GEA VARIPUMP

GEA Hilge HYGIA

Centrifugal Pumps 50/60 Hz
Catalog

engineering for
a better world

gea.com

Legal notice

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Flow Components

Hygienic Pumps

GEA Hilge HYGIA Pumps

GEA Hilge HYGIA I

Performance Curves

GEA Hilge HYGIA II

Performance Curves

Appendix

Regardless of the application – for our customers product quality and profitability are what matters. This is what GEA Flow Components is known for. Our engineers are specialists in everything that flows.

Around one quarter of the milk processed is handled by GEA equipment

Roughly every second liter of beer is brewed using GEA equipment and solutions

Every fourth liter of human blood is handled by GEA equipment

Approx. one in three instant coffee lines has been built by GEA

GEA Group

GEA is one of the largest technology suppliers for food processing and a wide range of other industries. The global group specializes in machinery, plants, as well as process technology and components. GEA provides sustainable solutions for sophisticated production processes in diverse end-user markets and offers a comprehensive service portfolio.

GEA Flow Components

In addition to our hygienic pump portfolio, our range of sophisticated process components also includes hygienic and aseptic valves as well as cleaning technology.

All components and services are available worldwide through the interntional GEA sales network.

GEA Hilge Hygienic Pumps – The heart of every process

GEA Hilge offers a versatile range of centrifugal and positive displacement pumps for a wide variety of sensitive applications in the beverage, food and pharmaceutical industries.

Our pumps with their sophisticated design ensure particularly gentle conveyance of the respective medium, offer lasting reliability and are characterized by economic efficiency. After all, hygienic pumps are used in processes that directly affect the product and production. They are the heart of every process.

State-of-the-art pump technology, made to our customers' preferences

At the GEA Hilge Hygienc Pumps Center of Competence in Bodenheim we develop innovative pumps and processes together with our customers. Our decades of up-close experience with operations and systems at our customers' production sites ensure optimum selection and configuration of the right pumps for every application (e.g. food and dairy, brewery and beverage, pharmaceutical and biotech, personal and home care).

Maximum efficiency

Two product lines, GEA VARIPUMP and GEA SMARTPUMP, enable our customers to choose from a highly versatile pump range with a multitude of smart adaption options to achieve simpler operation, higher-quality production, and reduced consumption of valuable resources. Special construction features of our many types of pumps provide for exceptionally gentle product handling, delivering top-quality products to consumers.

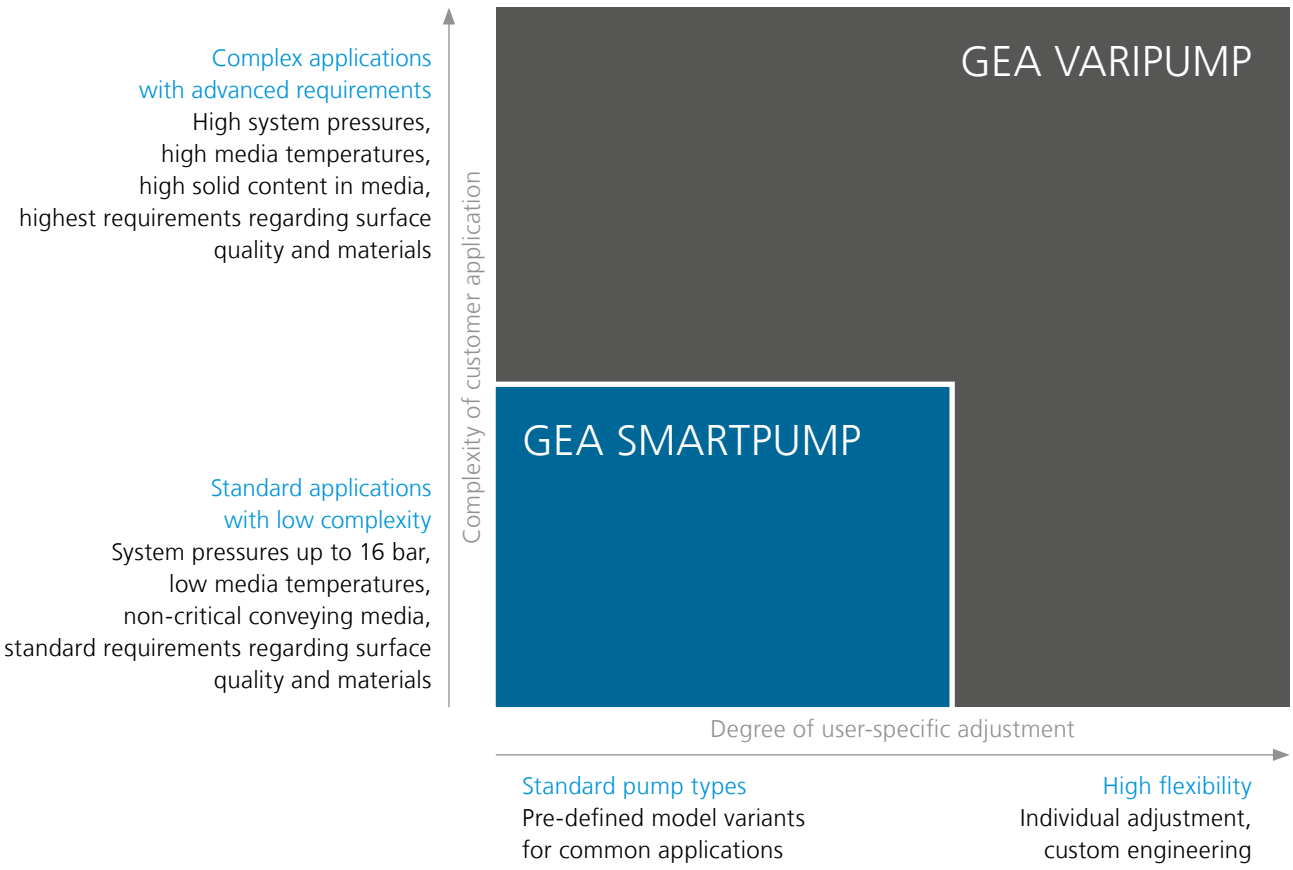
Maximum reliability

Our customers rely on the safe, continuous operation of their production processes without unplanned breaks or disturbances. That is why GEA pumps are optimized for uncompromising reliability in all applications. Thanks to their robust design and long service life, they are known as "workhorses" for their ease of maintenance and outstanding service, proven over decades, and for the great number of pumps currently in operation. Of course, GEA pumps also comply with all relevant hygiene standards and norms with continuous documentation and up-to-date certifications safely ensuring judicial security.

Two modern pump lines for maximum efficiency

Two product lines, GEA VARIPUMP and GEA SMARTPUMP, form a highly versatile pump range with a multitude of adaption options to ensure simpler operation, higher-quality production, and reduced consumption of valuable resources.

Selecting and configuring the right pump requires a high level of experience. The selection matrix provides initial guidance.



GEA VARIPUMP

The pump series in the GEA VARIPUMP line have been conceived for extreme application demands. The pumps are individually optimized by GEA for each task.

GEA VARIPUMP models are made entirely without die-cast components, offering high-quality surfaces and materials that meet stringent demands even in the sensitive pharmaceutical industry, further ensured by complementing services, e.g. Witnessed Factory Acceptance Test (FAT).

With a great variety of set-up and customizing options the pumps can be adapted individually to any production process, for lower operational costs and maximum system efficiency.

- Developed for advanced application conditions
- Project-specific customization
- Surface roughness up to $R_a \leq 0.4$ µm
- Product-wetted materials according to specific requirements (e.g. no cast parts, $F_e \leq 1$ % optional)

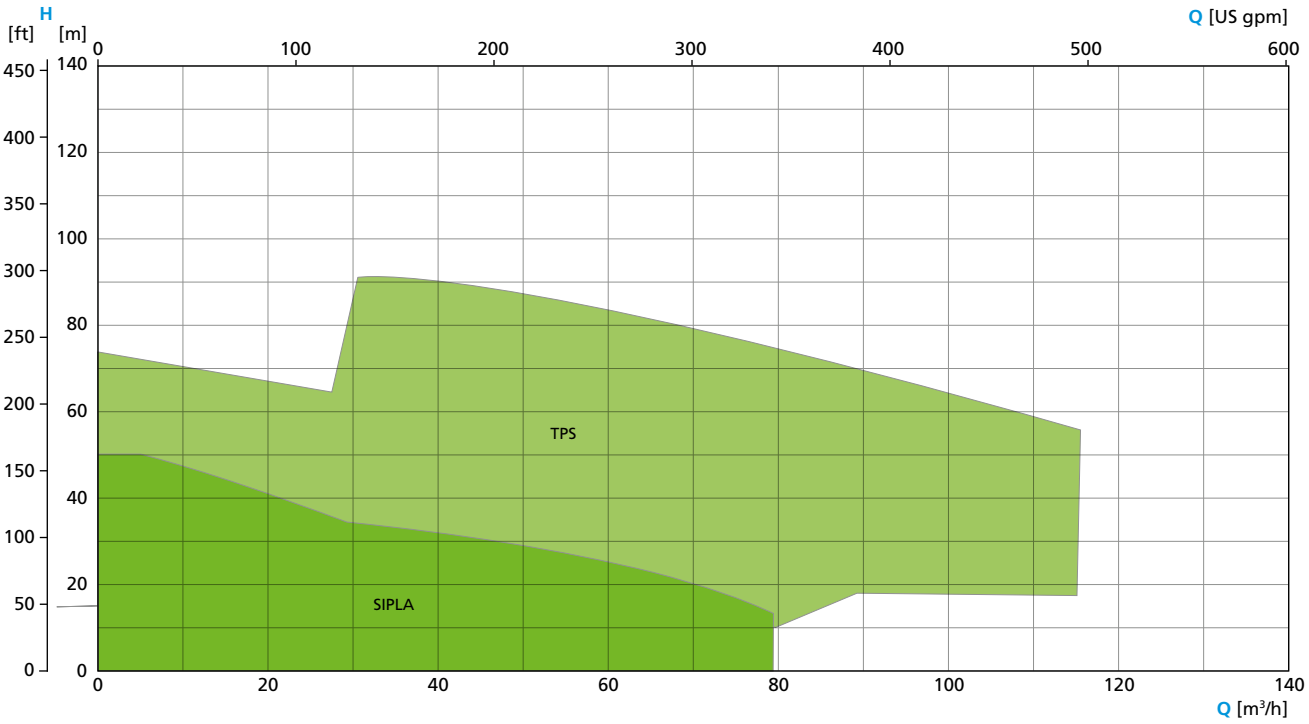
GEA SMARTPUMP

The GEA SMARTPUMP line comprises highly standardized and attractively priced pump series for common, often-used applications at standard conditions. The pumps are easy to select and ready for fast delivery. Within pre-defined parameters, the standard models can be configured to individual tasks.

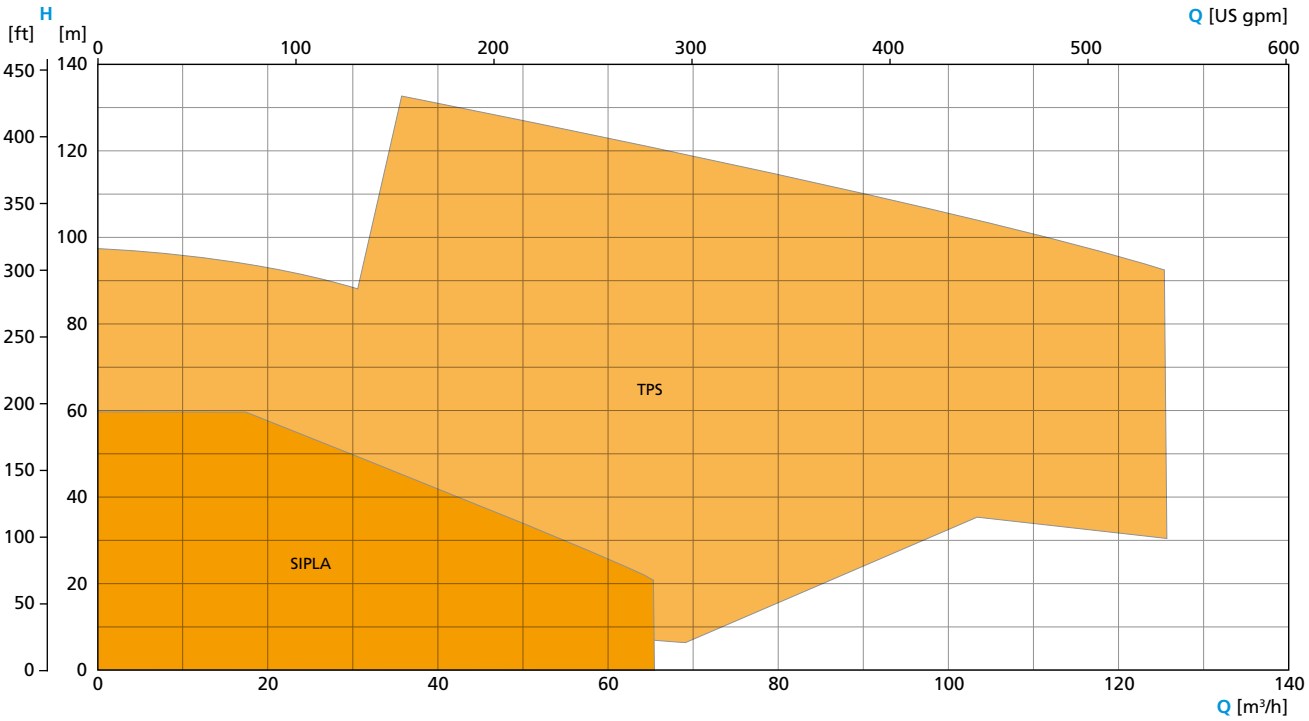
The modular construction using high-value materials, the proven “Hygienic Design” and easy-to-apply standardized spare parts all recommend GEA SMARTPUMP pumps for use in cost-critical production systems – at no compromise in terms of quality.

- Application for common and clearly defined “standard” process tasks
- Simple selection and configuration
- Fast delivery
- Standardized spare parts

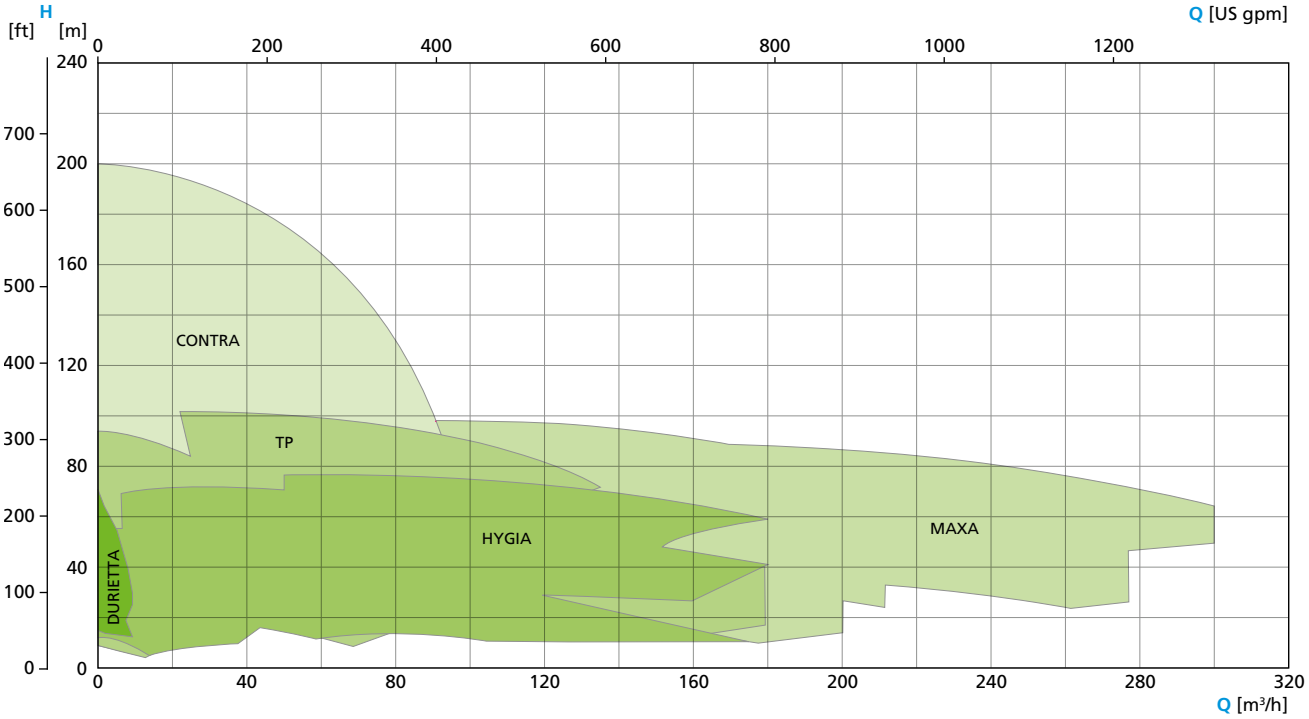
Self-priming Pumps
50 Hz



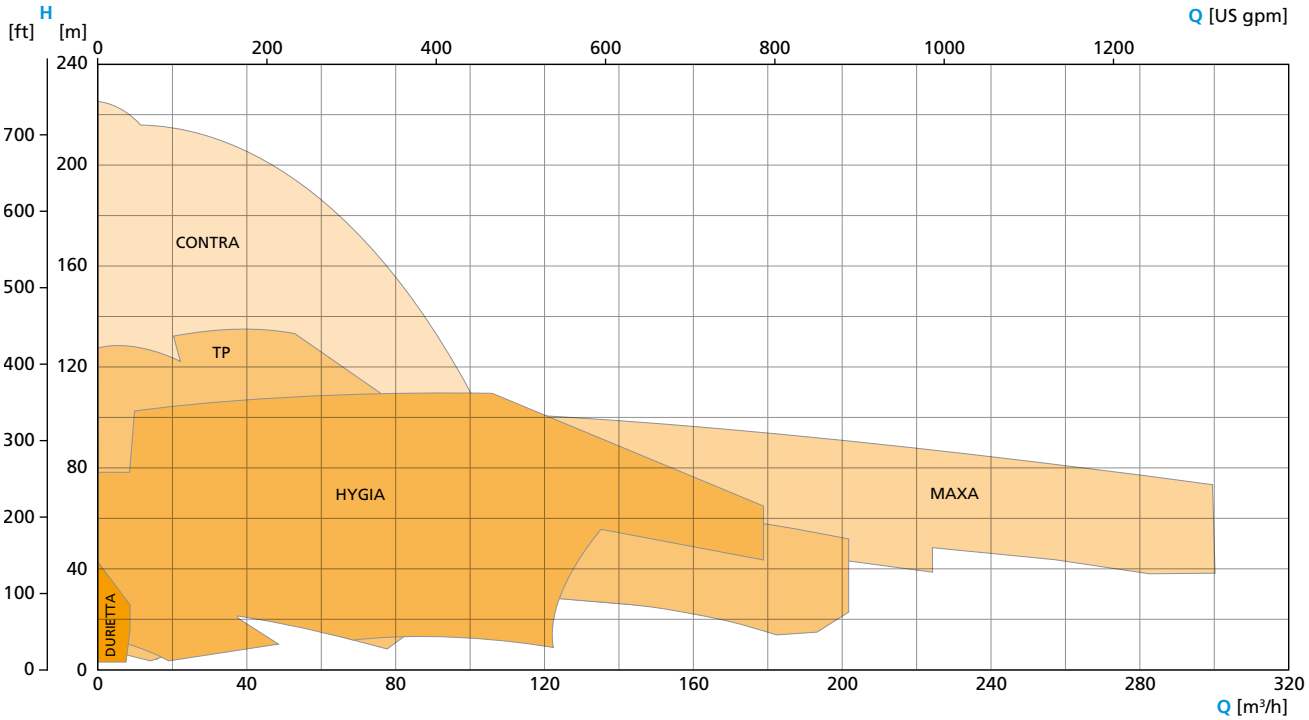
Self-priming Pumps
60 Hz



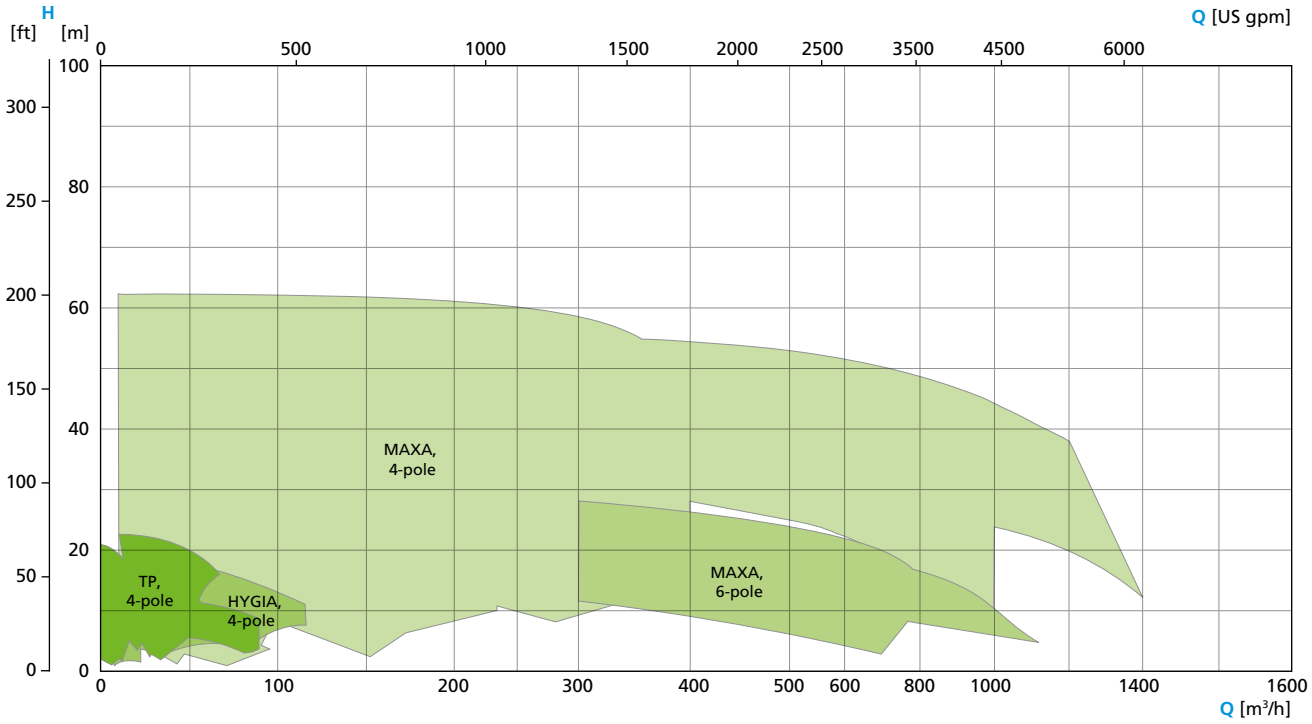
Centrifugal Pumps
2-pole, 50 Hz



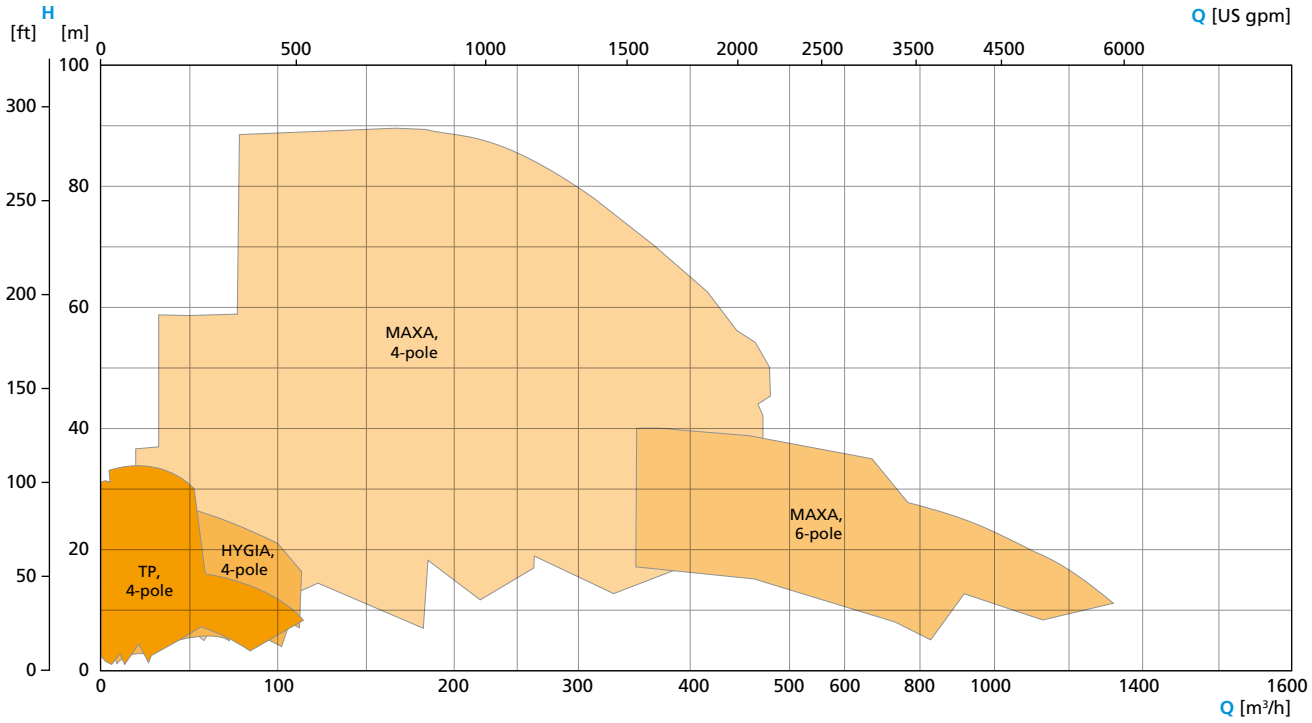
Centrifugal Pumps
2-pole, 60 Hz



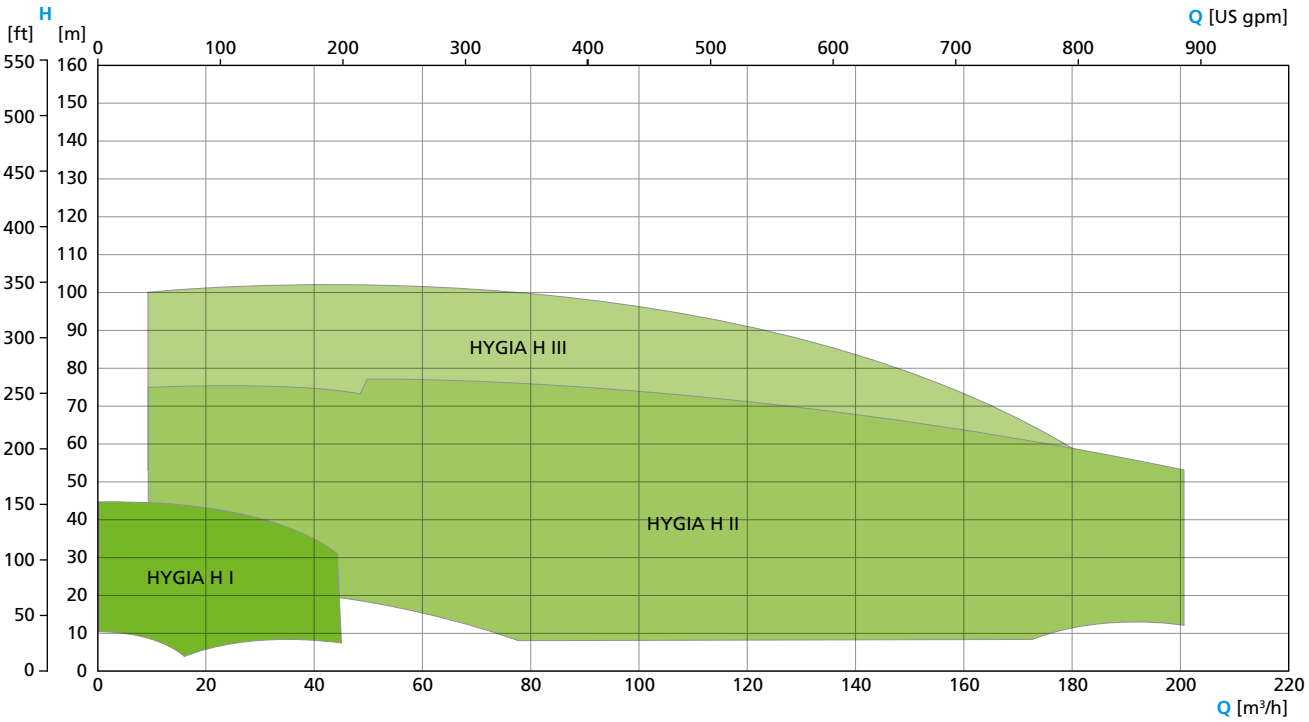
Centrifugal Pumps
4-/6-pole, 50 Hz



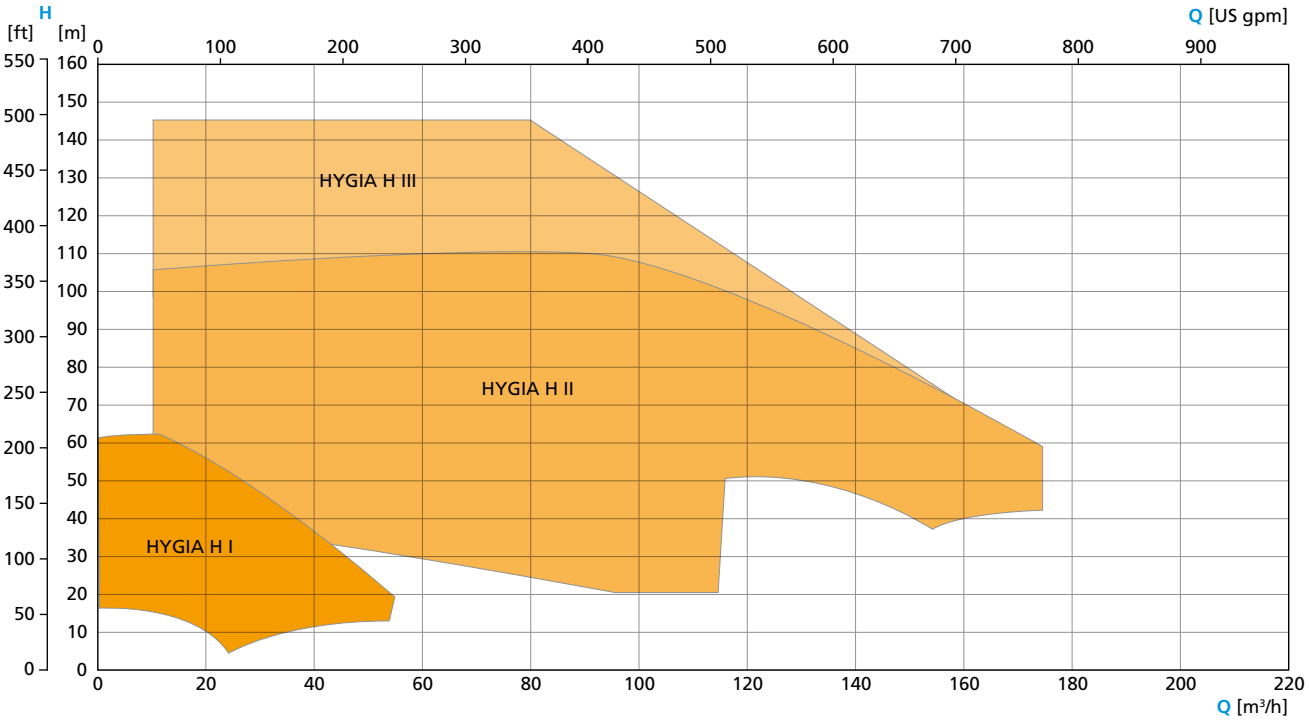
Centrifugal Pumps
4-/6-pole, 60 Hz



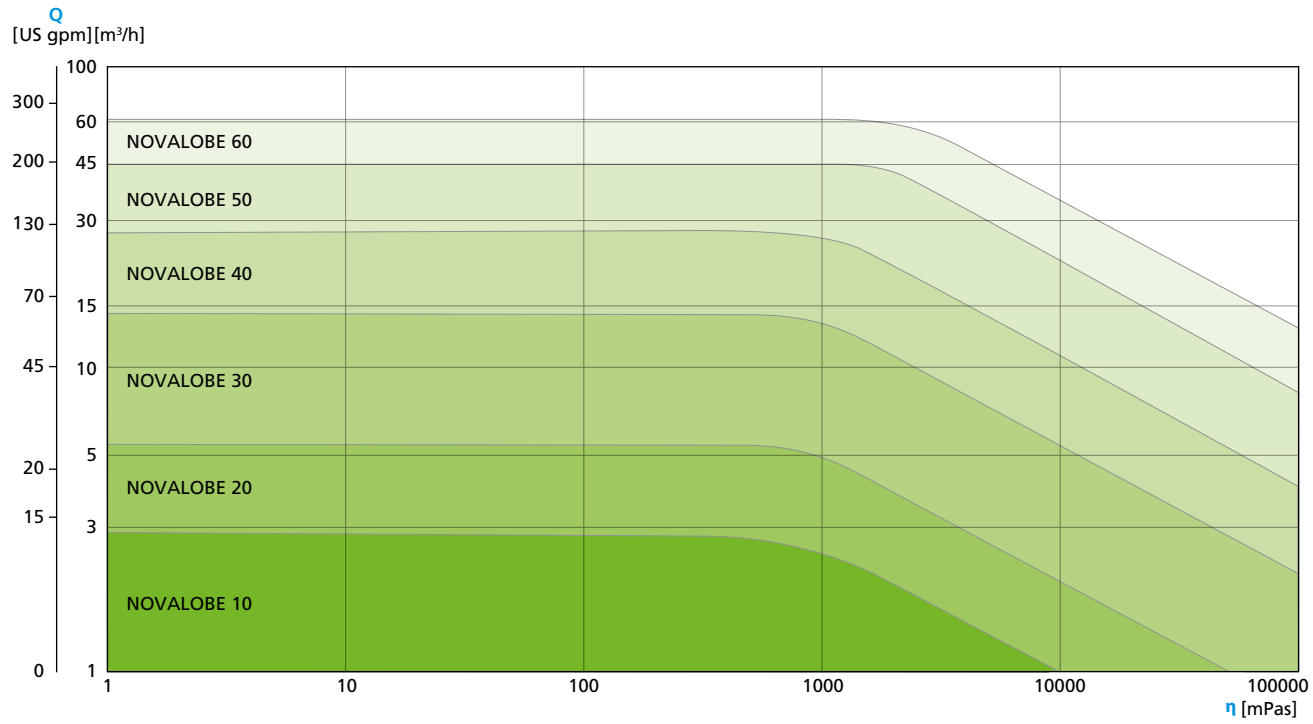
High-pressure Pumps
50 Hz



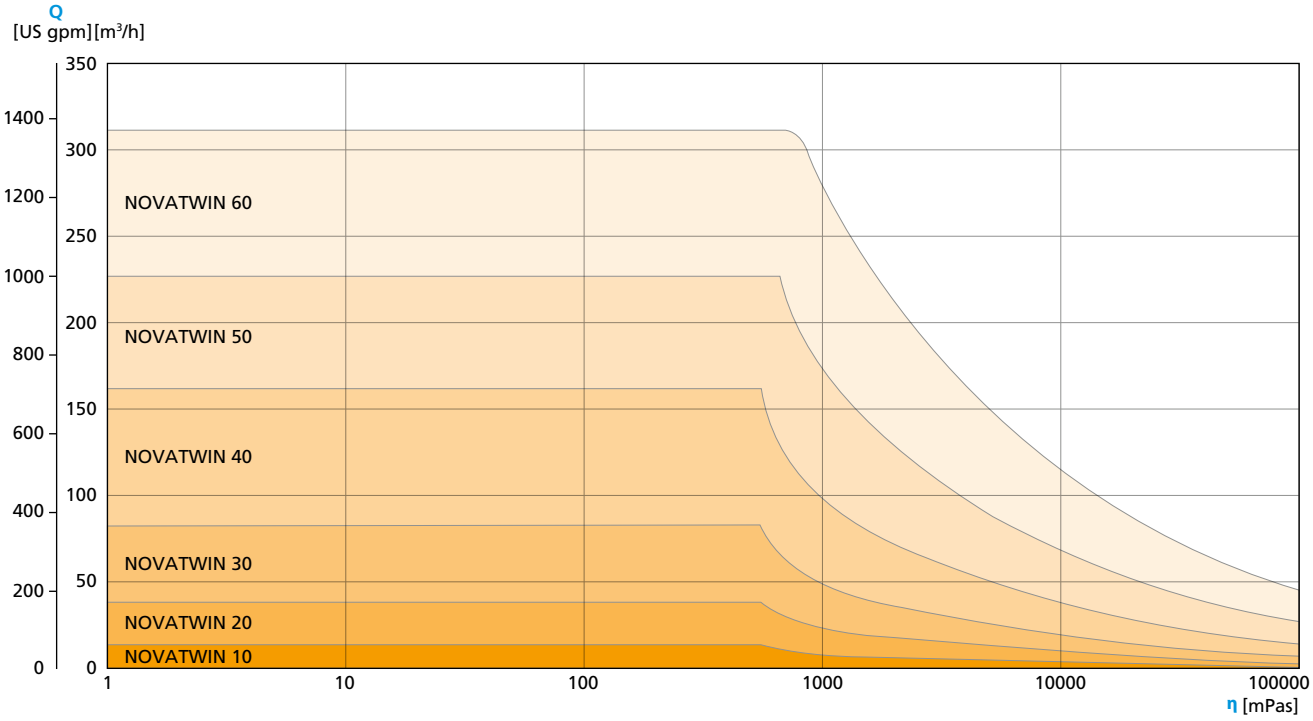
High-pressure Pumps
60 Hz



Rotary Lobe Pumps



Twin Screw Pumps



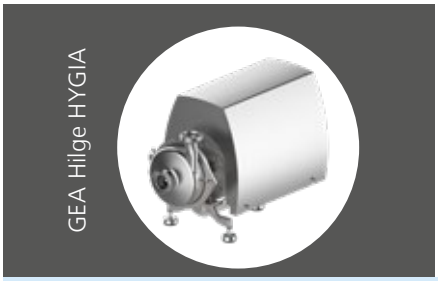
GEA VARIPUMP
Wide model range with numerous variants.
Customization to specific customer requirements

GEA SMARTPUMP
Clearly defined list of models, limited to standard requirements no other variants

GEA Hilge HYGIA/HYGIA H

The "Swiss Knife" among the hygienic pumps. Premium quality and highest flexibility of customization ensure successful application in the food, beverage, and pharma industries.

Technical data	50 Hz	60 Hz
Max. flow rate	200 m³/h	175 m3/h
Max. head	100 m	145 m
System pressure	16 / 25 / 64 bar	



GEA Hilge MAXA

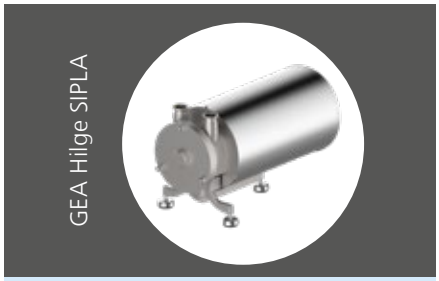
A single-stage centrifugal pump designed for heavy-duty operation in industrial processes. The major dimensions and characteristics of these pumps correspond to DIN EN 733 and DIN EN 22858.

Technical data	50 Hz	60 Hz
Max. flow rate	1,450 m³/h	1,320 m³/h
Max. head	100 m	100 m
System pressure	10 bar	

GEA Hilge SIPLA

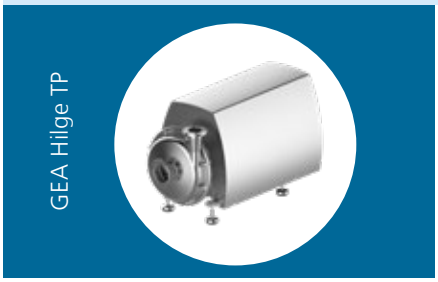
A single-stage self-priming side channel pump, especially suited for SIP/CIP return systems and applications with high gas content. Right- and left-hand rotation can be freely adjusted for additional application options.

Technical data	50 Hz	60 Hz
Max. flow rate	78 m³/h	64 m³/h
Max. head	47 m	60 m
System pressure	10 bar	



Single-stage end-suction centrifugal pumps

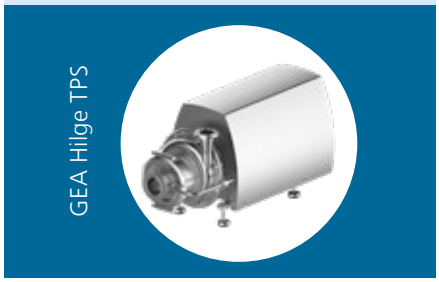
Single-stage self-priming centrifugal pumps



GEA Hilge TP

The GEA Hilge TP is the smart solution for standard applications. The single-stage centrifugal pump suits a wide range of applications and offers uncompromising hygiene and quality.

Technical data	50 Hz	60 Hz
Max. flow rate	170 m³/h	205 m³/h
Max. head	90 m	135 m
System pressure	16 bar	



GEA Hilge TPS

This self-priming centrifugal pump is the solution of choice especially for emptying tanks as well as for conveying products containing gas, e.g. CIP return systems.

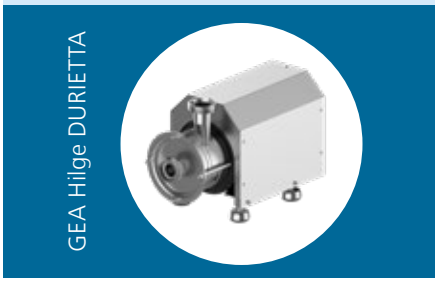
Technical data	50 Hz	60 Hz
Max. flow rate	115 m³/h	125 m³/h
Max. head	95 m	138 m
System pressure	16 bar	

GEA Hilge CONTRA

Single- and multi-stage centrifugal pumps are available in this series. The hygienic design in every detail provides perfect solutions to numerous tasks in sterile and hygienic processes.

Technical data	50 Hz	60 Hz
Max. flow rate	100 m³/h	100 m³/h
Max. head	200 m	230 m
System pressure	25 bar	

Multi-stage centrifugal pumps



GEA Hilge DURIETTA

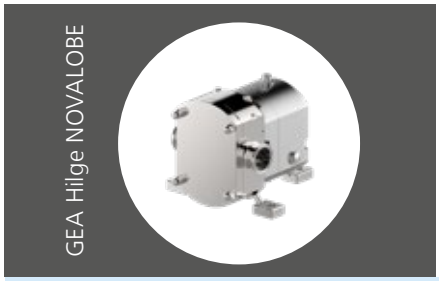
This end-suction single- or multi-stage centrifugal pump in a very compact design has been created for applications with low flow rates at high flow heads.

Technical data	50 Hz	60 Hz
Max. flow rate	8 m³/h	8 m³/h
Max. head	72 m	41 m
System pressure	8 bar	

GEA Hilge NOVALOBE

This rotary lobe pump has been specifically designed for highly viscous media – and for applications where gentle pumping is required. The pump is fully drainable with vertical ports.

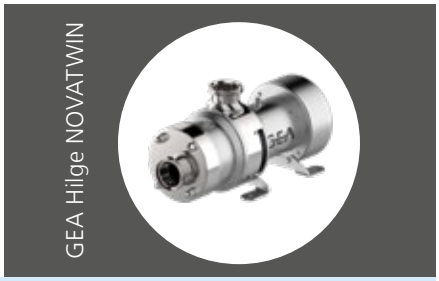
Technical data	50 / 60 Hz
Max. displacement	2.1 l/rev
Max. differential pressure	16 bar
System pressure	10/16 bar



GEA Hilge NOVATWIN

The GEA Hilge NOVATWIN is a flexible twin screw pump. It fulfills the highest hygienic standards for gentle product handling as well as CIP with one pump only.

Technical data	50 / 60 Hz
Max. flow rate	310 m³/h
Max. differential pressure	25 bar
System pressure	up to 30 bar



Rotary-lobe pumps

Twin-screw pumps

Positive displacement pumps

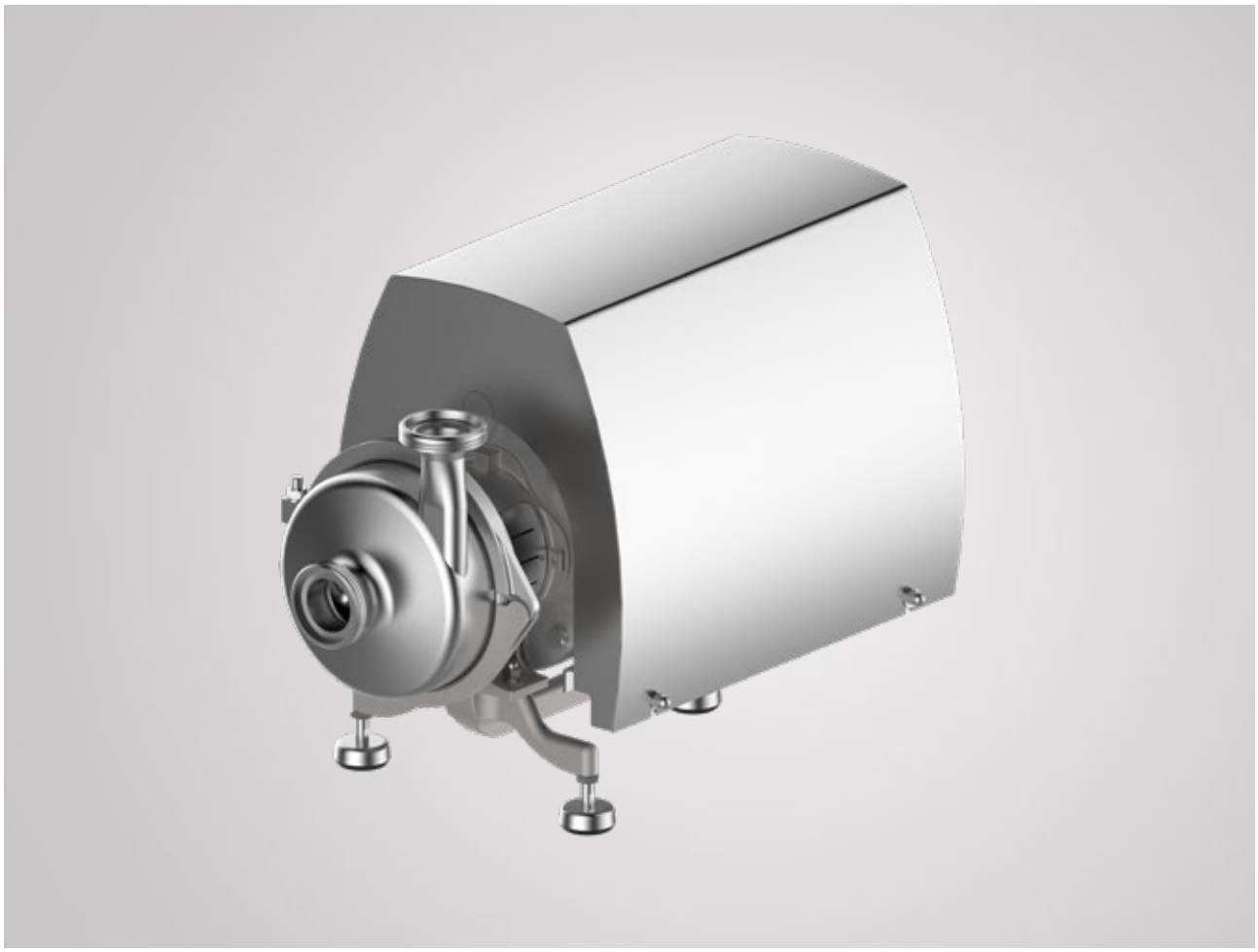
The certificates listed here are valid for corresponding GEA pump models. Pumps conforming to the requirements of the European Hygienic Engineering and Design Group (EHEDG) as well as 3-A Sanitary Standards, Inc. (3-A SSI) are available for numerous fields of application.

EHEDG certificates apply only to the specific pump type as listed. However, they may be transferred to specific other pump types, owing to identical housing designs and flow path geometries.

Moreover, independent, standardized tests have confirmed the efficient, problem-free cleaning ability of numerous pumps – for optimum safety and economic gain.

Document	GEA Hilge HYGIA / HYGIA H	GEA Hilge TP / TPS	GEA Hilge CONTRA	GEA Hilge MAXA	GEA Hilge DURIETTA	GEA Hilge SIPLA	GEA Hilge NOVALOBE	GEA Hilge NOVATWIN
3-A Sanitary Standard	•**	•						•
EHEDG certificate	•*	•*	•*				•*	•*
FDA declaration of conformity	•	•	•	•	•	•	•	•
Declaration of compliance with the order 2.1 acc. to EN 10204	•		•	•	•	•	•	•
Test report 2.2 acc. to EN 10204	•	•	•	•	•	•	•	•
Inspection certificate 3.1 acc. to EN 10204	•	•	•	•		•	•	•
EAC-Certificate	•*	•	•	•	•	•	•	•
Surface roughness test report	•	•	•	•			•	•
Delta ferrite test report	•		•				•	•
Acoustic measurement test report	•	•	•	•	•	•	•	•
USP Class VI – declaration of conformity	•	•	•			•	•	•
Certificate in acc. with the regulation (EG) No. 1935/2004	•	•	•	•	•	•	•	•
Certificate DIN EN ISO 9001:2015	•	•	•	•	•	•	•	•

Many more certificates on request
Subject to change without notice.
* registered for certification/recertification
** HYGIA H III registered for certification



GEA Hilge HYGIA K-SUPER on combi foot

Features and benefits

- Process safety, reliability and optimal cleanability, due to sterile, cast-free stainless steel, deep-drawn or forged components.
- Thanks to the mechanical seal optimally positioned in the pump, a flushed version can often be avoided.
- Precise sizing for optimum efficiency and matching of duty point thanks to different impeller geometries. Additional flexibility through operation on a frequency converter.
- Gentle conveying of liquids containing solids (e.g. cheese curd), insensitive to solids (grape panicles, pulp, long fibers in concentrate) due to the large clearance between impeller and pump housing as well as special free-flow impeller.
- Facilitated system qualification due to extensive customer- and requirement-specific documentation and certificates.
- When installed vertically, the pump is completely self-draining without a drain valve.
- Service-friendly, quick-opening pump housing. One sealing concept for the entire centrifugal pump portfolio (single-stage, multi-stage, self-priming pumps) minimizes wearing parts logistics.
- The Adapta version enables quick and easy motor change, pump can remain in the pipeline (requires no revalidation
- in pharmaceutical applications).

Technical Data

	GEA Hilge HYGIA I		GEA Hilge HYGIA II	
	50 Hz	60 Hz	50 Hz	60 Hz
Flow head	45 m	66 m	75 m	110 m
Flow rate	45 m³/h	50 m³/h	175 m³/h	175 m³/h
Sterilization temperature	140 °C (SIP)		140 °C (SIP)	
Max. system pressure KLM casing	16 bar		16 bar	
Max. system pressure HPM casing	25 bar		25 bar	
Max. system pressure HP casing*	64 bar		64 bar	
Max. pump efficiency	71 %	68 %	72 %	73 %

*See separate GEA Hilge HYGIA H Catalog

Applications

The GEA Hilge HYGIA pump range is suitable for the following application areas and products, due to the hygienic design and material selection:

Food and beverage industry
- Breweries (beer, wort, mash, yeast, etc.)
- Dairies (milk, milk-based mixed beverages, cheese manufacturing etc.)
- Soft drinks (fruit juice, lemonade, mineral water, etc.)
- Wine and champagne cellars
- Distilleries (mash, distillates, etc.)
- Food manufacturing (marinades, brine, cooking oil, etc.)
- Cleaning In Place systems (CIP)

Pharmaceutical and biotechnology
- Pure-water systems (WFI)
- Infusion
- Culture medium
- Blood plasma
- Lotions
- Perfumes

Design

GEA Hilge HYGIA pumps are single-stage, end-suction, centrifugal pumps, designed to meet the hygienic requirements of sterile process technology.

The pump casing is made of heavy-duty, rolled and deep drawn CrNiMo steel 1.4404/1.4435, the equivalent of AISI 316L. The pumps have a mechanical seal and a fan-cooled asynchronous motor to enclosure class IP55.

Pump Connections

GEA Hilge offers the following standard connections for the GEA Hilge HYGIA pump range:
- Thread according to DIN 11851
- Flanges according to DIN 11864-2
- Tri-Clamp according to DIN 32676

Selected connections also available with drain port. You can find additional information in the connection selection guide on page 31.

The pumps are available in two sizes with a variety of flexible versions. The pumps are CIP- and SIP- capable in compliance with the DIN EN 12462 performance criteria. The design fulfills the following requirements:
- 3-A Sanitary Standard
- EHEDG (registered for recertification)
- EAC
- GMP regulations

Certification

ATEX

For use in potentially explosive areas, Adapta pumps are available. These pumps, which possess an EC declaration of conformity in accordance with the ATEX guideline 2014/34/EU, correspond to device categories 2 or 3, and can be used in zone 1 or 2.

ATEX-Symbol

For explanation see chapter certificates on page 20.

Impellers

According to the application, three impeller versions are available: semi-open, closed and free-flow.

Semi-open impeller

The stainless steel, semi-open impeller is available in three versions, according to the application.

Impeller version	Surface finish
Cast	$R_a \leq 3.2$ µm
Cast	$R_a \leq 0.8$ µm
Milled	$R_a \geq 0.8$ or $R_a \leq 0.4$ µm

The impeller is suitable for low-viscosity liquids and liquids containing low content of particles.

Closed impeller

The stainless steel, closed impeller is available in two versions, according to the application.

Impeller version	Surface finish
Cast	$R_a \leq 3.2$ µm
Welded	$R_a \leq 3.2$ µm

Free-flow impeller

The stainless steel, free-flow impeller is available in two versions, according to the application.

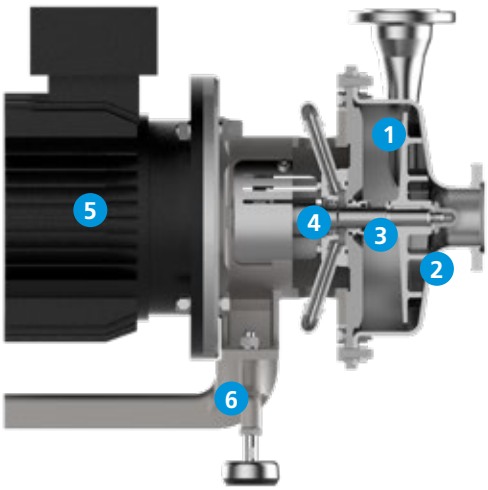
Impeller version	Surface finish
Cast	$R_a \leq 3.2$ µm
Welded	$R_a \leq 3.2$ µm – $R_a \leq 0.8$ µm

The non-clogging, free-flow impeller is designed for pumped liquids with a high content of solid particles or fibres. For surface finish requirements, see page 25.

Impeller	GEA Hilge HYGIA I	GEA Hilge HYGIA II
Semi-open	•	•
Closed	–	•
Free-flow	◦	◦

• Standard ◦ Option

Materials



Material overview GEA Hilge HYGIA

Item	Component	Material	No.
1	Impeller	CrNiMo steel	316L (1.4404/1.4435) CF3M (1.4408/1.4409)
2	Pump casing	CrNiMo steel	316L (1.4404/1.4435)
3	Seal	Single mechanical seal carbon/stainless steel or SiC/SiC, other versions available on request	
4	Pump shaft	CrNiMo steel	316L/316Ti (1.4404/1.4571) 318LN (1.4462)
5	Motor	Aluminum	
6	Foot	Iron/stainless steel	

Coating

Components not made of stainless steel are provided with one of the following coatings, depending on the design:

Version	Paint/coating	Coating thickness
Primer	2K epoxy resin	30–60 µm
	KTL coating	15–20 µm
Top coating	2K epoxy resin	50–70 µm
	2K polyurethane color	60 µm
	KTL coating	15–20 µm

Surface design

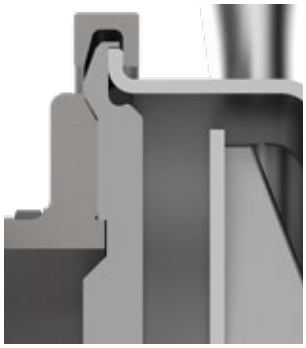
Selected components are electro-polished in order to improve the surface and protect it against corrosion.

Surface	Electro-polished components
$R_a \leq 3.2$ µm	Casing
$R_a \leq 0.8$ µm	Casing (all liquid-touched components optional)
$R_a \leq 0.4$ µm	All liquid-touched components

Casing design

The special groove ensures that the seal is kept reliably in place at all times. The metallic stop allows a defined compression of the seal, ensuring gap-free sealing against the product chamber without dead legs.

Clamp ring (KLM)
- System pressure up to 16 bar
- Freely selectable discharge port position



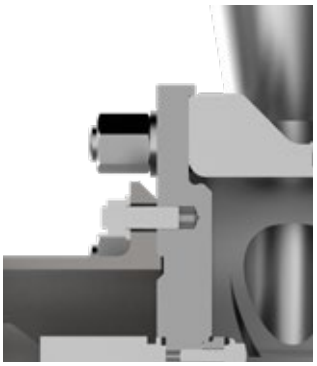
Clamp ring

Flange ring (HPM)
- System pressure up to 25 bar
- Discharge port position: 12, 9, 3 o'clock

Flange ring

High pressure flange ring (HP)
- For GEA Hilge HYGIA H*
- System pressure up to 64 bar
- Discharge port position: 12 o'clock

* For detailed information see separate GEA Hilge HYGIA H Catalog



High pressure flange ring

Mechanical seal

GEA Hilge offers the following seal designs:
- Single mechanical seal
- Single mechanical seal, flushed (Quench, only for K)
- Double mechanical seal, tandem (only for Adapta)
- Double mechanical seal, back-to-back (only for Adapta)

The pumps of the GEA Hilge HYGIA range are equipped with single internal mechanical seals optimally arranged in the pump.

This ensures efficient lubrication and cooling of the mechanical seal. CIP and SIP-capability is fulfilled according to hygienic design criteria.

The standard material for the mechanical seals is carbon/stainless steel with EPDM elastomers. Other executions and materials are available on request.

For further information on mechanical seals, see page 34.

Design variants

Standard version	Description
GEA Hilge HYGIA K	Horizontal installation, plug-in shaft, standard motor
GEA Hilge HYGIA K-V	Vertical installation, plug-in shaft, standard motor (only for HYGIA I)
GEA Hilge HYGIA K-tronic	Horizontal installation, plug-in shaft, standard motor with integrated frequency converter
GEA Hilge HYGIA K-SUPER	Horizontal installation, plug-in shaft, standard motor with stainless steel shroud
GEA Hilge HYGIA K-SUPER-tronic	Horizontal installation, plug-in shaft,standard motor with stainless steel shroud and integrated frequency converter

Design K
GEA Hilge sterile and process pumps in compact K design require small installation space. The pump is equipped with a plug-in shaft.

The modular design enables numerous installation designs. The K-tronic variants are equipped with an integrated frequency converter. Pumps in the K-SUPER design are equipped with stainless steel shrouds.

GEA Hilge HYGIA K on Motor Foot

GEA Hilge HYGIA K on Cast Iron Foot

GEA Hilge HYGIA K on Combi Foot

GEA Hilge HYGIA K on Stainless Steel Foot

GEA Hilge HYGIA K-SUPER on Combi Foot

GEA Hilge HYGIA K on Trolley

Standard version	Description
GEA Hilge HYGIA Adapta	Horizontal installation, mounted pump shaft, standard motor
GEA Hilge HYGIA Adapta-tronic	Horizontal installation, supported pump shaft, standard motor with integrated frequency converter
GEA Hilge HYGIA Adapta-SUPER	Horizontal installation, mounted pump shaft, standard motor with stainless steel shroud
GEA Hilge HYGIA Adapta-SUPER-tronic	Horizontal installation, mounted pump shaft, standard motor with stainless steel shroud
GEA Hilge HYGIA Adapta-V	Vertical installation, mounted pump shaft, standard motor

Adapta design
Pumps in Adapta design have a bearing bracket with a double supported shaft. The connection between the pump shaft and the motor shaft is coupled with an elastic coupling. This design enables the use of various standard motors. The pump can remain in the system during engine demounting/mounting.

Pumps in Adapta tronic design are equipped with an integrated frequency inverter. Pumps in Adapta-SUPER design have a stainless steel motor shroud.

GEA Hilge HYGIA Adapta on Cast Iron Foot
(up to 18.5 kW)

GEA Hilge HYGIA Adapta on Adapta-foot
(only for 22 kW)

GEA Hilge HYGIA Adapta on Machine Pads
(only for 22 kW)

GEA Hilge HYGIA Adapta-SUPER
on Combi Foot

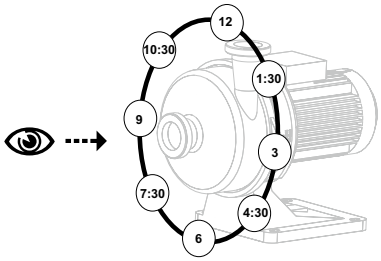
GEA Hilge HYGIA Adapta on Trolley

GEA Hilge HYGIA I Adapta-V
on Vertical Stand with Elbow

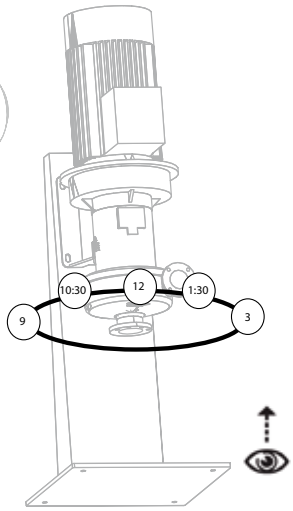
Terminal box position
This terminal box positions are possible for all pumps without shroud.

Possible terminal box positions

Positioning of discharge port and terminal box
For pumps with HPM-casing only the positions 3, 12 and 9 o'clock are possible.



Positioning of discharge port and terminal box for horizontal pumps



Positioning of discharge port and terminal box for vertical pumps

Noise emissions

Measured values according to DIN EN ISO 3746 for pump units, measurement uncertainty 3 dB (A).

Motor power [kW]	LpA (LwA), 2-pole	LpA (LwA), 4-pole
	50 Hz / 60 Hz [dB (A)]	50 Hz / 60 Hz [dB (A)]
0.55	–	51/54
0.75	–	51/54
1.1	65/68	53/56
1.5	67/70	53/56
2.2	67/70	63/66
3.0	73/76	65/68
4.0	73/76	65/68
5.5	73 / 76	67/70
7.5	75/78	70/73
11.0	75/78	–
15.0	76/79	–
18.5	76/79	–
22.0	80/83 (95)	–
30.0	80/83 (95)	–
37.0	81 (92) / 84 (96)	–
45.0	82 (94) / 85 (97)	–

The noise emissions of a pump are significantly affected by the given application. The values given here therefore serve only as a guide. Please contact GEA for more detailed information.

What does "ATO" mean?

The GEA Hilge ATO program was launched in order to optimise and shorten the delivery time of the pumps:
- ATO: Assembly to order
- All components are available from stock.
- Assembly of ready components.
- Fast delivery.

GEA Hilge HYGIA I

Motor size	Pole/ speed [rpm]	Power [kW]
80L	2/2900	1.1
90S	2/2900	1.5
90L	2/2900	2.2
100L	2/2900	3.0
112M	2/2900	4.0
132S	2/2900	5.5

GEA Hilge HYGIA II

Motor size	Pole/ speed [rpm]	Power [kW]
100L	2/2900	3.0
112M	2/2900	4.0
132S	2/2900	5.5
132S	2/2900	7.5
160M	2/2900	11.0
160M	2/2900	15.0
160L	2/2900	18.5

Available ATO executions

Feature	Execution
Material liquid contact parts	316L (1.440/1.4435)
Elastomer	EPDM, FKM (Viton)
Connection	• Threads – DIN 11851 • Threads SMS (international) • Aseptic flange – DIN 11864-2/11853-2 • Clamp 32676, Class C • Flanges APV FN 1 (PN 10)
Connection Sizes	HYGIA I: • DN 40/40 – 1½"–1½" • DN 50/50 – 2"–2" HYGIA II: • DN 65/65 – 2½"–2½" • DN 80/80 – 3"–3" • DN 100/100 – 4"–4"
Surface roughness liquid contact parts	• $R_a \leq 3.2$ µm • $R_a \leq 0.8$ µm (only in combination with connections flange according to DIN 11864-2, row A, form A and clamp according to DIN 32676, row C)
Mechanical seal	• Single mechanical seal • Single mechanical seal with quench (flushed) • Carbon/stainless steel/EPDM – open spring • Carbon/stainless steel/FKM – open spring • Carbon/stainless steel/EPDM – open spring (vaccum operation) • Carbon/ stainless steel/FKM – open spring (caccum operation) • SiC/SiC/EPDM – open spring • SiC/SiC/Viton – open spring • Carbon/stainless steel/EPDM – encapsulated bi-directional • Carbon/stainless steel/FKM – encapsulated bi-directional • SiC/SiC/EPDM – encapsulated bi-directional • SiC/SiC/Viton – encapsulated bi-directional
Design	• K – Pump in bloc execution with plug-in shaft • K SUPER – Motor with stainless steel shroud • Adapta – Pump in bloc design with bearing bracket and standard motor • Adapta SUPER – Motor with stainless steel shroud
Mounting	Design K and Adapta: • Motor foot • Cast iron foot • Combi foot • Machine pads Execution SUPER: • Combi foot • Machine pads
Motor	• 3 × 380–415 V / 50 Hz or • 3 × 460 V / 60 Hz • 2-pole • Design B5/B35 • ISO class F • Efficiency class IE3 • Protection class IP55
Colour	RAL 9005
Casing	Clamp ring – KLM
Documentation	• Operating manual • Declaration of CE conformity • Pump test report

Motors

GEA Hilge HYGIA I

Motor power [kW]	HYGIA I K		HYGIA I Adapta	
	2-pole [frame size]	4-pole [frame size]	2-pole [frame size]	4-pole [frame size]
0.55	–	80	–	80
0.75	–	80	–	80
1.1	80	90S	80	90S
1.5	90S	90L	90S	90L
2.2	90L	100L	90L	100L
3.0	100L	–	100L	–
4.0	112M	–	112M	–
5.5	132S	–	132S	–

May differ for some motor approvals/effiency classes.

GEA Hilge HYGIA II

Motor power [kW]	HYGIA II K		HYGIA II Adapta	
	2-pole [frame size]	4-pole [frame size]	2-pole [frame size]	4-pole [frame size]
2.2	90L	100L	90L	100L
3.0	100L	100L	100L	100L
4.0	112M	112M	112M	112M
5.5	132S	132S	132S	132S
7.5	132S	132M	132S	132M
11.0	160M	-	160M	-
15.0	160M	-	160M	-
18.5	160L	-	160L	-
22.0	160L (160LP)	-	180M	-
30.0	-	-	200L	-
37.0	-	-	200L	-
45.0	-	-	225M	-

May differ for some motor approvals/effiency classes.

GEA Hilge HYGIA I/II

Power [kW]	Motor approval		IE Class		
	CEL China Energy	INMETRO Brazil	50 Hz	60 Hz	PTC
0.55	–	•	3	3	–
0.75	–	•	3	3	–
1.1	–	•	3	3	–
1.5	•	•	3	3	–
2.2	•	•	3	3	–
3.0	•	•	3	3	•
4.0	•	•	3	3	•
5.5	•	•	3	3	•
7.5	•	•	3	3	•
11.0	•	•	3	3	•
15.0	•	•	3	3	•
18.5	•	•	3	3	•
22.0	•	•	3	3	•
30.0	•	•	3	3	•
37.0	•	•	3	3	•
45.0	•	•	3	3	•

May differ for some motor approvals/effiency classes.

Motor protection
Three-phase motors should be connected to a motor-protective circuit breaker.

All three-phase mains-operated standard motors can be connected to an external frequency converter. When a frequency converter is connected, the motor isolation is often overloaded, making the motor louder than during normal operation. In addition, large motors will be exposed to bearing currents caused by the frequency converter.

The following should be taken into account when operating a frequency converter:
- In the event of special noise protection requirements, motor noise can be reduced by using a dU/dt filter between the motor and the frequency converter. For noise-sensitive environments, we recommend using a sinus filter.
- The length of the cable between motor and frequency converter affects the motor load. For this reason, check whether the cable length corresponds to the specifications issued by the supplier of the frequency converter.
- For supply voltages between 500 and 690 V, fit either a dU/dt filter to reduce voltage peaks, or use a motor with reinforced insulation.
- For supply voltages of 690 V, use a motor with reinforced insulation, and fit a dU/dt filter.

Design
The motors are totally enclosed, fan-cooled standard motors with main dimensions according to IEC and DIN standards. Electrical tolerances according to IEC 60034.

Pump range	Design – IEC 60034-7 Horizontal installation
GEA Hilge HYGIA	IM 3001 (IM B5) IM 2001 (IM B35)

Relative air humidity: Max. 95 %
Enclosure class: IP55
Insulation class: F according to IEC 85
Ambient temperature: Max. 40 °C (standard motor)

In humid locations, the lowest drain hole in the motor must be opened. In such cases, the motor enclosure class is IP44.

Selecting according to the application

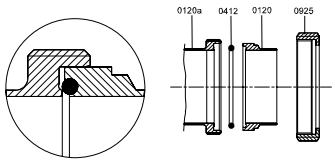
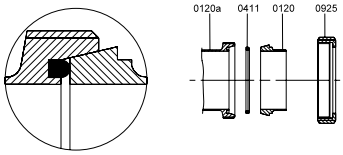
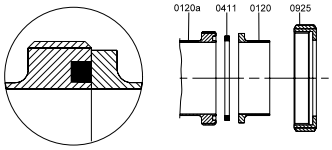
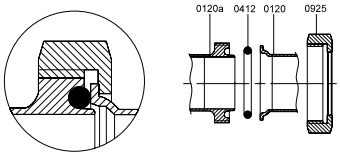
The table below is intended as a general guide. Selection of connection often depends on on-site conditions.

Connection		Application																			
		Beverages					Food				Life science and personal care			Industrial applications						Cleaning	
Type		Beer	Wine	Juice	Alcohol	Soft drinks	Confectionery	Dairy products	Frying oil	Syrup	Pure water	Biotechnology products	Perfumes and lotions	Glue and paint	Purification products	Chemical products	Industrial wastewater and efflux	Surface treatment products	Biofuel	CIP	SIP
Threads	Aseptic threaded connection DIN 11864-1/ 11853-1	•	•	•	•	•	•	•	•	•	•	•	•							•	•
	Threaded connection DIN 11851	•	•	•	•	•	•	•	•	•										•	•
	Threaded connection SMS	•	•	•	•	•	•	•	•	•										•	
	Threaded connection RJT	•	•	•	•	•	•	•	•	•										•	
Flanges	Aseptic flange DIN 11864-2/11853-2	•	•	•	•	•	•	•	•	•	•	•	•							•	•
	Flange APV-FN1/APV-FG1	•	•	•	•	•	•	•	•	•										•	
	Flange DIN EN 1092-1	•	•	•	•	•	•	•	•	•				•	•	•	•	•	•	•	
	Flange VARIVENT® FN	•	•	•	•	•	•	•	•	•										•	
	Flange Kieselmann DIN	•	•	•	•	•	•	•	•	•										•	
Clamps	Clamp 32676	•	•	•	•	•		•			•	•	•							•	•

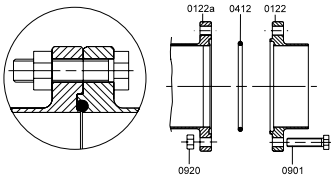
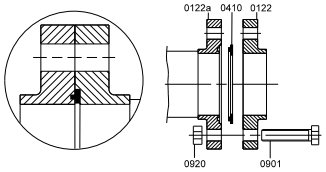
Design

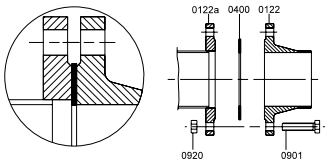
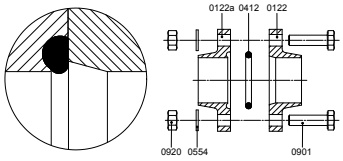
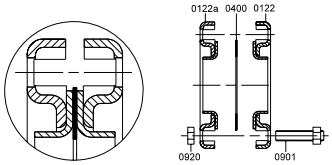
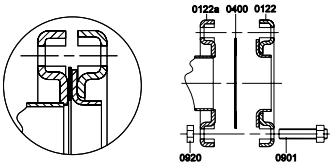
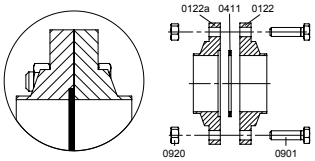
The following tables show the design of the different connection types.

Threads

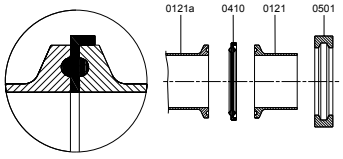
Applications	Standard	Design	Description of the components
Aseptic Thread			
• Biotechnology / Pharmaceutical Industry	DIN 11864-1/ 11853-1		0120a: Threaded connection at pump casing 0120: Threaded connection 0412: O-ring 0925: Grooved union nut
Thread			
• Beverage Industry • Food Industry	DIN 11851		0120a: Threaded connection at pump casing 0120: Threaded connection 0411: Joint ring 0925: Grooved union nut
• Beverage Industry • Food Industry	SMS (ISO 2037 DS 722)		0120a: Threaded connection at pump casing 0120: Threaded connection 0411: Joint ring 0925: Grooved union nut
• Beverage Industry • Food Industry	RJT (BS 4825-5)		0120a: Threaded connection at pump casing 0120: Threaded connection 0412: O-ring 0925: Grooved union nut

Flanges

Applications	Standard	Design	Description of the components
Aseptic Flange			
• Biotechnology / Pharmaceutical Industry • Beverage Industry	DIN 11864-2/ 11853-2 Form A		0122a: Flanged connection at pump casing 0122: Flanged connection 0412: O-ring 0901: Hexagon head screw 0920: Hexagon nut
Flange			
• Food Industry • Beverage Industry	APV-FN1/ APV-FG1		0122a: Flanged connection at pump casing 0122: Flanged connection 0410: Profile gasket 0901: Hexagon head screw 0920: Hexagon nut

Applications	Standard	Design	Description of the components
• Industrial Applications	DIN EN 1092-1 (fixed)		0122a: Flanged connection at pump casing 0122: Flanged connection 0400: Gasket 0901: Hexagon head screw 0920: Hexagon nut
• Food Industry • Beverage Industry • Cleaning System (CIP)	VARIVENT®		0122a: Flanged connection at pump casing 0122: Flanged connection 0412: O-ring 0554: Washer 0901: Hexagon head screw 0920: Hexagon nut
Kremo Flange			
• Industrial Applications	DIN EN 1092-1 (loose)		0122a: Flanged connection at pump casing 0122: Flanged connection 0400: Gasket 0901: Hexagon head screw 0920: Hexagon nut
• Industrial Applications	DIN EN 1092-1 (fixed/loose)		0122a: Flanged connection at pump casing 0122: Flanged connection 0400: Gasket 0901: Hexagon head screw 0920: Hexagon nut
• Industrial Applications • Cleaning System (CIP)	Kieselmann DIN		0122a: Flanged connection at pump casing 0122: Flanged connection 0411: Joint ring 0901: Hexagon head screw 0920: Hexagon nut

Clamps

Applications	Standard	Design	Description of the components
• Food Industry • Biotechnology / Pharmaceutical Industry	DIN 32676		0121a: Clamp connection at pump casing 0121: Clamp connection 0410: Profile gasket 0501: Clamp ring

In order to ensure correct operation (depending on the application and the medium), single or single mechanical flushed seal systems can be supplied. The mechanical seal is optimally placed inside the pump. This ensures efficient lubrication and cooling of the mechanical seal, while also ensuring CIP (Cleaning In Place) and SIP (Sterilization In Place) capability. The standard material for the mechanical seals are carbon/stainless steel or SiC/SiC with EPDM or FKM (Viton) elastomers.

