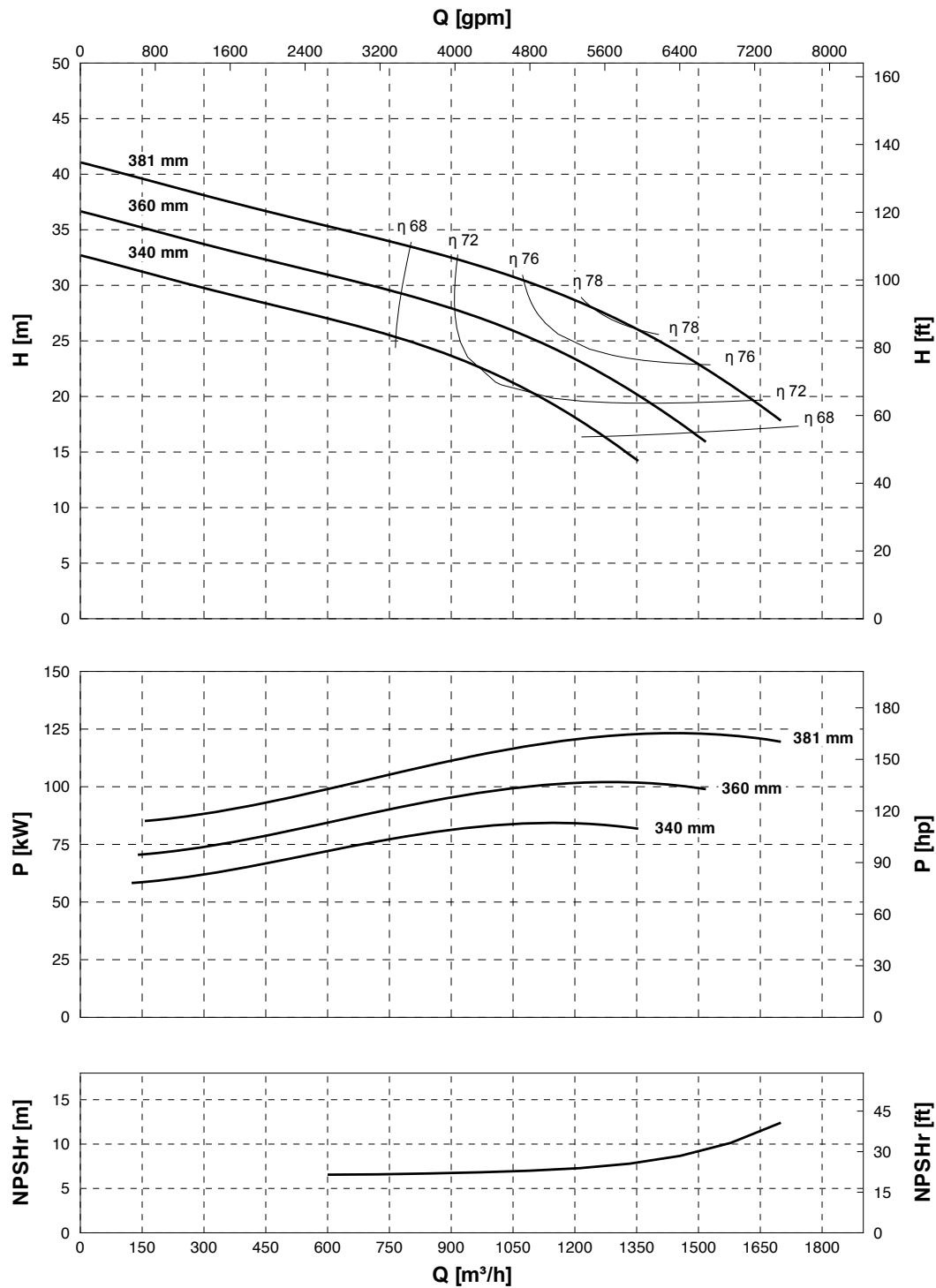
Notes:

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) 1500 rpm

VTP 1250

Curve #: 11025-080520-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 $T=18$ $^{\circ}C$, 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.

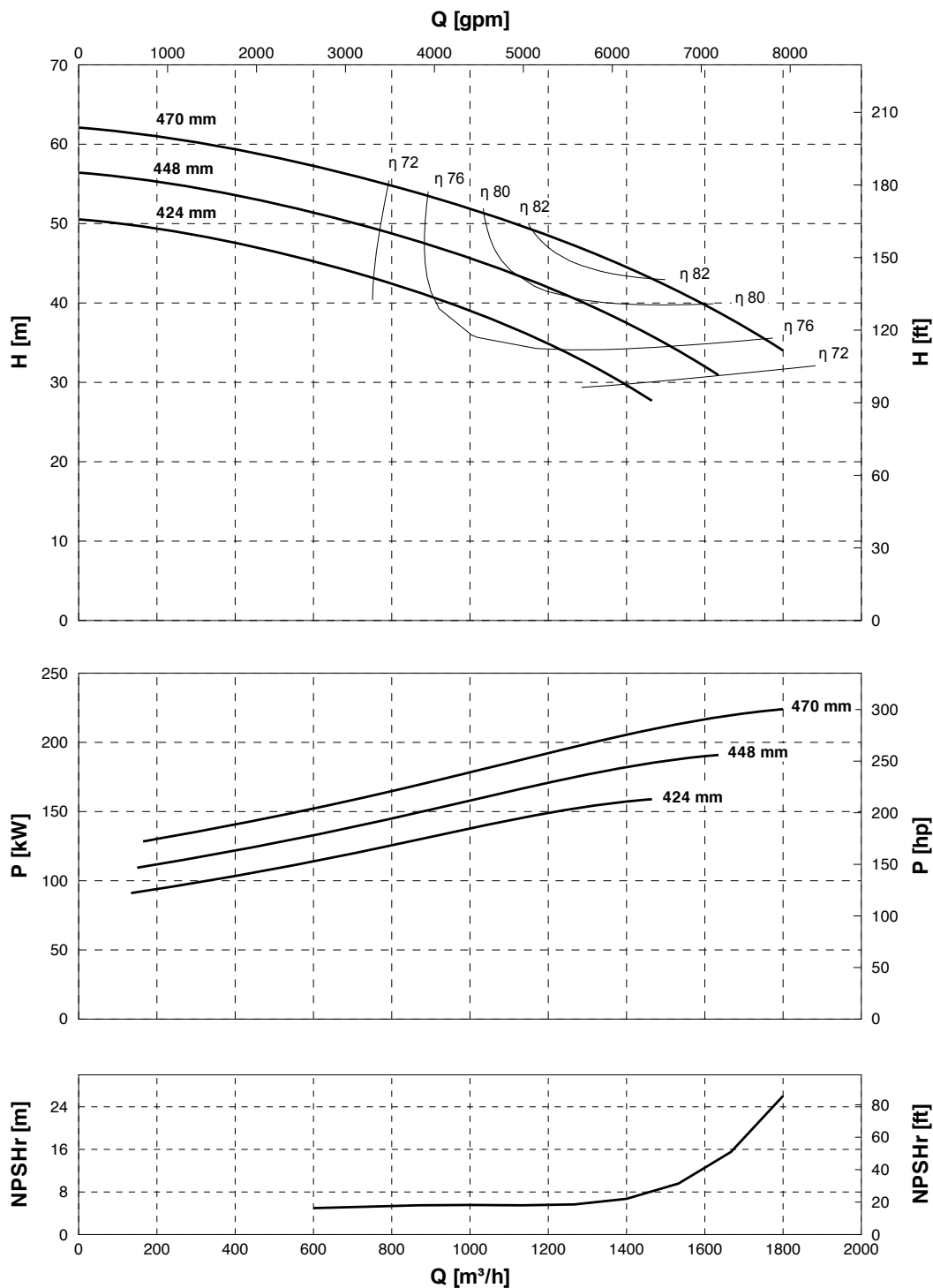


VTP 1300

Curve #: 11026-081111-S1

Vertical Turbine Pumps (VTP)

1500 rpm



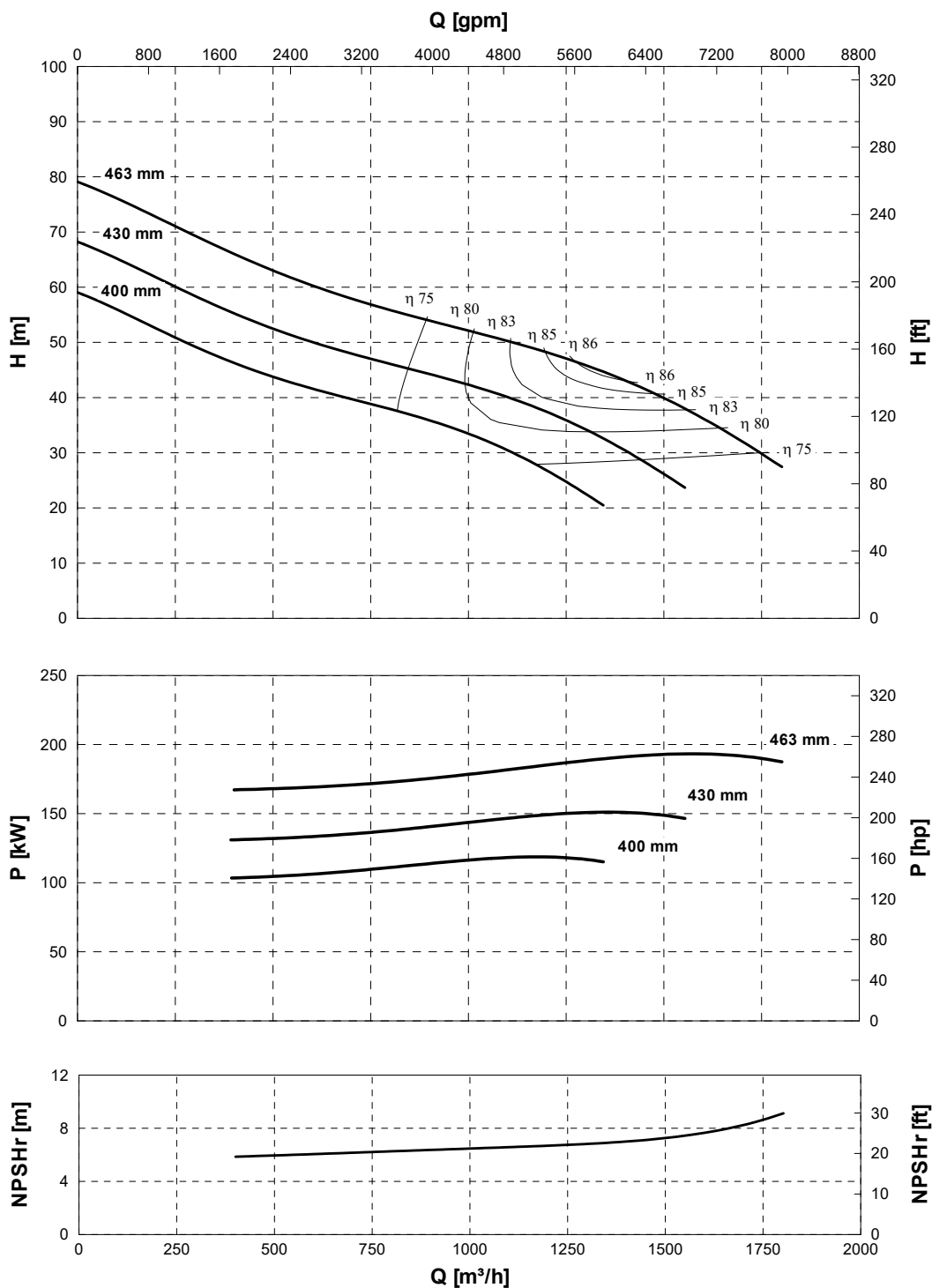
Notes:

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) 1500 rpm

VTP 1350

Curve #: 11087-160202-F1



Notes:

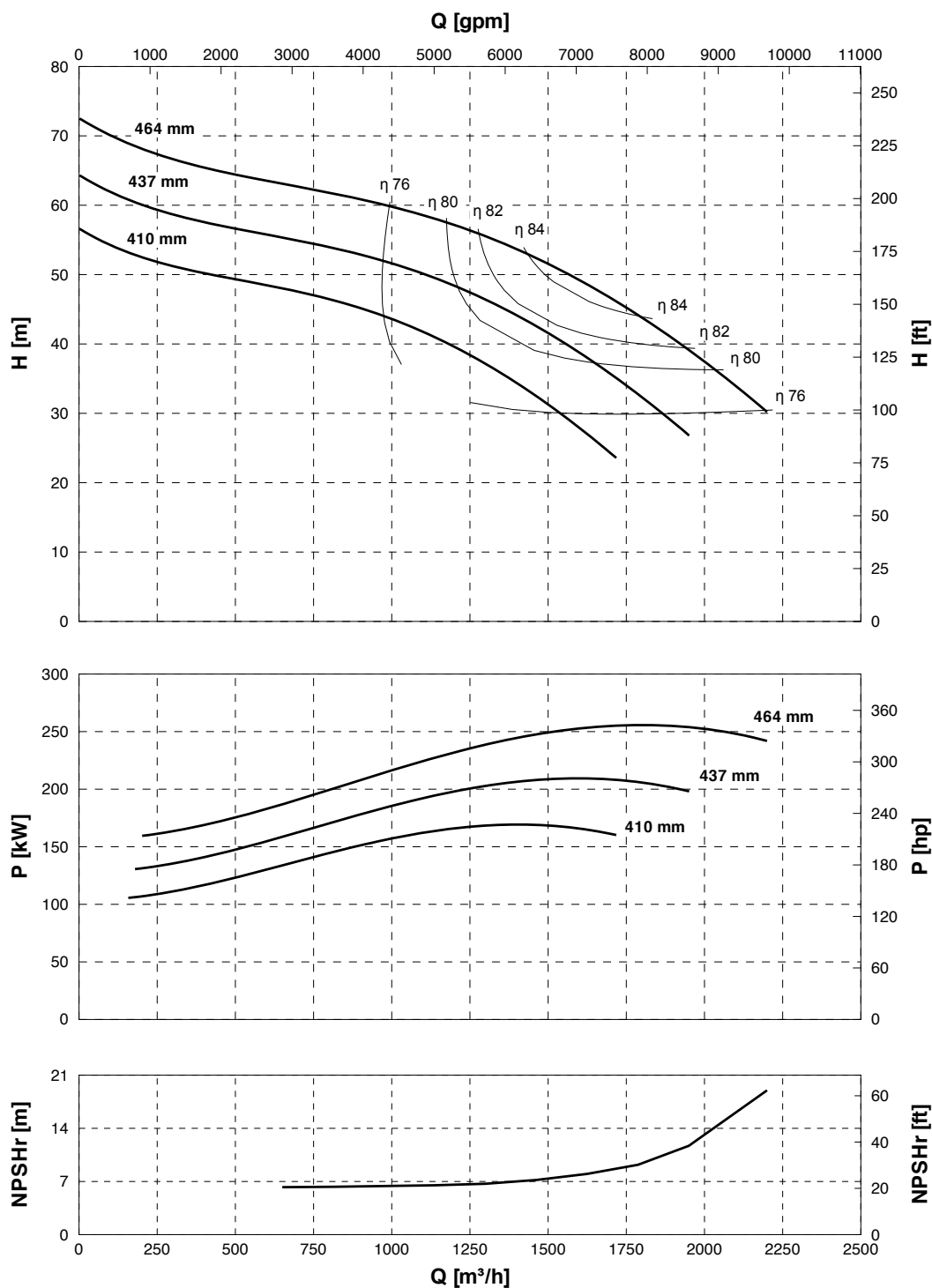
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ $^{\circ}C$), H_2O Density = 998 $[kg/m^3]$
- Power and efficiency losses are not reflected on the curve
- Elevated temperature 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.



VTP 1500

Curve #: 11027-081205-E1

Vertical Turbine Pumps (VTP) 1500 rpm

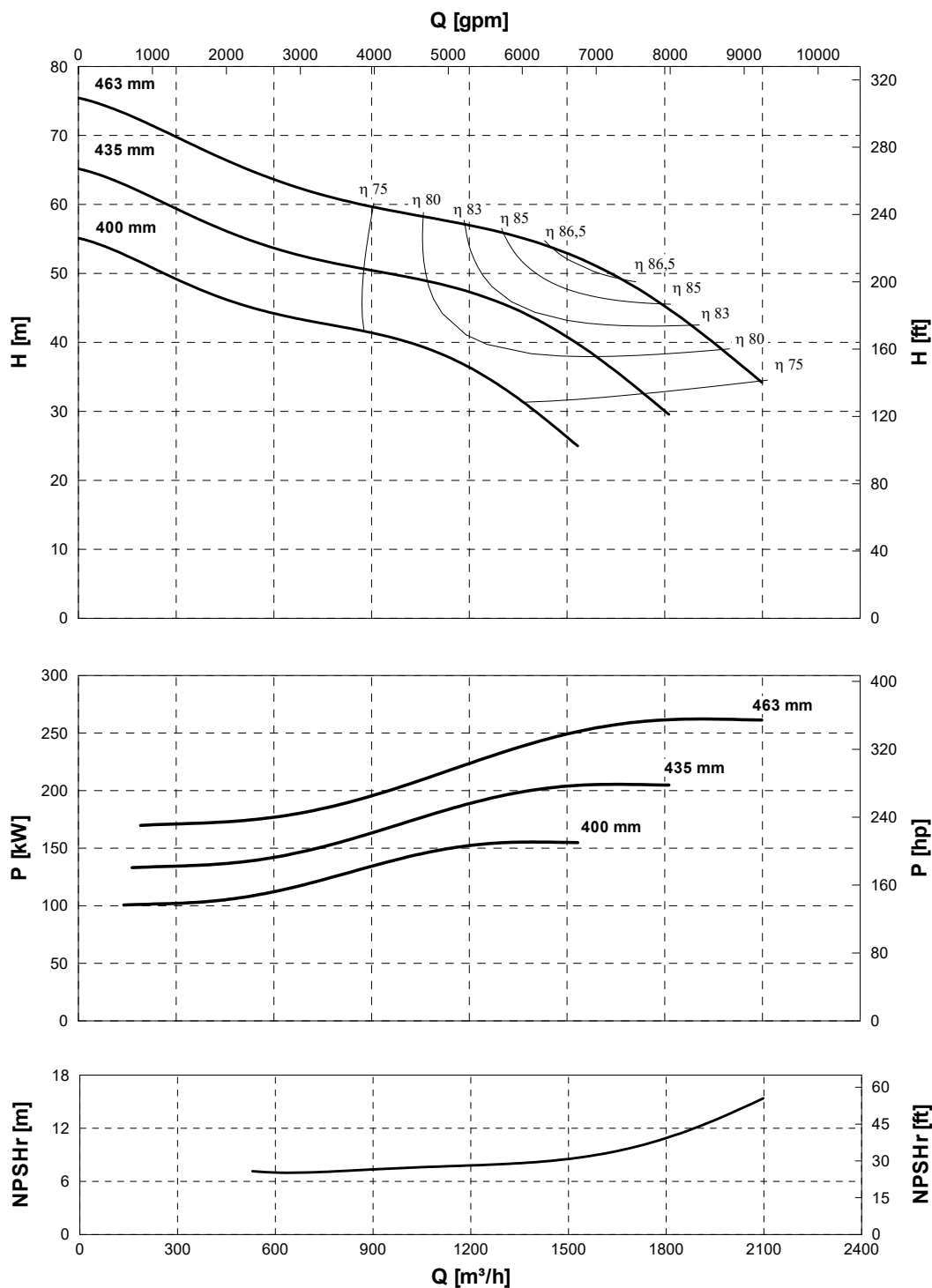


Notes:

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) 1500 rpm

VTP 1500KM Curve #: 11089-160405-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 (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.

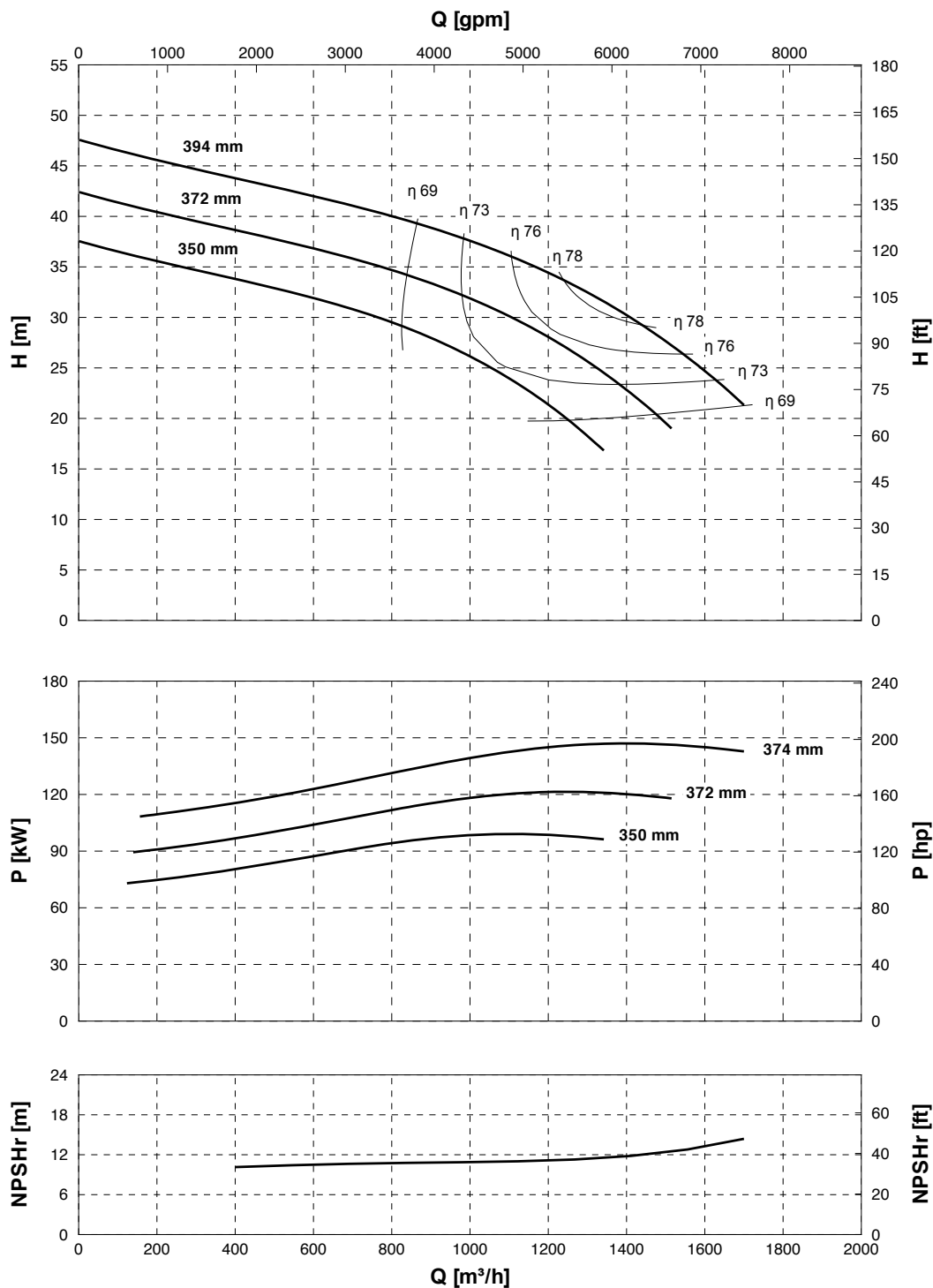


VTP 1500L

Curve #: 11028-080704-S1

Vertical Turbine Pumps (VTP)

1500 rpm

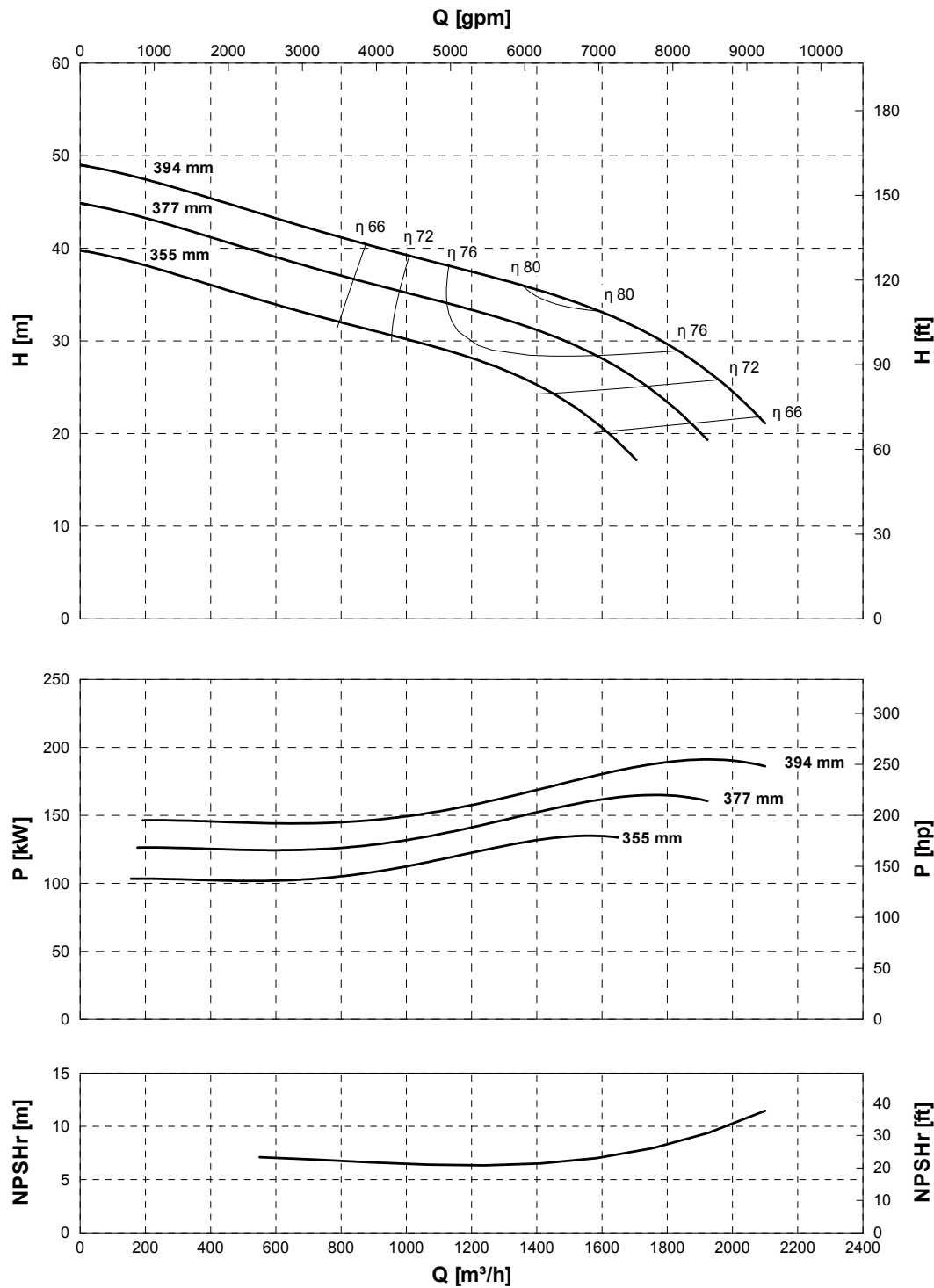


Notes:

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) 1500 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.

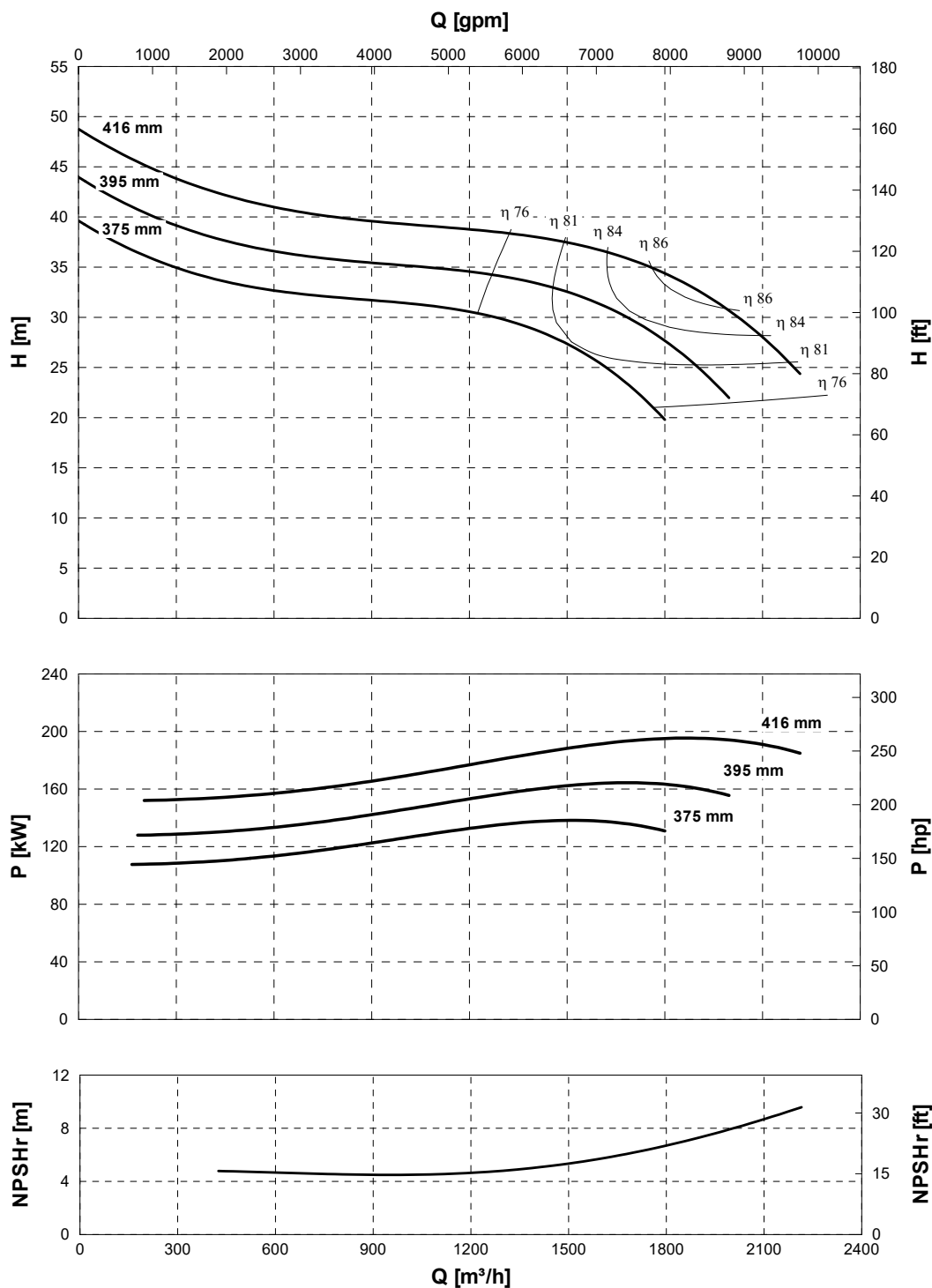


VTP 1800M

Curve #: 11067-140320-S1

Vertical Turbine Pumps (VTP)

1500 rpm

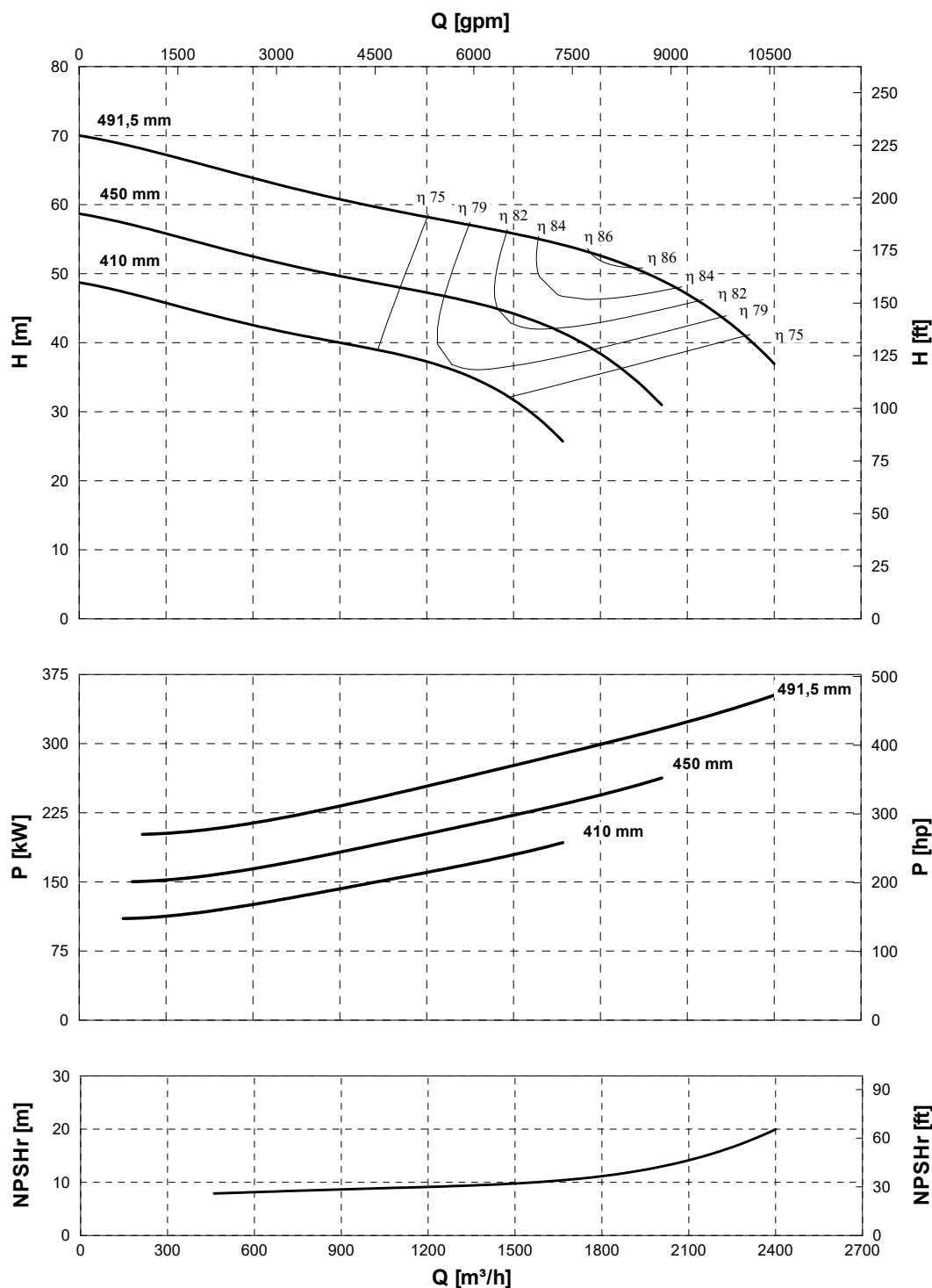


Notes:

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) 1500 rpm

VTP 1800X Curve #: 11072-140620-S1



Notes:

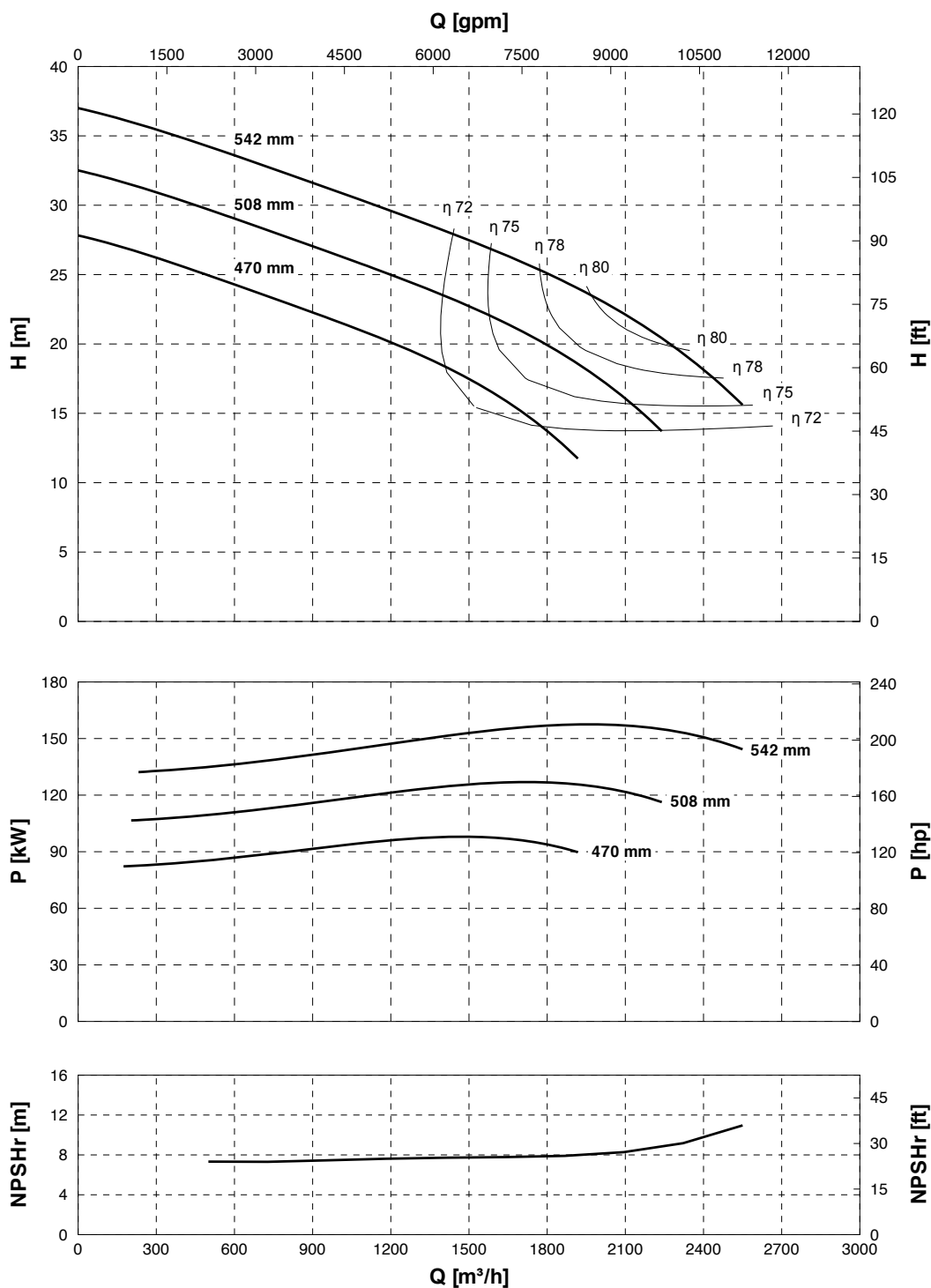
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VTP 2200

Curve #: 11030-080728-S1

Vertical Turbine Pumps (VTP)
1000 rpm



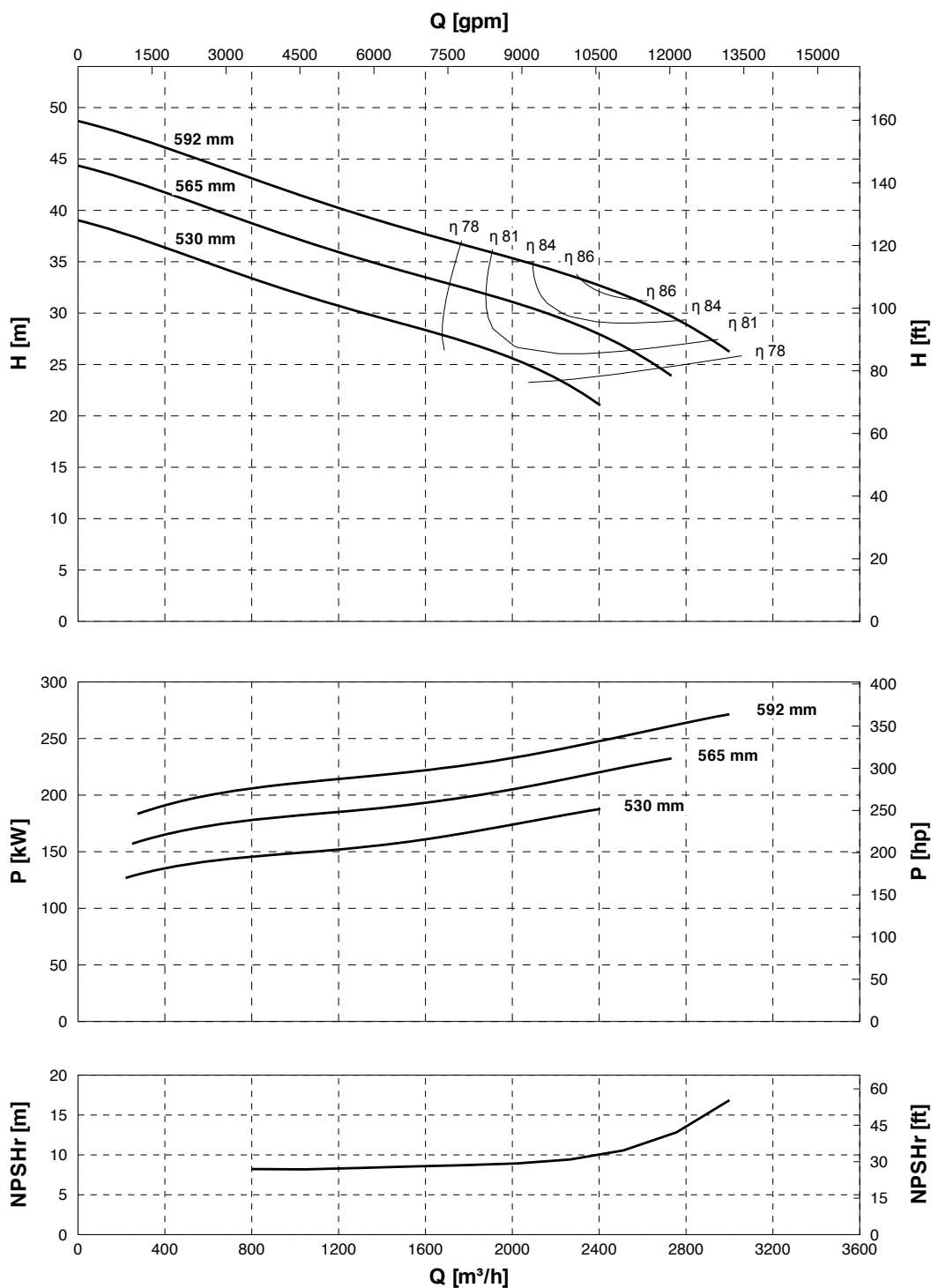
Notes:

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) 1000 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.

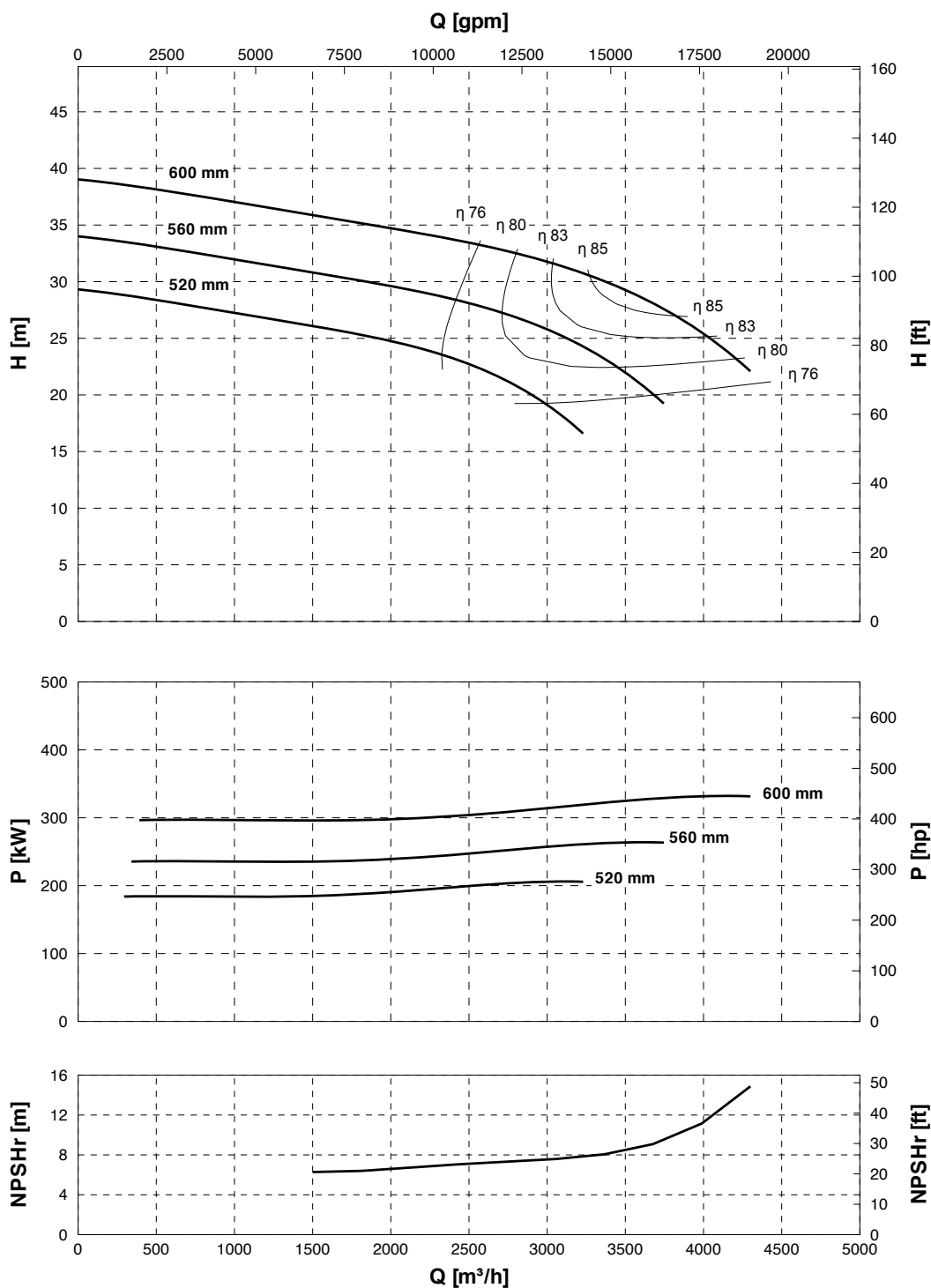


VTP 3000

Curve #: 11033-080813-S1

Vertical Turbine Pumps (VTP)

1000 rpm

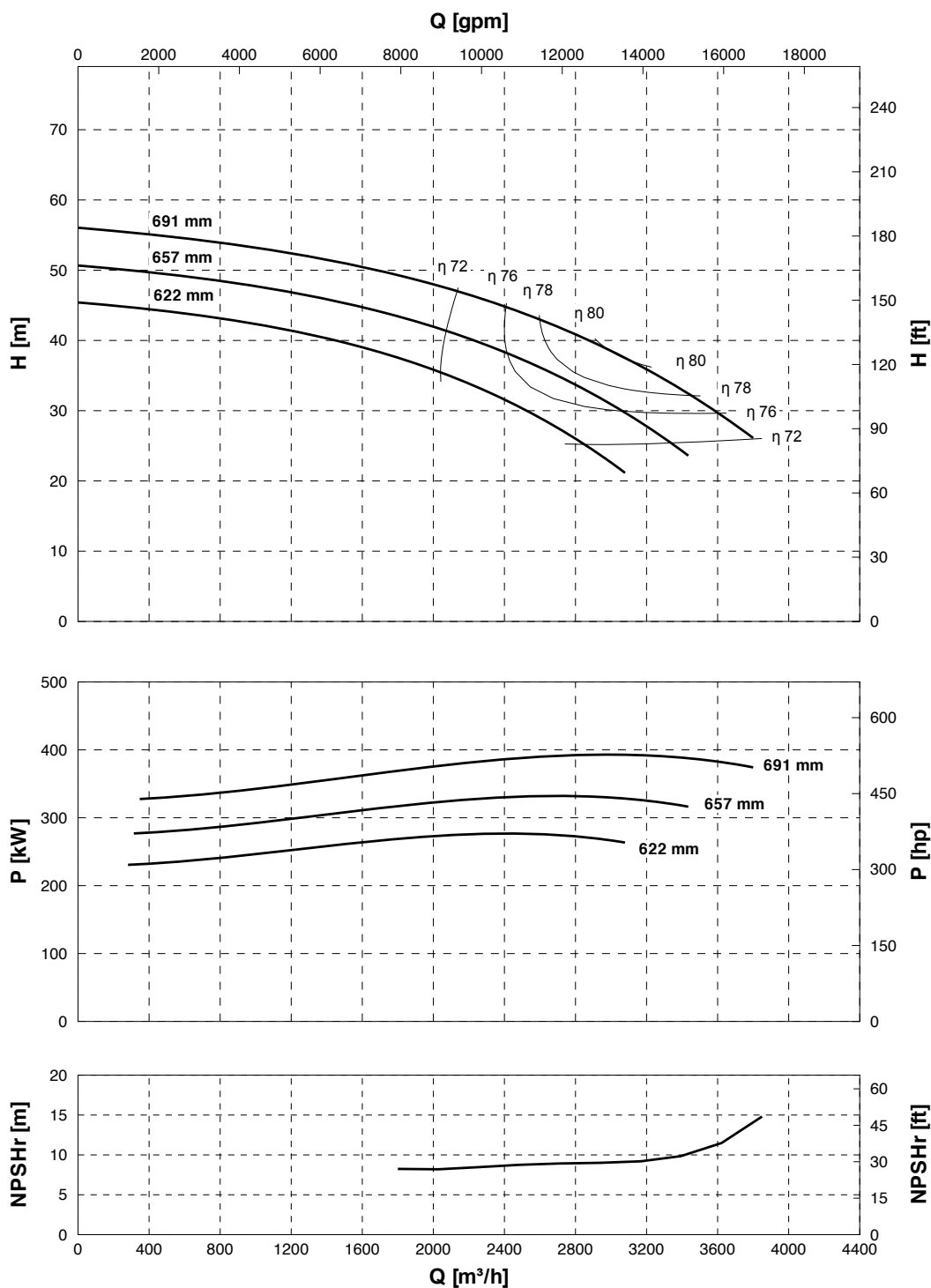


Notes:

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) 1000 rpm

VTP 3400 Curve #: 11034-080723-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 $T=18$ $^{\circ}C$, 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.

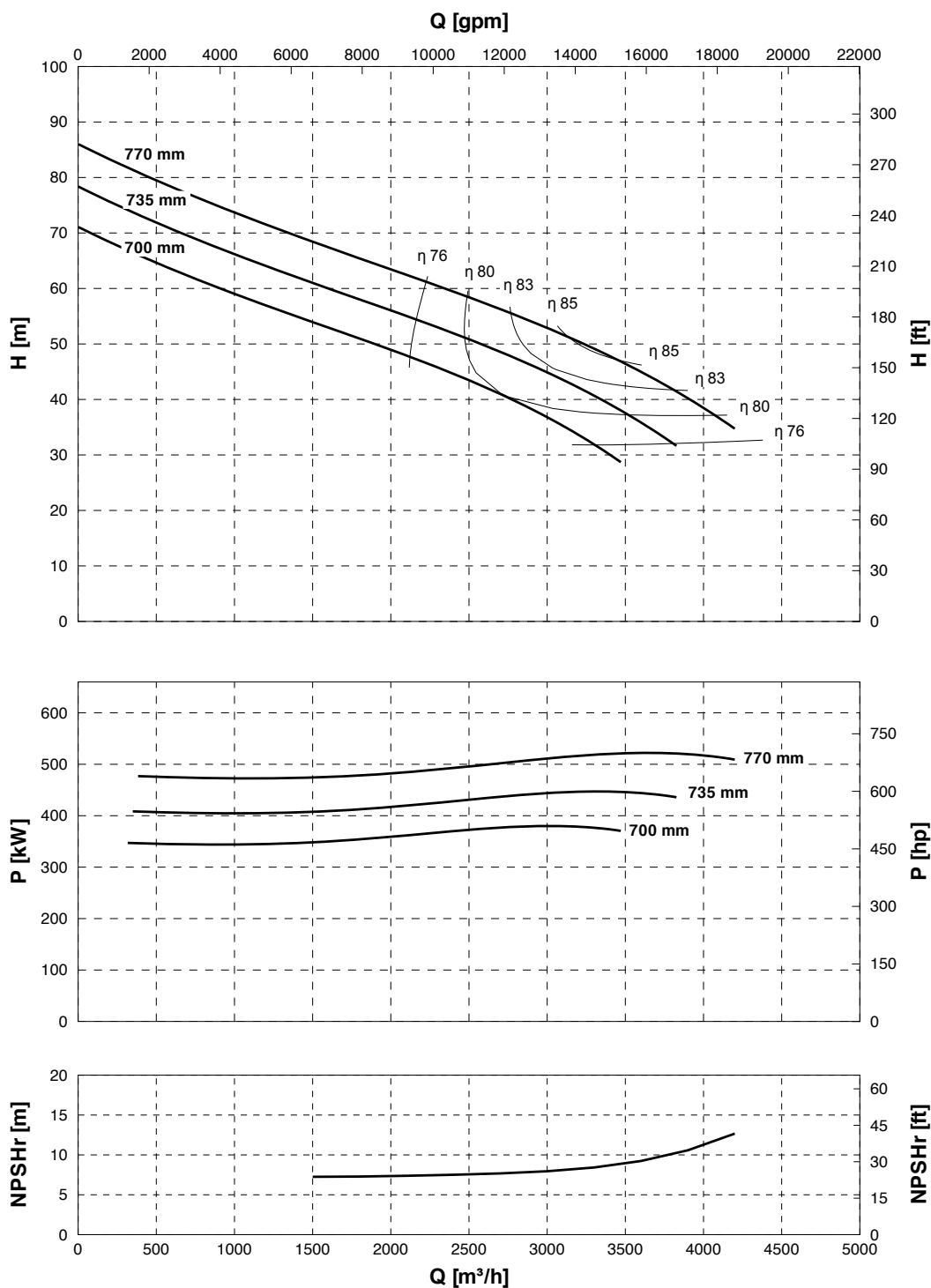


VTP 3400M

Curve #: 11035-080702-S1

Vertical Turbine Pumps (VTP)

1000 rpm

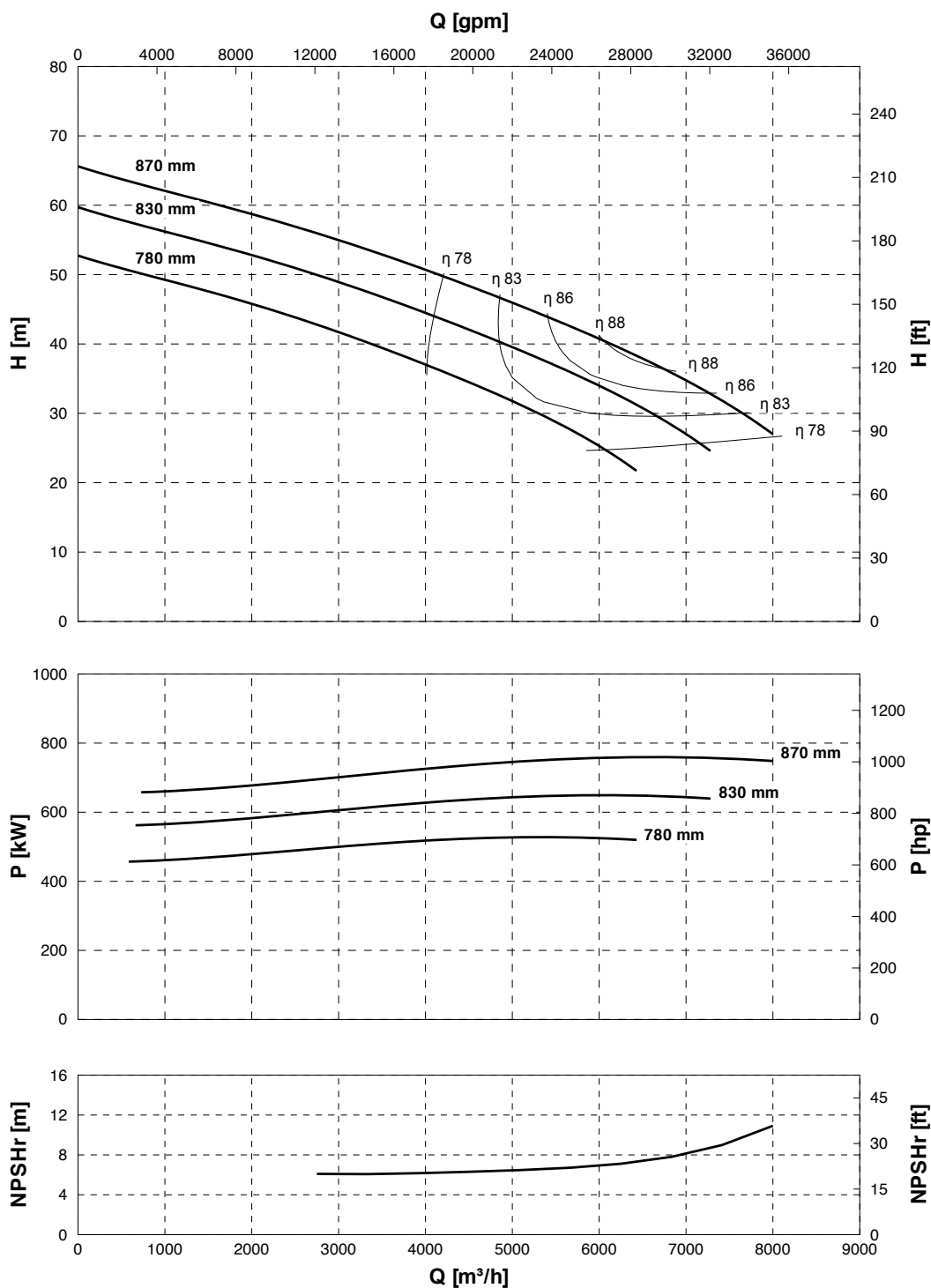


Notes:

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) 750 rpm

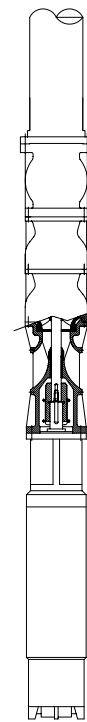
VTP 6500 Curve #: 11036-090310-S2



Notes:

- 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
- 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 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.

OPERATING 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"

SERVICES

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

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

Vertical Submersible Pumps (VS)

Available Models

VS 50	VS 100	VS 110	VS 130
VS 170	VS 170M	VS 180	VS 180M
VS 250	VS 290	VS 300	VS 325
VS 360	VS 450	VS 500	VS 650
VS 850			

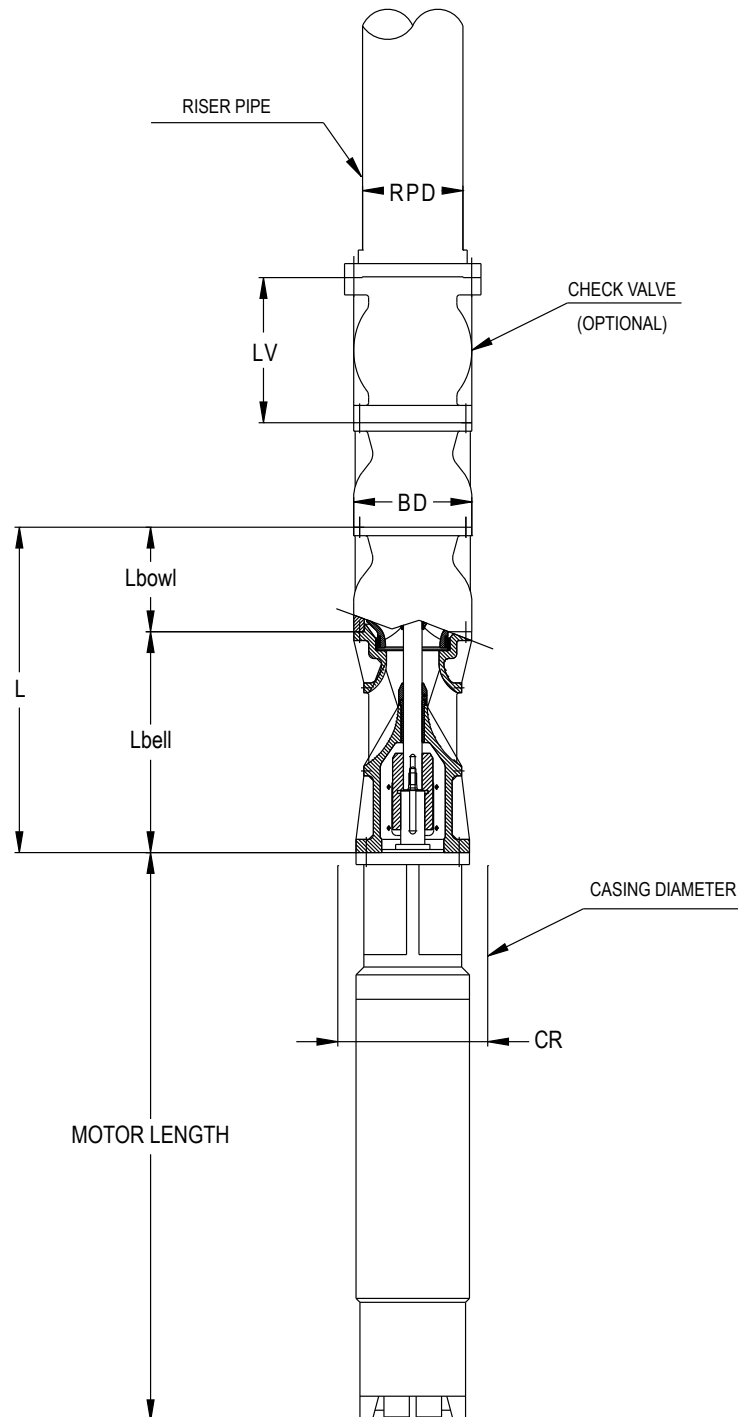
Vertical Submersible Pumps (VS) Applications

Duty	Heavy	Medium	Low
	●	●	●
Capacity	High	Medium	Low
		●	●
Head	High	Medium	Low
	●	●	
Fluid	Clean	Process	Slurry
	●	●	
Flexibility	High	Medium	Low
	●		

Vertical Submersible Pumps (VS) Main Components & Materials

Components	Material					
	Cast Iron	Carbon Steel	Brass	Stainless Steel	Duplex	Polymer
Bowl	●		●	●	●	
Impeller	●		●	●	●	
Wear Rings	●		●	●	●	
Shaft				●	●	
Check Valve	●		●	●	●	

Vertical Submersible Pumps (VS) Diagram



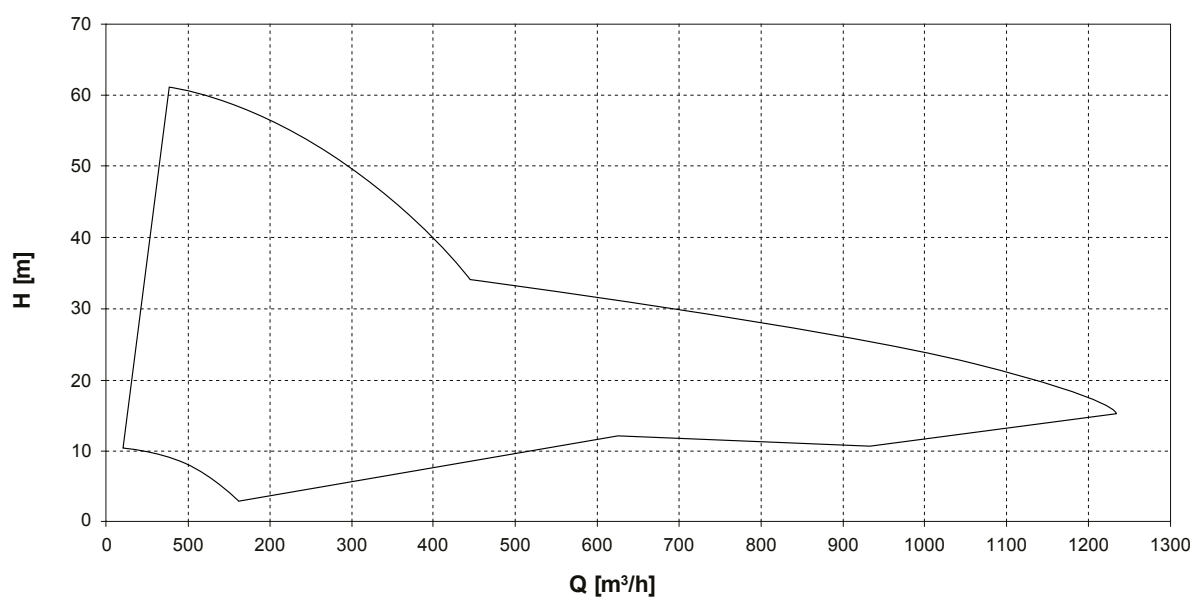
Vertical Submersible Pumps (VS)

Main Dimensions

Pump Model	Pump's Principal Dimensions				Bowl Assembly Dimensions		
	RPD [in]	BD [mm]	CRmin] mm]	LV [mm]	L [mm] (1st Stage)	Lbowl [mm] Each add Stage	Lbell [mm]
50	4	240	290	218	550	187	363
100	6	255	305	297	338	214	125
110	4	250	300	241	440	165	275
130	4	210	260	194	440	165	275
170	6	255	305	297	338	213	125
170M	6	255	305	297	338	213	125
180	8	310	360	294	730	233	497
180M	6	377	427	315	704	254	450
250	8	326	376	292	599	169	430
290	8	294	344	292	655	225	430
300	10	355	405	385	968	318	650
325	6	378	428	385	930	280	650
360	8	326	376	294	730	233	497
450	10	445	495	400	1030	345	685
500	10	361	411	410	930	350	580
650	12	523	573	485	1269	419	850
850	14	476	526	500	1224	474	750

Vertical Submersible Pumps (VS)

Range Chart - 50 Hz - 1 Stage

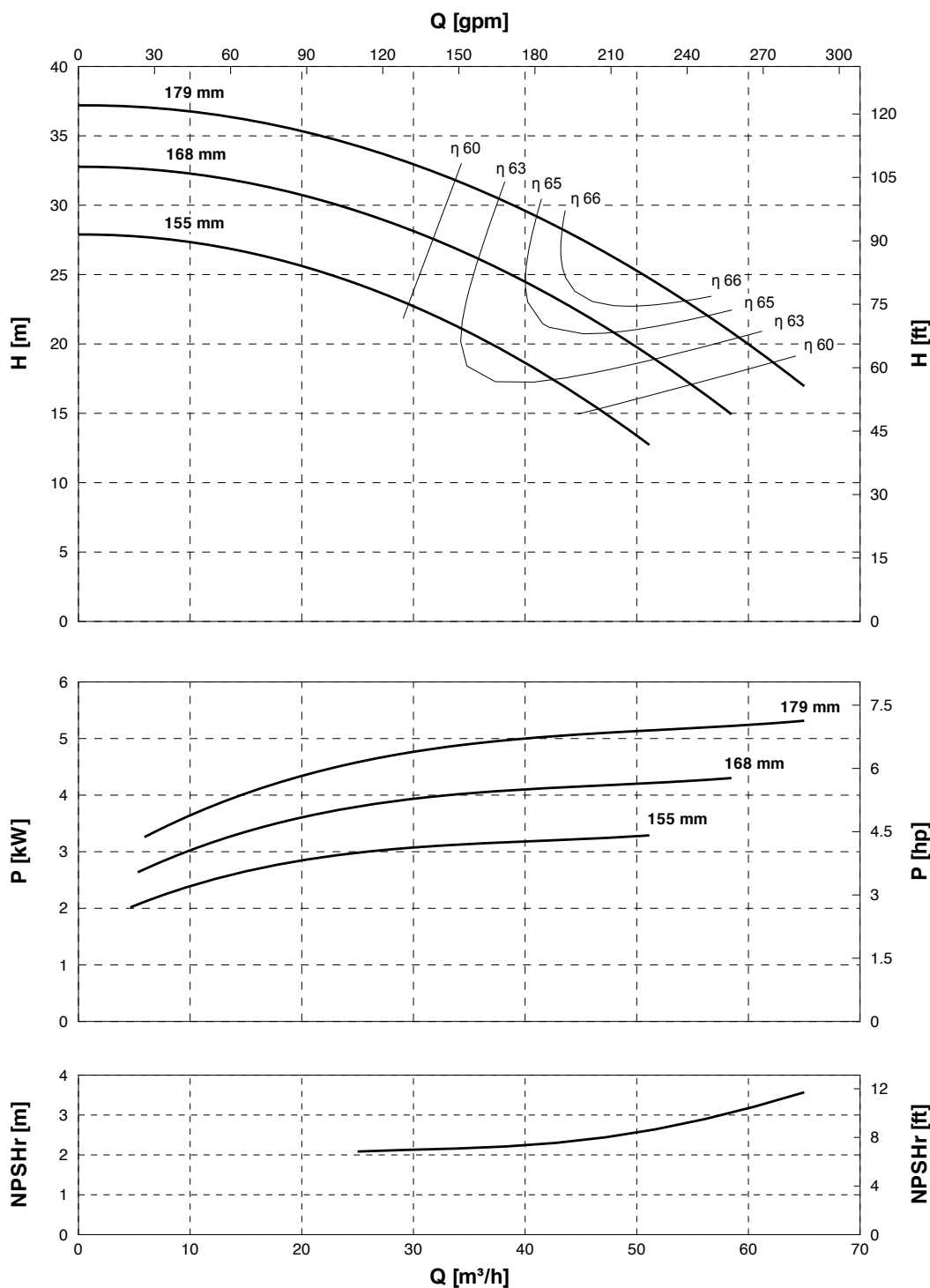


Vertical Submersible Pumps (VS)

3000 rpm

VS 50

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 (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.