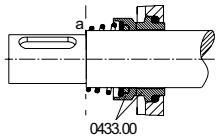
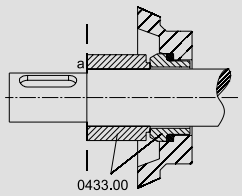
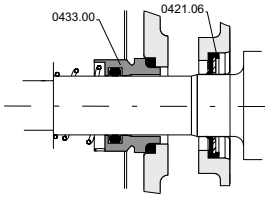
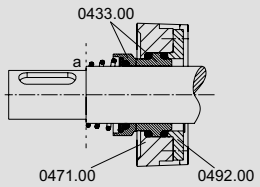
Mechanical seals

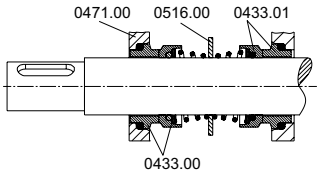
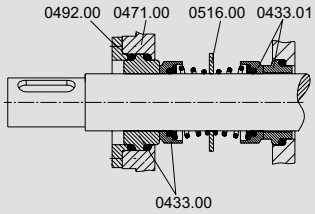
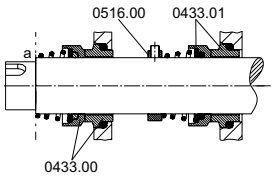
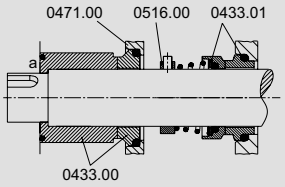
The operating range of the seal depends on the liquid, the type of seal, the operating pressure and the liquid temperature. The seal types described below are standard seal types; other seals are available on request.

Version	Material pairs stationary seat/seal face/O-rings	Max. pressure	Max. temperature
Open spring	Carbon/stainless steel/EPDM Carbon/stainless steel/FKM Silicon carbide/silicon carbide/EPDM Silicon carbide/silicon carbide/FKM	10 bar	–20 to 80 °C
Encapsulated spring	Silicon carbide/silicon carbide/EPDM Silicon carbide/silicon carbide/FFKM Silicon carbide/silicon carbide/FKM	16 bar	–20 to 100 °C

Special seals available in different materials up to 25 bar.

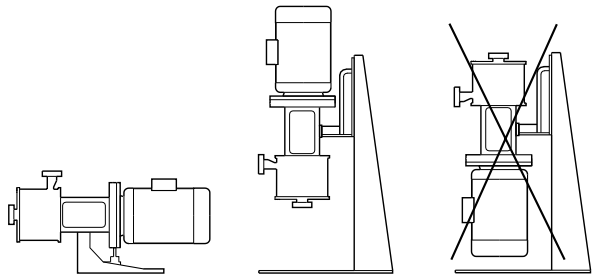
Mechanical seal arrangements

Arrangement	Design	Components	Seal characteristics	K	Adapta
Single mechanical seal with open spring		0433.000: Mechanical seal a: Contact surface impeller side	• Open conical spring • Optimal position inside the pump	•	•
Single mechanical seal with encapsulated spring		0433.00: Mechanical seal a: Contact surface impeller side	• Encapsulated spring • Easy to clean • Optimal position inside the pump • Bidirectional	•	•
Flushed mechanical seal with quench		0433.00: Mechanical seal 0421.06: Lip seal	• Flushed single seal • Optimal position inside the pump • Easy to retrofit • Open or encapsulated spring possible	•	
Single mechanical seal, stationary ring with double elastic bearing		0433.00: Mechanical seal 0471.00: Seal cover 0492.00: Locking plate a: Contact surface impeller side	• Open conical spring • Optimal position within the pump interior • Stationary ring with double elastic bearing • No position change of the stationary ring, including in the event of vacuum in the pump interior		•

Arrangement	Design	Components	Seal characteristics	K	Adapta
Double mechanical seal, back-to-back		0433.00: Mechanical seal, product side 0433.01: Mechanical seal, atmosphere side 0471.00: Seal cover 0516.00: Locating ring	• Back-to-back arrangement • Overpressure in barrier fluid space (seal cartridge) • No product leakage into the surrounding atmosphere • No dry running • Mechanical seals are lubricated and cooled		•
Double mechanical seal, back-to-back, product-side stationary ring with double elastic bearing		0433.00: Mechanical seal, product side 0433.01: Mechanical seal, atmosphere side 0471.00: Seal cover 0492.00: Locking plate 0516.00: Locating ring	• Back-to-back arrangement • Overpressure in lock chamber (seal cartridge) • Product-side stationary ring with double elastic bearing • No position change of the stationary ring, including in the event of vacuum in the pump interior • No product leakage into the surrounding atmosphere • No dry running • Mechanical seals are lubricated and cooled		•
Double mechanical seal, tandem		0433.00: Mechanical seal, product side 0433.01: Mechanical seal, atmosphere side 0516.00: Locating ring a: Contact surface impeller side	• Tandem arrangement • Open conical spring • Pressure-less flushing (seal cartridge) • No dry running • Mechanical seals are lubricated and cooled		•
Double mechanical seal, tandem		0433.00: Mechanical seal, product side 0433.01: Mechanical seal, atmosphere side 0471.00: Seal cover 0516.00: Locating ring a: Contact surface impeller side	• Tandem arrangement • Product-side spring encapsulated • Pressure-less flushing (seal cartridge) • No dry running • Mechanical seals are lubricated and cooled		•

Mechanical installation

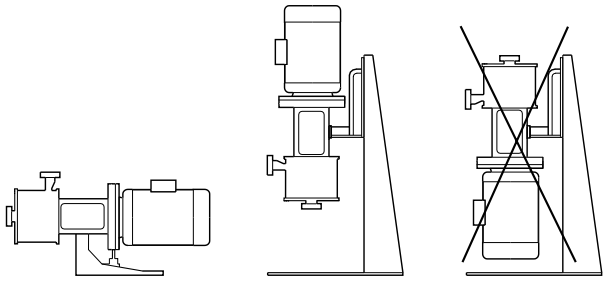
GEA Hilge HYGIA K
The pumps of the GEA Hilge HYGIA II can only be installed horizontally.



Installation GEA Hilge HYGIA I K

GEA Hilge HYGIA Adapta
The pumps of the GEA Hilge HYGIA Adapta series can be installed horizontally and vertically.

When installing vertically, always install the motor facing upwards.

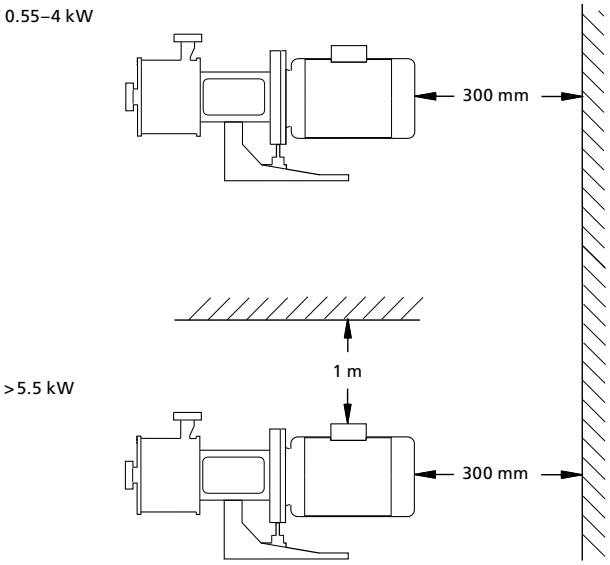


Installation GEA Hilge HYGIA Adapta

The pumps must be installed in such a way that strain from the pipework is not transferred to the pump casing. When installed outdoors, the motor must be provided with a suitable cover to avoid condensation on the electronic components and to protect pump and motor against the direct effects of the elements.

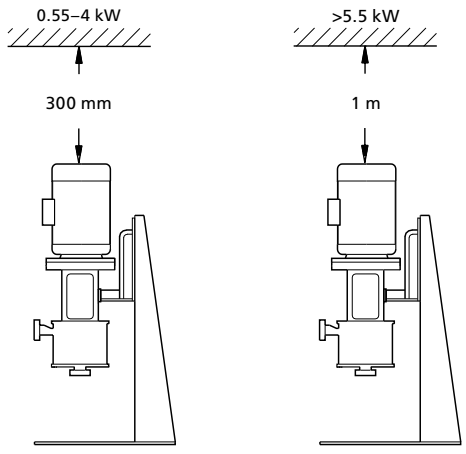
Space requirements

Horizontal installation
- Pumps fitted with motors up to and including 4 kW require a 300 mm clearance behind the motor.
- Pumps fitted with motors of 5.5 kW and up require at least a 1 meter clearance above the motor and 300 mm behind it to allow the use of lifting equipment.



Horizontal installation

Vertical installation
- Pumps fitted with motors up to and including 4 kW require a 300 mm clearance above the motor.
- Pumps fitted with motors of 5.5 kW and up require at least a 1 meter clearance above the motor to allow the use of lifting equipment.



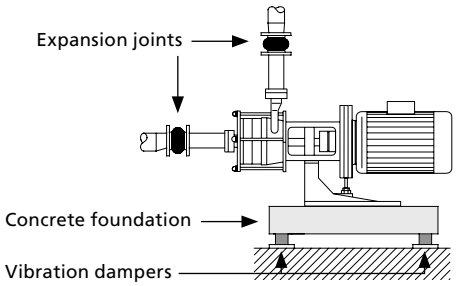
Vertical installation

Elimination of noise and vibrations

In order to achieve optimum operation and minimum noise and vibration, consider vibration dampening of the pump. Generally, always consider this for pumps with motors above 11 kW. Smaller motors, however, may also cause undesirable noise and vibration.

Noise and vibration are generated by the rotation in the motor and pump and by the flow in the pipework and fittings. The effect on the environment is subjective and depends on correct installation and the state of the remaining system.

Foundation
Vibration dampening is best achieved by installing the pumps on a plane and rigid concrete foundation.



Example of a pump foundation

As a guideline, the weight of the concrete foundation should be 1.5 times the pump weight.

Vibration dampers
To prevent vibrations from being transmitted to the building, we recommend that you isolate the pump foundation from buildings by means of vibration dampers.

The selection of the correct vibration dampers requires the following data:
- Forces that will be transmitted through the vibration dampers
- Motor speed, taking speed control into account as needed
- Required dampening in % (suggested value is 70 %)

The right damper varies from installation to installation, and the wrong damper may increase the vibration level. Vibration dampers should therefore be sized by the supplier.

Expansion joints

If the pump is installed on a pedestal with vibration dampers, expansion joints must always be fitted on the pipeline connections. This is important to prevent the pump from "hanging" in the connections.

Install expansion joints in order to
- absorb expansion/contractions in the pipework caused by variable liquid temperatures
- reduce mechanical strains that occur in connection with pressure surges in the plant
- isolate mechanical structure-borne noise in the pipework (only rubber bellows expansion joints)

Note: Do not install expansion joints to compensate for inaccuracies in the pipework such as center displacement of flanges.

Fit expansion joints at a distance of at least 1 to 1.5 times the nominal flange diameter away from the pump on the suction as well as on the discharge side. This will prevent the development of turbulence in the expansion joints, resulting in better suction conditions and a minimum pressure loss on the discharge side.

We always recommend expansion joints with limiting rods for flanges larger than DN 100/4".

The pipes should be anchored so that they do not stress the expansion joints and the pump. Follow the supplier's instructions and pass them on to advisers or pipe installers.

The values for density and viscosity given here are ratios and can deviate in practice.

Application beer

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Altbier Beer Beer mix Berliner Weisse Bock beer Craft beer Export beer Full beer (Vollbier) Green beer Herb beer Lager Light beer Martzen (Märzen) Non-alcoholic beer Pils Pilsener Ringed (Kräusen) Wheat beer	< 100	1,000	1	aeE (up to 10 bar), aiH (from 10 bar)	–	–
Cold wort Original wort	< 40	< 1,050	< 5	aeE (up to 10 bar), aiH (from 10 bar)	–	–
Hop extract (dissolved) Lees Mash (beer)	< 100	< 1,050	< 5	–	kiE/WDR	kiE/aeE
Lauter wort	40–90	< 1,050	< 5	–	kiE/WDR	kiE/aeE
Hot wort	40–115	< 1,050	< 5	–	kiE/WDR	kiE/aeE
Crop yeast Pitching yeast Yeast	< 20	< 1,050	< 100	aeE	–	–
Enzymes (watery dissolution)	< 60	< 1,050	< 5	aeE	–	–
Lactic acid, con. < 50 % ($C_3H_6O_3$)	< 100	< 1,100	< 5	kiV (up to 16 bar), kiI (up to 25 bar)	–	–
Lactic acid, con. > 50 % ($C_3H_6O_3$)	< 100	< 1,210	< 5	kiV (up to 16 bar), kiI (up to 25 bar)	–	–

Application water

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Iced water	–4 to +3	< 1,000	1	kiE (up to 10 bar), kiH (from 10 bar)	–	–
Cold water Demineralized water (Not for sterile applications) Drinking water Flushing water Hot water Mineral water Process water Service water Water	< 125	< 1,000	1	aeE (up to 10 bar), aiH (from 10 bar)	–	–

Application wine/sparkling wine

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Champagne Cherry wine Cider Cidre Dry sparkling wine Fruit wine Prosecco Red wine Rosé wine Sparkling wine Strawberry wine White wine Wine Young wine	< 35	< 1,000	1	aeE (up to 10 bar), aiH (from 10 bar)	–	–
Dessert wine Dessert wine, late-harvest wine Drape must (w/o. particles) Ice wine	< 35	< 1,050	15	aeE (up to 10 bar), aiH (from 10 bar)	–	–
Wine lees Wine yeast	< 35	< 1,050	100	aeE (up to 10 bar), aiH (from 10 bar)	–	–
Mash (wine)	< 35	< 1,050	5	aeE (up to 10 bar), aiH (from 10 bar)	–	–

Application coffee/tea/cocoa

				Mechanical seal* material product side / atmospheric side			
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem	Encapsulated seal for vacuum application
Coffee	< 125	1,000	1	aeE	–	–	
Coffee extract	< 80–100	< 1,200	< 250	–	–	kiV/aeV	x
Tea	< 125	1,000	1	aeE	–	–	
Fruit tea / flavored tea	< 125	1,000	1	aeE	–	–	
Cocoa drink	< 40	1,020	< 10	aeE	–	–	

* aeE: carbon/stainless steel/EPDM, aeV: carbon/stainless steel/Viton, aiH: carbon/SIC/EPDM (USP-Class VI), kiE: SIC/SIC/EPDM, kiH: SiC/SiC/EPDM (USP-Class VI), kil: SIC/SIC/Viton (USP Class VI), kiV: SIC/SIC/Viton, WDR: lip seal. The elastomer of the static seals equals the elastomer of the mechanical seals.

Application milk

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Buttermilk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
UHT milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Yoghurt milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Kefir	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Cheese milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Skimmed milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Skimmed milk concentrate	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Milk concentrate	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Lactic culture	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Milk mix	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Whey	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Raw milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Pre-stirred yoghurt	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Sour milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Sour cream with thickening agents	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Full cream milk	< 55	< 1,050	< 10	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	> 55 – < 100	< 1,050	< 5	–	aeE/WDR (up to 10 bar), aiH/WDR (from 10 bar)	aeE/aeE (up to 10 bar), aiH/aeE (from 10 bar)
Coffee cream	< 55	< 1,100	< 40	aeV (up to 10 bar), ail (from 10 bar)	–	–
	> 55 – < 100	< 1,100	< 20	–	aeV/WDR (up to 10 bar), ail/WDR (from 10 bar)	aeV/aeV (up to 10 bar), ail/aeV (from 10 bar)
Whipping cream	< 55	< 1,100	< 40	aeV (up to 10 bar), ail (from 10 bar)	–	–
	> 55 – < 100	< 1,100	< 20	–	aeV/WDR (up to 10 bar), ail/WDR (from 10 bar)	aeV/aeV (up to 10 bar), ail/aeV (from 10 bar)
Sour cream	< 55	< 1,100	< 40	aeV (up to 10 bar), ail (from 10 bar)	–	–
	> 55 – < 100	< 1,100	< 20	–	aeV/WDR (up to 10 bar), ail/WDR (from 10 bar)	aeV/aeV (up to 10 bar), ail/aeV (from 10 bar)
Cream	< 55	< 1,100	< 40	aeV (up to 10 bar), ail (from 10 bar)	–	–
	> 55 – < 100	< 1,100	< 20	–	aeV/WDR (up to 10 bar), ail/WDR (from 10 bar)	aeV/aeV (up to 10 bar), ail/aeV (from 10 bar)
Condensed milk	< 55	< 1,100	< 40	aeV (up to 10 bar), ail (from 10 bar)	–	–
	> 55 – < 100	< 1,100	< 20	–	aeV/WDR (up to 10 bar), ail/WDR (from 10 bar)	aeV/aeV (up to 10 bar), ail/aeV (from 10 bar)

Application vinegar / sauces / marinade

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Soy sauce	5–95	1,250	25	kiE	–	–
	95.1–125	1,250	25	–	kiE/WDR	kiE/aeE
Cider vinegar Herb-flavored vinegar Vinegar Wine vinegar	60	1,020	1	aeE	–	–
Vinegar essence	60	1,050	1	aeV	–	–

* aeE: carbon/stainless steel/EPDM, aeV: carbon/stainless steel/Viton, aiH: carbon/SIC/EPDM (USP-Class VI), ail: carbon/SIC/Viton (USP-Class VI), kiE: SIC/SIC/EPDM, WDR: lip seal. The elastomer of the static seals equals the elastomer of the mechanical seals.

Application non-alcoholic drink

				Mechanical seal* material product side / atmospheric side			
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem	Encapsulated seal
Apple juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Apple juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Apple juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Apple juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Apple juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Apricot-mango juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Apricot-mango juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Apricot-mango juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Apricot-mango juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Apricot-mango juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Cherry juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Cherry juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Cherry juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Cherry juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Cherry juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Cola	< 100	1,040	< 5	aeE	–	–	
Concentrated lemon juice, without pulp and granules	< 70	1,040	25	kiV	–	–	
Cranberry juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Cranberry juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Cranberry juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Cranberry juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Cranberry juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Multivitamin juice	< 70	1,040	< 50	kiE	–	–	x
Fruit juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Fruit juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Fruit juice, with pulp and with granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Fruit juice, without pulp	< 70	1,040	< 50	aeE	–	–	
	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Grape juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Grape juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Grape juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Grape juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Grape juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Iced tea	< 100	1,040	< 5	aeE	–	–	
Lemon juice, with pulp and granules	< 70	1,040	25	kiV	–	–	x
Lemon juice, without pulp and granules	< 70	1,040	25	aeV	–	–	
Lemonade	< 100	1,040	< 5	aeE	–	–	
Mineral water	< 100	1,040	< 5	aeE	–	–	
Multivitamin juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Multivitamin juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Multivitamin juice, with granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Multivitamin juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Orange juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Orange juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Orange juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Orange juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Orange juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Peach- / passion fruit juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Peach- / passion fruit juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Peach- / passion fruit juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Peach- / passion fruit juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Peach- / passion fruit juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x

				Mechanical seal* material product side / atmospheric side			
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem	Encapsulated seal
Raspberry- / Strawberry juice, without pulp	< 70	1,040	< 50	aeE	–	–	
Raspberry- / Strawberry juice, with pulp	< 70	1,040	< 50	aeE	–	–	x
Raspberry- / Strawberry juice, with granules	< 70	1,040	< 50	kiE	–	–	x
Raspberry- / Strawberry juice, without pulp	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	
Raspberry- / Strawberry juice, Apple juice, with pulp or granules	> 70 – < 95	1,040	< 10	–	kiE/WDR	kiE/aeE	x
Vegetable juice, with pulp and granules	< 70	1,050	< 50	kiV	–	–	x
	> 70 – < 95	1,050	< 10	–	–	kiV/aeV	x
Vegetable juice, without pulp and granules	< 70	1,050	< 50	aeV	–	–	
	> 70 – < 95	1,050	< 10	–	–	kiV/aeV	

Application concentrated fruit juice

					Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Concentration [Brix]	Single	Quench	Tandem
Concentrated fruit juice	5–90	1,150	related to temperature	to 25°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	5–40	1,200		26–49°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,200		26–49°	–	aeE/WDR	aeE/aeE
	15–40	1,230		50°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,230		50°	–	aeE/WDR	aeE/aeE
	15–40	1,260		55°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,260		55°	–	aeE/WDR	aeE/aeE
	15–40	1,290		60°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,290		60°	–	aeE/WDR	aeE/aeE
	15–40	1,320		65°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,320		65°	–	aeE/WDR	aeE/aeE
	20–40	1,350		70°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,350		70°	–	aeE/WDR	aeE/aeE

* aeE: carbon/stainless steel/EPDM, aeV: carbon/stainless steel/Viton, aiH: carbon/SIC/EPDM (USP-Class VI), kiE: SIC/SIC/EPDM, kiH: SiC/SiC/EPDM (USP-Class VI), kiV: SIC/SIC/Viton, WDR: lip sea. The elastomer of the static seals equals the elastomer of the mechanical seals.

Application oil & fat

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Cocoa butter Coconut oil / copra oil Corn oil Cotton seed oil Linseed oil Olive oil Palm oil Peanut oil Pumpkin seed oil Rape oil / rapeseed oil Safflower oil Sesame oil Soy oil / soy bean oil Sunflower oil Walnut oil Wheat germ oil	10–30 30.1–125	940 920	< 80 < 40	aeV aeV	– –	– –
Butter oil (liquid)	> 45–120	860	45	aeV	–	–
Lard (liquid)	> 45–120	860	45	aeV	–	–
Liquid butter	> 35–120	860	45	aeV	–	–
Fish oil	10–125	950	< 100	aeV	–	–
Whale oil	10–125	950	< 100	aeV	–	–
Cod liver (cod-liver oil)	10–125	950	< 100	aeV	–	–
Mineral oil Motor oil Petroleum	10–100			aeV	–	–
Derv Diesel oil	10–100	850	< 15	aeV	–	–
Oil-in-water emulsion	0–100	1,000	< 50	aeV	–	–

Application cleaning in place CIP

					Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Concentration [%]	Single	Quench	Tandem
CIP liquid (concentration approx. 5 %)	< 100	1,050	< 5	< 5	aeE (up to 10 bar), aiH (from 10 bar)	–	–

Application sugar syrup

					Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Concentration [Brix]	Single	Quench	Tandem
Sugar syrup without crystals	5–90	1,150	related to temperature	to 25°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	5–40	1,200		26–49°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,200		26–49°	–	aeE/WDR	aeE/aeE
	15–40	1,230		50°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,230		50°	–	aeE/WDR	aeE/aeE
	15–40	1,260		55°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,260		55°	–	aeE/WDR	aeE/aeE
	15–40	1,290		60°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,290		60°	–	aeE/WDR	aeE/aeE
	15–40	1,320		65°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,320		65°	–	aeE/WDR	aeE/aeE
	20–40	1,350		70°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,350		70°	–	aeE/WDR	aeE/aeE
	20–40	1,360		72,7°	aeE (up to 10 bar), aiH (from 10 bar)	–	–
	40.1–90	1,360		72,7°	–	aeE/WDR	aeE/aeE
Sugar syrup with crystals	5–90	1,150		to 25°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	5–40	1,200		26–49°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,200		26–49°	–	kiE/WDR	kiE/aeE
	15–40	1,230		50°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,230		50°	–	kiE/WDR	kiE/aeE
	15–40	1,260		55°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,260		55°	–	kiE/WDR	kiE/aeE
	15–40	1,290		60°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,290		60°	–	kiE/WDR	kiE/aeE
	15–40	1,320		65°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,320		65°	–	kiE/WDR	kiE/aeE
	20–40	1,350		70°	kiE (up to 10 bar), kiH (10 – 16 bar)	–	–
	40.1–90	1,350		70°	–	kiE/WDR	kiE/aeE

* aeE: carbon/stainless steel/EPDM, aeV: carbon/stainless steel/Viton, aiH: carbon/SIC/EPDM (USP-Class VI), kiE: SIC/SIC/EPDM, kiH: SiC/SiC/EPDM (USP-Class VI), WDR: lip seal. The elastomer of the static seals equals the elastomer of the mechanical seals.

Application chemicals

					Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Concentration [%]	Single	Quench	Tandem
Caustic soda (NaOH)	< 60	= Concentration		< 15	kiE	–	–
	< 60	= Concentration		> 15 – < 50	–	kiE/WDR	kiE/aeE
	> 60 – < 100	= Concentration		< 12	kiE	–	–
	> 60 – < 100	= Concentration		< 12 – < 50	–	kiE/WDR	kiE/aeE
Peracetic / peroxyacetic ($C_{24}O_3$)	< 60	< 1,020	< 1	< 5	kiV	–	–
	< 60	< 1,060	< 5	> 5.1 – < 15	kiK	–	–
Phosphoric acid (H_3PO_4)	< 40	1 % = 1,004 5 % = 1,026	< 5	< 15	kiV	–	–
	> 40 – < 85	10 % = 1,053 20 % = 1,114	< 5	< 15	–	kiV/WDR	kiV/aeV
	< 85	35 % = 1,216 45 % = 1,293	< 5	> 15 – < 45	–	–	kiV/aeV
Nitric acid (HNO_3)	0–20	1 % = 1,004 10 % = 1,055 20 % = 1,115 30 % = 1,180 40 % = 1,245	5	0–10	kiV	–	–
	20.1–40		5	0–10	–	kiV/WDR	kiV/aeV
	0–40		5	10.1–20	–	kiV/WDR	kiV/aeV
	40.1–85		5	0–20	–	–	kiV/aeV
	0–85		5	20.1–40	–	–	kiV/aeV
Sulfuric acid (H_2SO_4)	< 20	< 1,1	< 25	< 12	–	–	kiV/aeV
	< 70	< 1,08	< 20	< 12	–	–	kiK/aeV
High test peroxide (H_2O_2) Hydrogen peroxide	< 90	< 1,050	2	2–3	aeV	–	–
	< 90	< 1,150	2	< 40	kiV	–	–
	< 90	< 1,300	2	< 60	kiV	–	–
	< 60	< 1,450	2	< 100	–	–	kiV/aeV
Brine solution Common salt solution Sodium chloride (NaCl)	< 30	< 1,050	< 5	< 5	aeE	–	–
	30.1–40	< 1,050	< 5	< 5	kiE	–	–
	< 40	< 1,080	< 5	5.1–10	kiE	–	–
	< 40	< 1,200	< 25	10.1–25	–	kiE/WDR	kiE/aeE
Curing brine (butchery)	< 40	1,200	< 300	< 20	kiE	–	–
Salting brine (cheese dairy)	< 40	1,300	< 60	20–30	–	kiE/WDR	kiE/aeE
Ammonia/ammoniac (NH_3)	< 40	800	< 5		–	aeE/WDR	aeE/aeE
Caustic potash (KOH) Potassium hydroxide	< 60	< 1,100	< 5	< 10	kiE	–	–
	< 60	< 1,200	< 5	< 20	kiE	–	–
Glycerol Propanetriol	80	< 1,100	< 5	0–40	aeV	–	–
	80	< 1,160	< 20	40.1–60	aeV	–	–
	80	< 1,200	< 50	60.1–75	aeV	–	–
	80	< 1,220	< 100	75.1–85	aeV	–	–
Propylene-glycol ($C_3H_8O_2$)	0–80	1,010	< 5	1–20	kiV	–	–
	–5–80	1,020	< 20	20.1–50	kiV	–	–
	–10–80	1,040	< 150	50.1–75	kiV	–	–
	–10–0	1,060	< 255	75.1–100	kiV	–	–
	0.1–80	1,050	< 150	75.1–100	kiV	–	–
Ethanediol Ethylene-glycol ($C_2H_6O_2$)	0–80	1,030	< 5	1–20	kiE	–	–
	–5–80	1,060	< 20	20.1–50	kiE	–	
	–10–80	1,090	< 40	50.1–75	kiE	–	–
	–10–0	1,120	< 100	75.1–100	kiE	–	
	0.1–80	1,110	< 65	75.1–100	kiE	–	–
Citric acid ($C_6H_8O_7$) Natural citric acid	5–80	1 % = 1,005 10 % = 1,020	< 15	<10	kiV	–	–
	5–80	10.1 % = 1,020 20 % = 1,050 30 % = 1,100 50 % = 1,260	< 15	10.1–50	kiV	–	–
Acetic acid ($C_2H_4O_2$)	5–80	1,010	1	< 10	aeE	–	–
	5–100	1,050	1	10.1–100	–	–	aeK/aeE

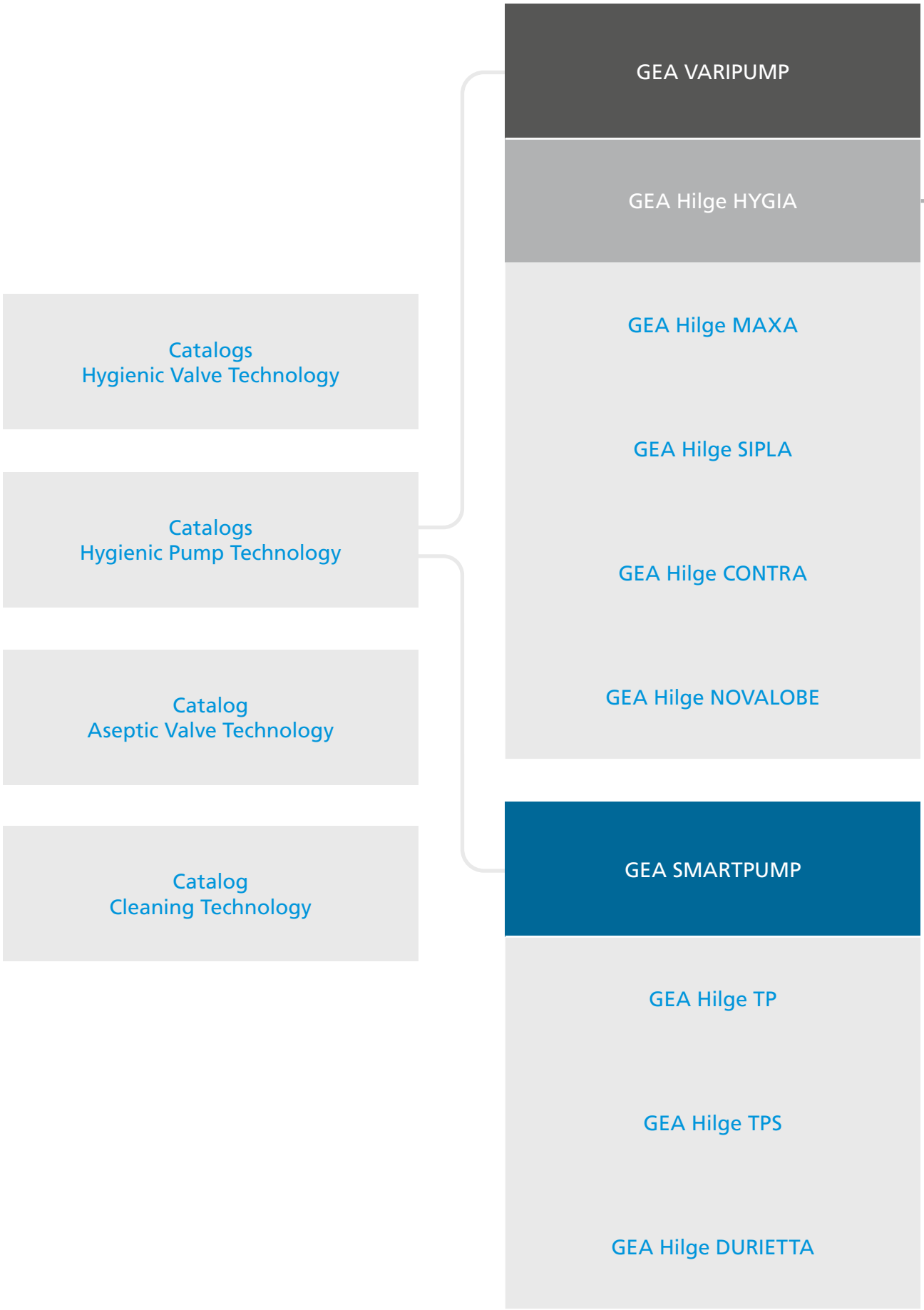
Application waste water

				Mechanical seal* material product side / atmospheric side		
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem
Dirty water Laboratory waste water Sewage Waste water, without solids (not abrasive), pH > 7	< 80	1,000	1	kiV	–	–
Dirty water Laboratory waste water Sewage Waste water, without solids (not abrasive), pH < 7	< 80	1,000	1	kiE	–	–
Landfill seepage water, not ozoniferous, chloride content max. 350 mg/l	< 50	1,000	1	kiV	–	–
Landfill seepage water, not ozoniferous, no chloride content	< 50	1,000	1	kiV	–	–
Landfill seepage water, ozoniferous, max. 300 ppB, chloride content max. 350 mg/l	< 50	1,000	1	kiK	–	–
Landfill seepage water, ozoniferous, max. 300 ppB, no chloride content	< 50	1,000	1	kiK	–	–
Activated sludge	< 60	1,000	1	kiV	–	–

Application pharma

				Mechanical seal* material product side / atmospheric side			
Subgroup	Temperature [°C]	Density [kg/m³]	Viscosity [mPas]	Single	Quench	Tandem	Encapsulated seal
Purified water (PW)	0–125	1,000	1	kiH	–	–	x
Highly purified water (HPW) Ultra-purified water (UPW) Water for injection (WFI)	0–125	1,000	1	kiH-C1/ooH-C1	–	–	x

* aeE: carbon/stainless steel/EPDM, aeK: carbon/stainless steel/FFKM, aeV: carbon/stainless steel/Viton, kiE: SIC/SIC/EPDM, kiH: SiC/SiC/EPDM (USP-Class VI), kiK: SIC/SIC/FFKM, kiV: SIC/SIC/Viton, ooH: SIC/SIC/EPDM (USP-Class VI). The elastomer of the static seals equals the elastomer of the mechanical seals.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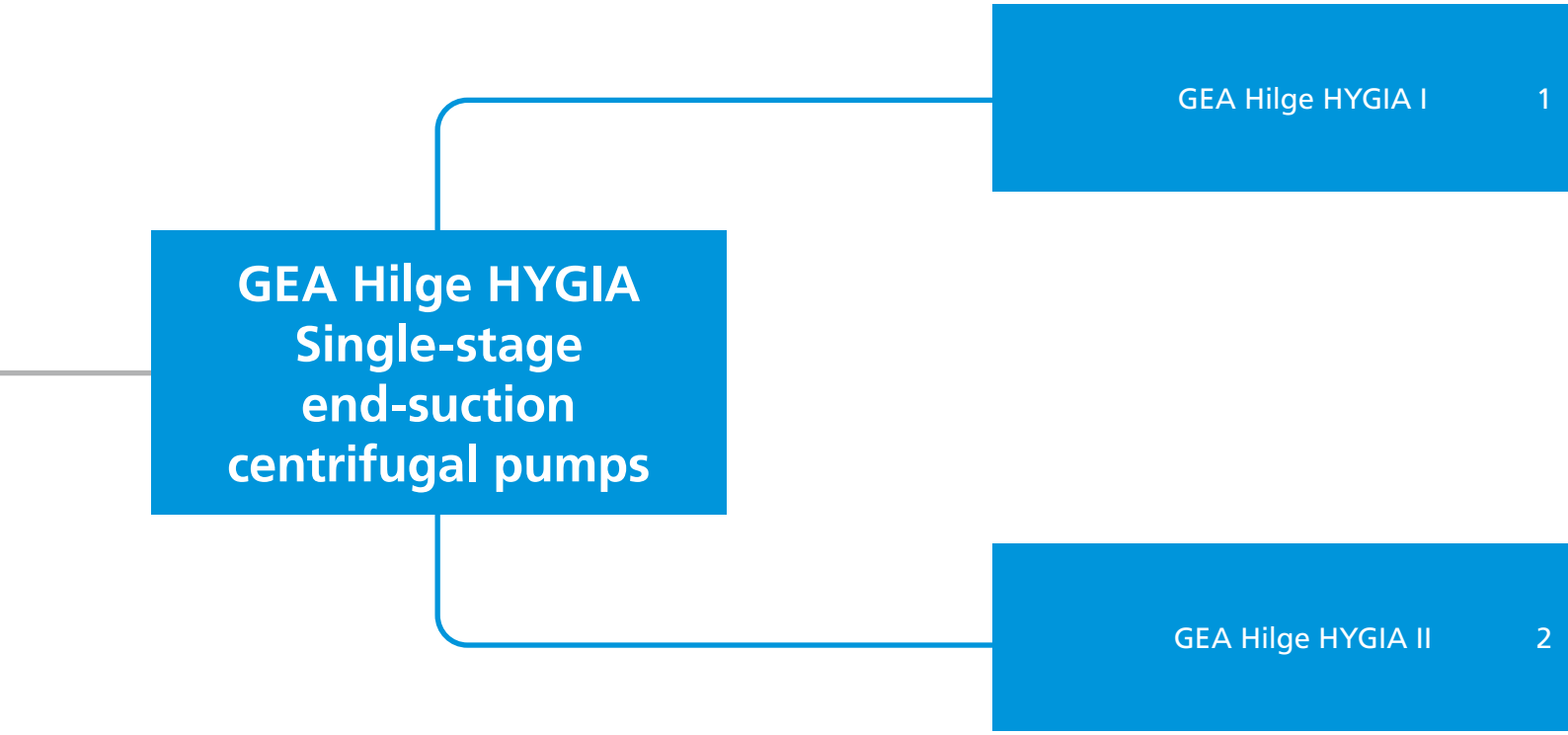
GEA Hilge HYGIA Single-stage end-suction centrifugal pumps
GEA Hilge HYGIA I 1
GEA Hilge HYGIA II 2

Casing Design		KLM	x	x	x	x
		HPM		x	x	x
Nominal width		DIN	40/25	40/40	50/50	65/50
		OD	1½"/1"	1½"/1½"	2"/2"	2½"/2"
Connection type		ISO	48.3/33.7	48.3/48.3	60.3/60.3	76.1/60.3
Threaded connection	a_1		75.0	75.0	75.0	75.0
DIN 11851	e_1		85.0	85.0	75.0	75.0
(DIN)	h_2		170.0	170.0	170.0	170.0
Threaded connection	a_1		82.0	82.0	78.0	78.0
DIN 11864-1 / DIN 11853-1	e_1		85.0	85.0	75.0	75.0
Form A – pipe range A (DIN)*	h_2		183.0	188.0	188.0	188.0
Threaded connection	a_1		78.0	78.0	78.0	–
DIN 11864-1 / DIN 11853-1	e_1		85.0	85.0	75.0	–
Pipe range B (ISO)**	h_2		187.0	188.0	193.0	–
Threaded connection	a_1		82.0	82.0	78.0	78.0
DIN 11864-1 / DIN 11853-1	e_1		85.0	85.0	75.0	75.0
Pipe range C (OD)***	h_2		183.0	188.0	188.0	188.0
Groove-faced flange	a_1		74.7	74.7	70.7	65.7
DIN 11864-2 / DIN 11853-2	e_1		85.0	85.0	75.0	75.0
Form A – pipe range A (DIN)*	h_2		180.7	180.7	180.7	180.7
Groove-faced flange	a_1		70.7	70.7	94.2	–
DIN 11864-2 / DIN 11853-2	e_1		85.0	85.0	75.0	–
Pipe range B (ISO)**	h_2		180.7	180.7[(2)]	193.7	–
Groove-faced flange	a_1		74.7	74.7	70.7	65.7
DIN 11864-2 / DIN 11853-2	e_1		85.0	85.0	75.0	75.0
Pipe range C (OD)***	h_2		180.7	180.7	180.7	180.7
Welding neck flange	a_1		100.0	93.0	92.0	97.0
EN1092-1/11 PN16	e_1		85.0	85.0	75.0	75.0
	h_2		170.0	199.0	202.0	202.0
Welding neck flange	a_1		–	100.0	92.0	94.0
EN1092-1/11 PN40	e_1		–	85.0	75.0	75.0
(only casing design HPM)	h_2		–	199.0	202.0	202.0
Flange	a_1		75.0	75.0	75.0	75.0
EN1092-1 PN10 Kremo	e_1		85.0	85.0	75.0	75.0
****	h_2		170.0	170.0	170.0	170.0
Clamp	a_1		72.5	72.5	68.5	75.0
DIN 32676	e_1		85.0	85.0	75.0	75.0
Pipe range A (DIN)*	h_2		178.5	178.5	178.5	178.5
Flange connection	a_1		76.0	76.0	72.0	75.0
Varivent® FN	e_1		85.0	85.0	75.0	75.0
(DIN)	h_2		182.0	182.0	182.0	182.0
Flange connection	a_1		76.0	76.0	72.0	67.0
Varivent® FN	e_1		85.0	85.0	75.0	75.0
(OD)	h_2		182.0	182.0	182	182.0
Threaded connection	a_1		72.5	72.5	68.5	63.5
RJT	e_1		85.0	85.0	75.0	75.0
(OD)	h_2		178.5	178.5	178.5	178.5
Flange connection	a_1		75.0	75.0[(1)]	74.0	75.0
APV-FG / 3.1-PN 10	e_1		85.0	85.0	75.0	75.0
(DIN)	h_2		200.0	170.0	170.0	170.0
Flange connection	a_1		75.0	75.0	74.0	75.0
APV-FN / 3.1-PN 10	e_1		85.0	85.0	75.0	75.0
(DIN)	h_2		181.0	170.0	170.0	170.0
Flange connection	a_1		–	67.0	72.0	62.0
APV-FN / PN25	e_1		–	85.0	75.0	75.0
(DIN)	h_2		–	173.0	177.0	177.0
Flange connection	a_1		75.0	75.0	71.0	66.0
Kieselmann	e_1		85.0	85.0	75.0	75.0
(DIN)	h_2		181.0	181.0	181.0	181.0
Clamp	a_1		68.5	68.5	70.0	–
DIN 32676	e_1		85.0	85.0	75.0	–
Pipe range B (ISO)**	h_2		178.5	178.5	185.0	–
Clamp	a_1		72.5	72.5	68.5	70.5
DIN 32676	e_1		85.0	85.0	75.0	75.0
Pipe range C (OD)***	h_2		178.5	178.5	178.5	178.5

Casing Design	KLM	x	x	x	x	x
	HPM			x	x	x
Nominal width / Connection type	OD	–	1½"/1"	1½"/1½"	2"/2"	2½"/2"
Threaded connection	a_1	–	71.0	71.0	67.0	71.5
SMS international	e_1	–	85.0	85.0	75.0	75.0
(OD)	h_2	–	176.0	177.0	177.0	170.0
Clamp	a_1	–	79.6	79.6	75.6	70.0
SMS	e_1	–	85.0	85.0	75.0	75.0
(OD)	h_2	–	185.6	185.6	185.6	185.6
Clamp	a_1	–	79.6	79.6	75.6	70.6
With 3-A certification	e_1	–	85.0	85.0	75.0	75.0
Pipe range C (OD)***	h_2	–	185.6	185.6	185.6	185.6

Tolerances according to DIN EN 735 Connection dimensions for centrifugal pumps. Technical changes reserved.
Dimensions valid for KLM and HPM casing.
(1) For the HPM version, the dimension a1 = 82 mm
(2) For the HPM version, the dimension a1 = 100 mm
* For pipes according to DIN 11866 series A
** For pipes according to DIN 11866 series B
*** For pipes according to DIN 11866 series C (pipe dimensions according to ASME BPE)
**** DNs/DNd – fixed flange/loose flange (exception DNs 65: loose flange/loose flange)

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Casing Design		KLM	x	x	x	x	x	x
		HPM		x		x		x
Nominal width		DN	50/50	65/65	80/65	80/80	100/80	100/100
		OD	2"/2"	2½"/2½"	3"/2½"	3"/3"	4"/3"	4"/4"
Connection type		ISO	60.3/60.3	76.1/76.1	88.9/76.1	88.9/88.9	114.3/88.9	114.3/114.3
Threaded connection	a_1		116.0	116.0	116.0	116.0	116.0	116.0
DIN 11851	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(DIN)	h_2		200.0	200.0	200.0	200.0	200.0	201.5
Threaded connection	a_1		112.0	119.0	125.0	125.0	133.0	133.0
DIN 11864-1 / DIN 11853-1	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Form A – pipe range A (DIN)*	h_2		206.0	213.0	213.0	220.0	220.0	227.0
Threaded connection	a_1		119.0	125.0	133.0	133.0	–	–
DIN 11864-1 / DIN 11853-1	e_1		98.0	98.0	98.0	85.5	–	–
Pipe range B (ISO)**	h_2		211.0	219.0	219.0	228.0	–	–
Threaded connection	a_1		112.0	119.0	125.0	125.0	133.0	133.0
DIN 11864-1 / DIN 11853-1	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Pipe range C (OD)***	h_2		218.0	223.0	223.0	220.0	220.0	227
Groove-faced flange	a_1		104.7	106.7	108.7	108.7	108.7	108.7
DIN 11864-2 / DIN 11853-2	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Form A – pipe range A (DIN)*	h_2		198.7	200.7	200.7	203.7	203.7	202.7
Groove-faced flange	a_1		135.2	137.2	139.7	139.7	–	–
DIN 11864-2 / DIN 11853-2	e_1		98.0	98.0	98.0	85.5	–	–
Pipe range B (ISO)**	h_2		198.7	200.7	200.7	203.7	–	–
Groove-faced flange	a_1		104.7	106.7	138.7	138.7	108.7	108.7
DIN 11864-2 / DIN 11853-2	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Pipe range C (OD)***	h_2		210.7	210.7	212.7	201.7	201.7	202.7
Welding neck flange	a_1		126.0	128.0	133.0	133.0	135.0	135.0
EN1092-1/11 PN16	e_1		98.0	98.0	98.0	85.5	85.5	85.5
	h_2		232.0	222.0	234.0	228.0	228.0	229.0
Welding neck flange	a_1		–	135.0	–	141.0	–	148.0
EN1092-1/11 PN40	e_1		–	98.0	–	85.5	–	85.5
(only casing design HPM)	h_2		–	229.0	–	236.0	–	242.0
Flange	a_1		116.0	116.0	116.0	116.0	116.0	116.0
EN1092-1 PN10 Kremo	e_1		98.0	98.0	98.0	85.5	85.5	85.5
****	h_2		200.0	200.0	200.0	200.0	200.0	200.0
Clamp	a_1		102.5	111.0	111.0	111.0	111.0	111.0
DIN 32676	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Pipe range A (DIN)*	h_2		208.5	205.0	228.0	206.0	206.0	205.0
Flange connection	a_1		106.0	108.0	108.0	108.0	108.0	108.0
Varivent® FN	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(DIN)	h_2		200.0	202.0(1)	225.0(2)	203.0	203.0	202.0
Flange connection	a_1		106.0	108.0	108.0	108.0	108.0	108.0
Varivent® FN	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(OD)	h_2		212.0	212.0	212.0	203.0	203.0	202.0
Threaded connection	a_1		102.5	104.5	104.5	104.5	104.5	104.5
RJT	e_1		98.0	98.0	98.0	85.5	85.5	85.5.0
(OD)	h_2		196.5	208.5	208.5	199.5	199.5	198.5
Flange connection	a_1		105.0	107.0	107.0	107.0	107.0	107.0
APV-FG / 3.1-PN 10	e_1		98.0	98.0	98.0	85.5.0	85.5	85.5
(DIN)	h_2		199.0	224.0	224.0	200.0	200.0	201.0
Flange connection	a_1		105.0	107.0	107.0	107.0	107.0	107.0
APV-FN / 3.1-PN 10	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(DIN)	h_2		199.0	224.0	224.0	200.0	200.0	201.0
Flange connection	a_1		101.0	103.0	106.0	106.0	107.0	107.0
APV-FN / PN25	e_1		98.0	98.0	85.5	85.5	85.5	85.5
(DIN)	h_2		195.0	197.0	197.0	201.0	201.0	201.0
Flange connection	a_1		105.0	107.0	107.0	107.0	107.0	107.0
Kieselmann	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(DIN)	h_2		199.0	201.0	201.0	202.0	202.0	201.0
Flange connection	a_1		116.0	116.0	116.0	116.0	116.0	116.0
ANSI-B16.5 150lb/sq. in.	e_1		98.0	98.0	98.0	85.5	85.5	85.5
(OD)	h_2		200.0	200.0	200.0	200.0	200.0	200.0
Clamp	a_1		111.0	111.0	142.0	142.0	–	–
DIN 32676	e_1		98.0	98.0	98.0	85.5	–	–
Pipe range B (ISO)**	h_2		203.0	205.0	205.0	206.0	–	–
Clamp	a_1		102.5	111.0	111.0	111.0	111.0	111.0
DIN 32676	e_1		98.0	98.0	98.0	85.5	85.5	85.5
Pipe range C (OD)***	h_2		208.5	215.0	215.0	206.0	206.0	205.0

Casing Design	KLM / HPM	x	x	x	x	x	x
Nominal width / Connection type	OD	2"/2"	2½"/2½"	3"/2½"	3"/3"	4"/3"	4"/4"
Threaded connection	a_1	101.0	107.0	107.0	107.0	118.0	118.0
SMS international	e_1	98.0	98.0	98.0	85.5	85.5	85.5
(OD)	h_2	207.0	211.0	211.0	202.0	202.0	212.0
Clamp	a_1	109.6	111.0	111.0	111.0	111.0	111.0
SMS	e_1	98.0	98.0	98.0	98.0	85.5	85.5
(OD)	h_2	215.6	215.0	215.0	225.0	206.0	205.0
Clamp	a_1	109.6	111.6	111.6	111.6	111.6	111.6
With 3-A certification	e_1	98.0	98.0	98.0	85.5	85.5	85.5
Pipe range C (OD)***	h_2	215.6	215.6	215.6	206.6	206.6	205.6

Tolerances according to DIN EN 735 Connection dimensions for centrifugal pumps. Technical changes reserved.
DN code: The code corresponds to the design annular casing without draining / venting.
Dimensions valid for KLM and HPM casing.
(1) For the HPM version, the dimension h2 = 225 mm
(2) For the HPM version, the dimension h2 = 202 mm
* For pipes according to DIN 11866 series A
** For pipes according to DIN 11866 series B
*** For pipes according to DIN 11866 series C (pipe dimensions according to ASME BPE)
**** DNs/DNd – fixed flange/loose flange

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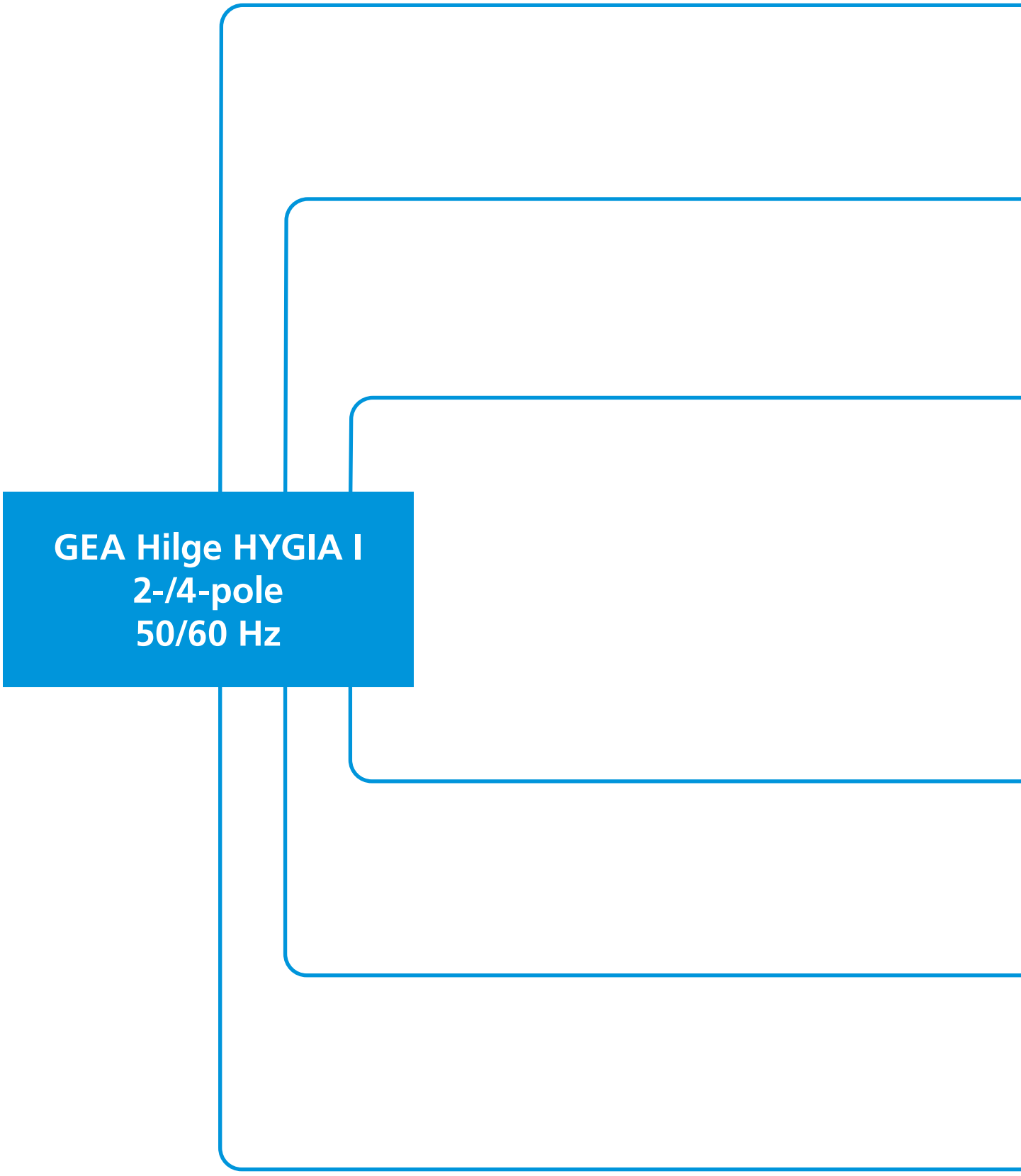

GEA Hilge HYGIA I
2-/4-pole
50/60 Hz

GEA Hilge HYGIA I K

GEA Hilge HYGIA I K-SUPER

GEA Hilge HYGIA I K-SUPER tronic

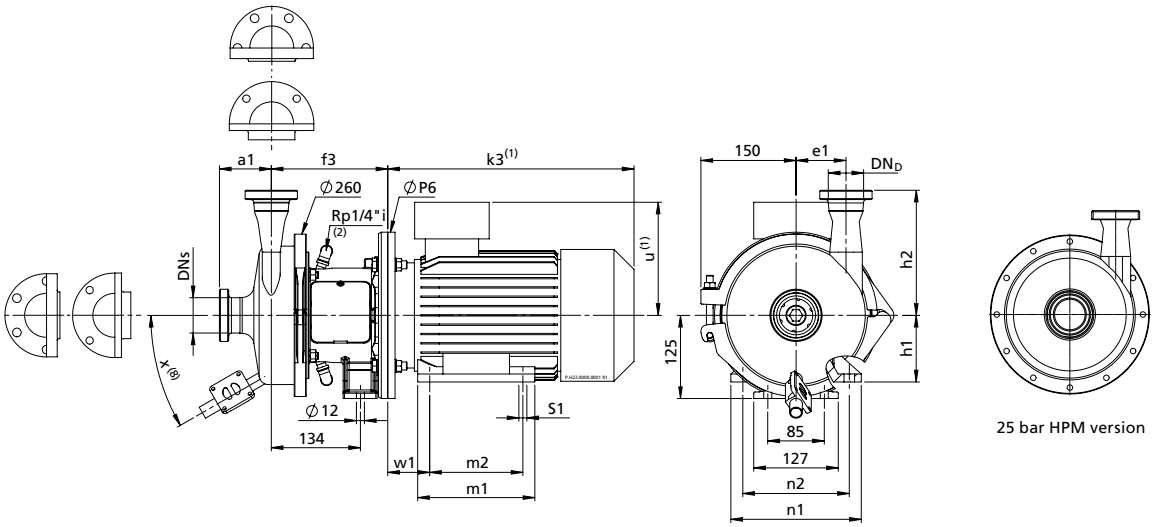
GEA Hilge HYGIA I Adapta

GEA Hilge HYGIA I Adapta-SUPER

GEA Hilge HYGIA I Adapta-SUPER tronic

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic											
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	w1 [mm]	m1 [mm]	m2 [mm]	n1 [mm]	n2 [mm]	s1 [mm]	h1 [mm]	Weight [kg]
1.10	80	320	130	274	158	170	200	50	125	100	155	125	10	80	32
1.50	90S	340	150	274	158	170	200	56	150	100	170	140	10	90	39
2.20	90L	340	150	274	158	170	200	56	150	125	170	140	10	90	40
3.00	100L	370	175	334	201	175	250	63	170	140	200	160	12	100	51
4.00	112M	380	185	334	201	175	250	70	170	140	220	190	12	112	60
5.50	132S	450	205	365	201	175	300	89	170	140	250	216	12	132	85

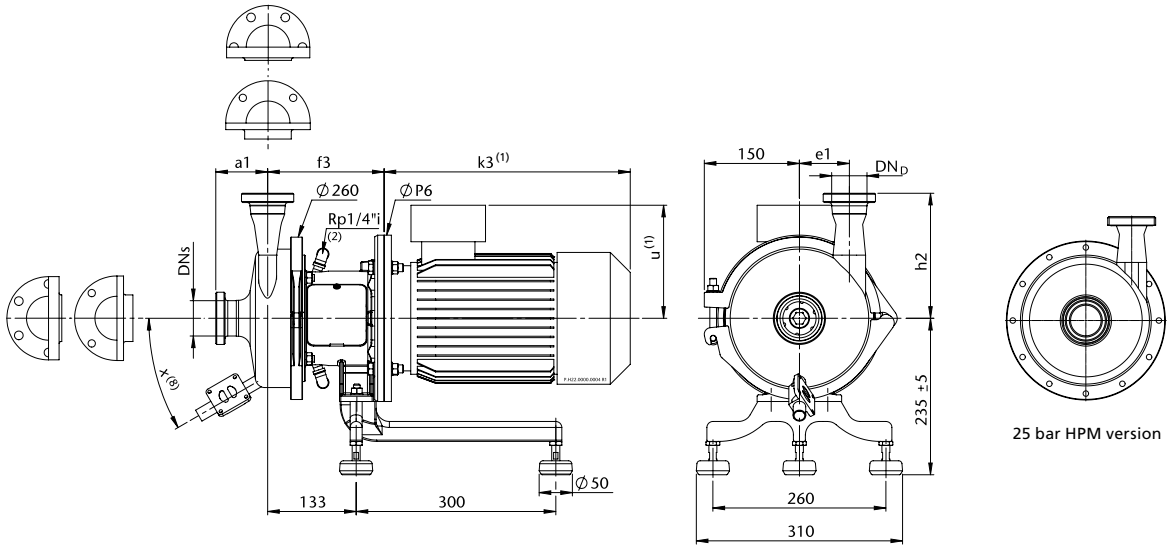
4-pole

		Standard		tronic											
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	w1 [mm]	m1 [mm]	m2 [mm]	n1 [mm]	n2 [mm]	s1 [mm]	h1 [mm]	Weight [kg]
0.55	80	320	130	–	–	170	200	50	125	100	155	125	10	80	31
0.75	80	320	130	274	158	170	200	50	125	100	155	125	10	80	32
1.10	90S	340	150	274	158	170	200	56	150	100	170	140	10	90	37
1.50	90L	340	150	274	158	170	200	56	150	125	170	140	10	90	41
2.20	100L	370	175	334	201	175	250	63	170	140	200	160	12	100	50

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	170	200	35
1.50	90S	340	150	274	158	170	200	42
2.20	90L	340	150	274	158	170	200	42
3.00	100L	370	175	334	201	175	250	53
4.00	112M	380	185	334	201	175	250	62
5.50	132S	450	205	365	201	175	300	87

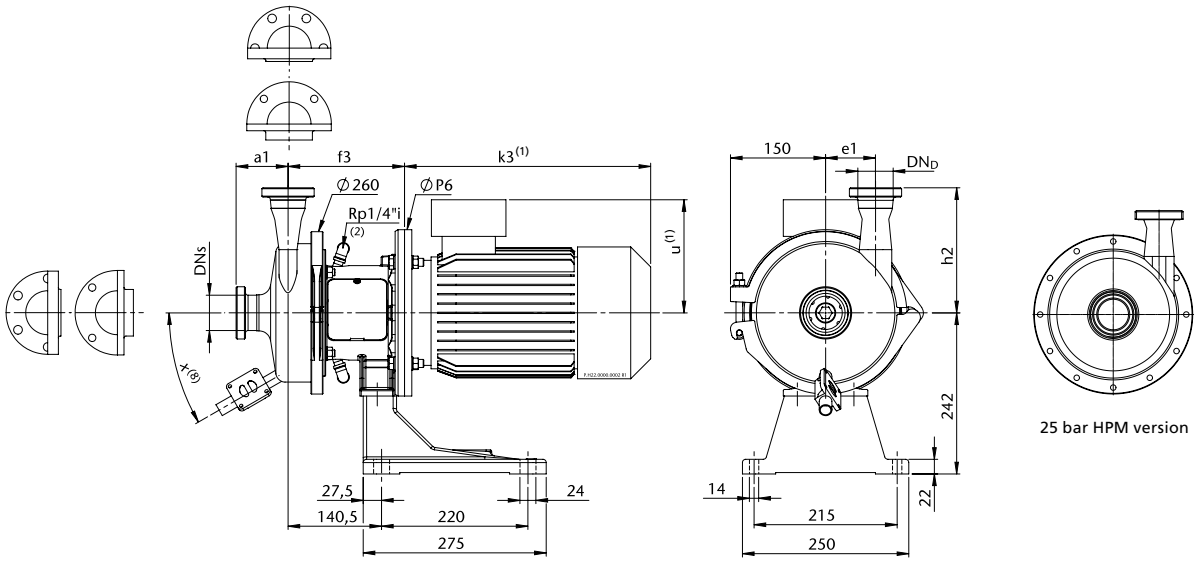
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	140	200	34
0.75	80	320	130	274	158	170	200	35
1.10	90S	340	150	274	158	170	200	40
1.50	90L	340	150	274	158	170	200	43
2.20	100L	370	175	334	201	175	250	53

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	170	200	40
1.50	90S	340	150	274	158	170	200	46
2.20	90L	340	150	274	158	170	200	47
3.00	100L	370	175	334	201	175	250	58
4.00	112M	380	185	334	201	175	250	67
5.50	132S	450	205	365	201	175	300	92

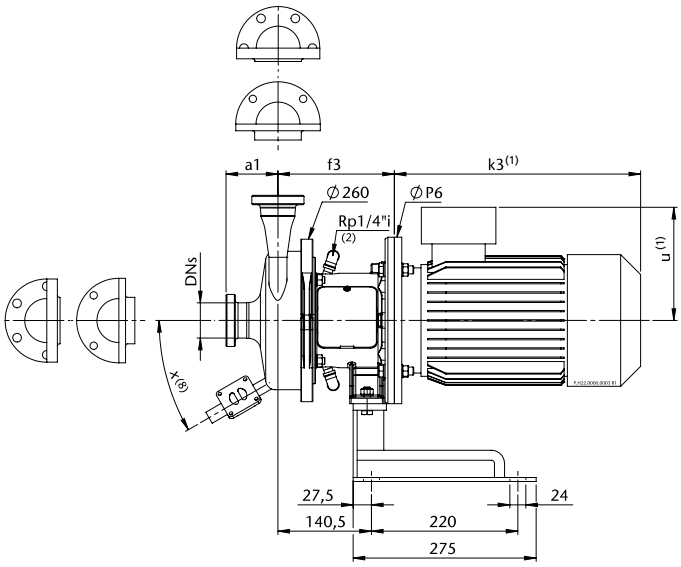
4-pole

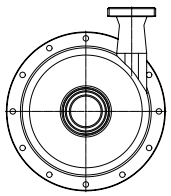
		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	170	200	39
0.75	80	320	130	274	158	170	200	39
1.10	90S	340	150	274	158	170	200	44
1.50	90L	340	150	274	158	170	200	48
2.20	100L	370	175	334	201	175	250	57

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	170	200	36
1.50	90S	340	150	274	158	170	200	43
2.20	90L	340	150	274	158	170	200	44
3.00	100L	370	175	334	201	175	250	55
4.00	112M	380	185	334	201	175	250	63
5.50	132S	450	205	365	201	175	300	88

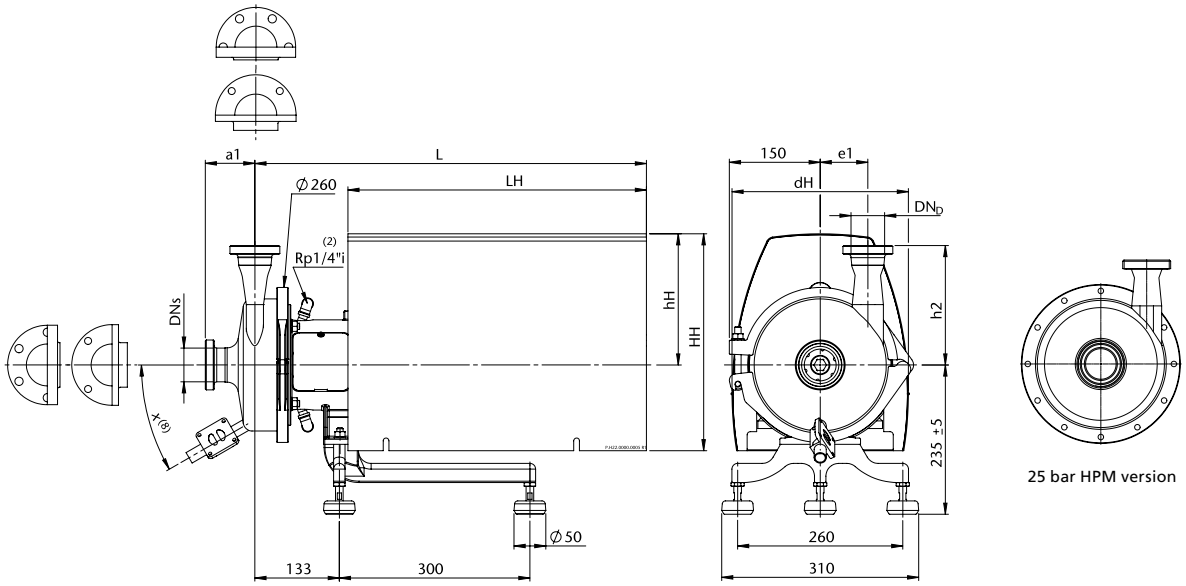
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	170	200	35
0.75	80	320	130	274	158	170	200	36
1.10	90S	340	150	274	158	170	200	41
1.50	90L	340	150	274	158	170	200	44
2.20	100L	370	175	334	201	175	250	54

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	292	177	266	44
1.50	90S	575	431	292	179	266	50
2.20	90L	575	431	292	179	266	51
3.00	100L	609	471	382	240	332	65
4.00	112M	609	471	382	240	332	73
5.50	132S	705	561	382	220	332	98

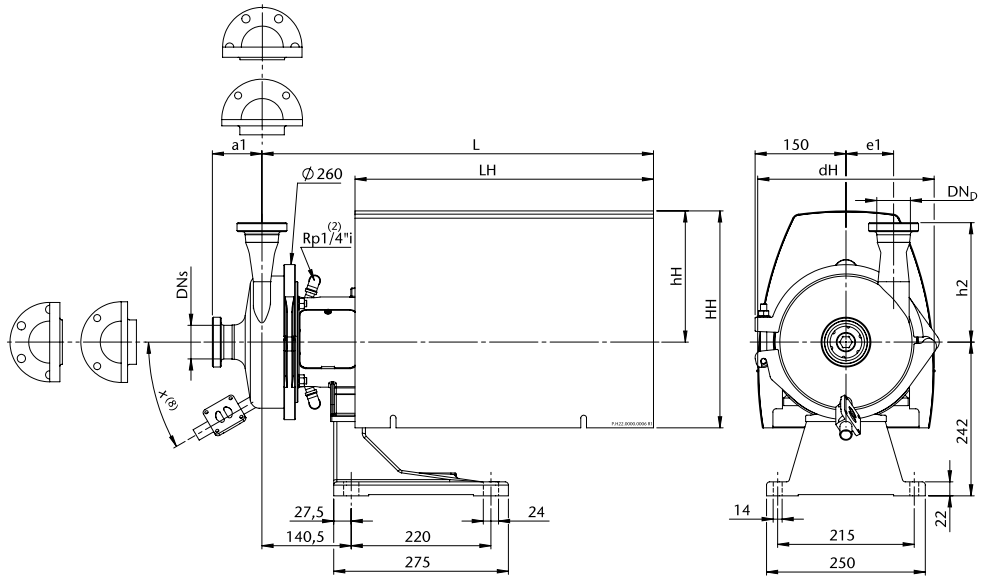
4-pole

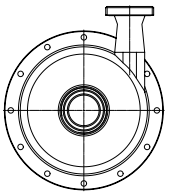
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	292	177	266	42
0.75	80	575	431	292	177	266	44
1.10	90S	575	431	292	179	266	48
1.50	90L	575	431	292	179	266	52
2.20	100L	609	471	382	240	332	64

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	292	177	266	49
1.50	90S	575	431	292	179	266	55
2.20	90L	575	431	292	179	266	56
3.00	100L	609	471	382	240	332	70
4.00	112M	609	471	382	240	332	78
5.50	132S	705	561	382	220	332	103

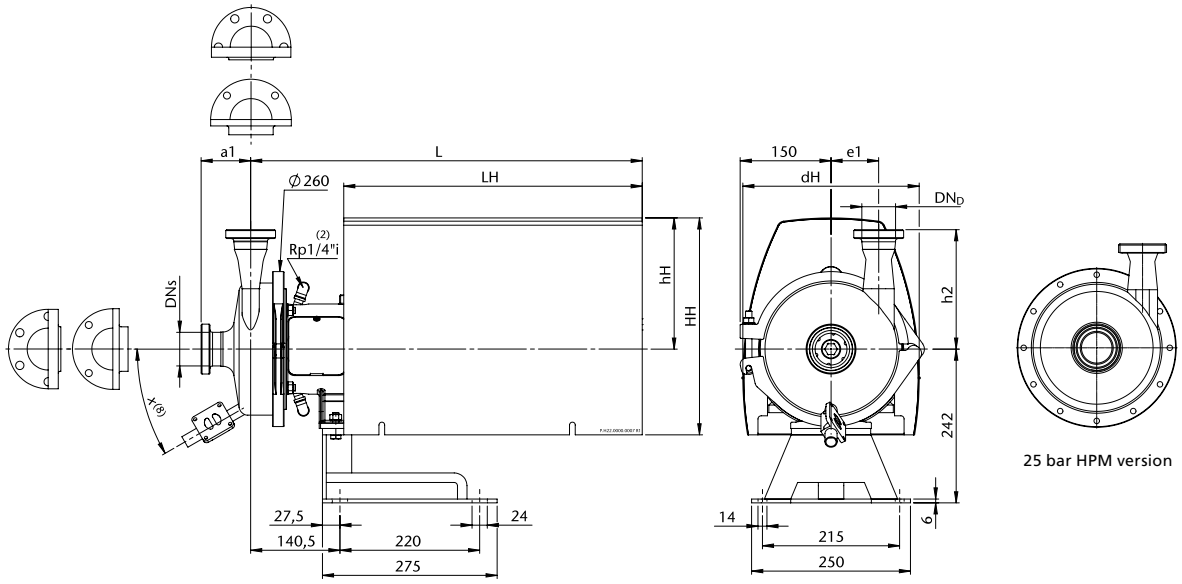
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	292	177	266	47
0.75	80	575	431	292	177	266	49
1.10	90S	575	431	292	179	266	53
1.50	90L	575	431	292	179	266	57
2.20	100L	609	471	382	240	332	69

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	292	177	266	45
1.50	90S	575	431	292	179	266	51
2.20	90L	575	431	292	179	266	52
3.00	100L	609	471	382	240	332	66
4.00	112M	609	471	382	240	332	74
5.50	132S	705	561	382	220	332	100

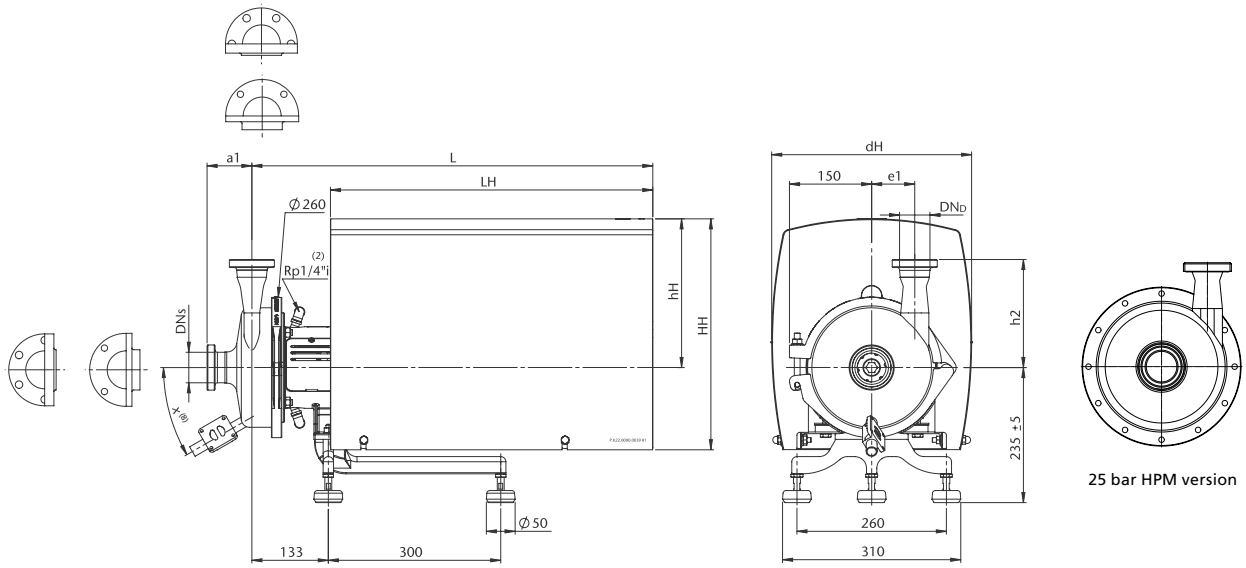
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	292	177	266	43
0.75	80	575	431	292	177	266	45
1.10	90S	575	431	292	179	266	49
1.50	90L	575	431	292	179	266	53
2.20	100L	609	471	382	240	332	66

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	352	238.5	328	46
1.50	90S	575	431	352	238.5	328	45
2.20	90L	575	431	352	238.5	328	47
3.00	100L	698	561	402	259.0	348	60
4.00	112M	698	561	402	259.0	348	62
5.50	132S	698	561	402	259.0	348	72