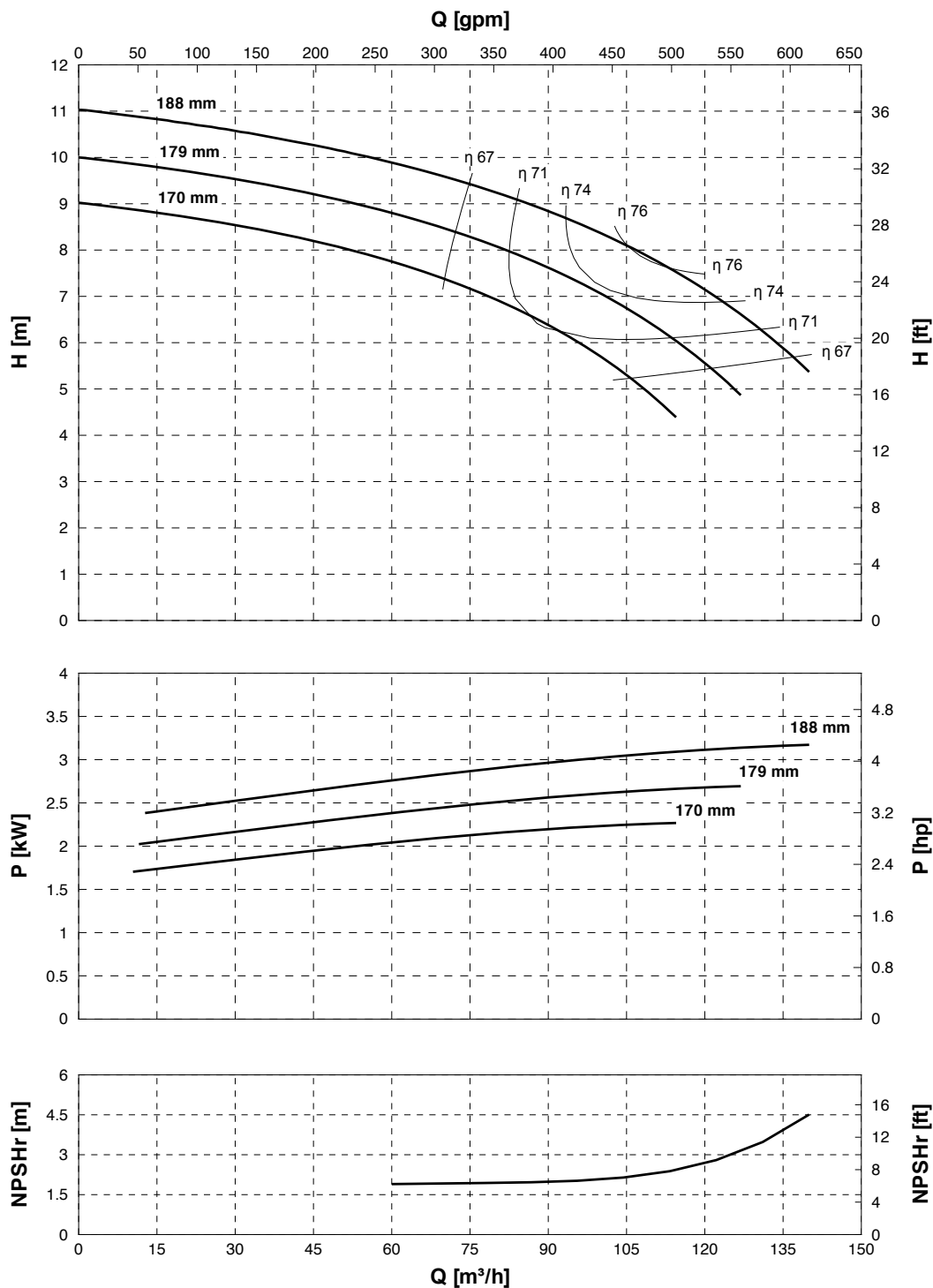


VS 100

Curve #: 11002-070713-F1

Vertical Submersible Pumps (VS)

1500 rpm



Notes:

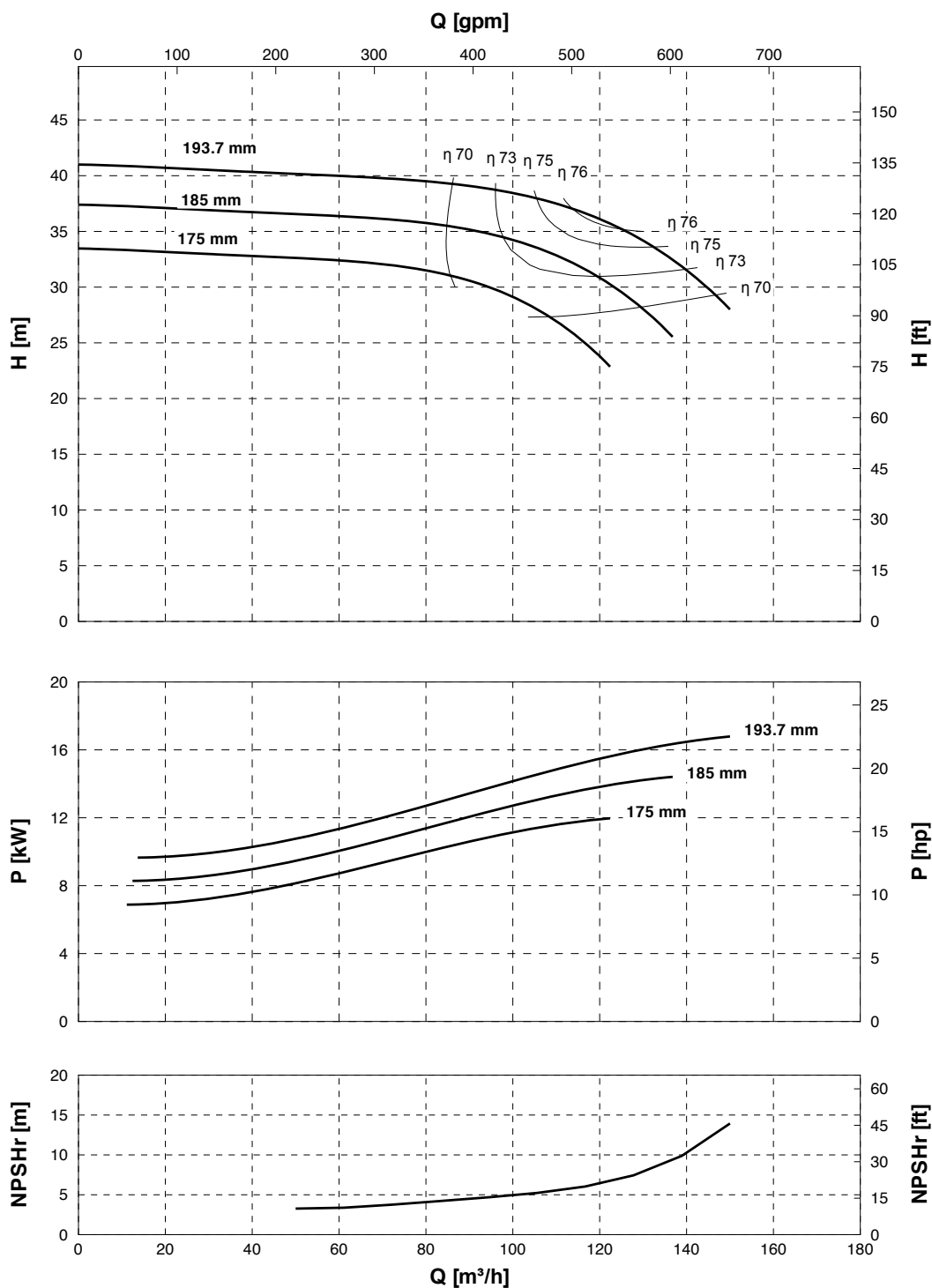
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

3000 rpm

VS 110

Curve #: 11003-071121-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.

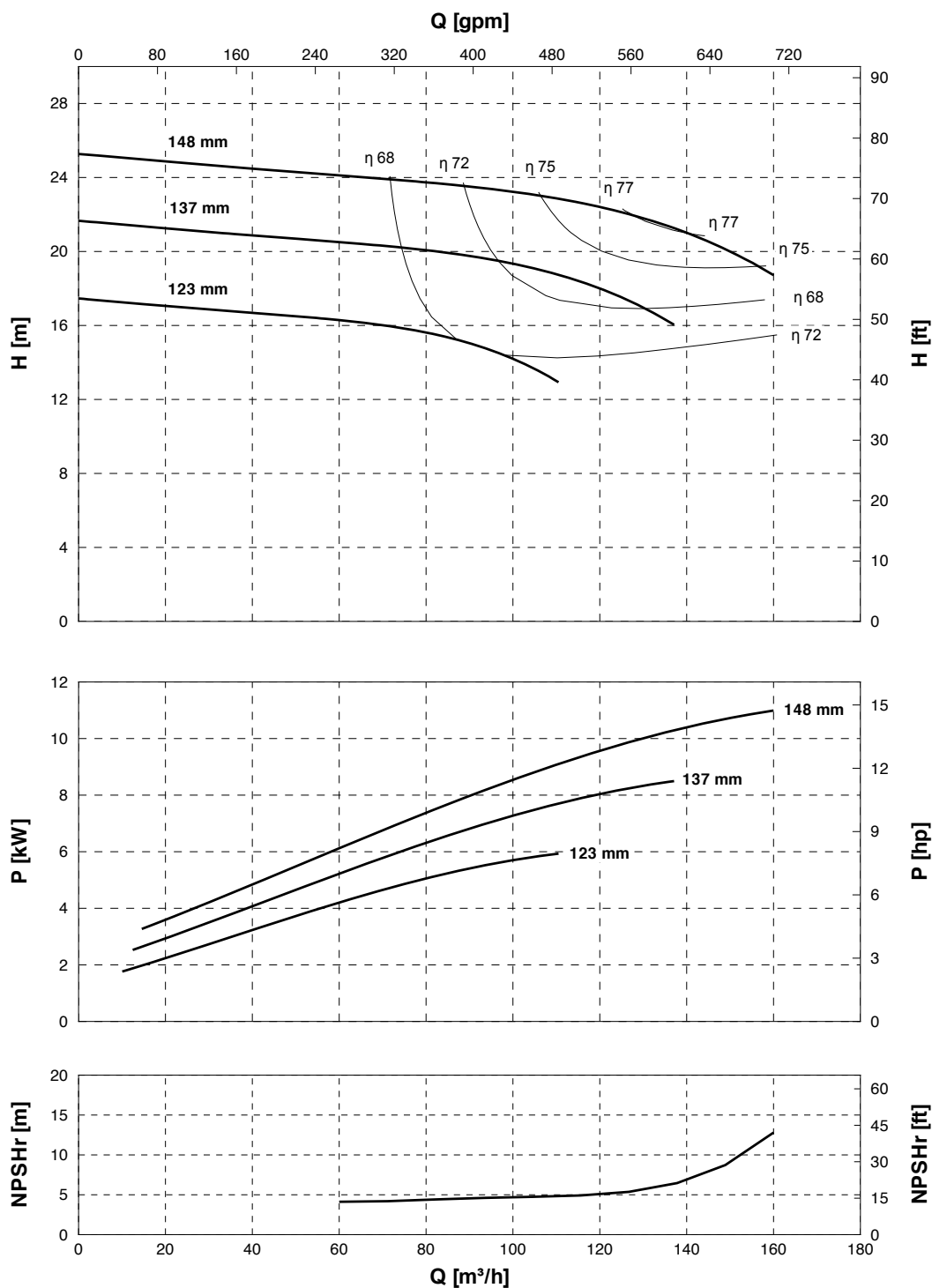


VS 130

Curve #: 11004-081121-S1

Vertical Submersible Pumps (VS)

3000 rpm



Notes:

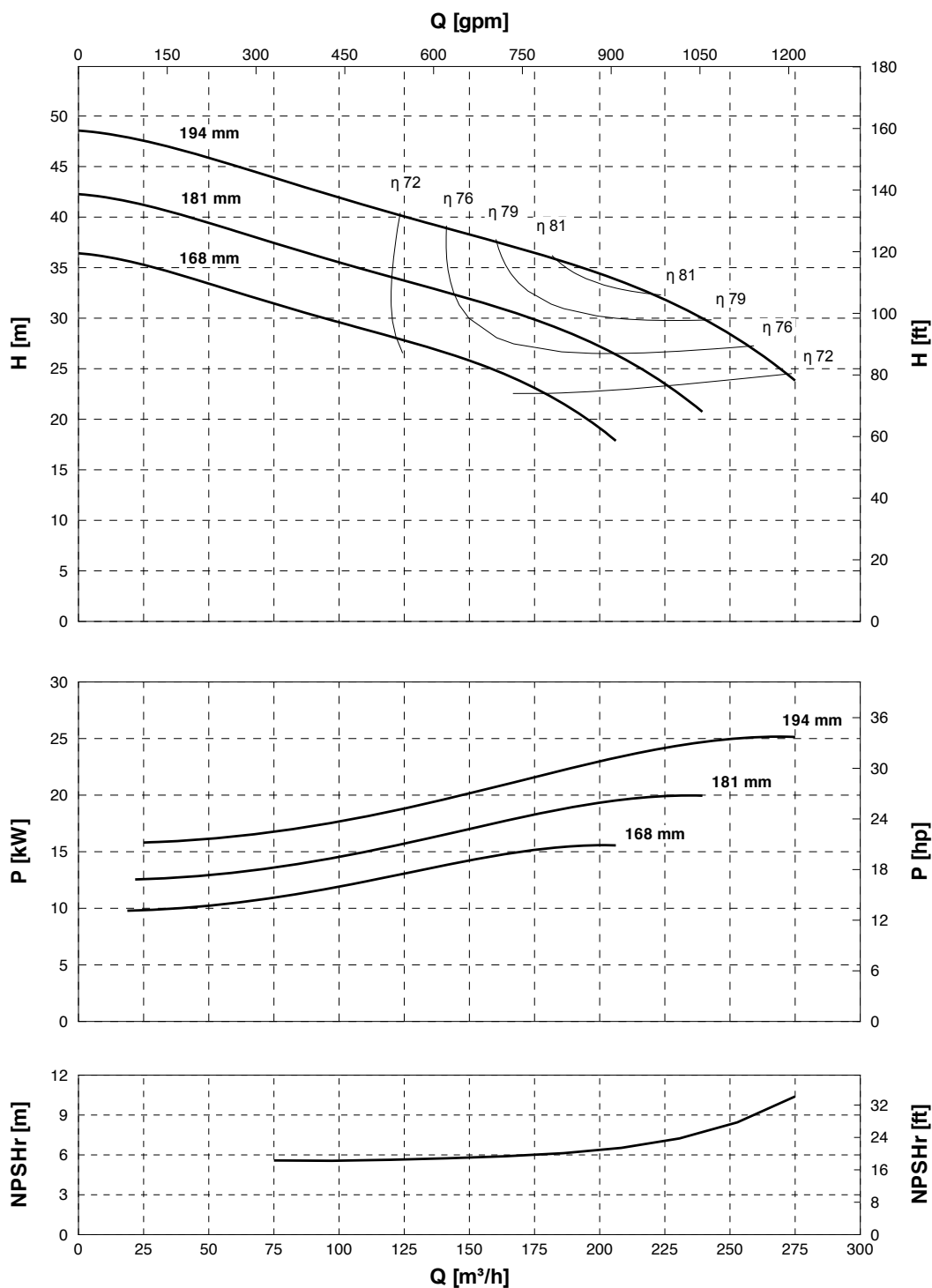
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H_2O $T=18^\circ C$), H_2O Density = 998 kg/m^3)
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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.

Vertical Submersible Pumps (VS)

3000 rpm

VS 170

Curve #: 11005-080704-E1



Notes:

- 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
- 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.

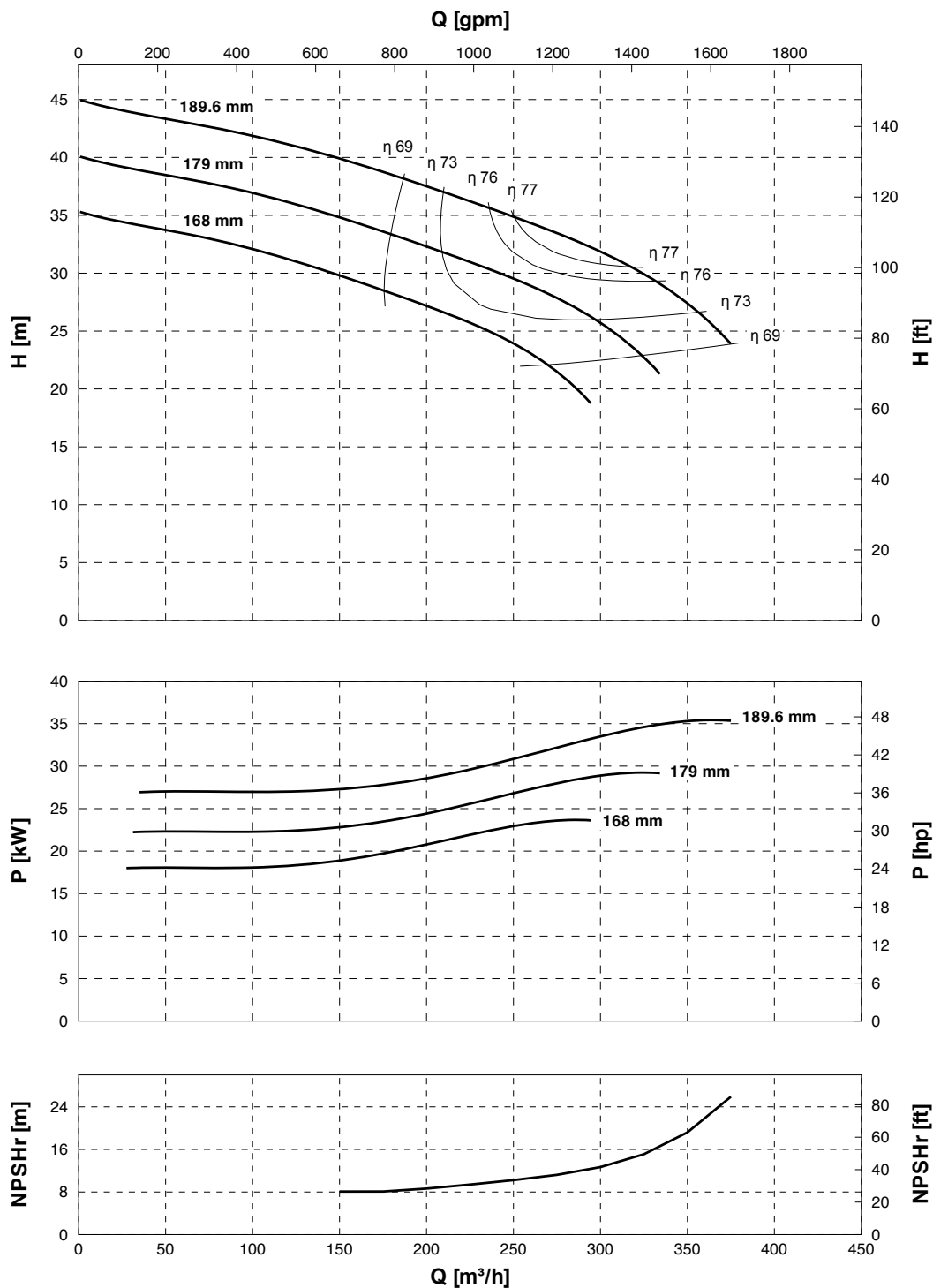


VS 170M

Curve #: 11005-080704-E1

Vertical Submersible Pumps (VS)

3000 rpm



Notes:

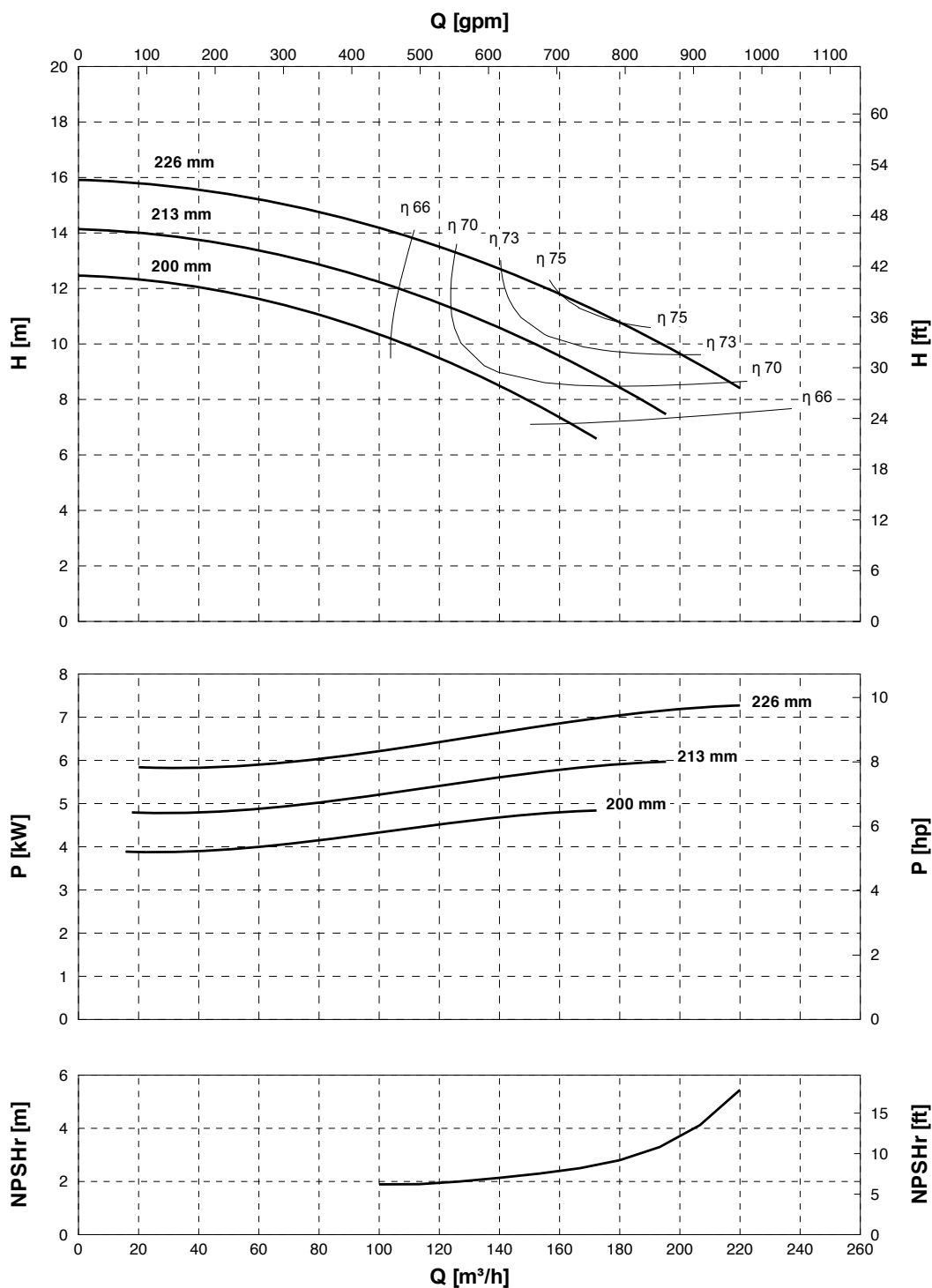
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

VS 180

Curve #: 11007-070717-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.

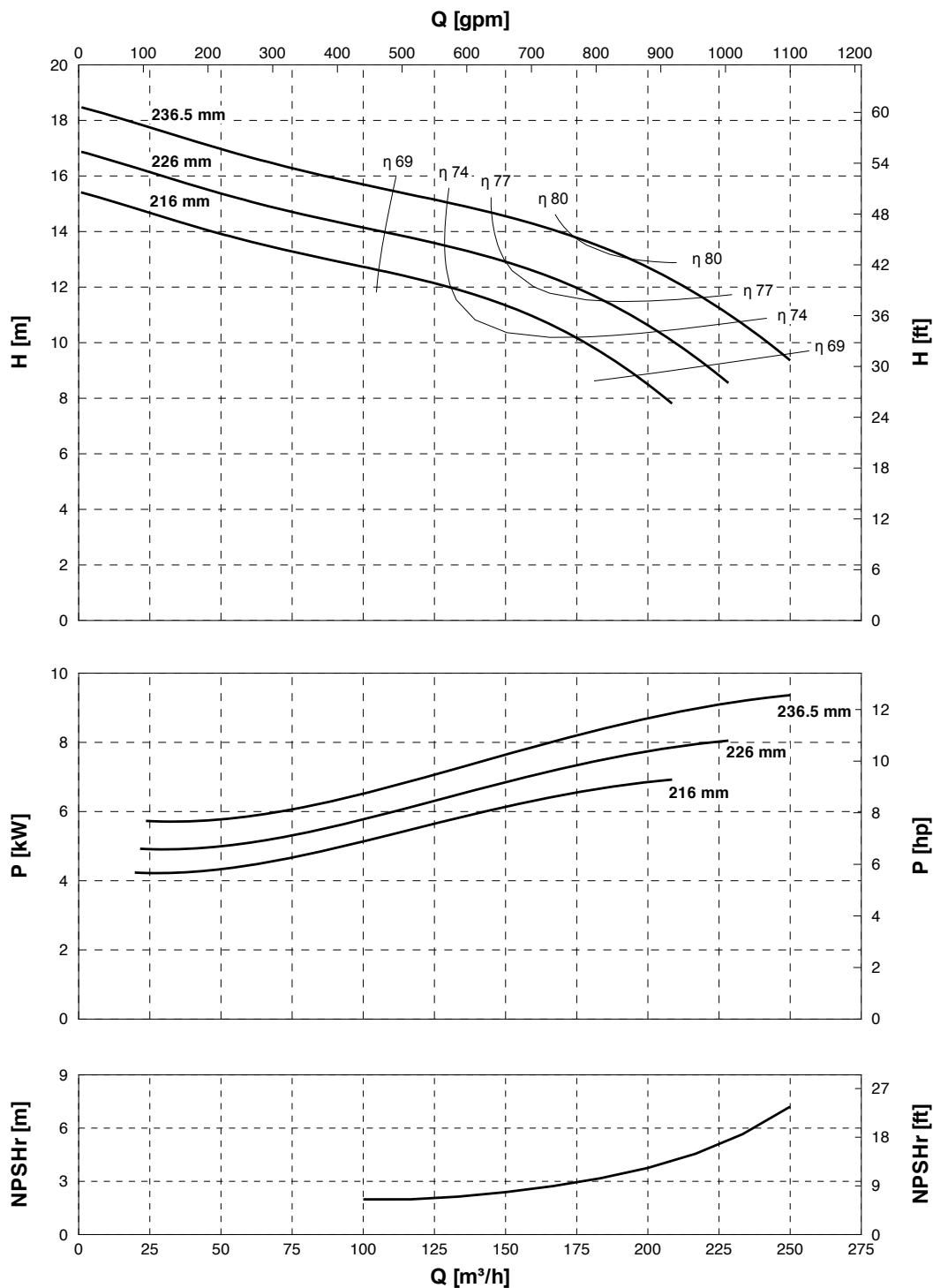


VS 180M

Curve #: 11008-081103-S1

Vertical Submersible Pumps (VS)

1500 rpm



Notes:

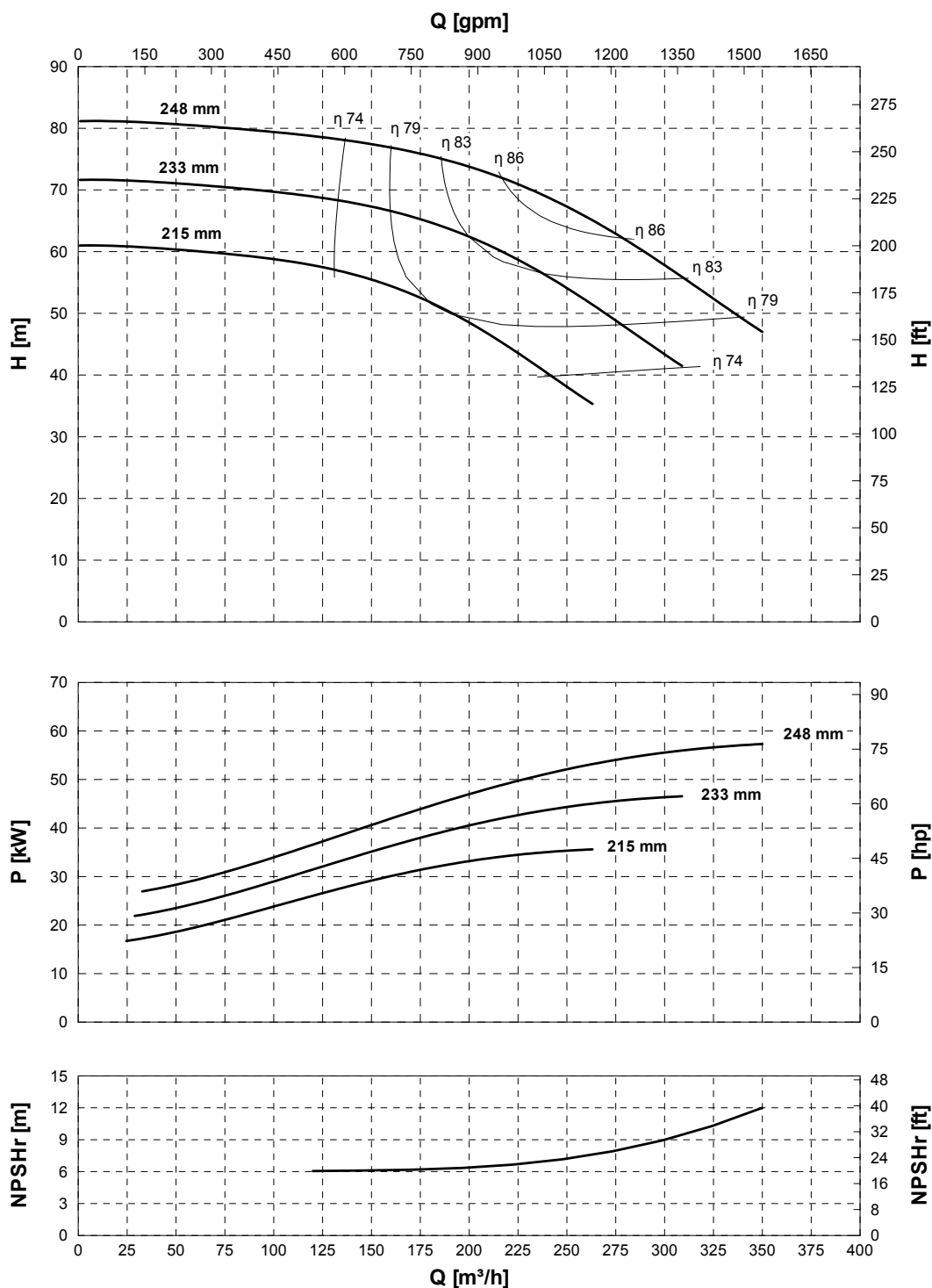
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

3000 rpm

VS 250

Curve #: 11009-100625-E2



Notes:

- 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
- 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.

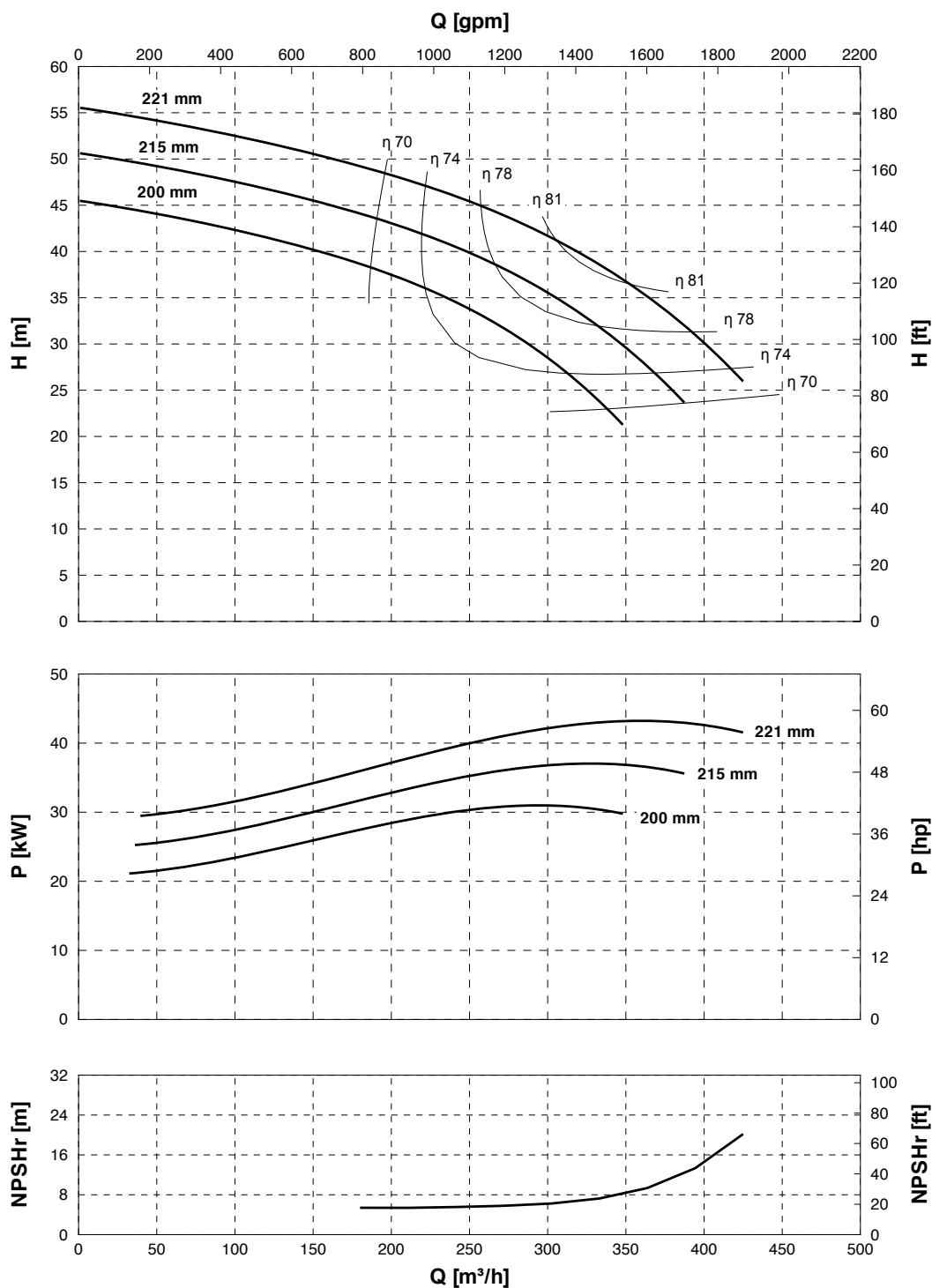


VS 290

Curve #: 11010-081103-S1

Vertical Submersible Pumps (VS)

3000 rpm



Notes:

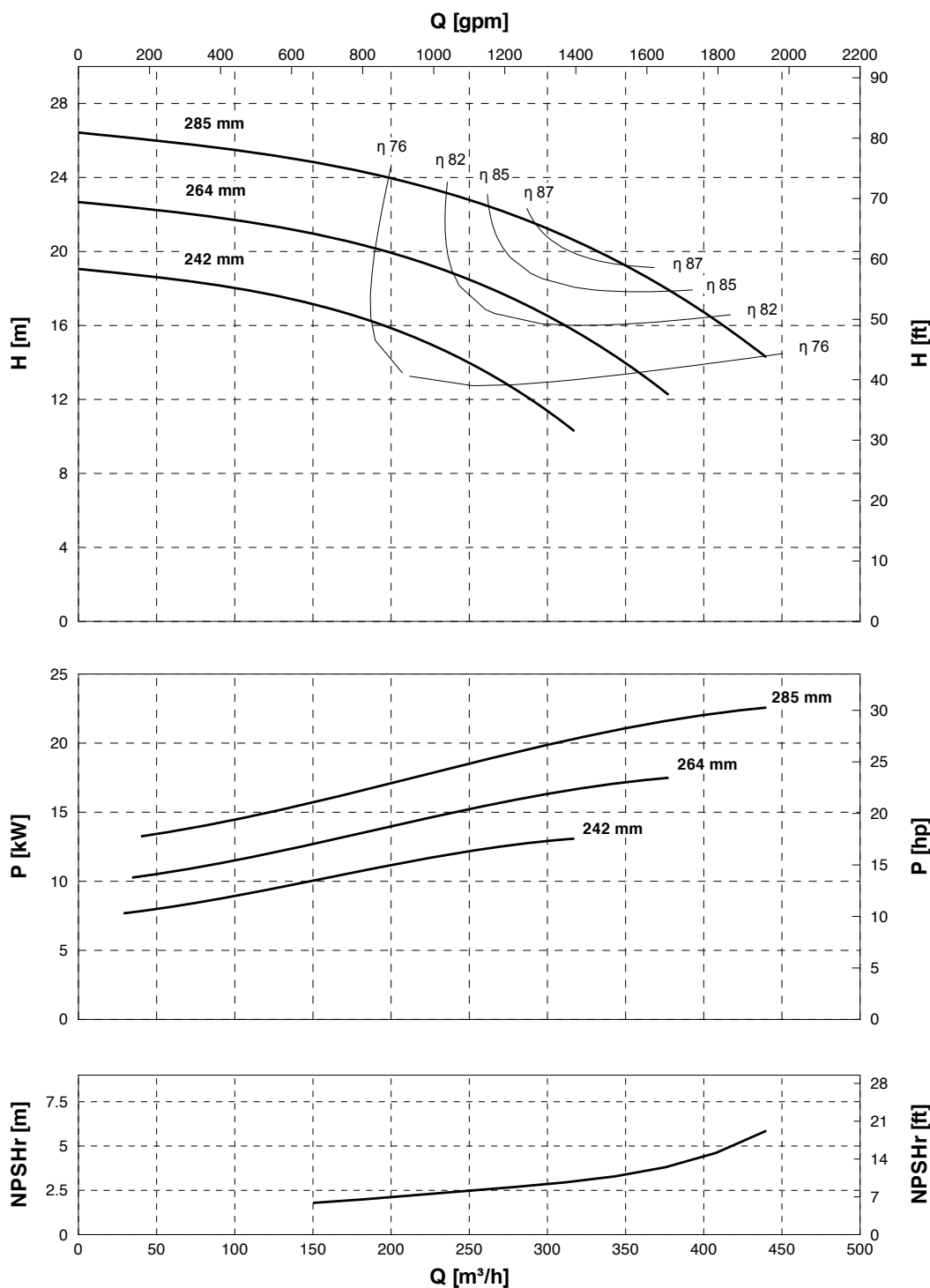
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

VS 300

Curve #: 11011-070713-F1



Notes:

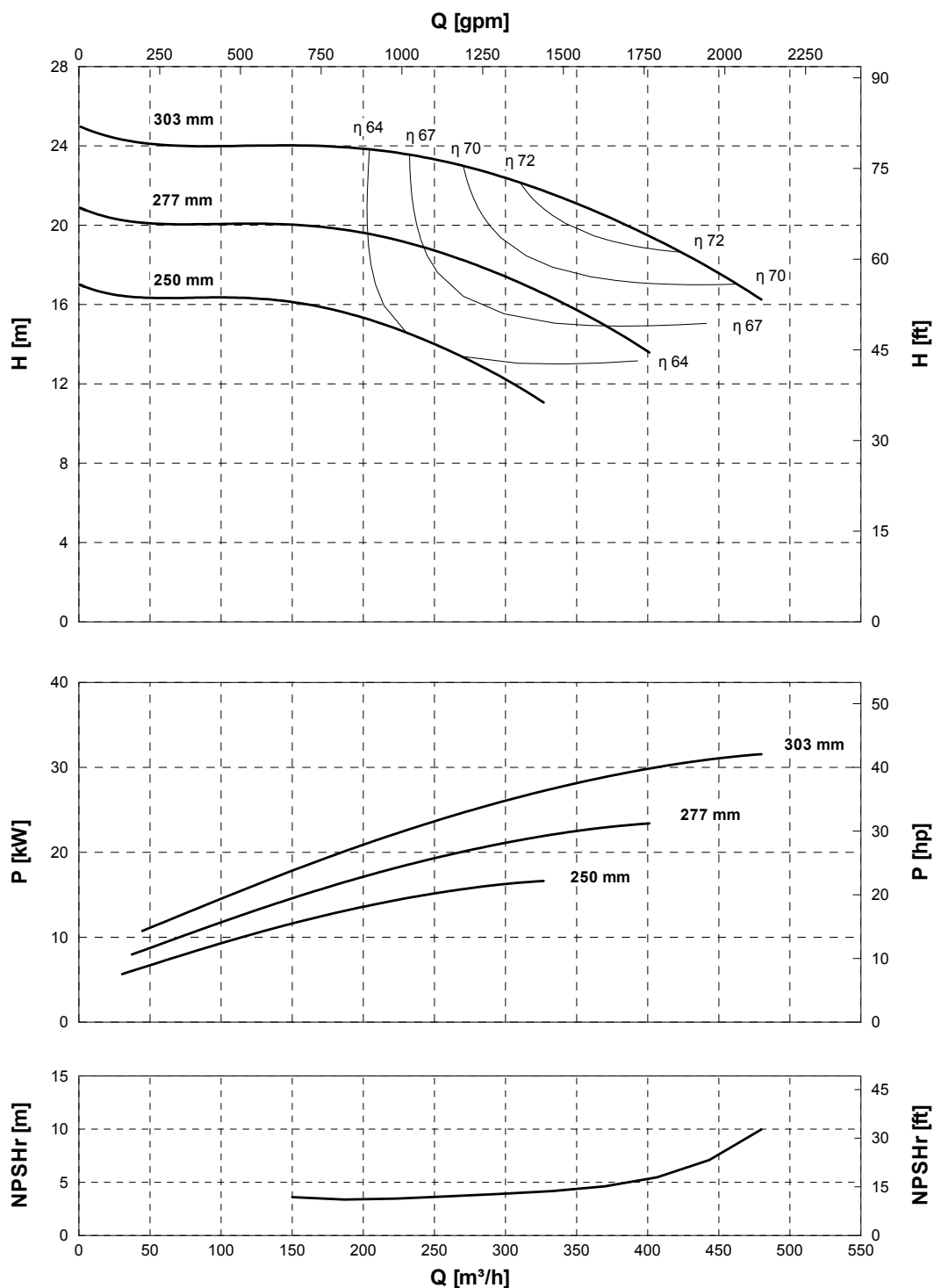
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



VS 325

Curve #: 11012-100701-E1

Vertical Submersible Pumps (VS) 1500 rpm



Notes:

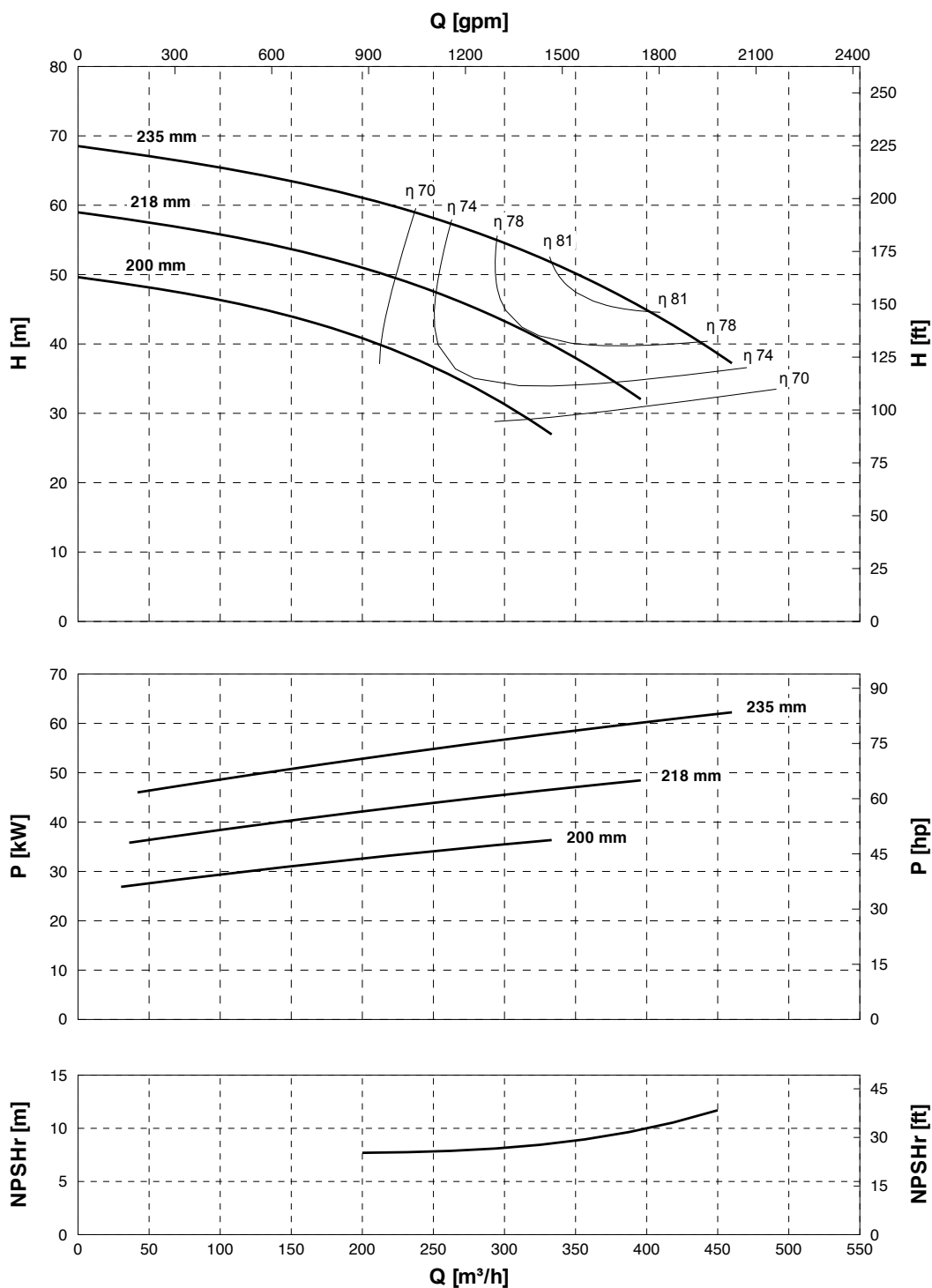
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

3000 rpm

VS 360

Curve #: 11013-080614-E1



Notes:

- 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
- 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.

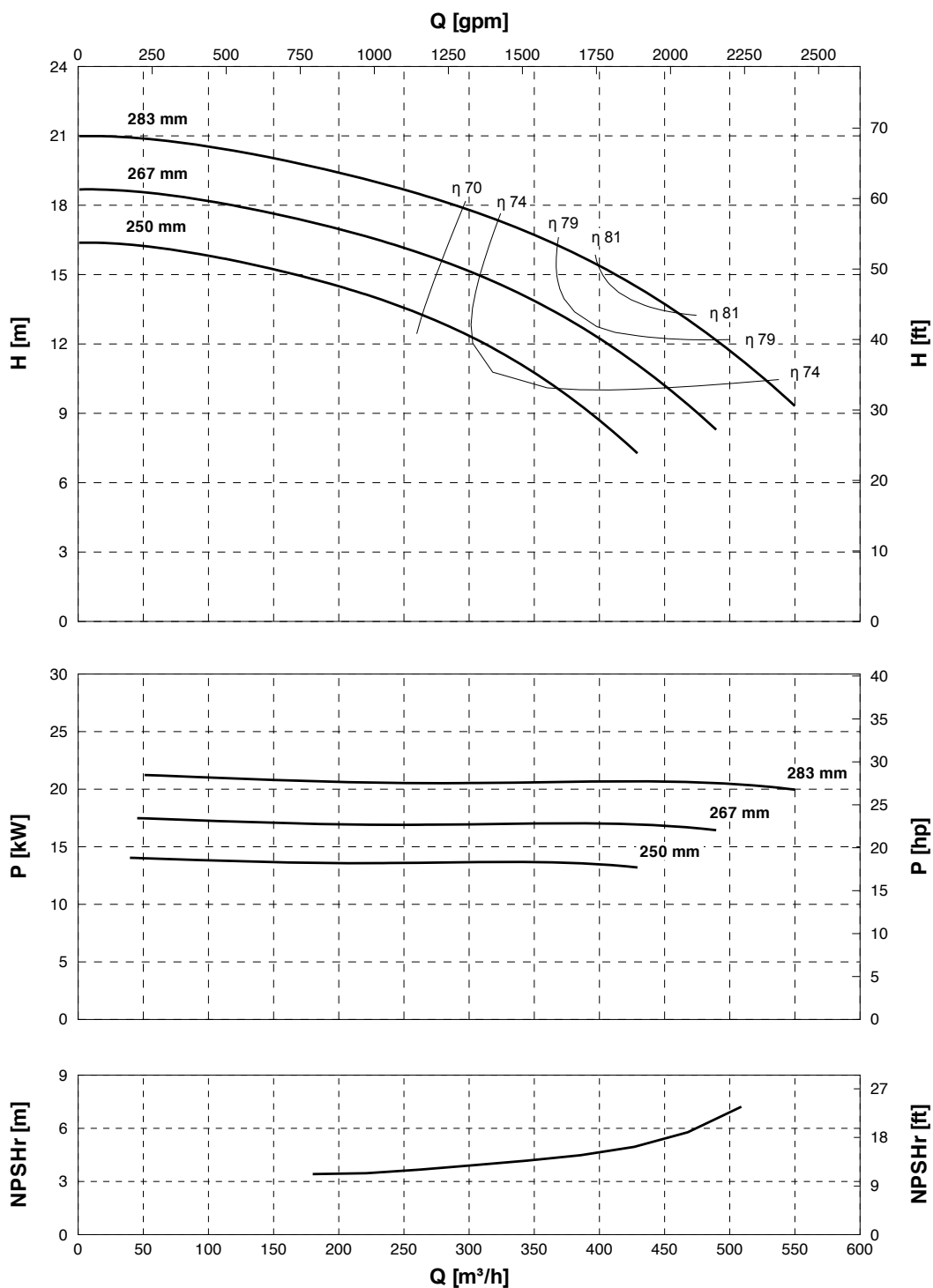


VS 450

Curve #: 11014-081103-S1

Vertical Submersible Pumps (VS)

1500 rpm



Notes:

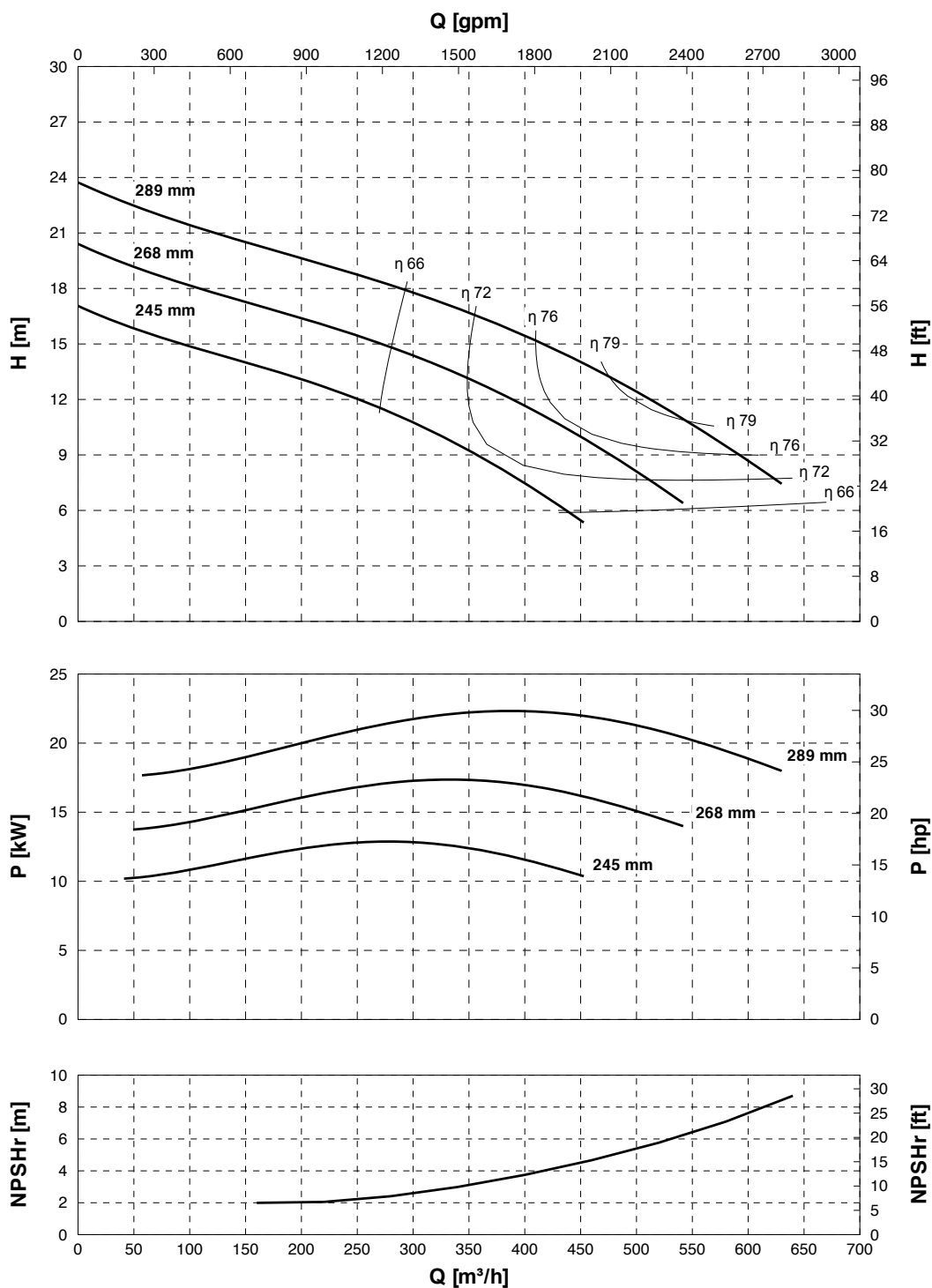
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

VS 500

Curve #: 11015-080802-E2



Notes:

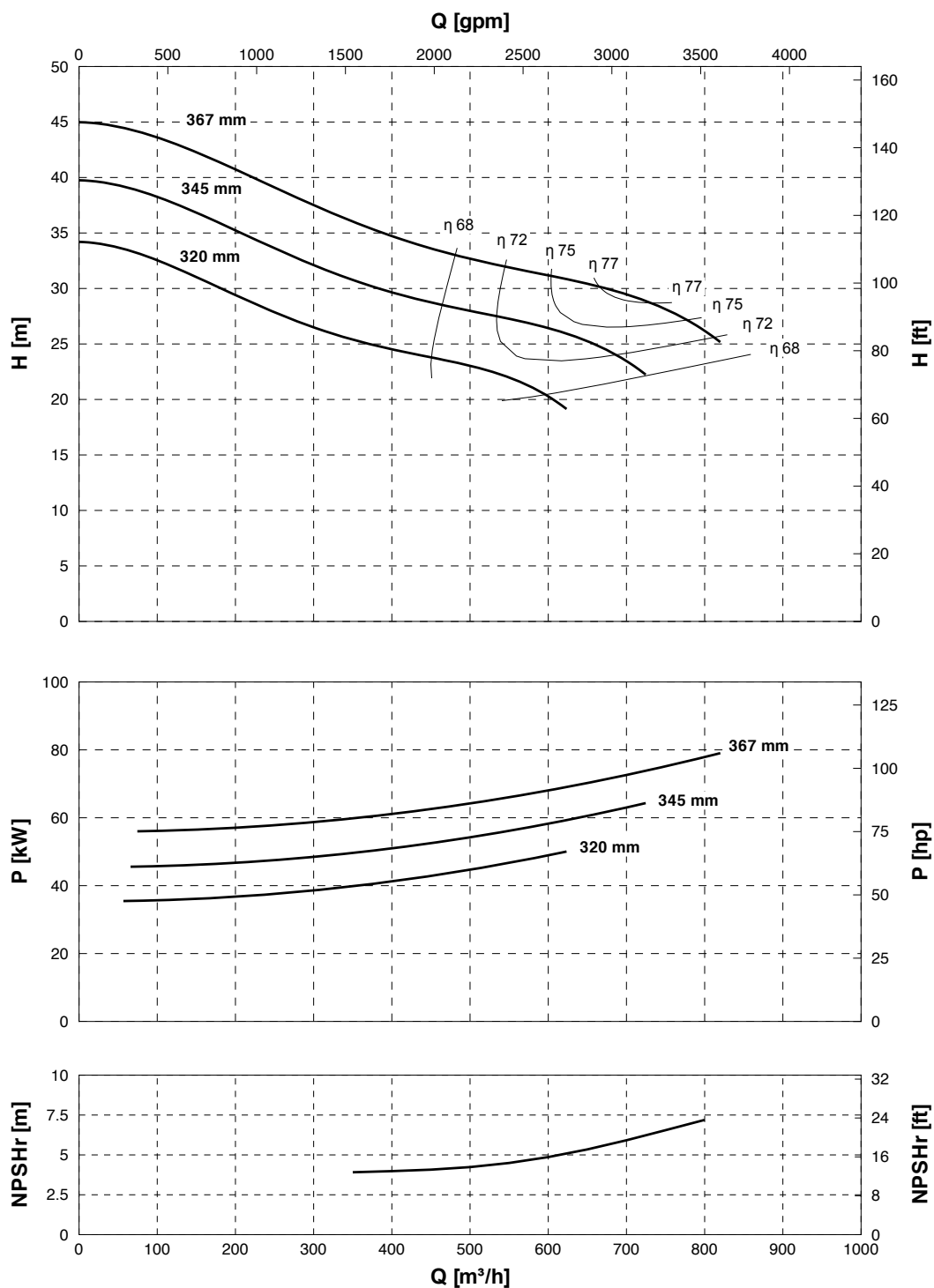
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance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



VS 650

Curve #: 11017-070713-E1

Vertical Submersible Pumps (VS) 1500 rpm



Notes:

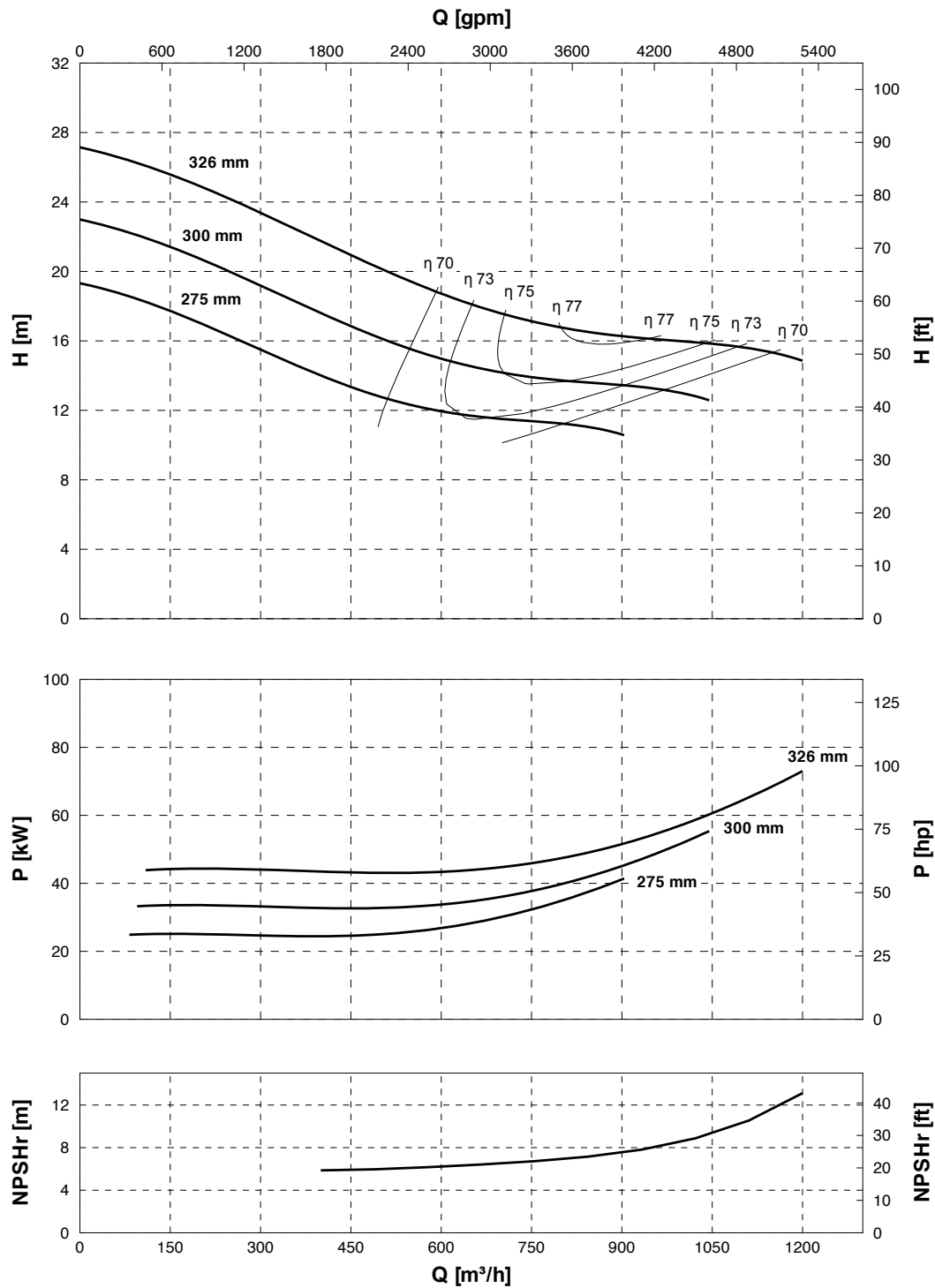
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

VS 850

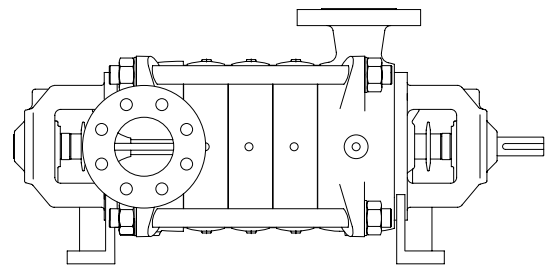
Curve #: 11021-070713-E1



Notes:

- 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
- Elevated temperature effects on performance are not included
- Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
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- 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, Mine Seepage, Well Pumps-Process, Water Supply, Mine De-Watering, Electrolyte, Pressure Boosting and Transfer
- Solvent Extraction/Electro-Winning (SX/EW) - Raffinate, Pregenate 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

Duty	Heavy	Medium	Low
	●	●	●
Capacity	High	Medium	Low
		●	●
Head	High	Medium	Low
	●	●	
Fluid	Clean	Process	Slurry
	●	●	
Flexibility	High	Medium	Low
	●		

Multistage Pumps (HR)

Main Components & Materials

Components	Material					
	Cast Iron	Carbon Steel	Brass	Stainless Steel	Duplex	Polymer
Volute	●		●	●	●	
Impeller			●	●	●	
Wear Rings	●		●	●	●	
Shaft				●	●	
Stuffing Box / Mechanical Seal	●					

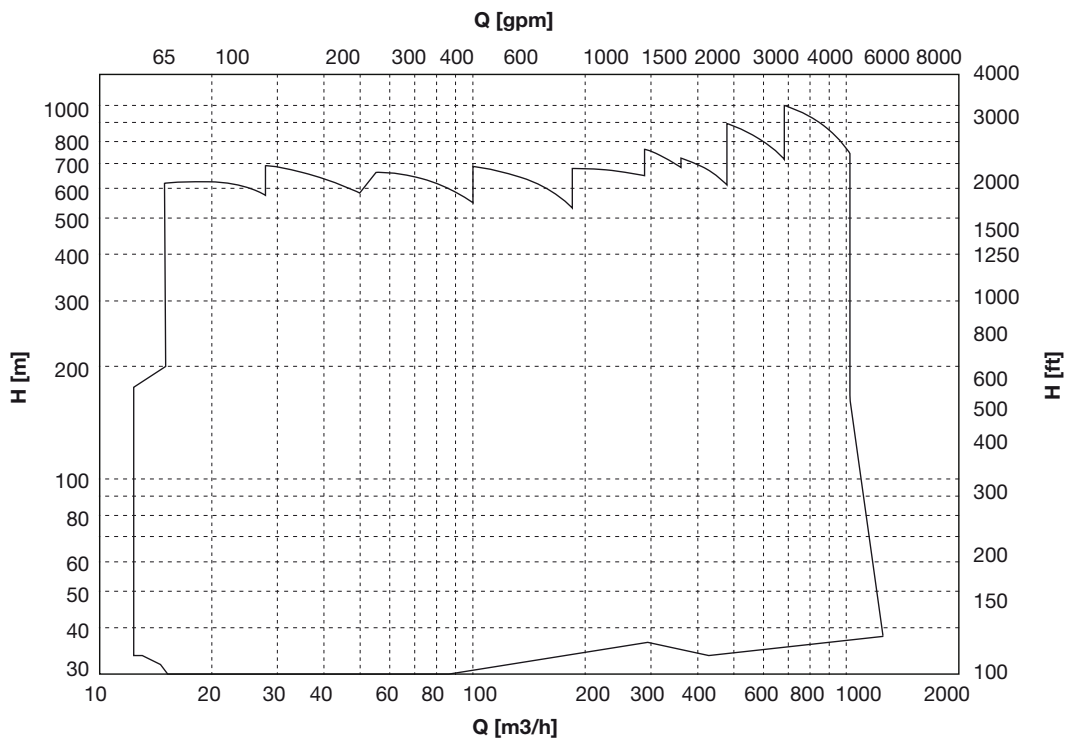
Multistage Pumps (HR)

Available Models

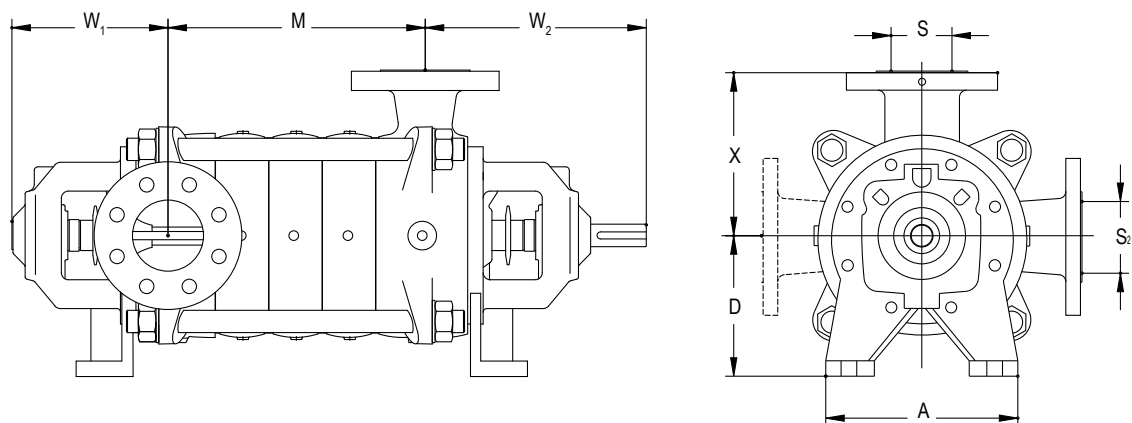
HR 32	HR 50	HR 70
HR 150	HR 360	HR 900

Multistage Pumps (HR)

Range Chart - 50 Hz - 1 Stage



Multistage Pumps (HR) Diagram



Multistage Pumps (HR) Main Dimensions

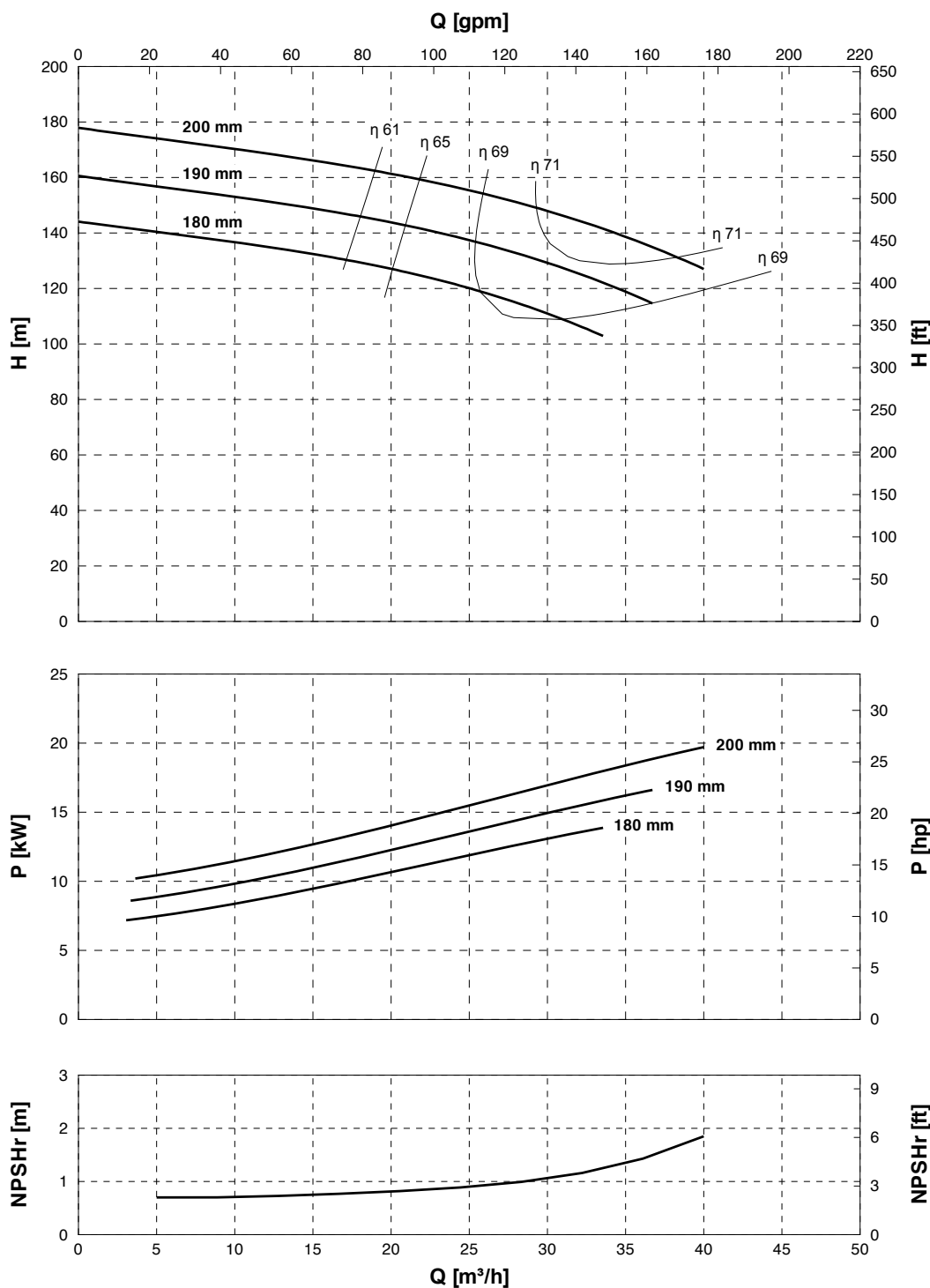
Dimensions (mm)									
Model	S_2 Radial Suction	S_1	X	D	A	W_1	W_2	M 3-Stage	Each Add'l Stage M
HR 32	100	65	210	141	285	314	223	260	70
HR 50	79	50	200	160	304	297	227	227	66
HR 70	104	77	219	200	265	314	236	275	76
HR 150	104	77	296	320	538	533	460	369	181
HR 360	201	150	399	356	572	563	440	583	156
HR 900	298	248	551	450	782	821	654	850	215

Multistage Pumps (HR)

1500 rpm

HR 32

Curve #: 22001-070713-F1



Notes:

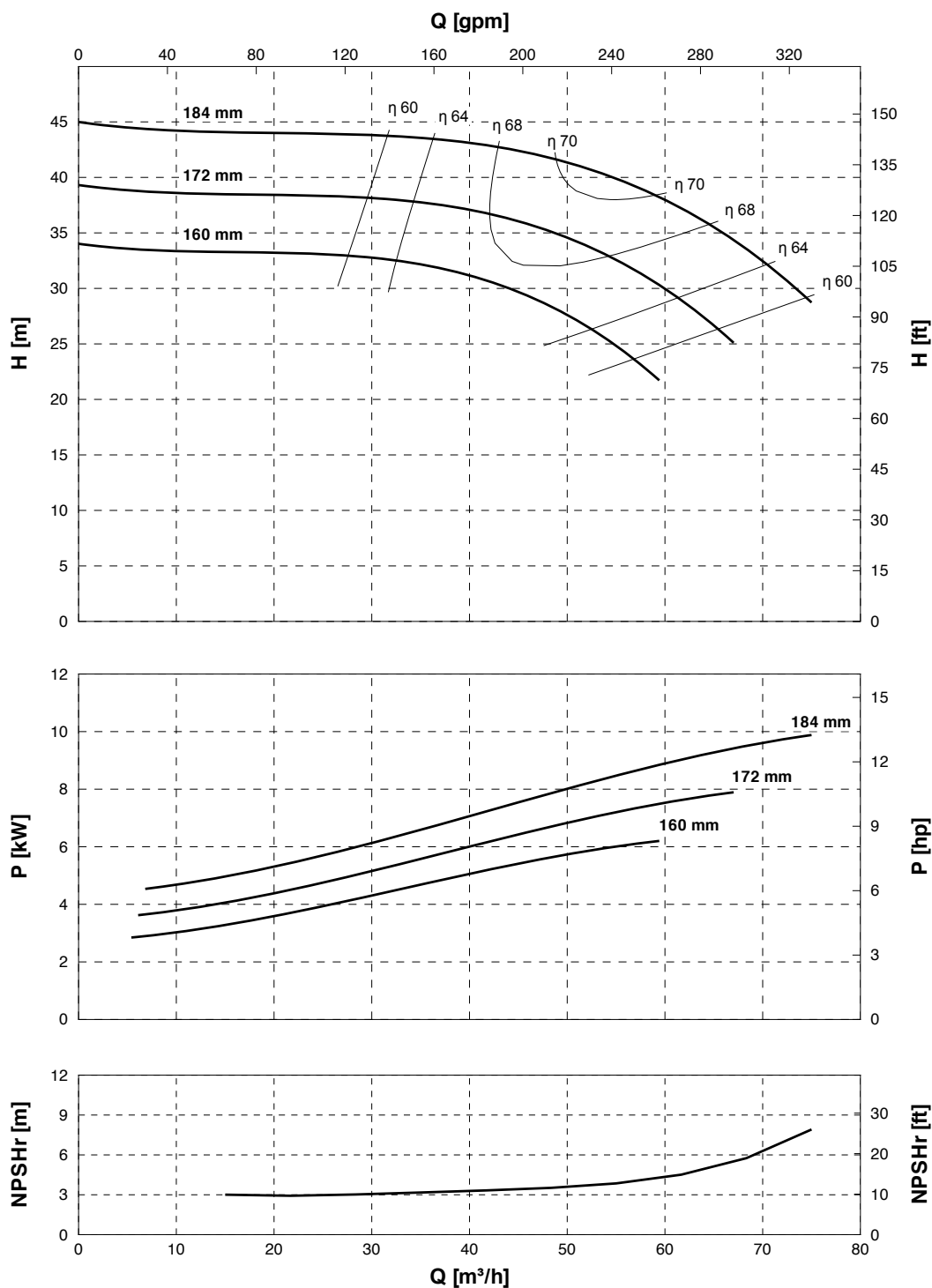
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ [°C], H_2O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on 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.