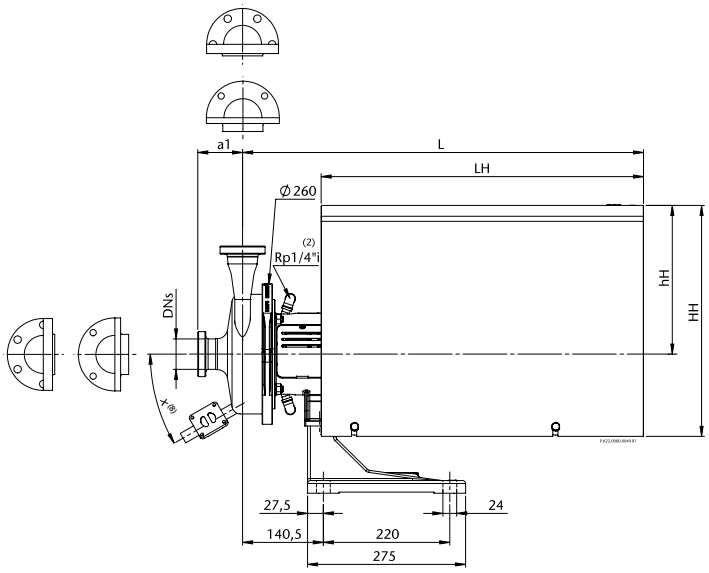
4-pole

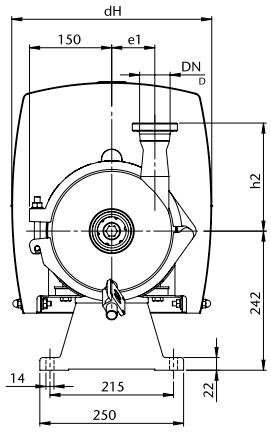
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	352	238.5	328	45
0.75	80	575	431	352	238.5	328	46
1.10	90S	575	431	352	238.5	328	47
1.50	90L	575	431	352	238.5	328	48
2.20	100L	698	561	402	259.0	348	62

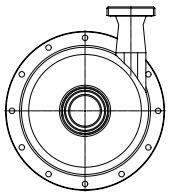
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	352	238.5	328	50
1.50	90S	575	431	352	238.5	328	50
2.20	90L	575	431	352	238.5	328	52
3.00	100L	698	561	402	259.0	348	64
4.00	112M	698	561	402	259.0	348	67
5.50	132S	698	561	402	259.0	348	76

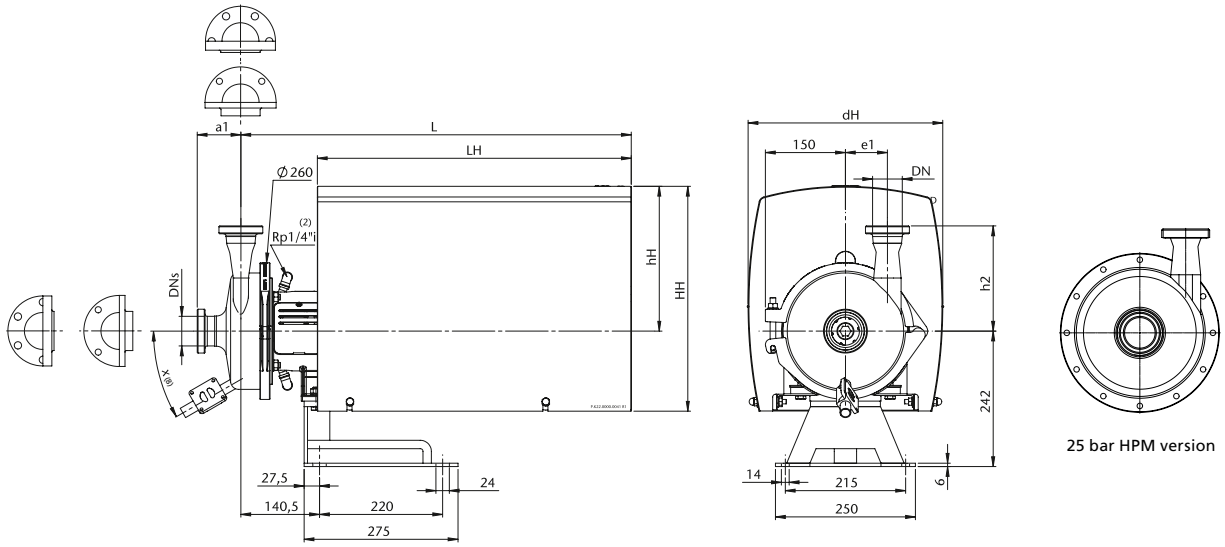
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	352	238.5	328	50
0.75	80	575	431	352	238.5	328	50
1.10	90S	575	431	352	238.5	328	52
1.50	90L	575	431	352	238.5	328	53
2.20	100L	698	561	402	259.0	348	66

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	575	431	352	238.5	328	47
1.50	90S	575	431	352	238.5	328	47
2.20	90L	575	431	352	238.5	328	48
3.00	100L	698	561	402	259.0	348	61
4.00	112M	698	561	402	259.0	348	64
5.50	132S	698	561	402	259.0	348	73

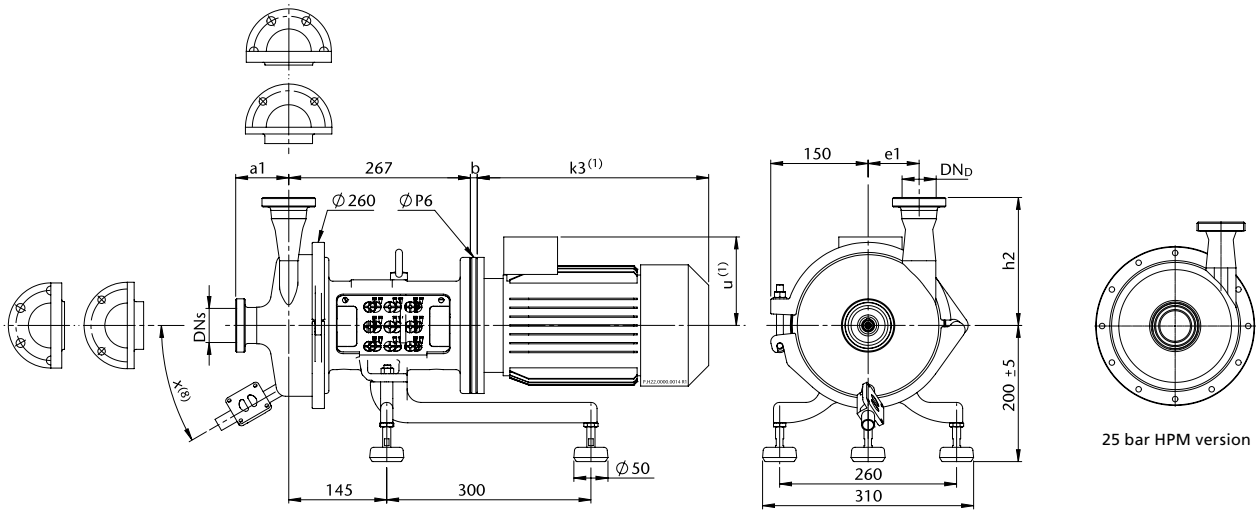
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	575	431	352	238.5	328	46
0.75	80	575	431	352	238.5	328	47
1.10	90S	575	431	352	238.5	328	48
1.50	90L	575	431	352	238.5	328	50
2.20	100L	698	561	402	259.0	348	63

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	0	200	42
1.50	90S	340	150	274	158	10	200	50
2.20	90L	340	150	274	158	10	200	50

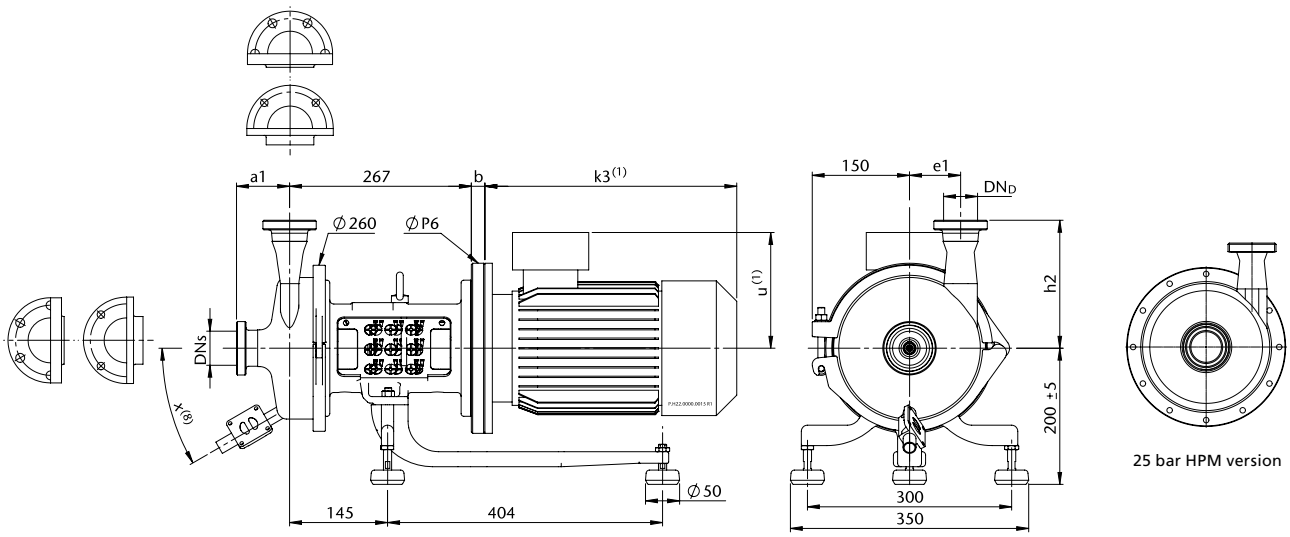
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	0	200	41
0.75	80	320	130	274	158	0	200	42
1.10	90S	340	150	274	158	10	200	48
1.50	90L	340	150	274	158	10	200	51

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	20	250	64
4.00	112M	380	185	334	201	20	250	73
5.50	132S	450	205	365	201	40	300	100

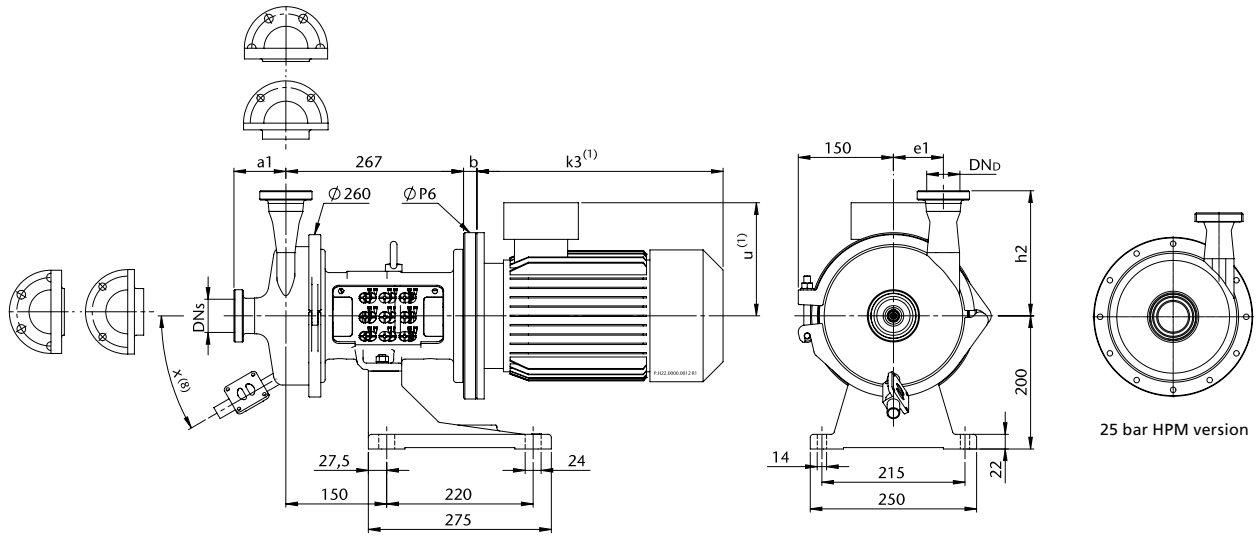
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	20	250	63

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	0	200	47
1.50	90S	340	150	274	158	10	200	55
2.20	90L	340	150	274	158	10	200	55
3.00	100L	370	175	334	201	20	250	67
4.00	112M	380	185	334	201	20	250	76
5.50	132S	450	205	365	201	40	300	103

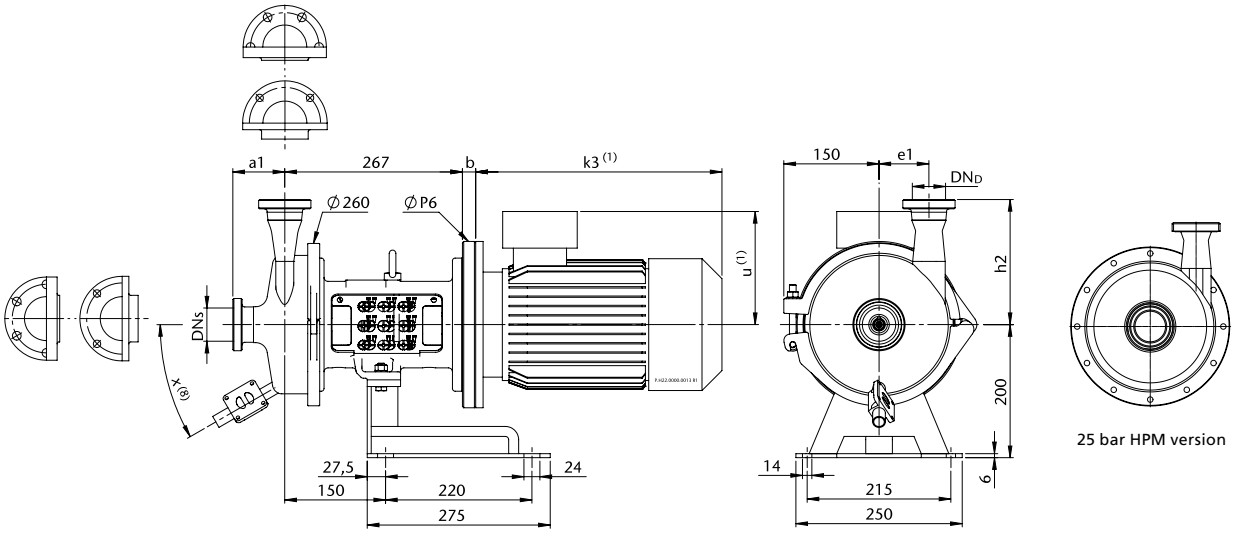
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	0	200	46
0.75	80	320	130	274	158	0	200	47
1.10	90S	340	150	274	158	10	200	53
1.50	90L	340	150	274	158	10	200	56
2.20	100L	370	175	334	201	20	250	67

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
1.10	80	320	130	274	158	0	200	44
1.50	90S	340	150	274	158	10	200	51
2.20	90L	340	150	274	158	10	200	52
3.00	100L	370	175	334	201	20	250	64
4.00	112M	380	185	334	201	20	250	73
5.50	132S	450	205	365	201	40	300	100

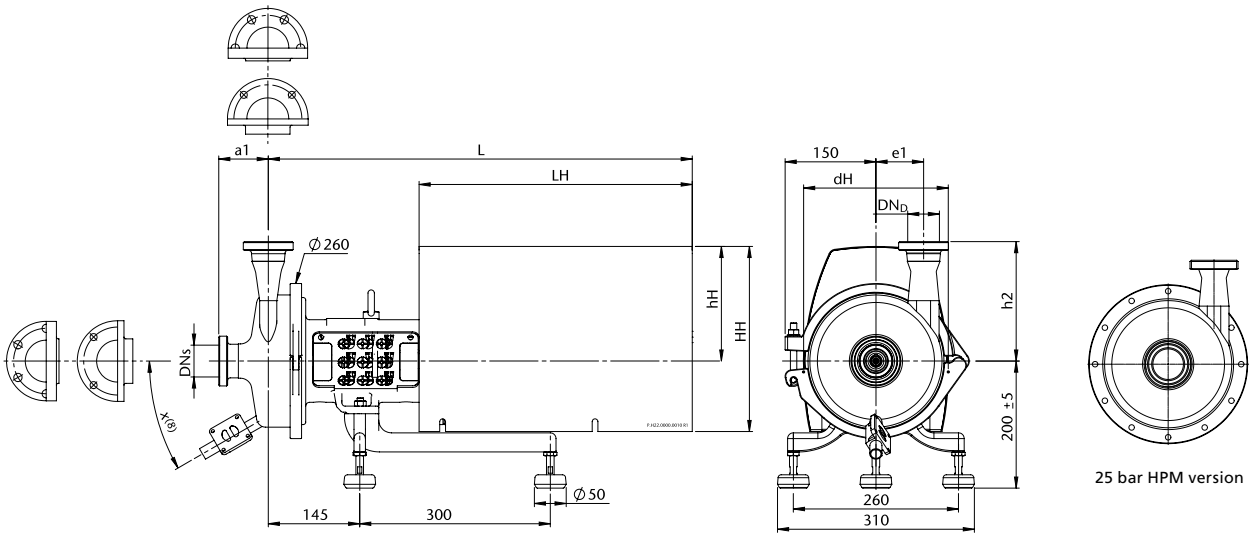
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
0.55	80	320	130	–	–	0	200	42
0.75	80	320	130	274	158	0	200	43
1.10	90S	340	150	274	158	10	200	49
1.50	90L	340	150	274	158	10	200	52
2.20	100L	370	175	334	201	20	250	63

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	657	431	291.5	176.5	266	51
1.50	90S	667	431	291.5	178.5	266	58
2.20	90L	667	431	291.5	178.5	266	59

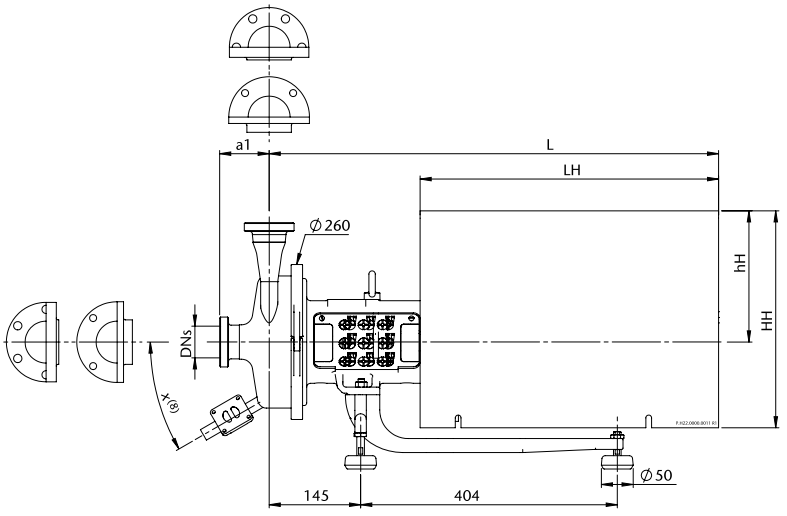
4-pole

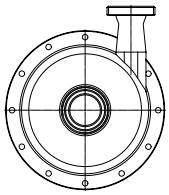
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	657	431	291.5	176.5	266	48
0.75	80	657	431	291.5	176.5	266	51
1.10	90S	667	431	291.5	178.5	266	56
1.50	90L	667	431	291.5	178.5	266	59

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	721	471	381.5	240	332	76
4.00	112M	721	471	381.5	240	332	84
5.50	132S	808	561	381.5	220	332	111

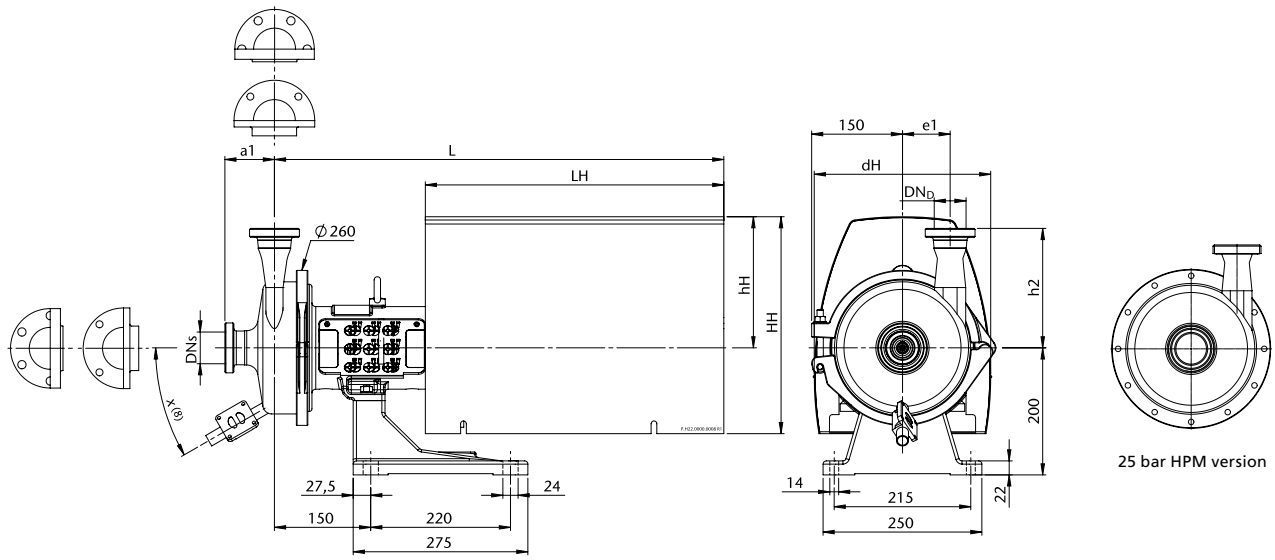
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	721	471	381.5	240	332	75

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	657	431	291.5	176.5	266	48
1.50	90S	667	431	291.5	178.5	266	55
2.20	90L	667	431	291.5	178.5	266	55
3.00	100L	721	471	371.5	240.0	332	71
4.00	112M	721	471	381.5	240.0	332	79
5.50	132S	808	561	381.5	220.0	332	107

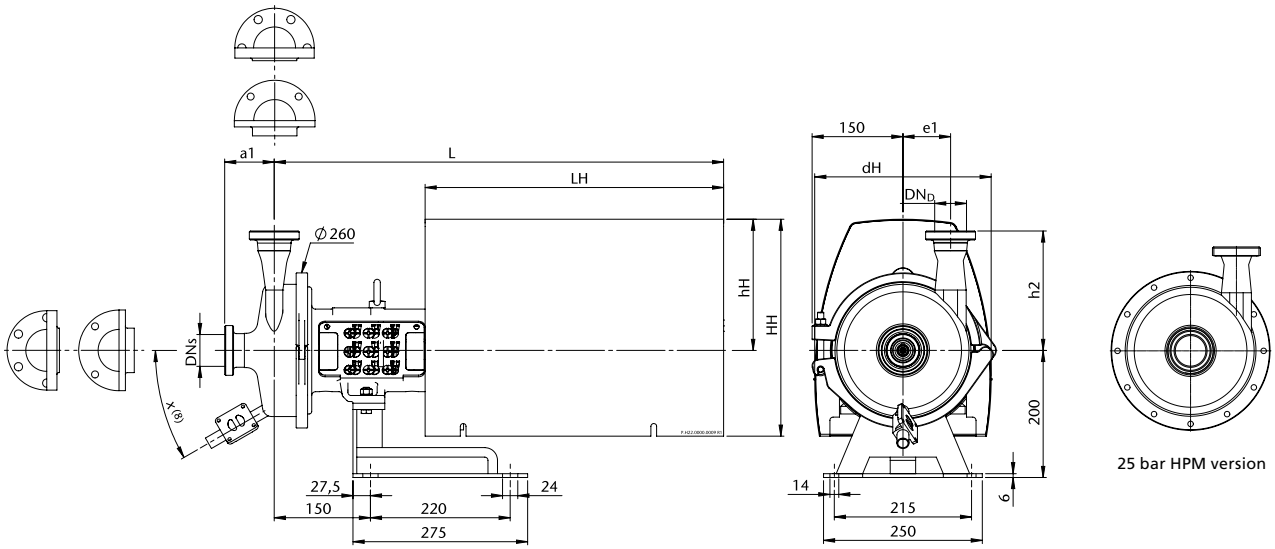
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	657	431	291.5	176.5	266	45
0.75	80	657	431	291.5	176.5	266	48
1.10	90S	667	431	291.5	178.5	266	53
1.50	90L	667	431	291.5	178.5	266	56
2.20	100L	721	471	381.5	240.0	332	70

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	657	431	291.5	176.5	266	53
1.50	90S	667	431	291.5	178.5	266	59
2.20	90L	667	431	291.5	178.5	266	60
3.00	100L	721	471	381.5	240	332	75
4.00	112M	721	471	381.5	240	332	84
5.50	132S	808	561	381.5	220	332	111

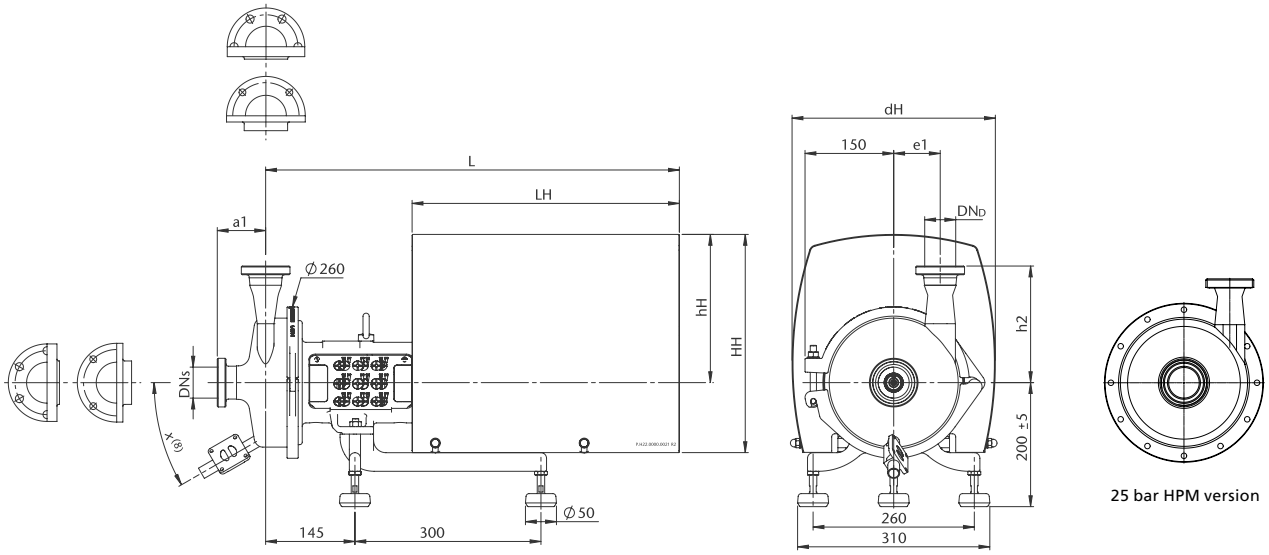
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.55	80	657	431	291.5	176.5	266	50
0.75	80	657	431	291.5	176.5	266	52
1.10	90S	667	431	291.5	178.5	266	57
1.50	90L	667	431	291.5	178.5	266	60
2.20	100L	721	471	381.5	240.0	332	75

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	667	431	352	239	328	53
1.50	90S	667	431	352	239	328	55
2.20	90L	667	431	352	239	328	56

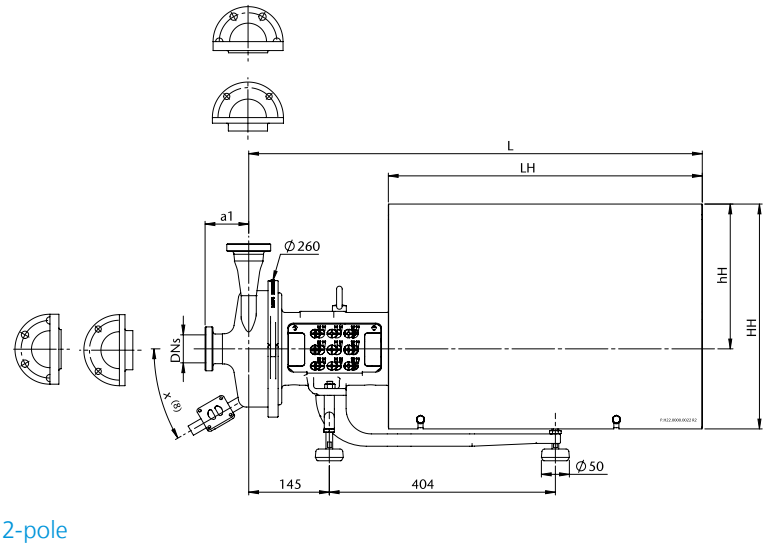
4-pole

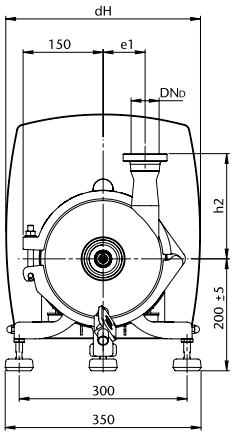
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.75	80	667	431	352	239	328	53
1.10	90S	667	431	352	239	328	56
1.50	90L	667	431	352	239	328	58

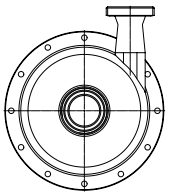
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	811	561	402	259	348	71
4.00	112M	811	561	402	259	348	74
5.50	132S	811	561	402	259	348	87

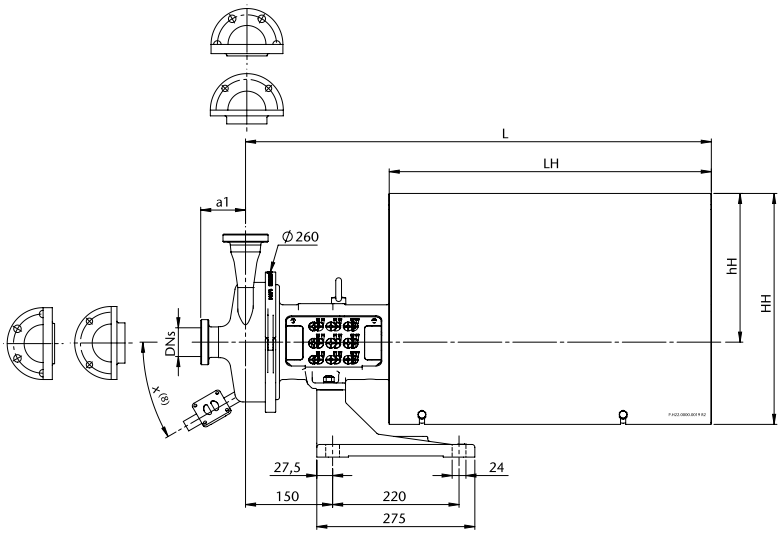
4-pole

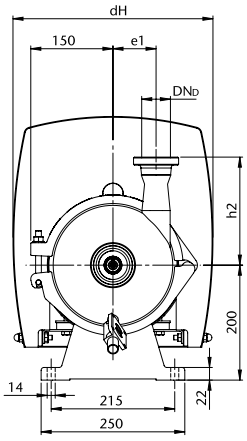
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	811	561	402	259	348	73

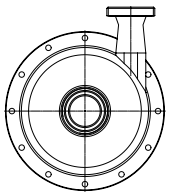
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	667	431	352	239	328	57
1.50	90S	667	431	352	239	328	59
2.20	90L	667	431	352	239	328	60
3.00	100L	811	561	402	259	348	75
4.00	112M	811	561	402	259	348	77
5.50	132S	811	561	402	259	348	90

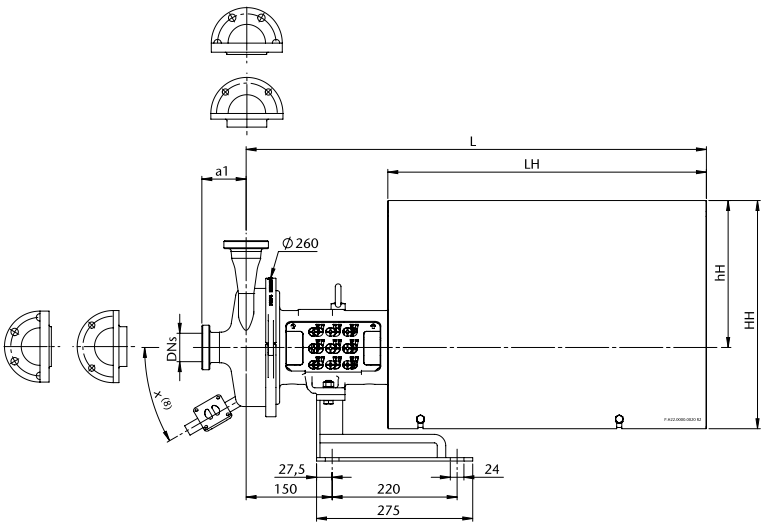
4-pole

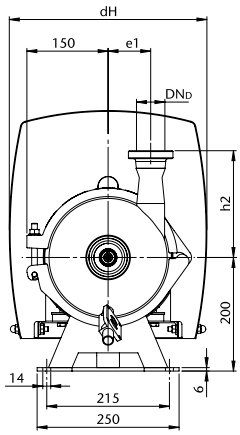
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.75	80	667	431	352	239	328	58
1.10	90S	667	431	352	239	328	60
1.50	90L	667	431	352	239	328	62
2.20	100L	811	561	402	259	348	77

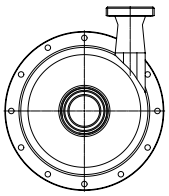
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 40–65, pressure side DN 25–50
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 45 m³/h
Flow rate 60 Hz	Max. 66 m³/h
Pump head 50 Hz	Max. 55 m
Pump head 60 Hz	Max. 66 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

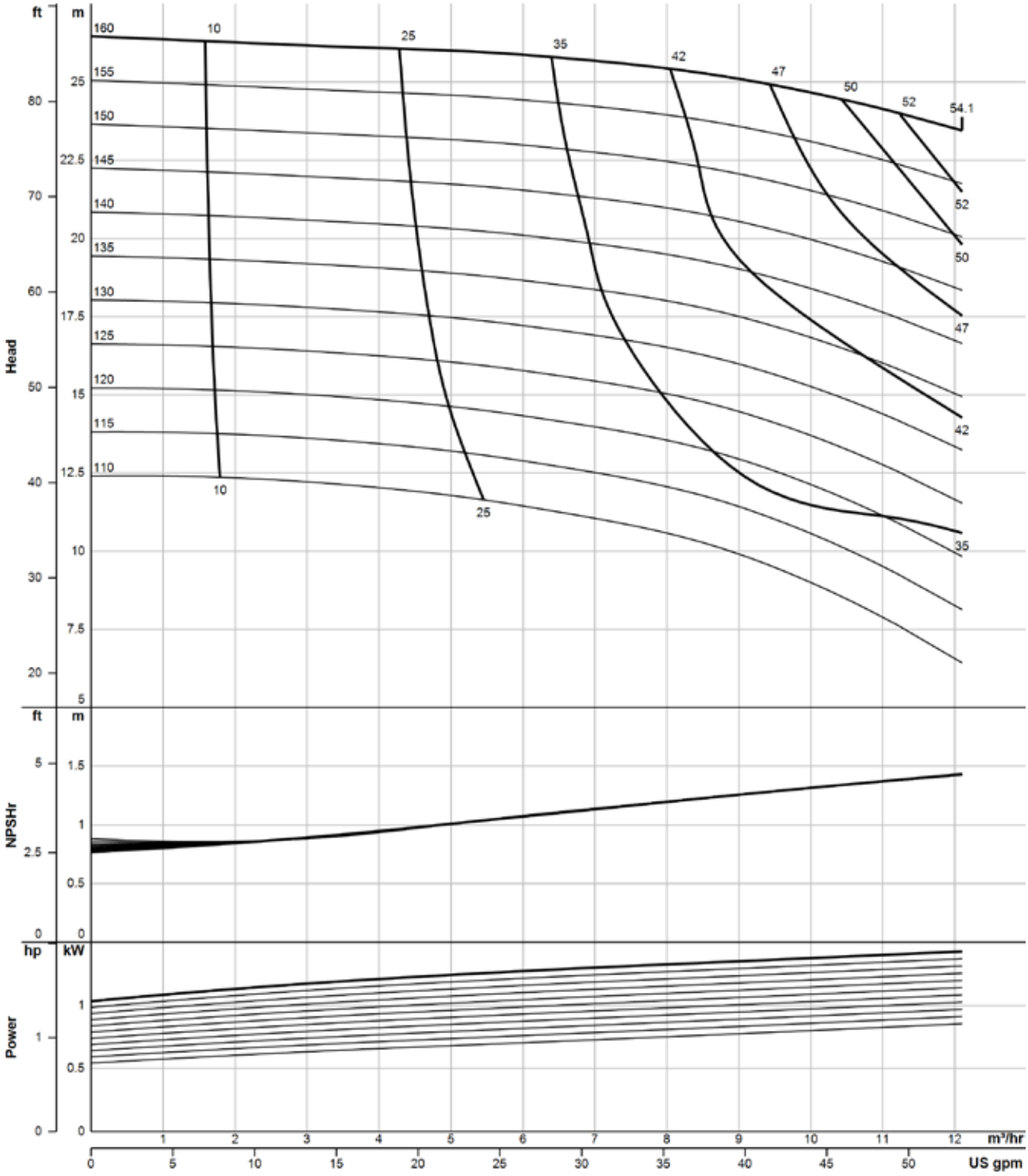
2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
1.10	80	667	431	352	239	328	54
1.50	90S	667	431	352	239	328	56
2.20	90L	667	431	352	239	328	57
3.00	100L	811	561	402	259	348	71
4.00	112M	811	561	402	259	348	74
5.50	132S	811	561	402	259	348	86

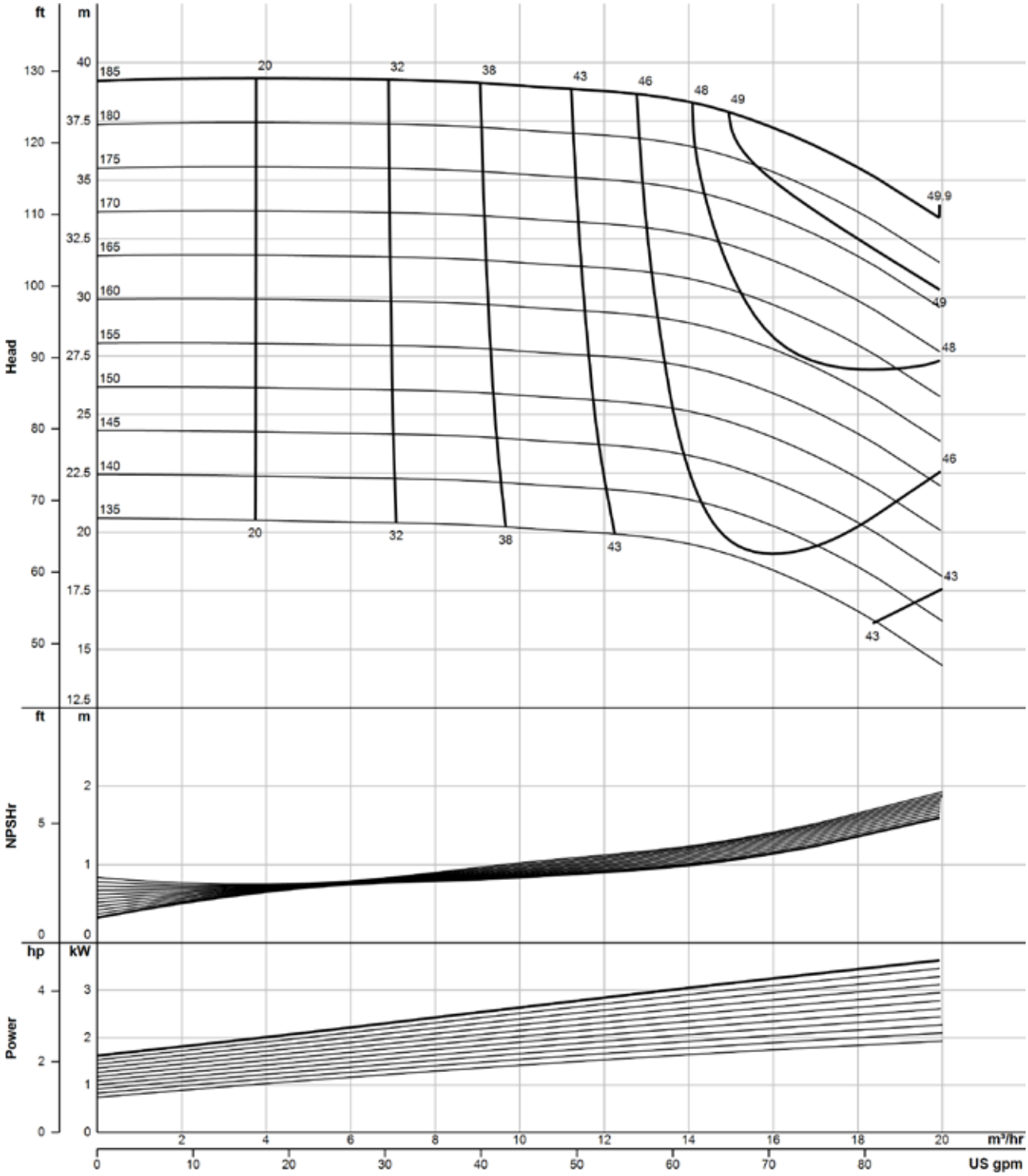
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
0.75	80	667	431	352	239	328	54
1.10	90S	667	431	352	239	328	57
1.50	90L	667	431	352	239	328	59
2.20	100L	811	561	402	259	348	73

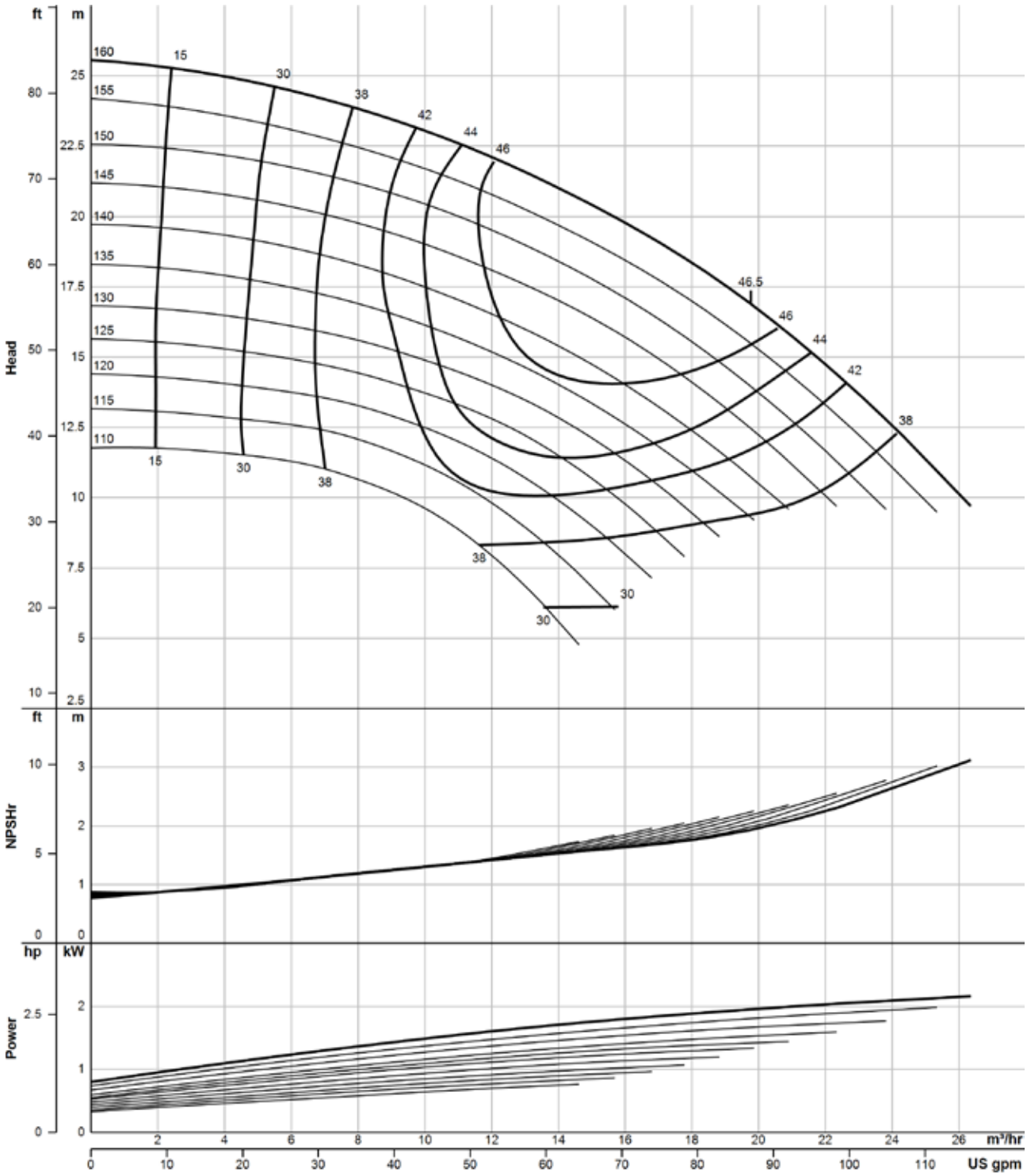
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging



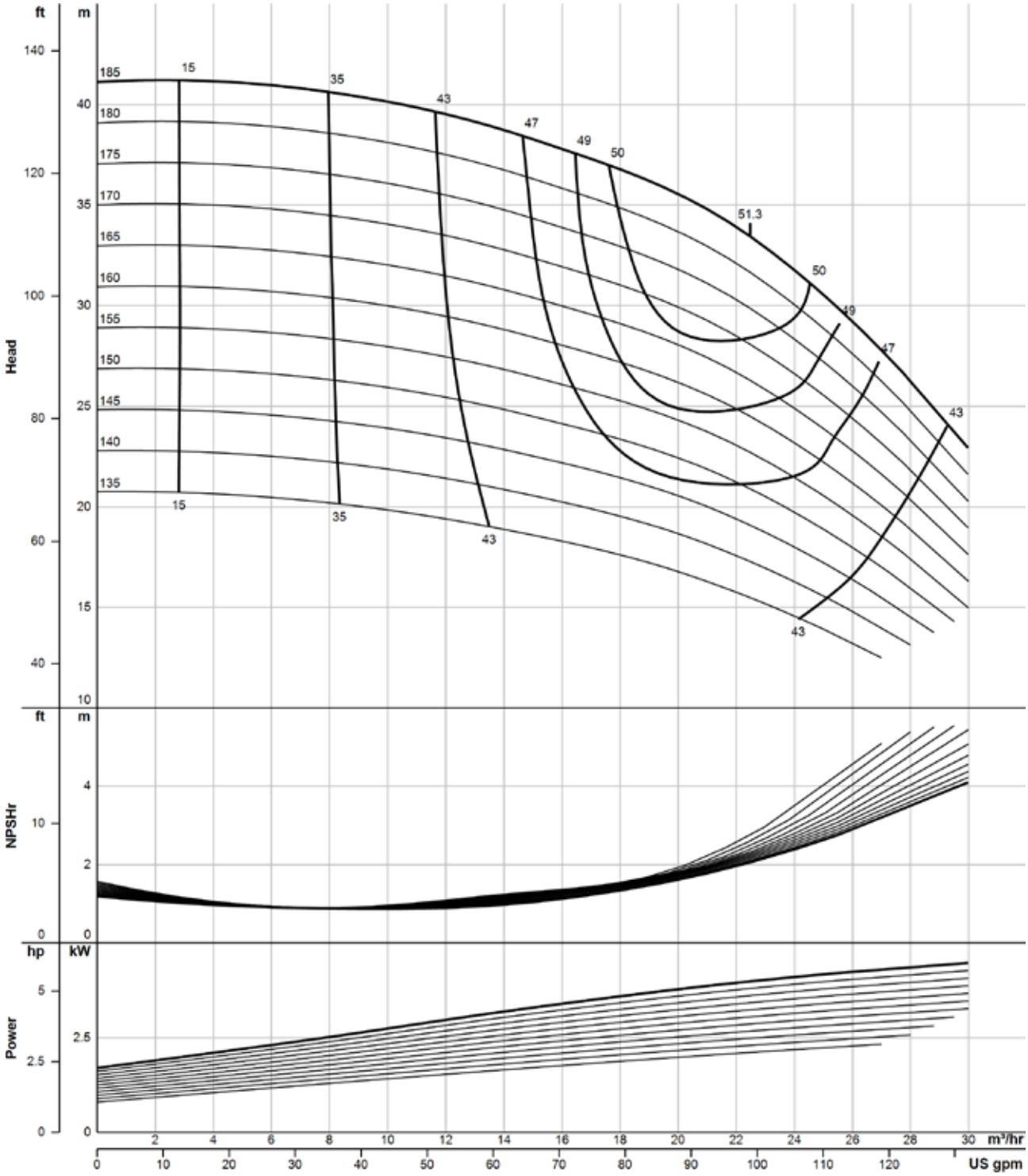
The flow charts are based on water, temperature 20 °C



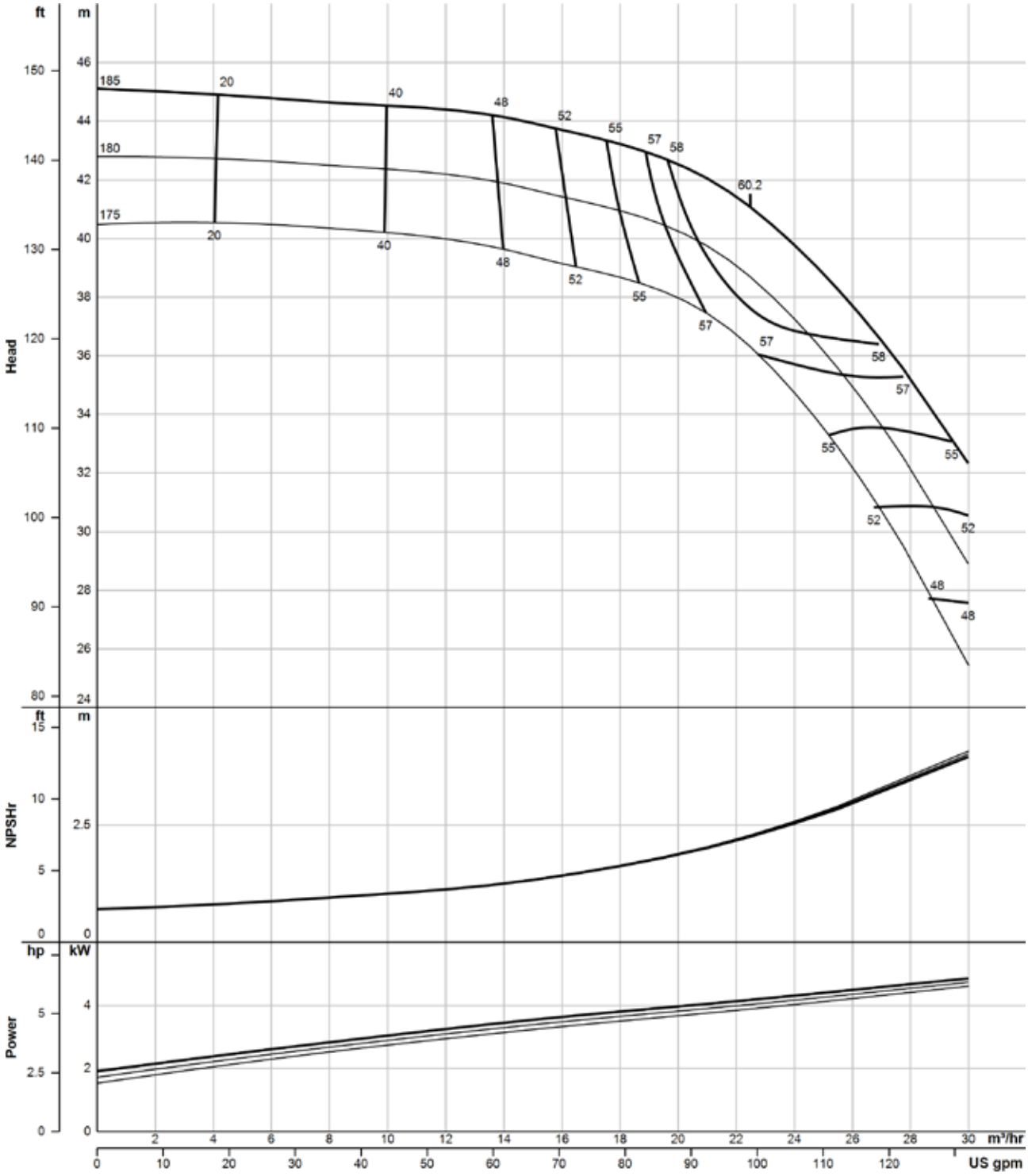
The flow charts are based on water, temperature 20 °C



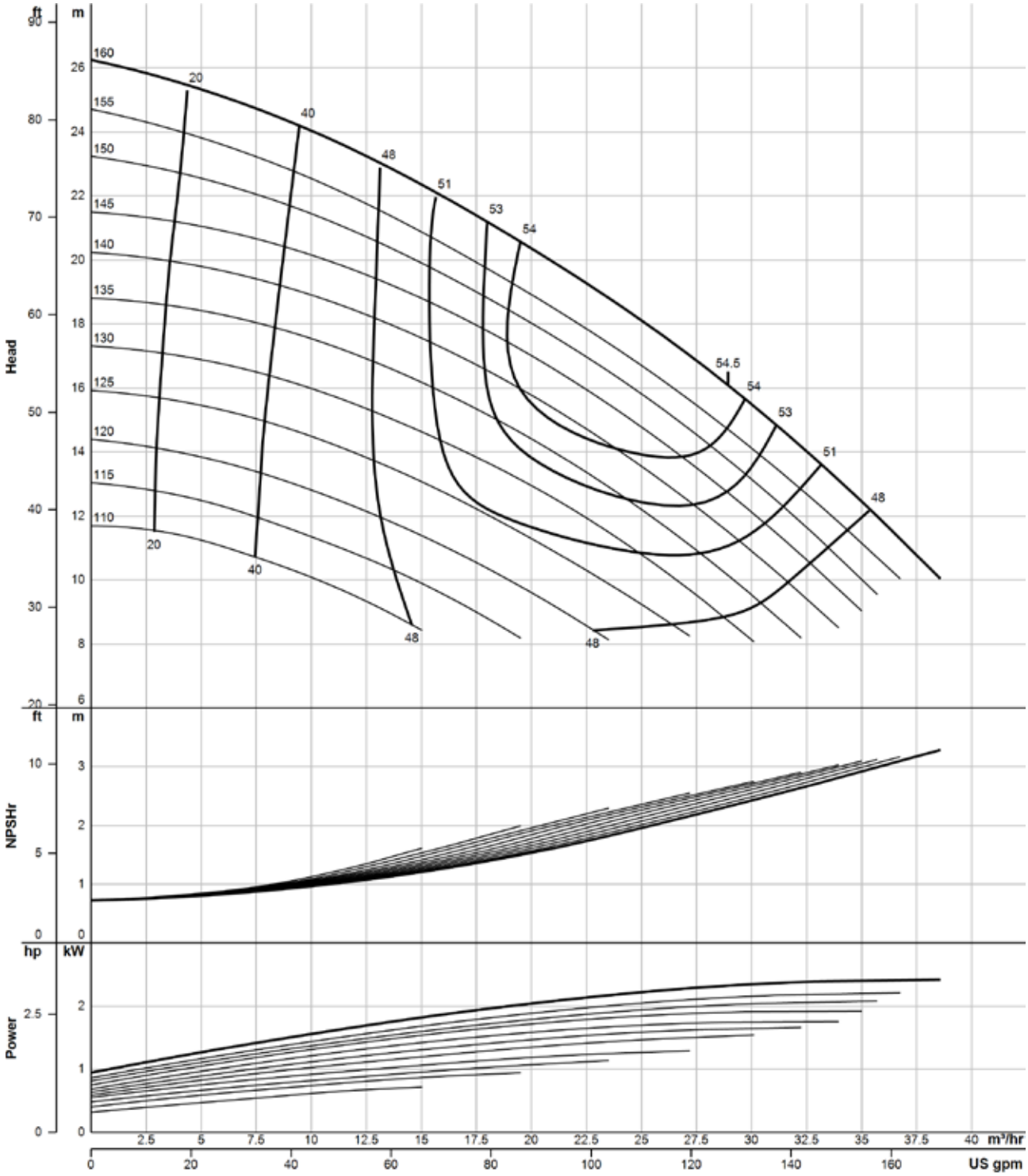
The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C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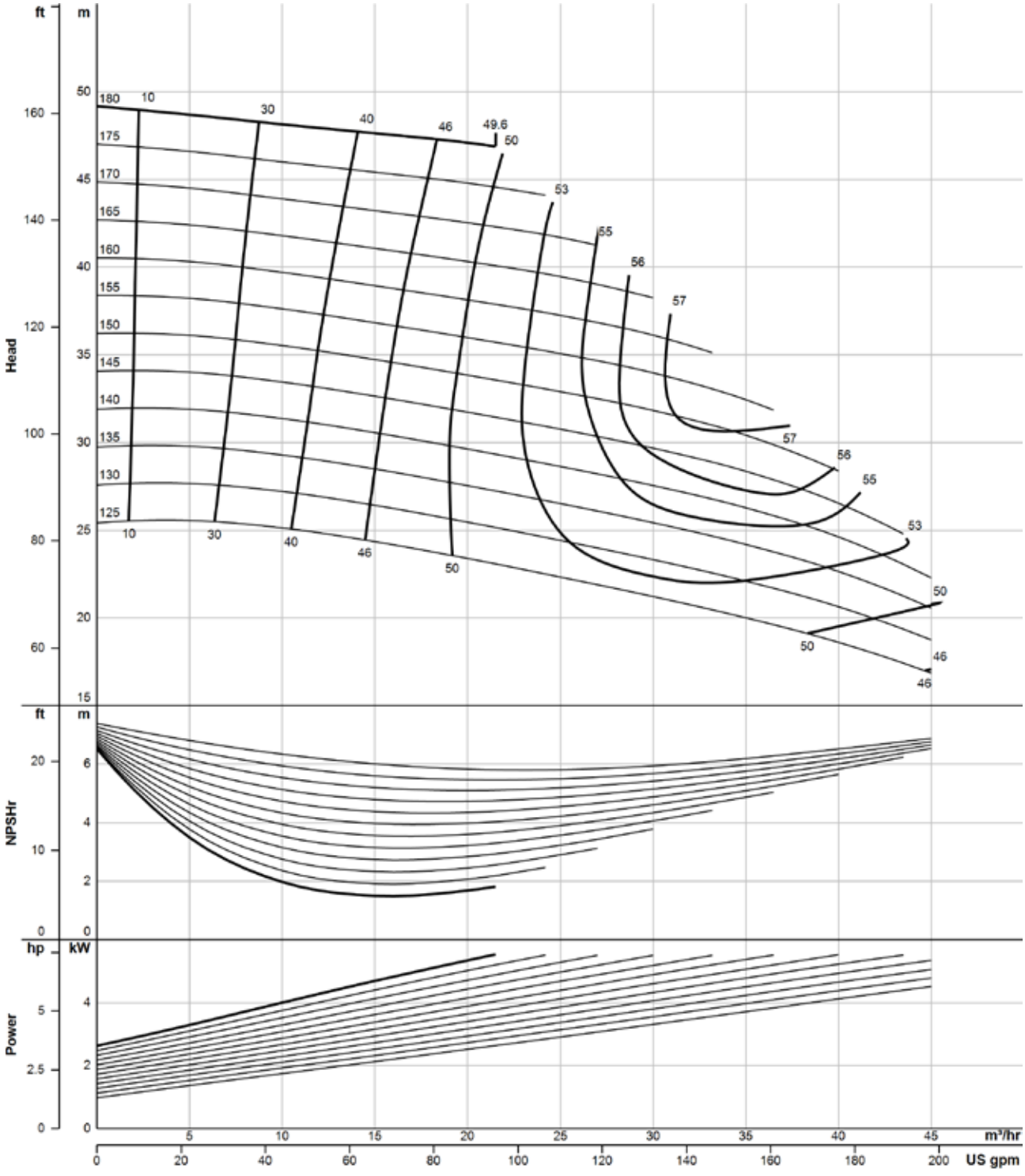

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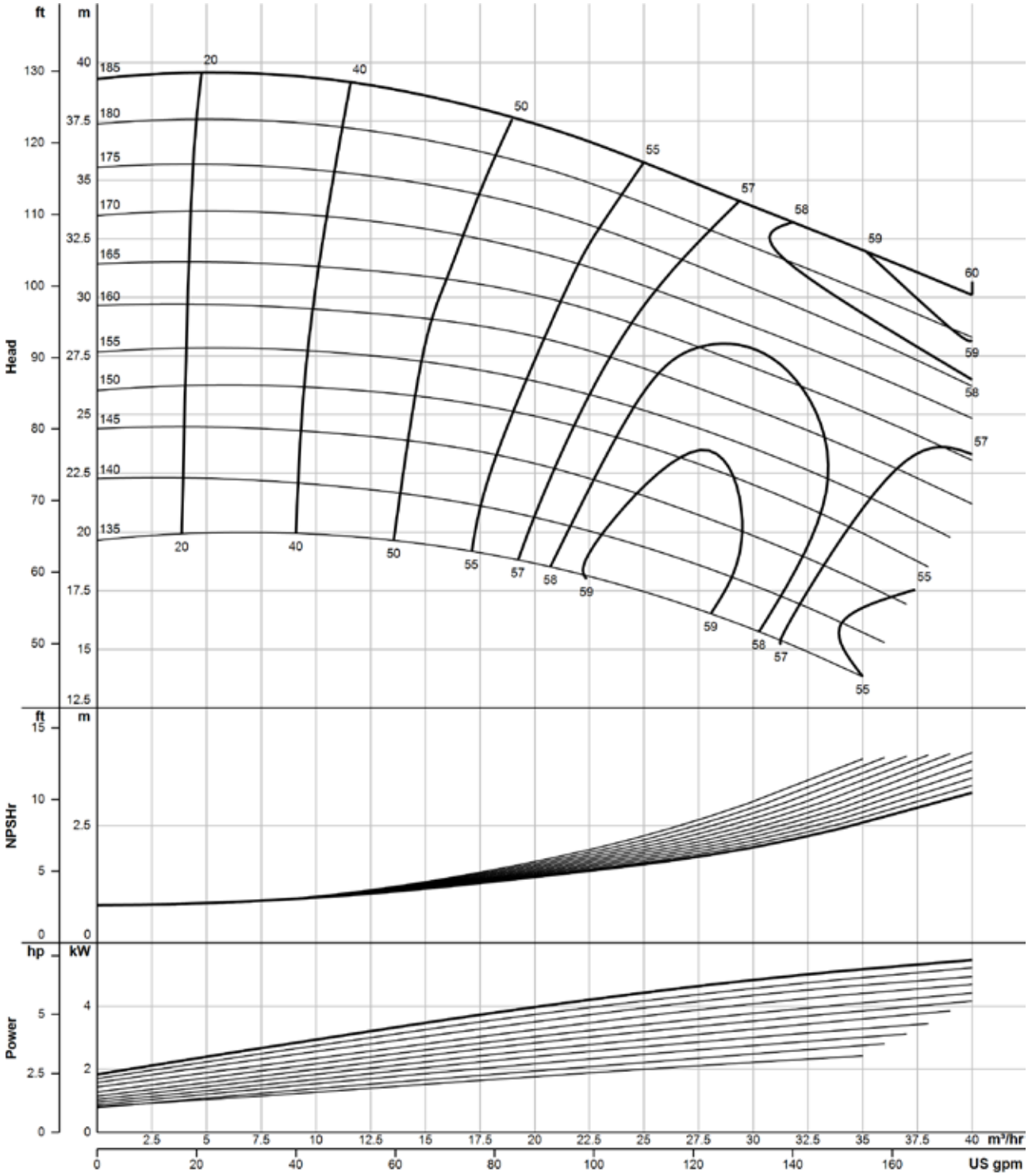

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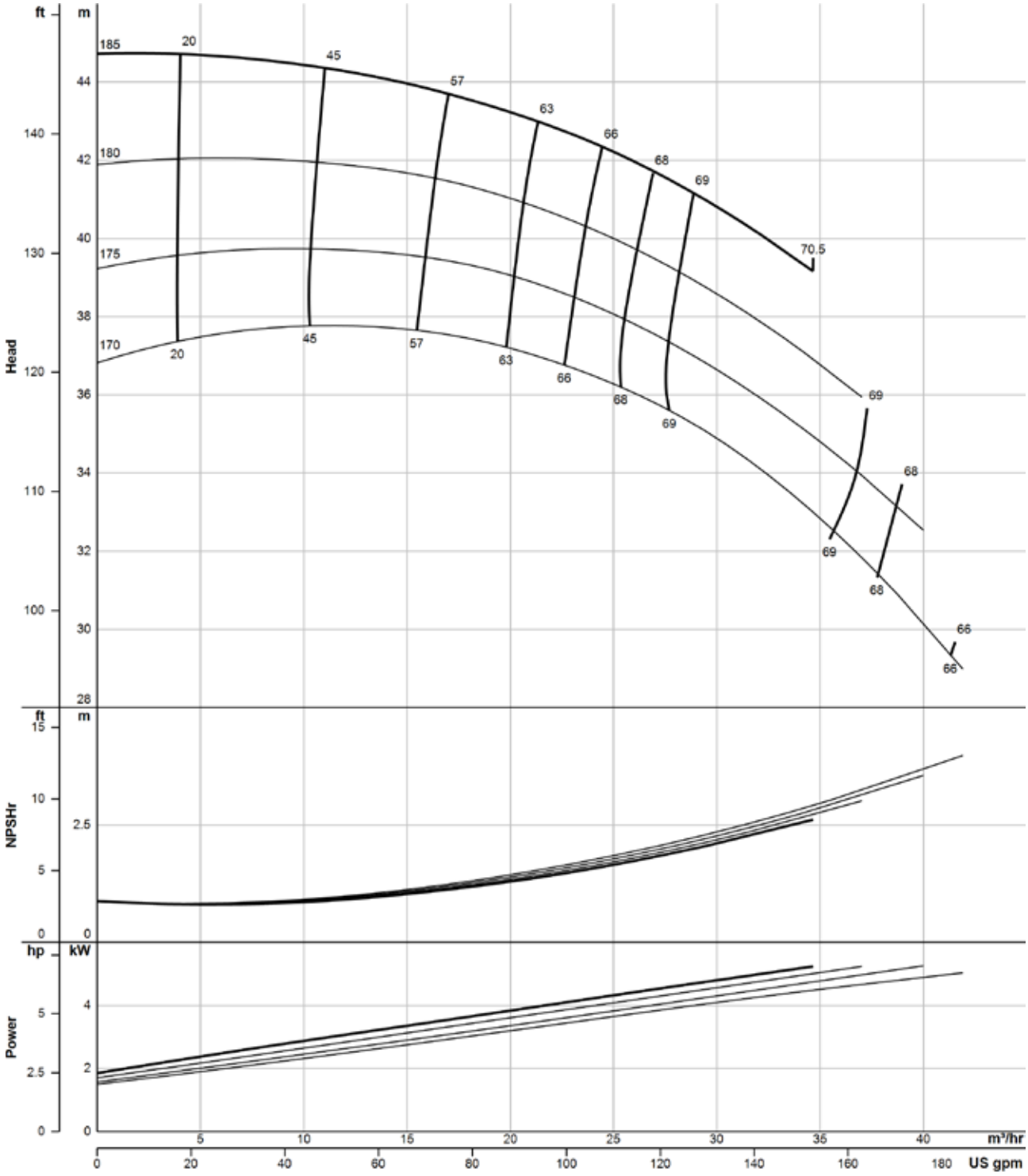

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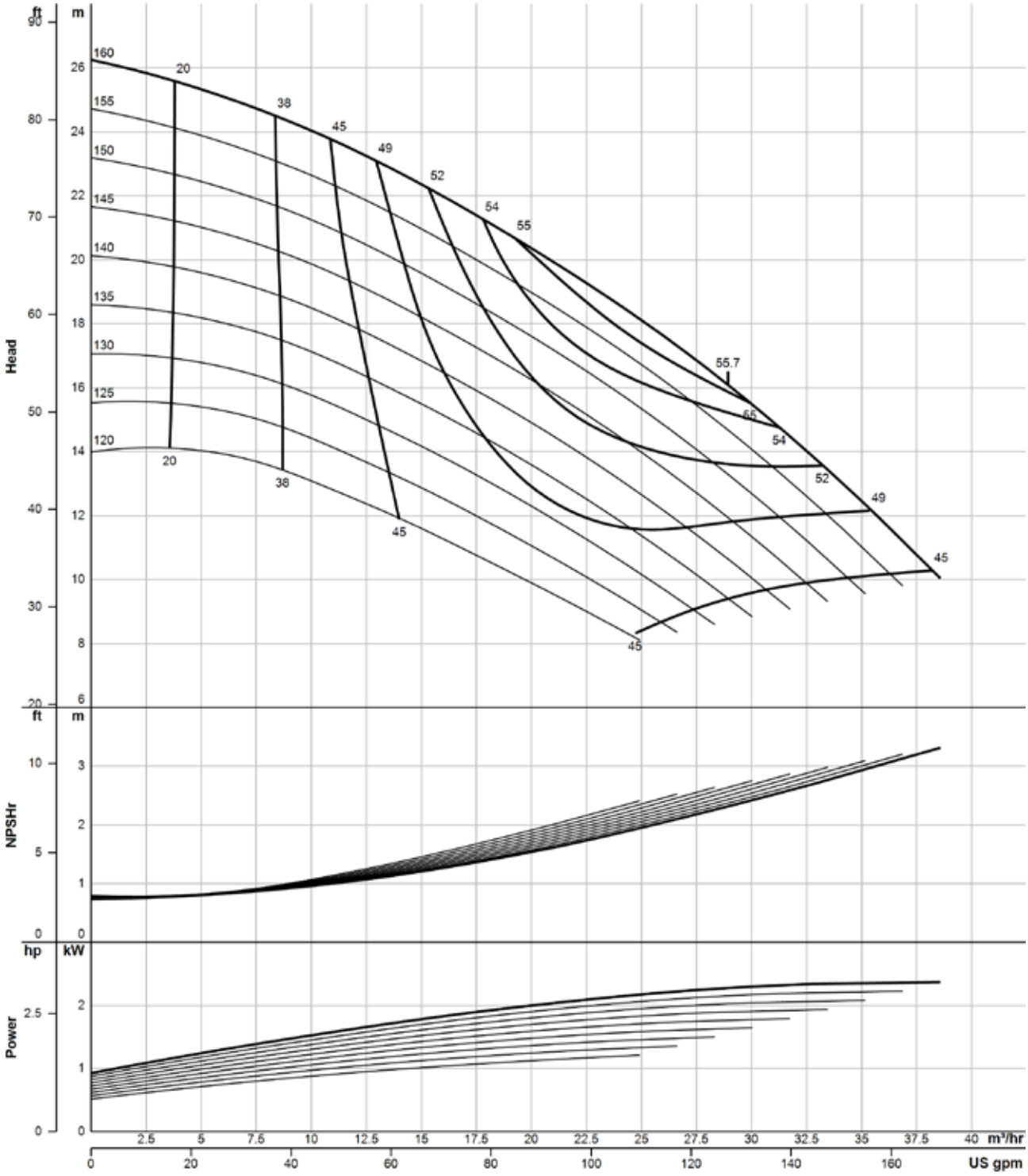

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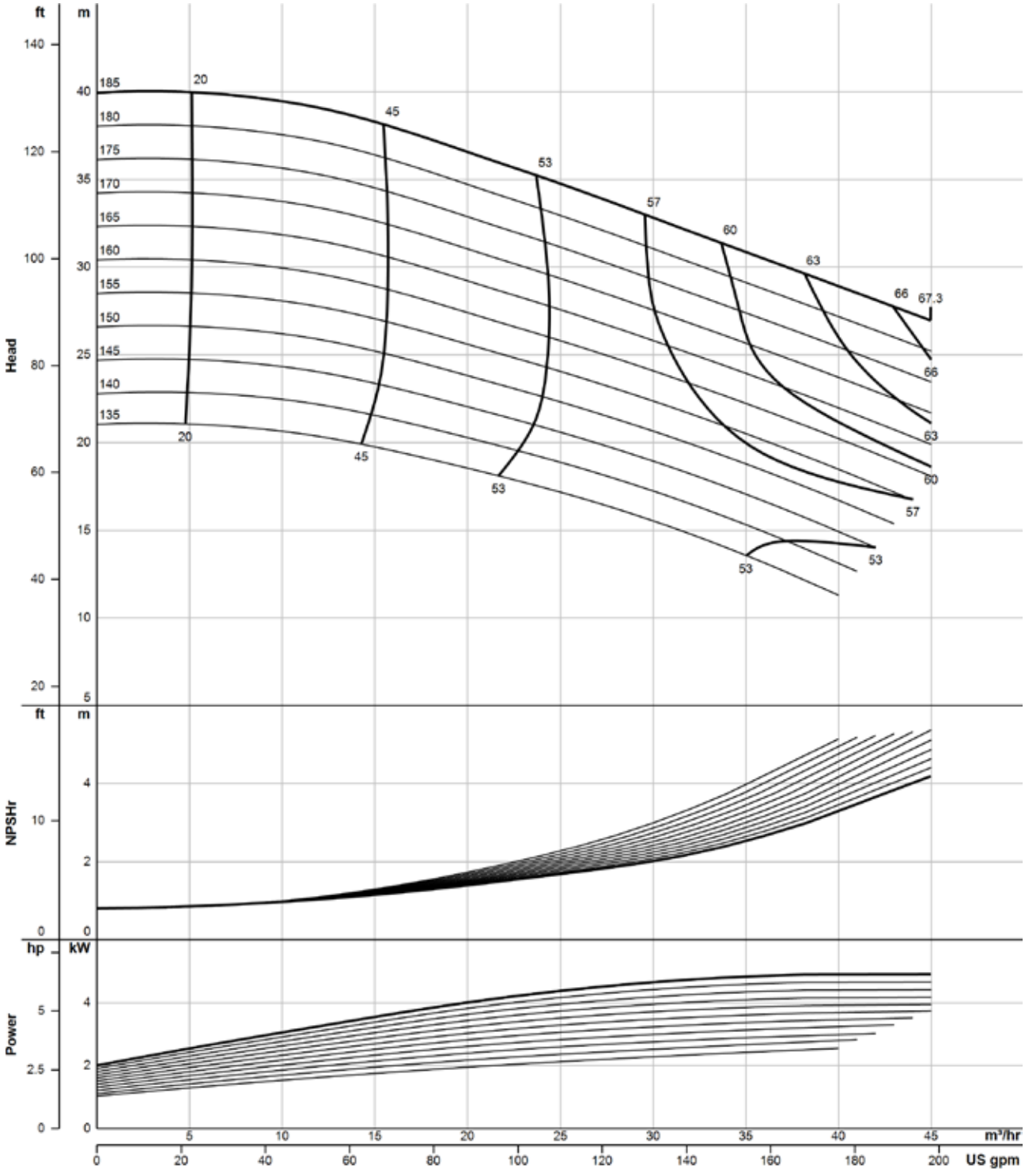