HR 50

Curve #: 22002-080917-E1

Multistage Pumps (HR)
3000 rpm



Notes:

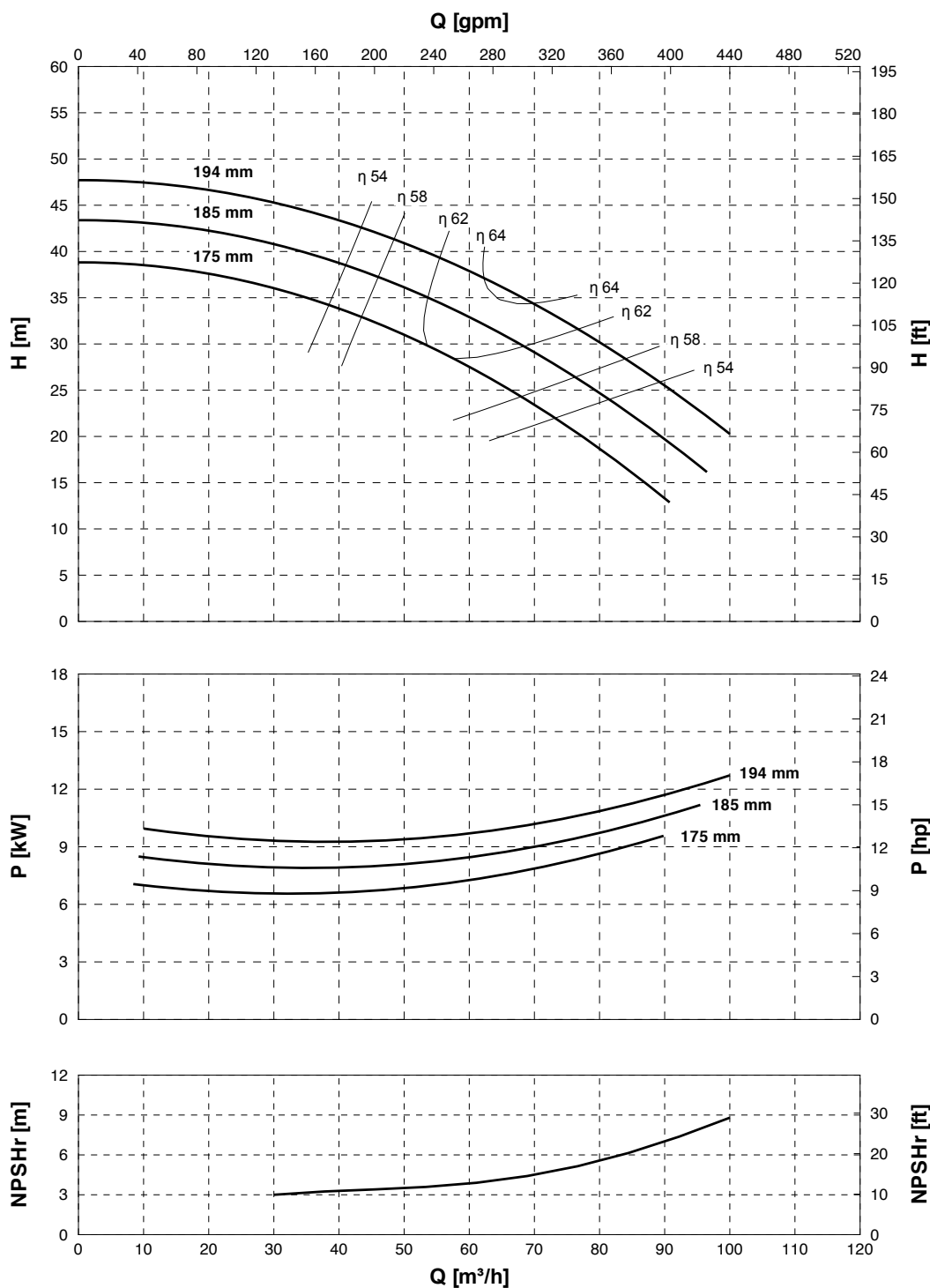
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.

Multistage Pumps (HR)

3000 rpm

HR 70

Curve #: 22003-070619-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 (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- 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.

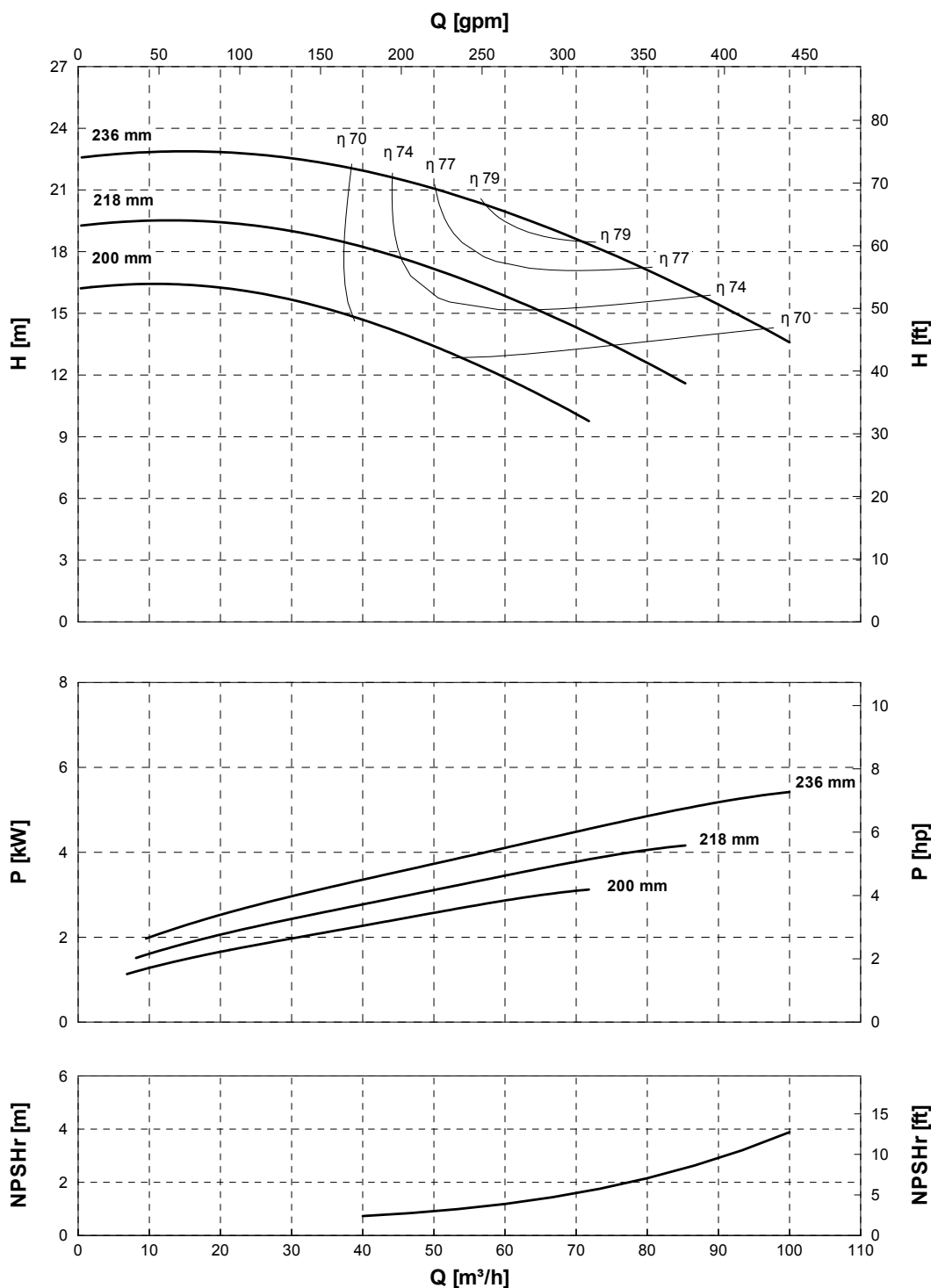


HR 150

Curve #: 22004-100709-E1

Multistage Pumps (HR)

1500 rpm



Notes:

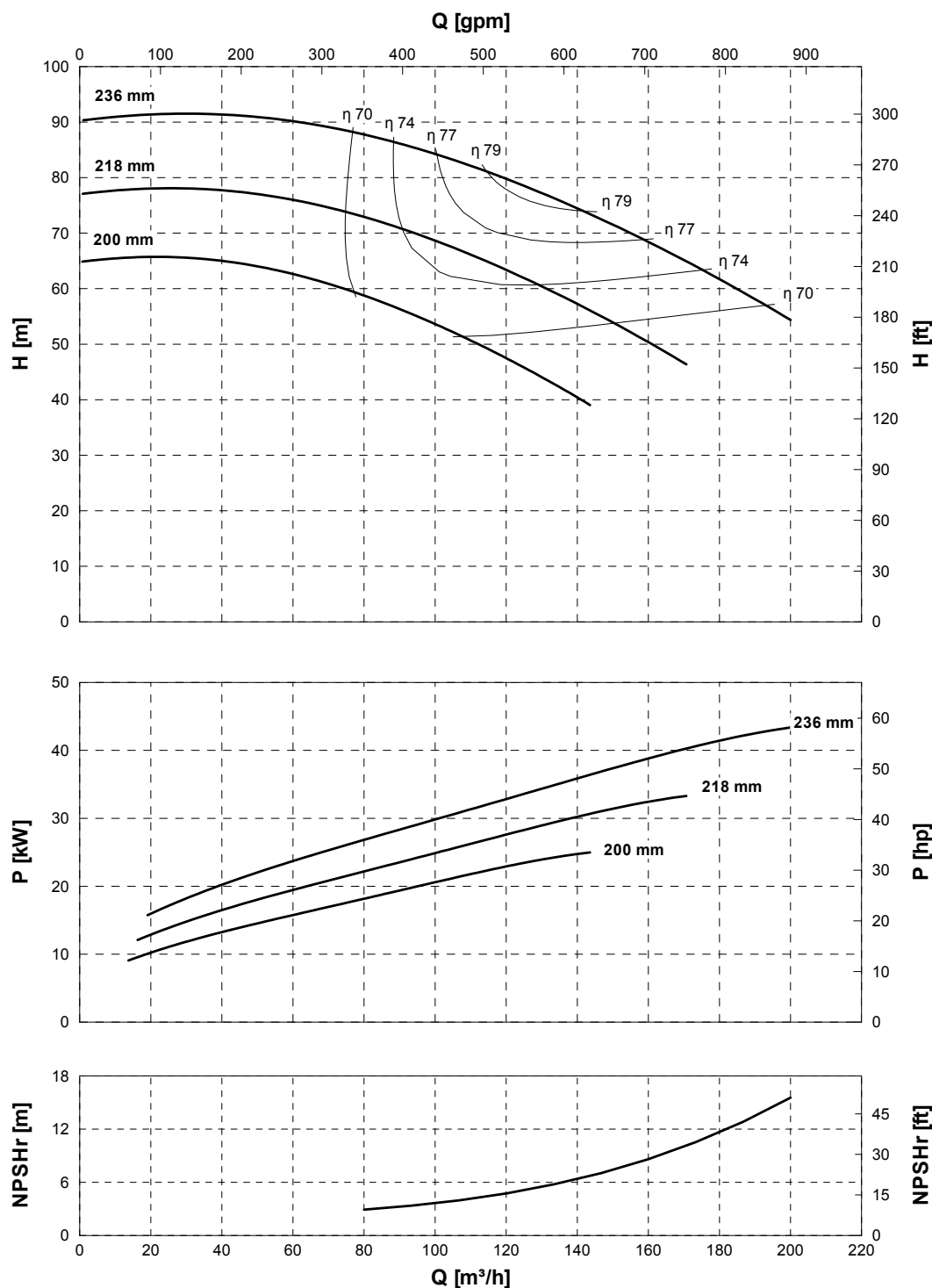
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

3000 rpm

HR 150

Curve #: 22004-100709-E1



Notes:

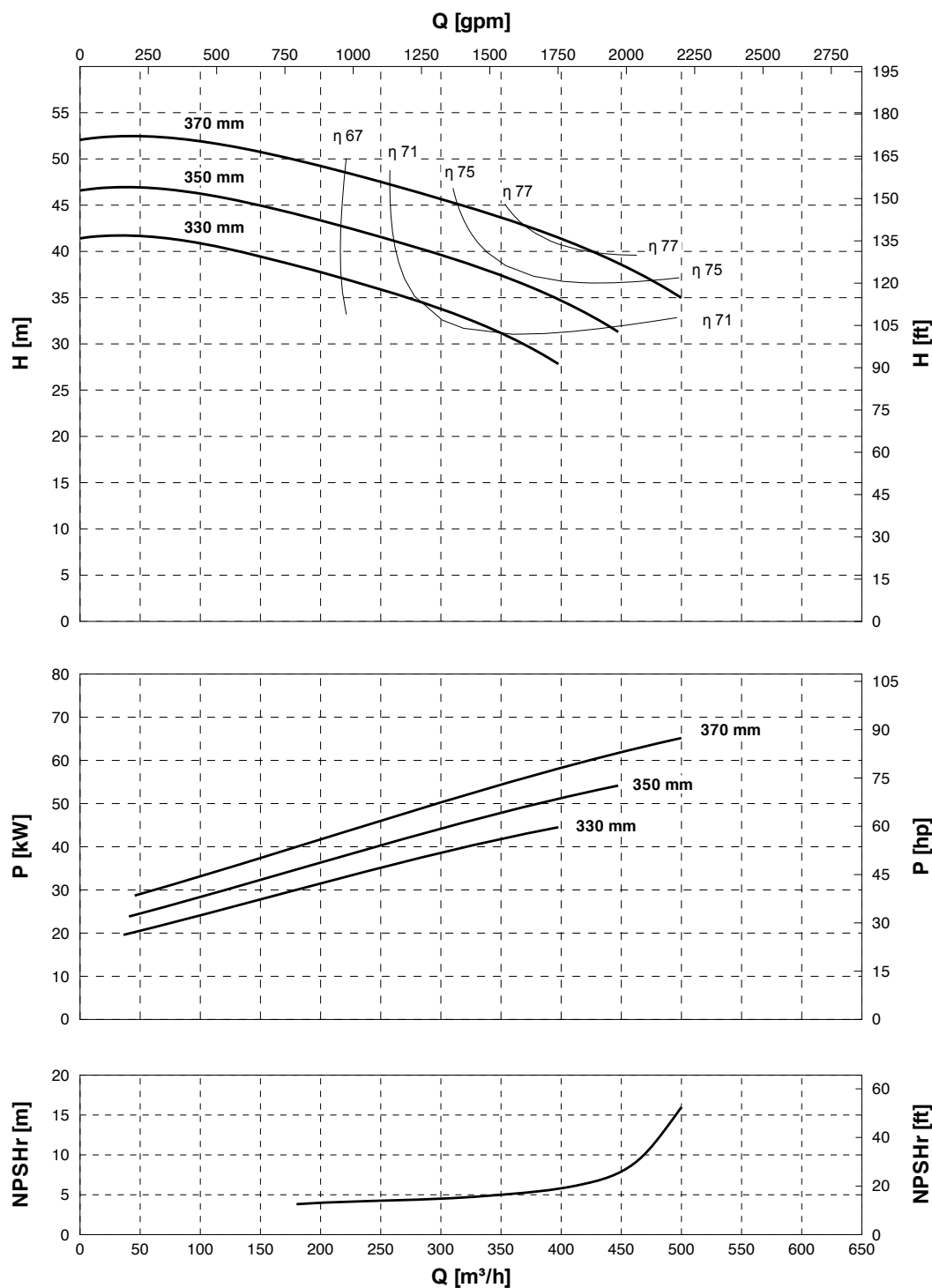
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



HR 360

Curve #: 22005-080614-E1

Multistage Pumps (HR)
1500 rpm



Notes:

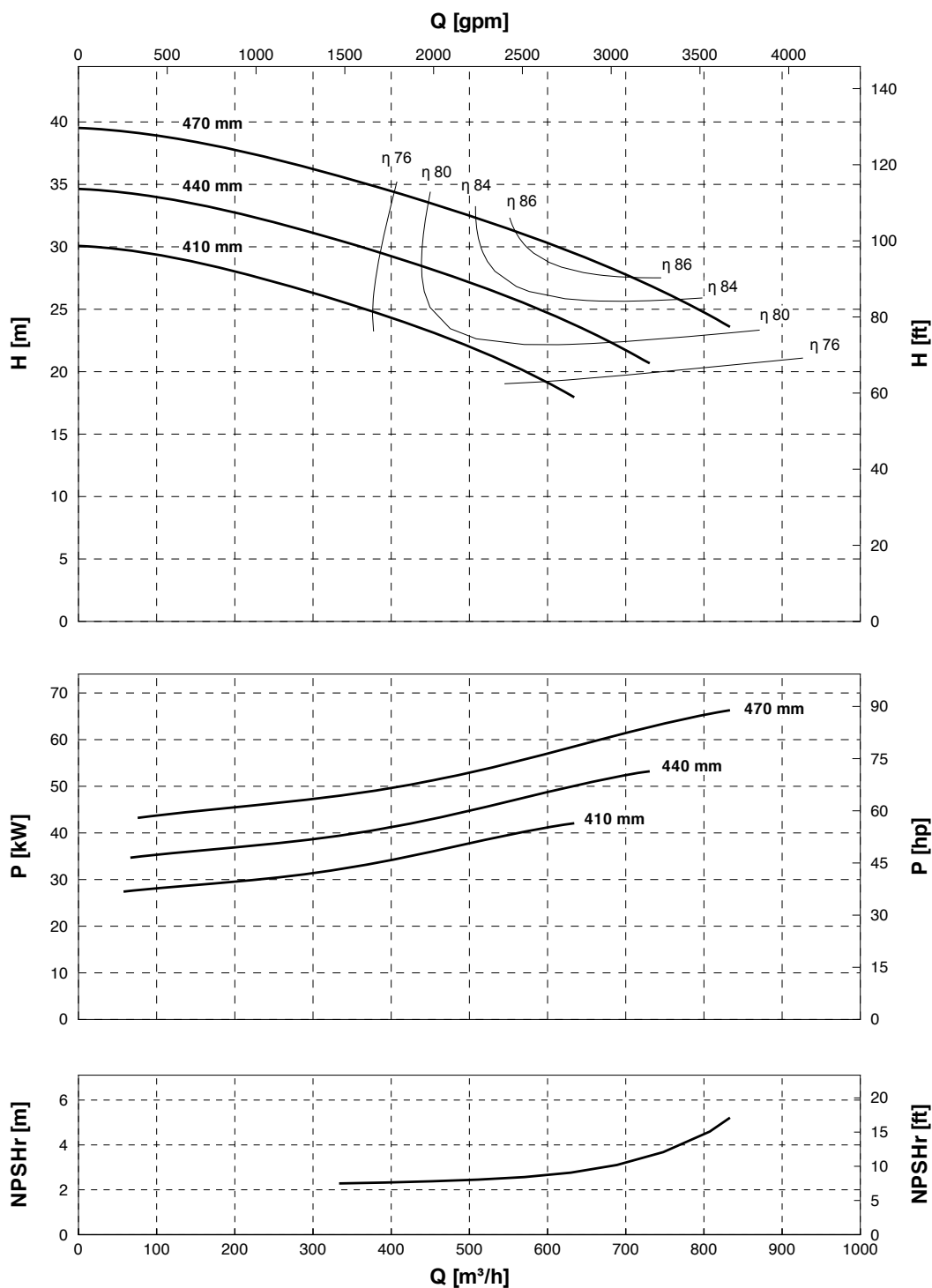
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2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects on performance are not included
5. Consider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

Multistage Pumps (HR)

1000 rpm

HR 900

Curve #: 22006-120214-S2



Notes:

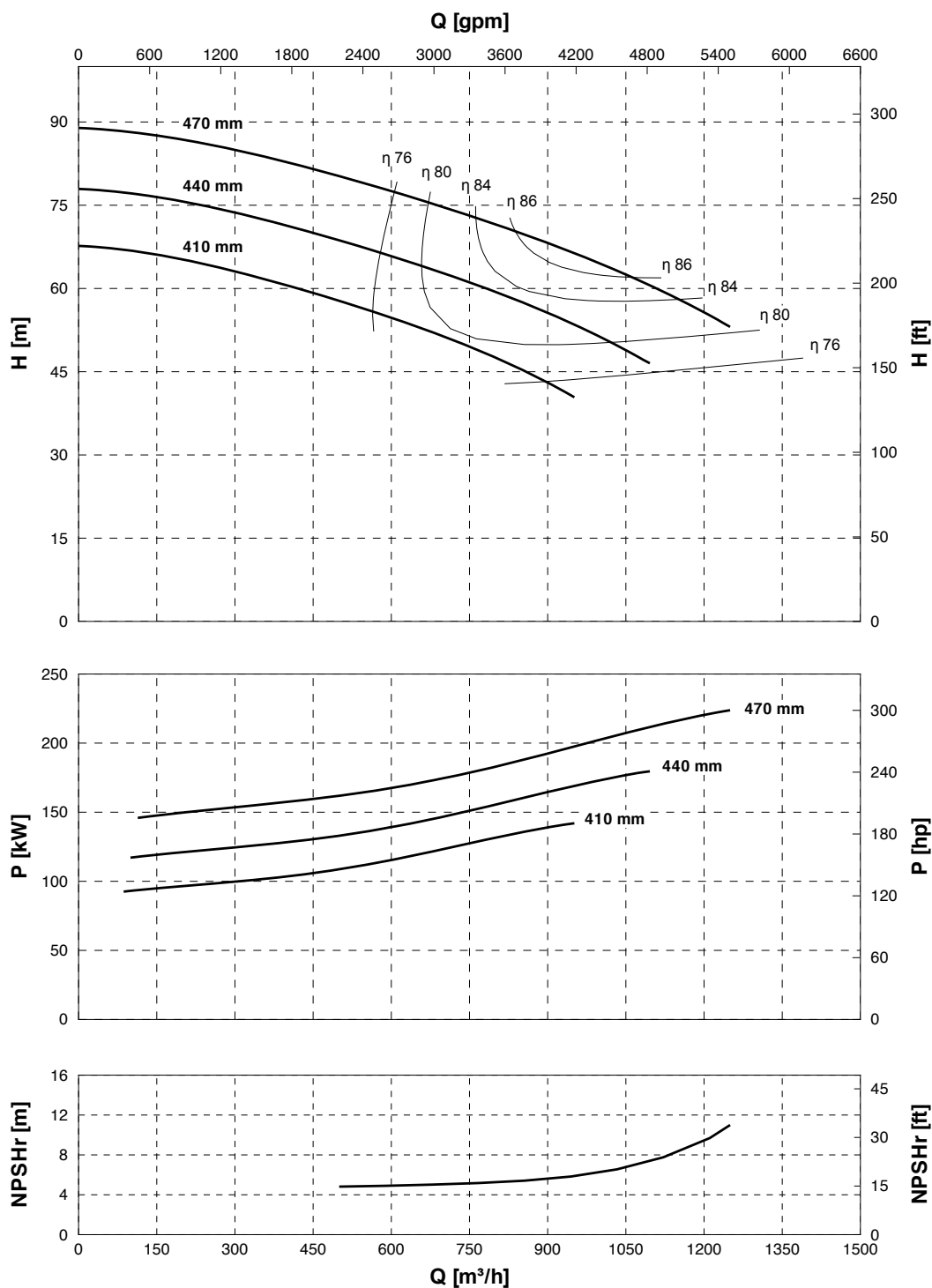
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H_2O $T=18$ [°C], H_2O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects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



HR 900

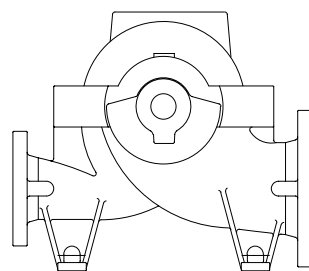
Curve #: 22006-120214-S2

Multistage Pumps (HR)
1500 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.



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, Mine Seepage, Well Pumps-Process, Water Supply, Mine De-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

Axial Split Case (HA) Applications

Duty	Heavy	Medium	Low
	●	●	●
Capacity	High	Medium	Low
		●	●
Head	High	Medium	Low
	●	●	
Fluid	Clean	Process	Slurry
	●	●	
Flexibility	High	Medium	Low
	●		

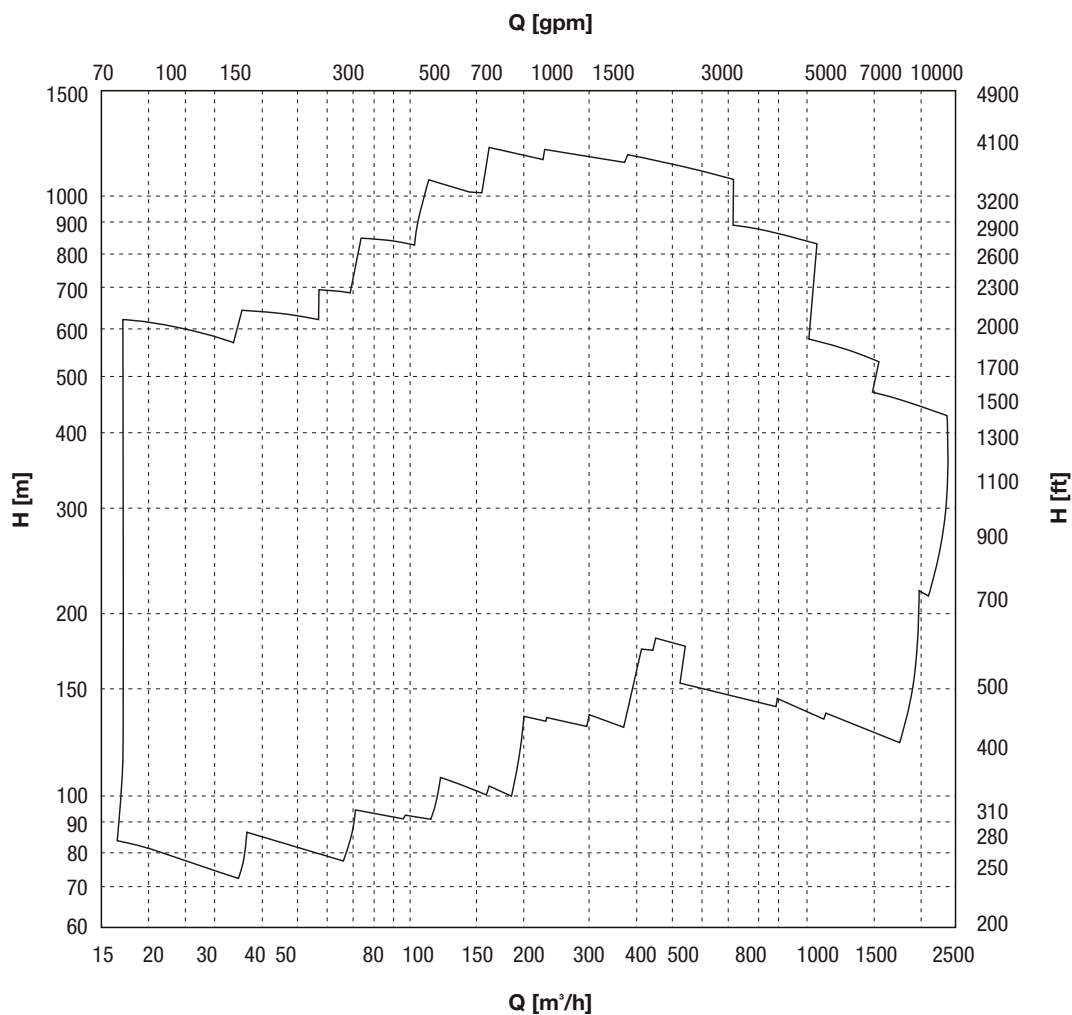
Axial Split Case (HA) Main Components & Materials

	Material					
Components	Cast Iron	Carbon Steel	Brass	Stainless Steel	Duplex	Polymer
Volute	●		●	●	●	
Impeller	●		●	●	●	
Wear Rings	●		●	●	●	
Shaft				●	●	

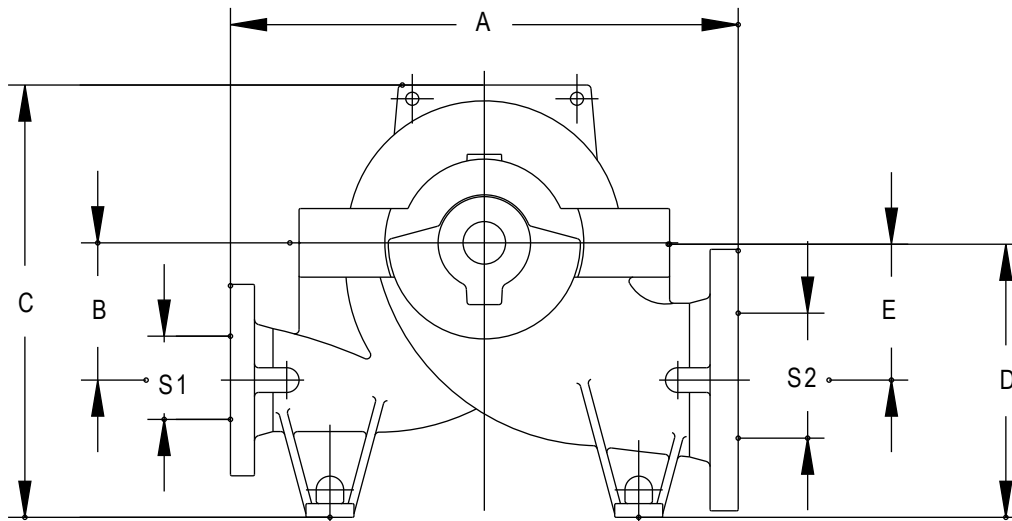
Axial Split Case (HA) Available Models

HA 90	HA 140	HA 200
HA 250	HA 290	HA 475
HA 700	HA 2400	

Axial Split Case (HA) Range Chart - 50Hz



Axial Split Case (HA) Diagram



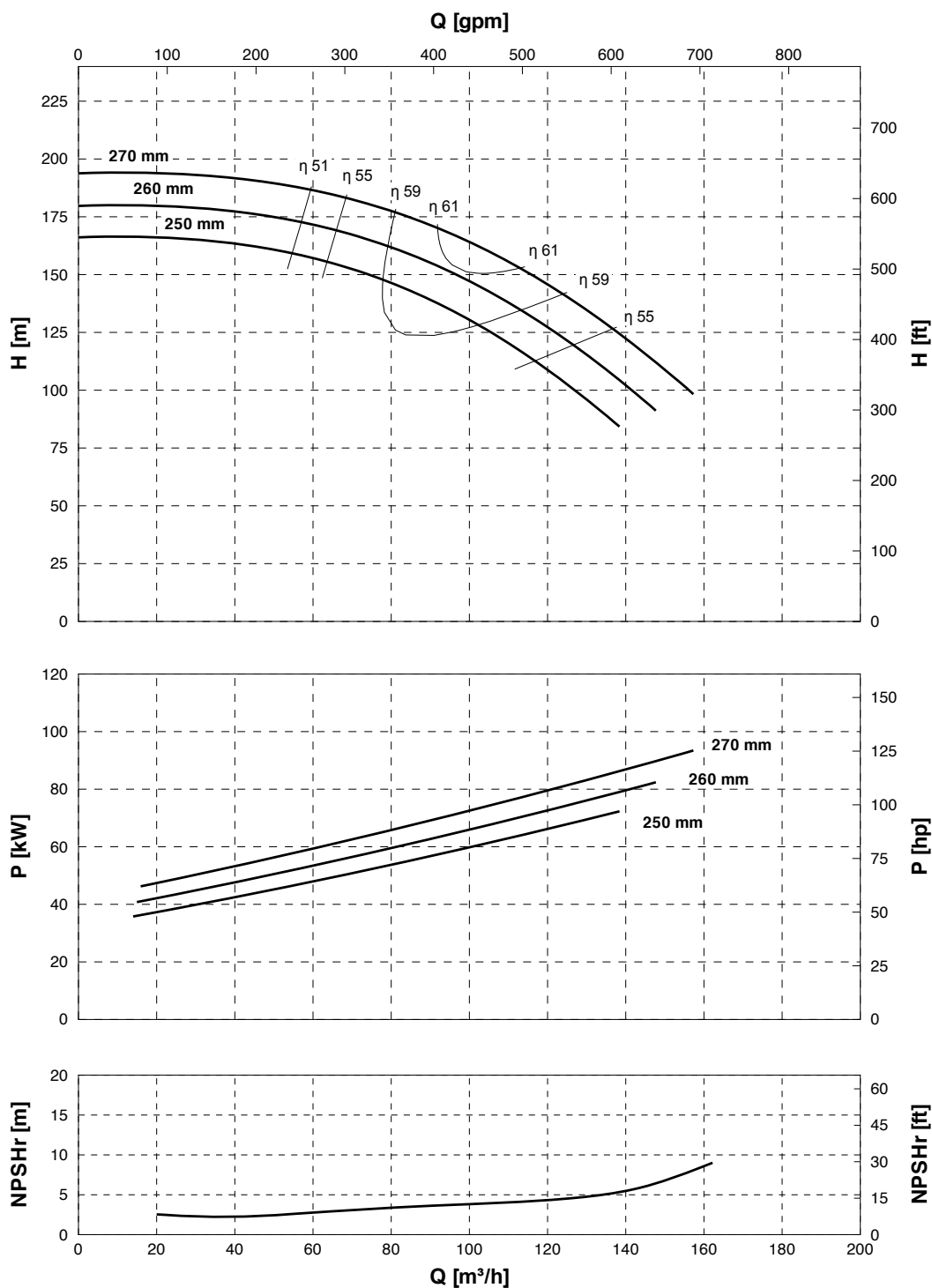
Axial Split Case (HA) Main Dimensions

Model	Dimensions (mm)							Stages
	S ₂ Suction	S ₁ Discharge	A	B	C	D	E	
HA 90	125	80	508	140	550	280	163	2
HA 140	125	80	600	140	483	315	140	1
HA 200	150	100	660	170	550	355	170	1
HA 250	150	100	660	170	550	355	170	1
HA 290	150	100	660	170	550	355	170	1
HA 475	280	150	1063	245	992	500	245	5
HA 700	206	206	1030	283	900	473	210	3
HA 2400	498	353	1160	465	1316	816	465	1

Axial Split Case (HA) 3000 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.