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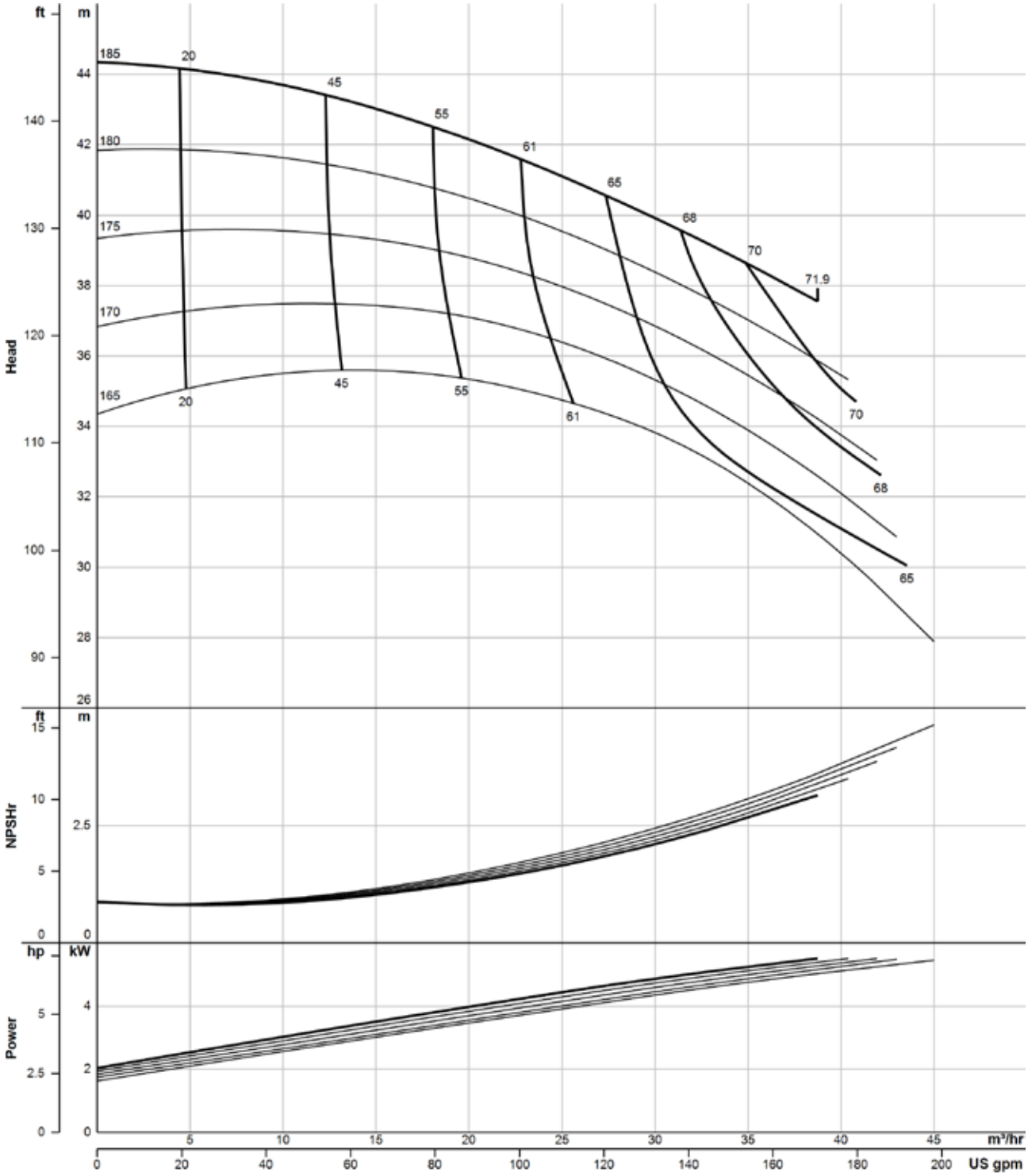

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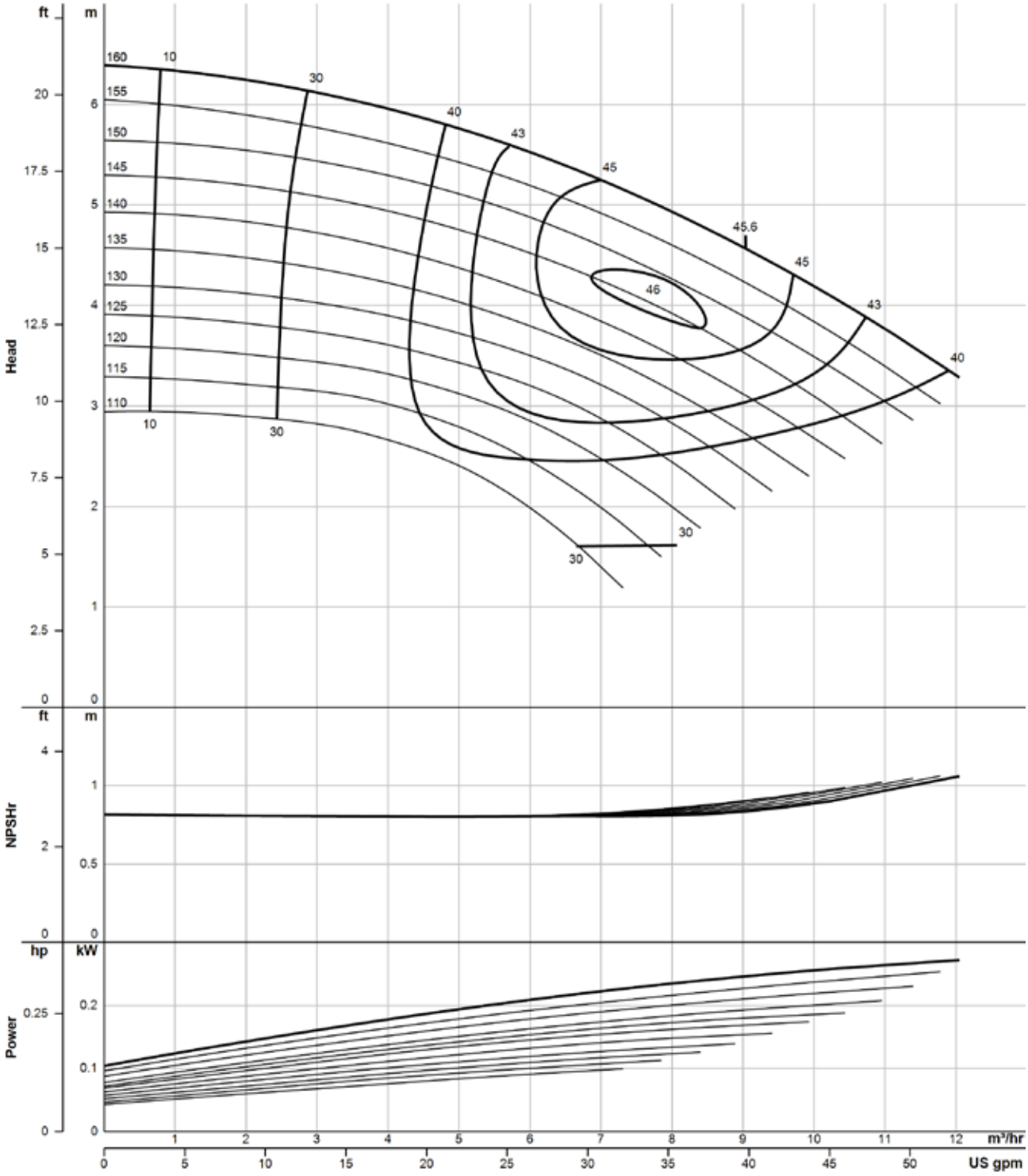
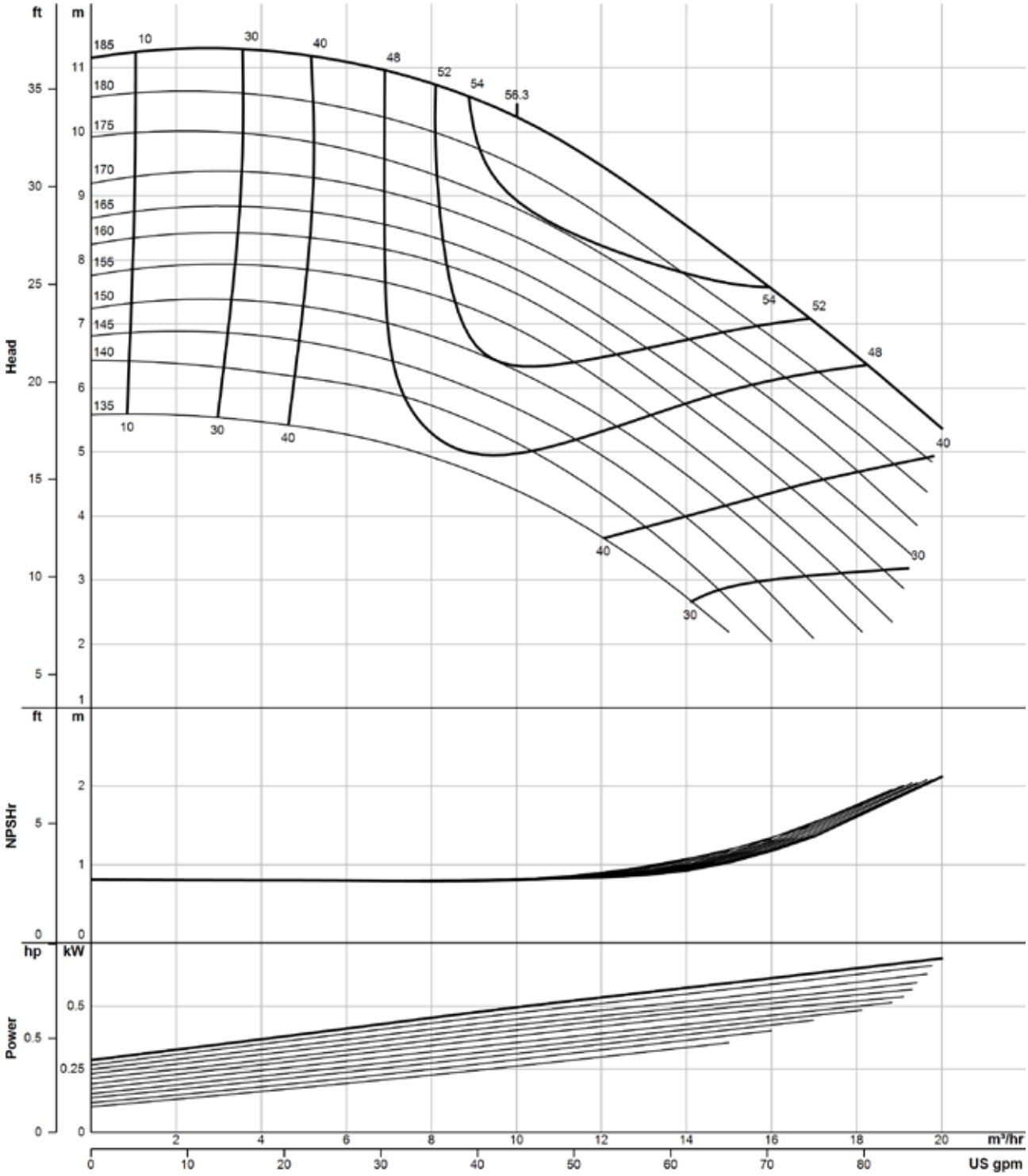


The flow charts are based on water, temperature 20 °C



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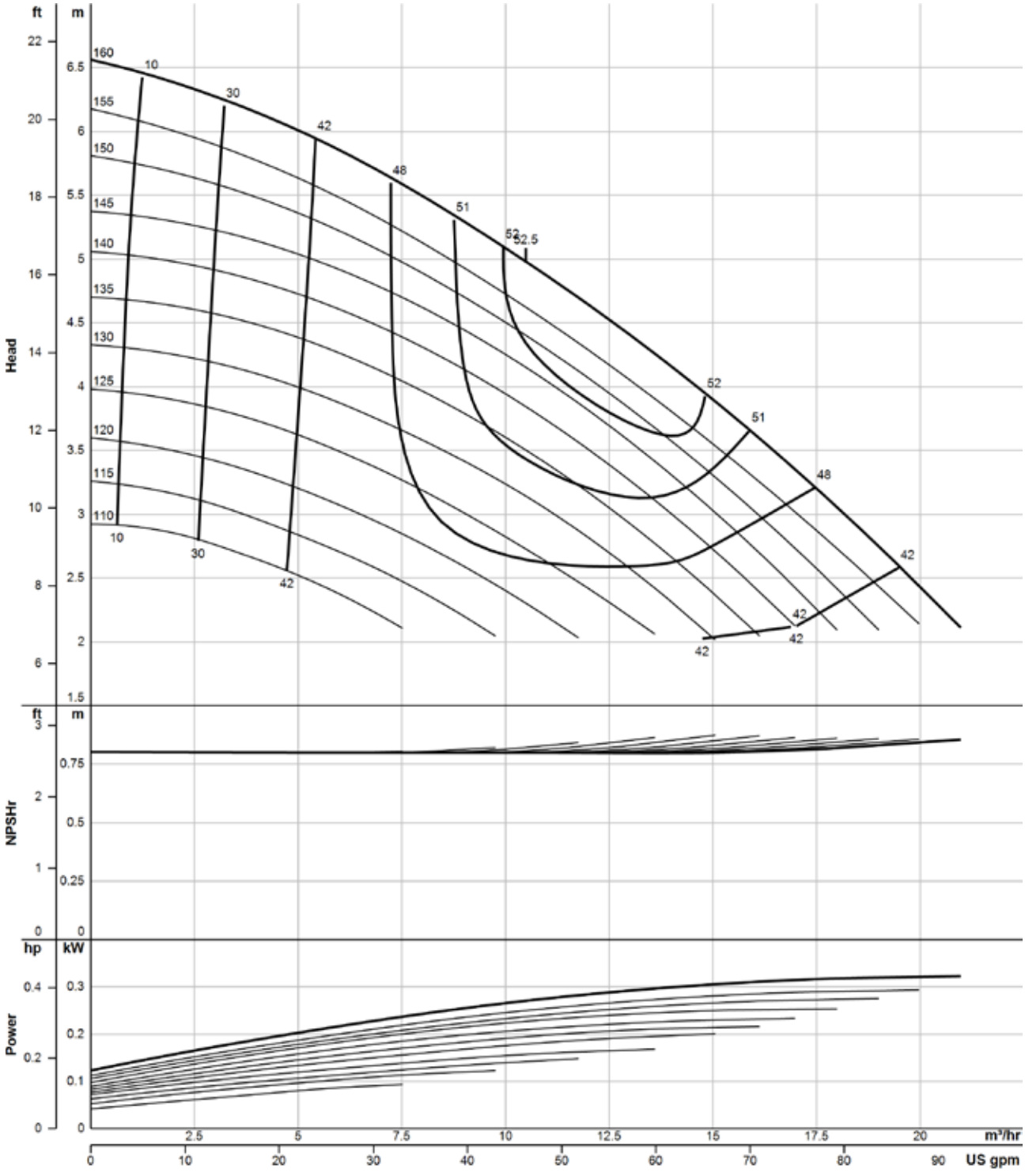

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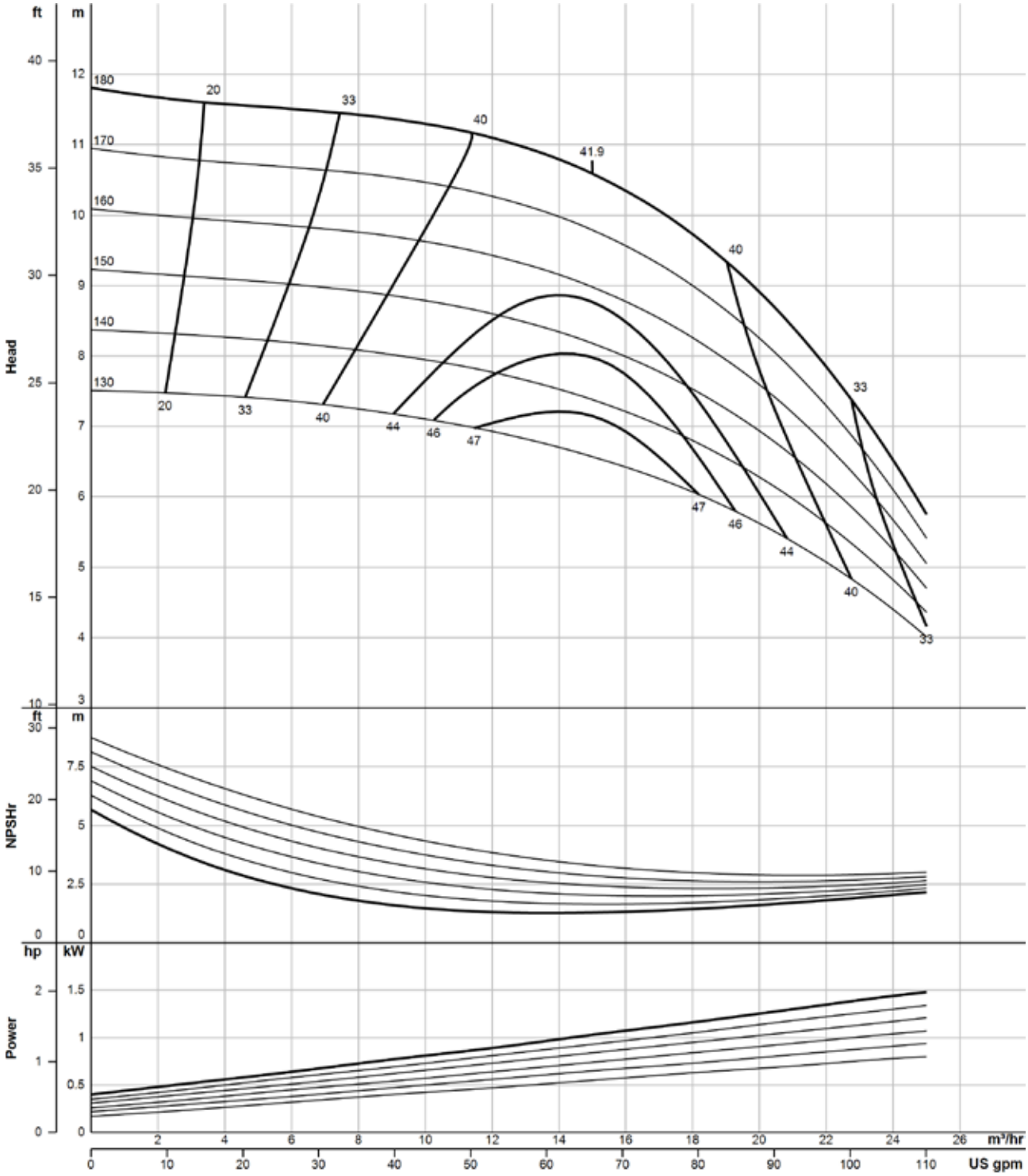
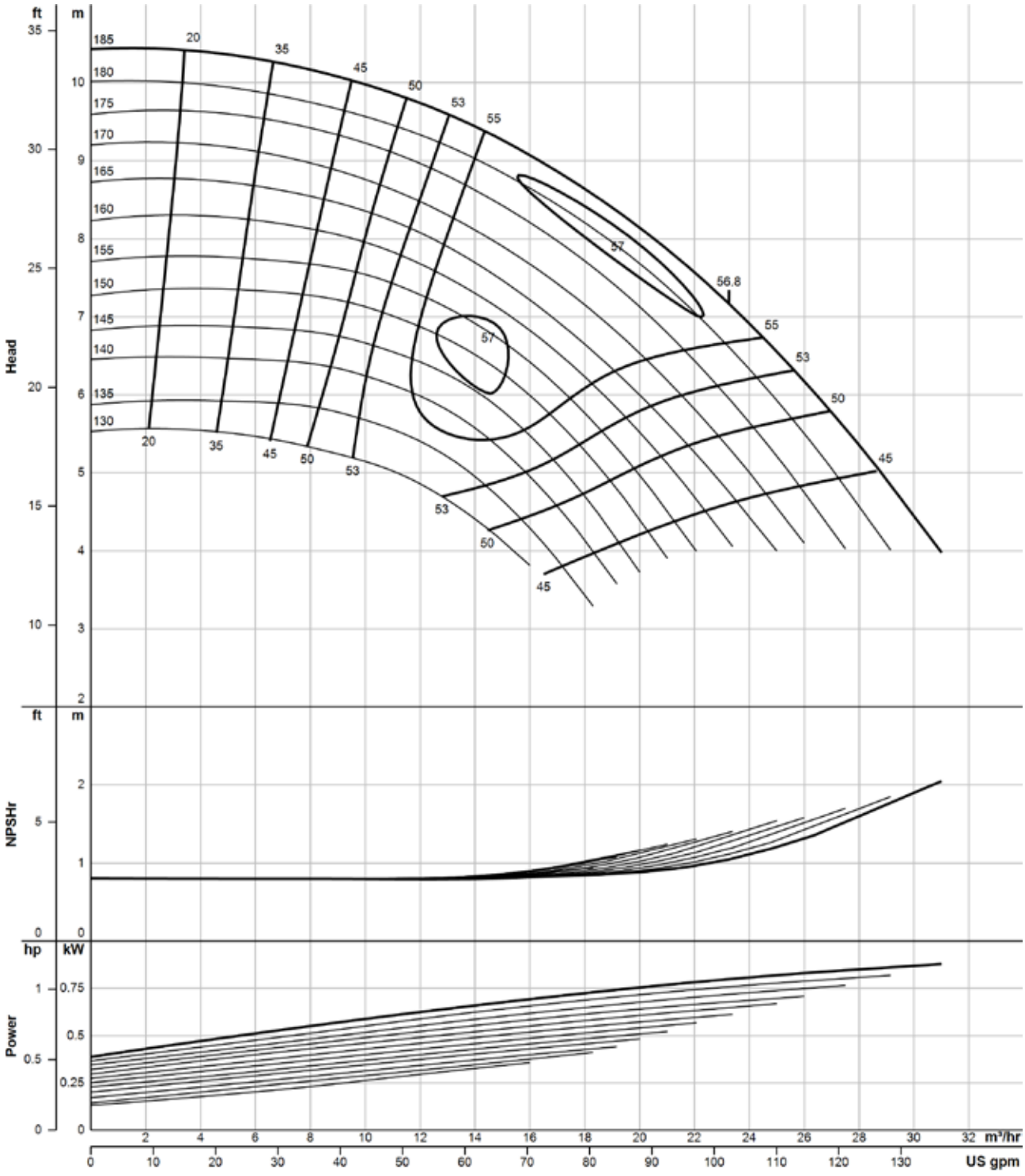


The flow charts are based on water, temperature 20 °C



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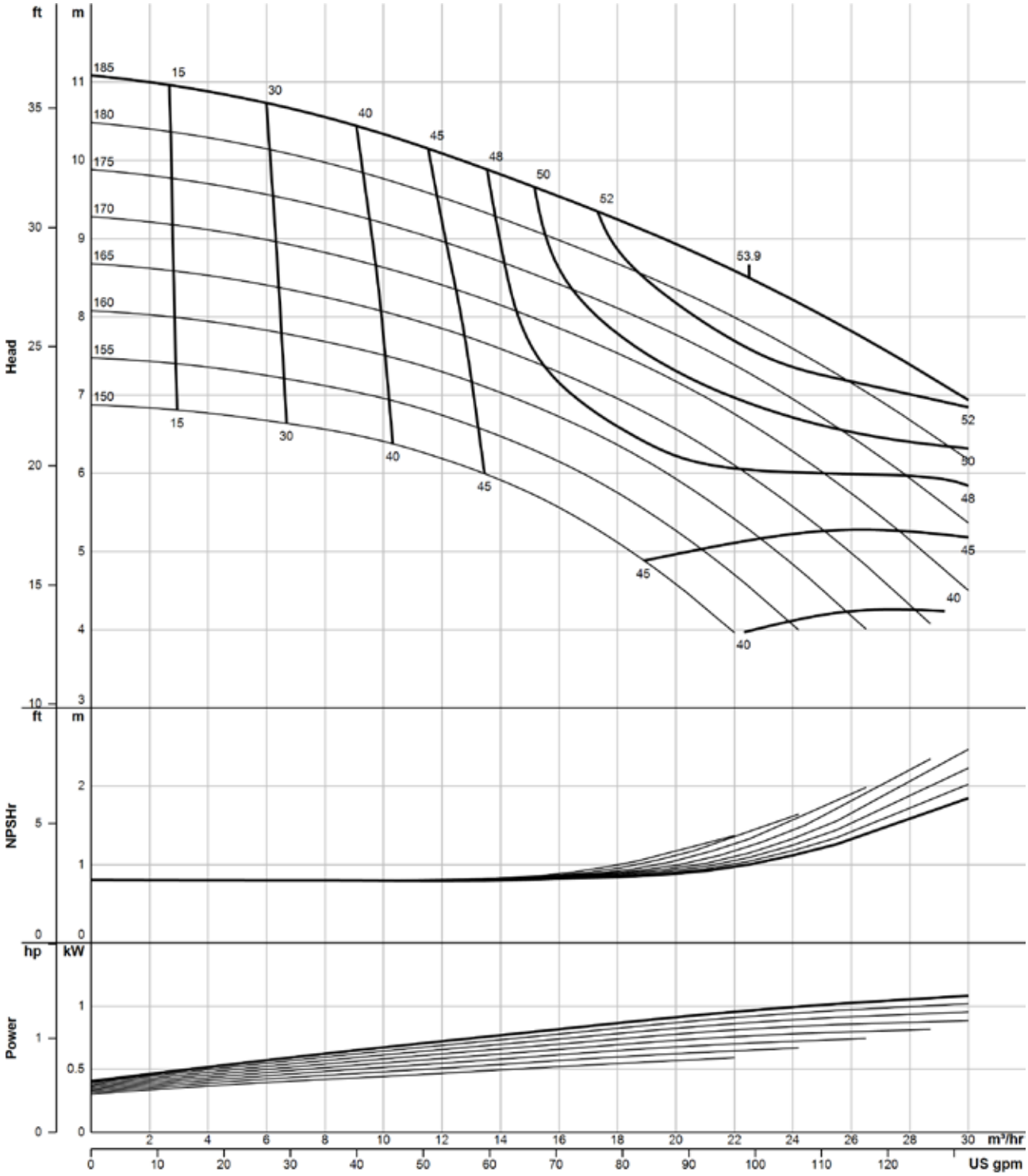

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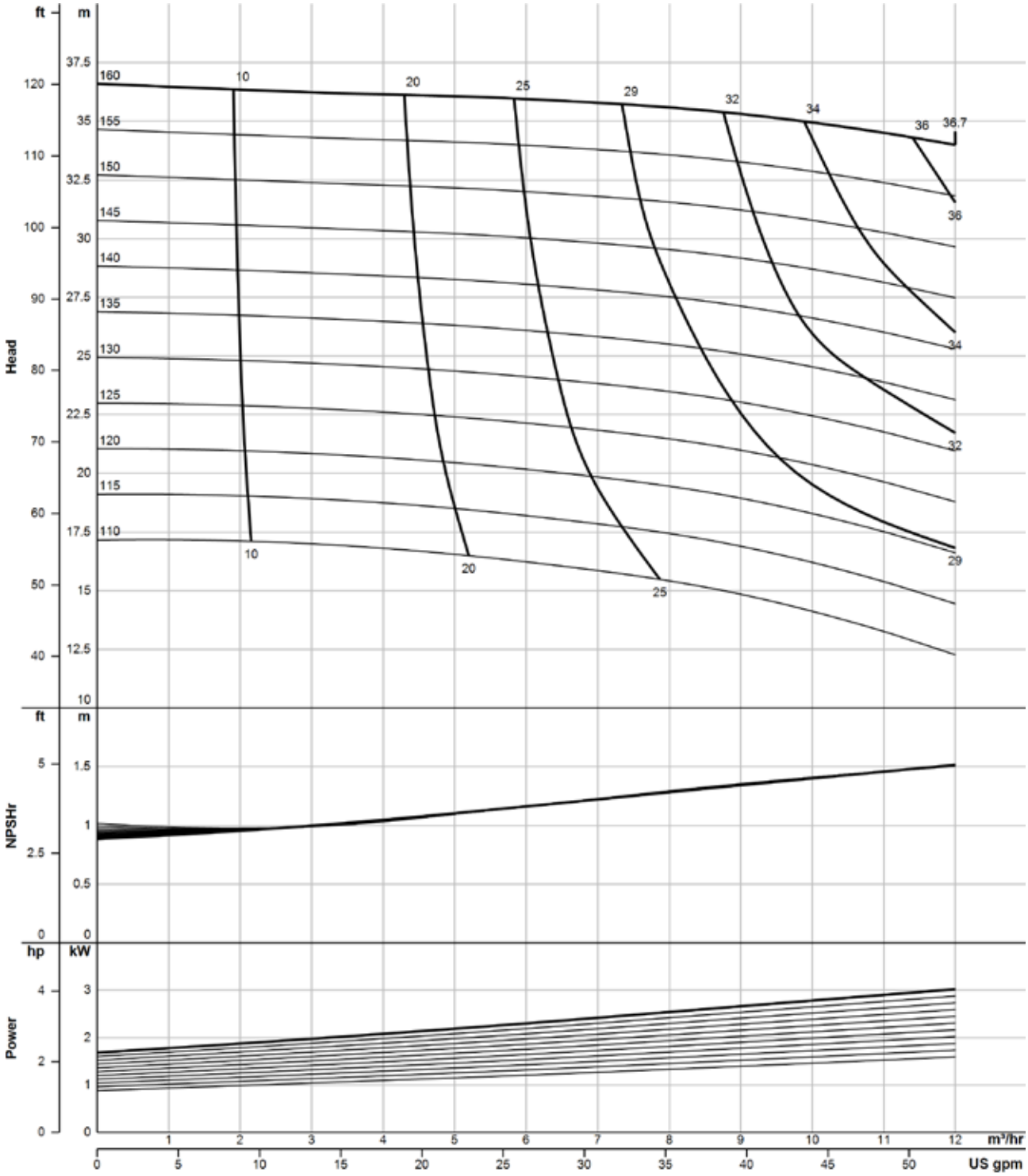
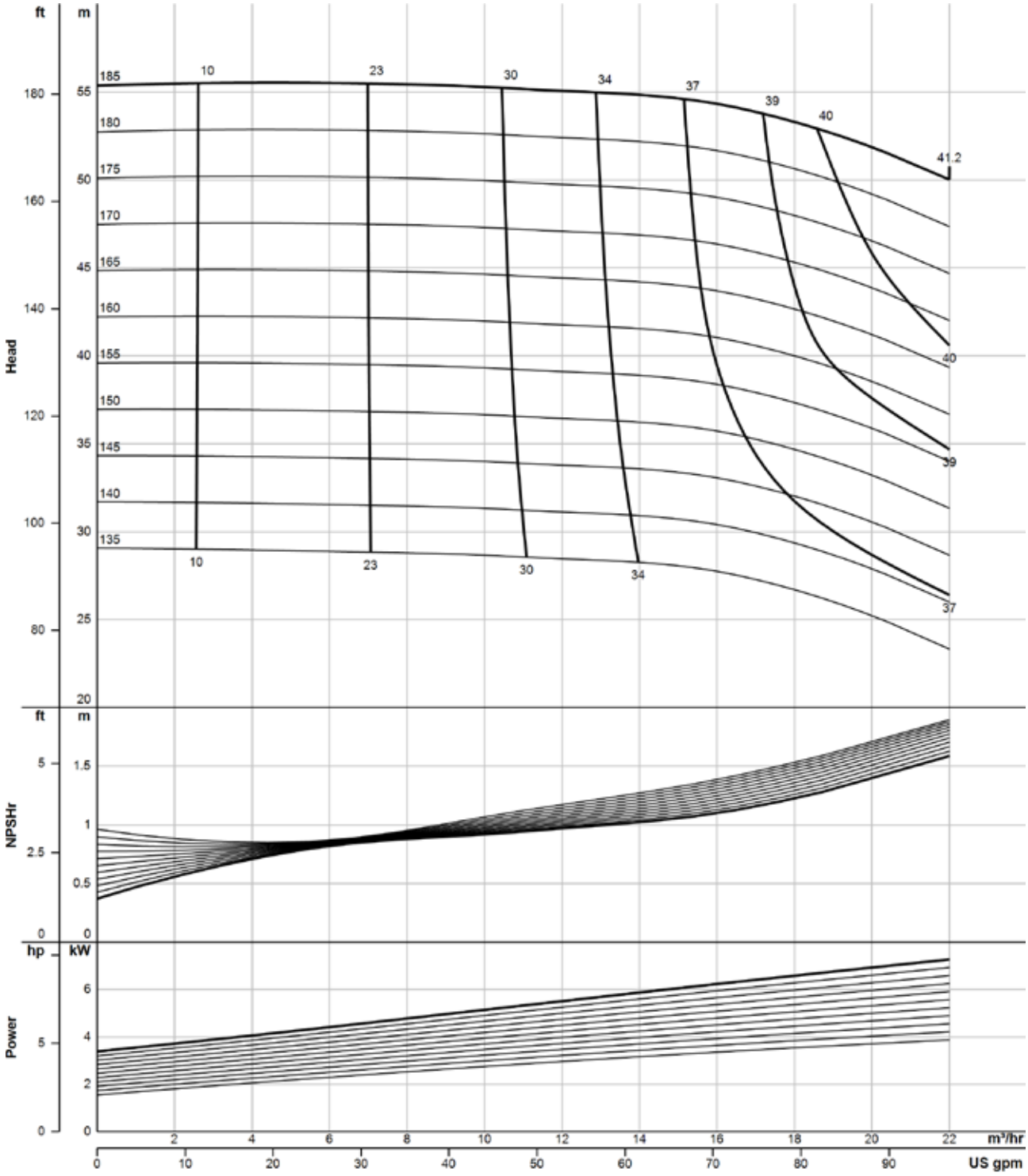
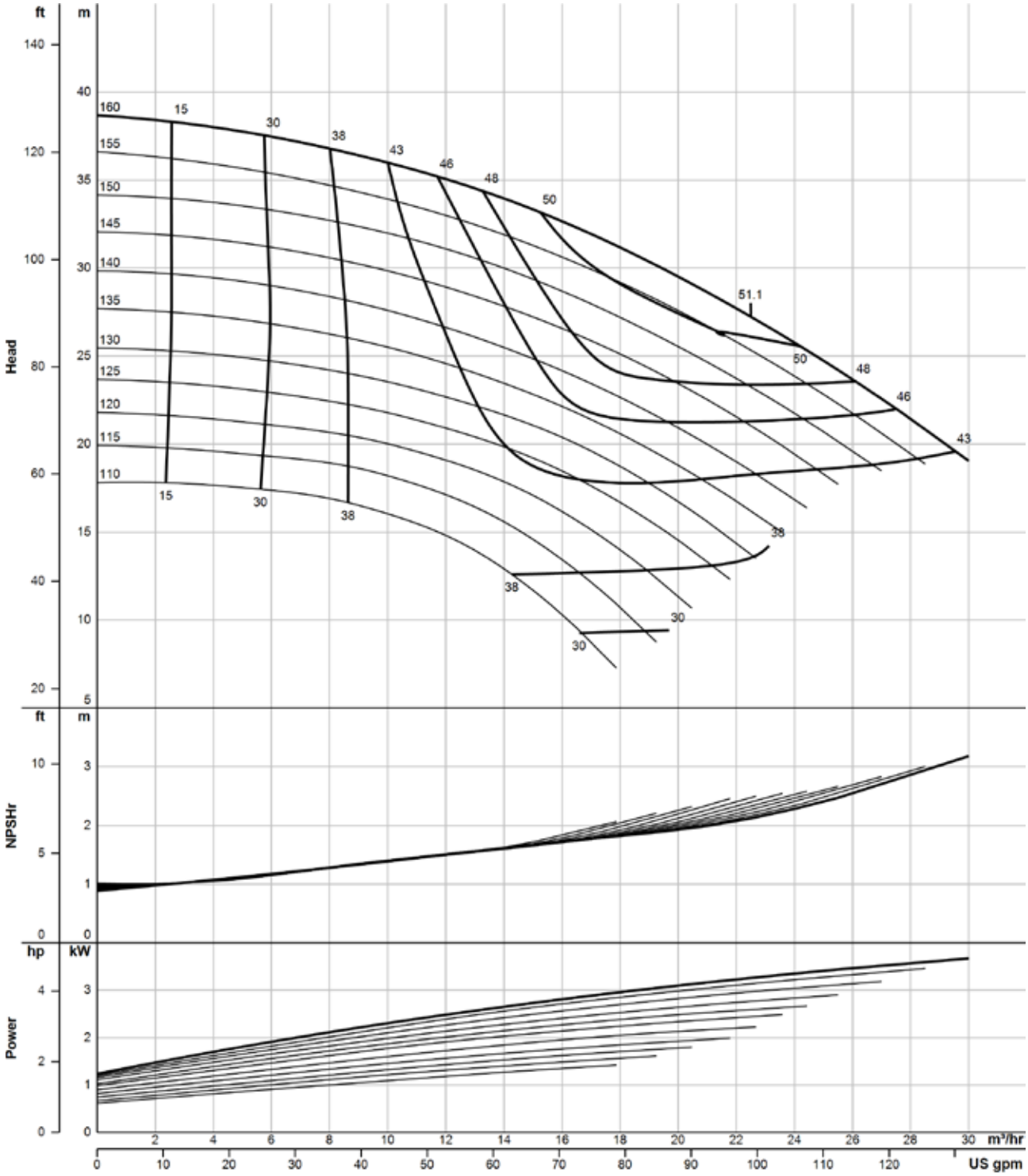


The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C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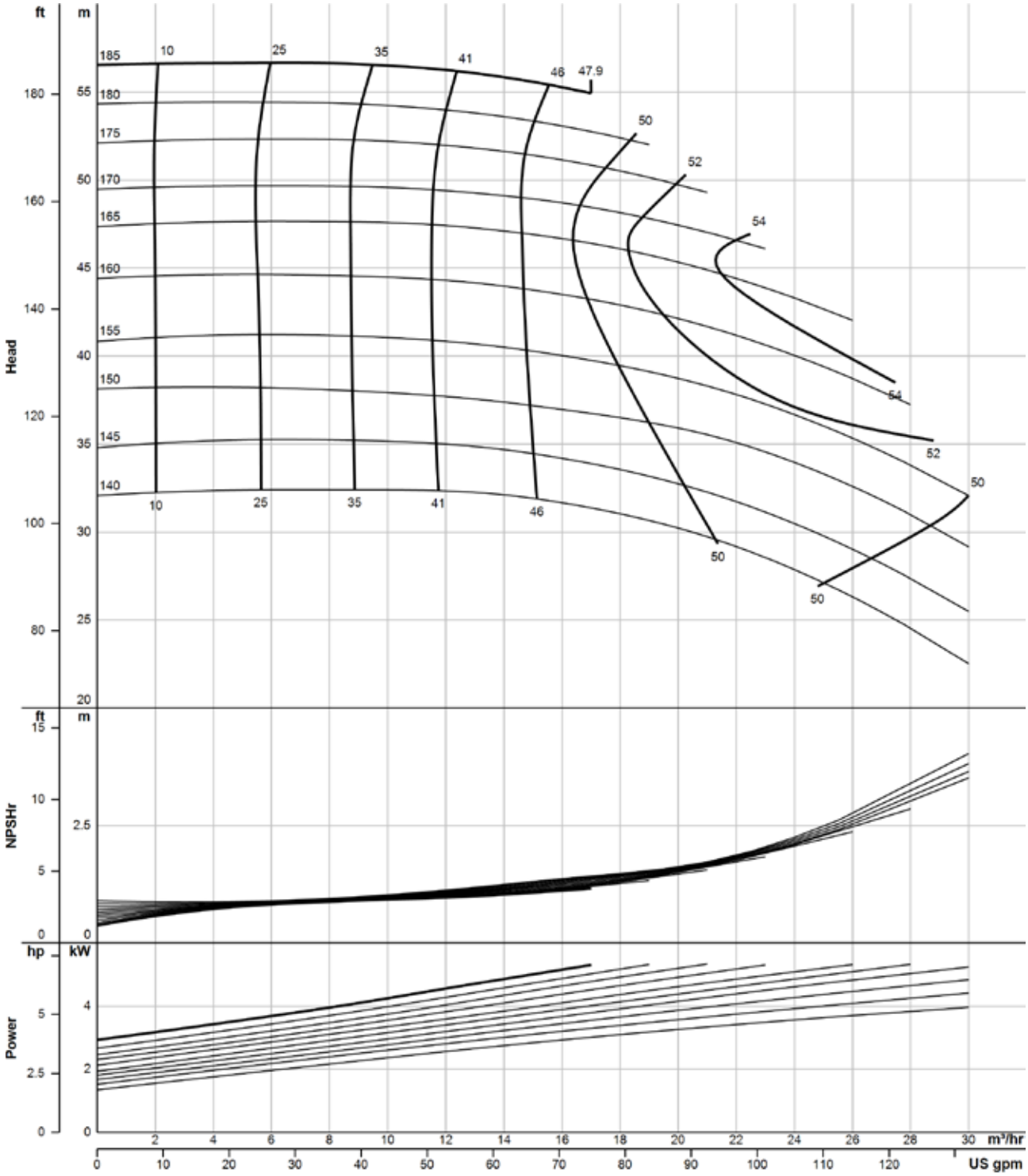
m³/hr
US gpm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hp
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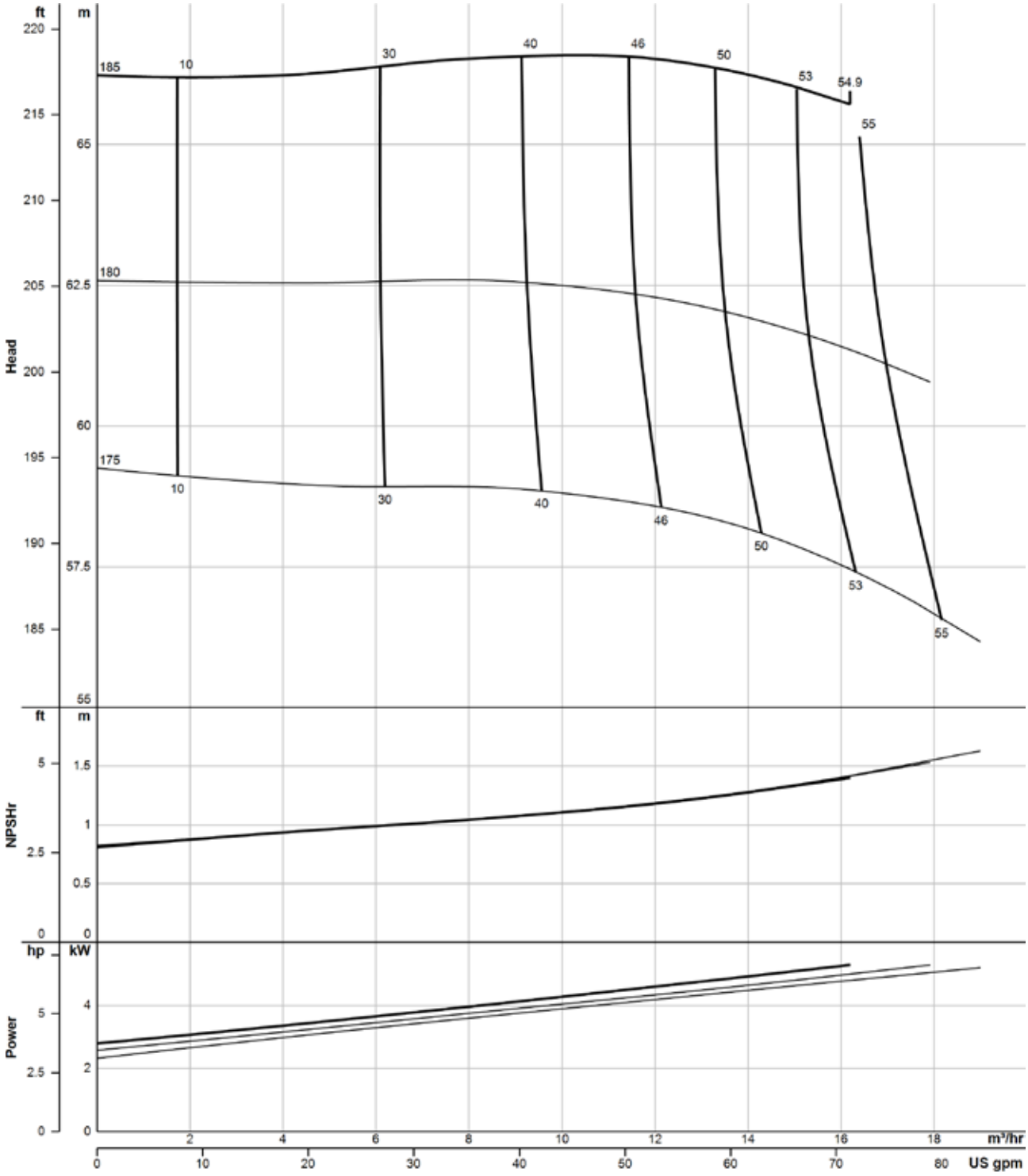
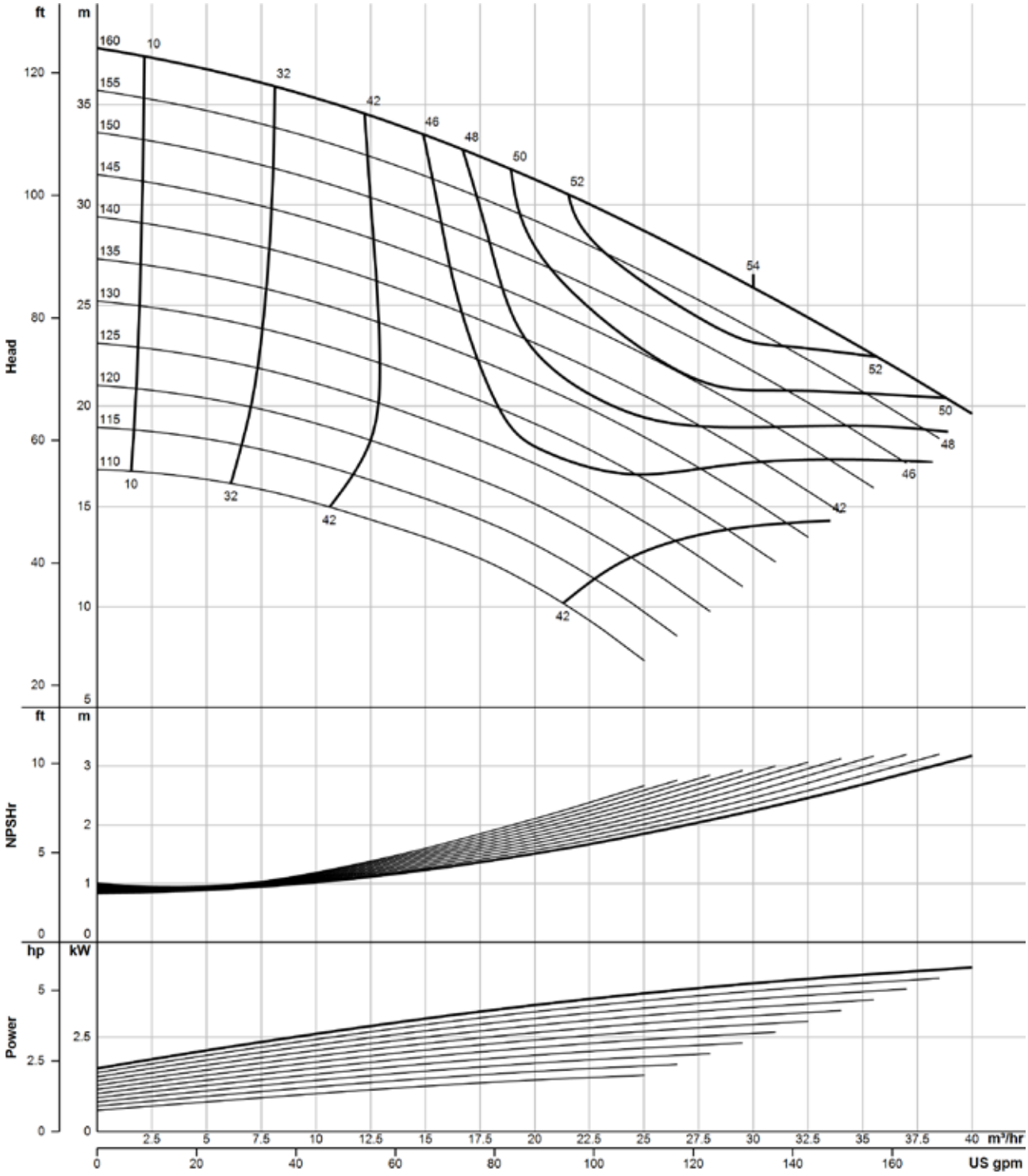
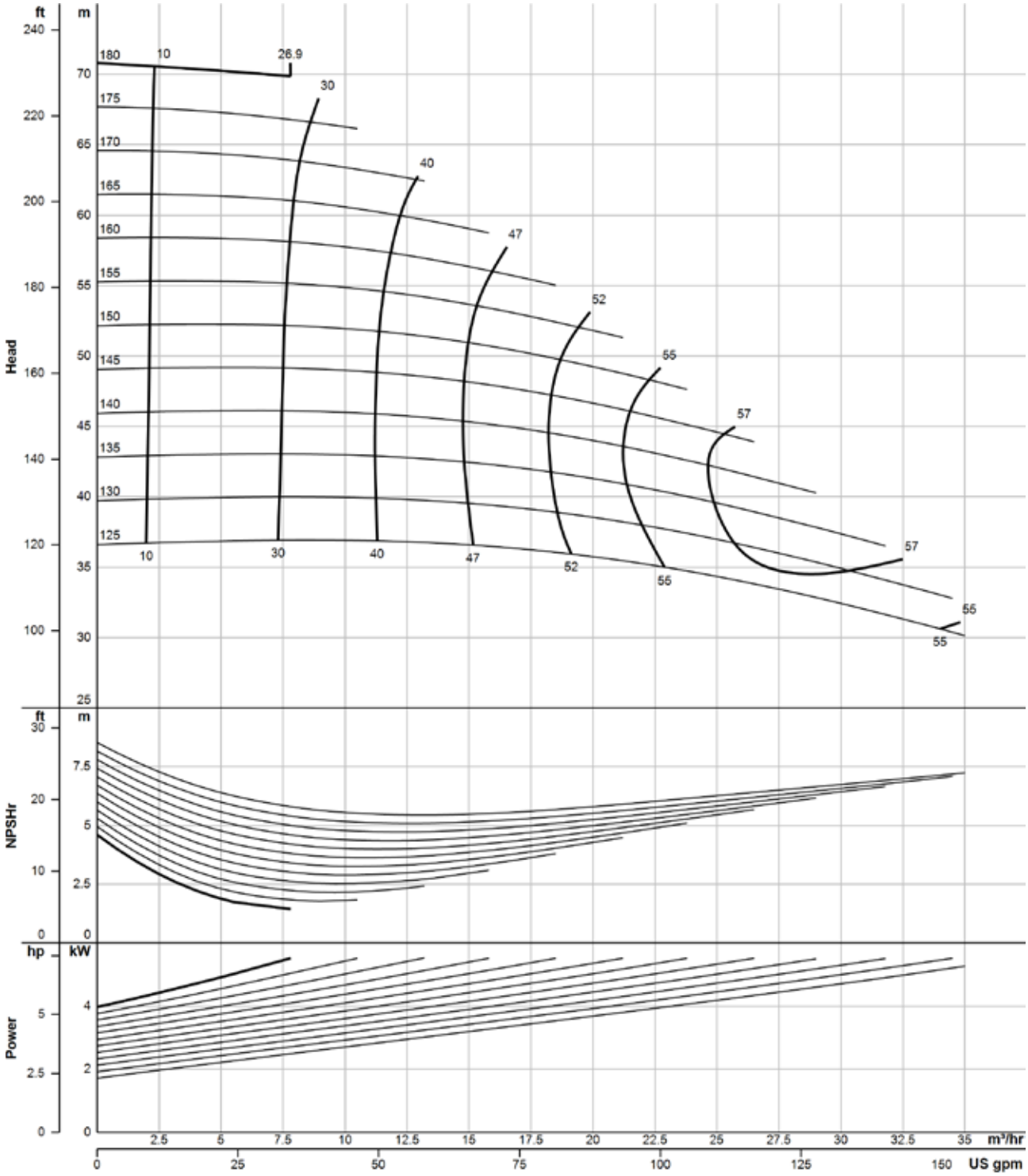
m³/hr
US gpm



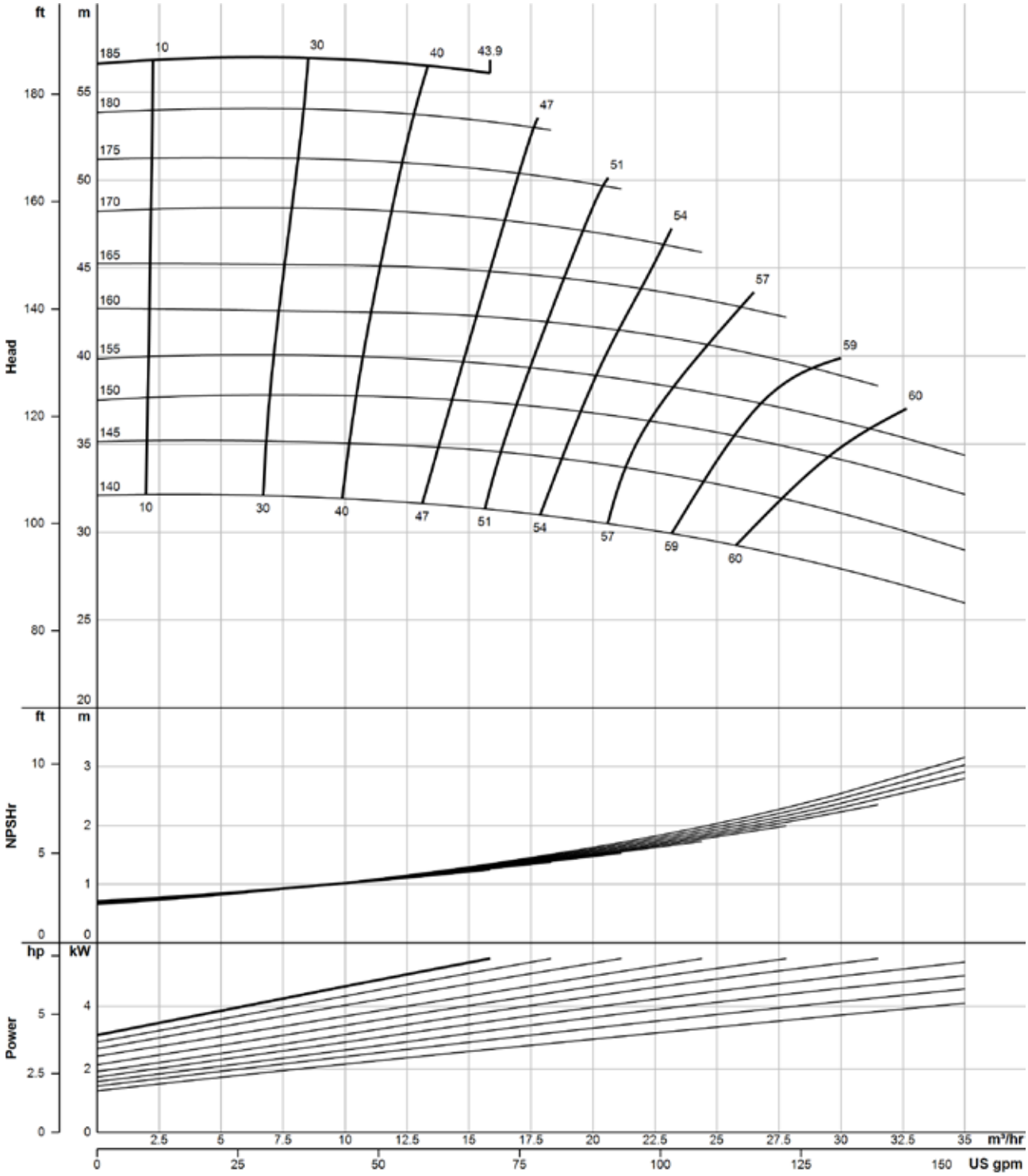
The flow charts are based on water, temperature 20 °C



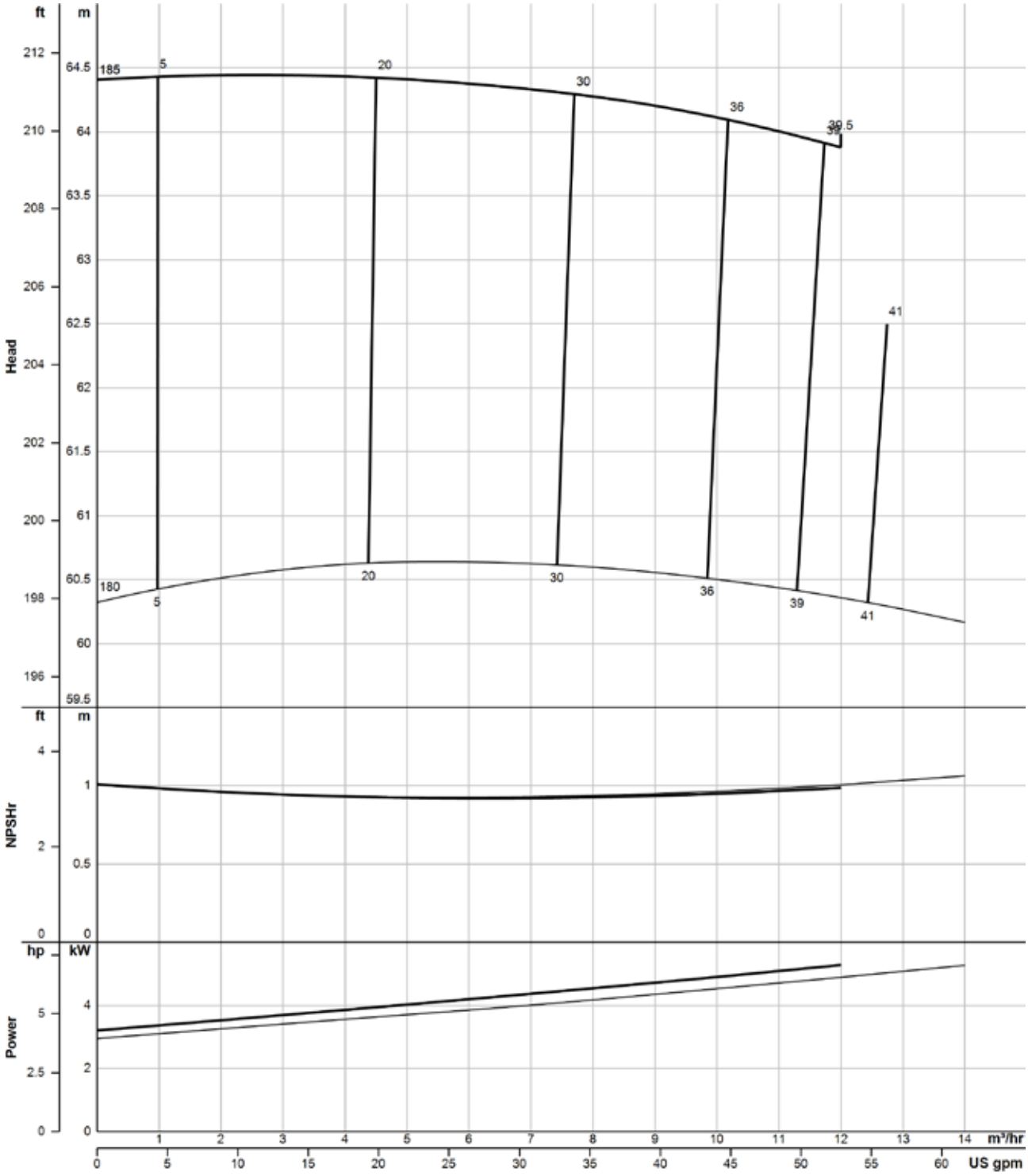
The flow charts are based on water, temperature 20 °C



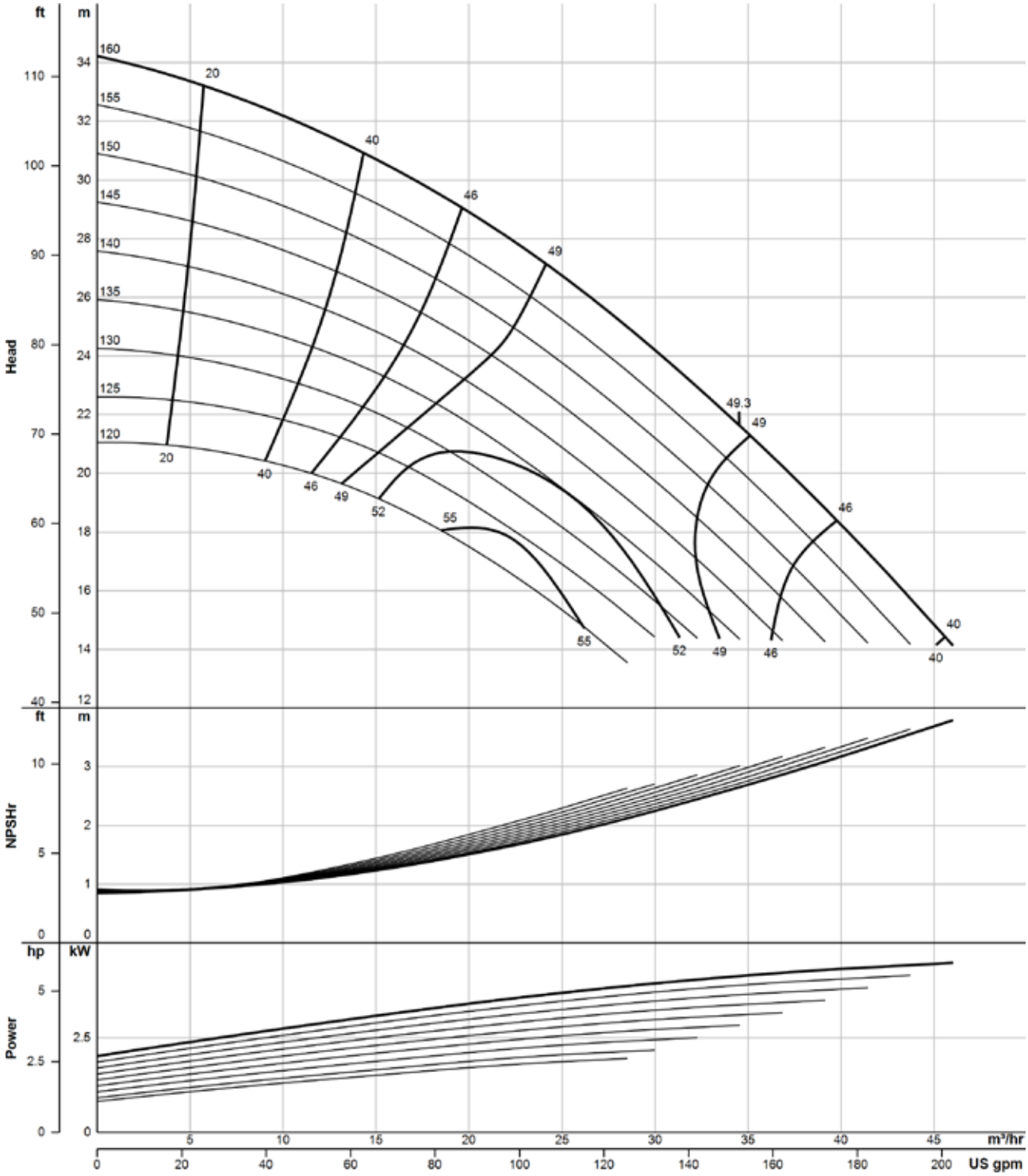
The flow charts are based on water, temperature 20 °C



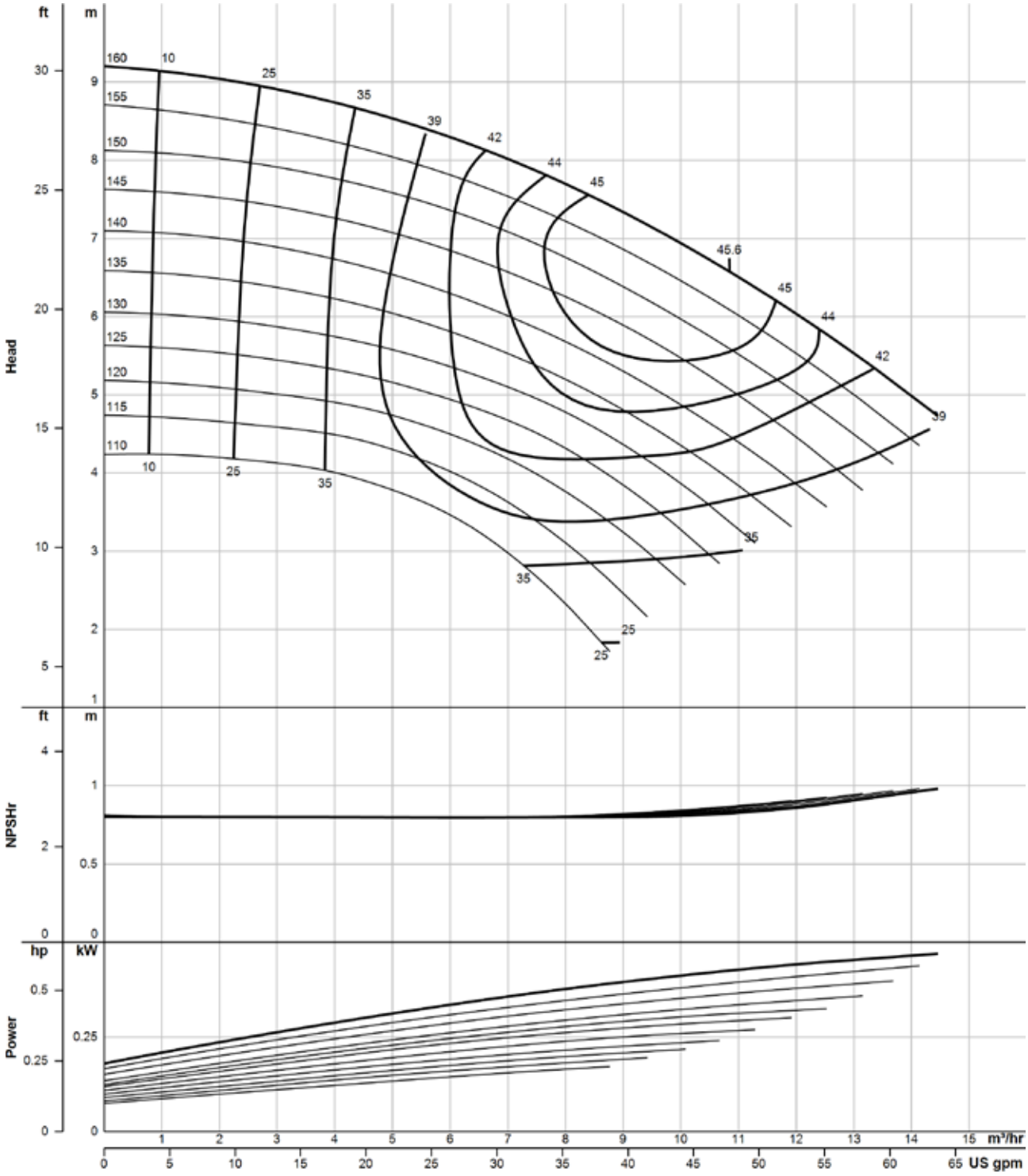
The flow charts are based on water, temperature 20 °C



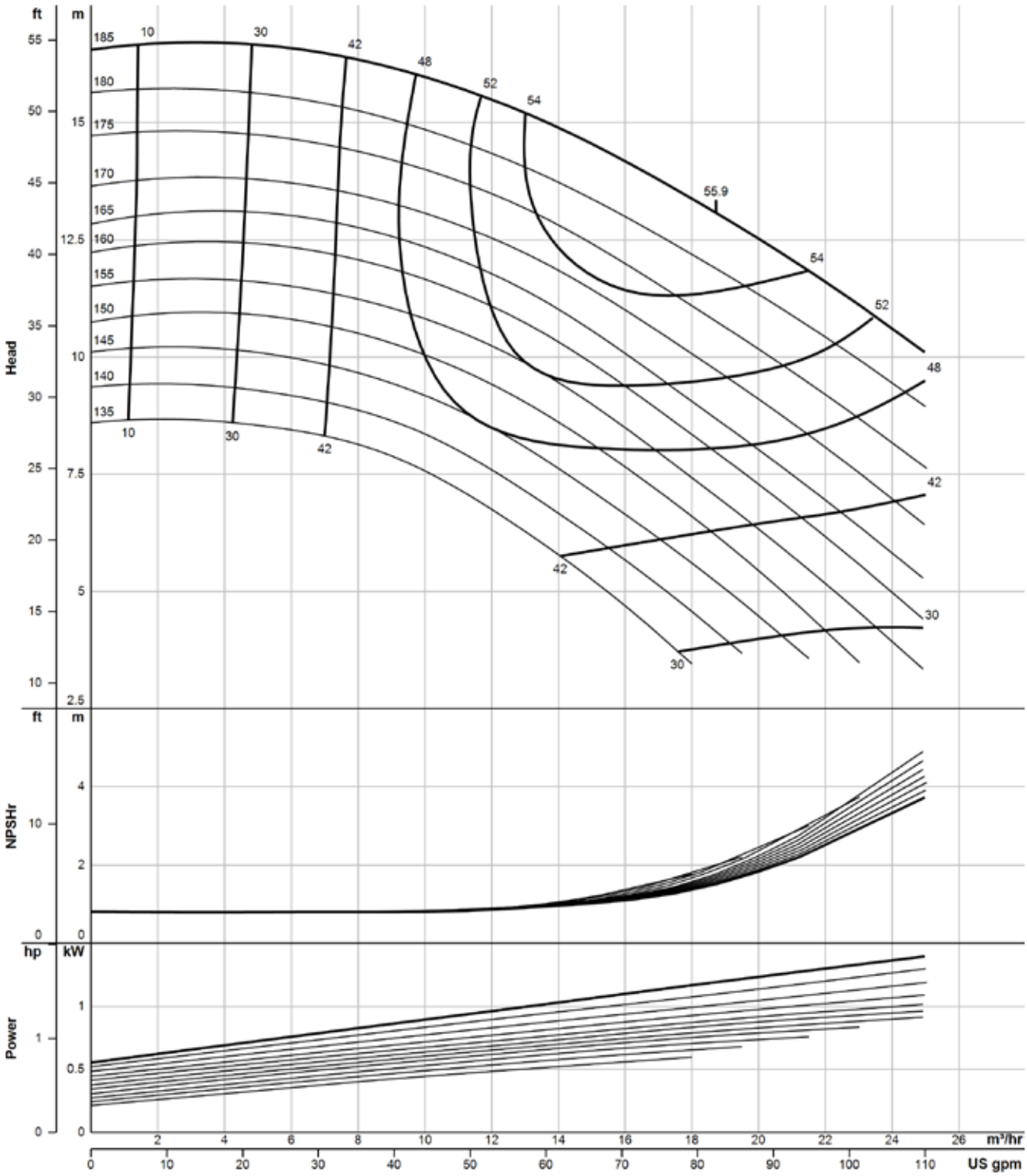
The flow charts are based on water, temperature 20 °C



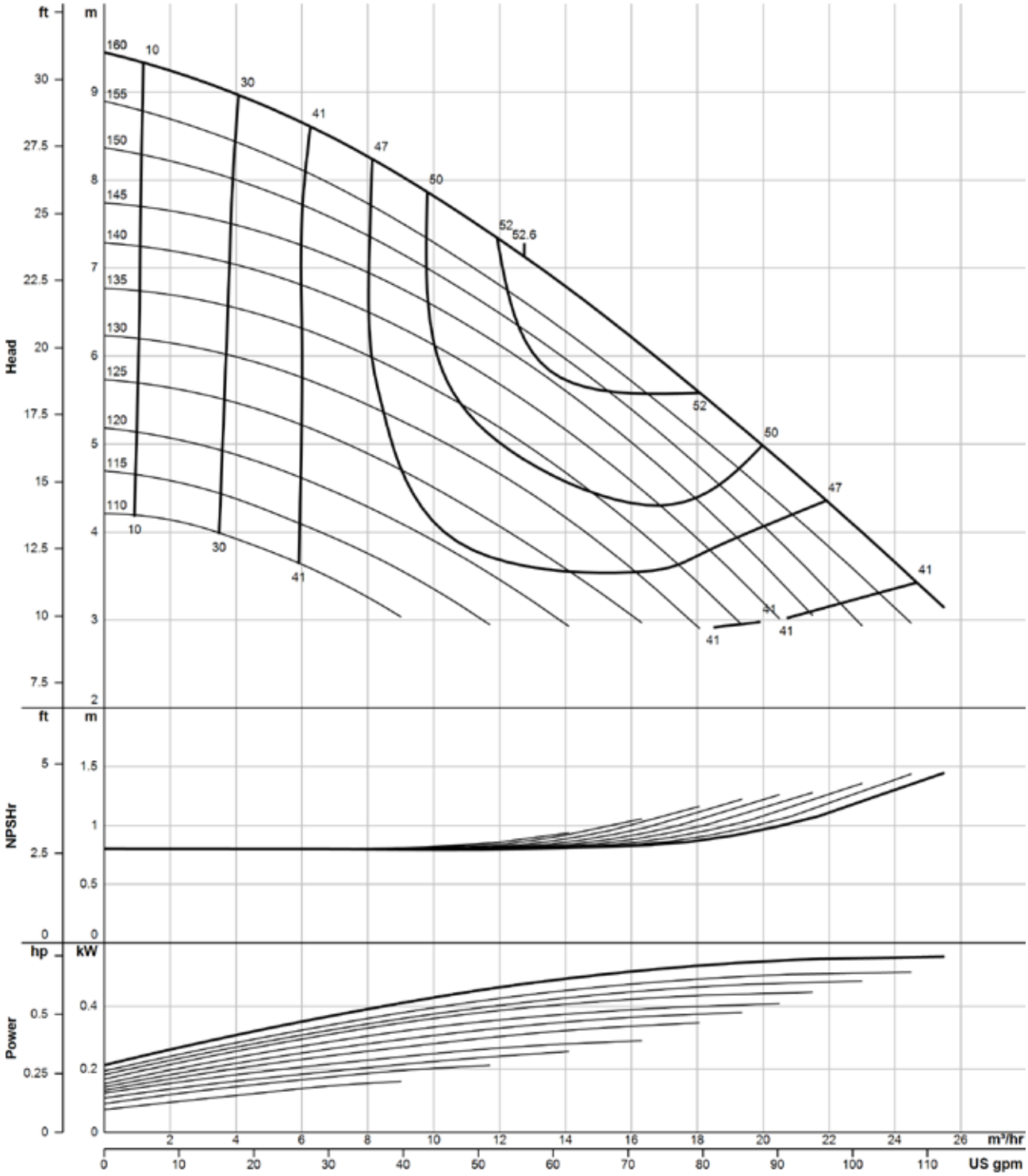
The flow charts are based on water, temperature 20 °C