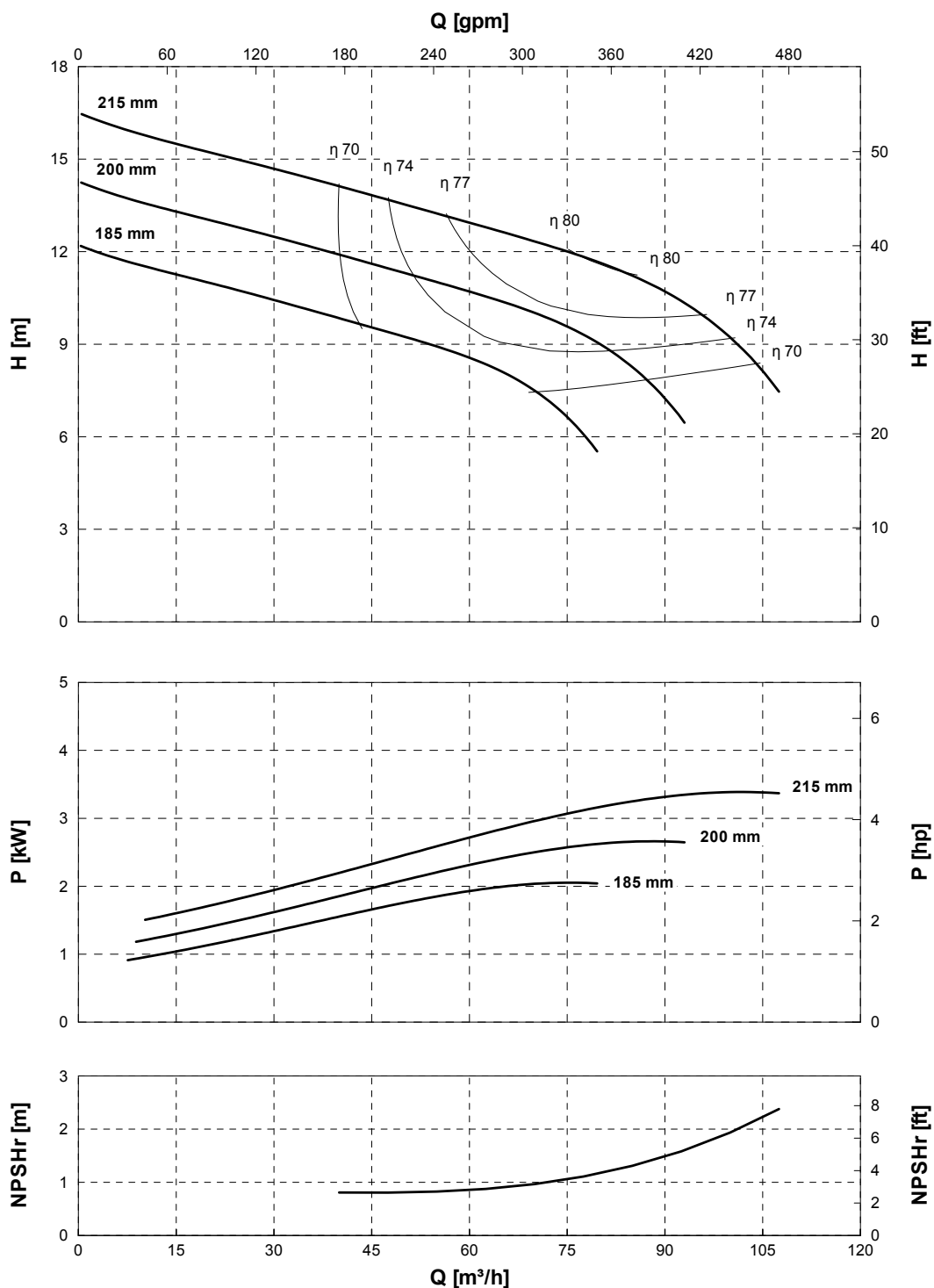


HA 140

Curve #: 31002-090923-S1

Axial Split Case (HA)

1500 rpm



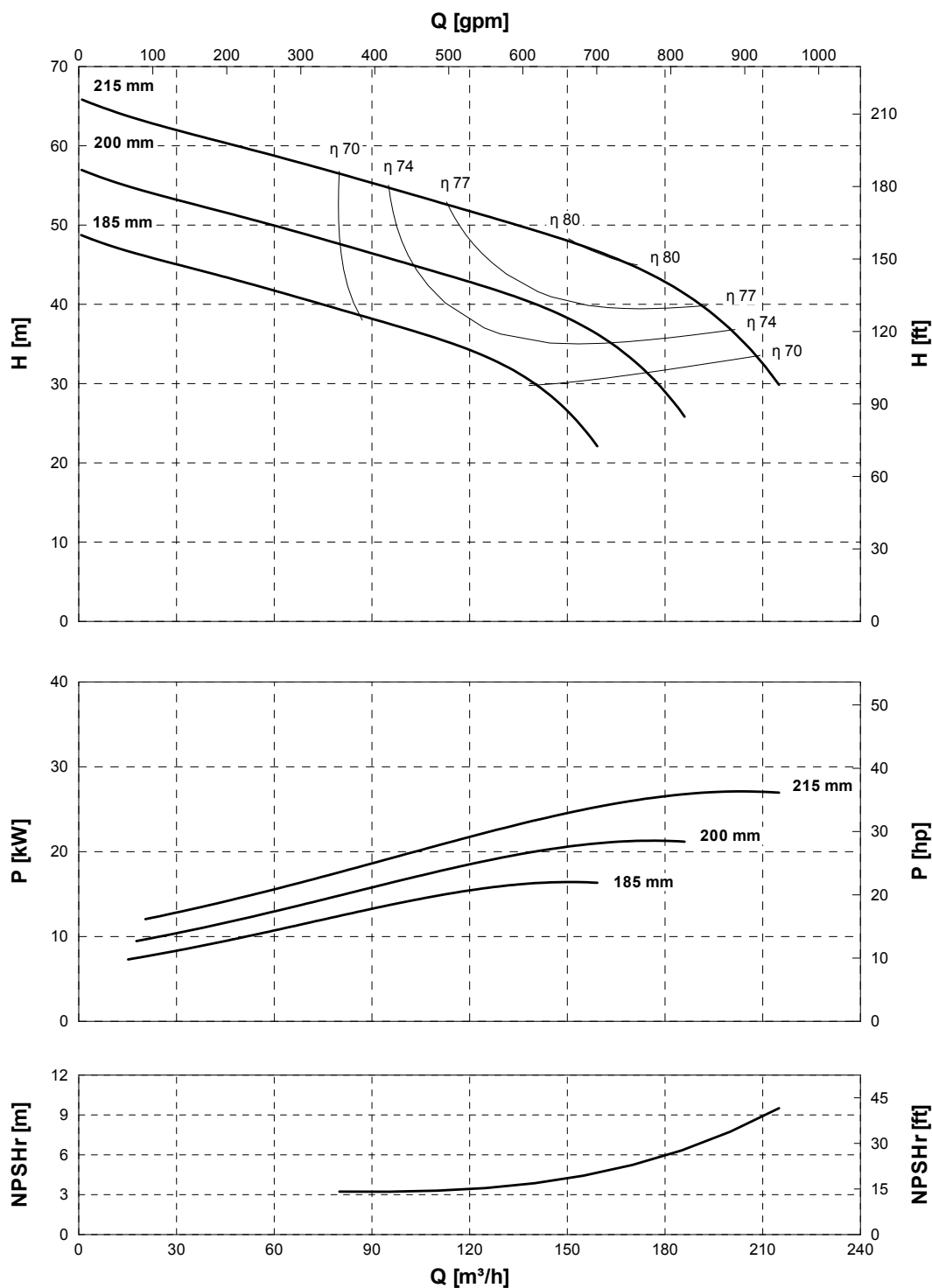
Notes:

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) 3000 rpm

HA 140

Curve #: 31002-090923-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 $T=18$ $^{\circ}C$, 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%)
- Specifications are subject to change without previous notice.

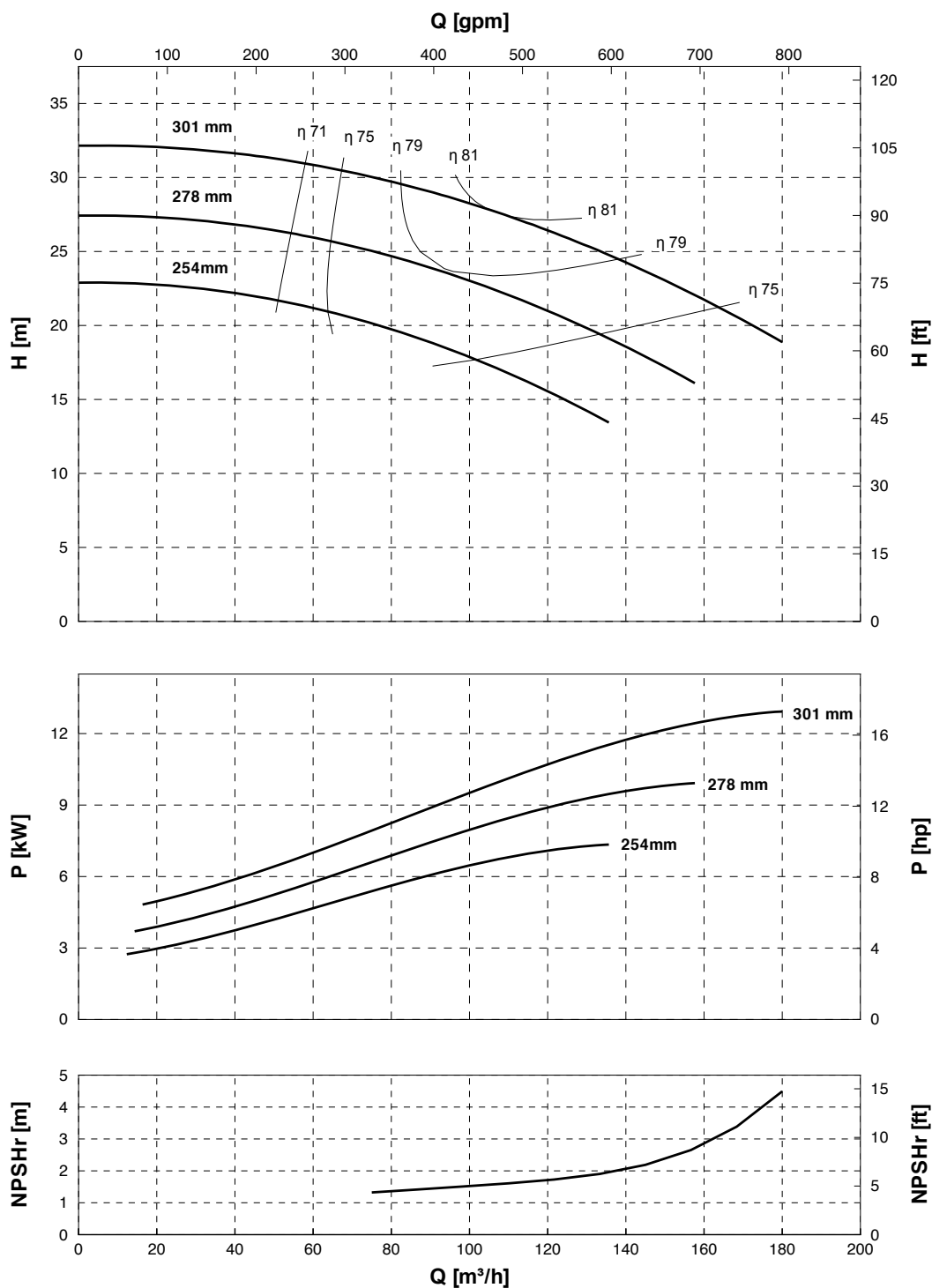


HA 200

Curve #: 31003-080724-E1

Axial Split Case (HA)

1500 rpm



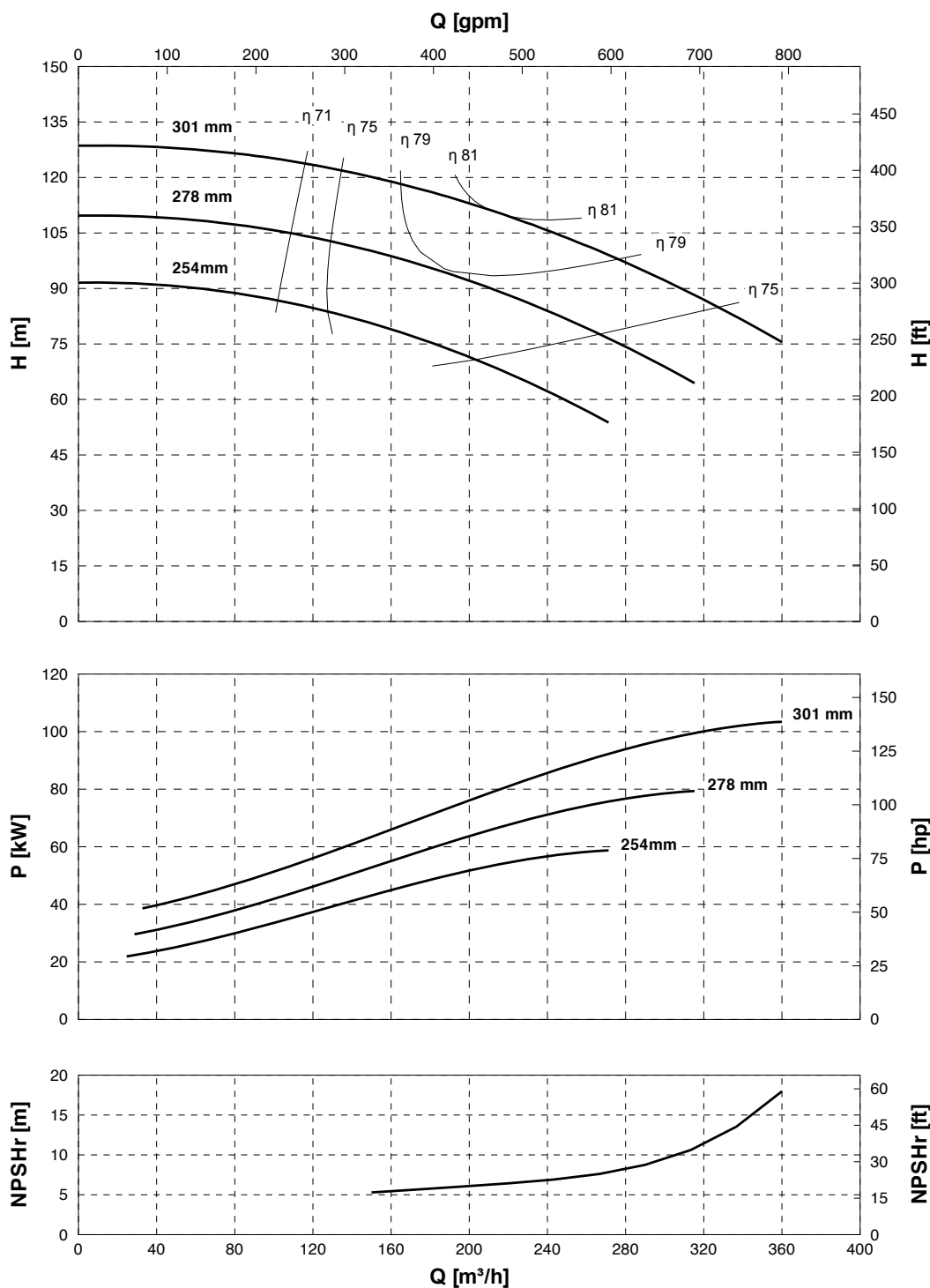
Notes:

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 $T^{\circ}=18^{\circ}C$), 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. Specifications are subject to change without previous notice.

Axial Split Case (HA) 3000 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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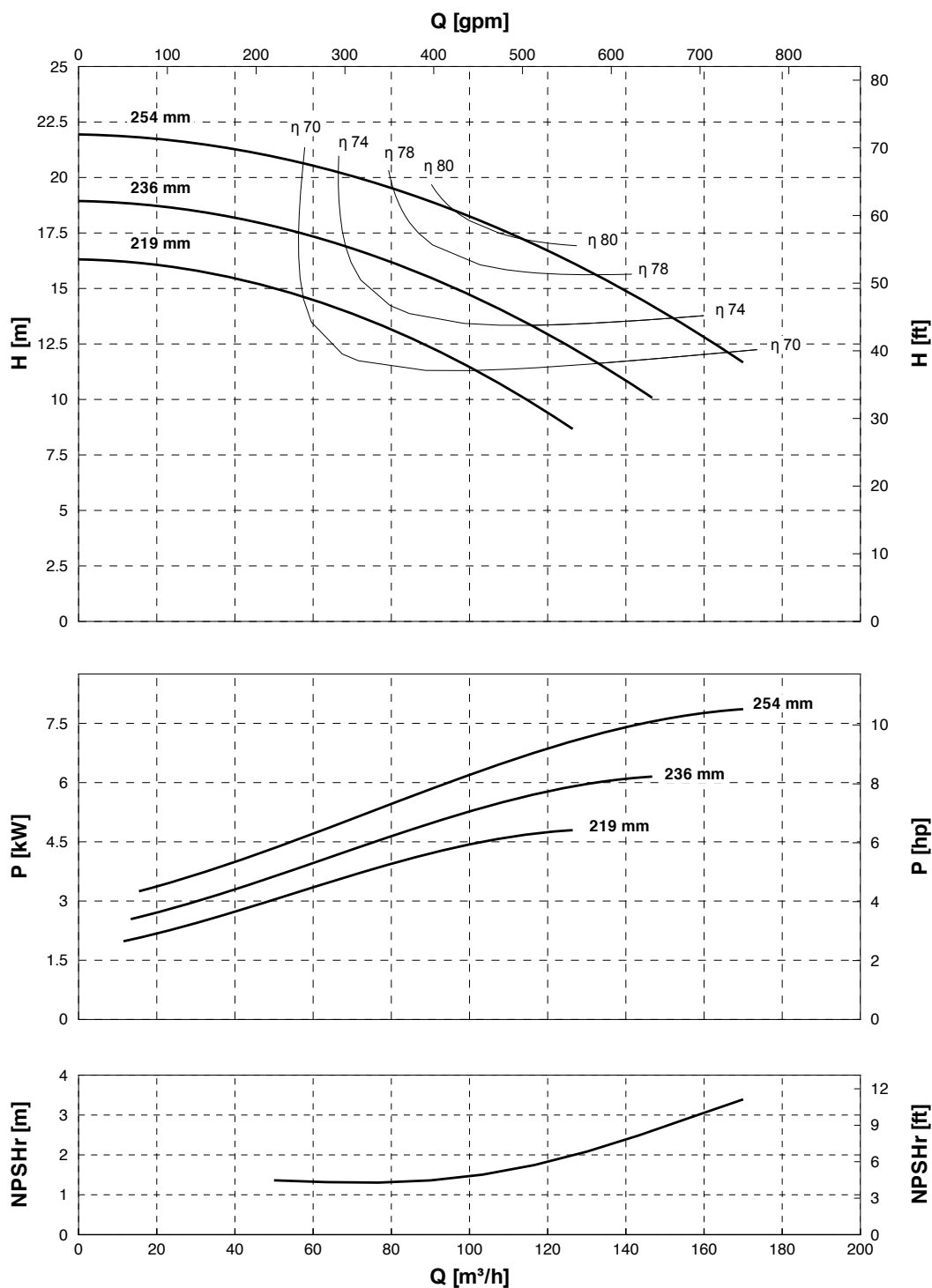


HA 250

Curve #: 31004-080704-F1

Axial Split Case (HA)

1500 rpm



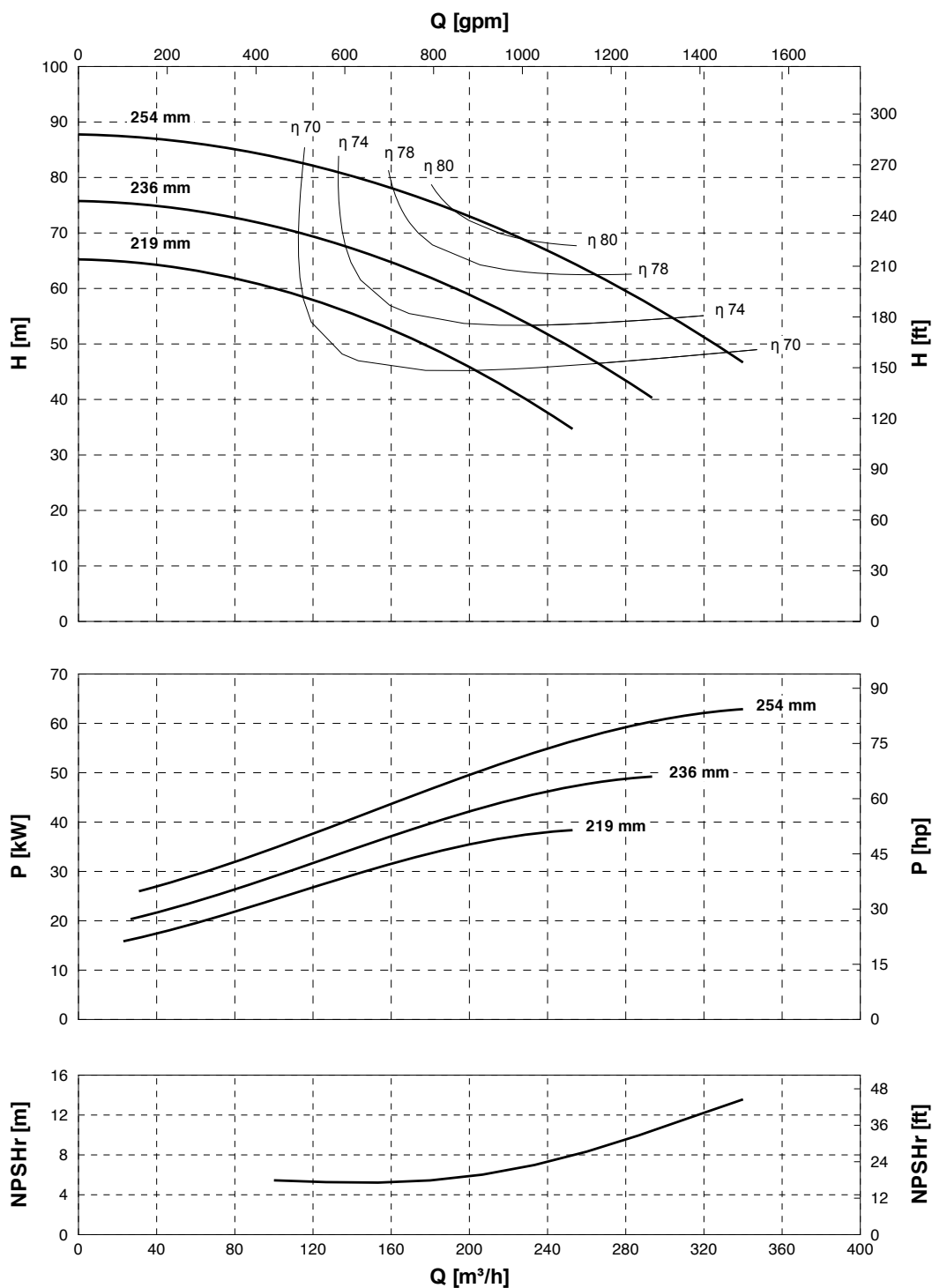
Notes:

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) 3000 rpm

HA 250

Curve #: 31004-080704-F1



Notes:

- 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
- Elevated temperature effects on performance are not included
- Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
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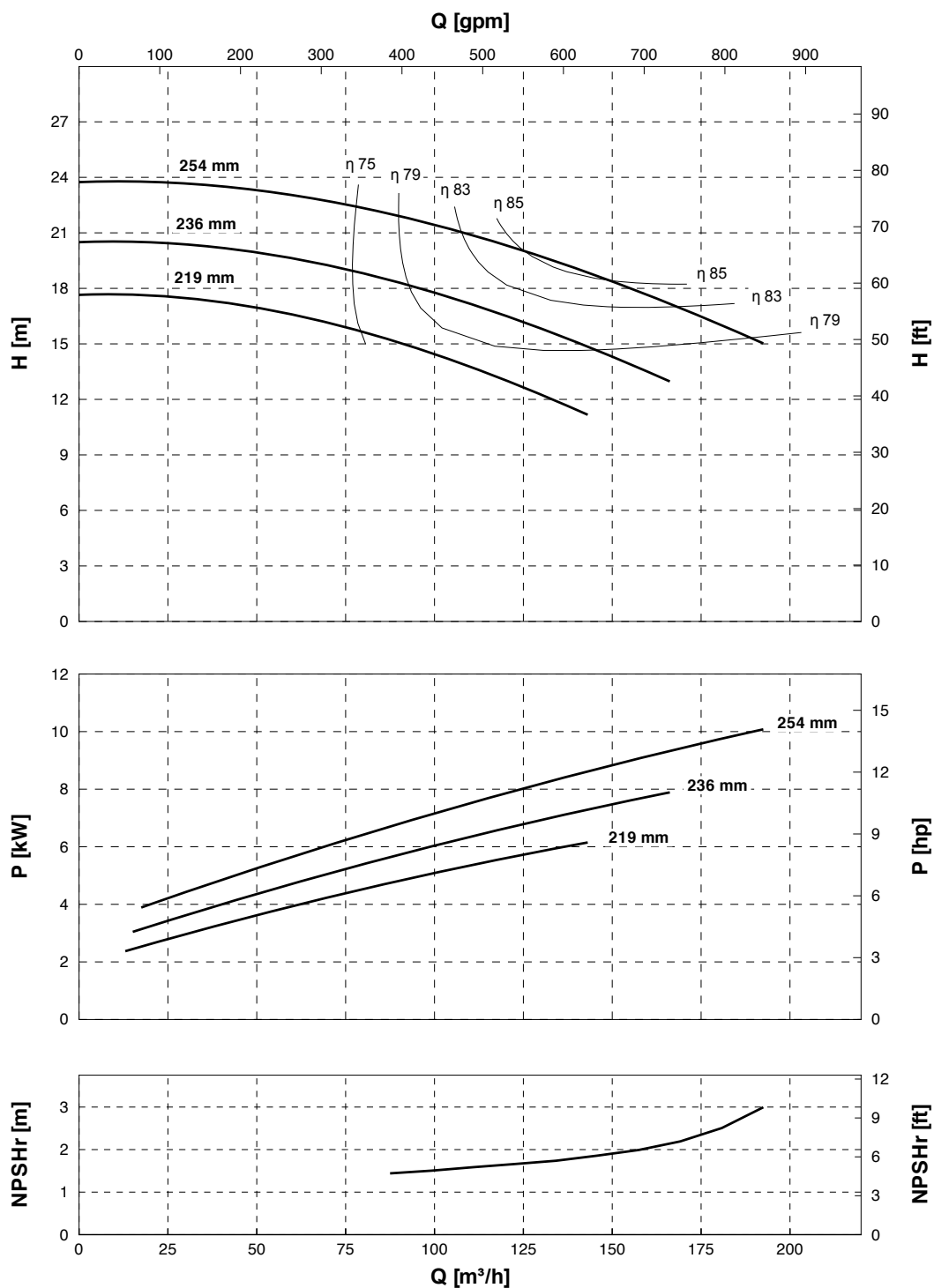


HA 290

Curve #: 31005-080614-F1

Axial Split Case (HA)

1500 rpm



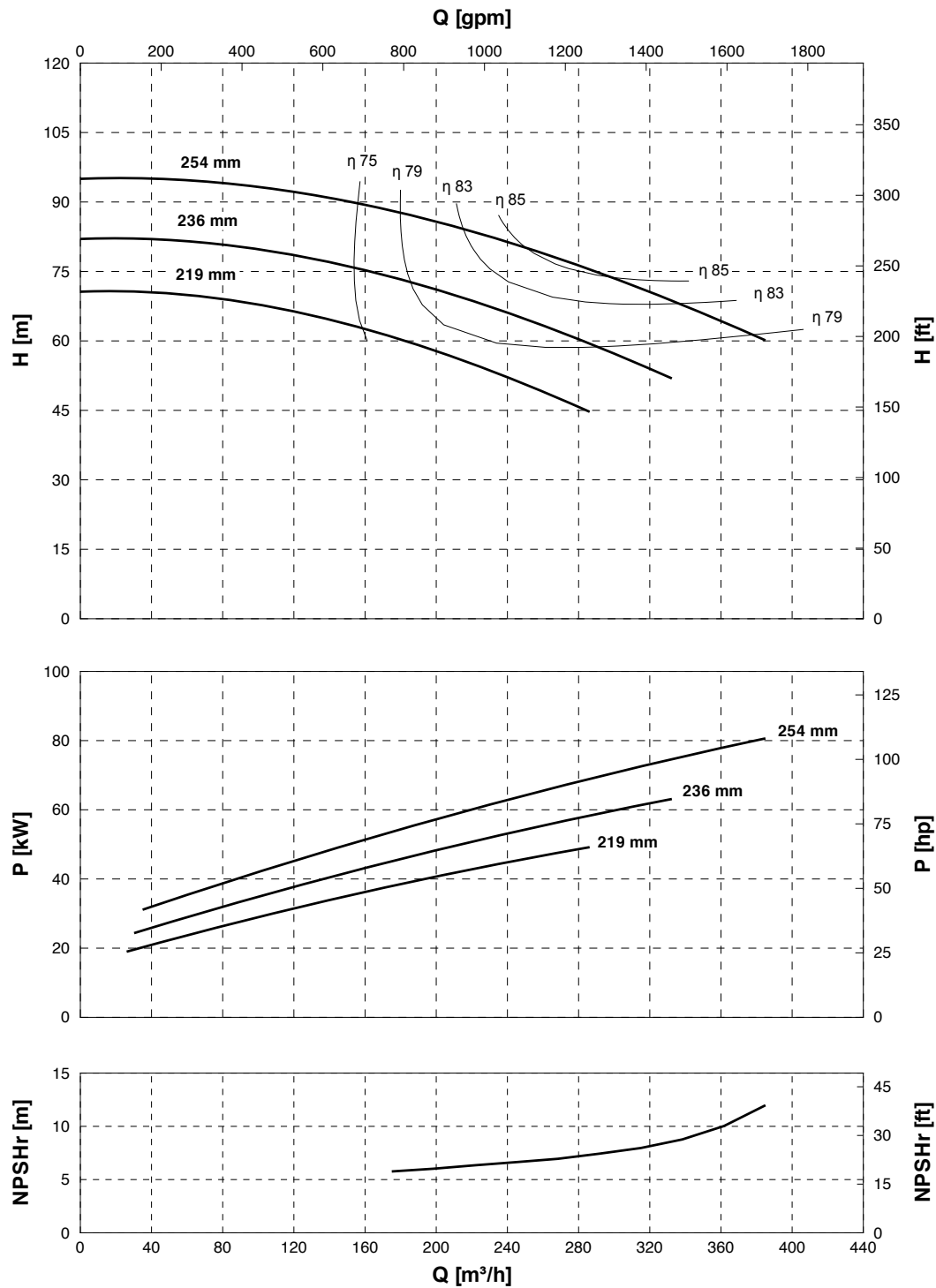
Notes:

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) 3000 rpm

HA 290

Curve #: 31005-080614-F1



Notes:

- 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
- Elevated temperature effects on performance are not included
- Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
- Specifications are subject to change without previous notice.

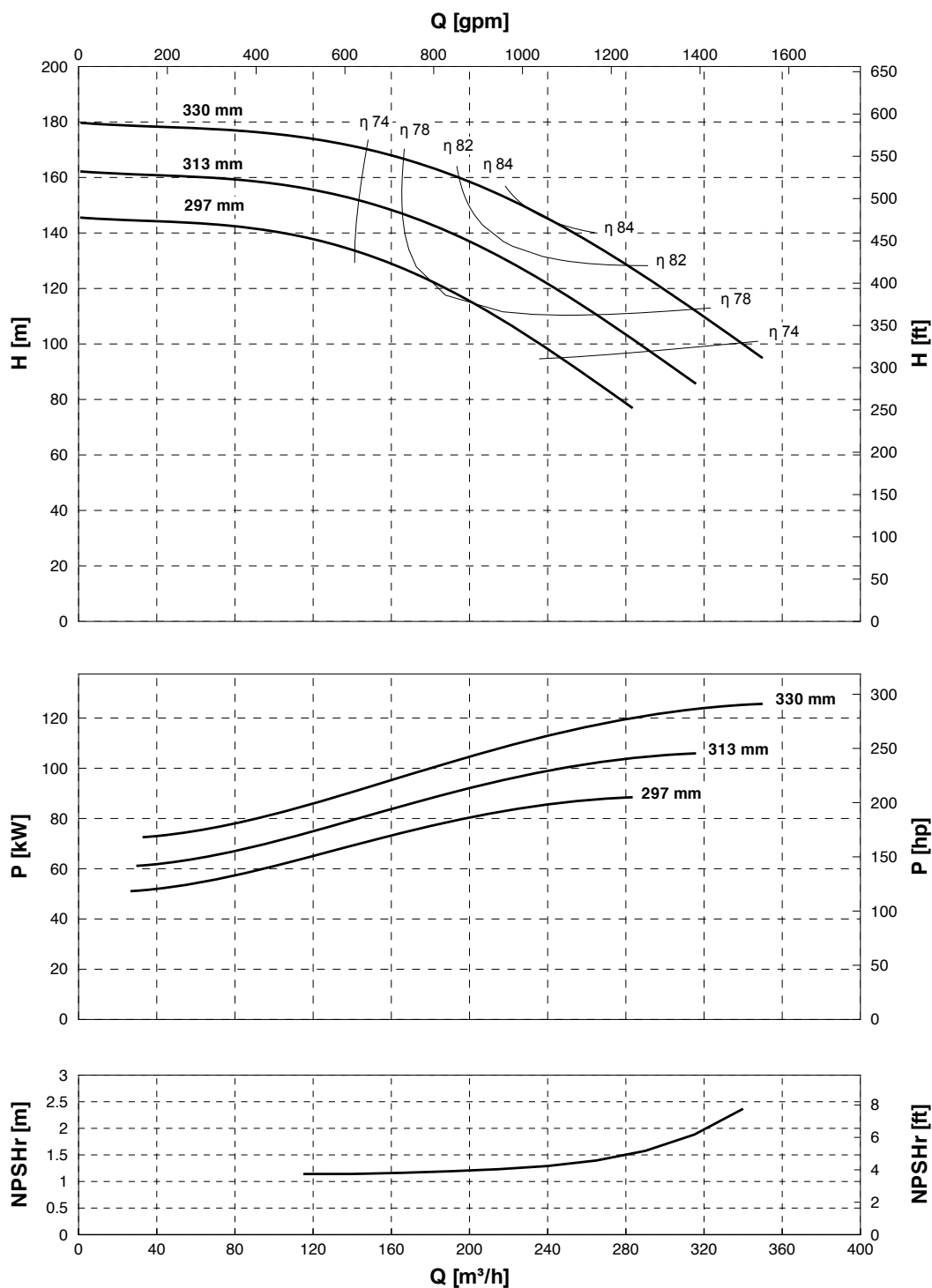


HA 475

Curve #: 32001-100625-S2

Axial Split Case (HA)

1500 rpm



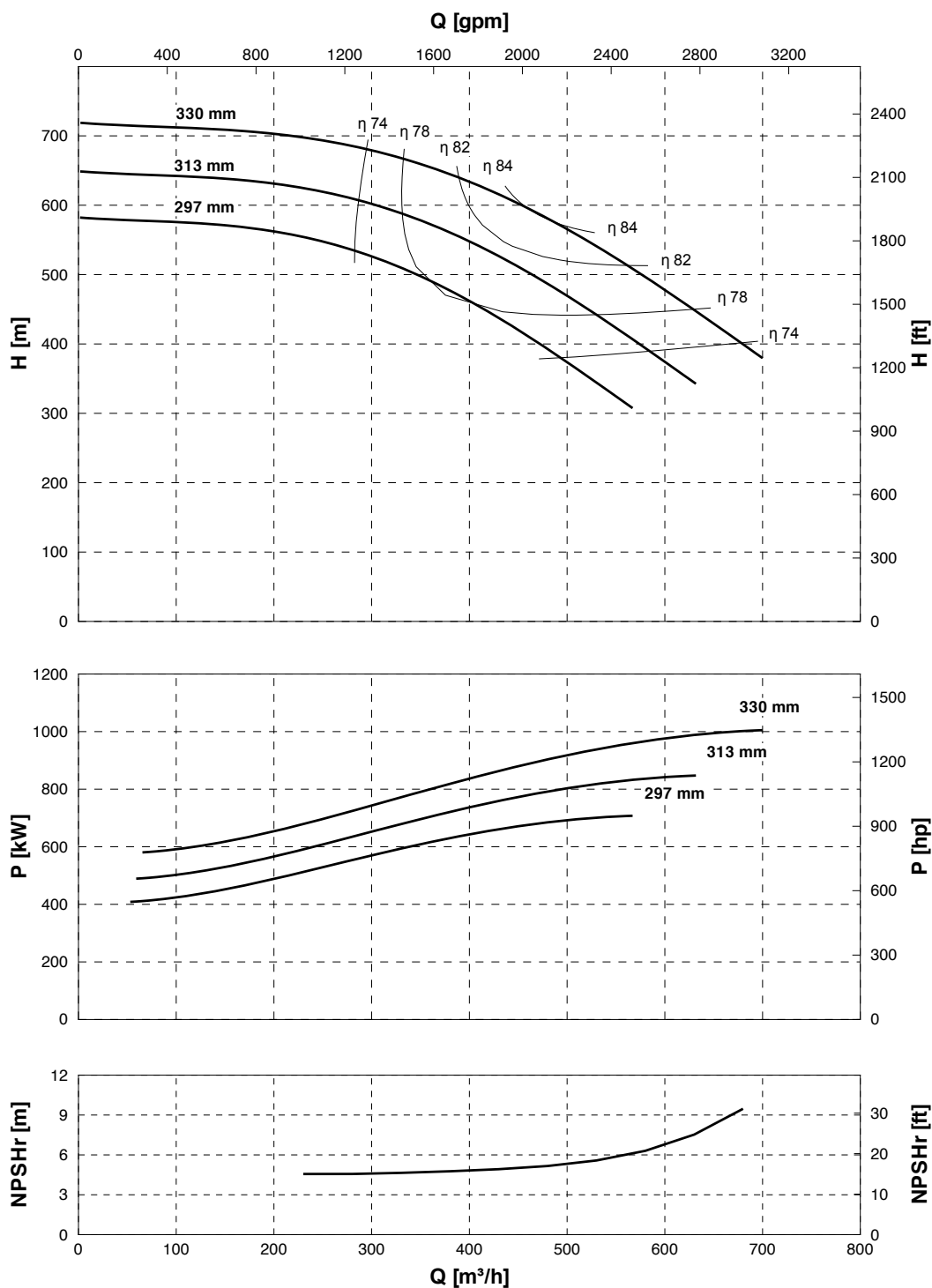
Notes:

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) 3000 rpm

HA 475

Curve #: 32001-100625-S2



Notes:

- 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
- Elevated temperature effects on performance are not included
- Consider 3.0% efficiency derate if operated Off-BEP (60% - 80%)
- Specifications are subject to change without previous notice.

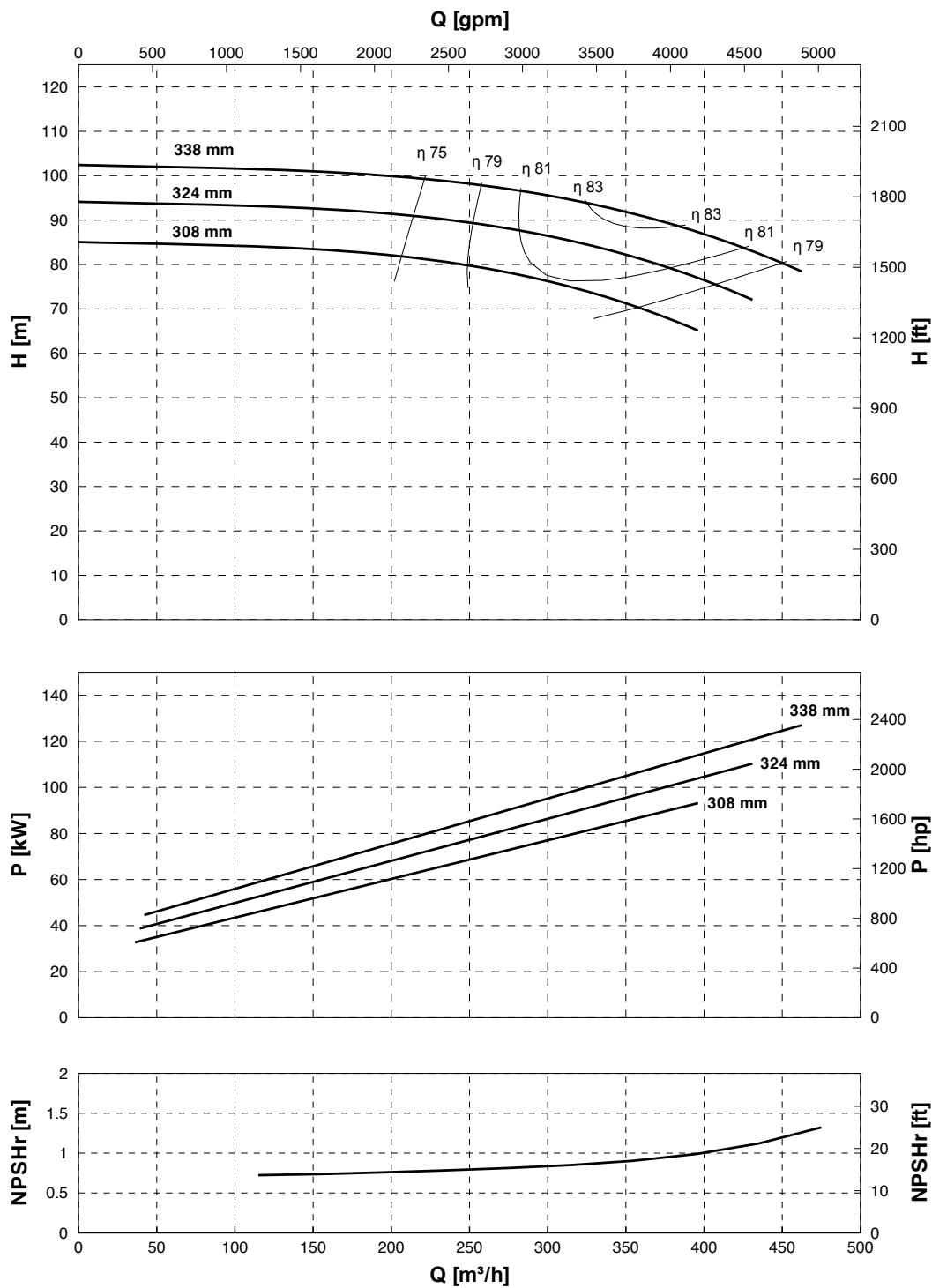


HA 700

Curve #: 32002-070619-F1

Axial Split Case (HA)

1500 rpm



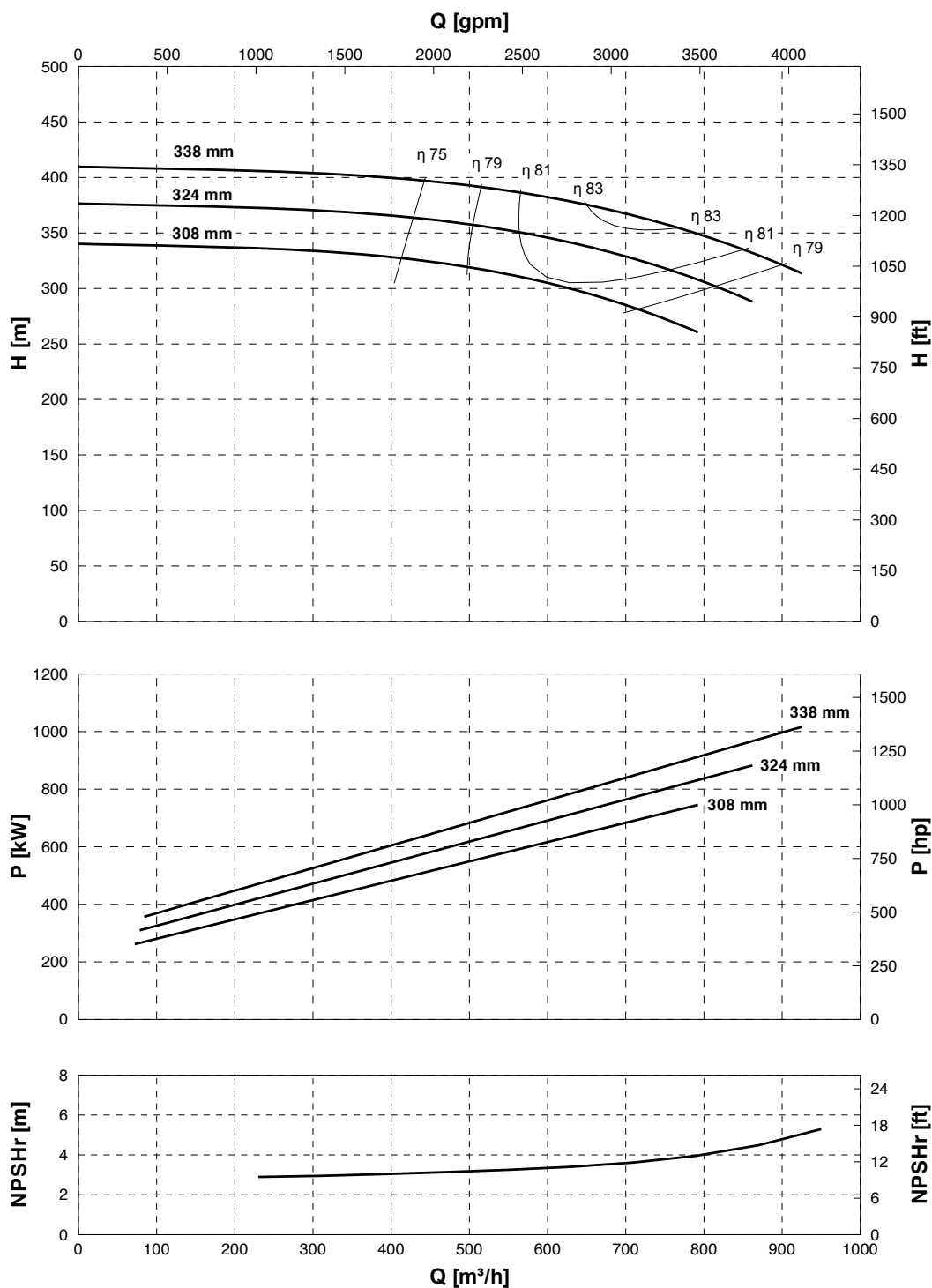
Notes:

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) 3000 rpm

HA 700

Curve #: 32002-070619-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.

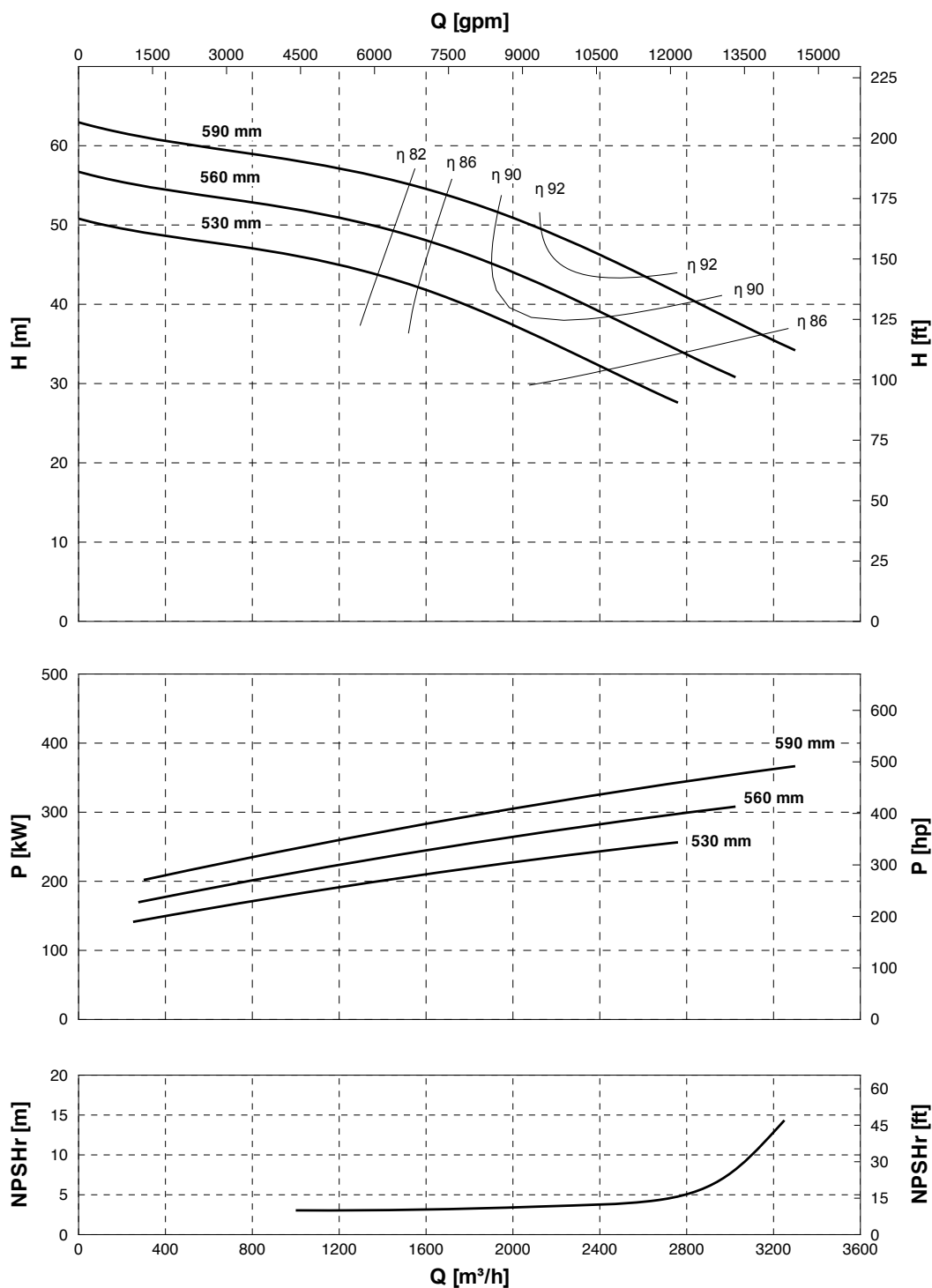


HA 2400

Curve #: 32006-070713-F1

Axial Split Case (HA)

1000 rpm



Notes:

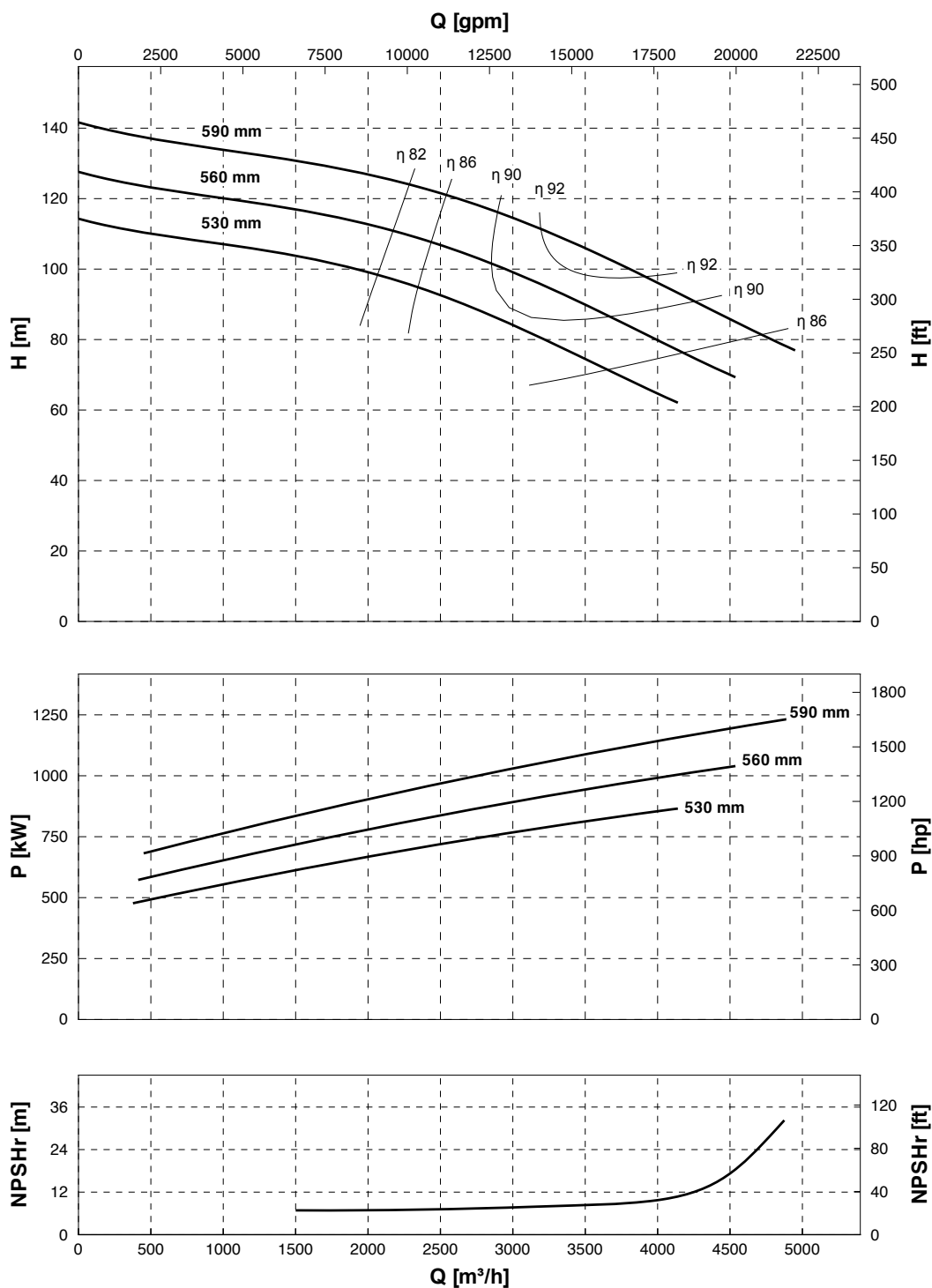
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

HA 2400

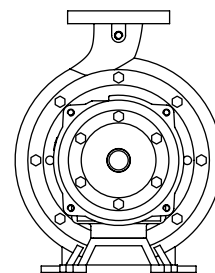
Curve #: 32006-070713-F1



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/m³])
- 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%)
- Specifications are subject to change without previous notice.





Volute Pumps (HV)

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, Mine Seepage, Well Pumps-Process, Water Supply, Mine De-Watering, Electrolyte, Pressure Boosting and Transfer
- Solvent Extraction/Electro-Winning (SX/EW): Raffinate, Pregate 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

Duty	Heavy	Medium	Low
	●	●	●
Capacity	High	Medium	Low
	●	●	●
Head	High	Medium	Low
	●	●	●
Fluid	Clean	Process	Slurry
	●	●	●
Flexibility	High	Medium	Low
			●

Volute Pumps (HV)

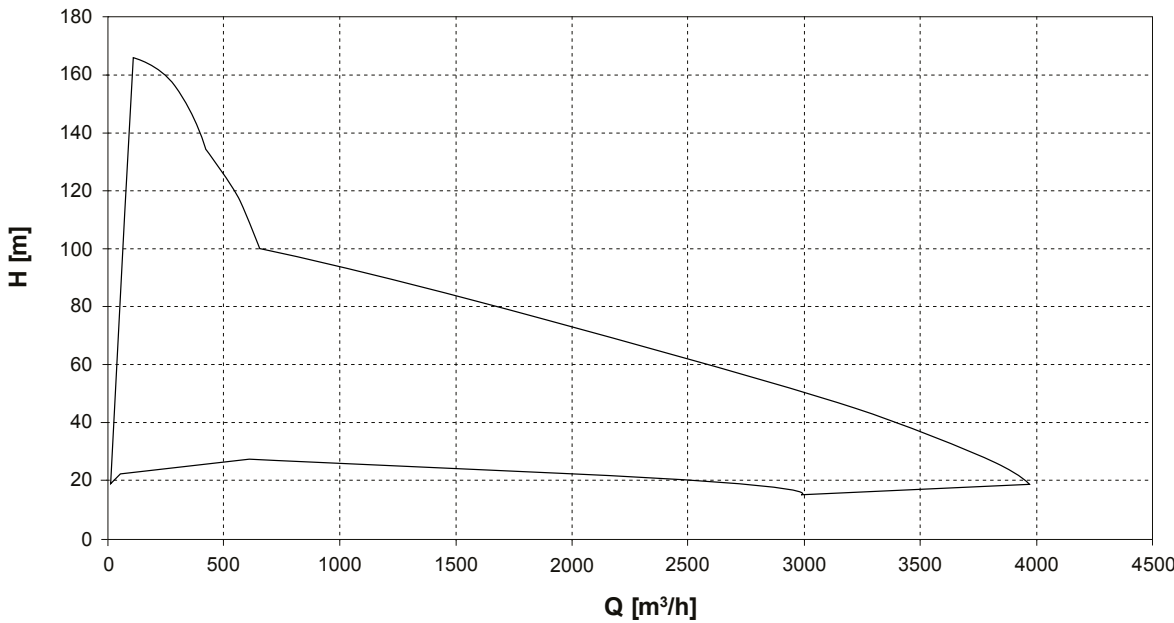
Main Components & Materials

	Material					
Components	Cast Iron	Carbon Steel	Brass	Stainless Steel	Duplex	Polymer
Volute	●			●	●	
Impeller	●			●	●	
Shaft		●		●	●	
Stuffing Box	●			●	●	

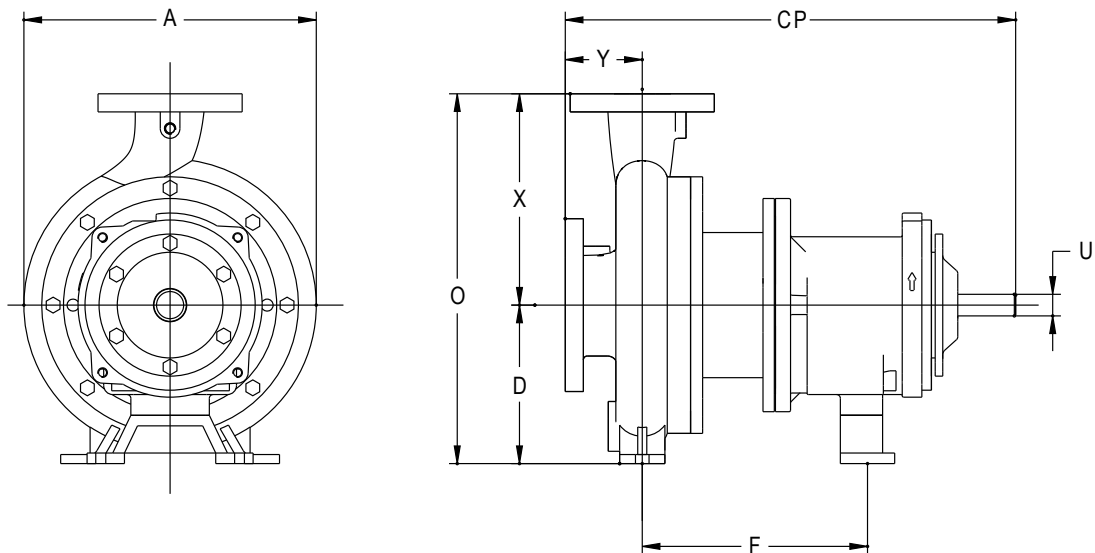
Volute Pumps (HV) Available Models

HV 62	HV 105	HV 120
HV 175	HV 250	HV 450
HV 475	HV 500	HV 3000

Volute Pumps (HV) Range Chart - 50 Hz



Volute Pumps (HV) Diagram



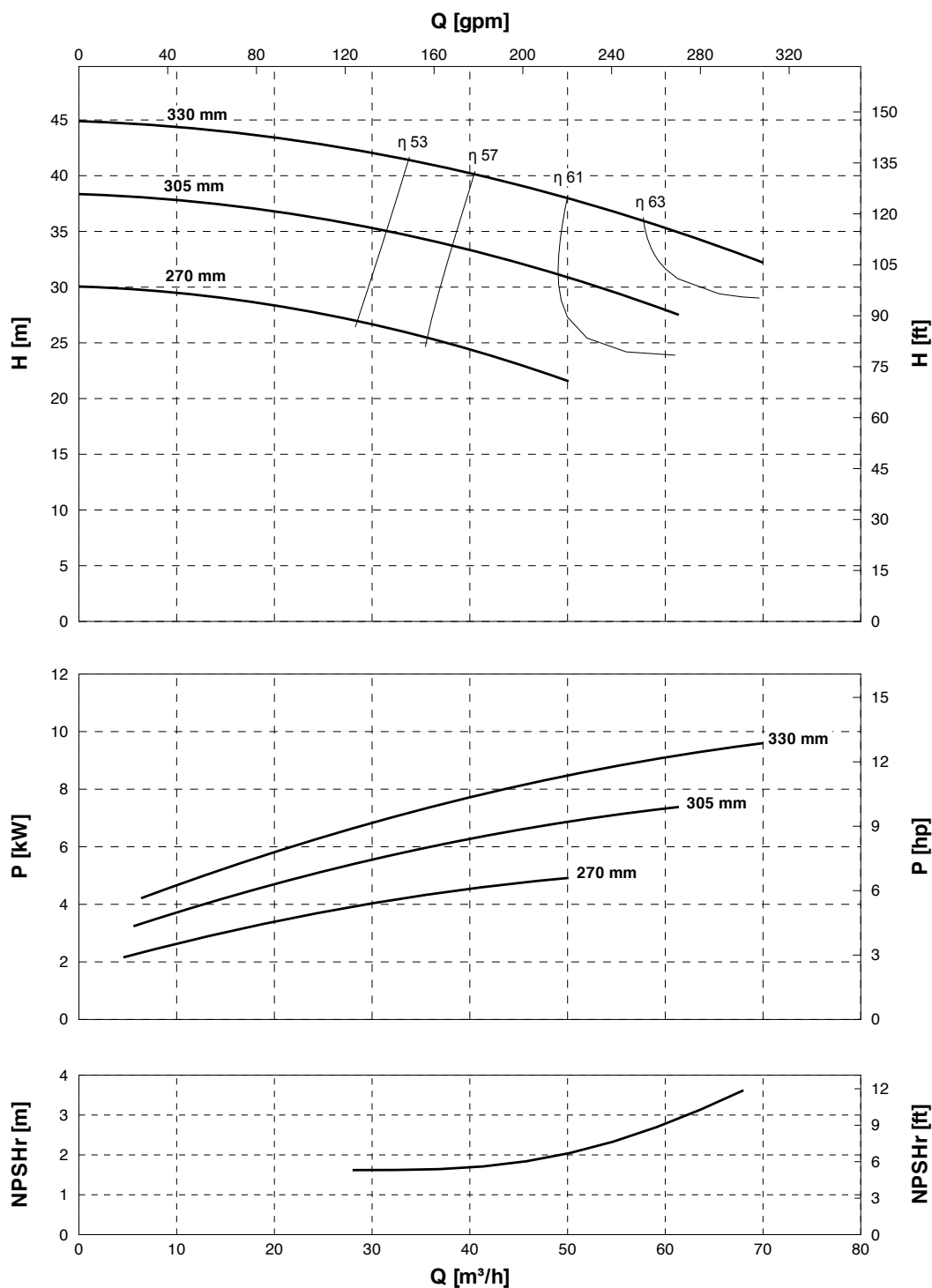
Volute Pumps (HV) Main Dimensions

Dimension in millimeters										
Model	Suction	Discharge	CP	D	F	O	U	X	Y	A
HV 62	3	2	597	254	318	546	29	292	102	427
HV 105	4	3	597	210	318	490	29	208	102	315
HV 120	4	3	597	210	318	490	29	208	102	194
HV 175	4	3	597	210	318	490	29	208	102	346
HV 250	8	6	860	368	476	775	60	406	152	520
HV 450	8	6	860	368	476	826	60	457	152	592
HV 475	8	6	1018	380	495	937	60	557	203	620
HV 500	8	6	1004	430	574	765	56	335	235	710
HV 3000	18	18	1271	711	629	1575	86	864	423	1270

Volute Pumps (HV) 1500 rpm

HV 62

Curve #: 43001-070620-F1



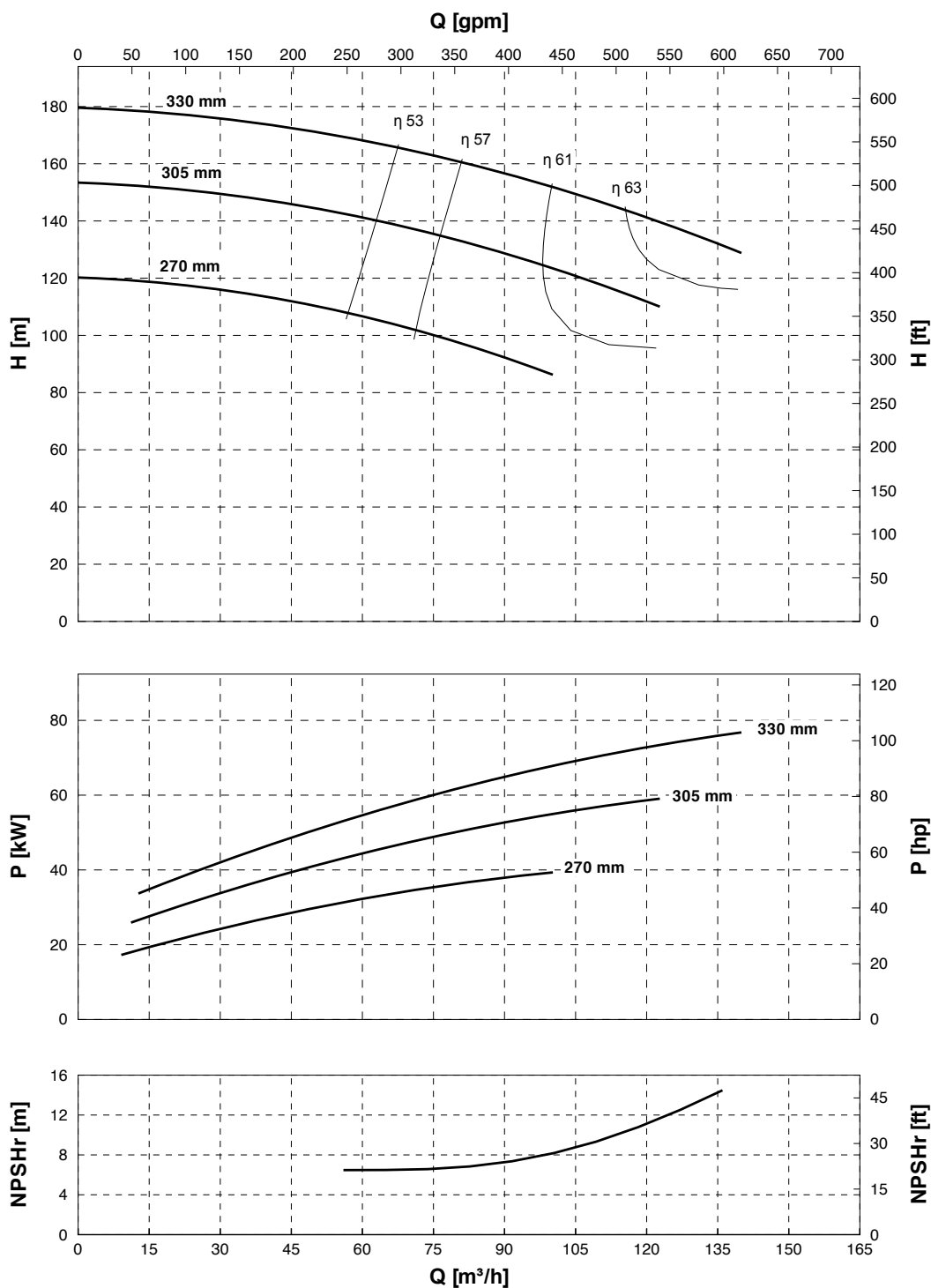
Notes:

- 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 $T=18$ $^{\circ}C$), 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.



Curve #: 43001-070620-F1

Volute Pumps (HV)
3000 rpm



Notes:

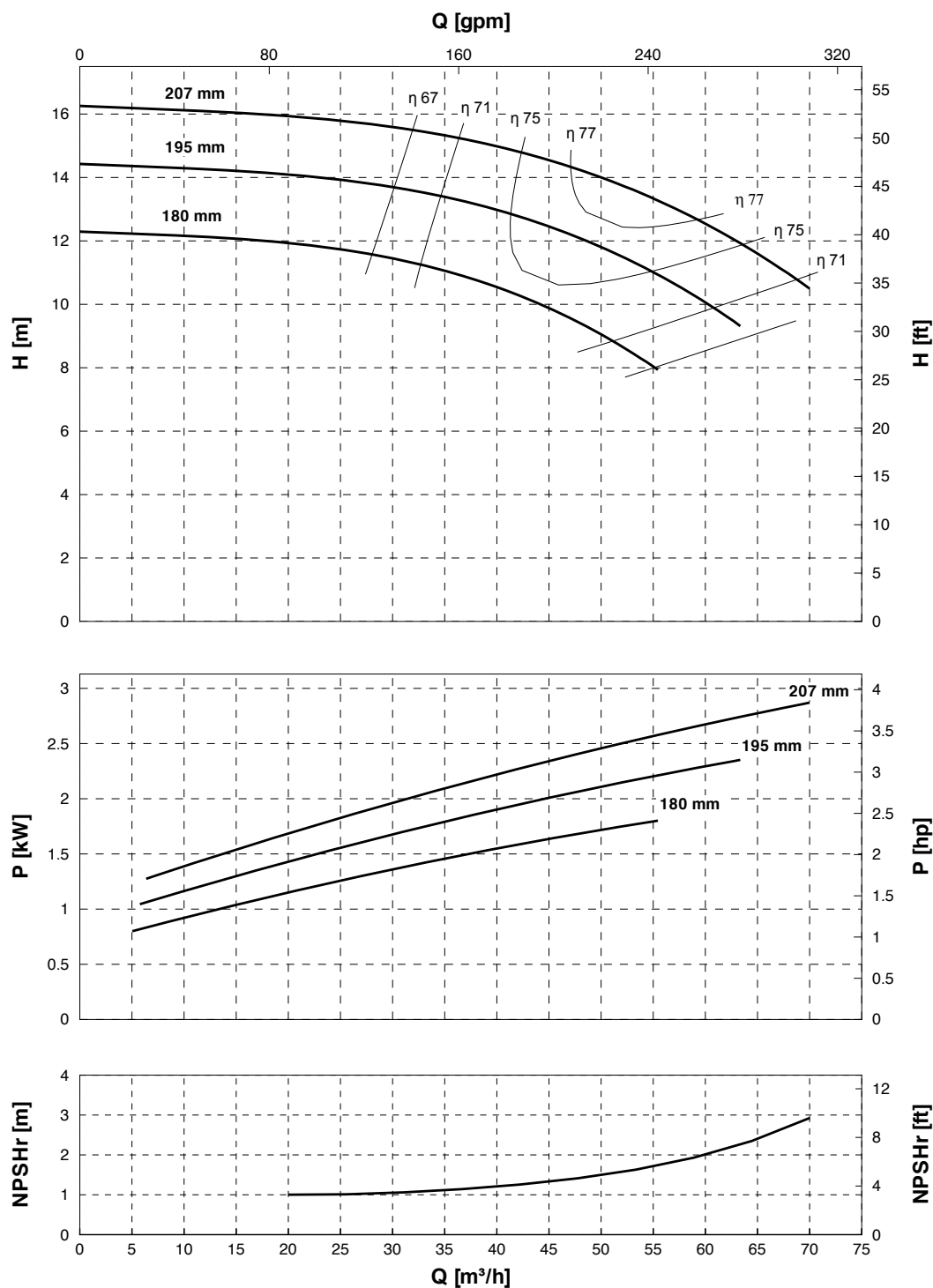
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance are not included
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Volute Pumps (HV)

1500 rpm

HV 105

Curve #: 43002-070619-F1



Notes:

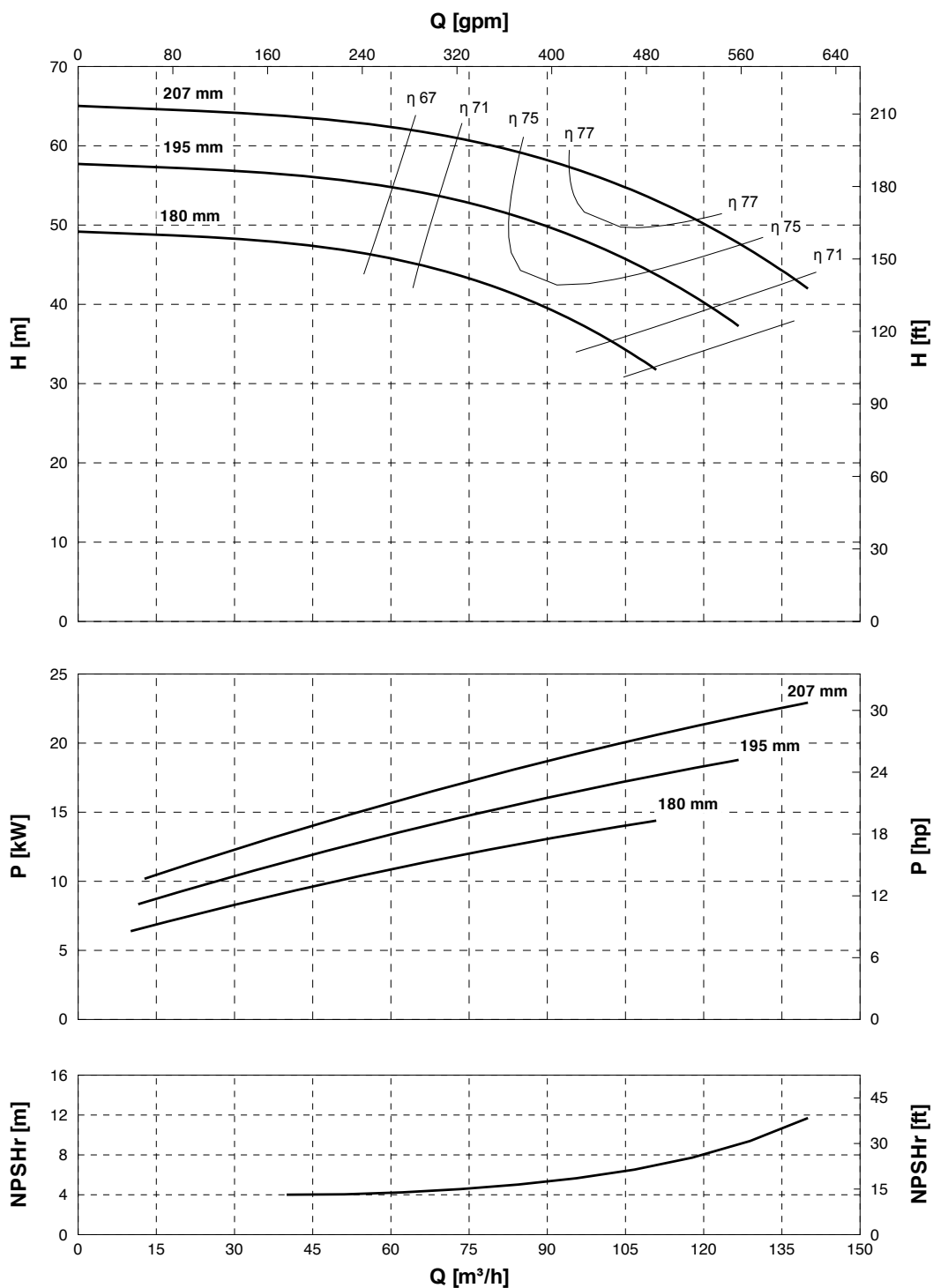
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



HV 105

Curve #: 43002-070619-F1

Volute Pumps (HV)
3000 rpm

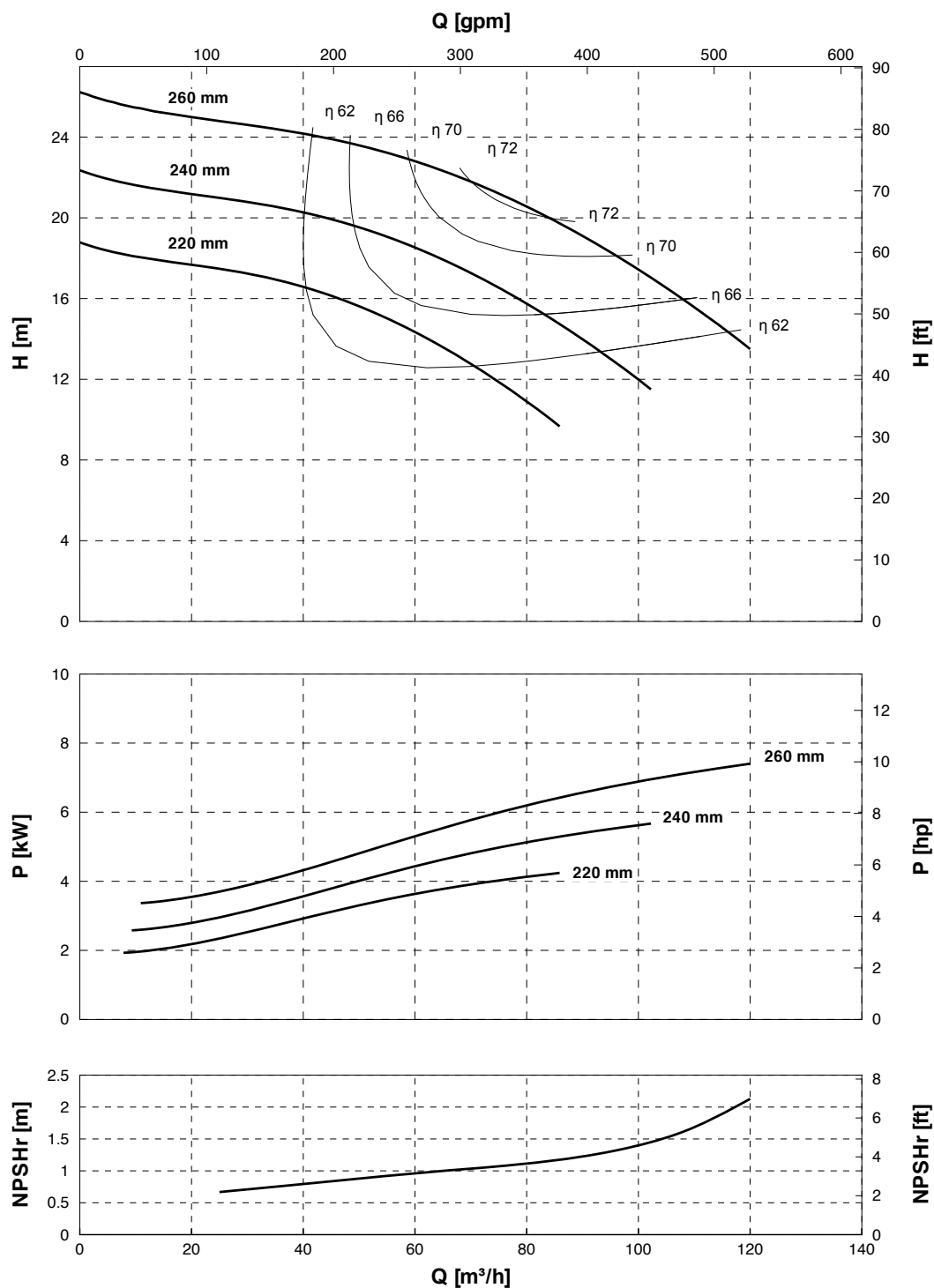


Notes:

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 $T^{\circ}=18^{\circ}C$), 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.