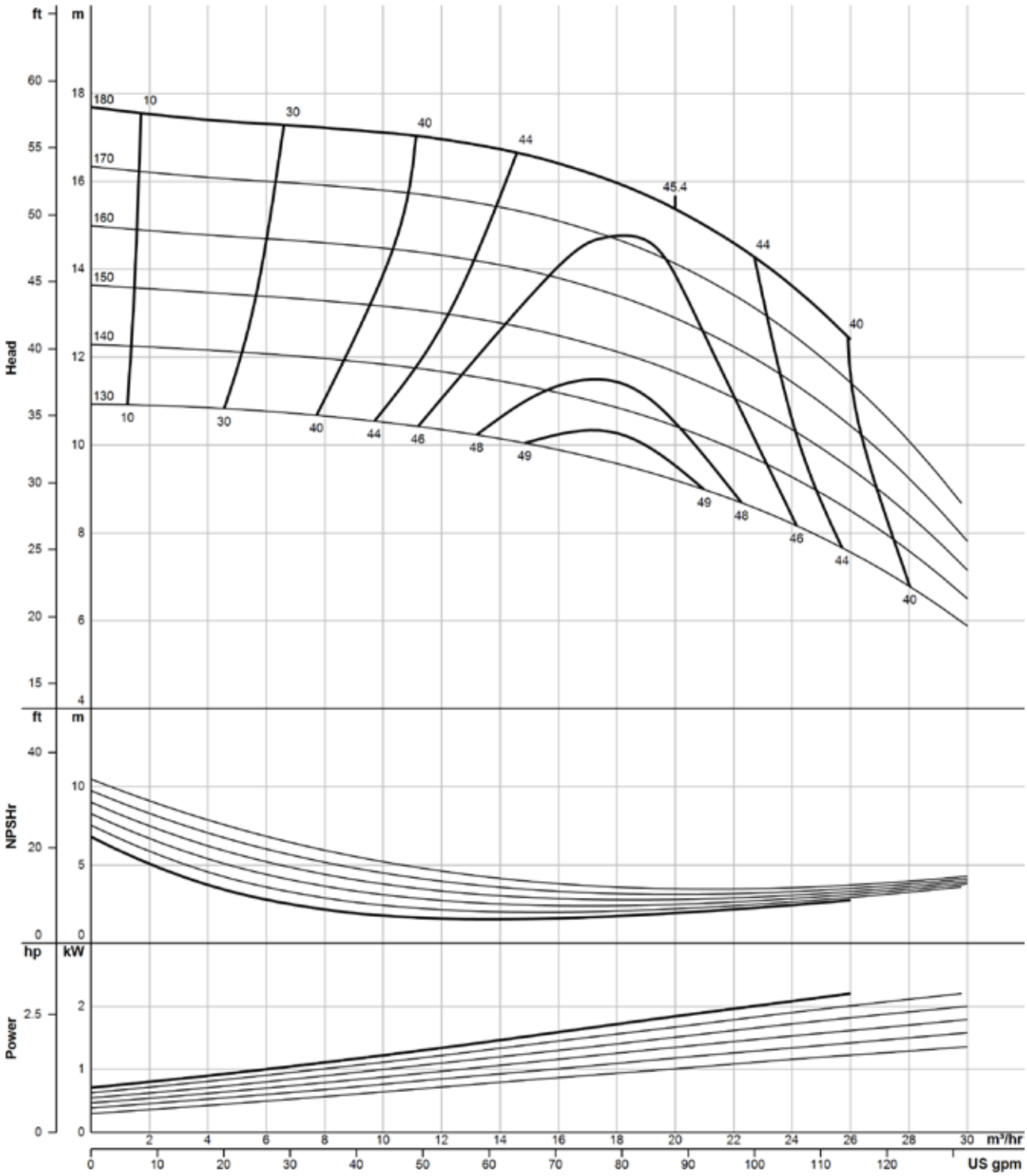
The flow charts are based on water, temperature 20 °C



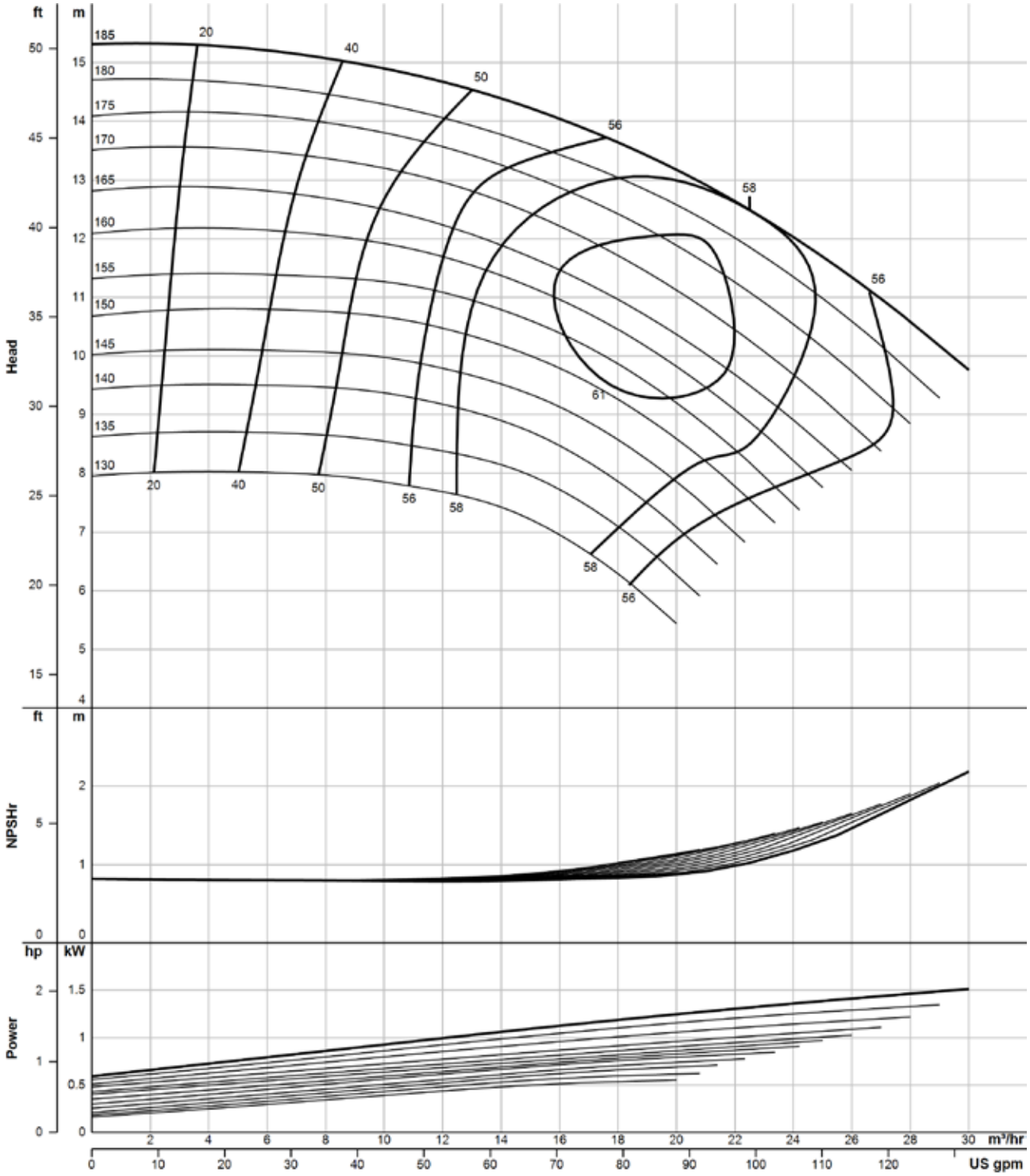
The flow charts are based on water, temperature 20 °C



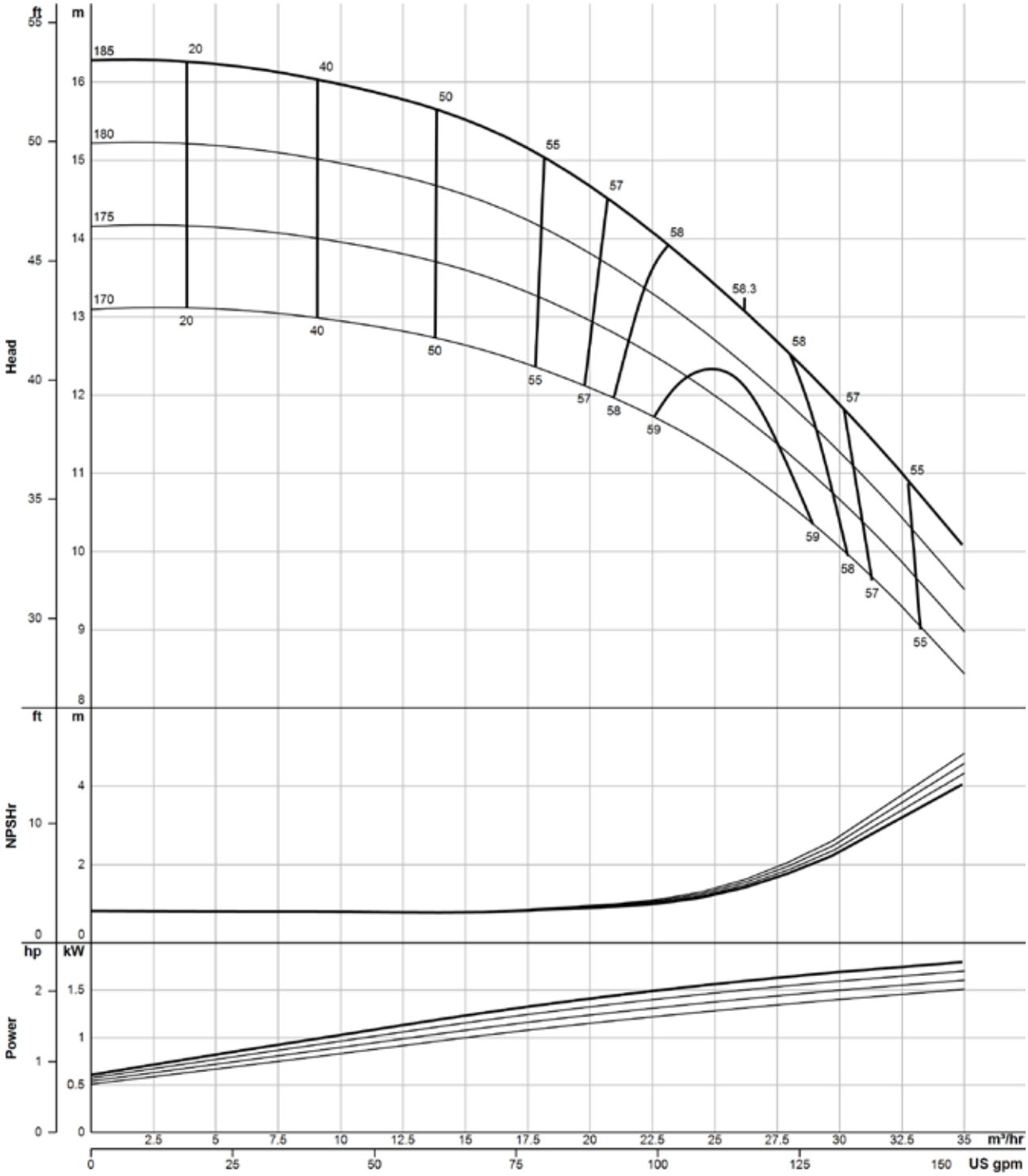
The flow charts are based on water, temperature 20 °C



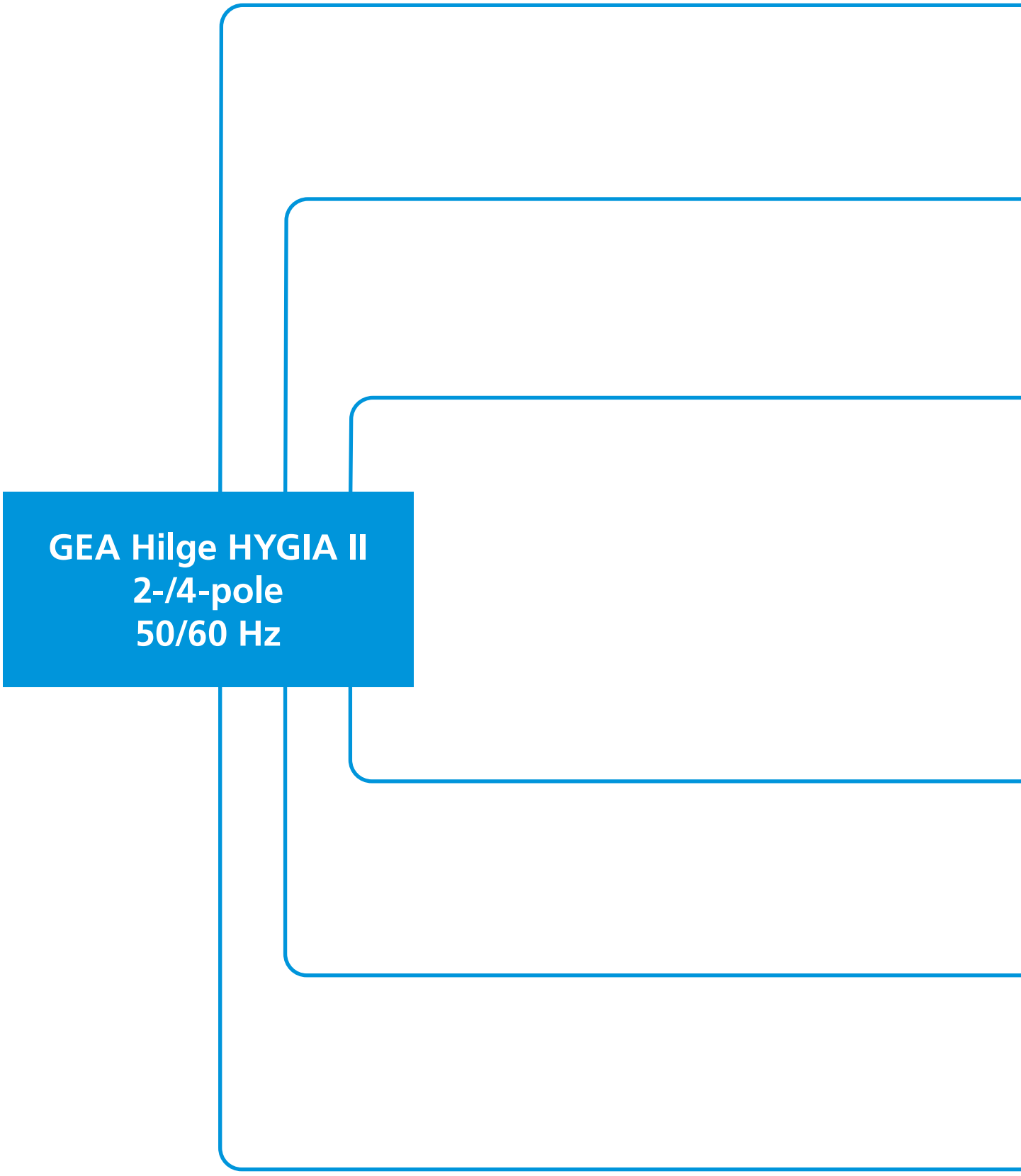
The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C


GEA Hilge HYGIA II
2-/4-pole
50/60 Hz

GEA Hilge HYGIA II K

GEA Hilge HYGIA II K-SUPER

GEA Hilge HYGIA II K-SUPER tronic

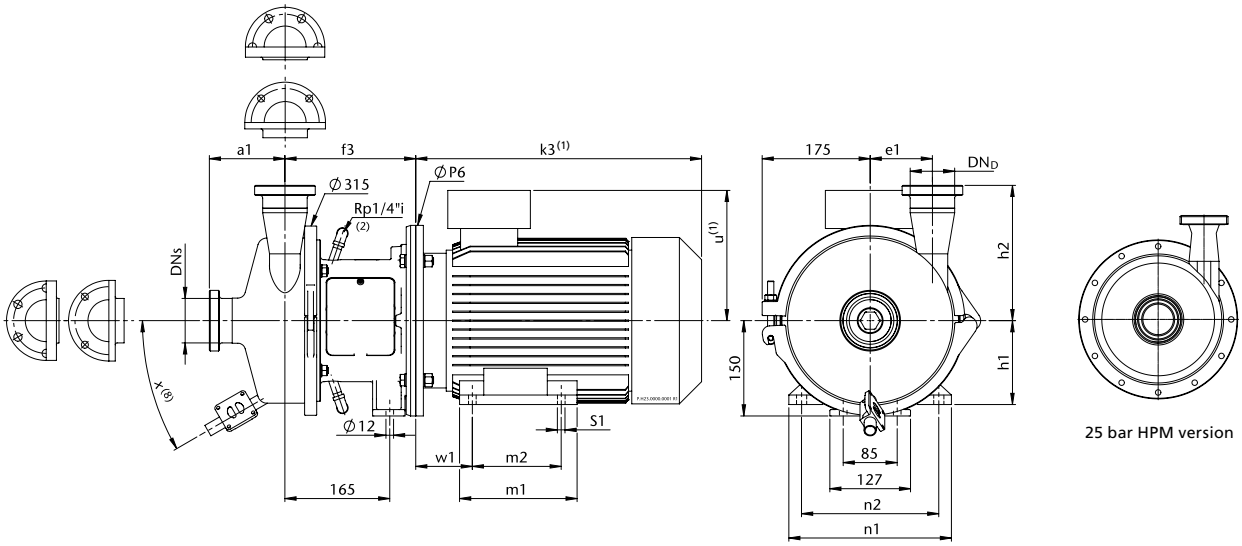
GEA Hilge HYGIA II Adapta

GEA Hilge HYGIA II Adapta-SUPER

GEA Hilge HYGIA II Adapta-SUPER tronic

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic											
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	w1 [mm]	m1 [mm]	m2 [mm]	n1 [mm]	n2 [mm]	S1 [mm]	h1 [mm]	Weight [kg]
3.00	100L	370	175	334	201	205	250	63	170	140	200	160	12.0	100	60
4.00	112M	380	185	334	201	205	250	70	170	140	220	190	12.0	112	69
5.50	132S	450	205	365	201	206	300	89	170	140	250	216	12.0	132	96
7.50	132S	450	205	389	237	206	300	89	170	140	250	216	12.0	132	104
11.00	160M	570	260	406	237	206	350	108	300	210	310	254	14.5	160	131
15.00	160M	570	260	515	308	206	350	108	300	210	310	254	14.5	160	131
18.50	160L	580	260	515	308	206	350	108	300	254	310	254	14.5	160	157
22.00	160L	580	260	–	–	206	350	108	300	254	310	254	14.5	160	193

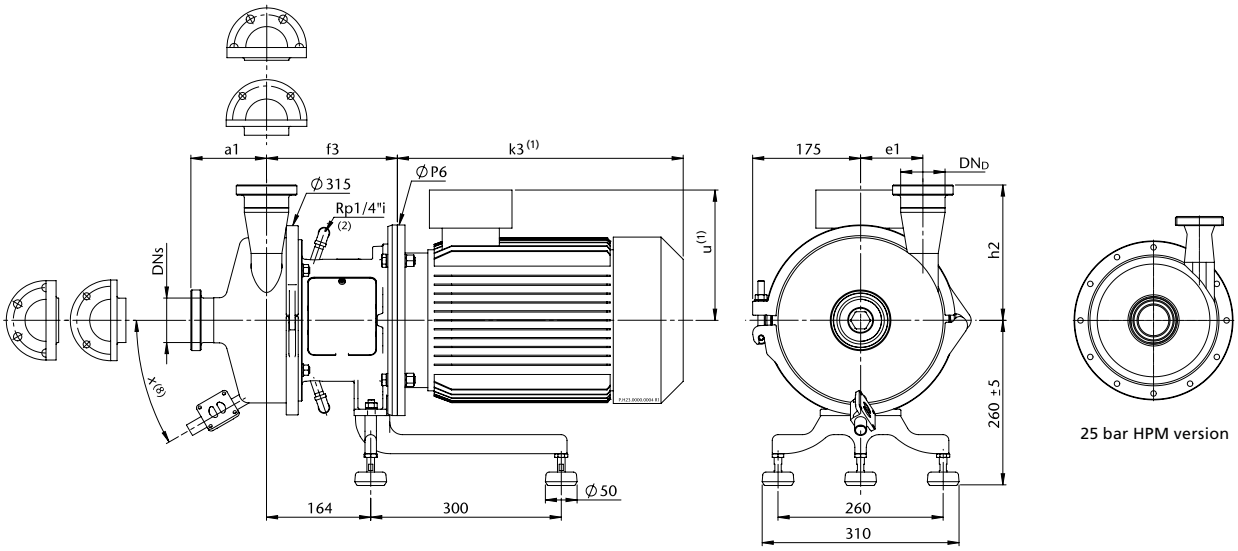
4-pole

		Standard		tronic											
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	w1 [mm]	m1 [mm]	m2 [mm]	n1 [mm]	n2 [mm]	S1 [mm]	h1 [mm]	Weight [kg]
2.20	100L	370	175	334	201	205	250	63	170	140	200	160	12	100	50
3.00	100L	370	175	334	201	205	250	63	170	140	200	160	12	100	68
4.00	112M	380	185	334	201	205	250	70	170	140	220	190	12	112	72
5.50	132S	450	205	389	201	206	300	89	170	140	250	216	12	132	100

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	205	250	63
4.00	112M	380	185	334	201	205	250	72
5.50	132S	450	205	365	201	206	300	97
7.50	132S	450	205	389	237	206	300	105

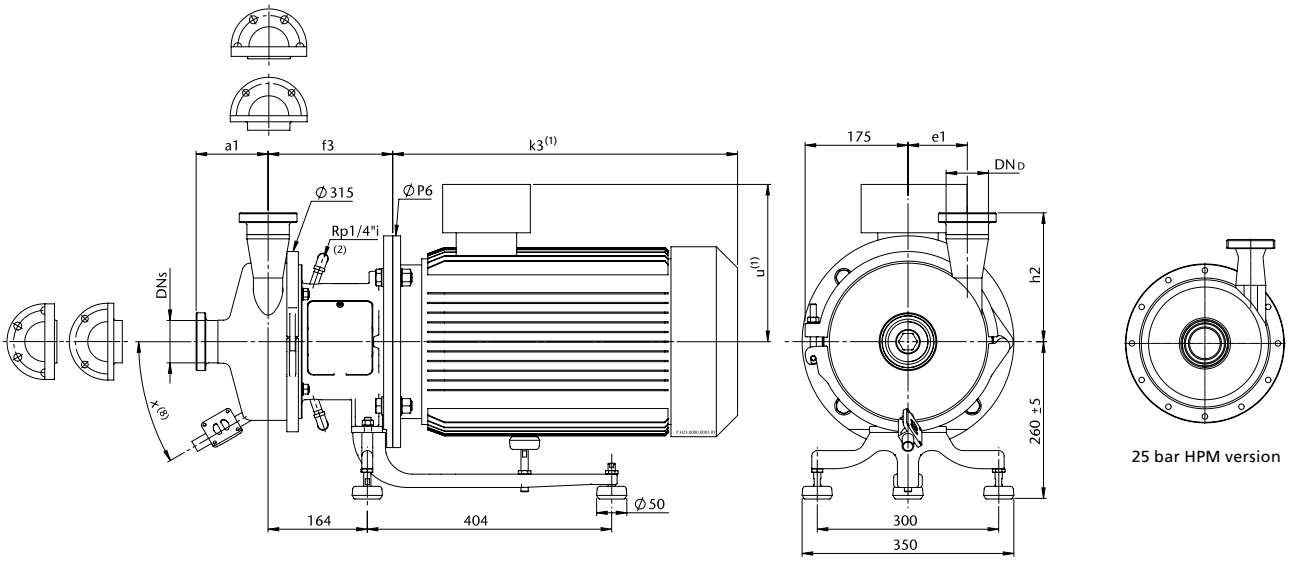
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	205	250	62
3.00	100L	370	175	334	201	205	250	71
4.00	112M	380	185	334	201	205	250	75
5.50	132S	450	205	389	237	206	300	101

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

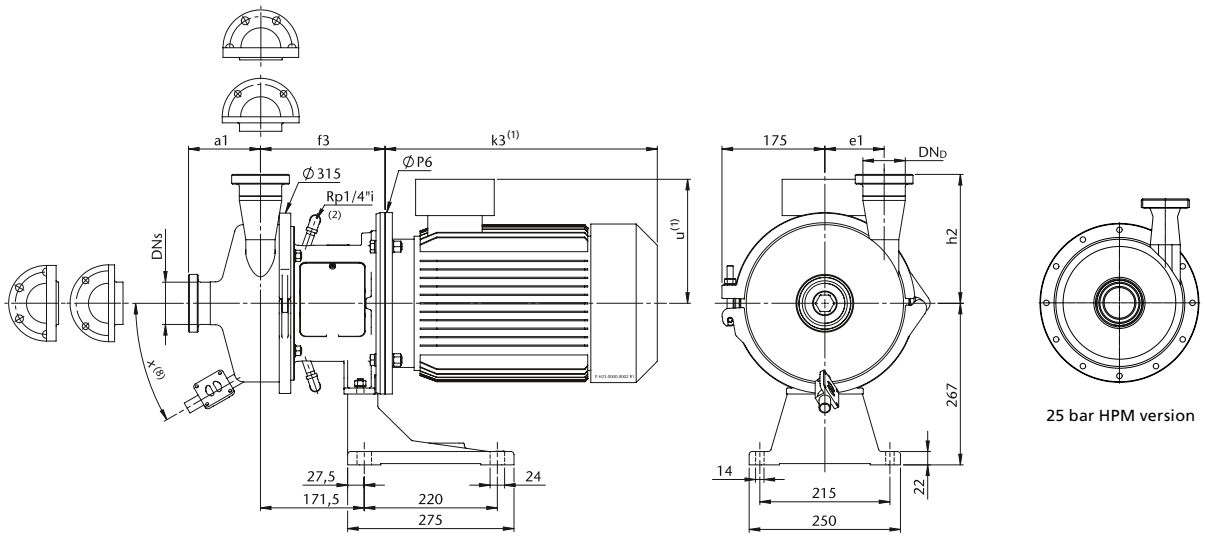
2-pole

P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
11.00	160M	570	260	206	350	132
15.00	160M	570	260	206	350	138
18.50	160L	580	260	206	350	158

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	205	250	67
4.00	112M	380	185	334	201	205	250	76
5.50	132S	450	205	334	201	206	300	102
7.50	132S	450	205	389	237	206	300	110

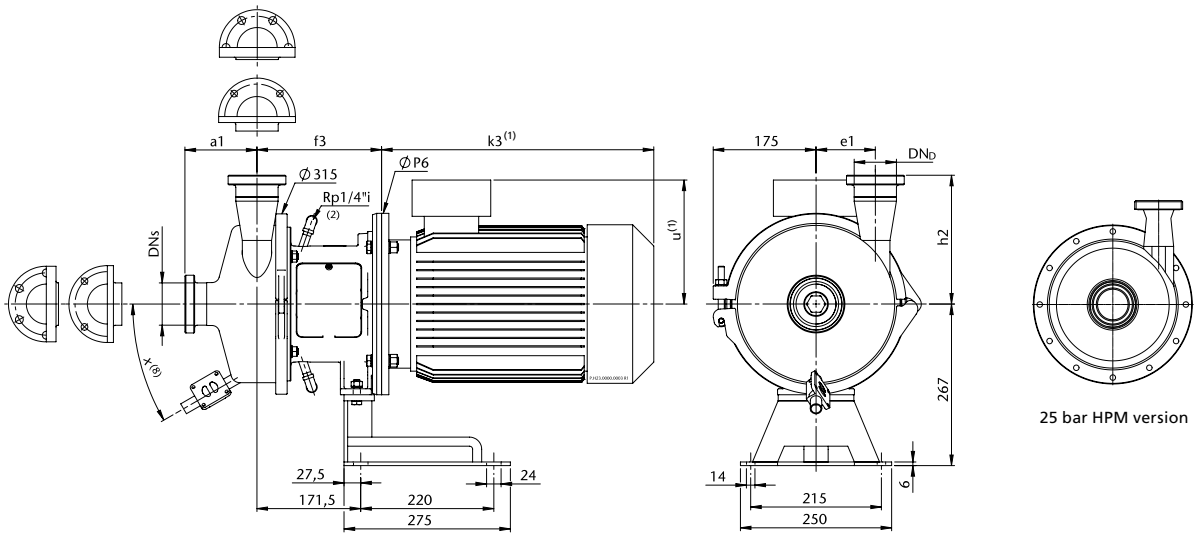
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	205	250	67
3.00	100L	370	175	334	201	205	250	75
4.00	112M	380	185	334	201	205	250	79
5.50	132S	450	205	389	237	206	300	106

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	205	250	64
4.00	112M	380	185	334	201	205	250	73
5.50	132S	450	205	365	201	206	300	98
7.50	132S	450	205	389	237	206	300	106

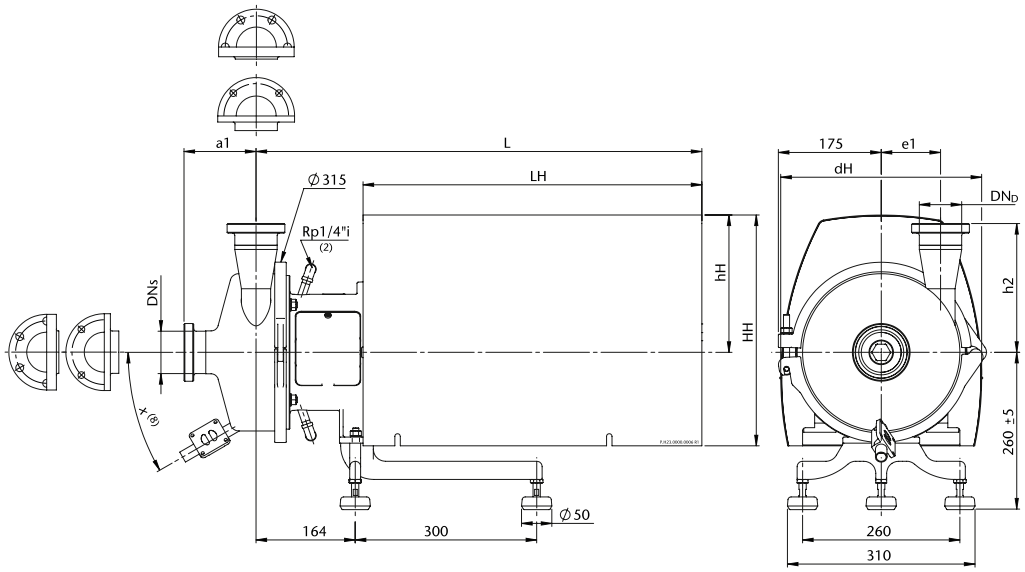
4-pole

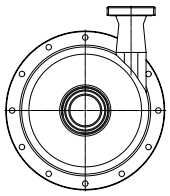
		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	f3 [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	205	250	63
3.00	100L	370	175	334	201	205	250	72
4.00	112M	380	185	334	201	205	250	76
5.50	132S	450	205	389	237	206	300	102

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	638.5	471	382	240	332	74
4.00	112M	638.5	471	382	240	332	83
5.50	132S	731.0	561	382	220	332	108
7.50	132S	731.0	561	382	220	332	116

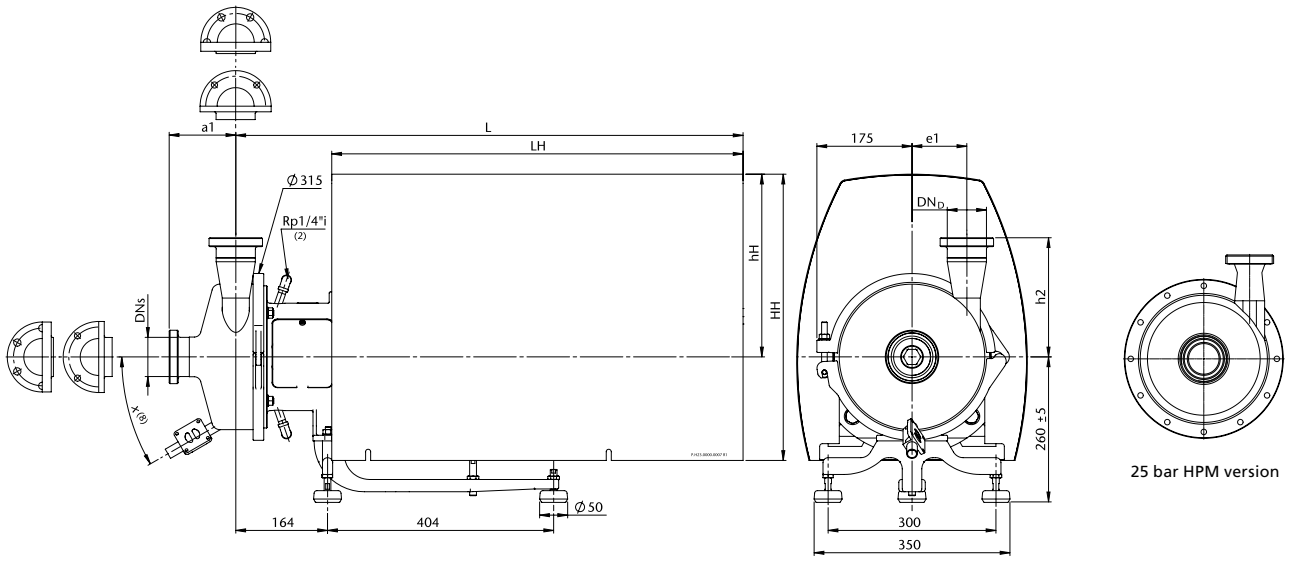
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	638.5	471	382	240	332	74
3.00	100L	638.5	471	382	240	335	82
4.00	112M	638.5	471	382	240	332	86
5.50	132S	731.0	561	382	220	332	112

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

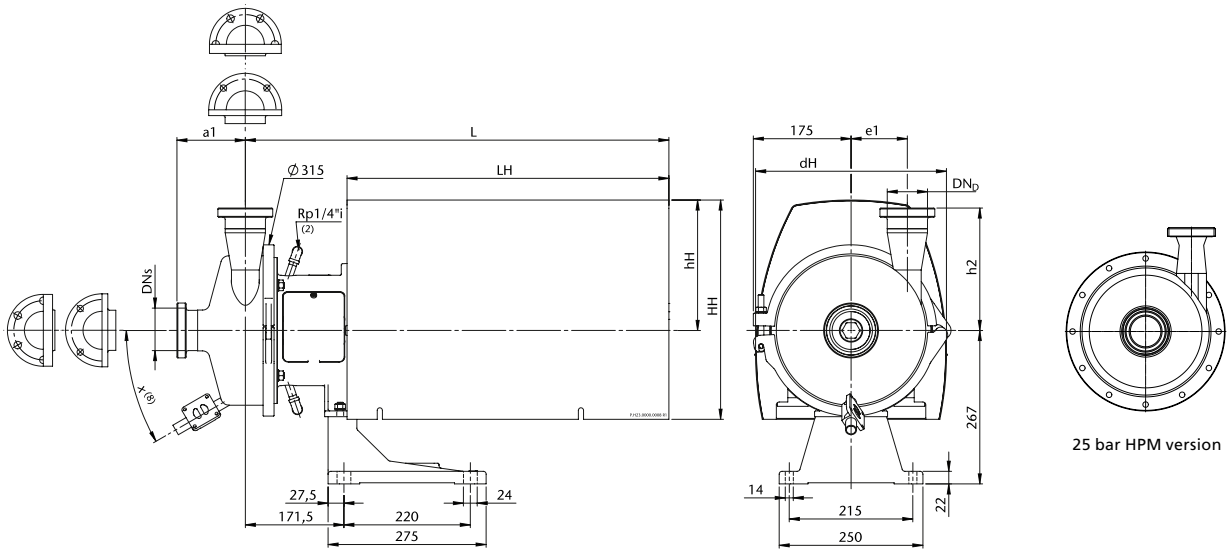
2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
11.00	160M	906	736	512	322	413	151
15.00	160M	906	736	512	322	413	157
18.50	160L	906	736	512	322	413	177

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	638.5	471	382	240	332	79
4.00	112M	638.5	471	382	240	332	88
5.50	132S	731.0	561	382	220	332	113
7.50	132S	731.0	561	382	220	332	121

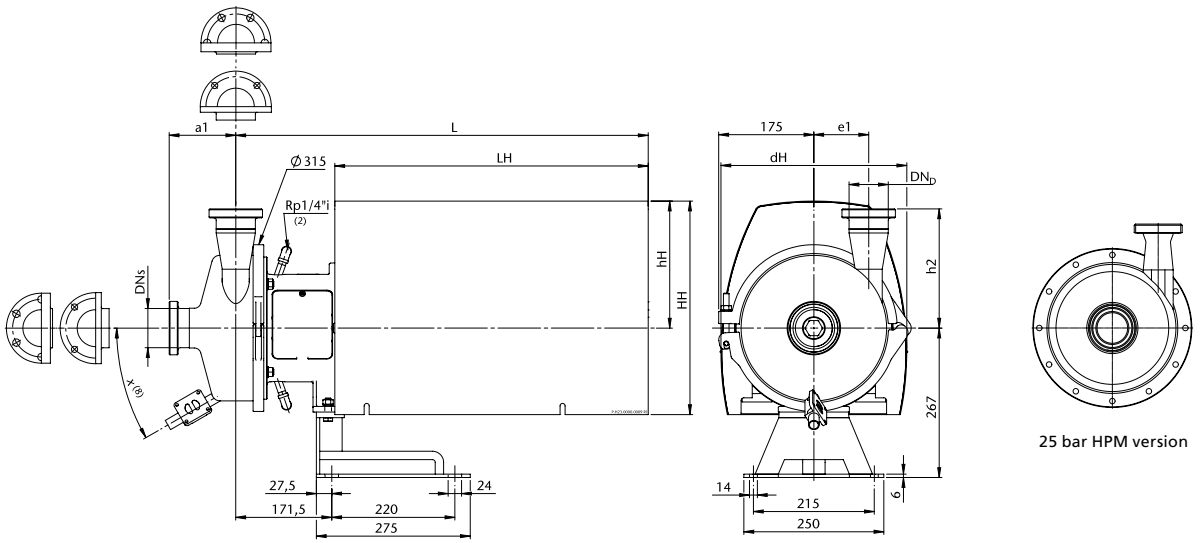
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	638.5	471	382	240	332	79
3.00	100L	638.5	471	382	240	335	87
4.00	112M	638.5	471	382	240	332	91
5.50	132S	731.0	561	382	220	332	117

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	638.5	471	382	240	332	76
4.00	112M	638.5	471	382	240	332	84
5.50	132S	731.0	561	382	220	332	110
7.50	132S	731.0	561	382	220	332	118

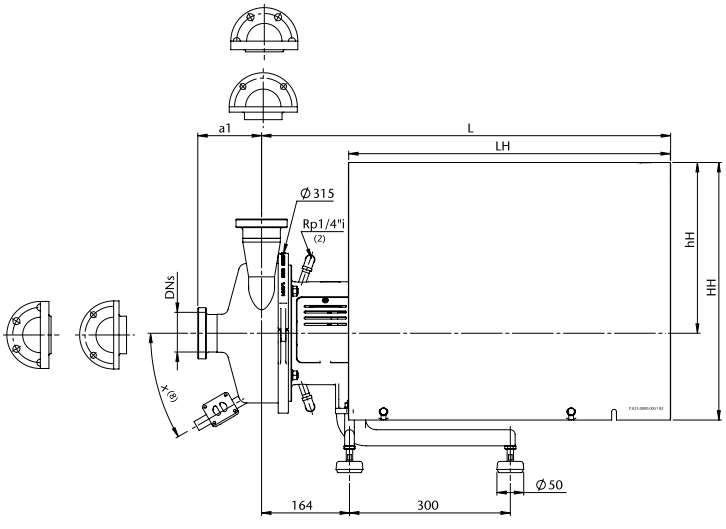
4-pole

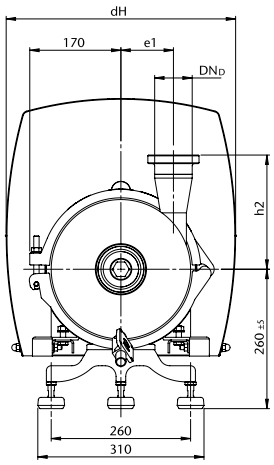
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	638.5	471	382	240	332	75
3.00	100L	638.5	471	382	240	335	84
4.00	112M	638.5	471	382	240	332	87
5.50	132S	731.0	561	382	220	332	114

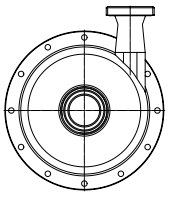
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	731	561	402	259	348	69
4.00	112M	731	561	402	259	348	72
5.50	132S	763	601	480	319	428	83
7.50	132S	763	601	480	319	428	97

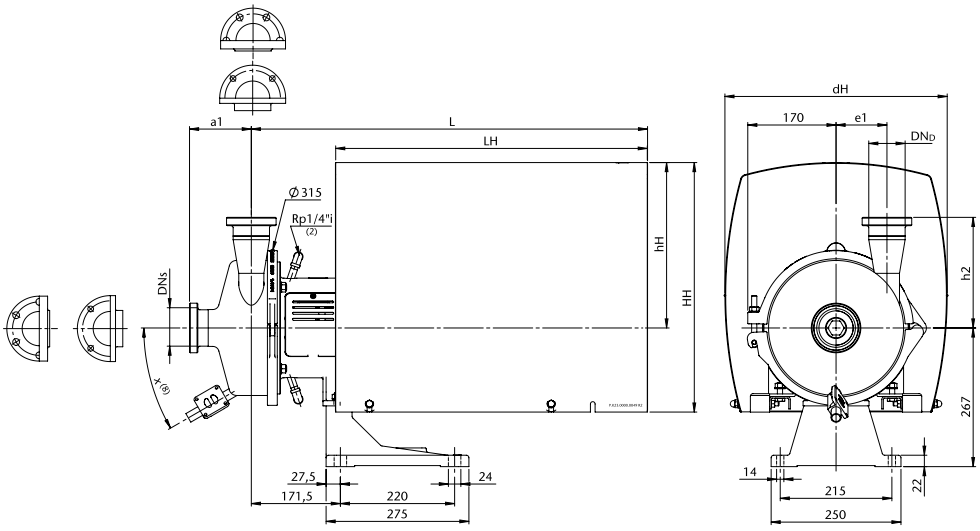
4-pole

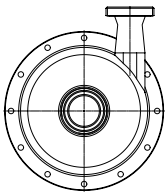
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	731	561	402	259	348	60
3.00	100L	731	561	402	259	348	73
4.00	112M	731	561	402	259	348	76
5.50	132S	763	601	480	319	428	95

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	731	561	402	259	348	74
4.00	112M	731	561	402	259	348	77
5.50	132S	763	601	480	319	428	88
7.50	132S	763	601	480	319	428	102

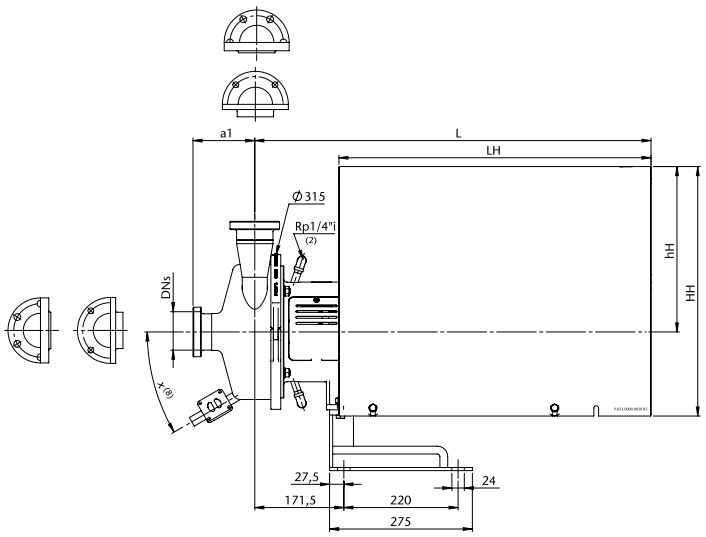
4-pole

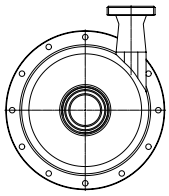
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	731	561	402	259	348	65
3.00	100L	731	561	402	259	348	78
4.00	112M	731	561	402	259	348	81
5.50	132S	763	601	480	319	428	100

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3 × 380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 120 m³/h
Flow rate 60 Hz	Max. 120 m³/h
Pump head 50 Hz	Max. 72 m
Pump head 60 Hz	Max. 92 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	731	561	402	259	348	71
4.00	112M	731	561	402	259	348	73
5.50	132S	763	601	480	319	428	84
7.50	132S	763	601	480	319	428	98

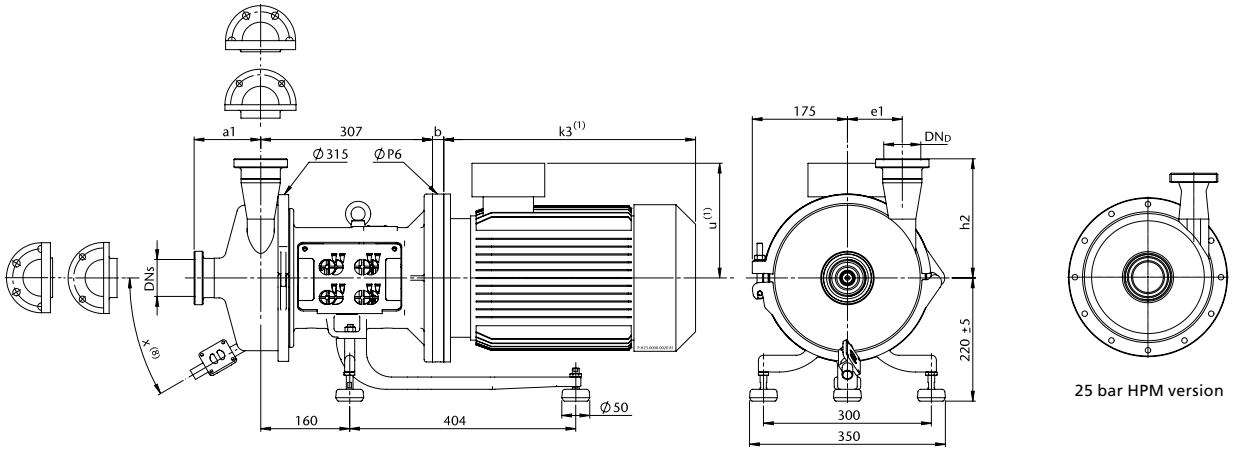
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	731	561	402	259	348	61
3.00	100L	731	561	402	259	348	75
4.00	112M	731	561	402	259	348	77
5.50	132S	763	601	480	319	428	96

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(2) Flushing connection only for quenched version
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	0	300	81
4.00	112M	380	185	334	201	0	300	90
5.50	132S	450	205	365	201	20	300	117
7.50	132S	450	205	389	237	20	300	125
11.00	160M	570	260	–	–	51	350	156
15.00	160M	570	260	–	–	51	350	162
18.50	160L	580	260	–	–	51	350	182

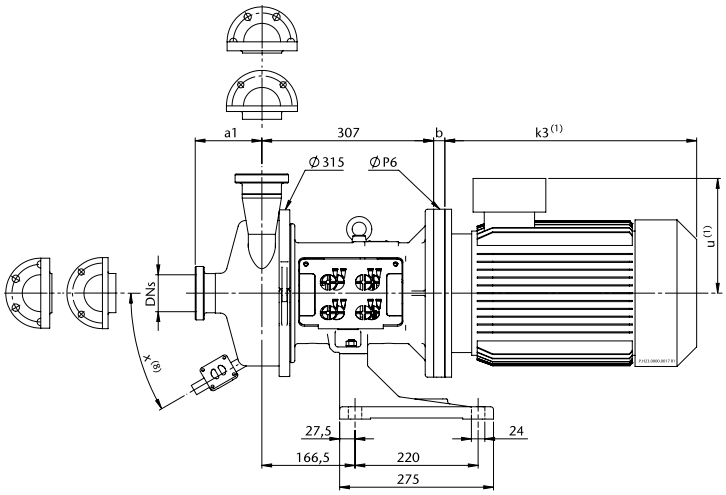
4-pole

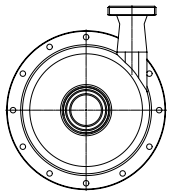
		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	0	300	81
3.00	100L	370	175	334	201	0	300	89
4.00	112M	380	185	334	201	0	300	93
5.50	132S	450	205	389	237	20	300	121
7.50	132M	450	205	389	237	20	300	130

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	0	300	84
4.00	112M	380	185	334	201	0	300	93
5.50	132S	450	205	365	201	20	300	120
7.50	132S	450	205	389	237	20	300	128
11.00	160M	570	260	–	–	51	350	159
15.00	160M	570	260	–	–	51	350	165
18.50	160L	580	260	–	–	51	350	185

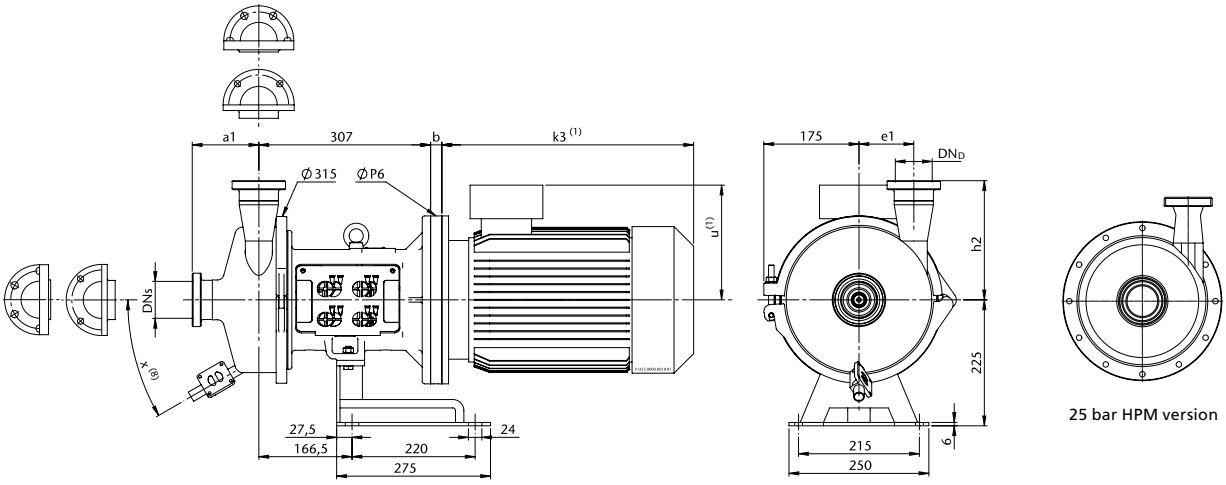
4-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	0	300	84
3.00	100L	370	175	334	201	0	300	92
4.00	112M	380	185	334	201	0	300	96
5.50	132S	450	205	389	237	20	300	124
7.50	132M	450	205	389	237	20	300	133

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
3.00	100L	370	175	334	201	0	300	81
4.00	112M	380	185	334	201	0	300	90
5.50	132S	450	205	365	201	20	300	117
7.50	132S	450	205	389	237	20	300	125
11.00	160M	570	260	–	–	51	350	156
15.00	160M	570	260	–	–	51	350	162
18.50	160L	580	260	–	–	51	350	182

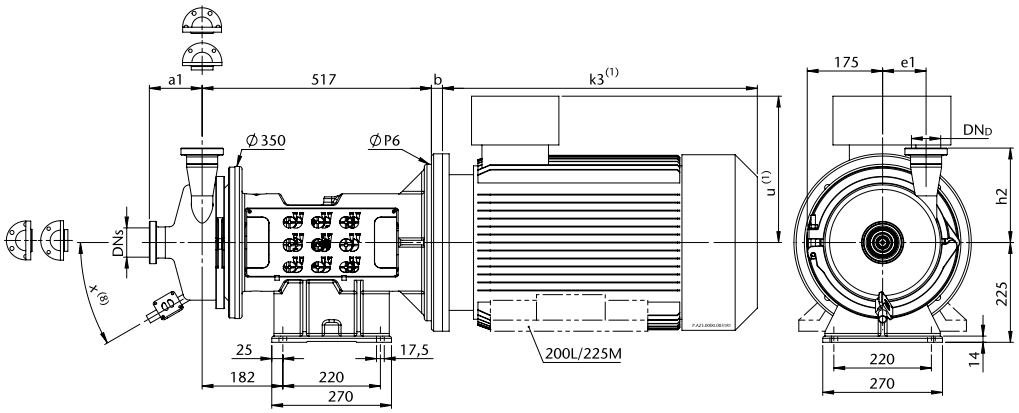
4-pole

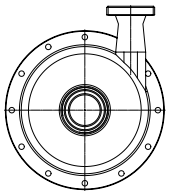
		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
2.20	100L	370	175	334	201	0	300	81
3.00	100L	370	175	334	201	0	300	89
4.00	112M	380	185	334	201	0	300	93
5.50	132S	450	205	389	237	20	300	121
7.50	132M	450	205	389	237	20	300	130

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

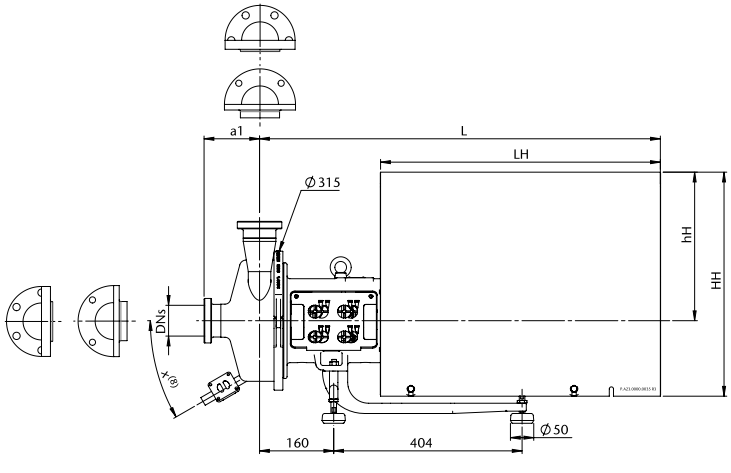
2-pole

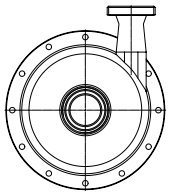
		Standard		tronic				
P2 [kW]	IEC-size	k3(1) [mm]	u(1) [mm]	k3(1) [mm]	u(1) [mm]	b [mm]	P6 [mm]	Weight [kg]
22.00	180M	620	290	541	308	0	355	265
30.00	200L	710	330	–	–	25	400	399
37.00	200L	710	330	–	–	25	400	399
45.00	225M	750	390	–	–	30	450	418

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(1) Motor dimensions depend on the motor manufacturer and execution. The shown motor dimensions indicate the size for the standard motor.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	741	471	381.5	240.0	332	93
4.00	112M	741	471	381.5	240.0	332	101
5.50	132S	828	561	381.5	227.0	332	128
7.50	132S	828	561	381.5	227.0	332	136
11.00	160M	1,009	736	511.5	326.5	413	175
15.00	160M	1,009	736	511.5	326.5	413	181
18.50	160L	1,009	736	511.5	326.5	413	201

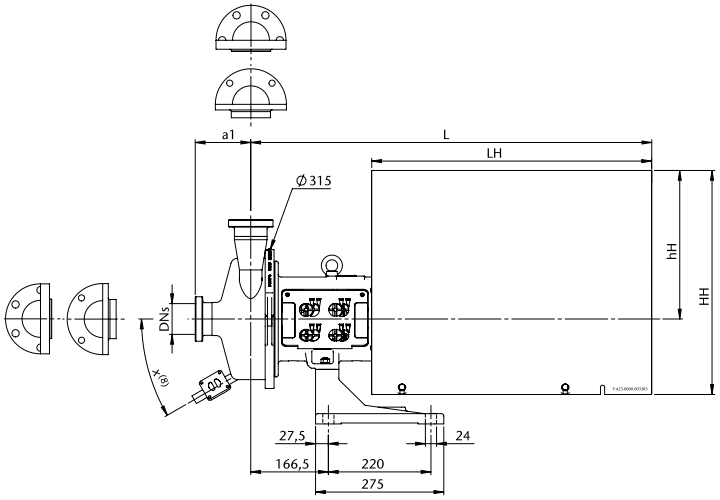
4-pole

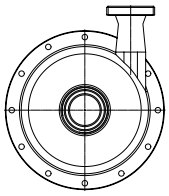
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	**100L**	**741**	**471**	**381.5**	**240**	**332**	**93**
3.00	100L	741	471	381.5	240	332	101
4.00	**112M**	**741**	**471**	**381.5**	**240**	**332**	**104**
5.50	132S	828	561	381.5	220	332	132
7.50	132M	828	561	381.5	220	332	141

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	741	471	381.5	240.0	332	96
4.00	112M	741	471	381.5	240.0	332	104
5.50	132S	828	561	381.5	227.0	332	132
7.50	132S	828	561	381.5	227.0	332	140
11.00	160M	1,009	736	511.5	326.5	413	178
15.00	160M	1,009	736	511.5	326.5	413	184
18.50	160L	1,009	736	511.5	326.5	413	204

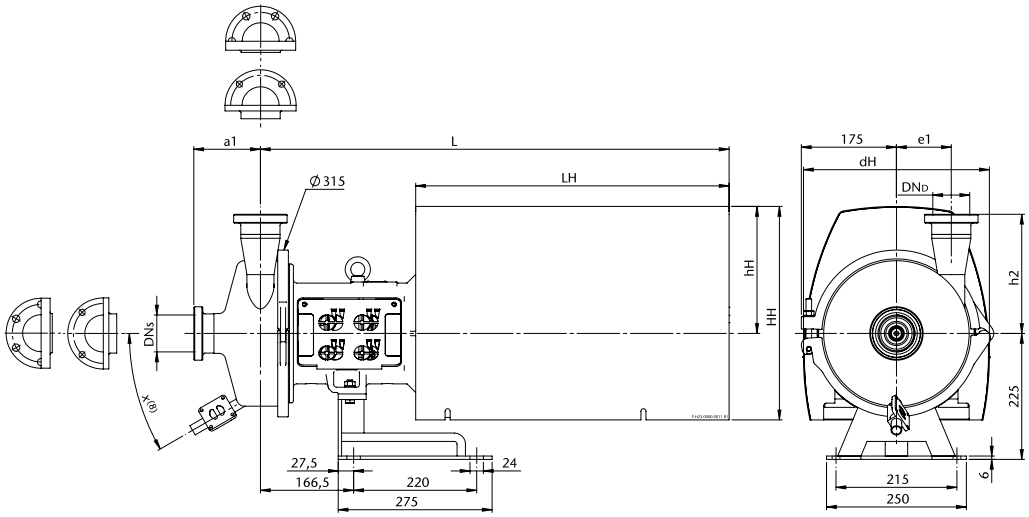
4-pole

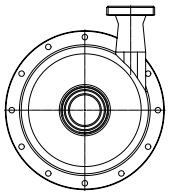
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	741	471	381.5	240	332	96
3.00	100L	741	471	381.5	240	332	104
4.00	112M	741	471	381.5	240	332	107
5.50	132S	828	561	381.5	220	332	136
7.50	132M	828	561	381.5	220	332	145

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification





25 bar HPM version

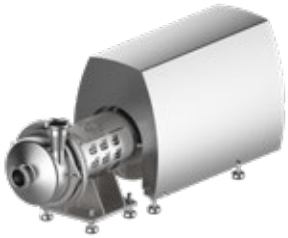
2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	741	471	381.5	240.0	332	92
4.00	112M	741	471	381.5	240.0	332	101
5.50	132S	828	561	381.5	227.0	332	128
7.50	132S	828	561	381.5	227.0	332	136
11.00	160M	1,009	736	511.5	326.5	413	174
15.00	160M	1,009	736	511.5	326.5	413	180
18.50	160L	1,009	736	511.5	326.5	413	200

4-pole

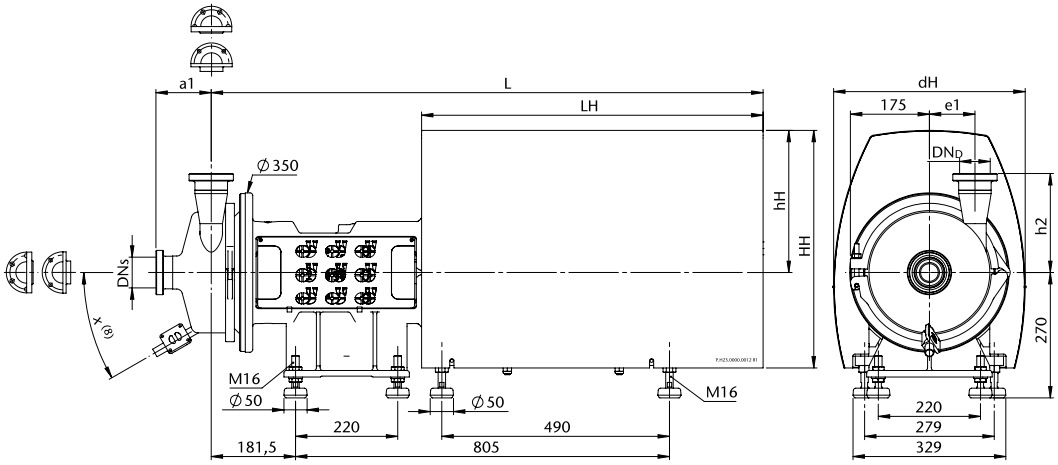
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	741	471	381.5	240	332	92
3.00	100L	741	471	381.5	240	332	100
4.00	112M	741	471	381.5	240	332	104
5.50	132S	828	561	381.5	220	332	132
7.50	132M	828	561	381.5	220	332	141

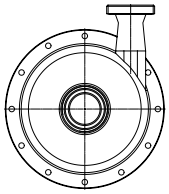
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging



Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification





25 bar HPM version

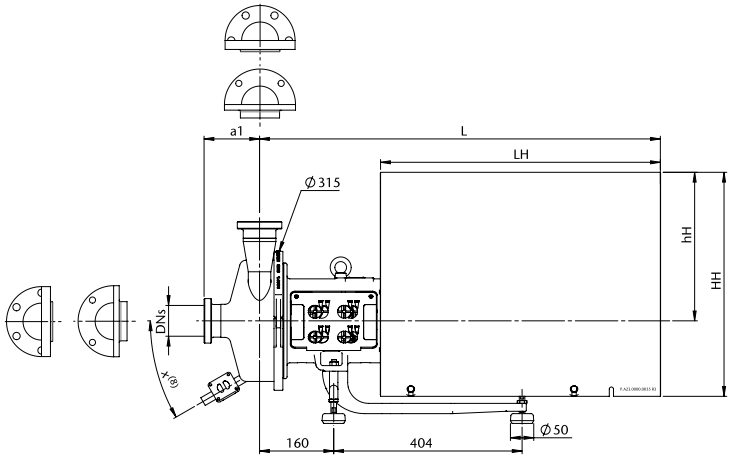
2-pole

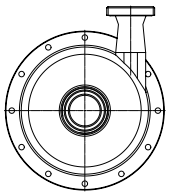
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
22.00	180M	1,189.5	736	511.5	306.5	412.5	293
30.00	200L	1,346.5	891	632.0	386.5	521.0	422
37.00	200L	1,346.5	891	632.0	386.5	521.0	422
45.00	225M	1,345.5	891	632.0	381.5	521.0	441

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification





25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	828	561	402	259	348	87
4.00	112M	828	561	402	259	348	90
5.50	132S	860	601	480	319	428	103
7.50	132S	860	601	480	319	428	117
11.00	160M	876	601	480	291	428	136

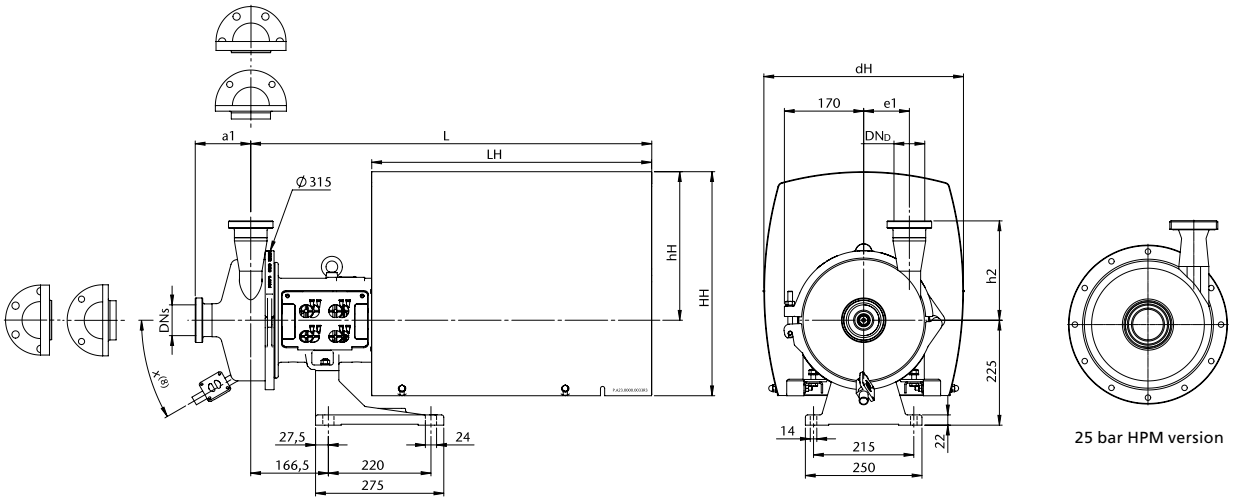
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	828	561	402	259	348	78
3.00	100L	828	561	402	259	348	91
4.00	112M	828	561	402	259	348	94
5.50	132S	860	601	480	319	428	115
7.50	132M	860	601	480	319	428	120

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3×380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	

* registered for recertification



25 bar HPM version

2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	828	561	402	259	348	91
4.00	112M	828	561	402	259	348	93
5.50	132S	860	601	480	319	428	106
7.50	132S	860	601	480	319	428	120
11.00	160M	876	601	480	291	428	139

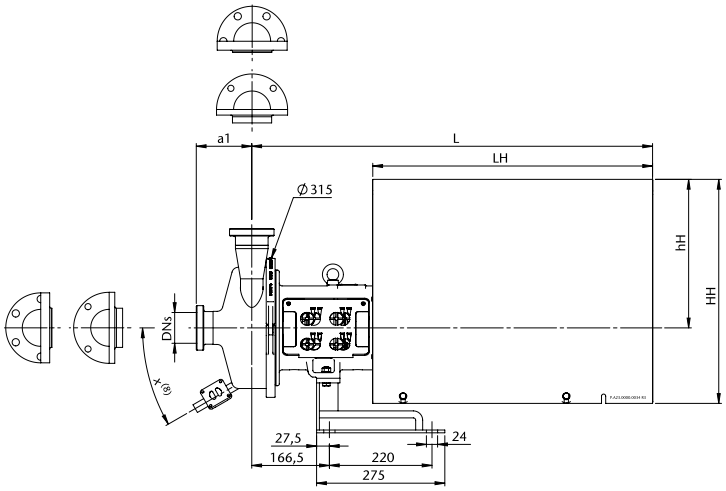
4-pole

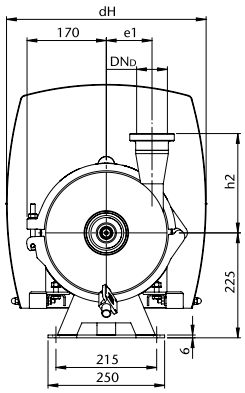
P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	828	561	402	259	348	81
3.00	100L	828	561	402	259	348	95
4.00	112M	828	561	402	259	348	97
5.50	132S	860	601	480	319	428	118
7.50	132M	860	601	480	319	428	123

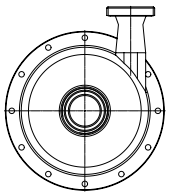
Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging

Technical data of the standard version	
Materials	Pump housing: stainless steel 316L (1.4404/1.4435) Impeller: precision casting 316L (1.4404)/CF3M (1.4408/1.4409)
Connections	Thread DIN 11851
Nominal width of connections	Suction side DN 50–100, pressure side DN 50–100
Mechanical seal	Single mechanical seal, material carbon/stainless steel/EPDM
Static seals	EPDM
Motor	Standard motor: IEC-Motor, 3 × 380/400/415 V/50 Hz, IP 55, ISO-Class F, incl. PTC thermistor, IE3
Documentation	Operating instructions, declaration of conformity, pump test report
Flow rate 50 Hz	Max. 180 m³/h
Flow rate 60 Hz	Max. 175 m³/h
Pump head 50 Hz	Max. 77 m
Pump head 60 Hz	Max. 110 m
Housing pressure	16 bar/25 bar
Certificates	CERTIFIED* EHEDG TYPE EL - CLASS I, FDA

* registered for recertification







25 bar HPM version

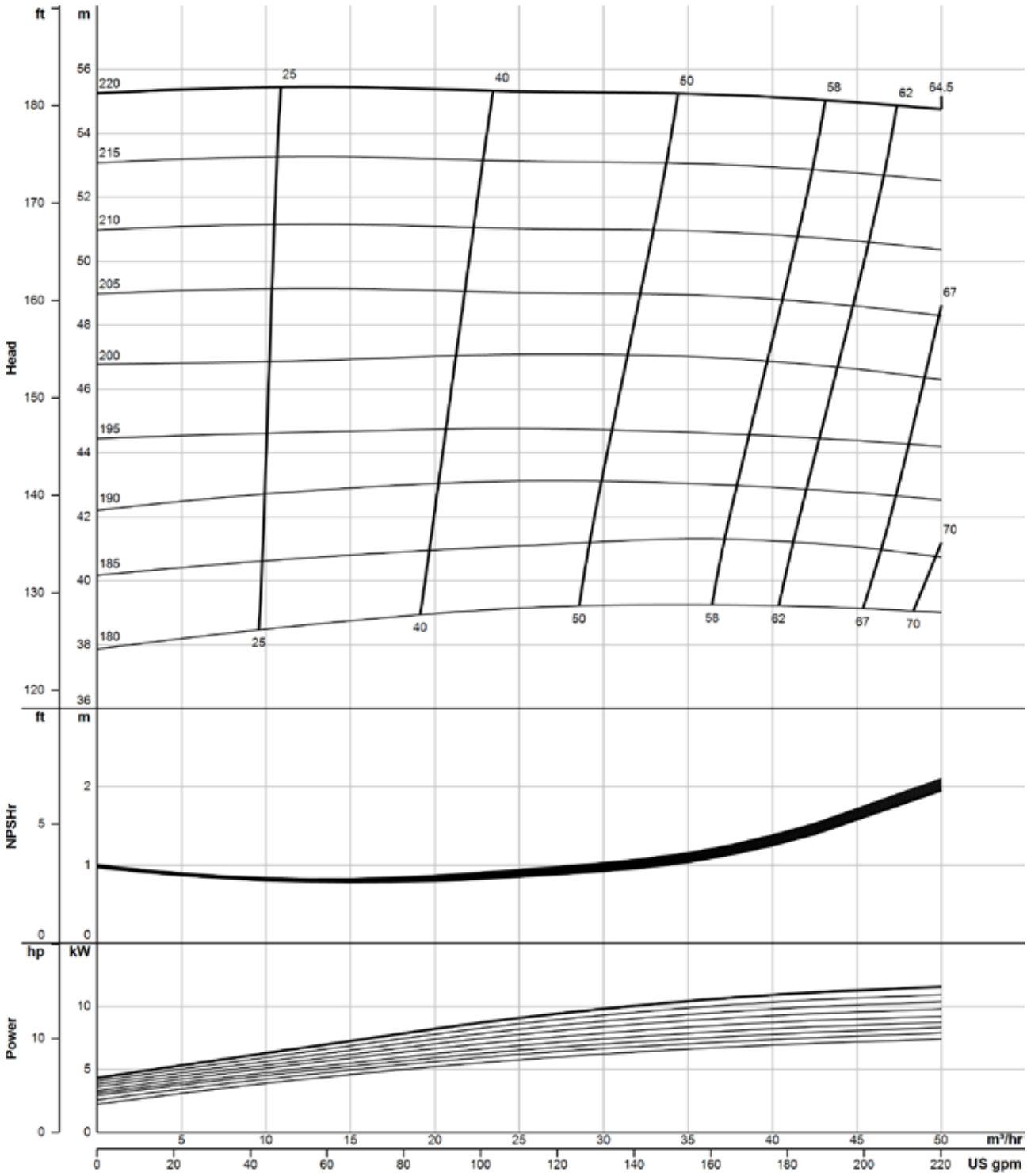
2-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
3.00	100L	828	561	402	259	348	87
4.00	112M	828	561	402	259	348	90
5.50	132S	860	601	480	319	428	102
7.50	132S	860	601	480	319	428	116
11.00	160M	876	601	480	291	428	135

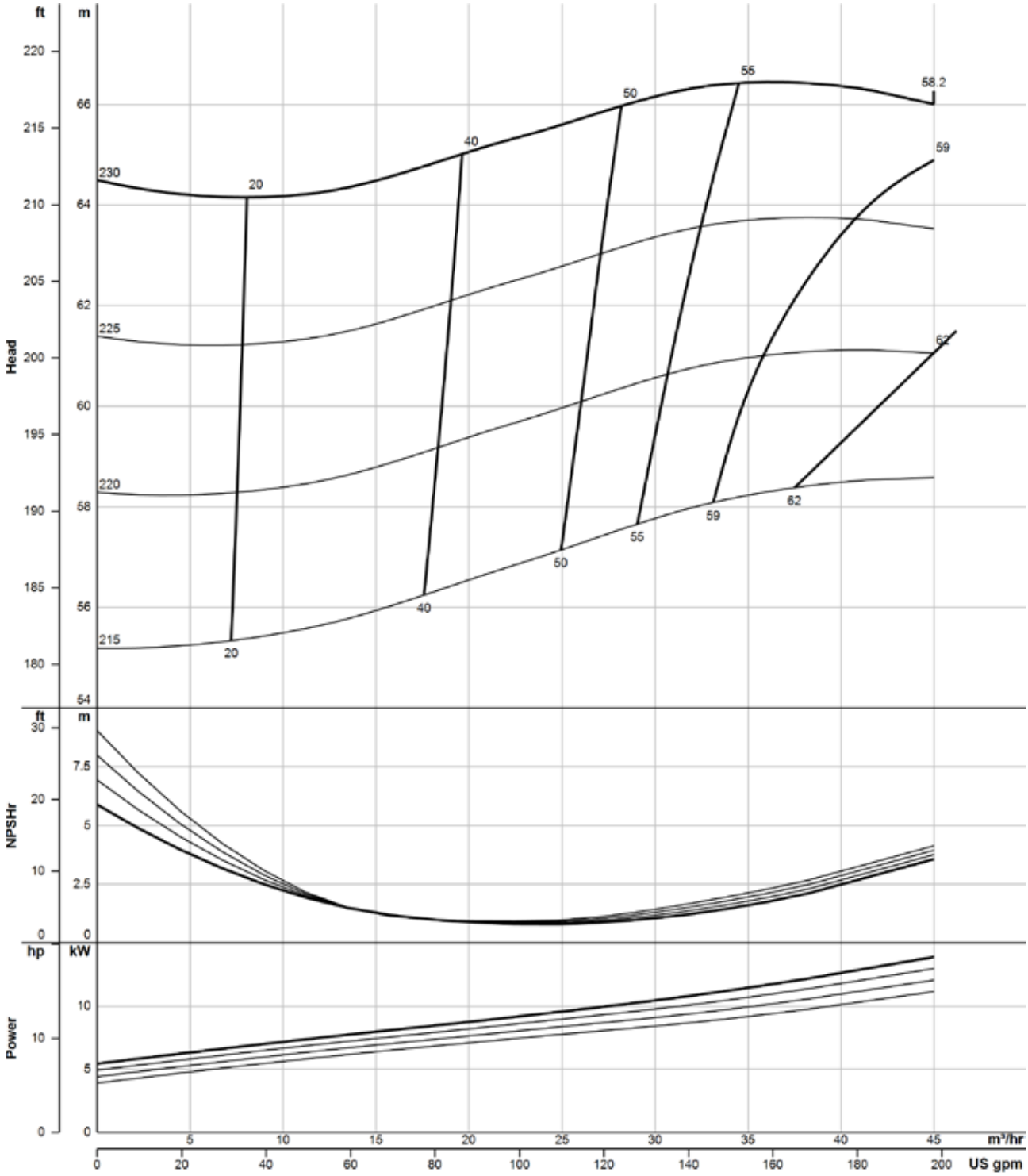
4-pole

P2 [kW]	IEC-size	L [mm]	LH [mm]	HH [mm]	hH [mm]	dH [mm]	Weight [kg]
2.20	100L	828	561	402	259	348	78
3.00	100L	828	561	402	259	348	91
4.00	112M	828	561	480	259	348	94
5.50	132S	860	601	480	319	428	114
7.50	132M	860	601	480	319	428	119

Dimensions depend on the casing size (DN_S, DN_D, a1, h2, e1). See connection dimensions.
(8) Option: drain valve (dimensions and other drainage variants on request)
Weight: net-weight without packaging



The flow charts are based on water, temperature 20 °C



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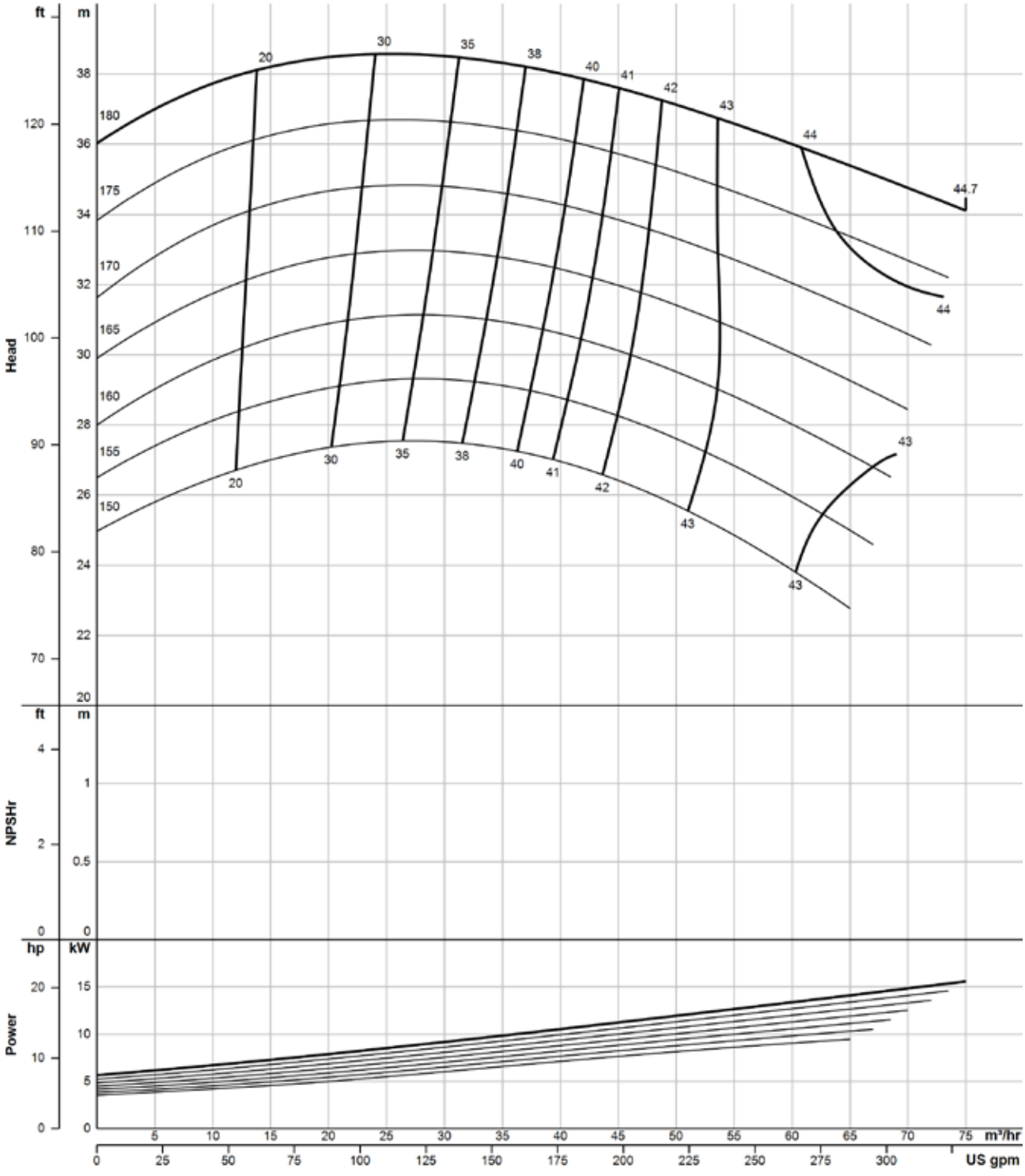

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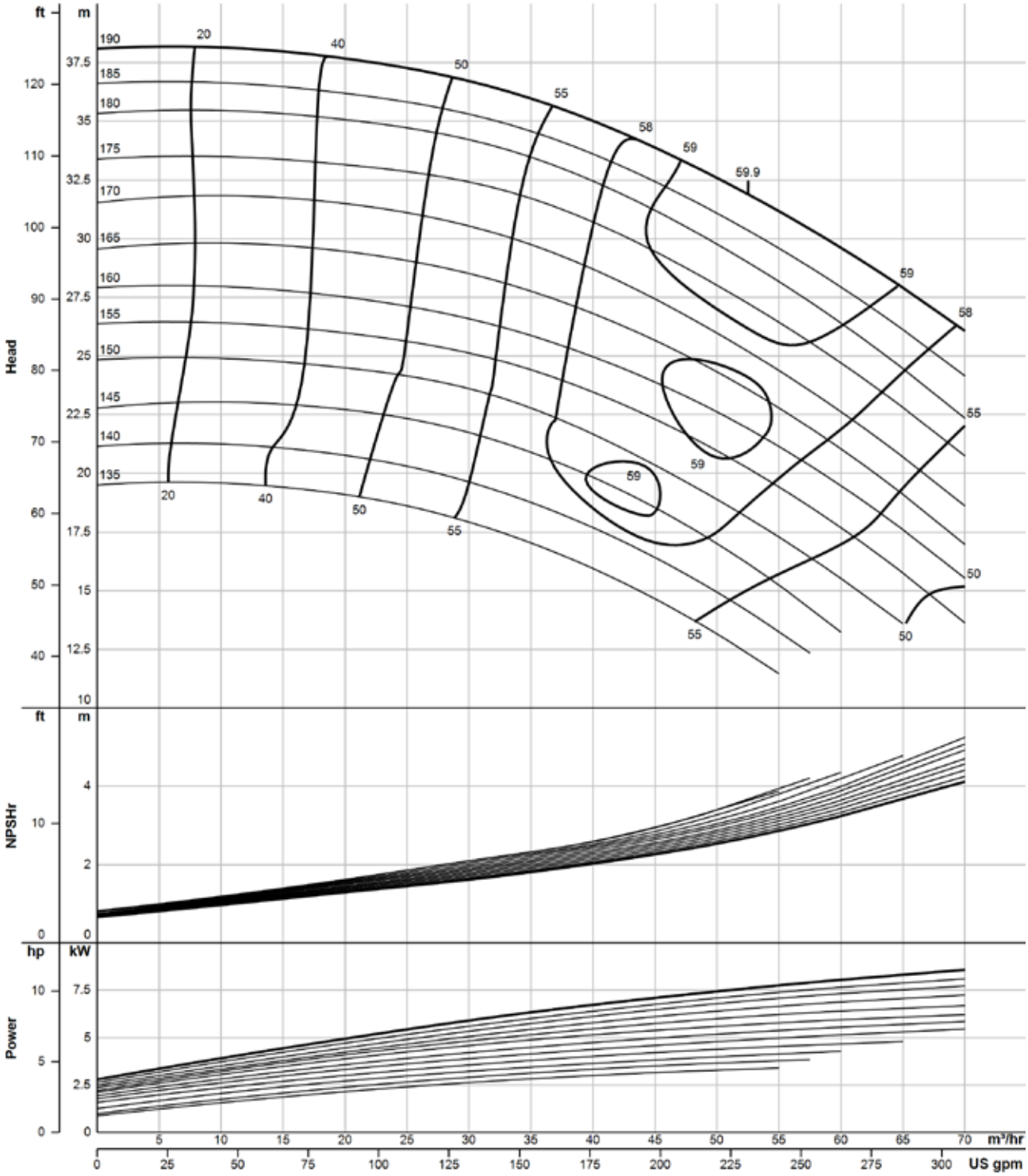

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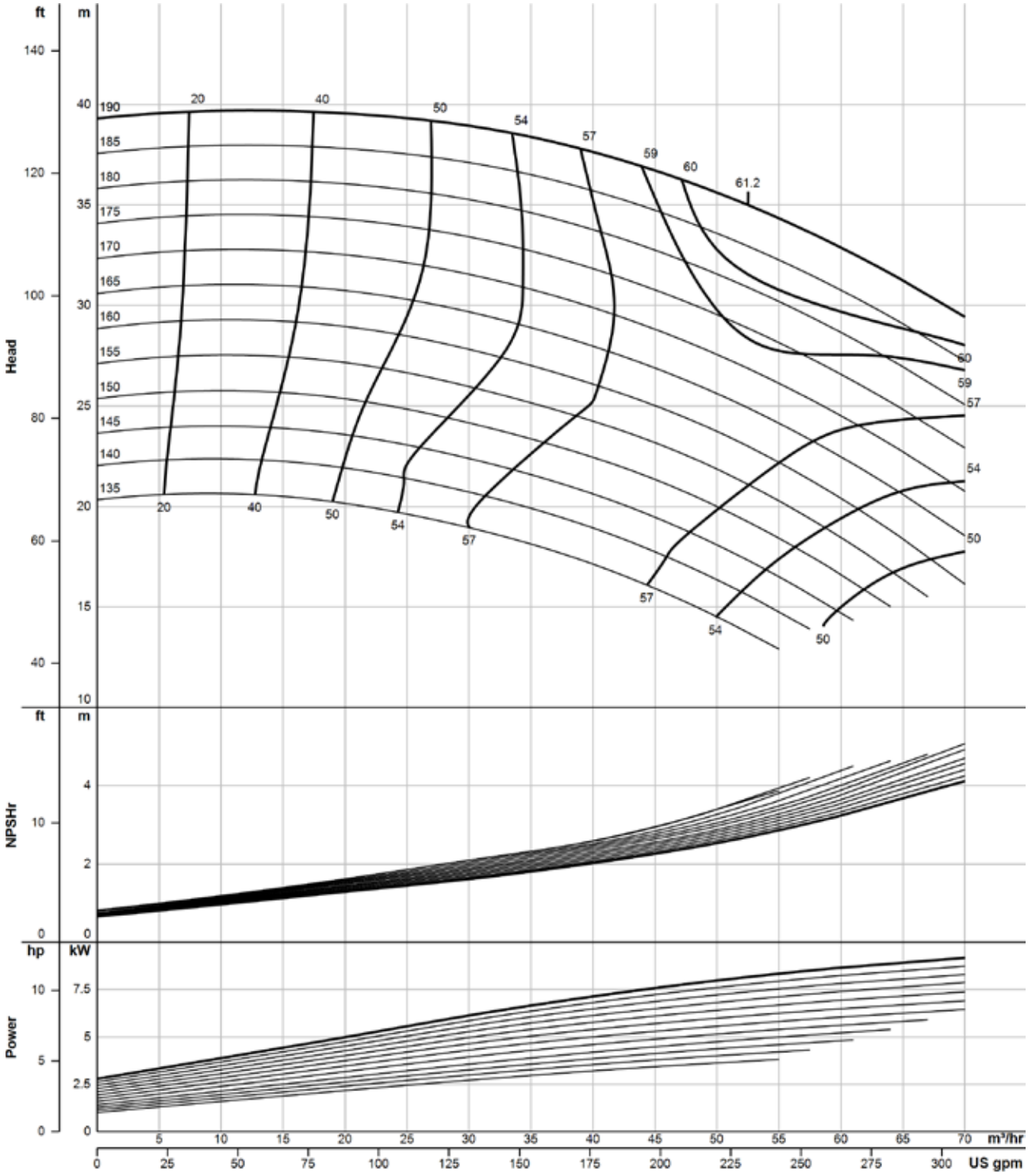

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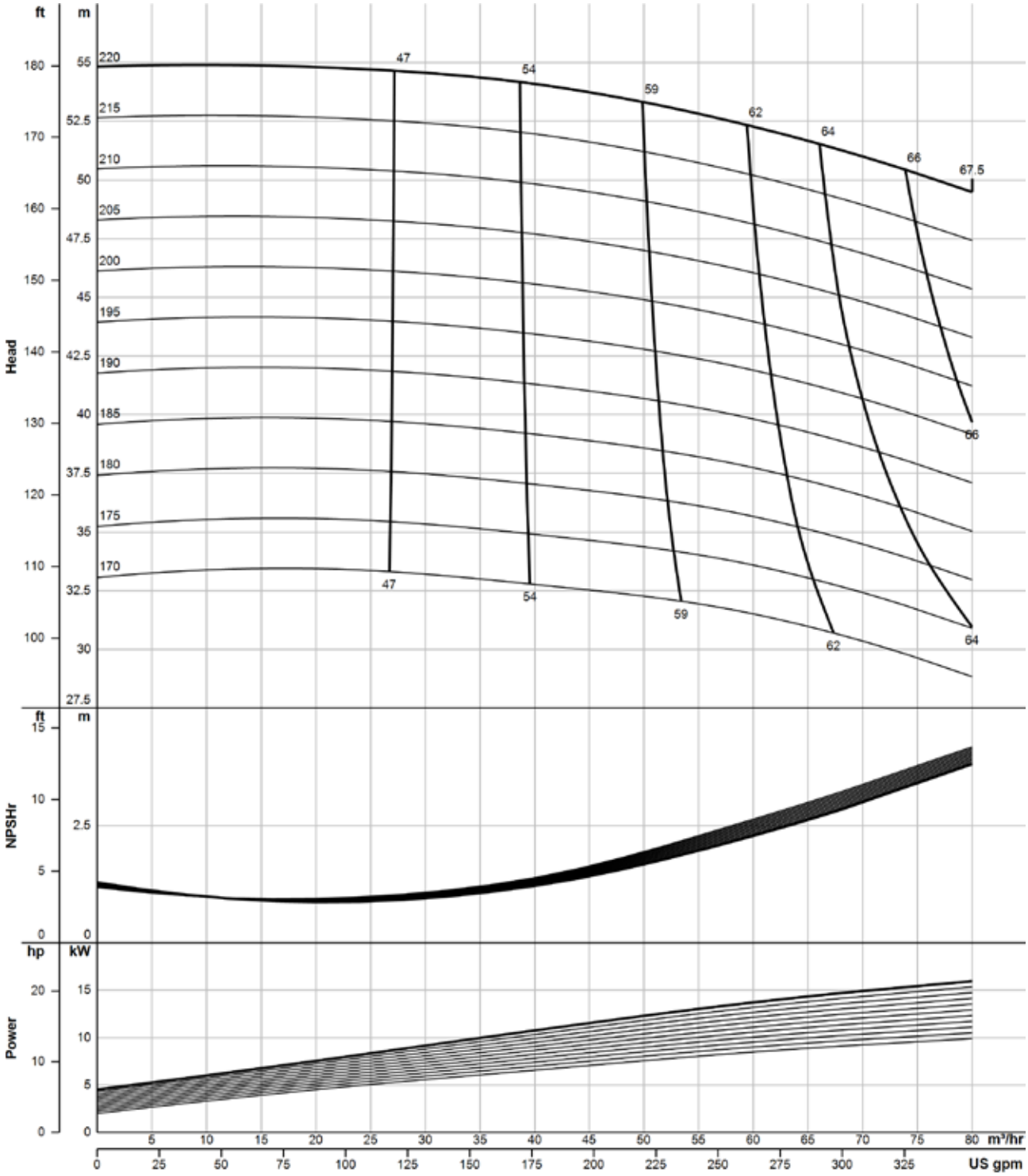

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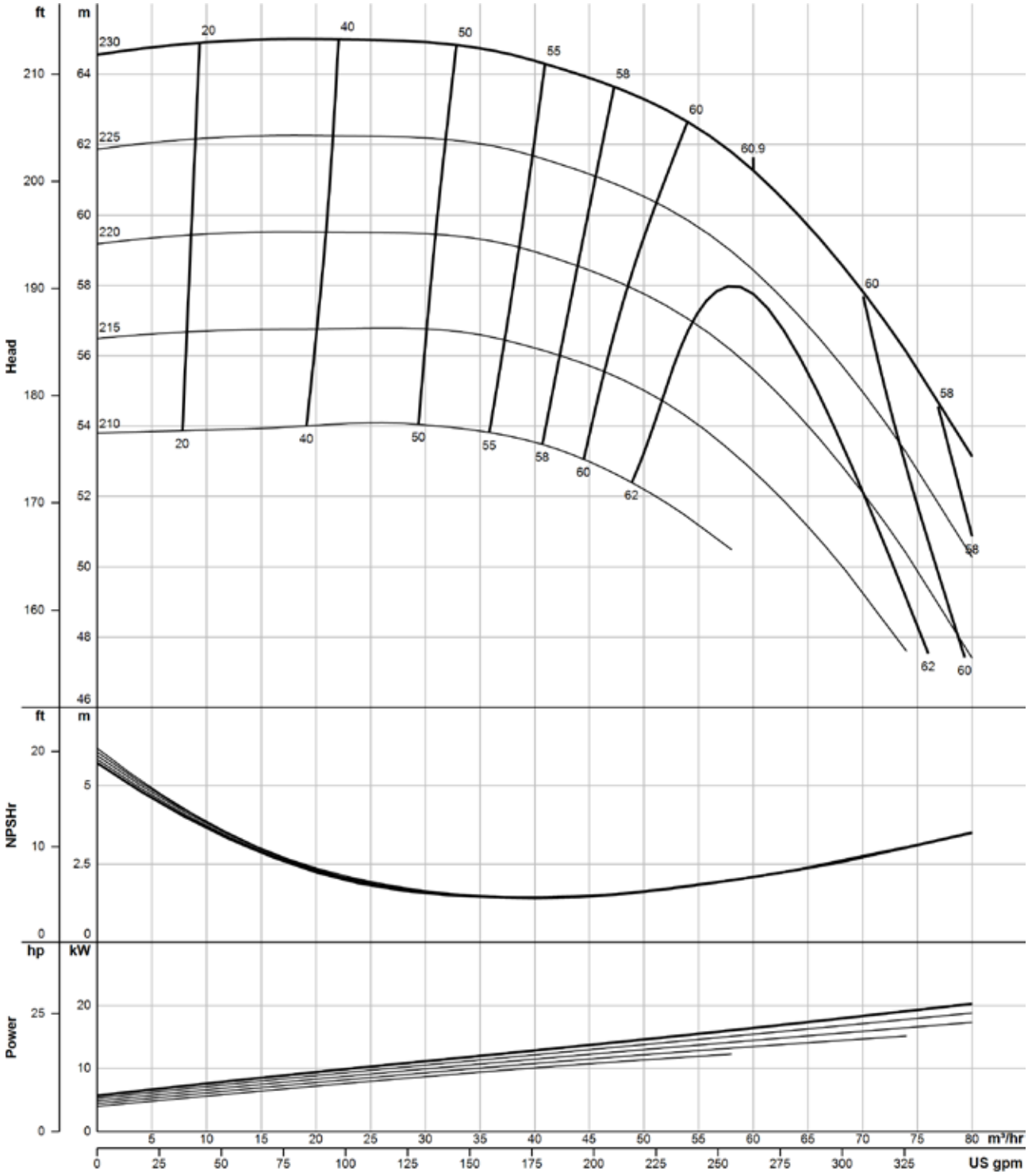

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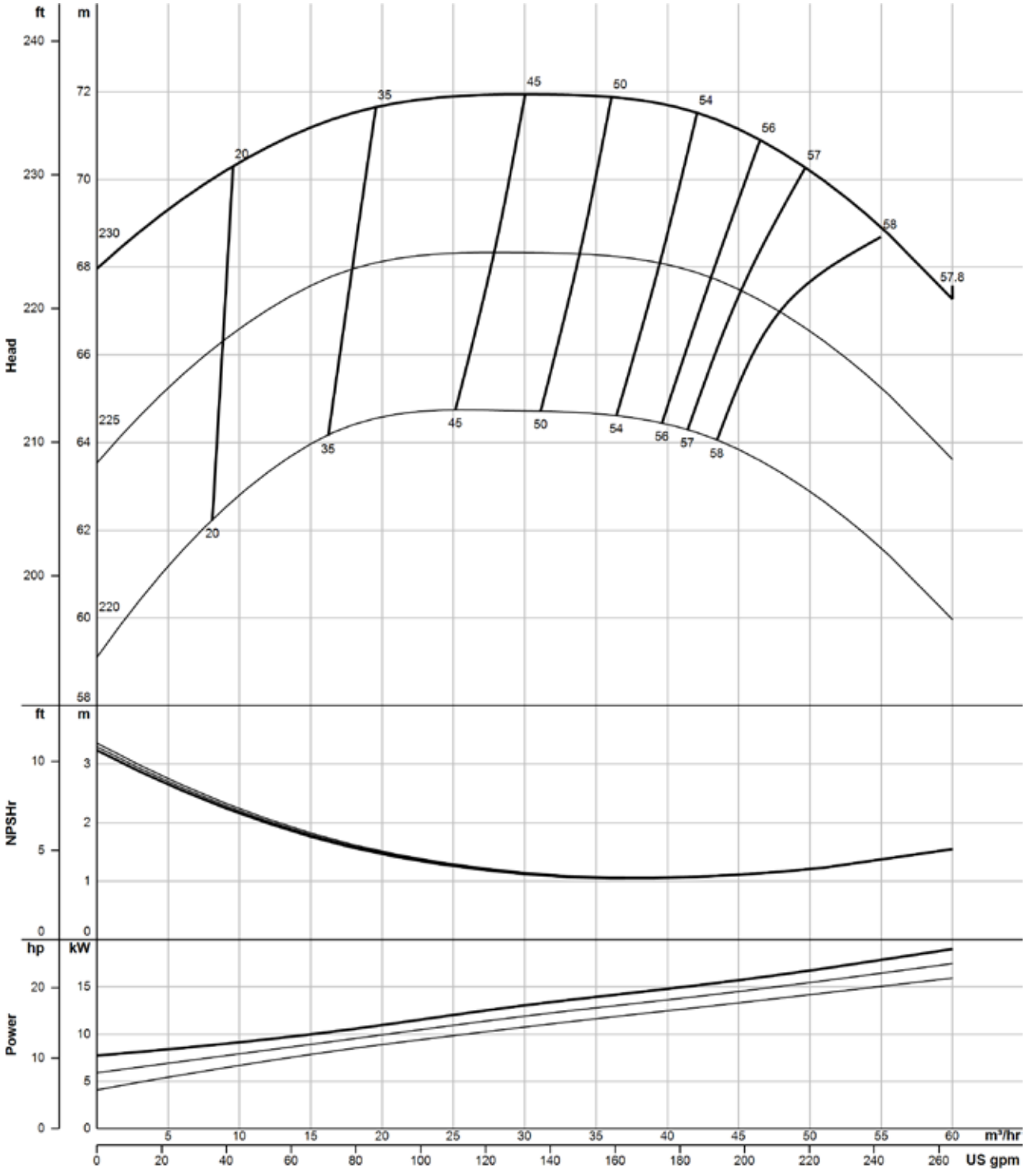

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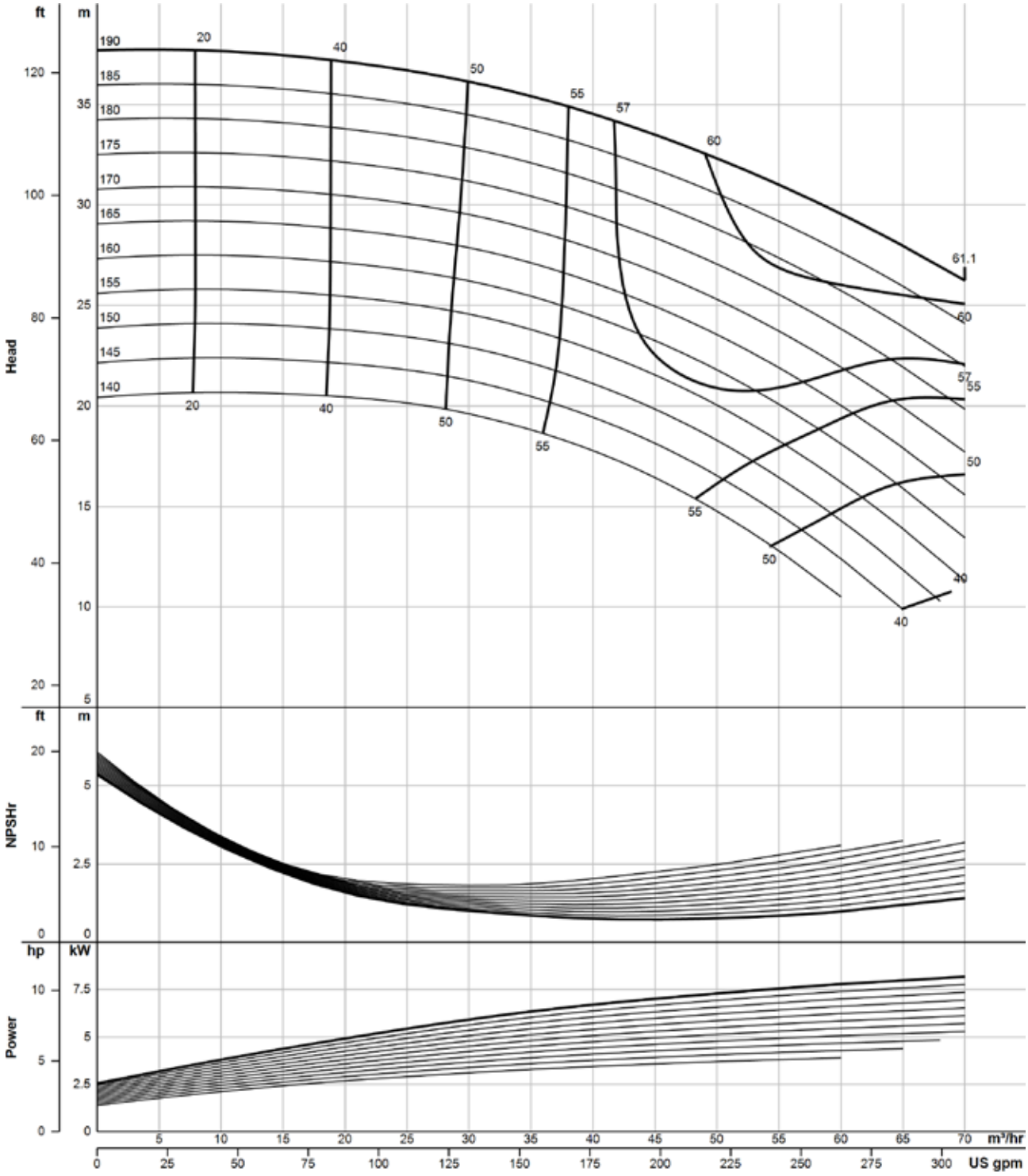

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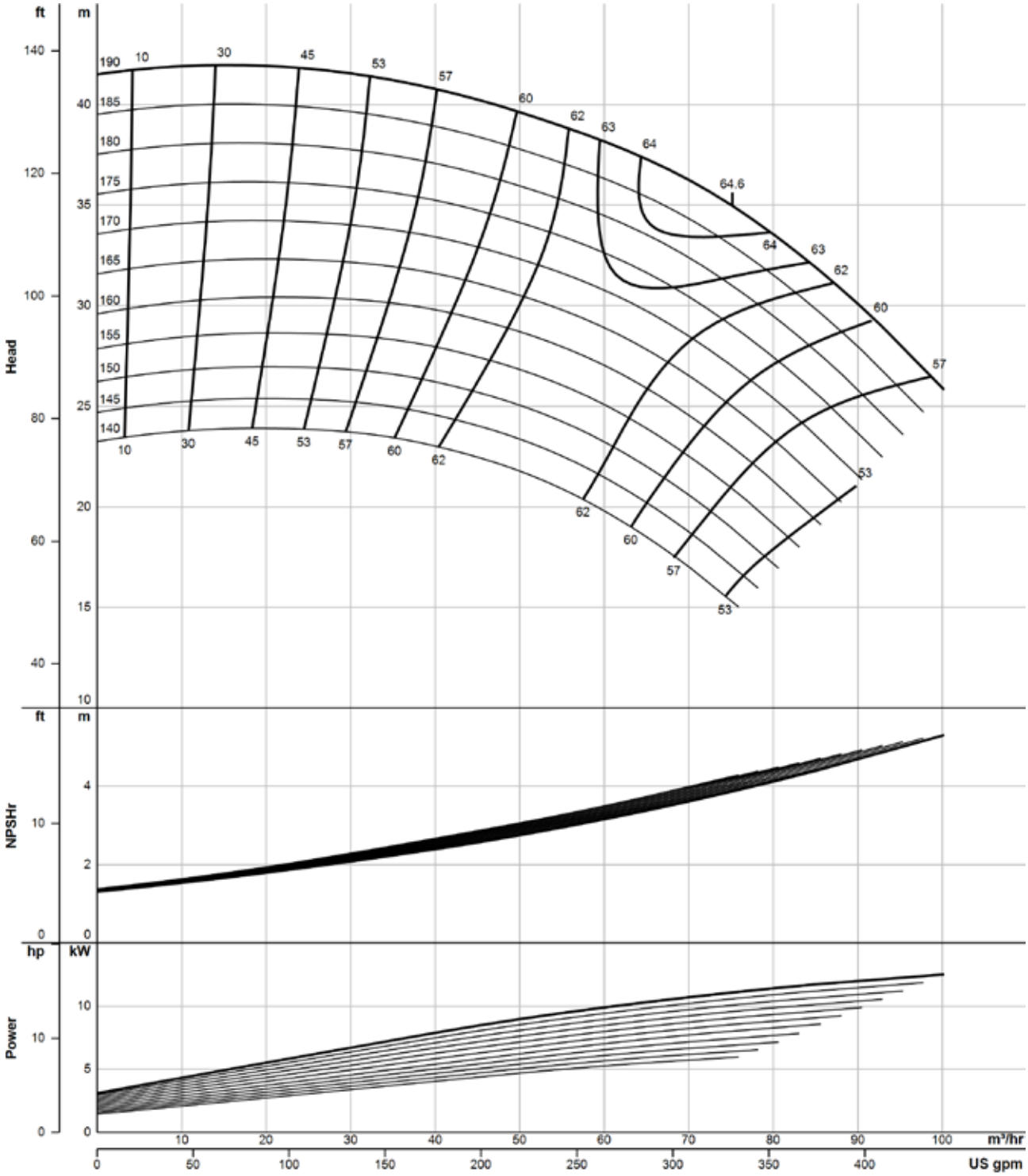
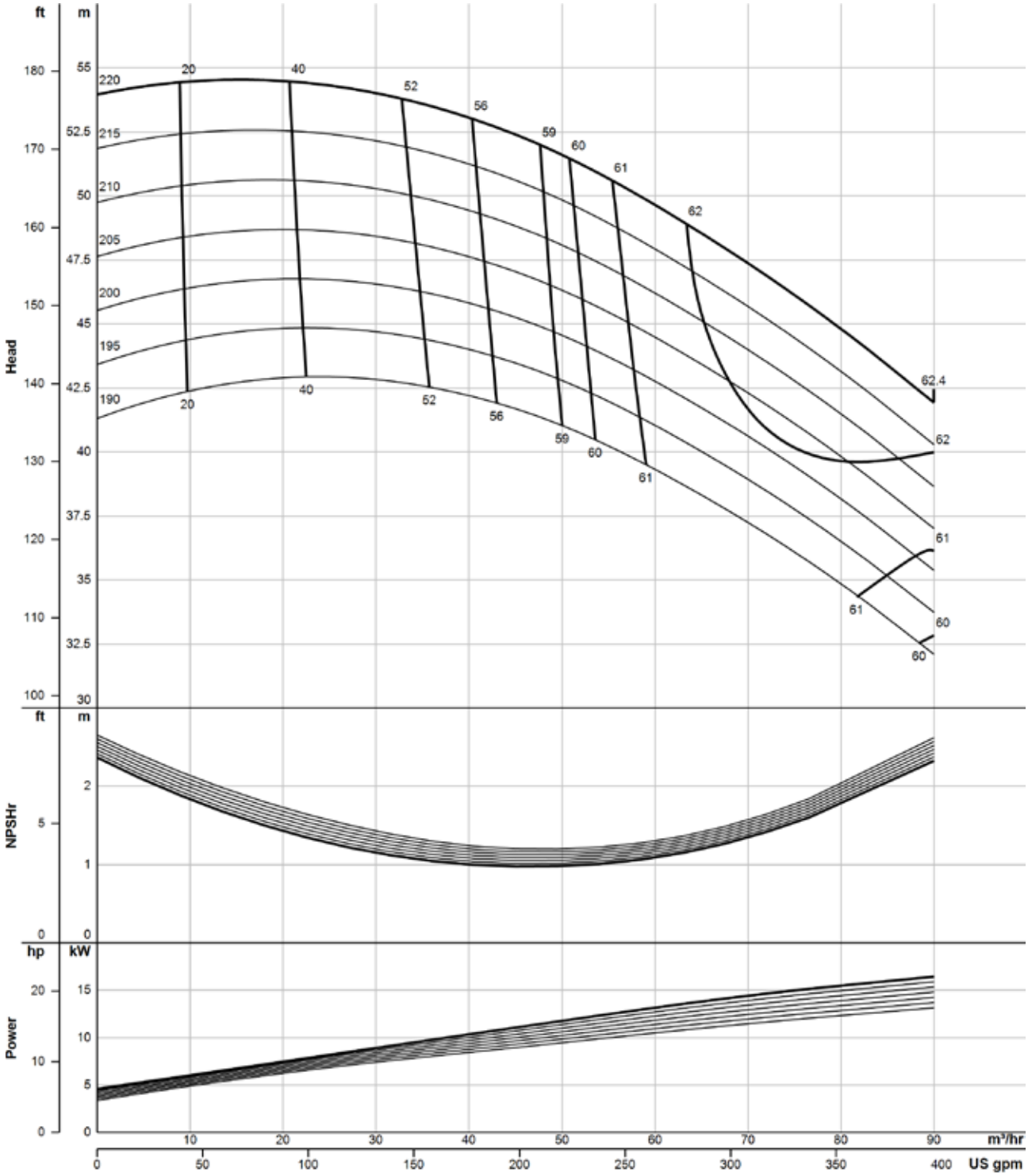
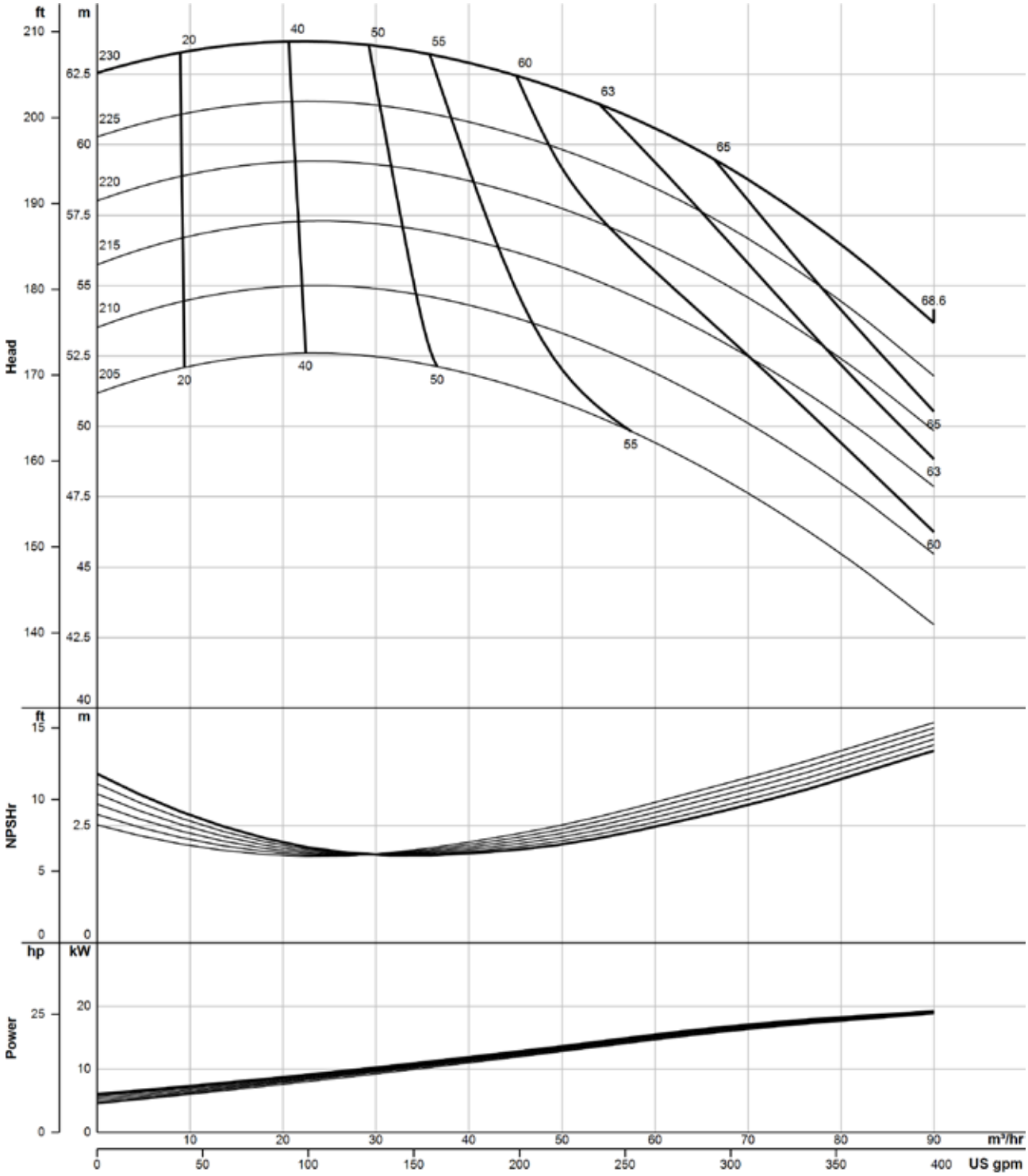


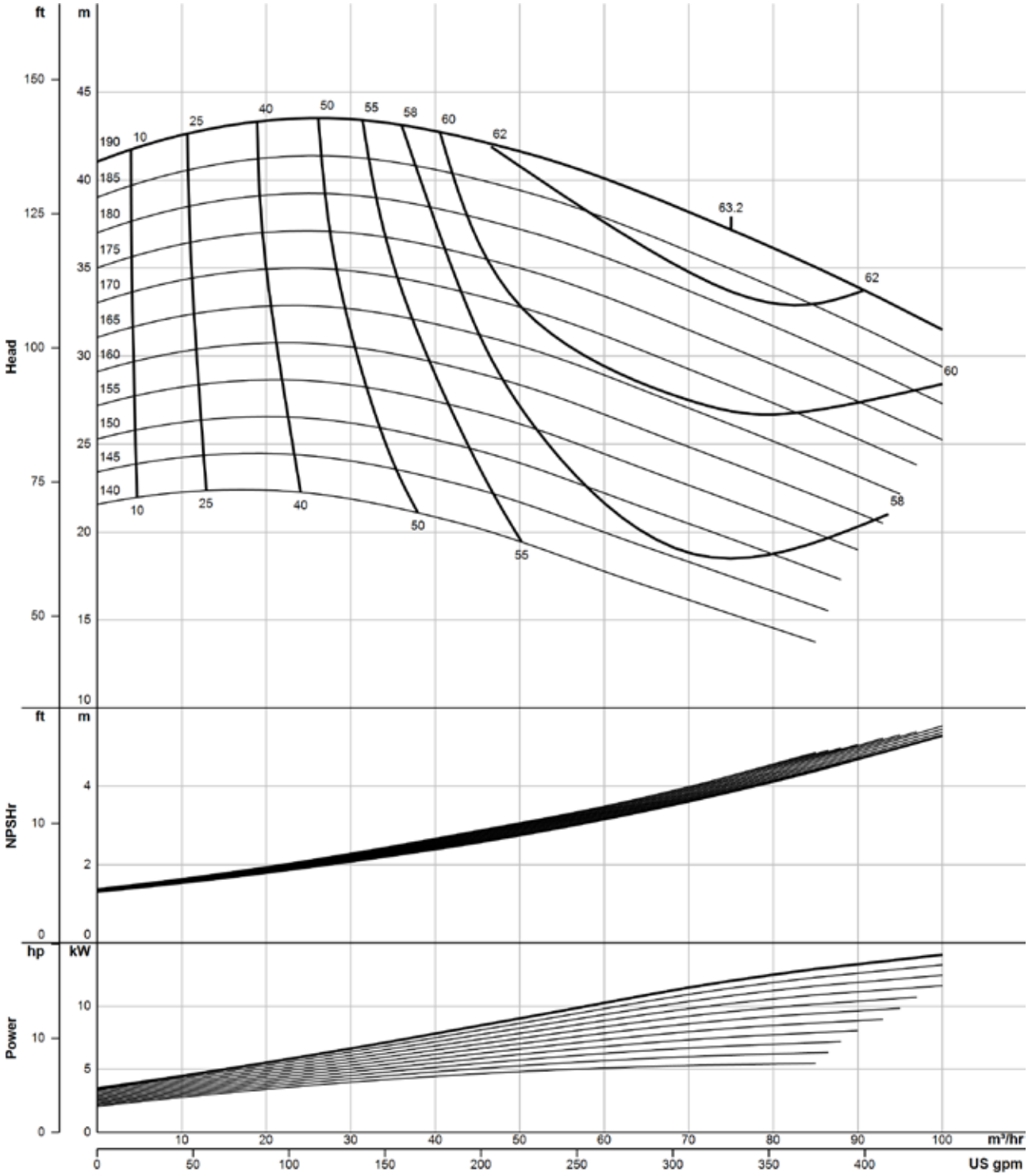
The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



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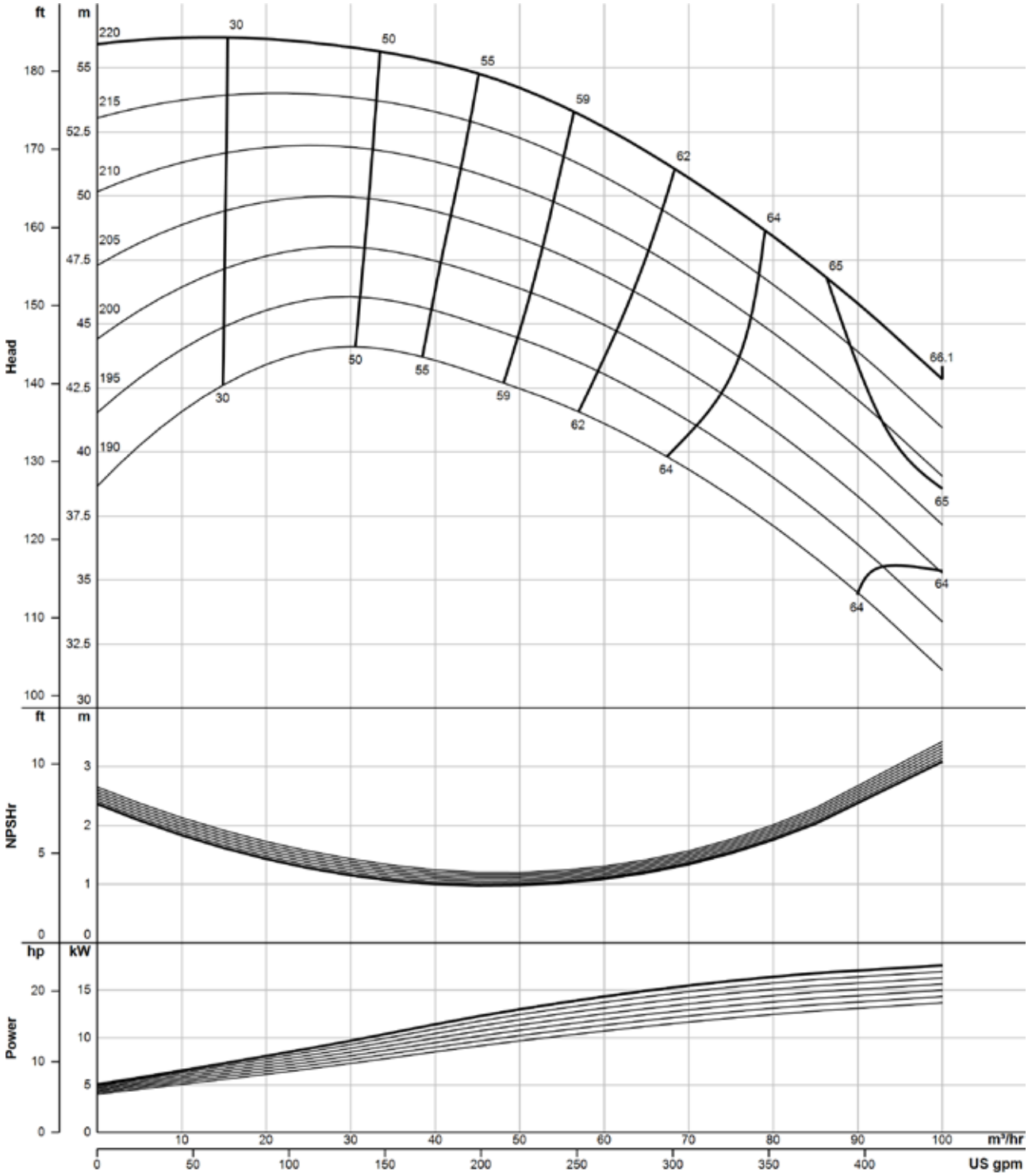
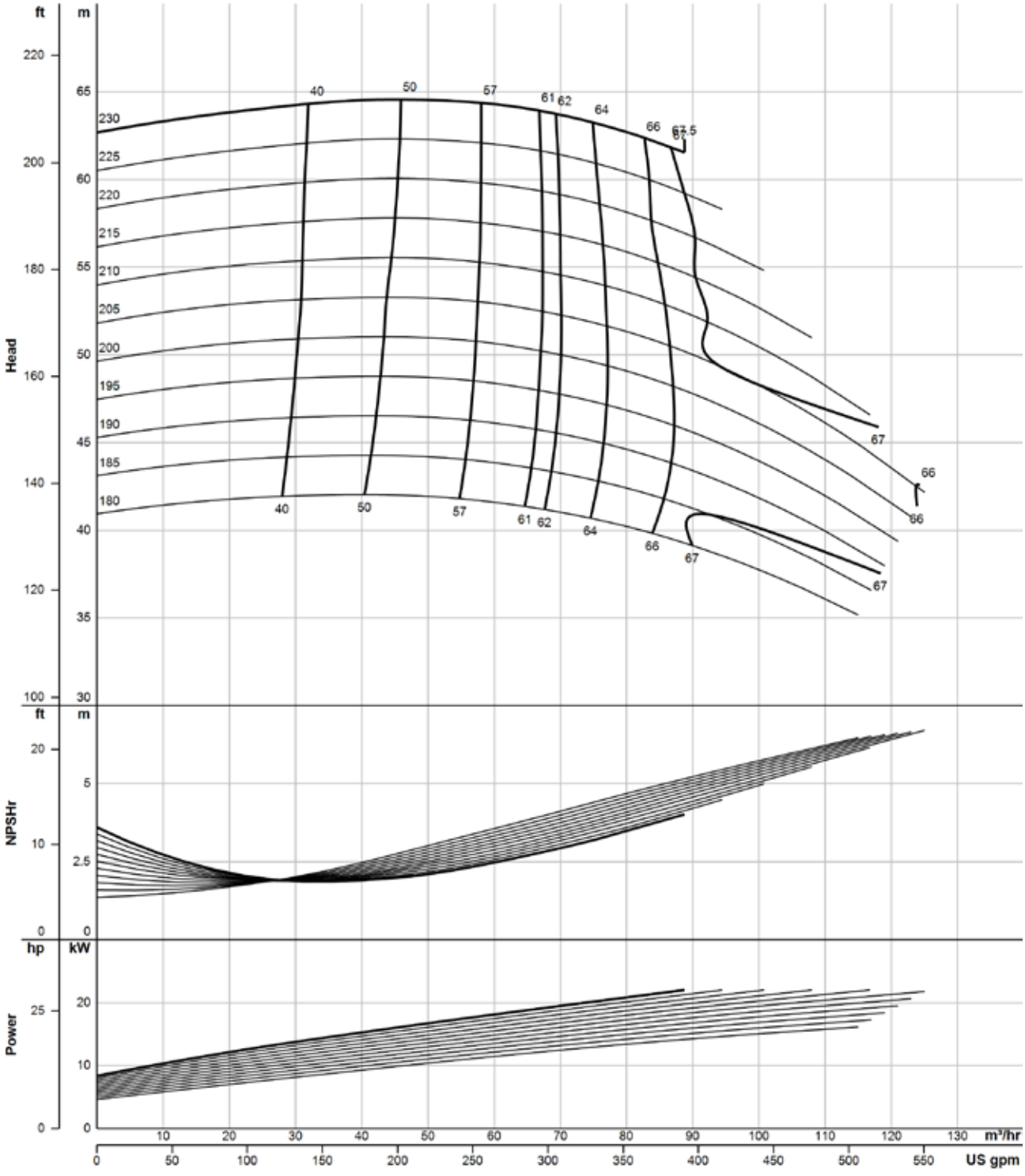
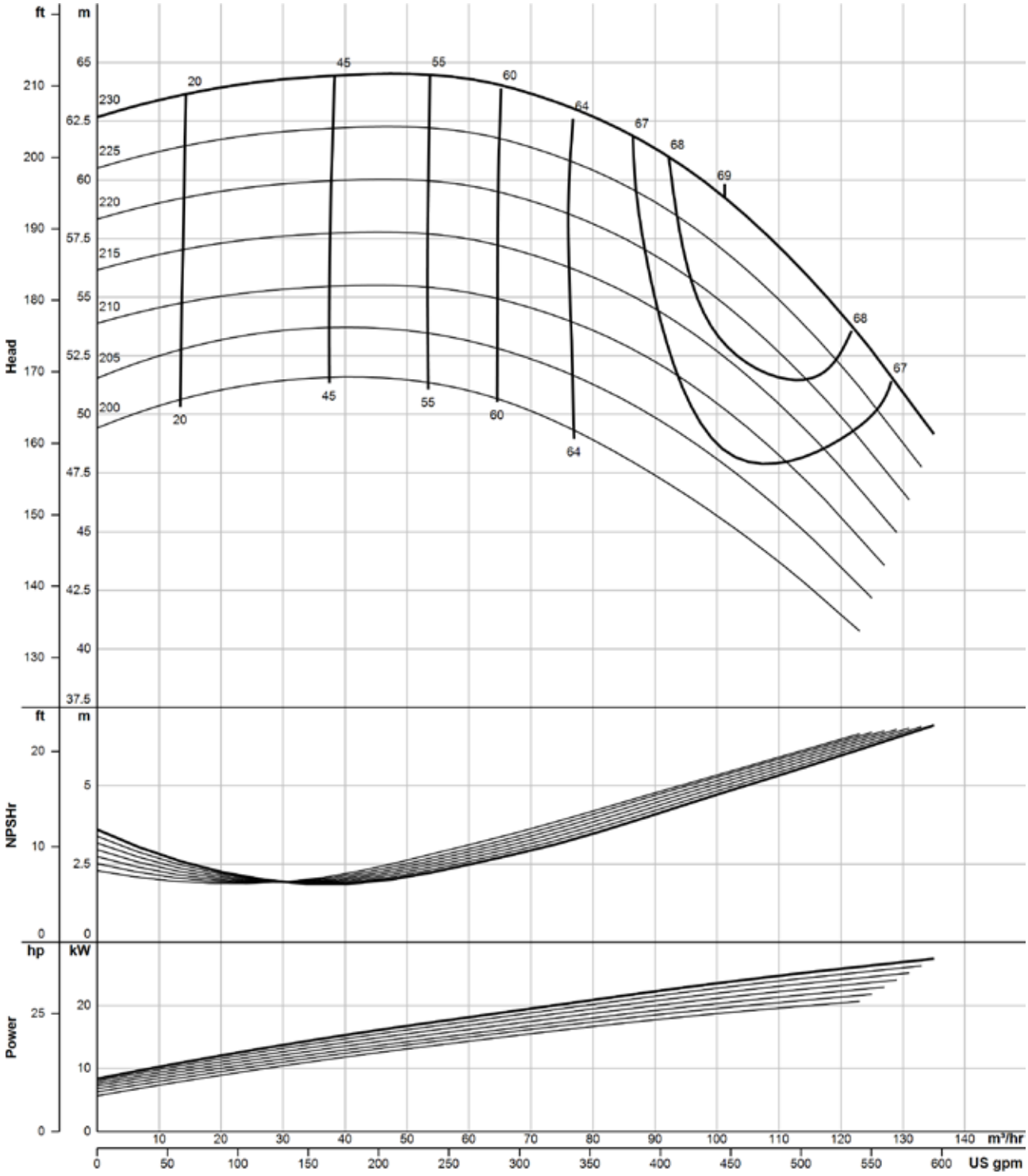


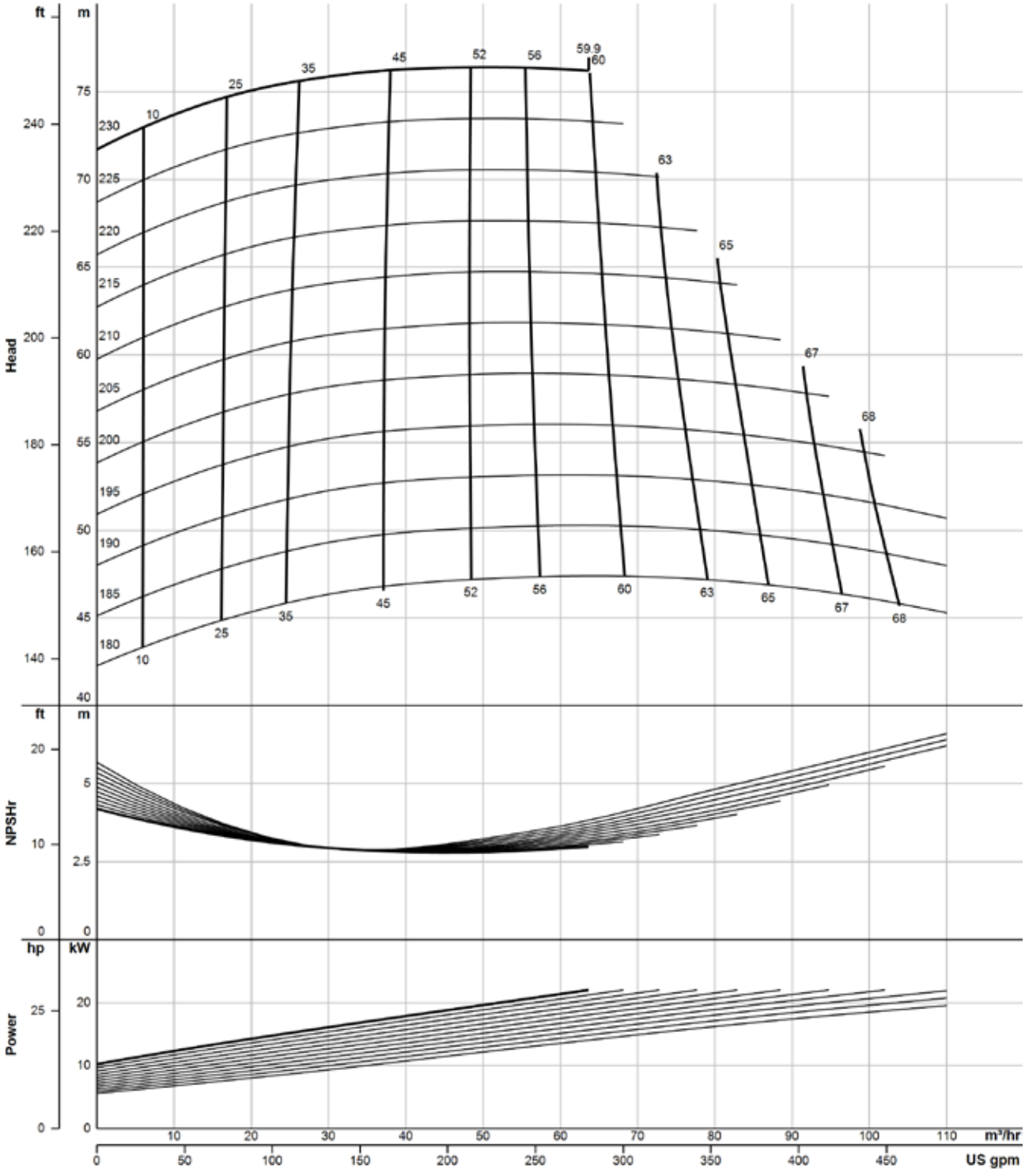
The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



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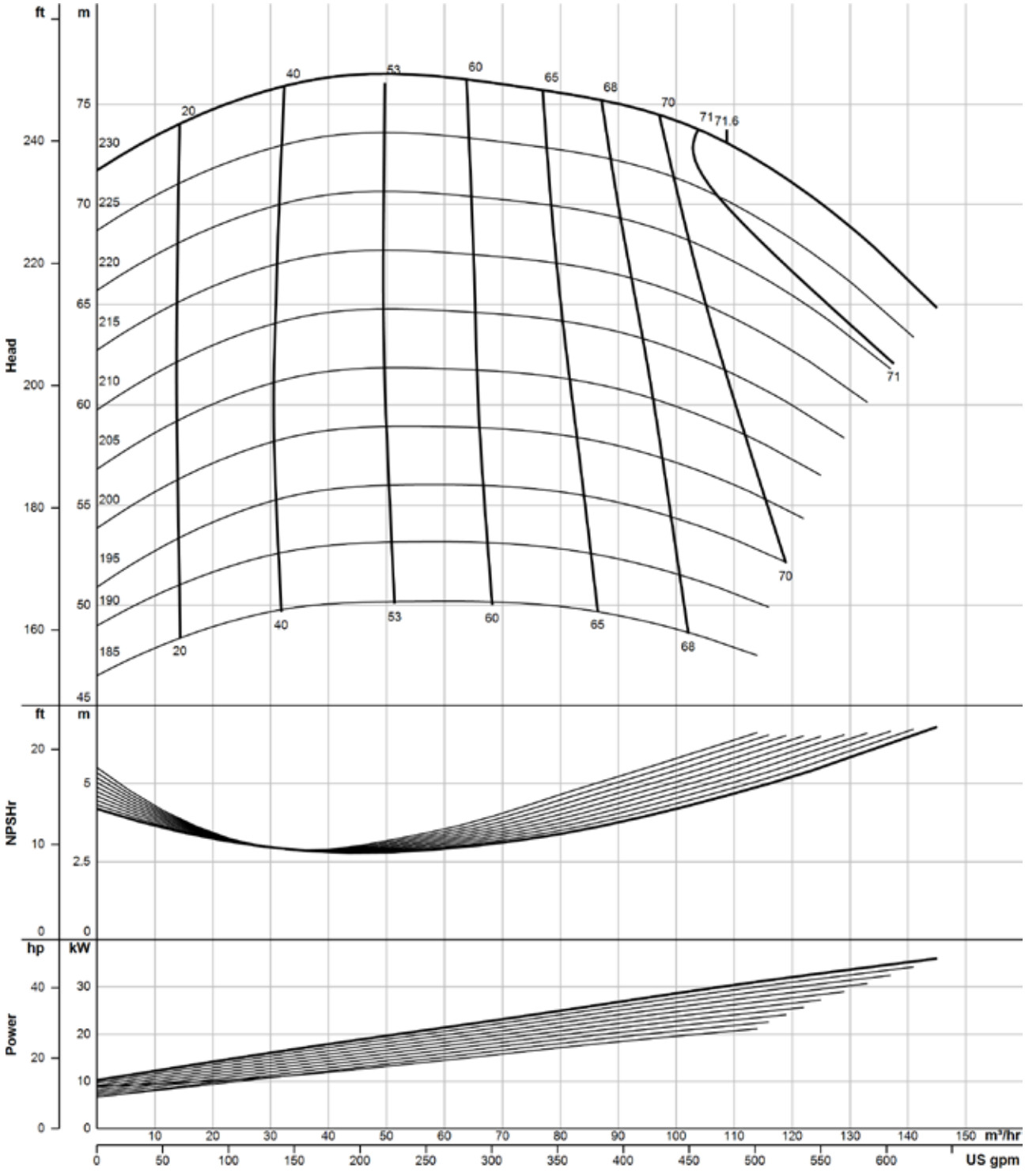

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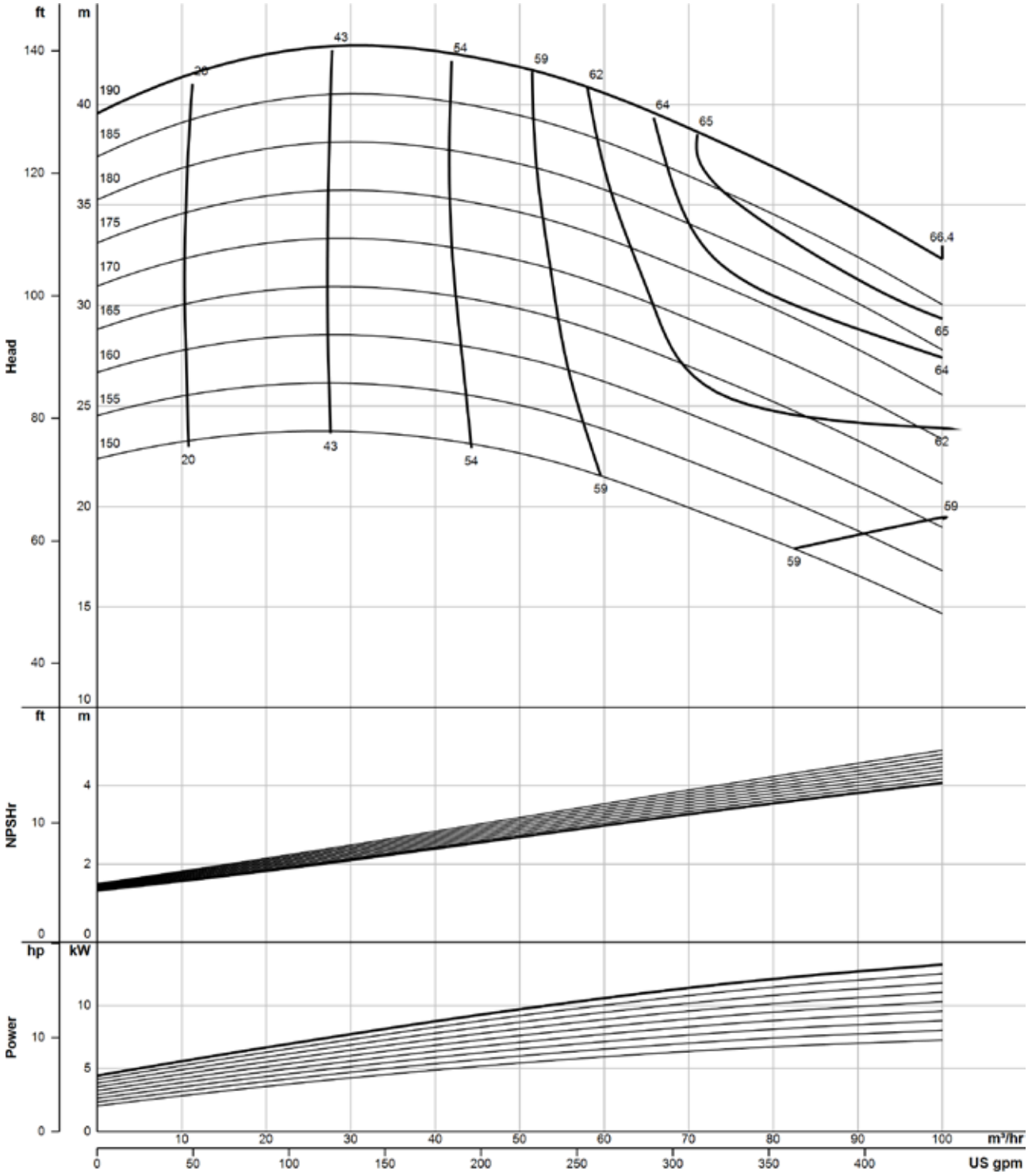

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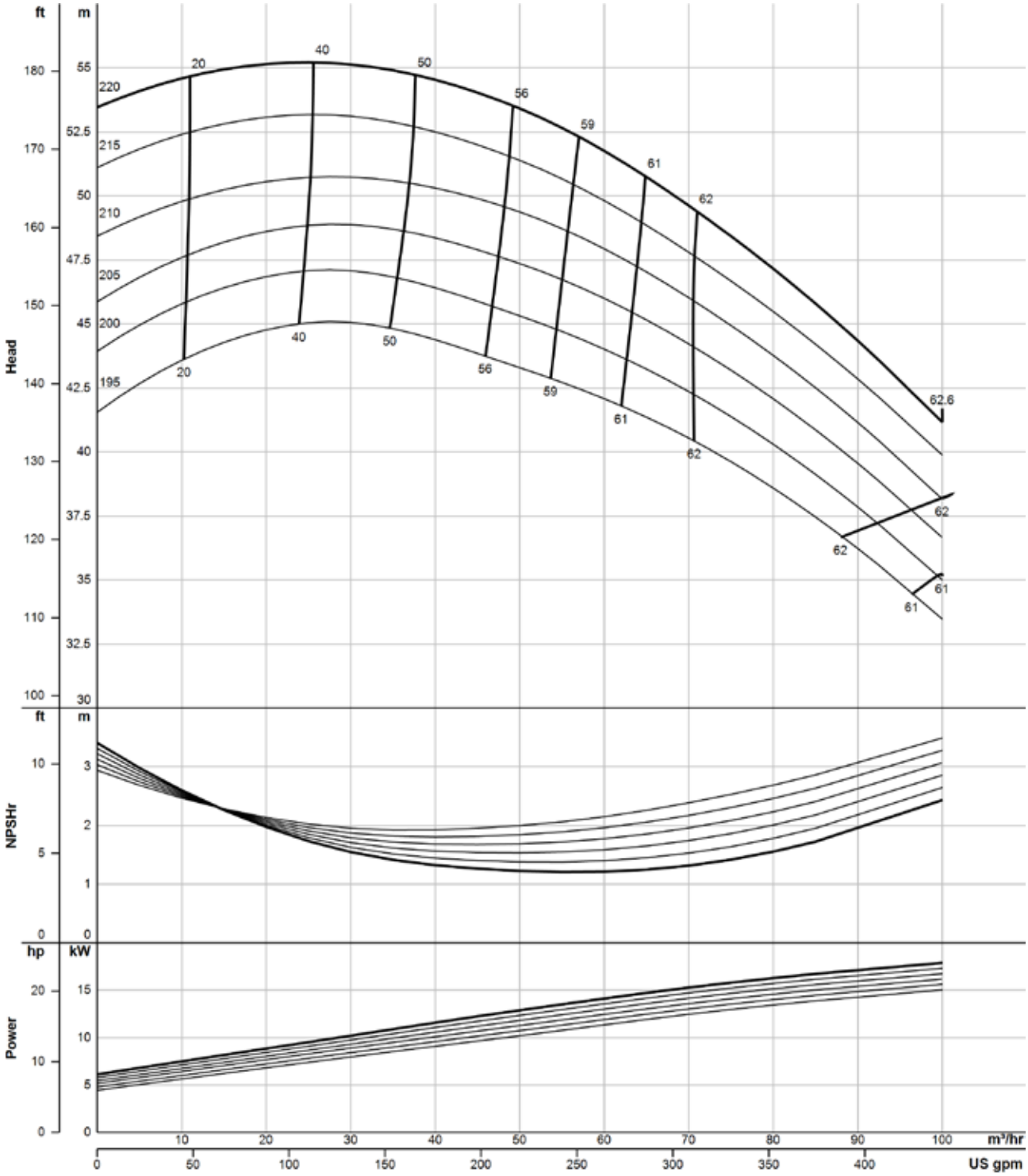

The flow charts are based on water, temperature 20 °C

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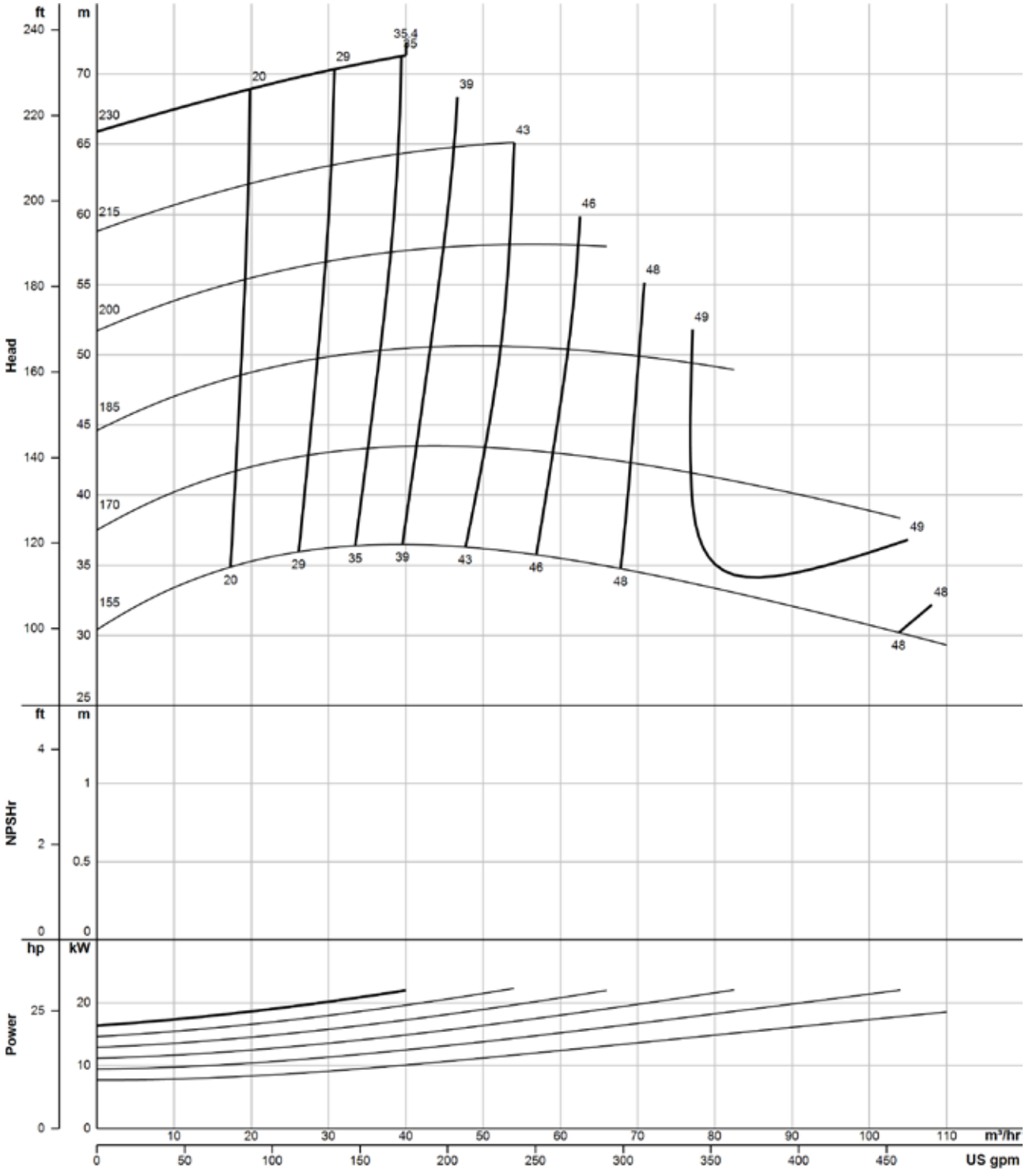