Volute Pumps (HV) 1500 rpm

HV 120
Curve #: 43003-090209-S1



Notes:

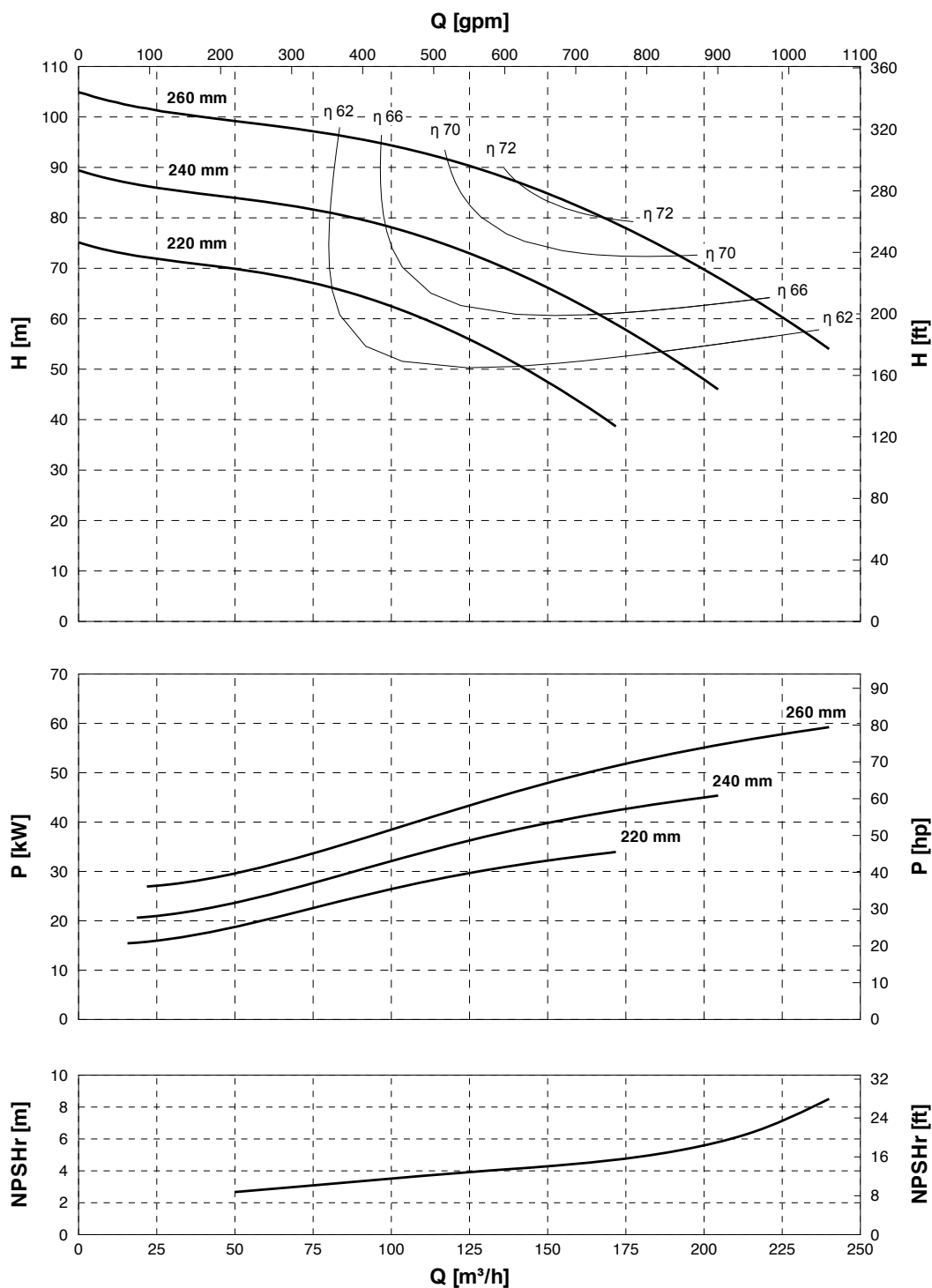
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



HV 120

Curve #: 43003-090209-S1

Volute Pumps (HV)
3000 rpm



Notes:

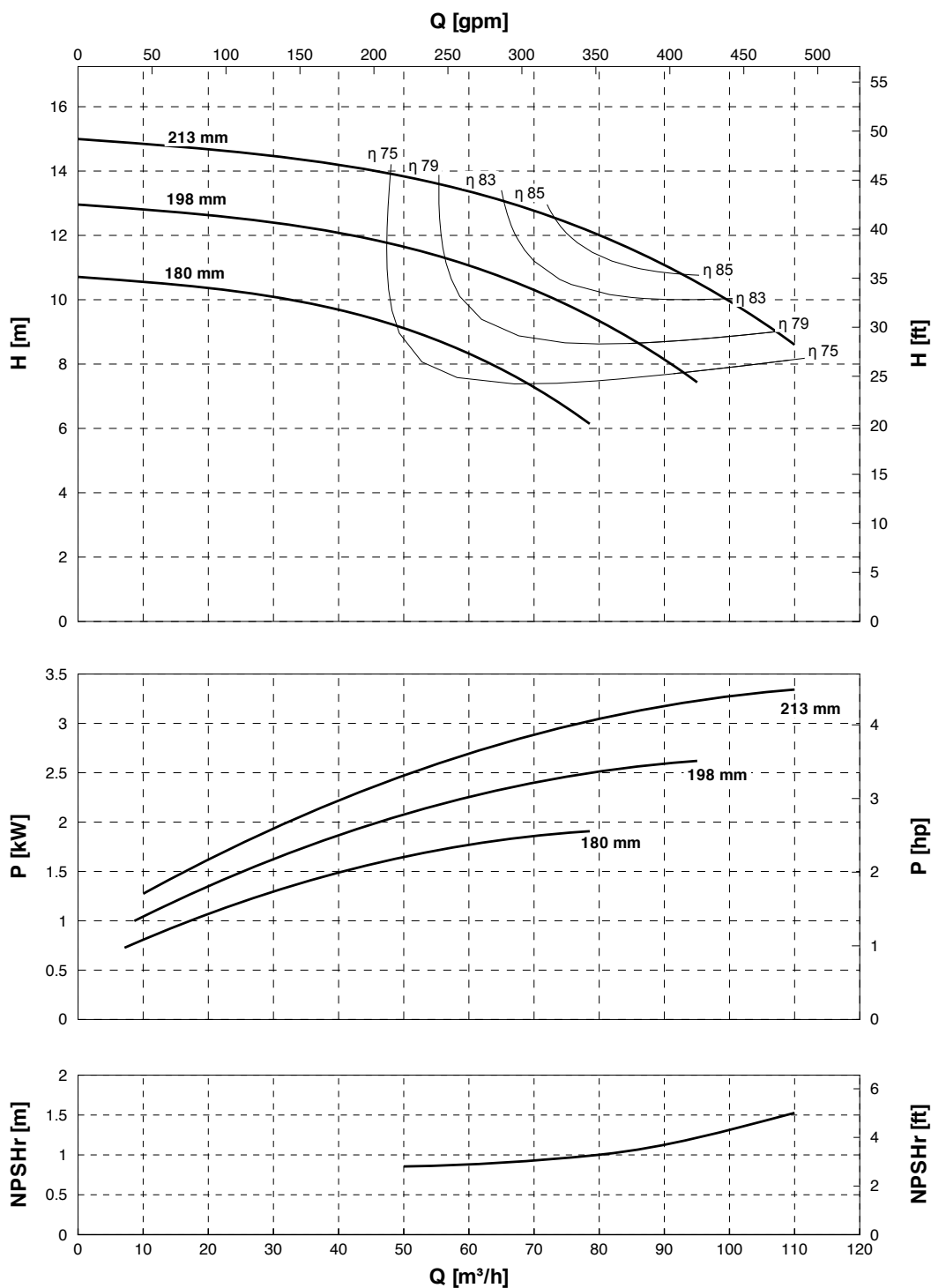
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1500 rpm

HV 175

Curve #: 43004-070619-F1



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 $T=18$ $^{\circ}C$, 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.

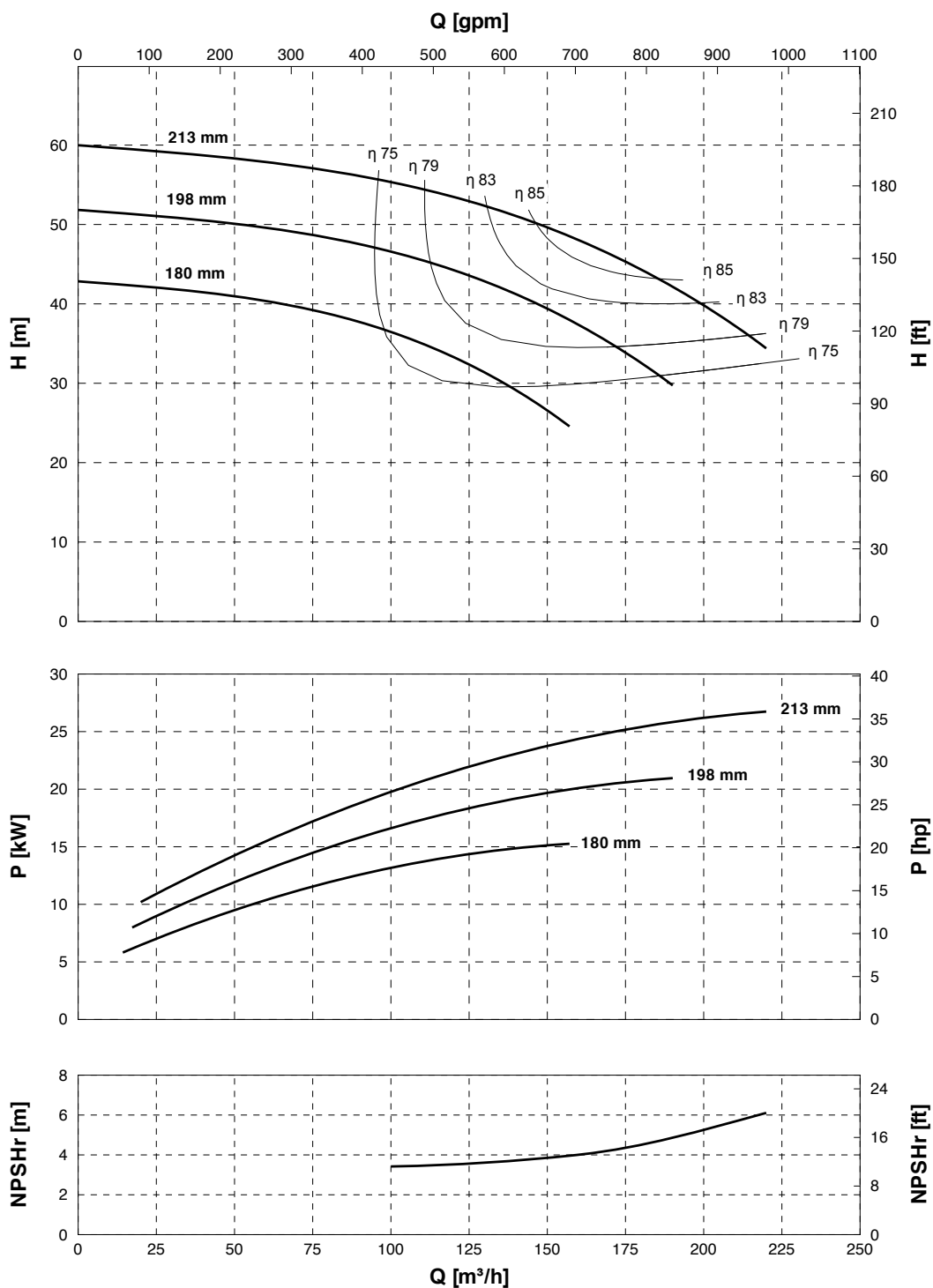


HV 175

Curve #: 43004-070619-F1

Volute Pumps (HV)

3000 rpm

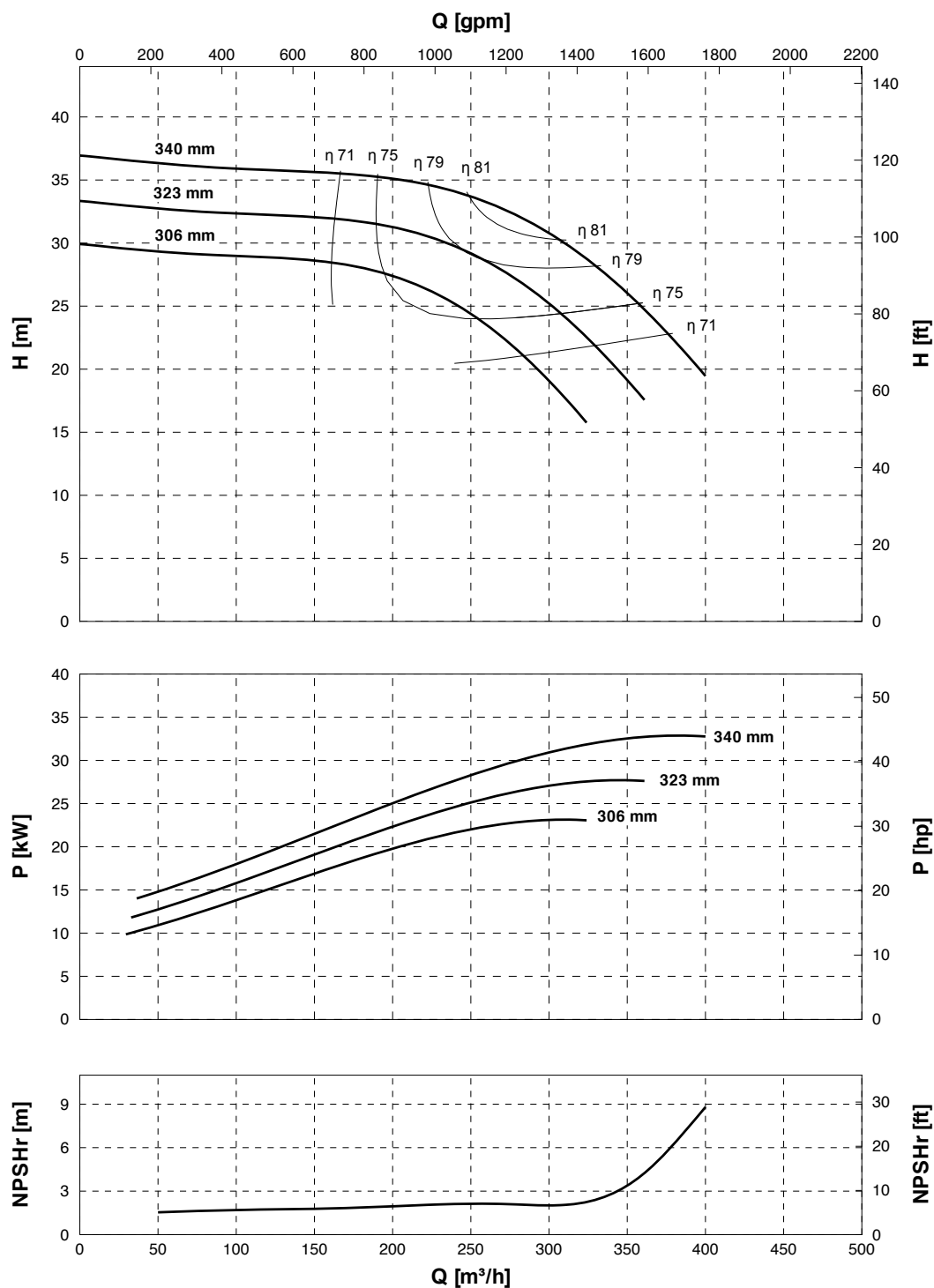


Notes:

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) 1500 rpm

HV 250 Curve #: 43006-090526-S1



Notes:

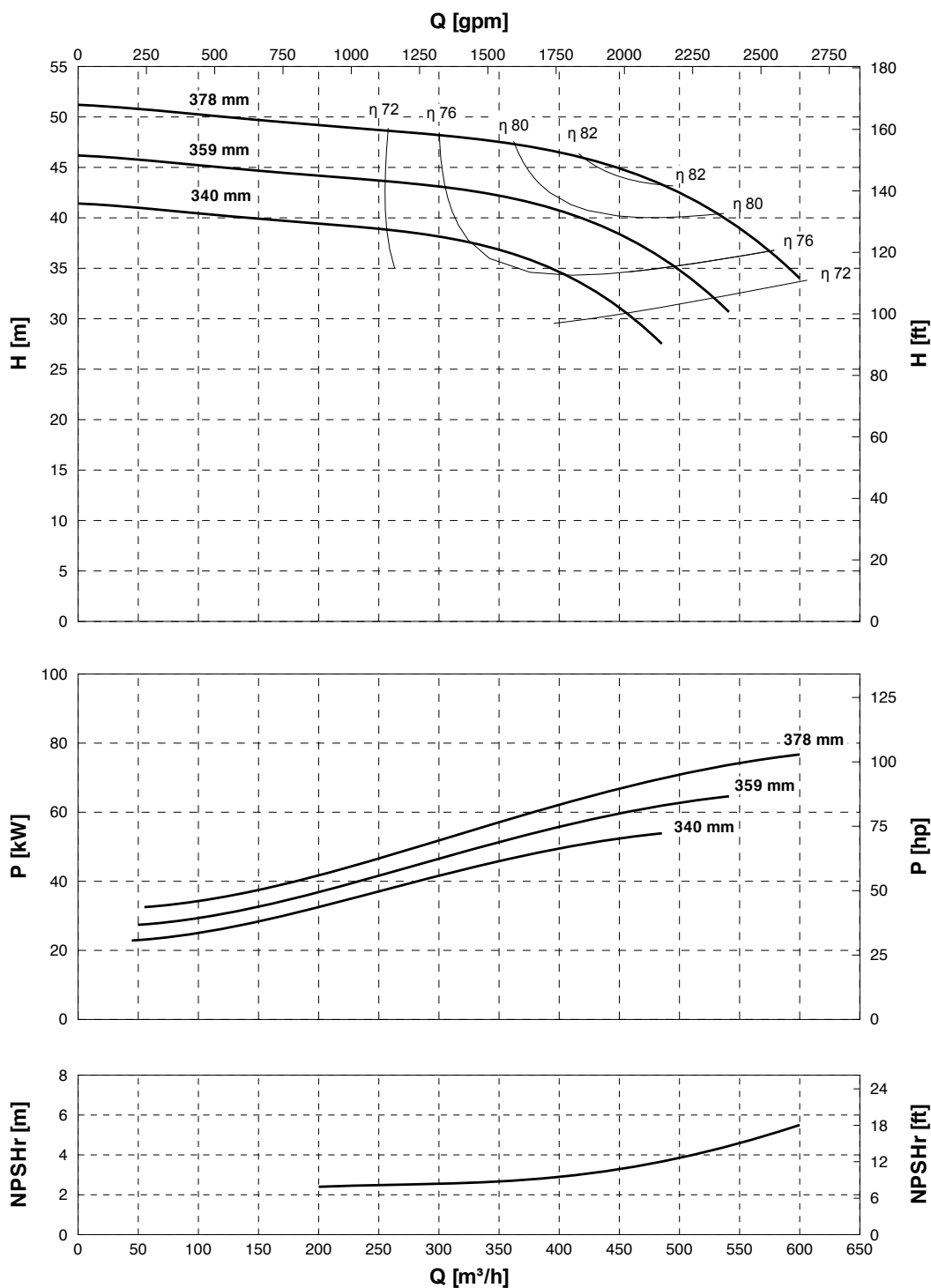
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance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



HV 450

Curve #: 43007-090509-S2

Volute Pumps (HV)
1500 rpm



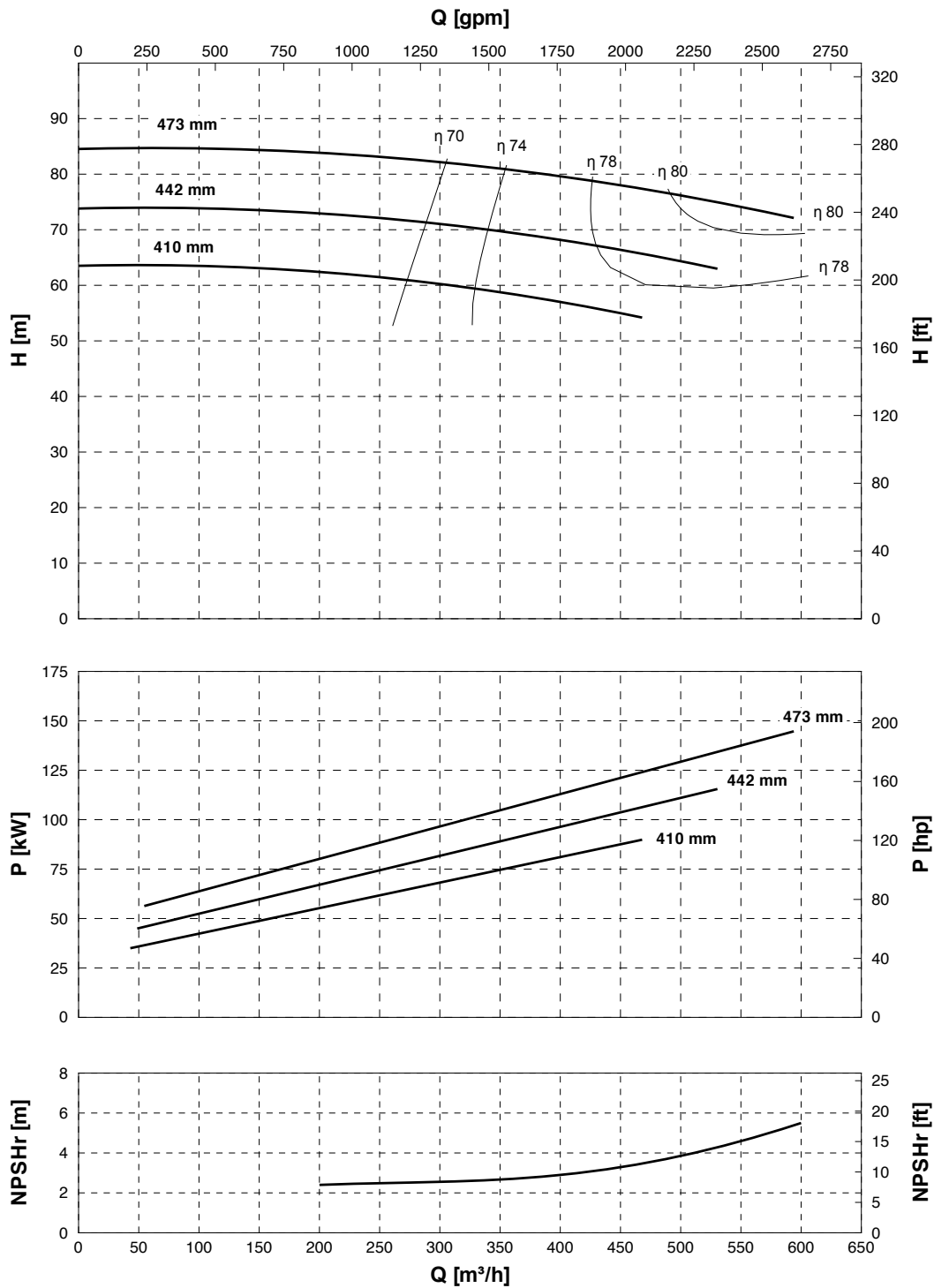
Notes:

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) 1500 rpm

HV 475

Curve #: 41001-070723-F1



Notes:

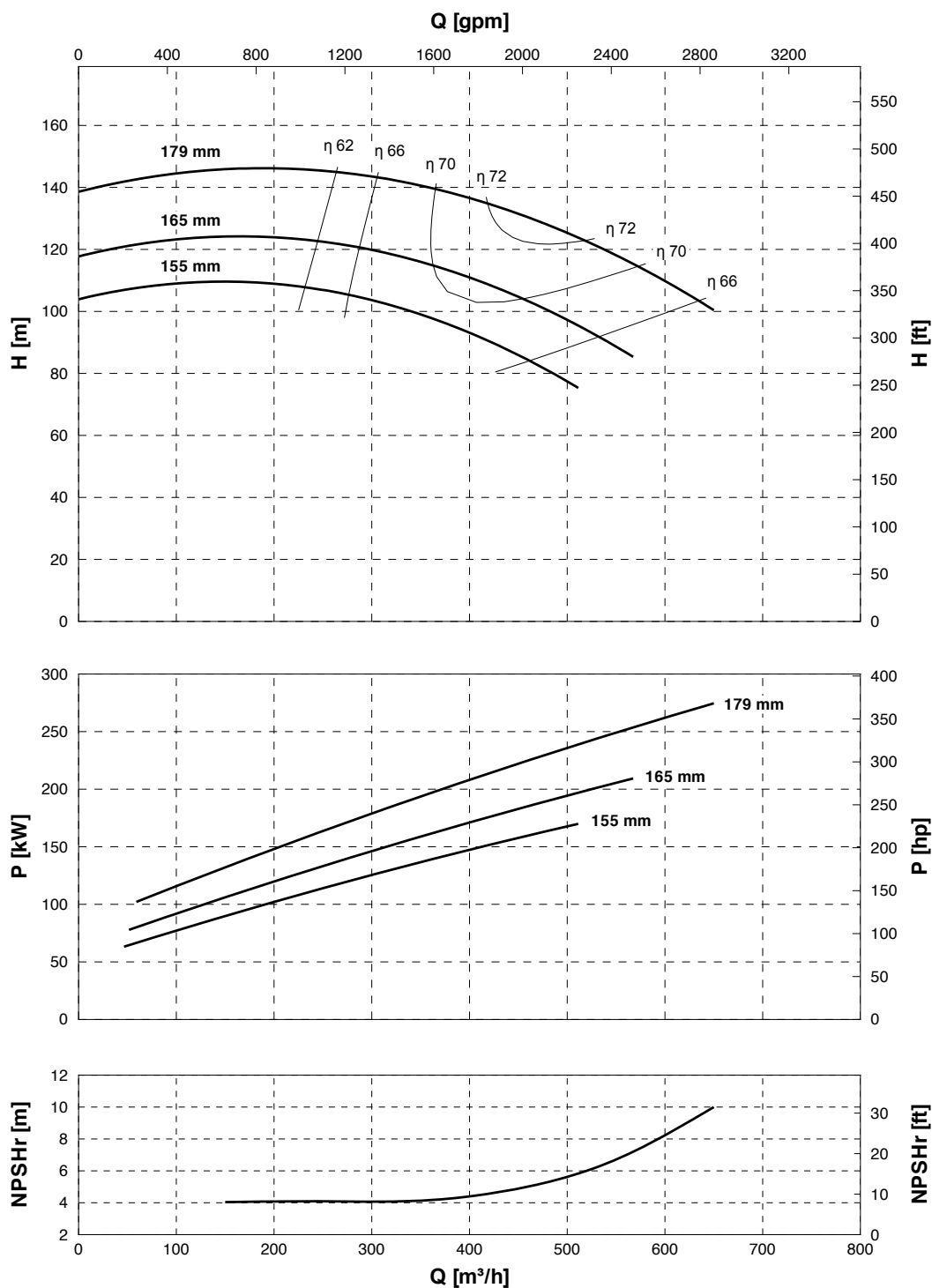
- Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
- Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
- Power and efficiency losses are not reflected on the curve
- Elevated temperature effects on performance 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.



HV 500

Curve #: 42002-070724-F1

Volute Pumps (HV)
3000 rpm



Notes:

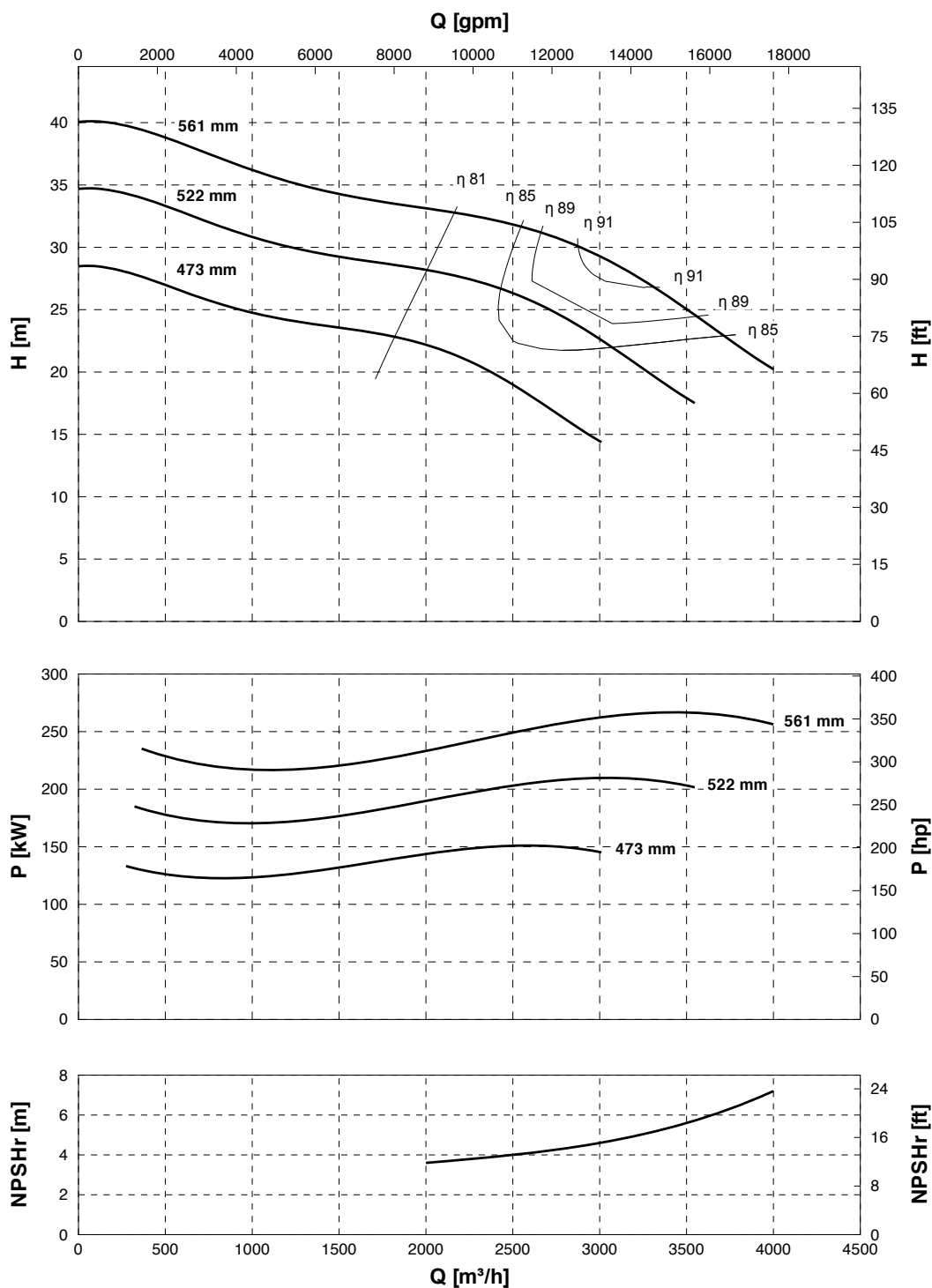
1. Operating data certified to ISO 9906 Hydraulic performance acceptance tests - Grades 1 & 2
2. Performance based on single stage pumping clean non-aerated water (H₂O T°=18 [°C], H₂O Density = 998 [kg/m³])
3. Power and efficiency losses are not reflected on the curve
4. Elevated temperature effects 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)

1000 rpm

HV 3000

Curve #: 41002-070717-F1



Notes:

- 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
- Elevated temperature effects on performance are not included
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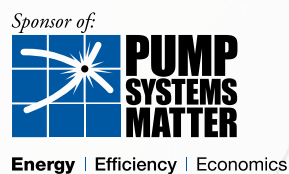


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