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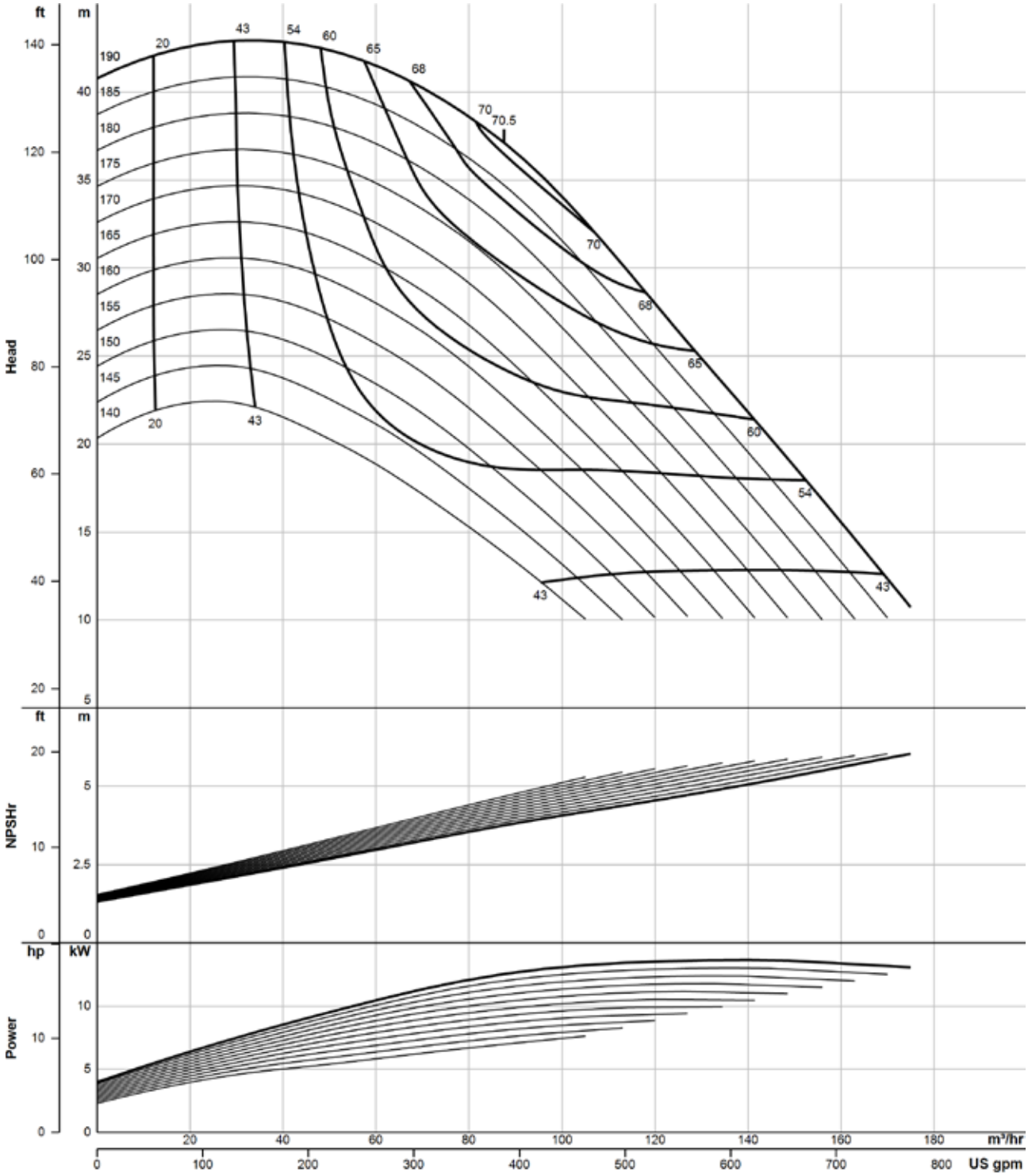
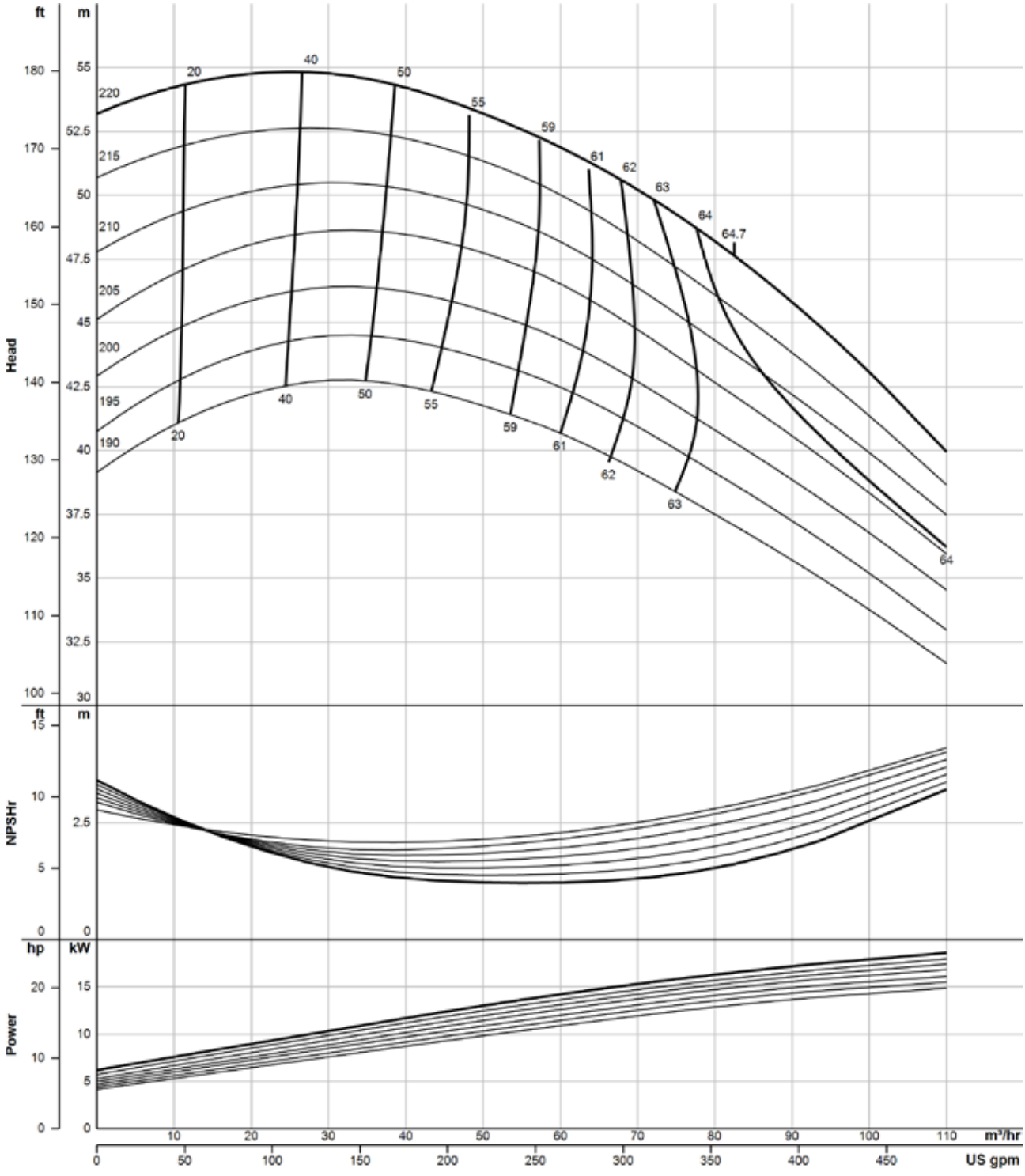
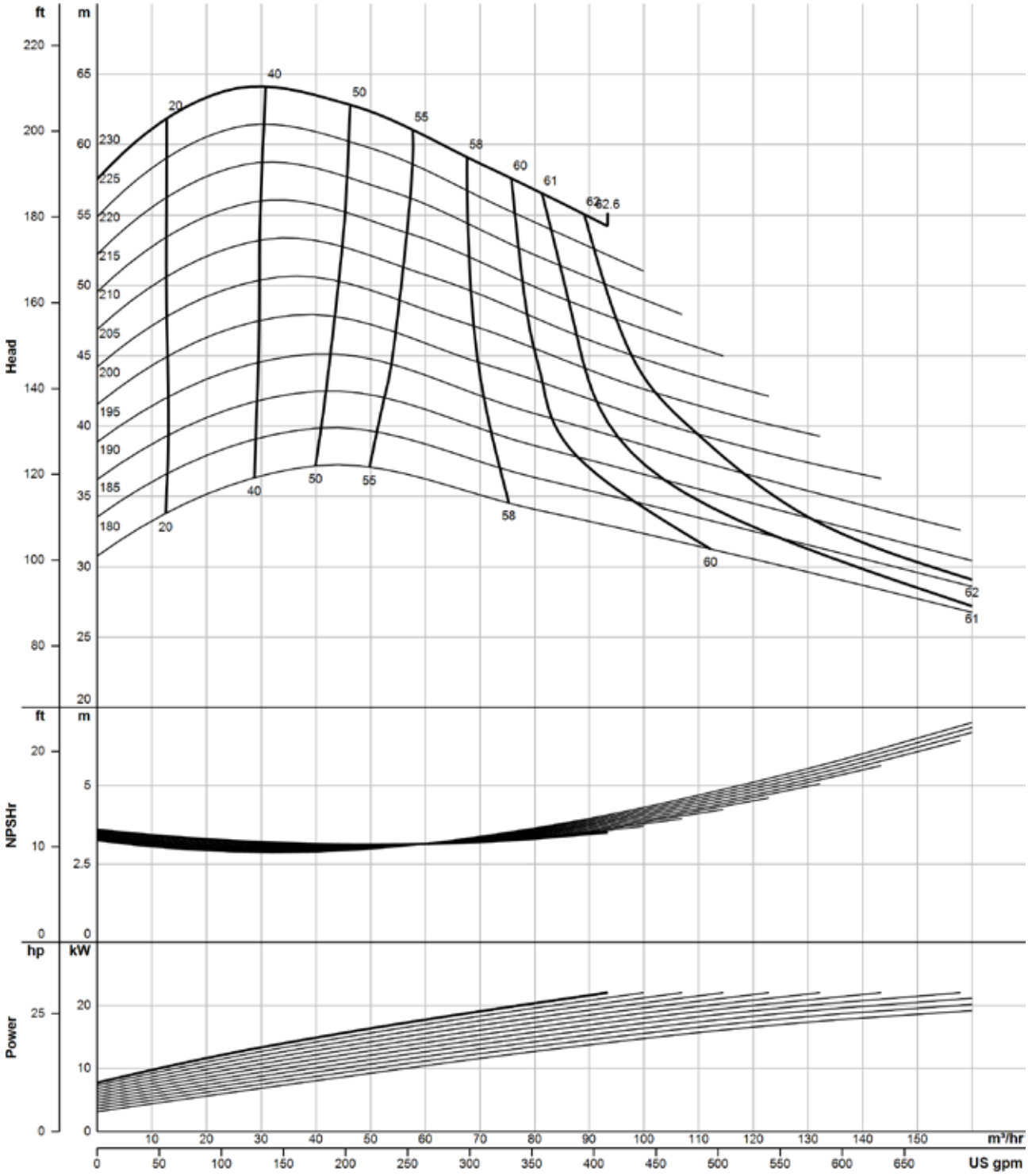


The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



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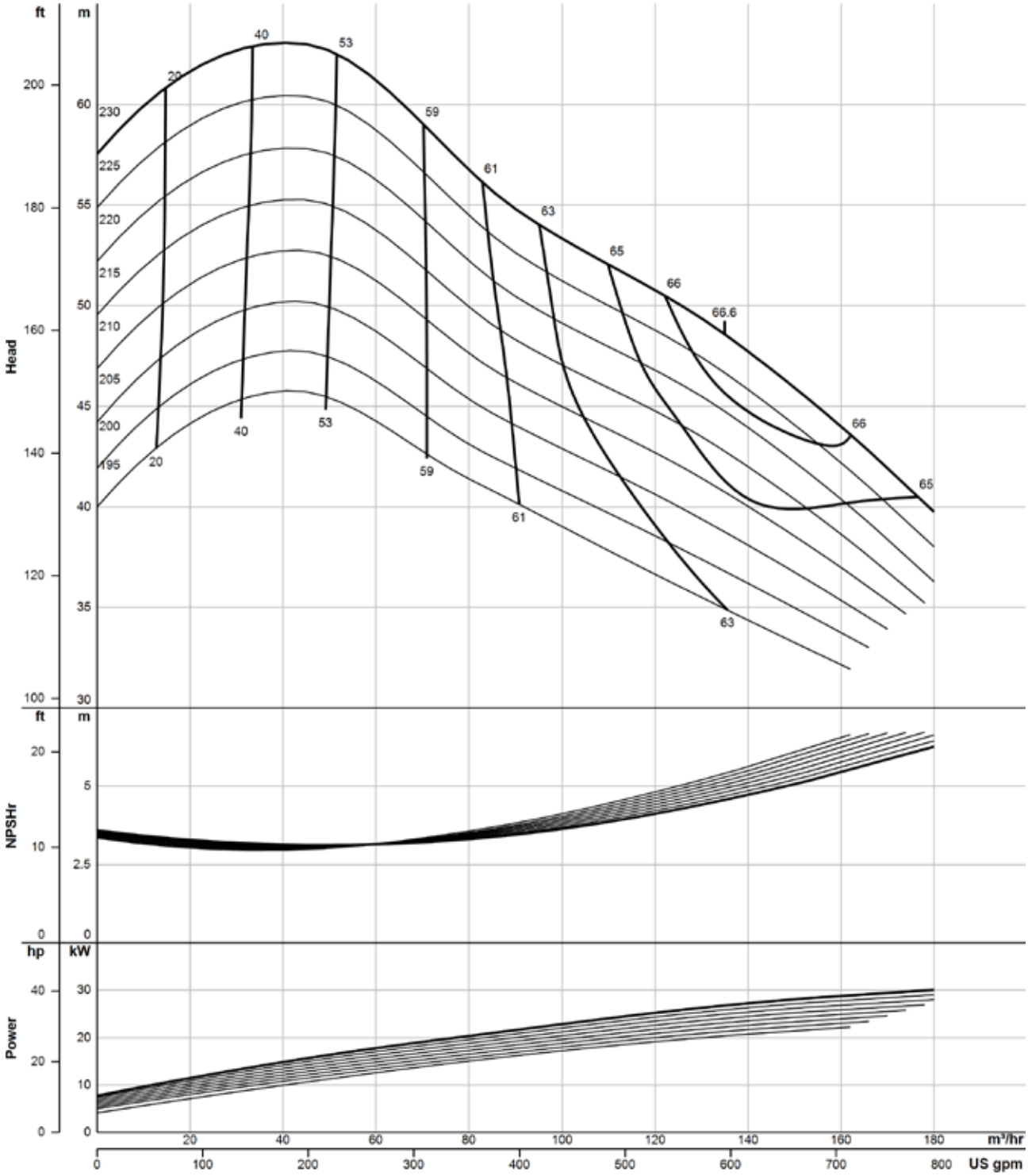
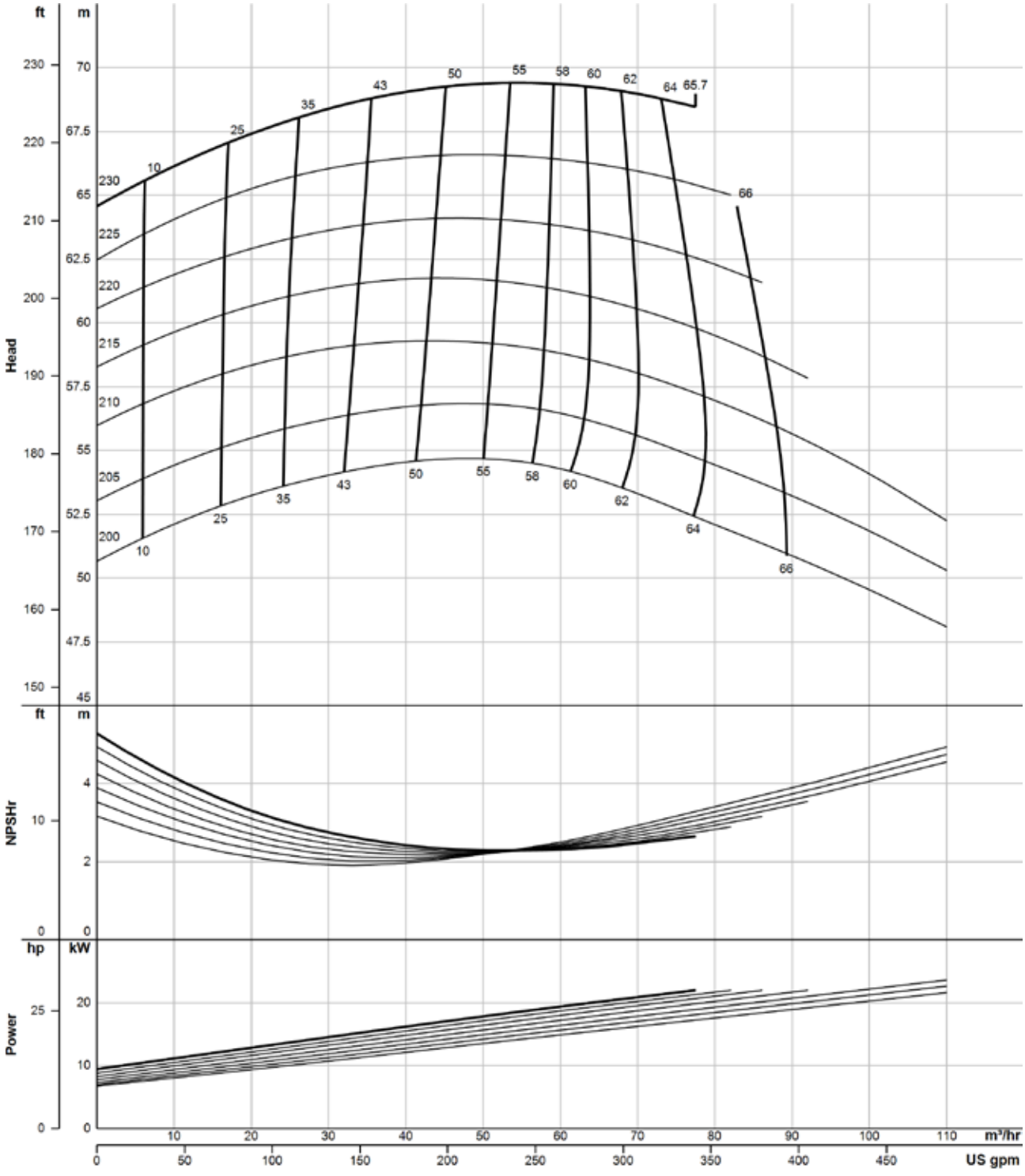


The flow charts are based on water, temperature 20 °C



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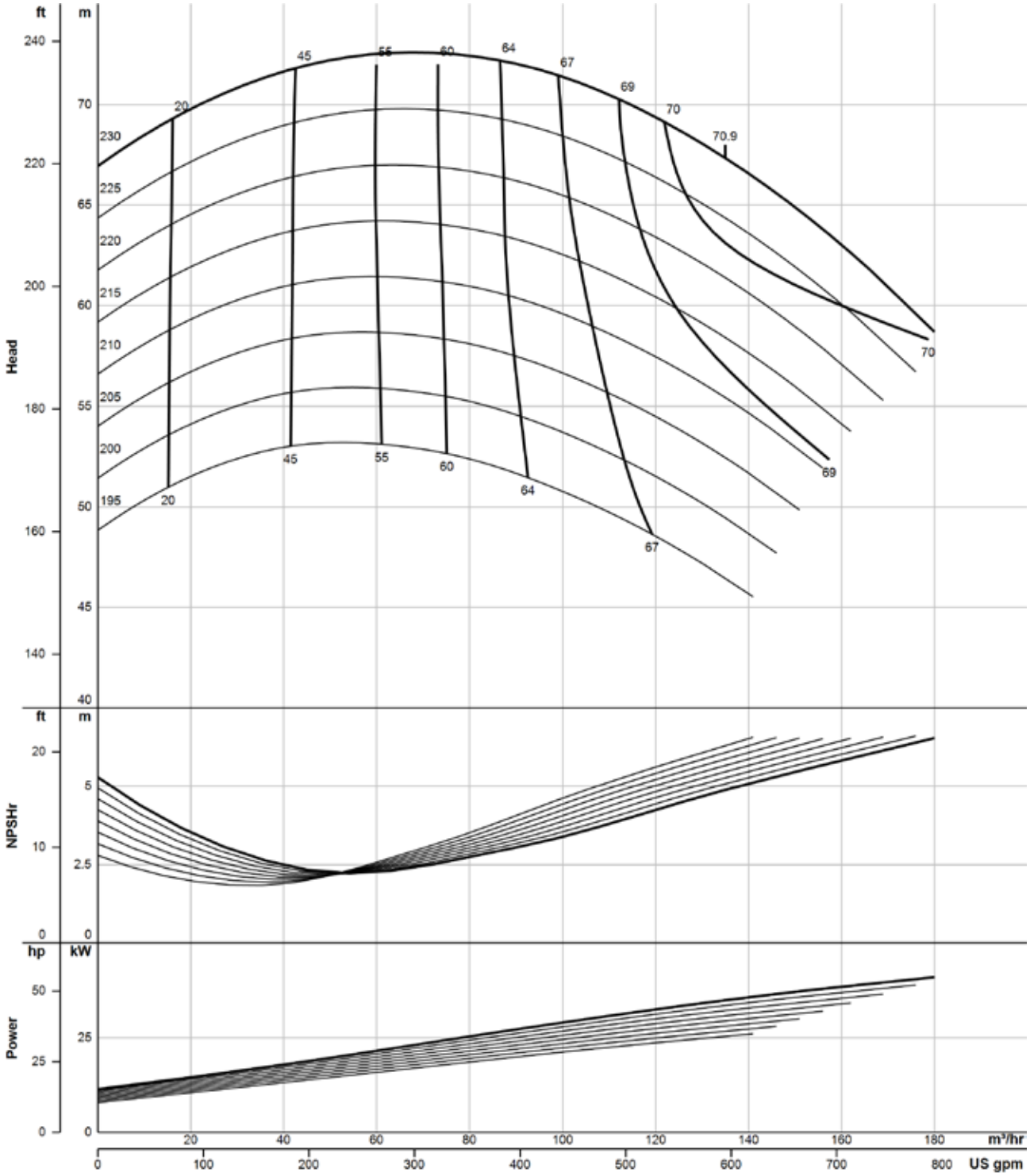
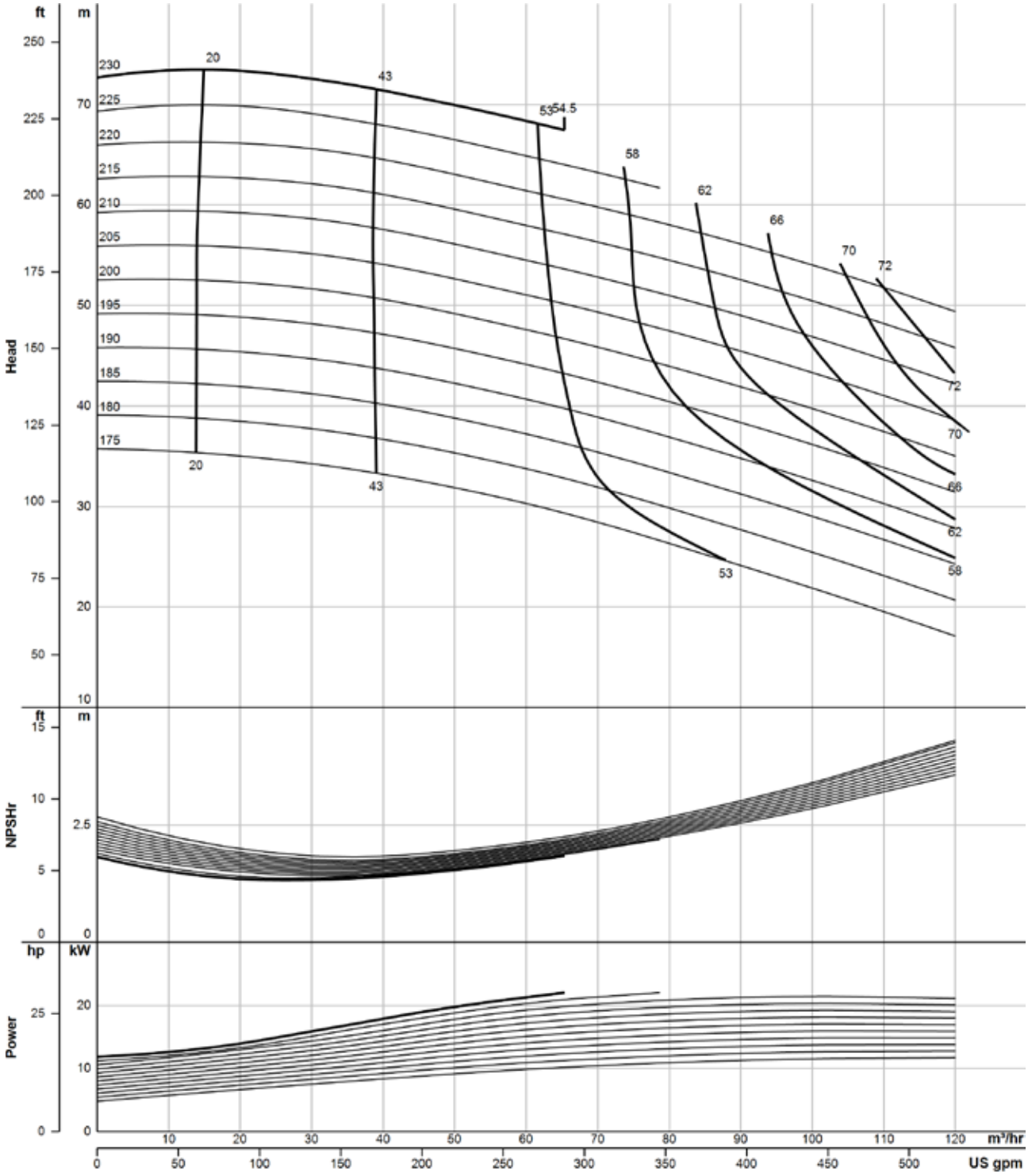


The flow charts are based on water, temperature 20 °C



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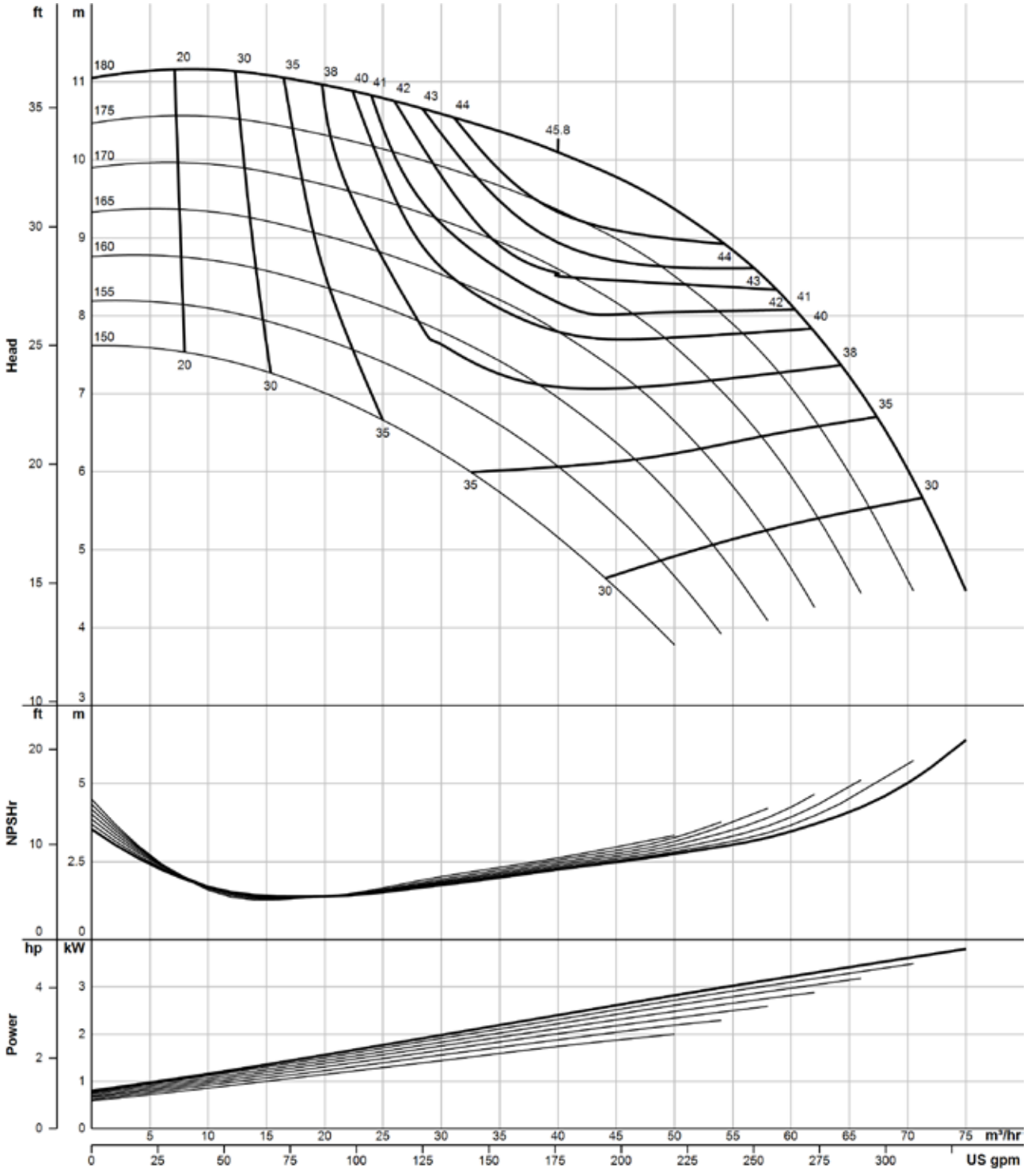

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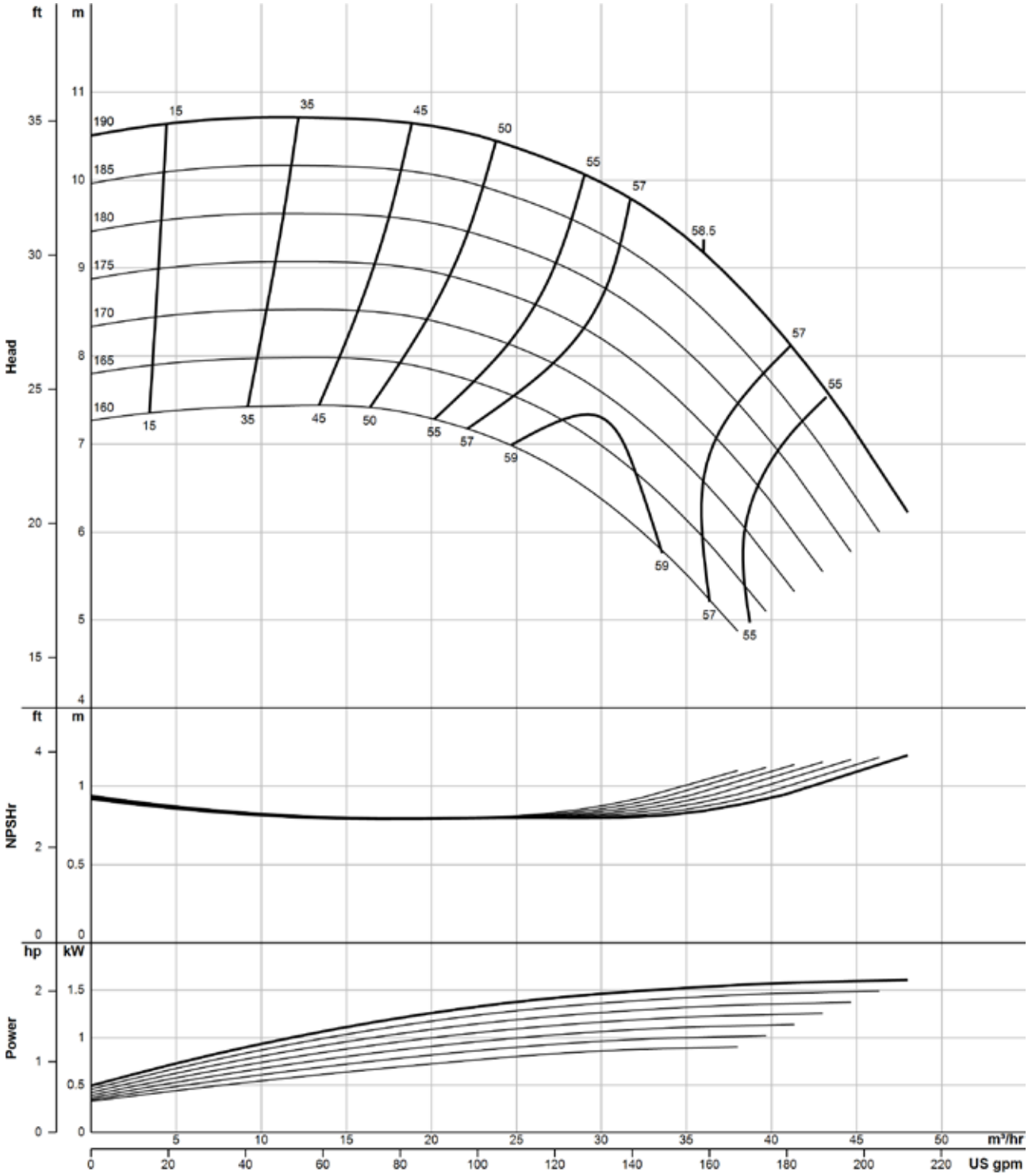

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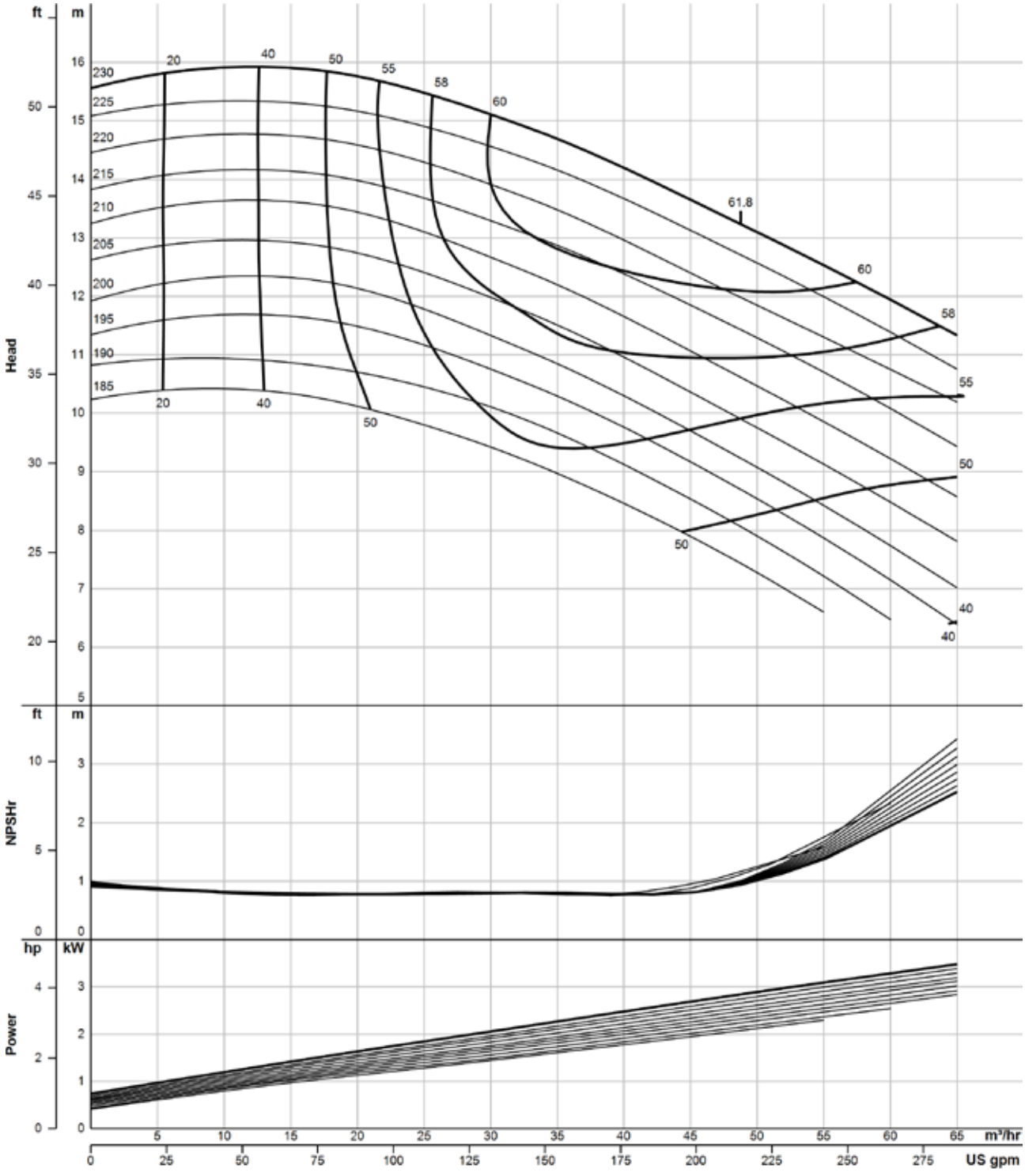

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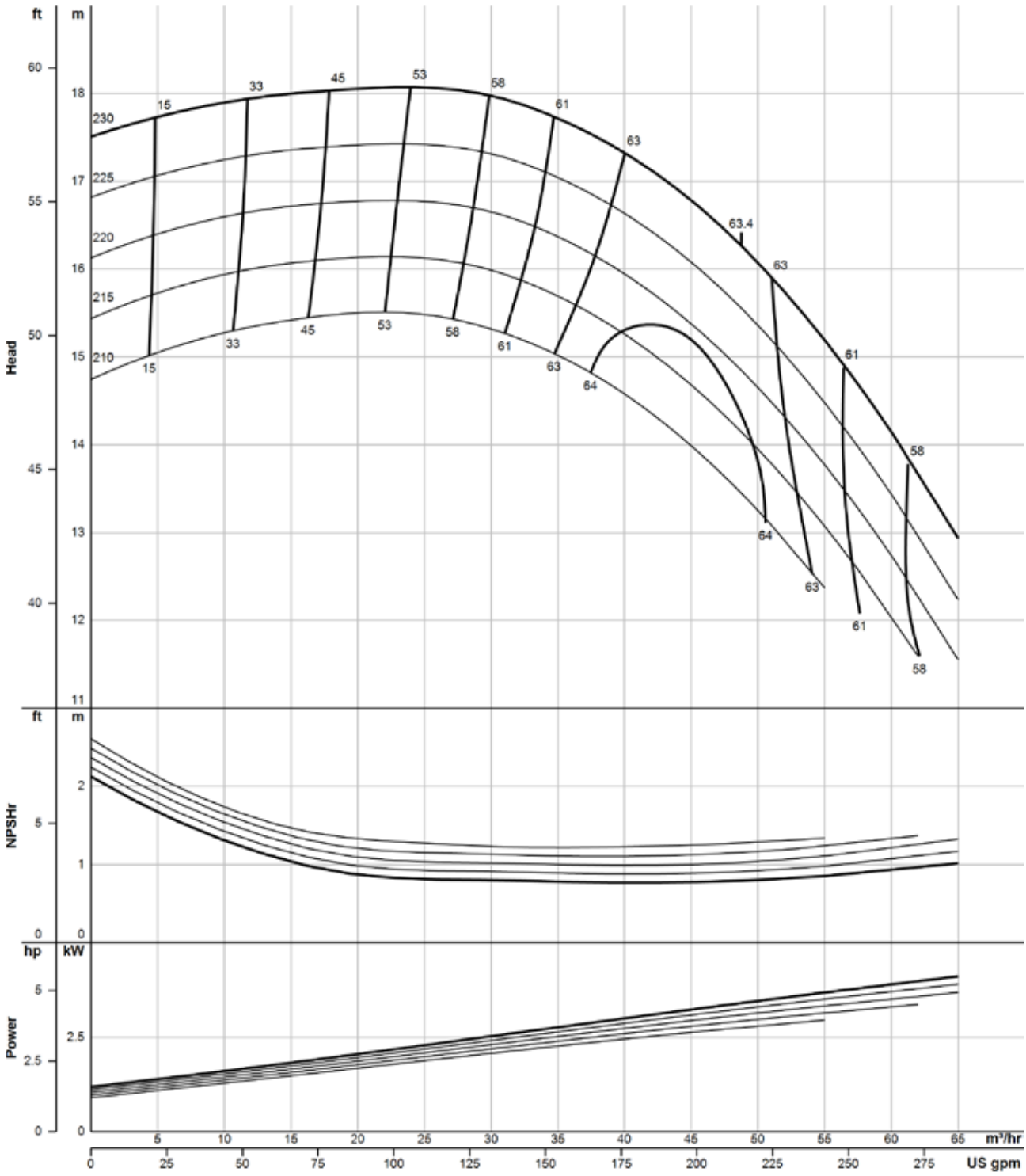

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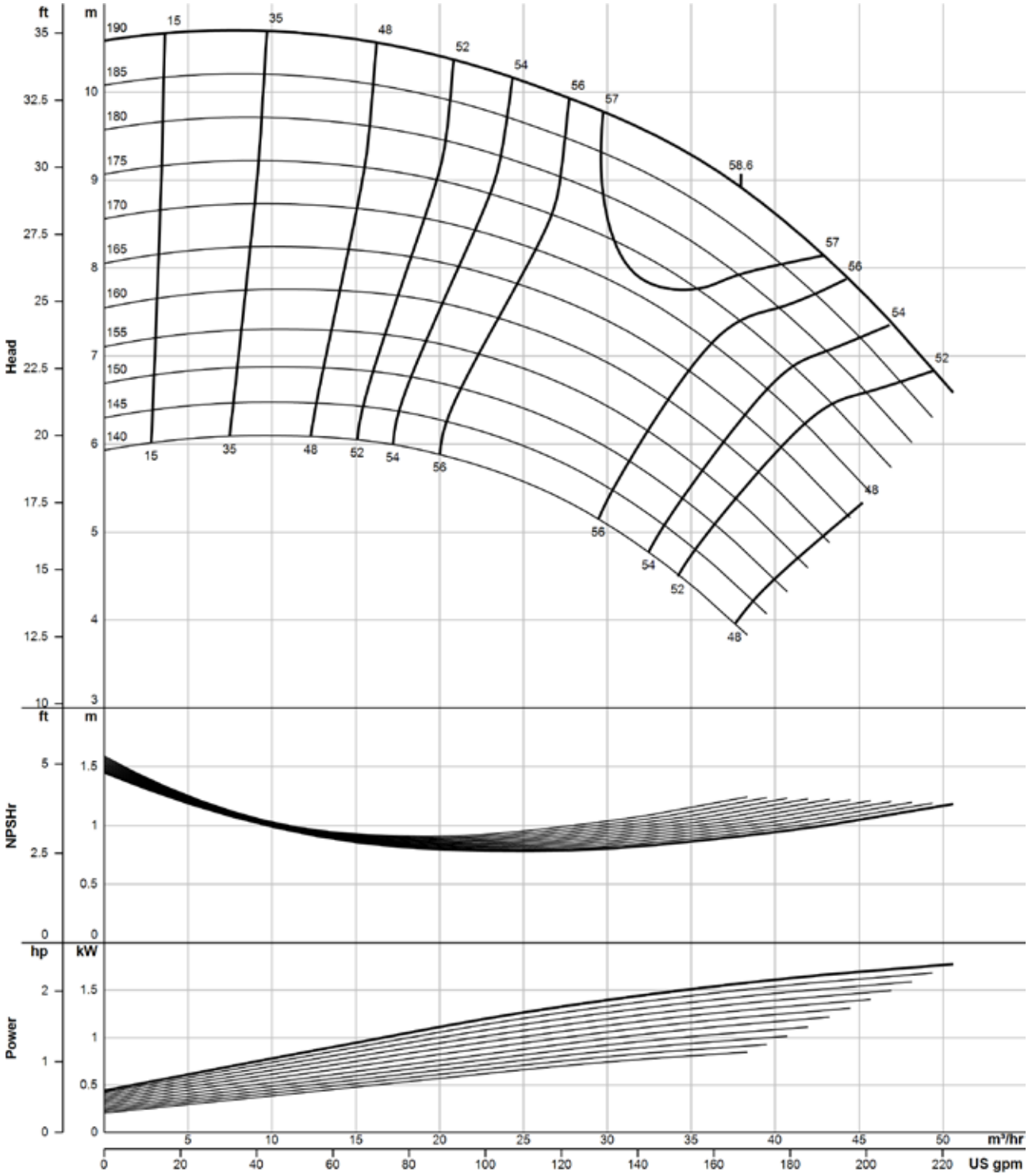

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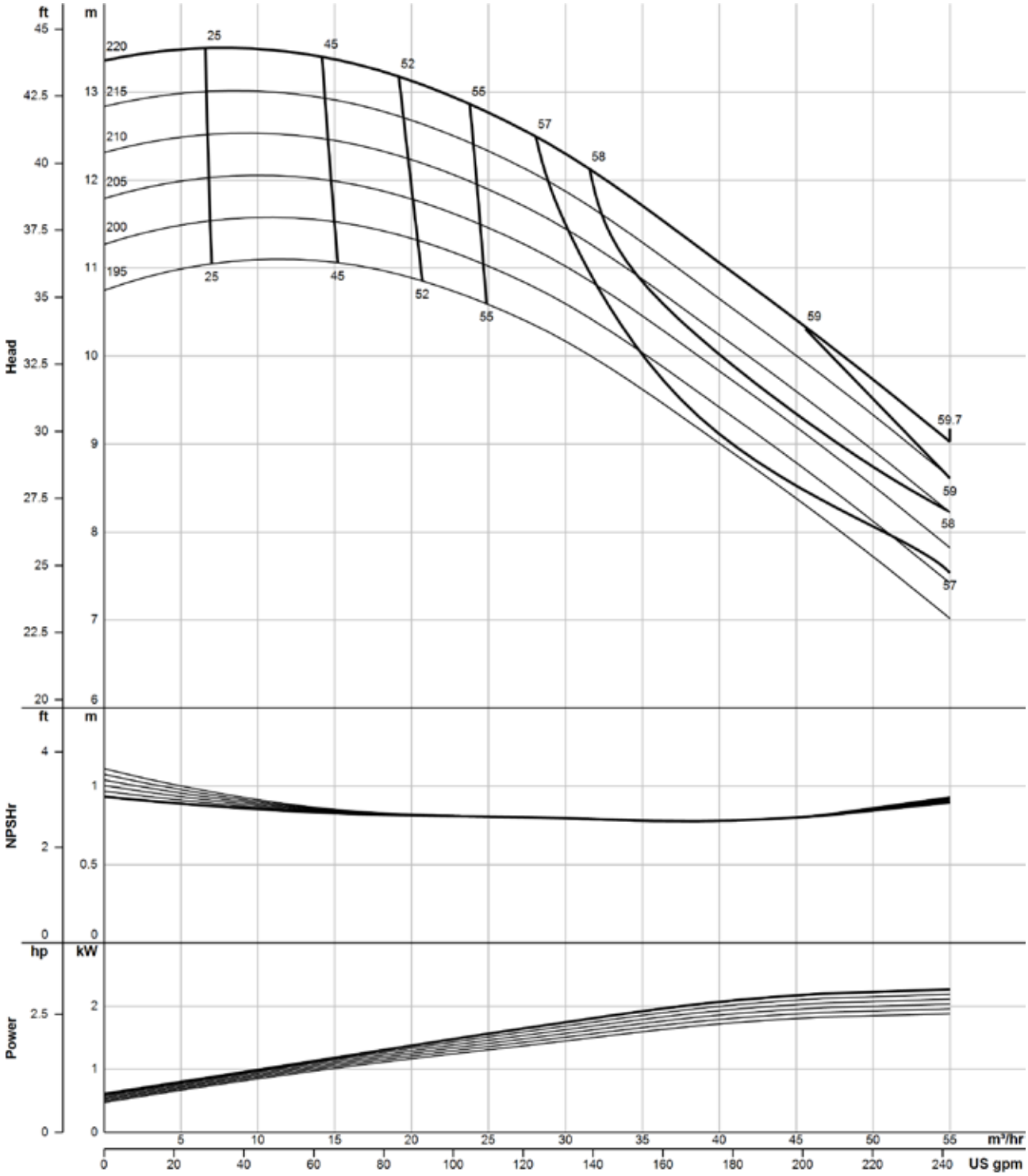

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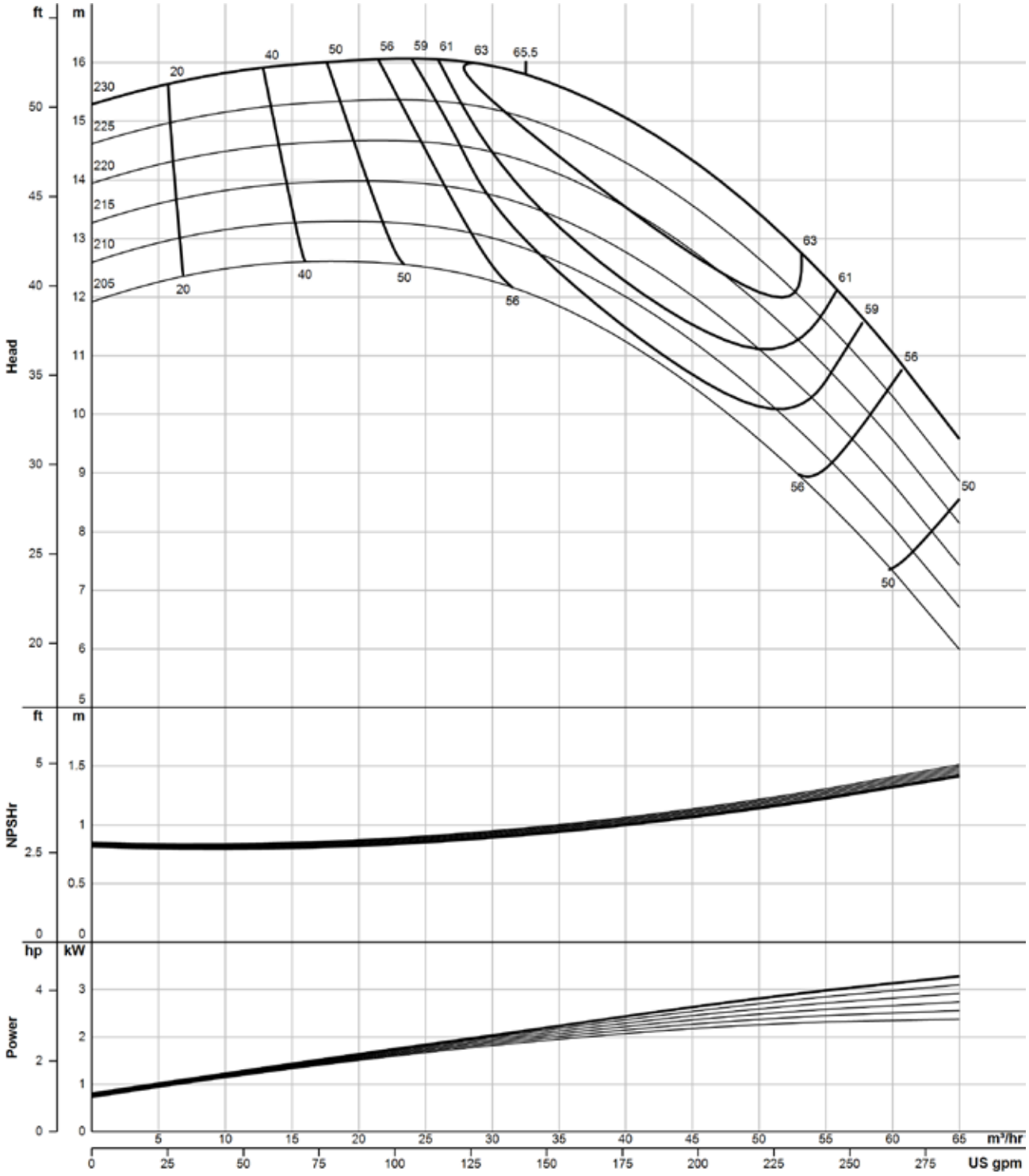

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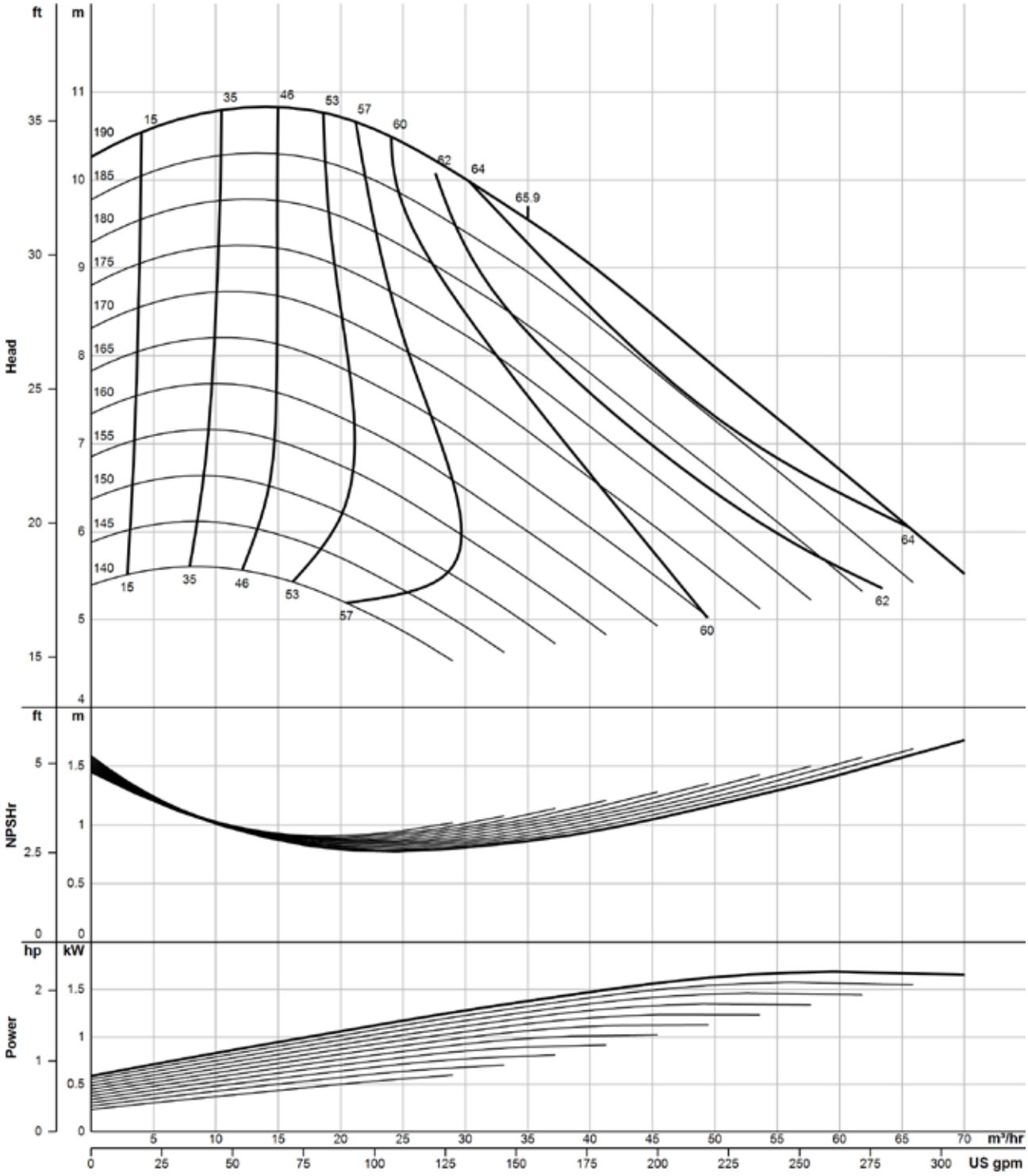

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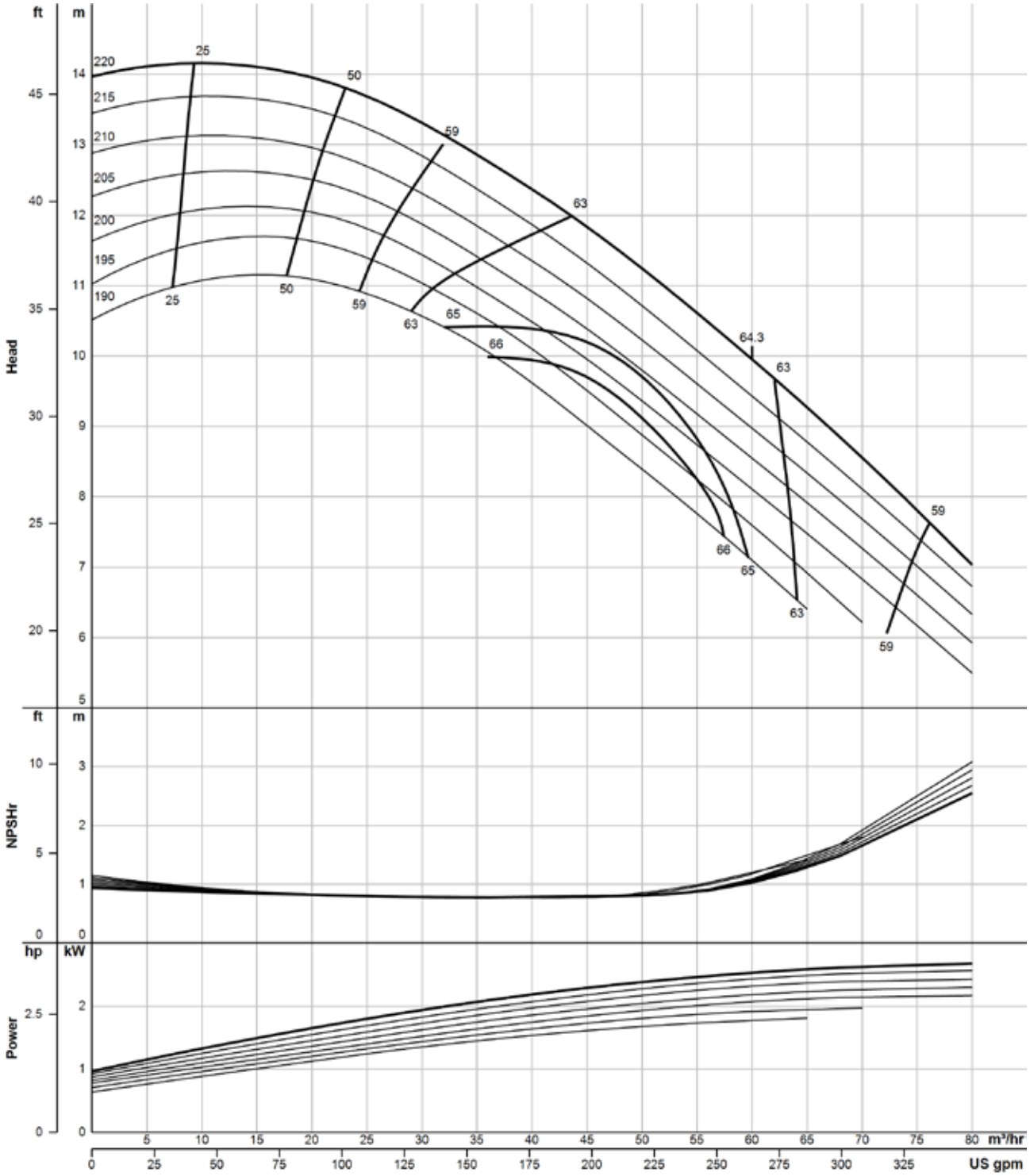

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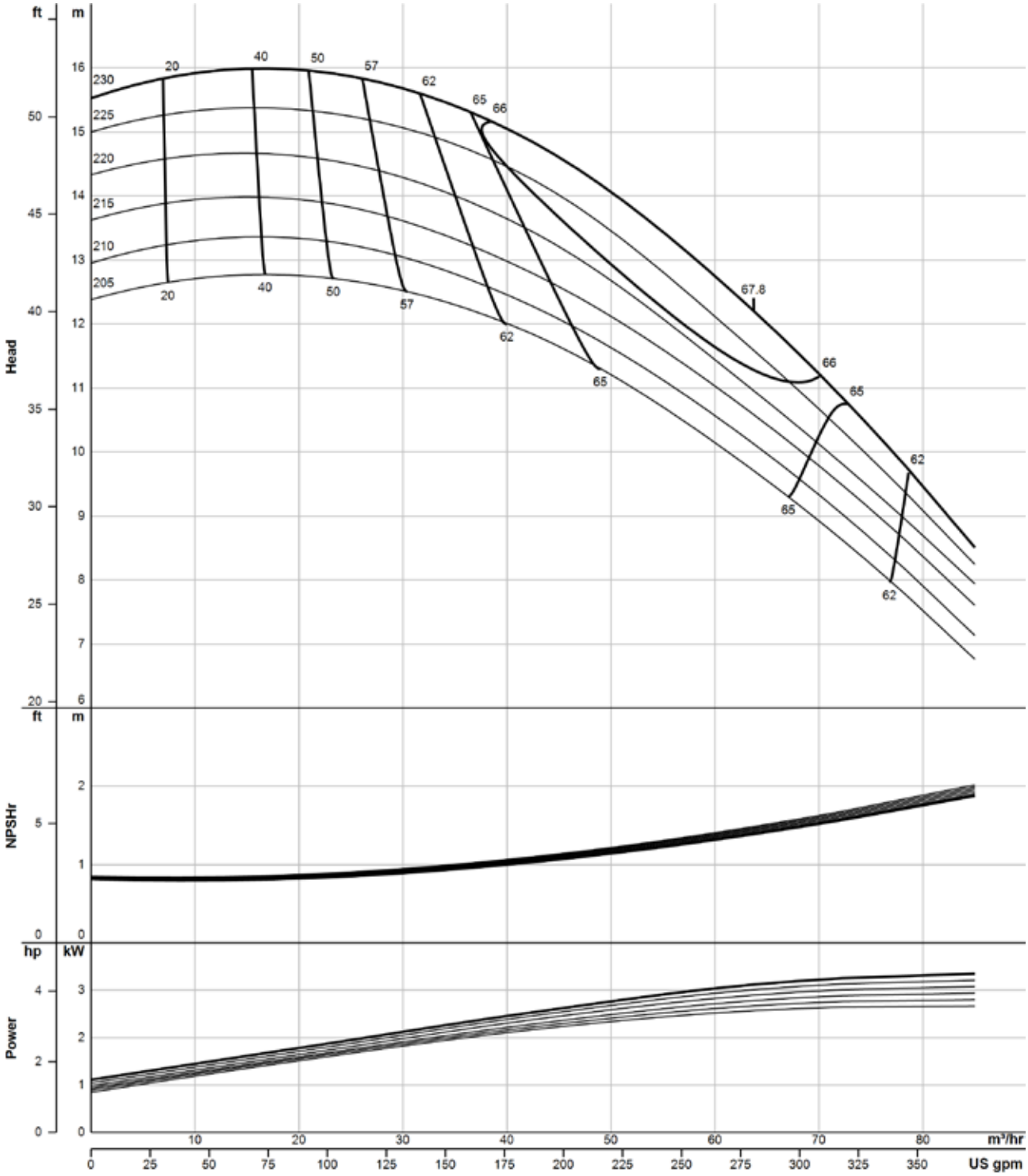

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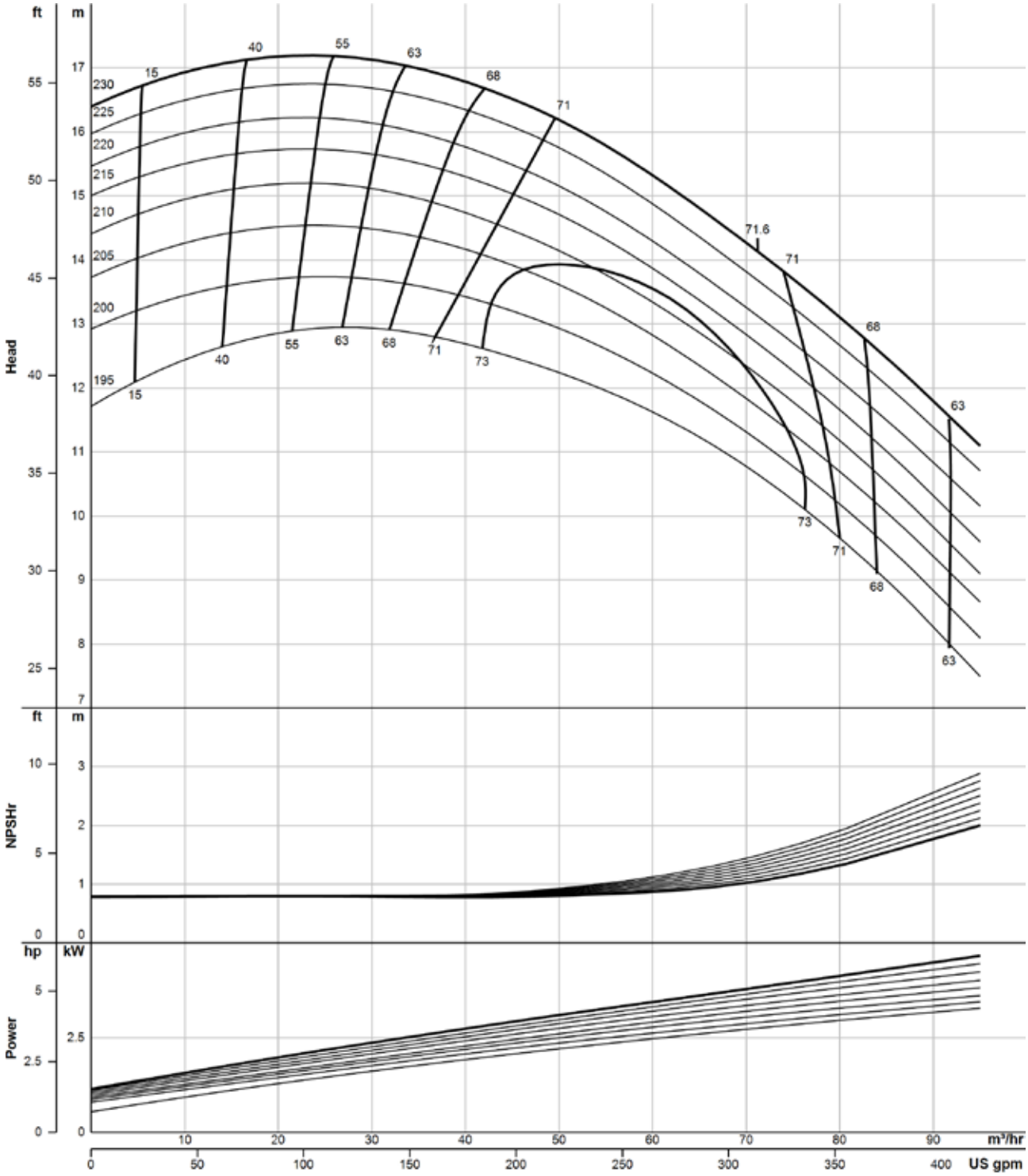

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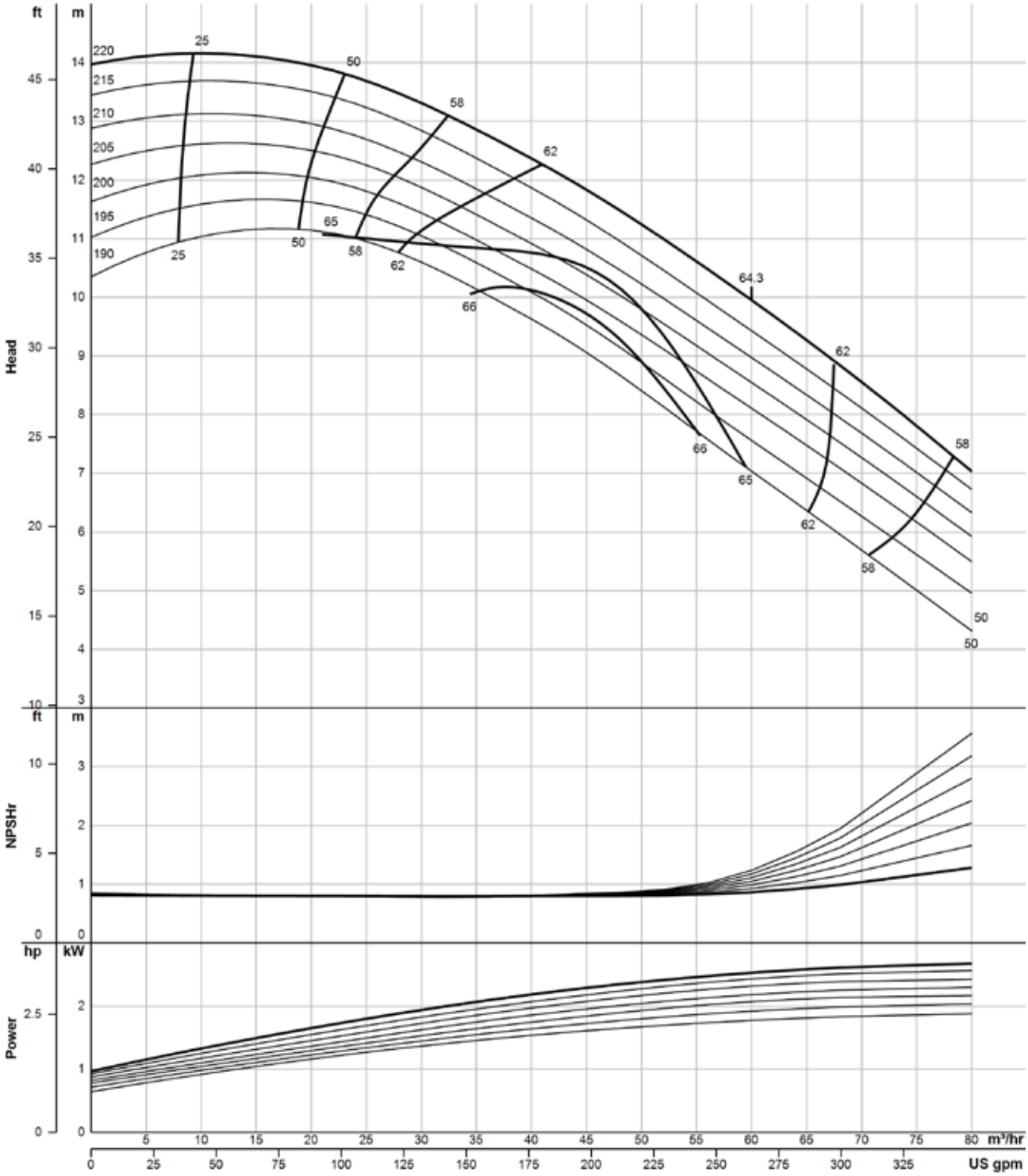

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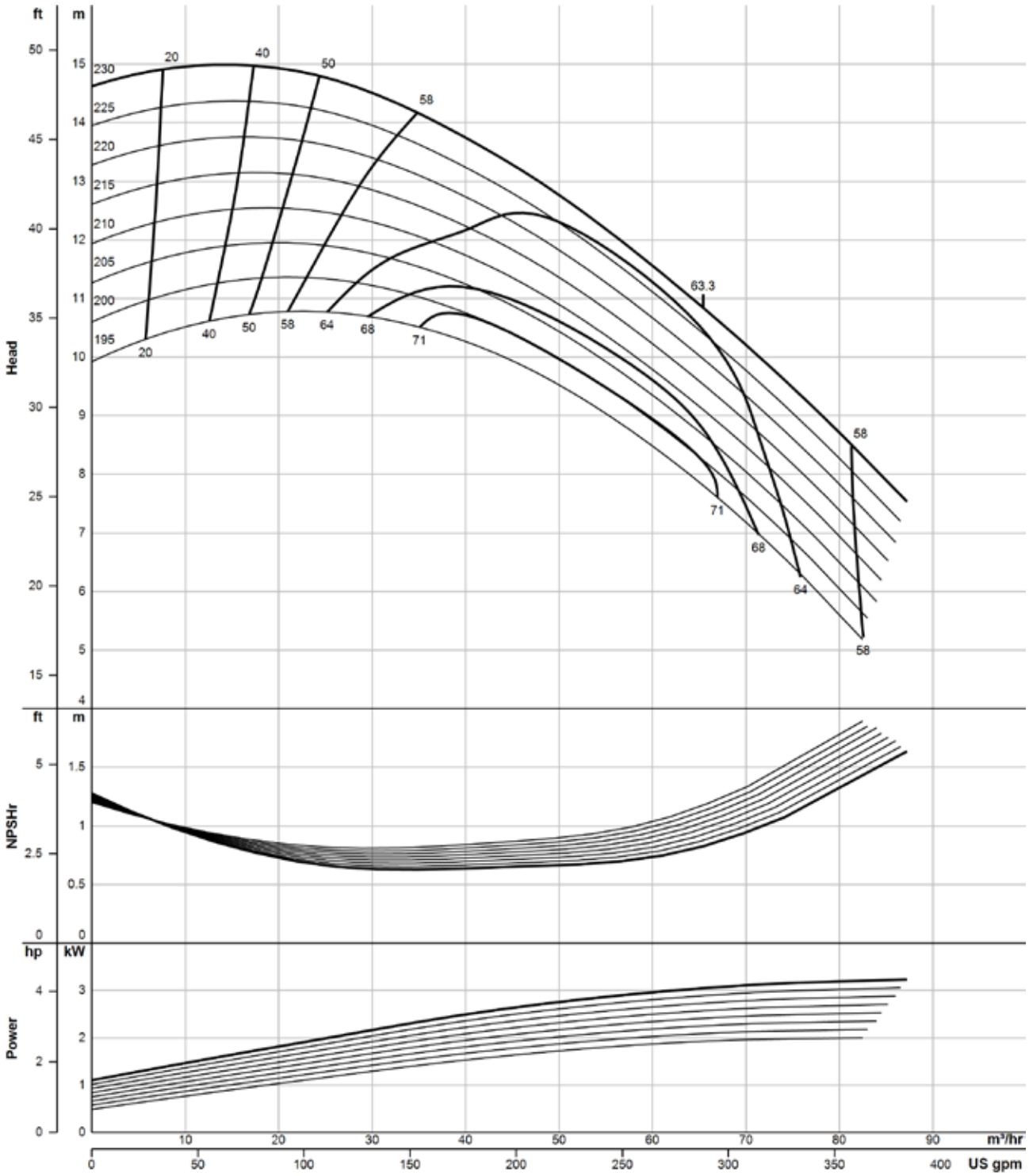

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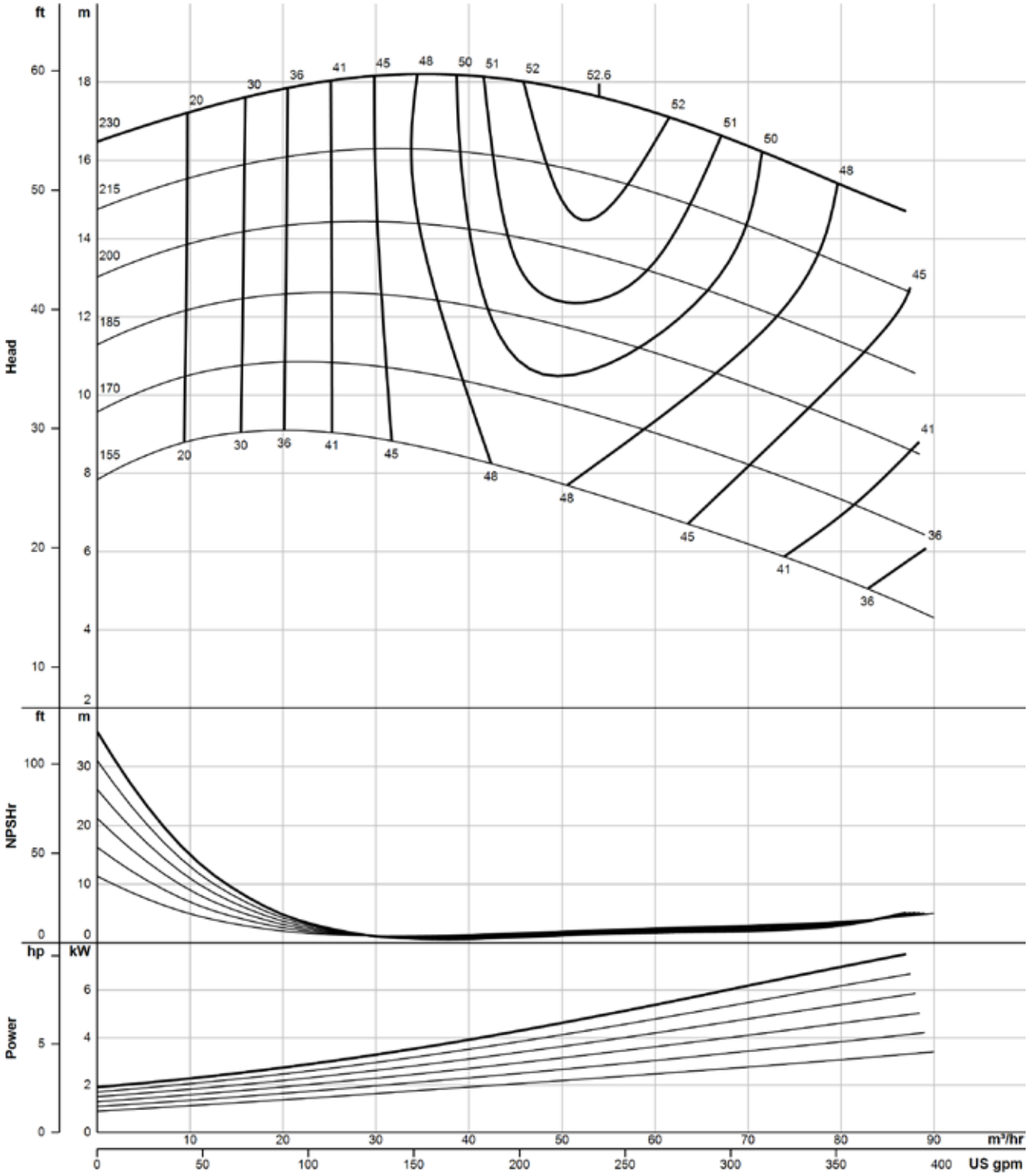

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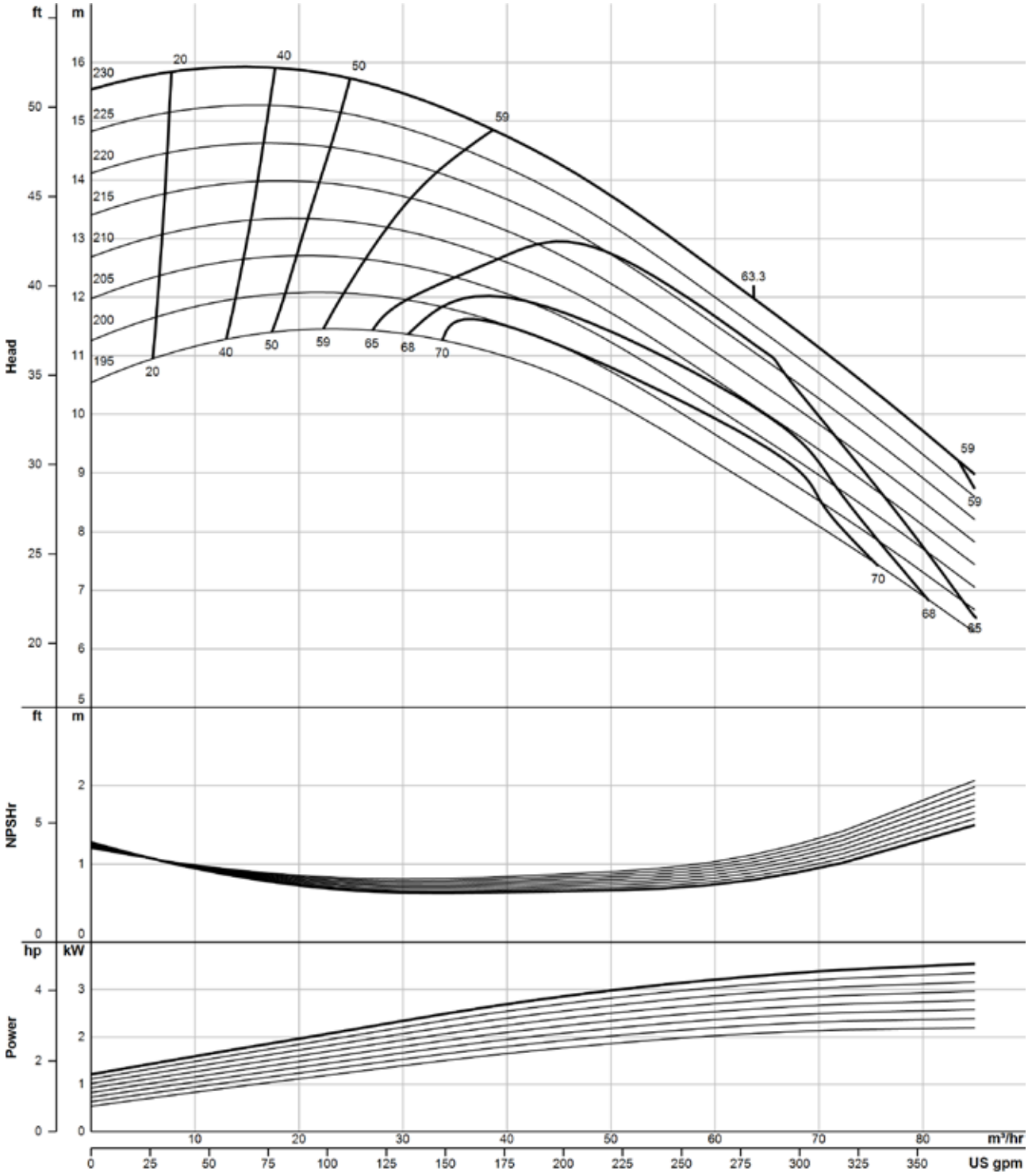

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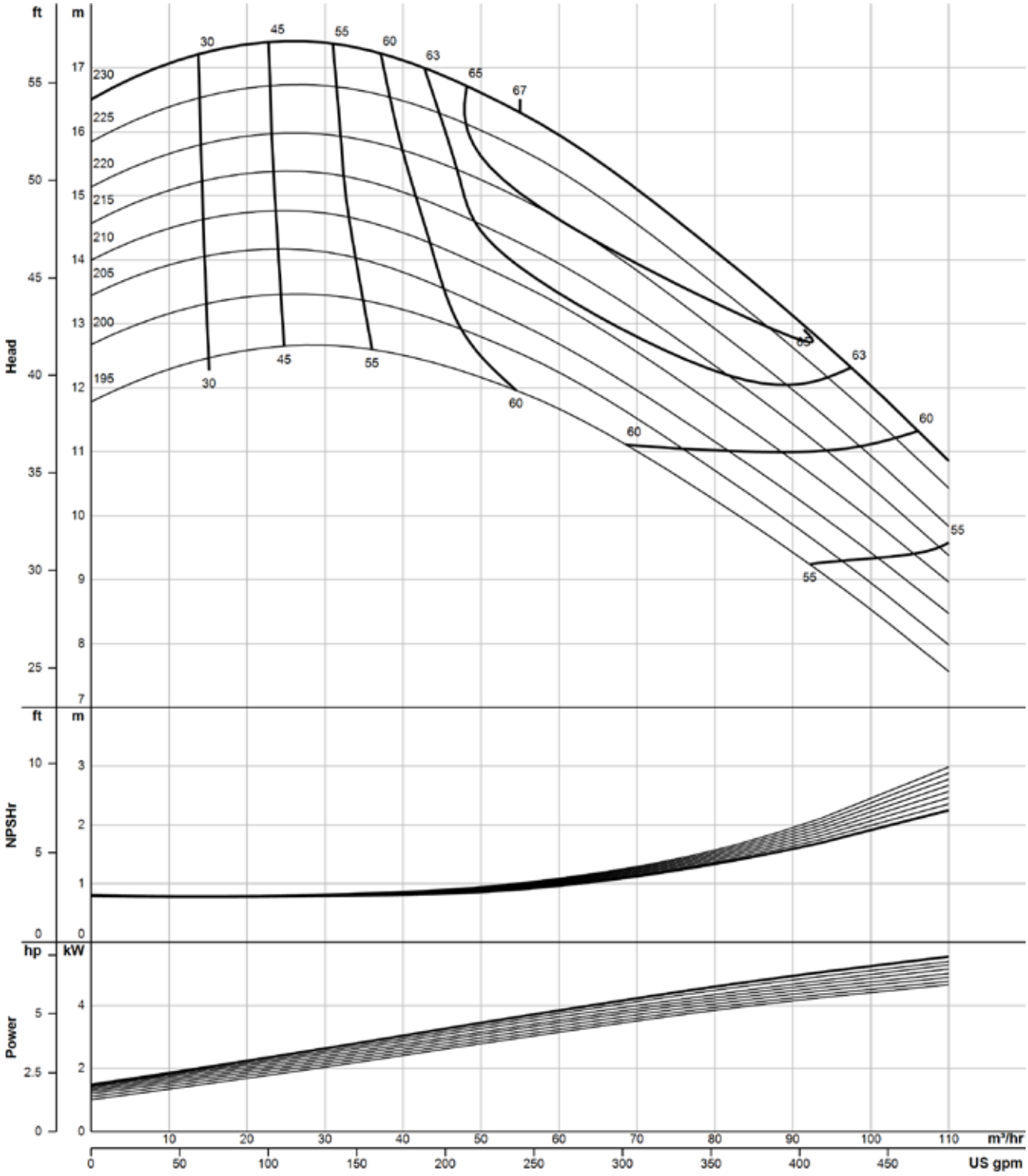

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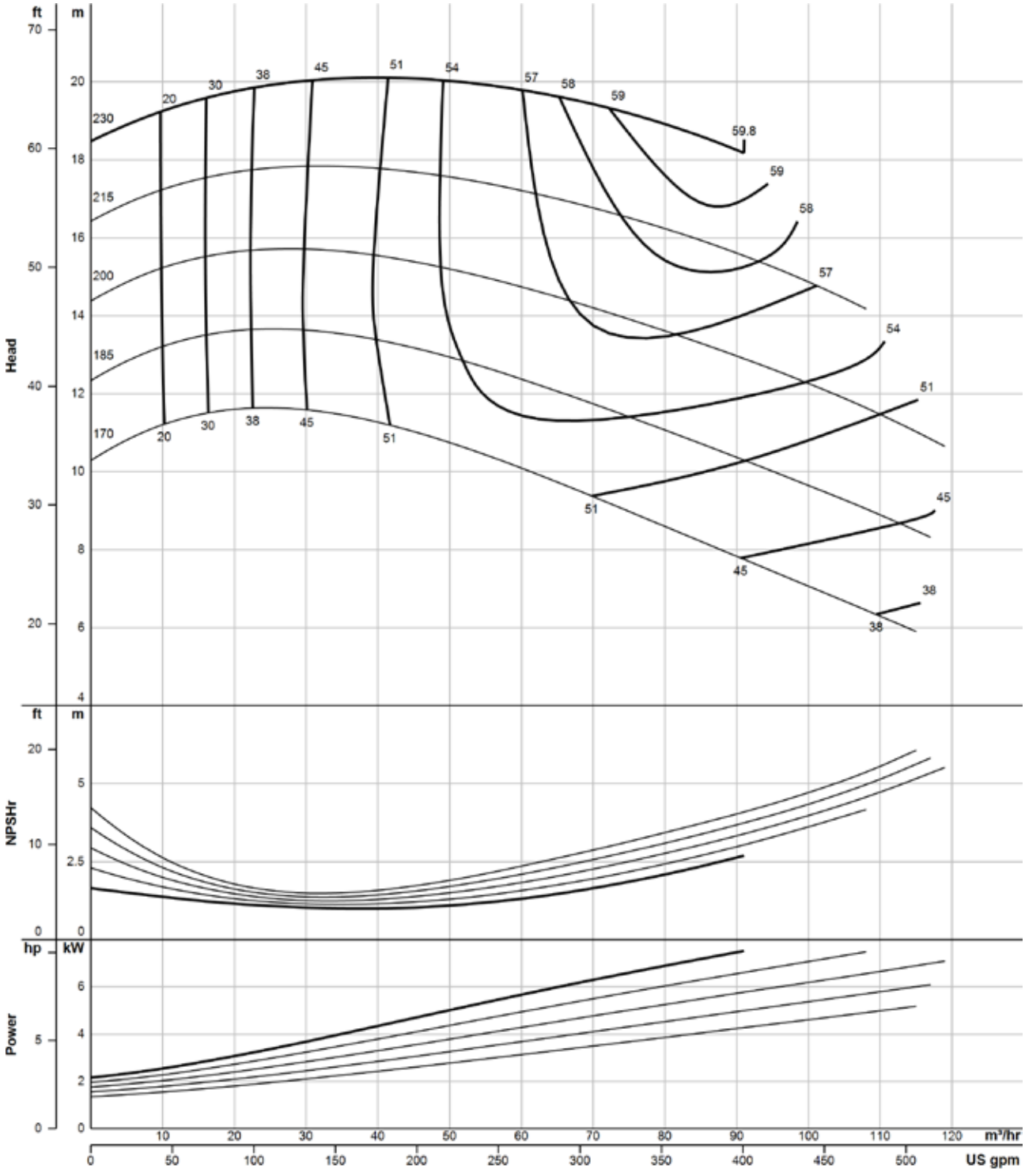

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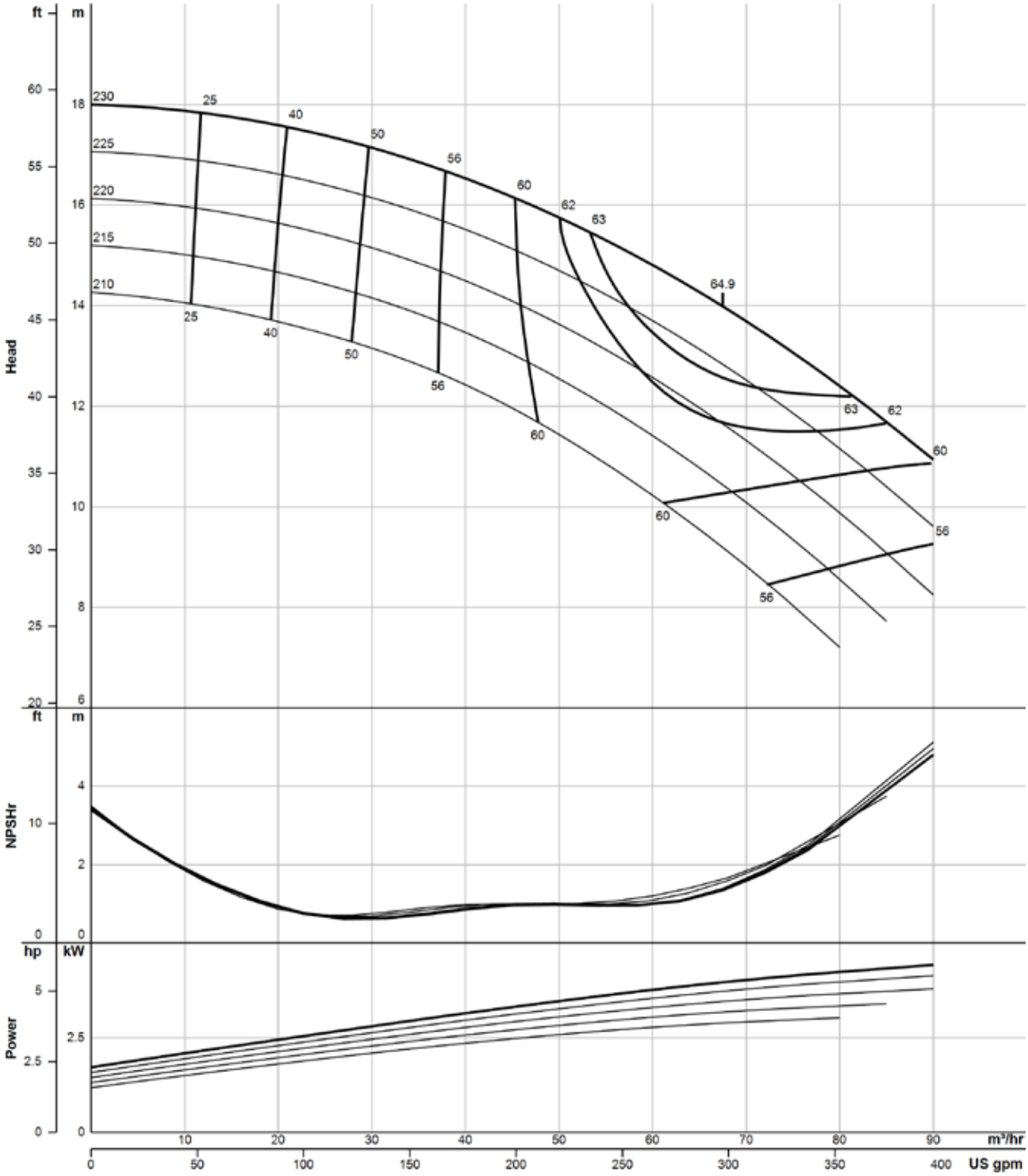

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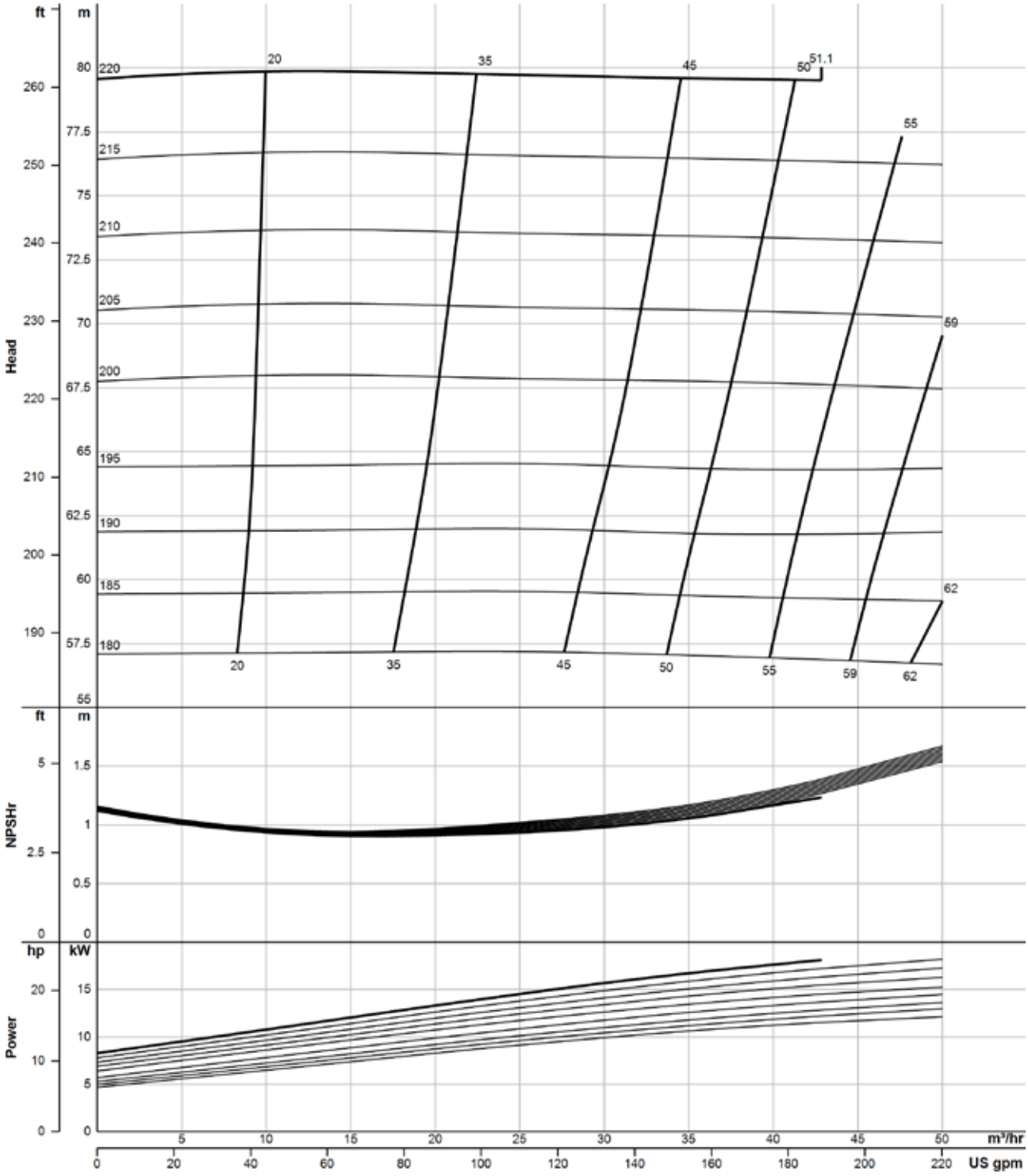

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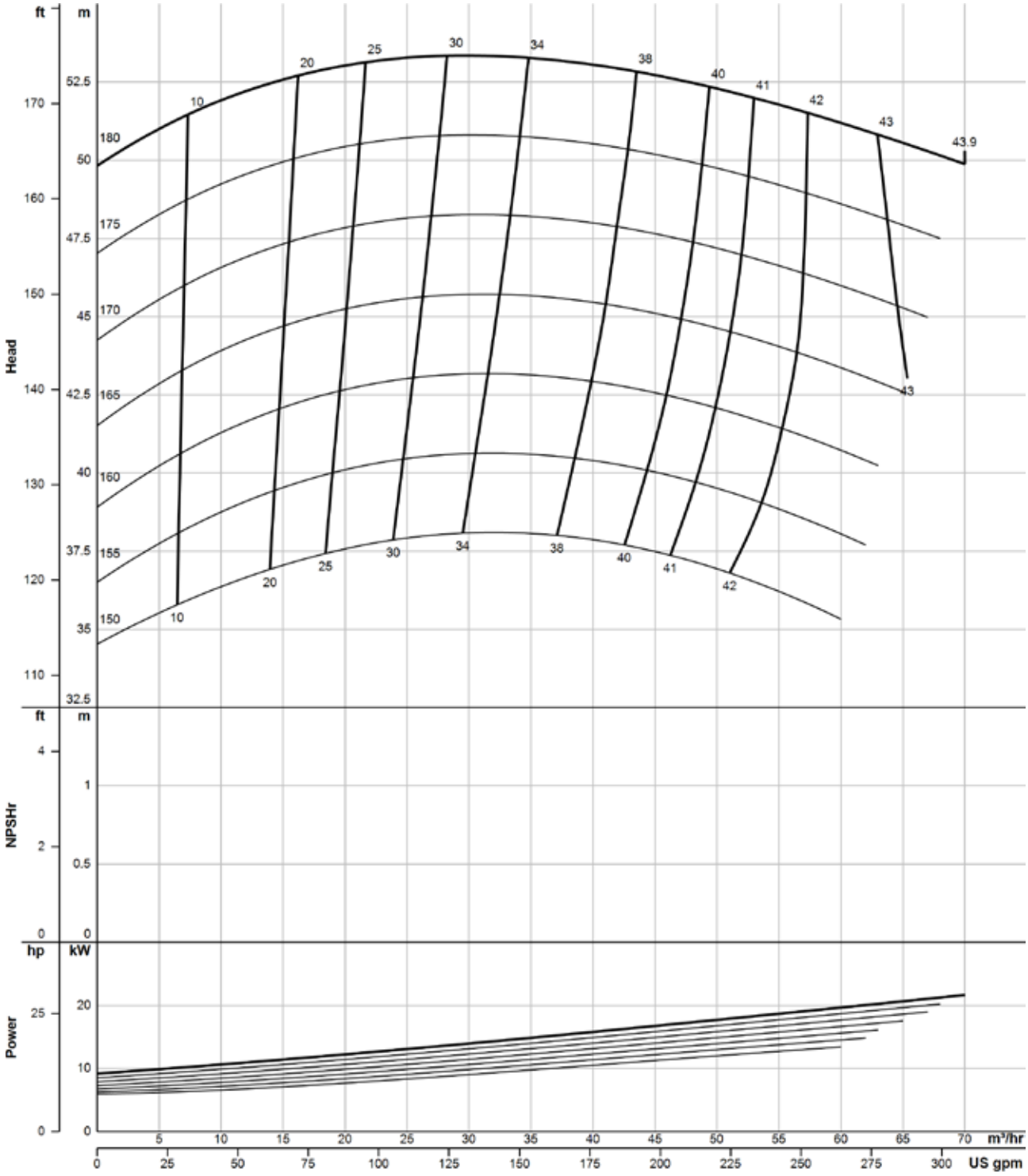

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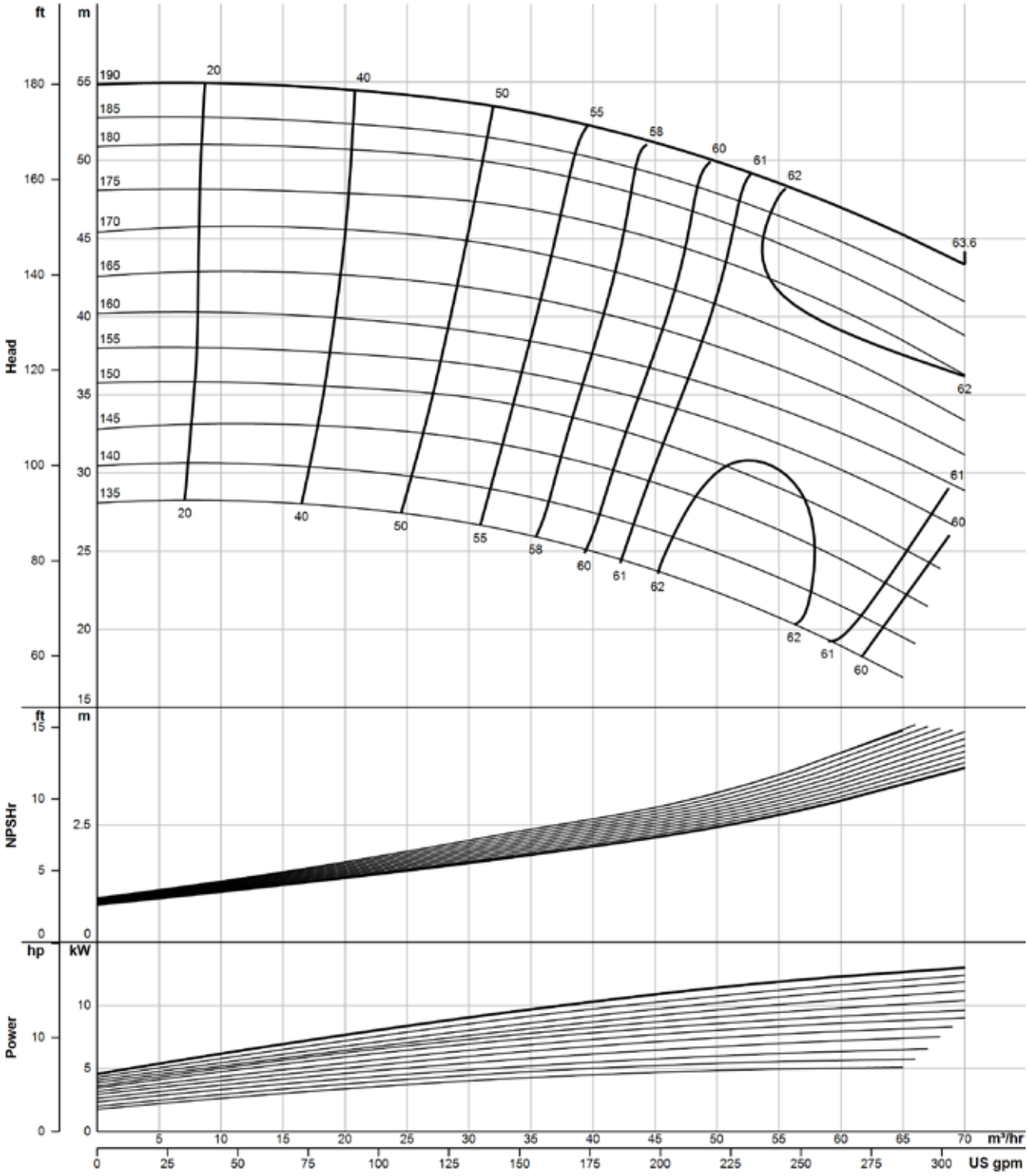

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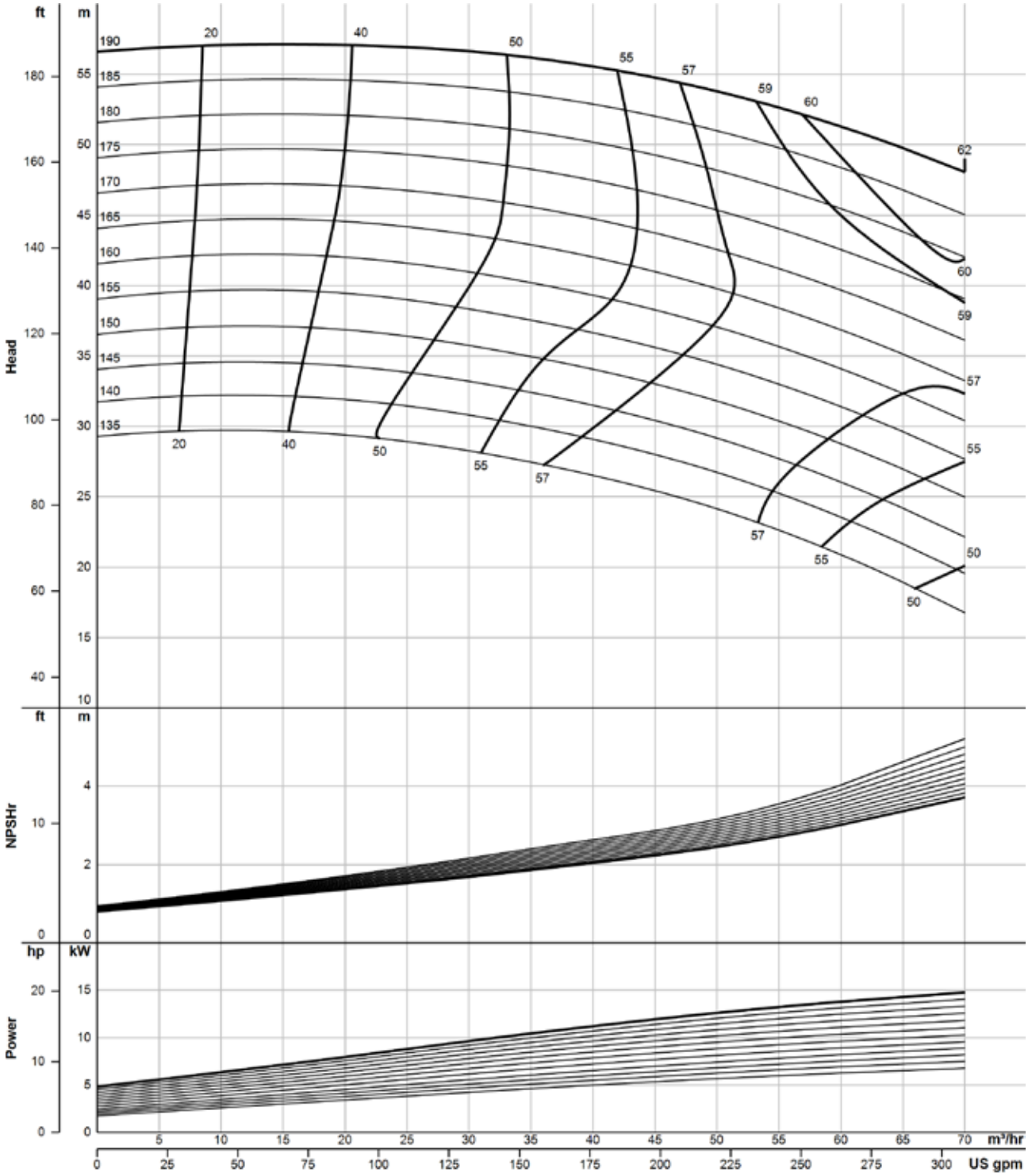

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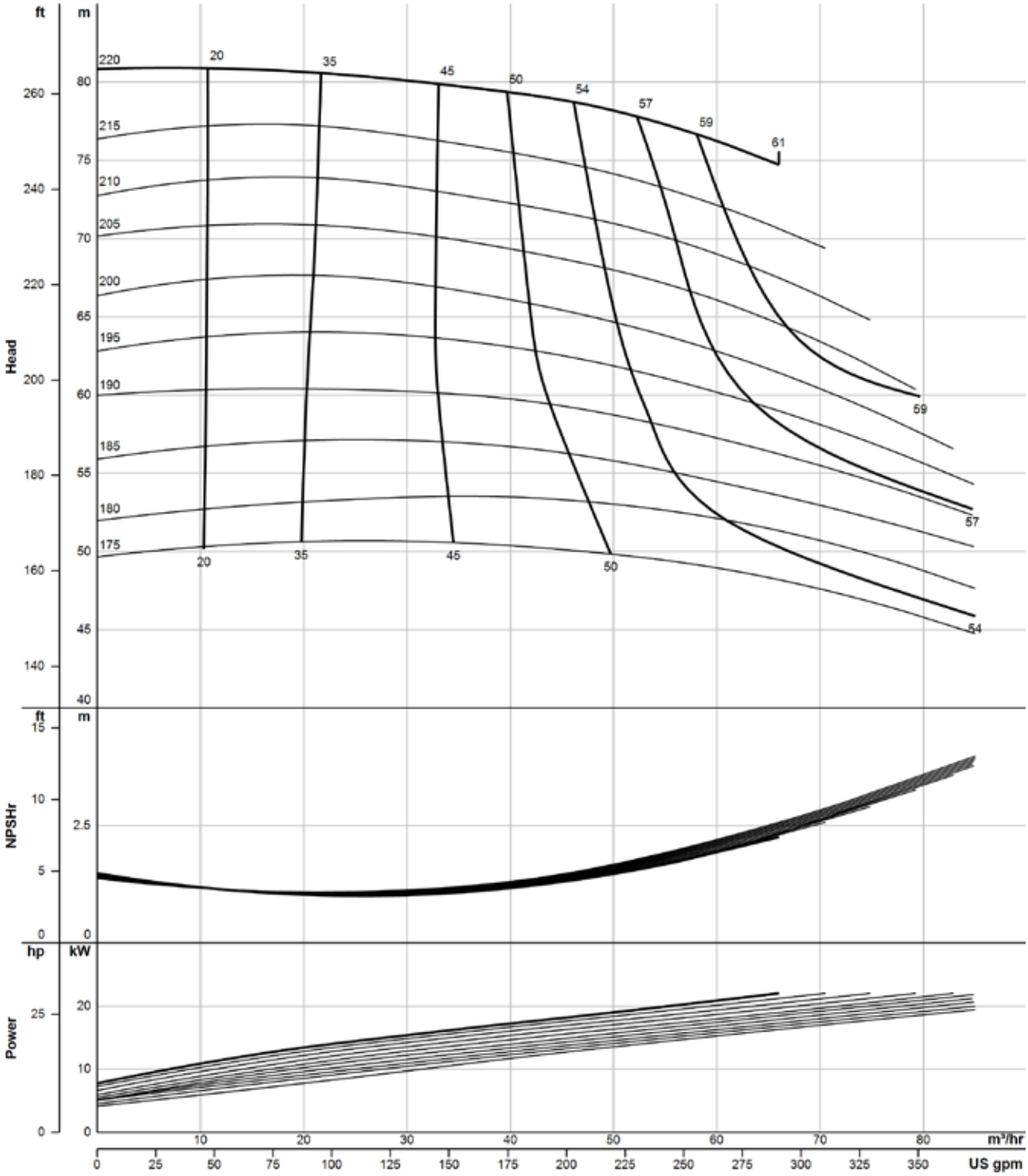

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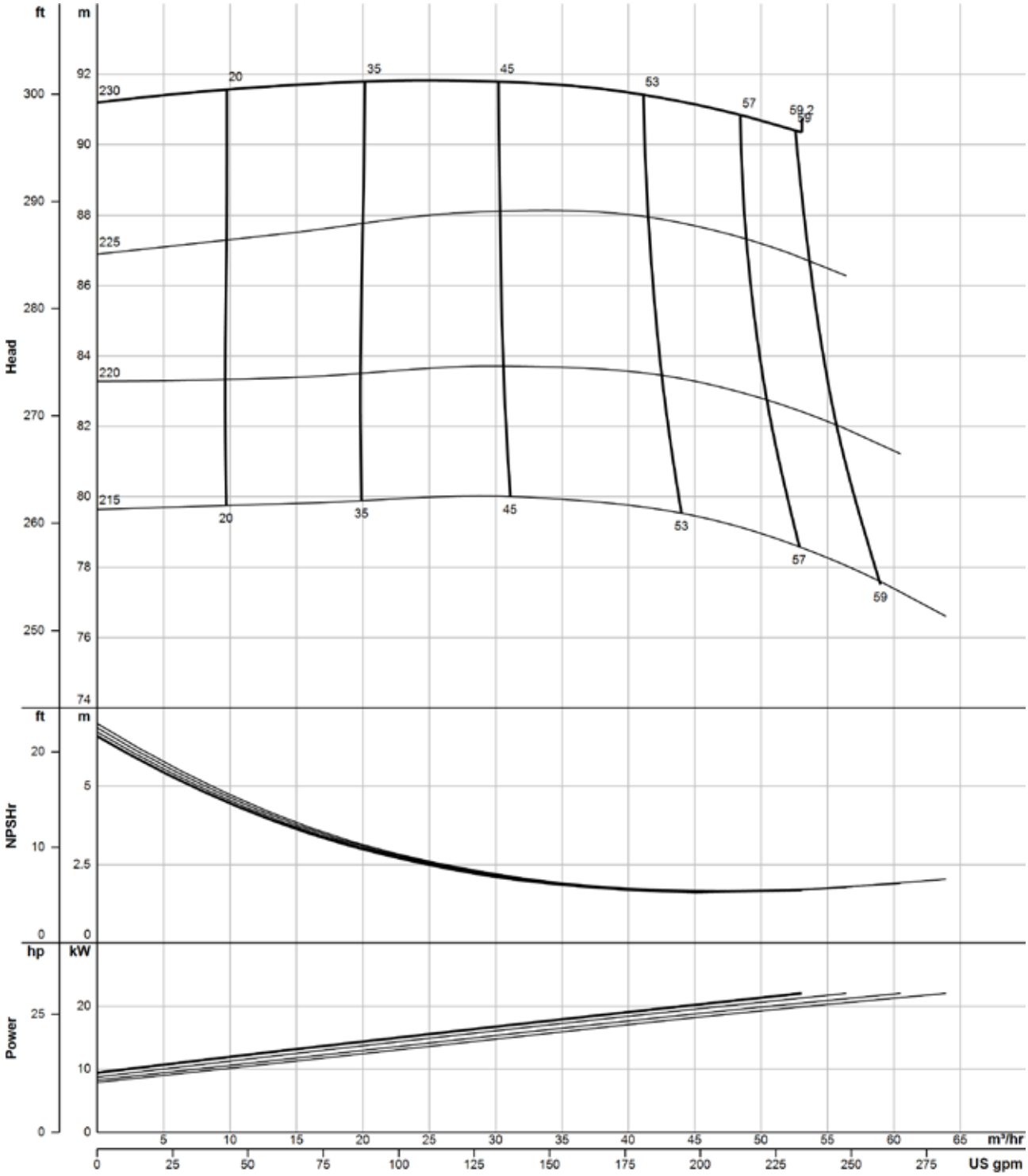

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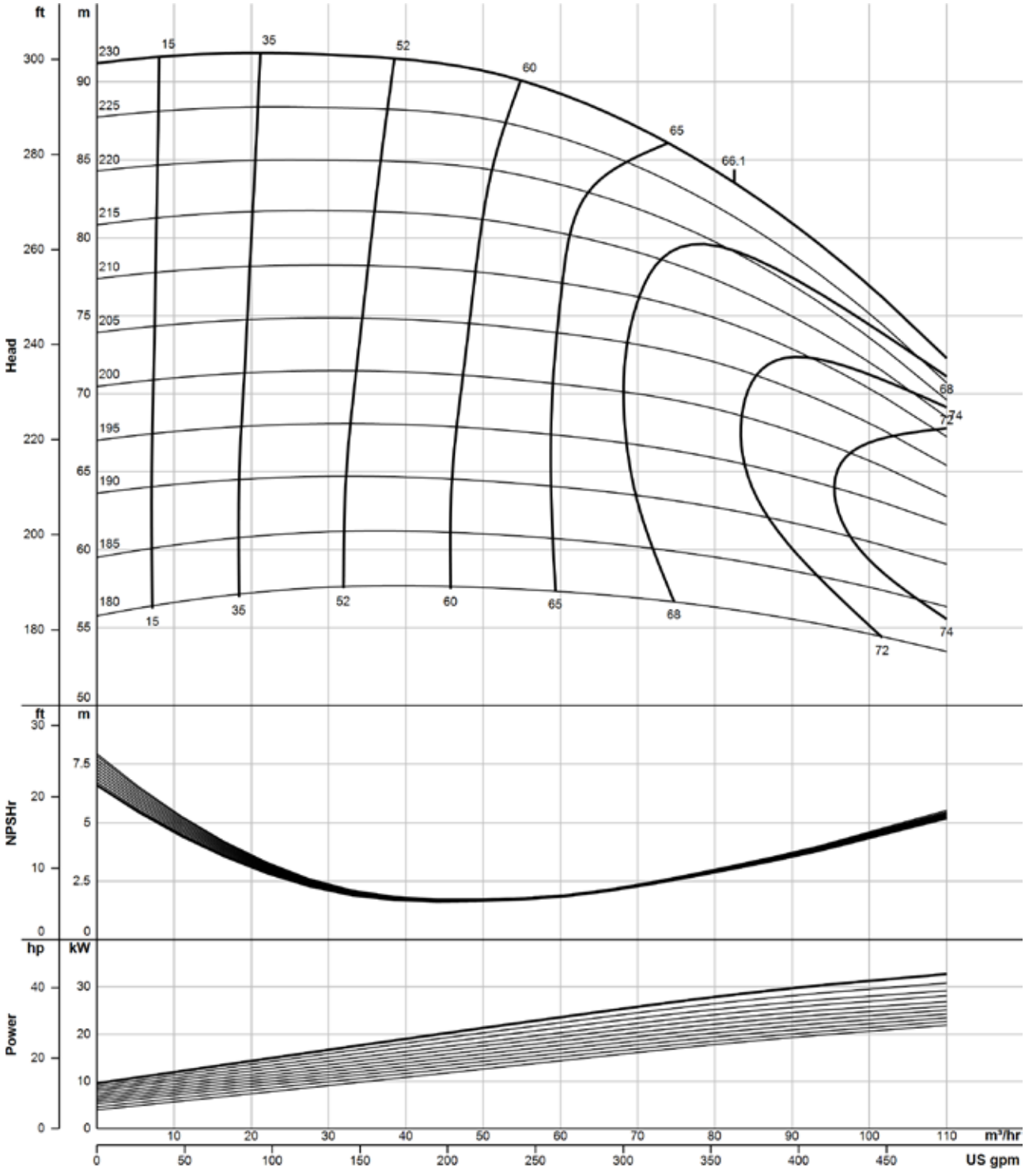

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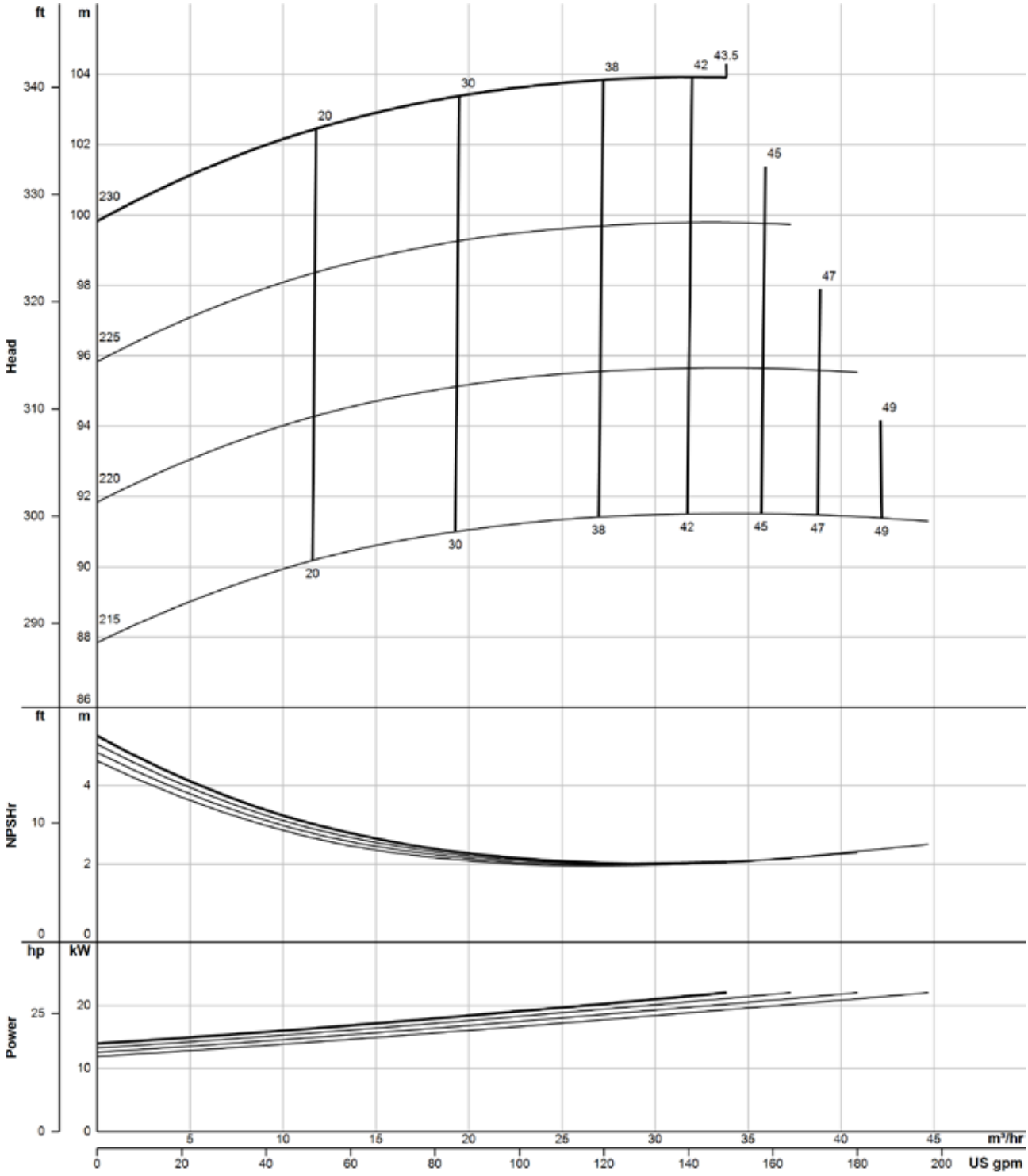

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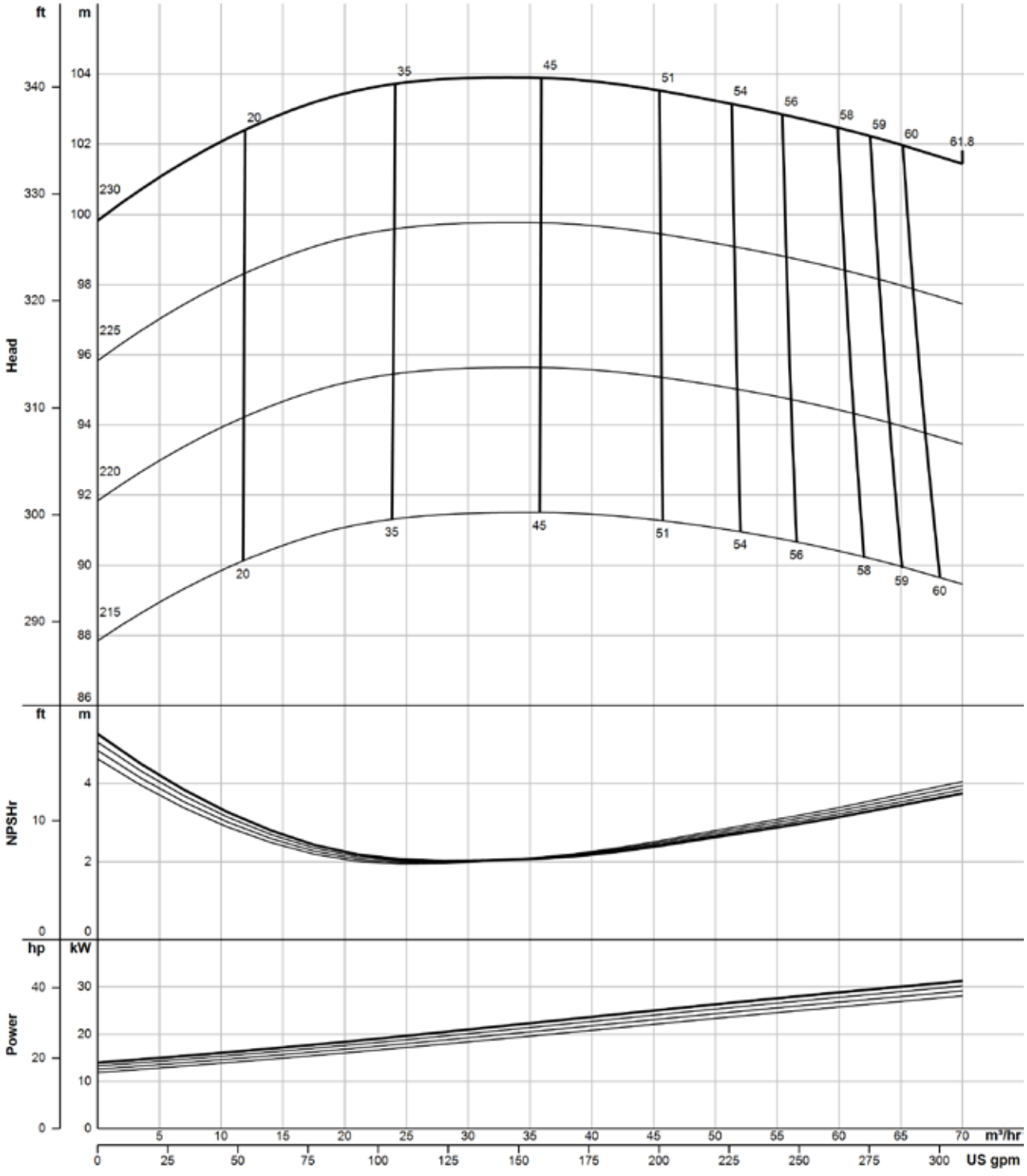

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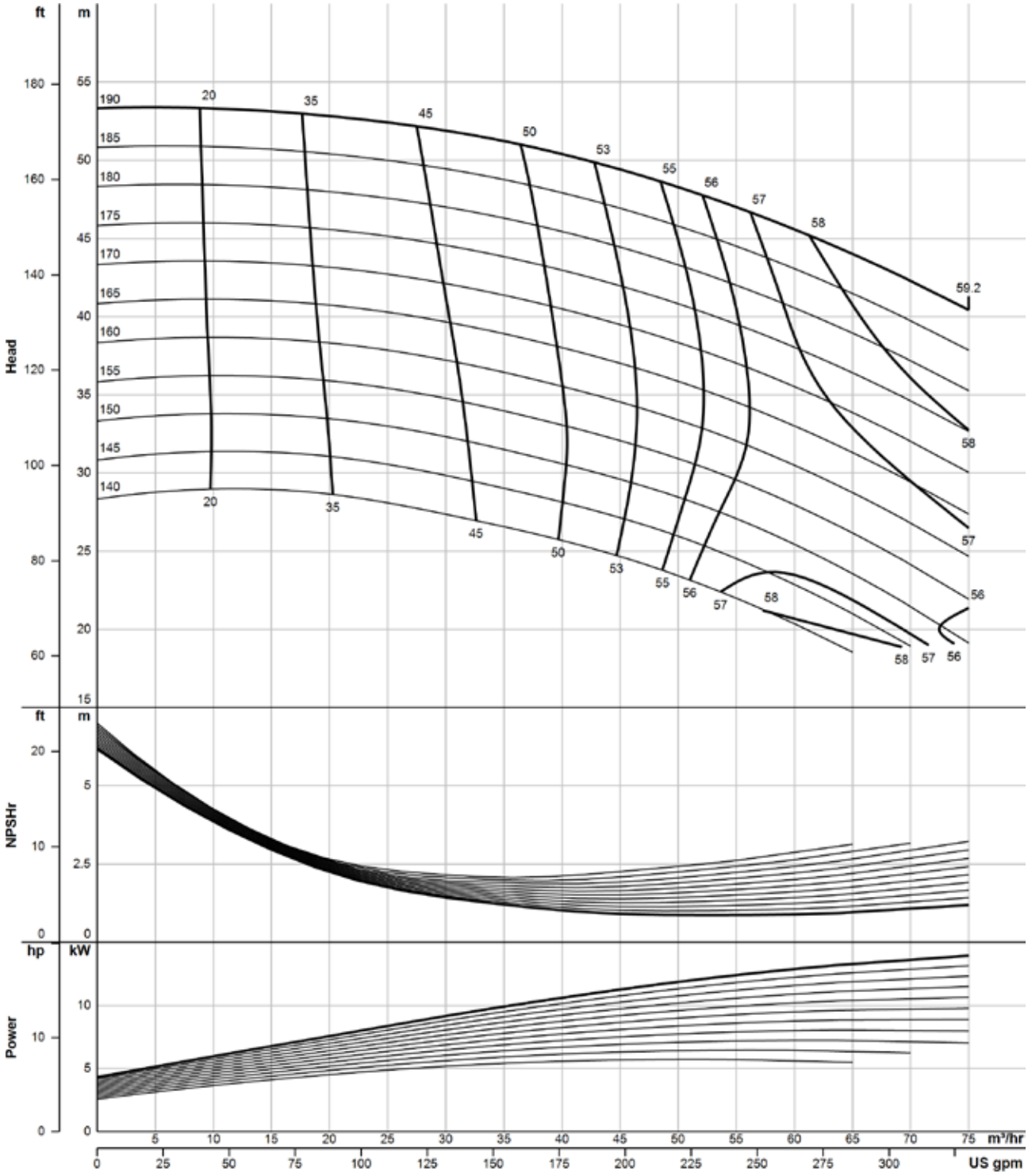

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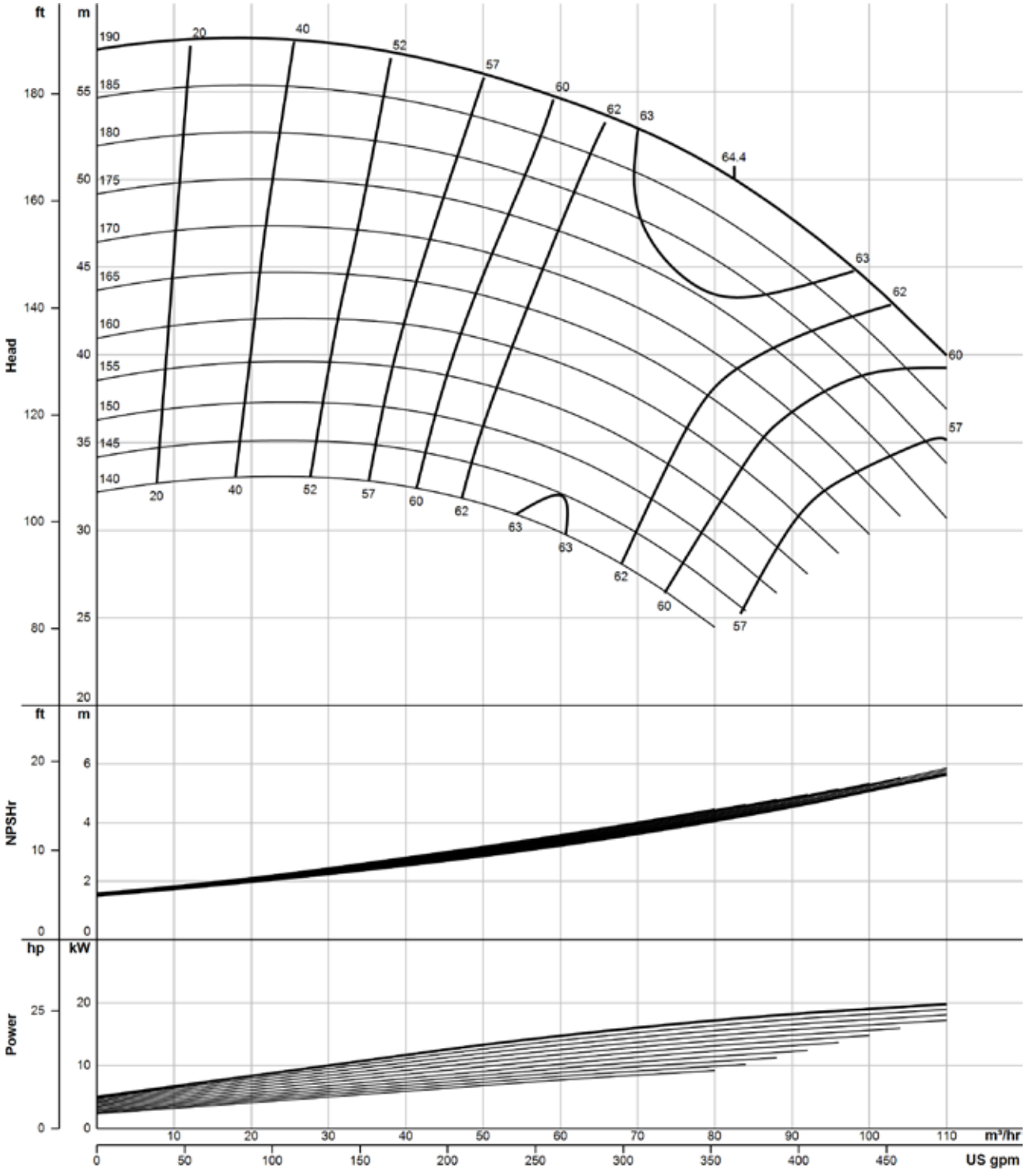

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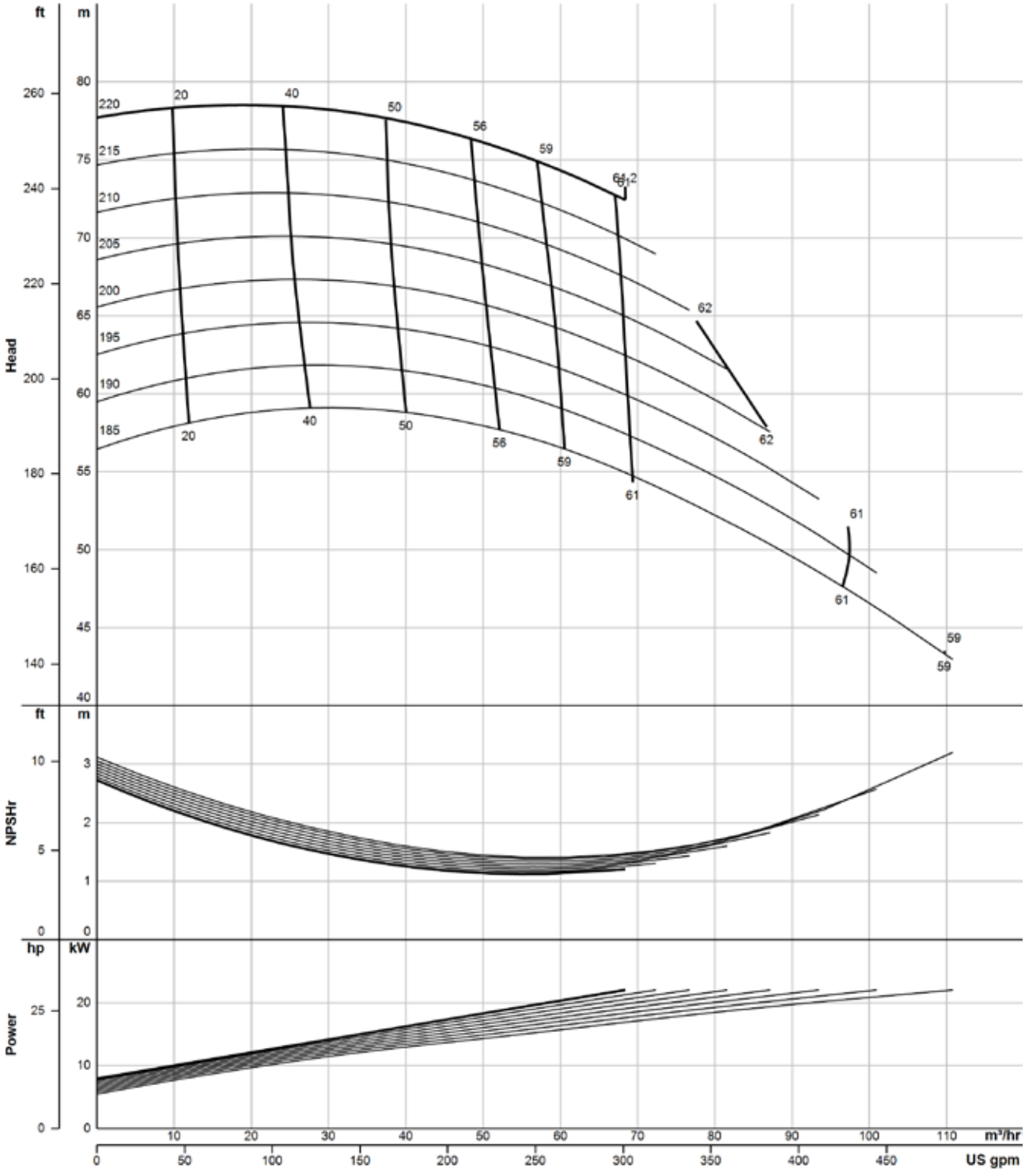

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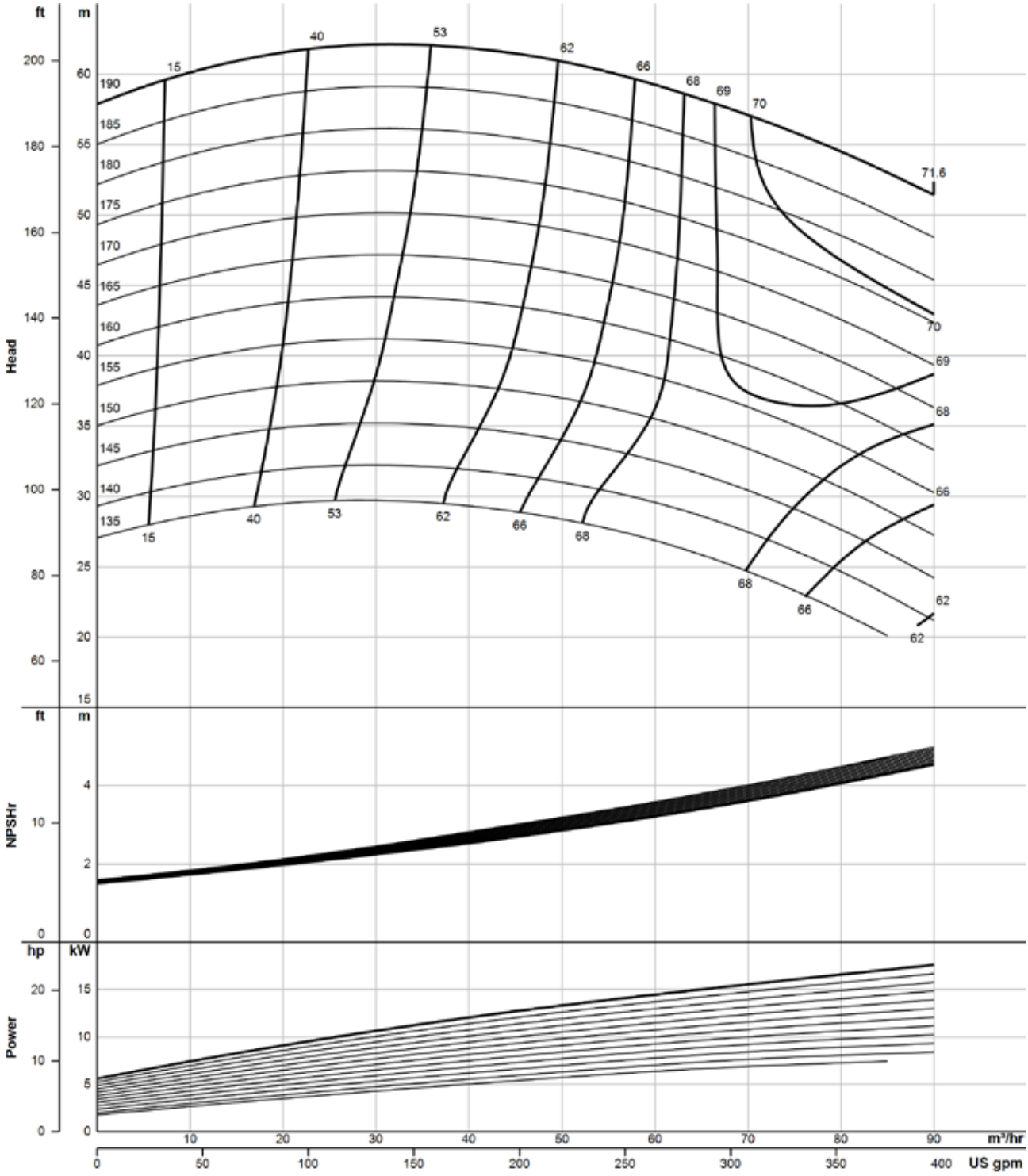

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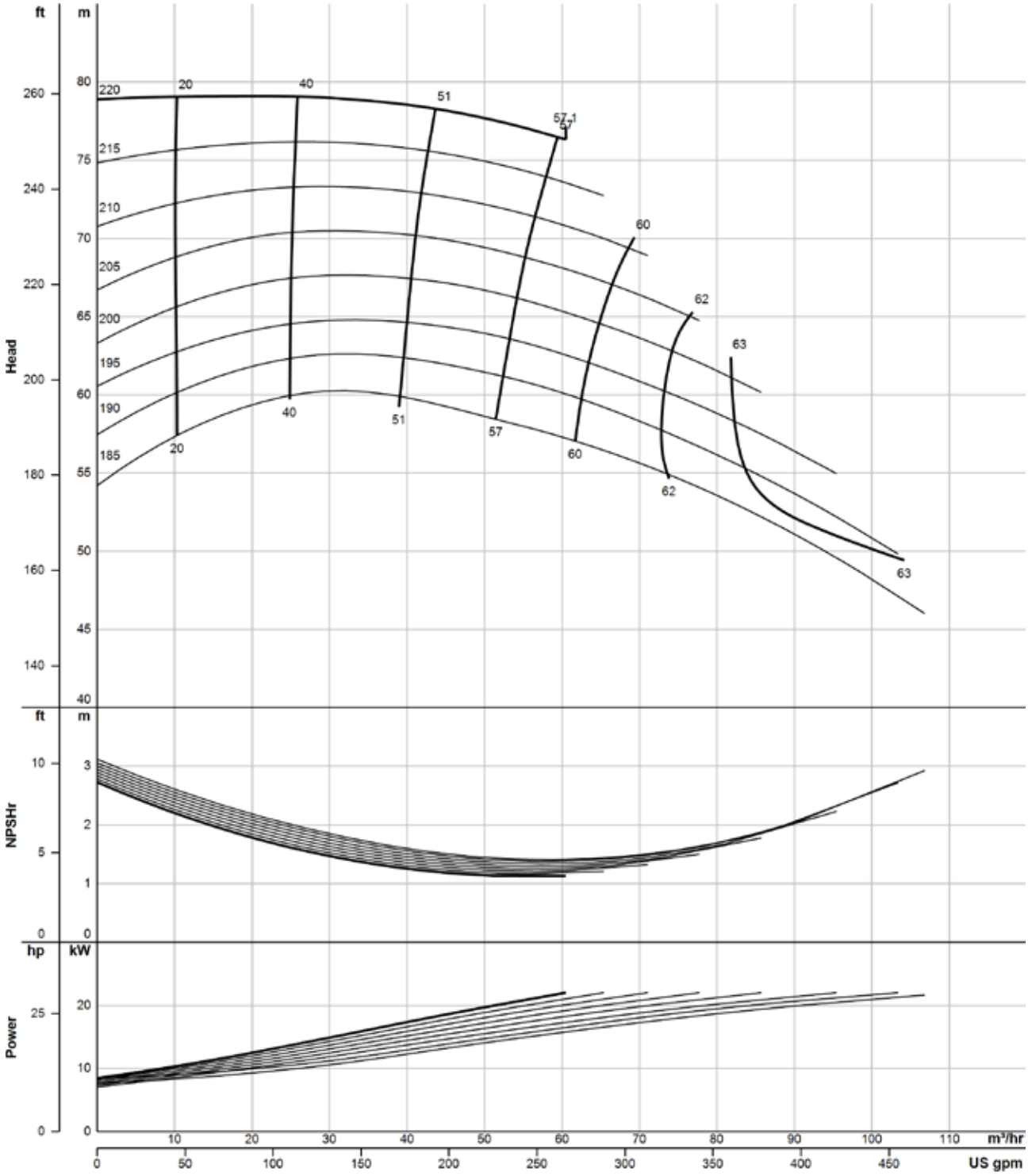

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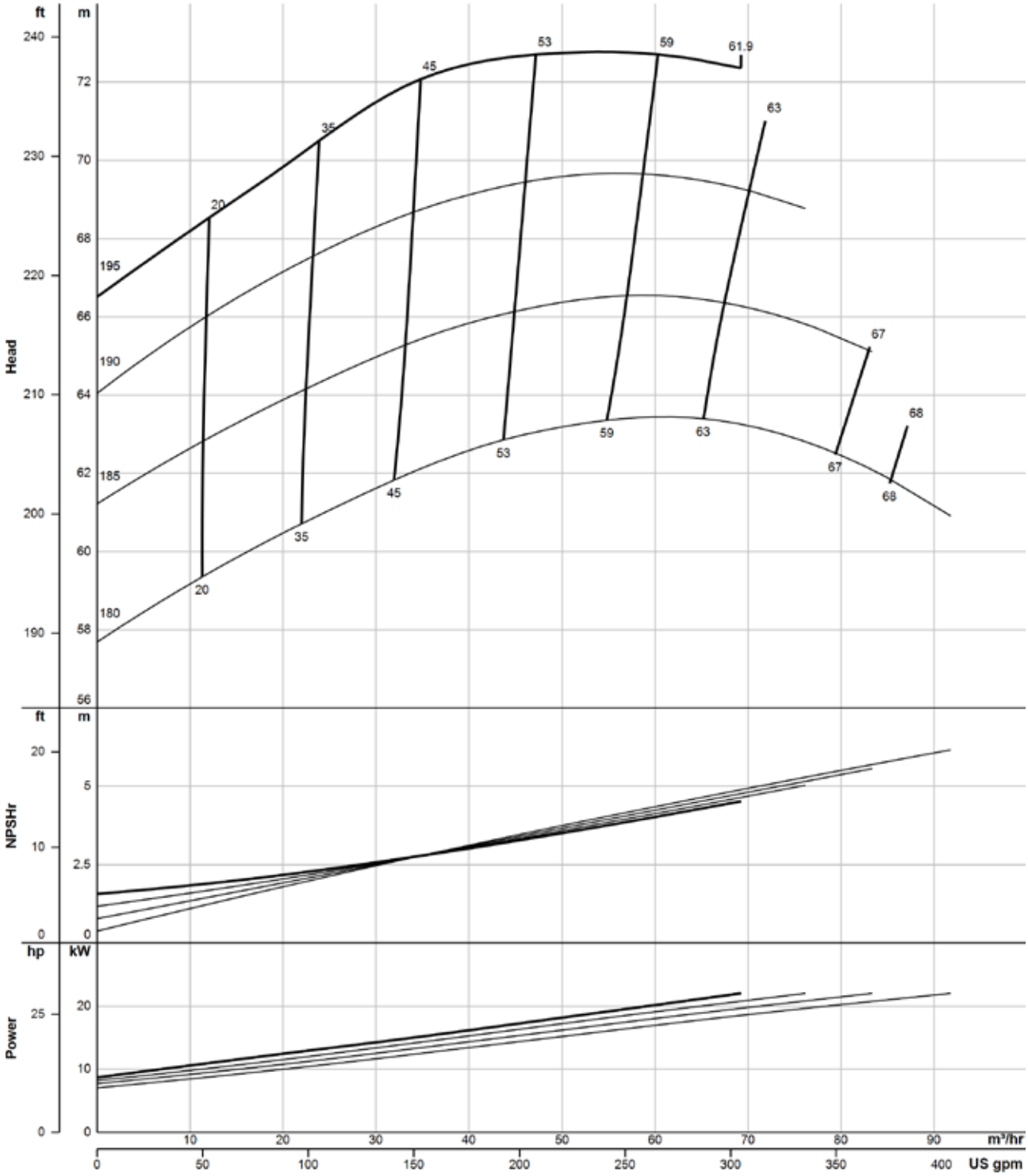

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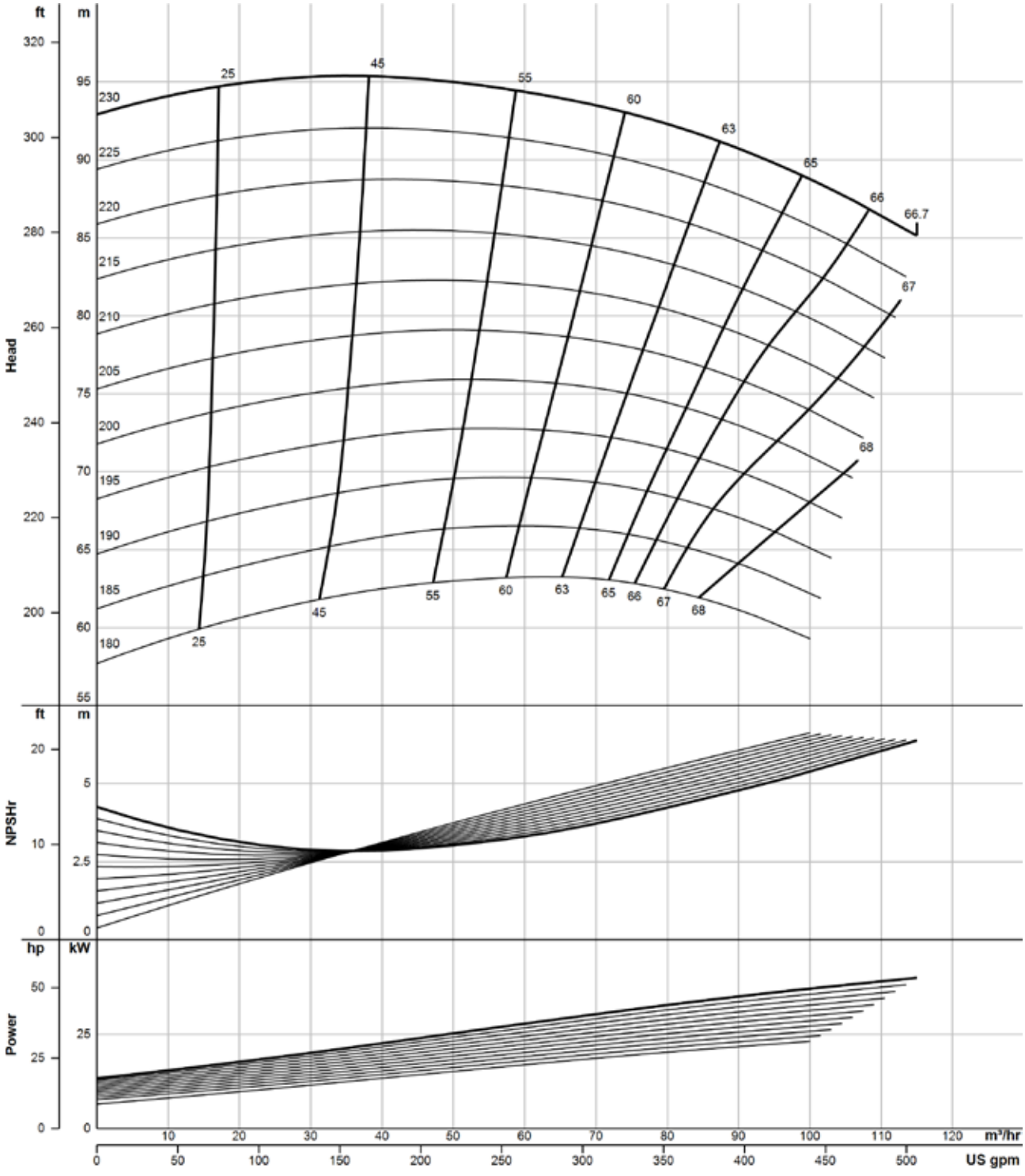

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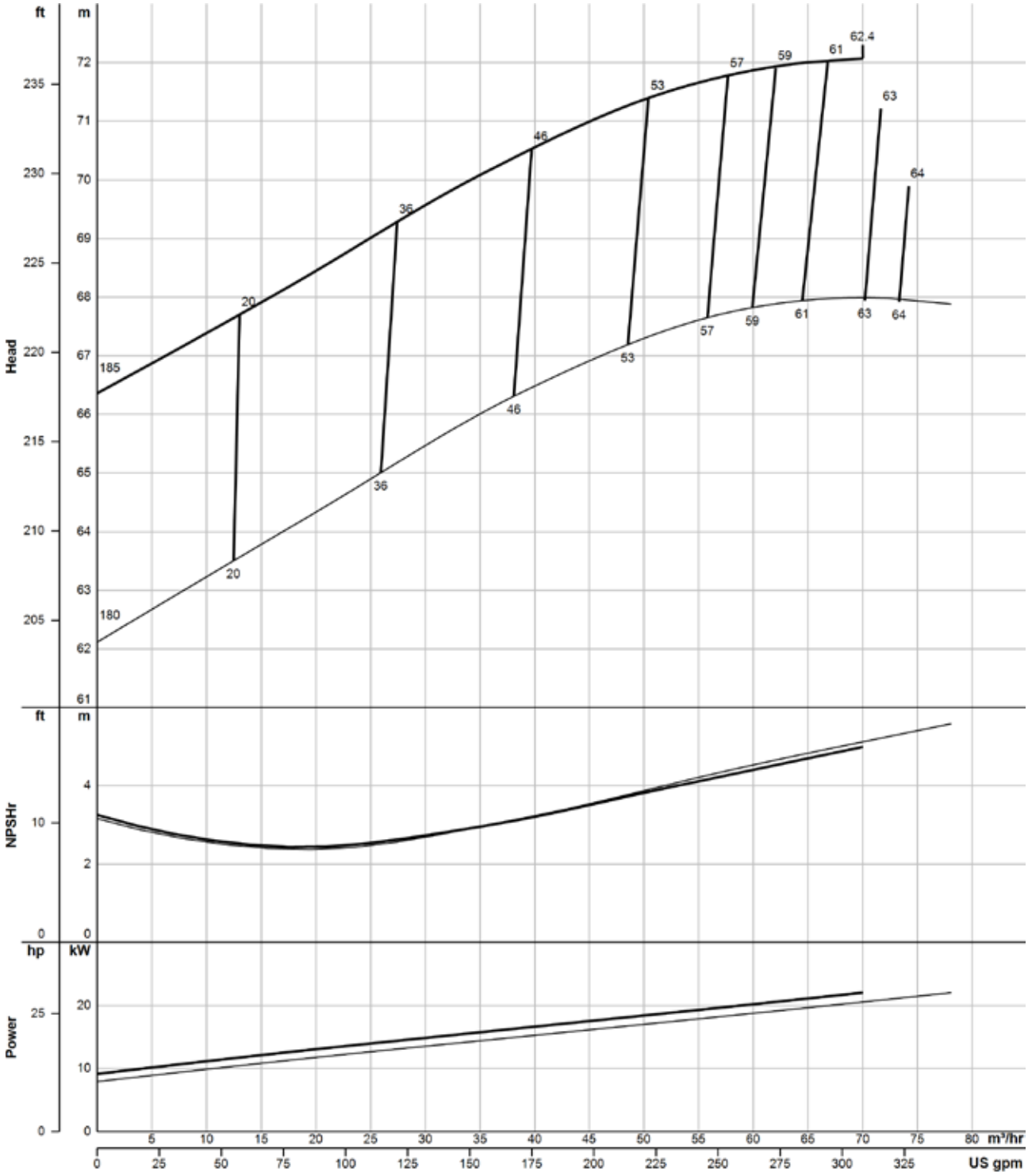

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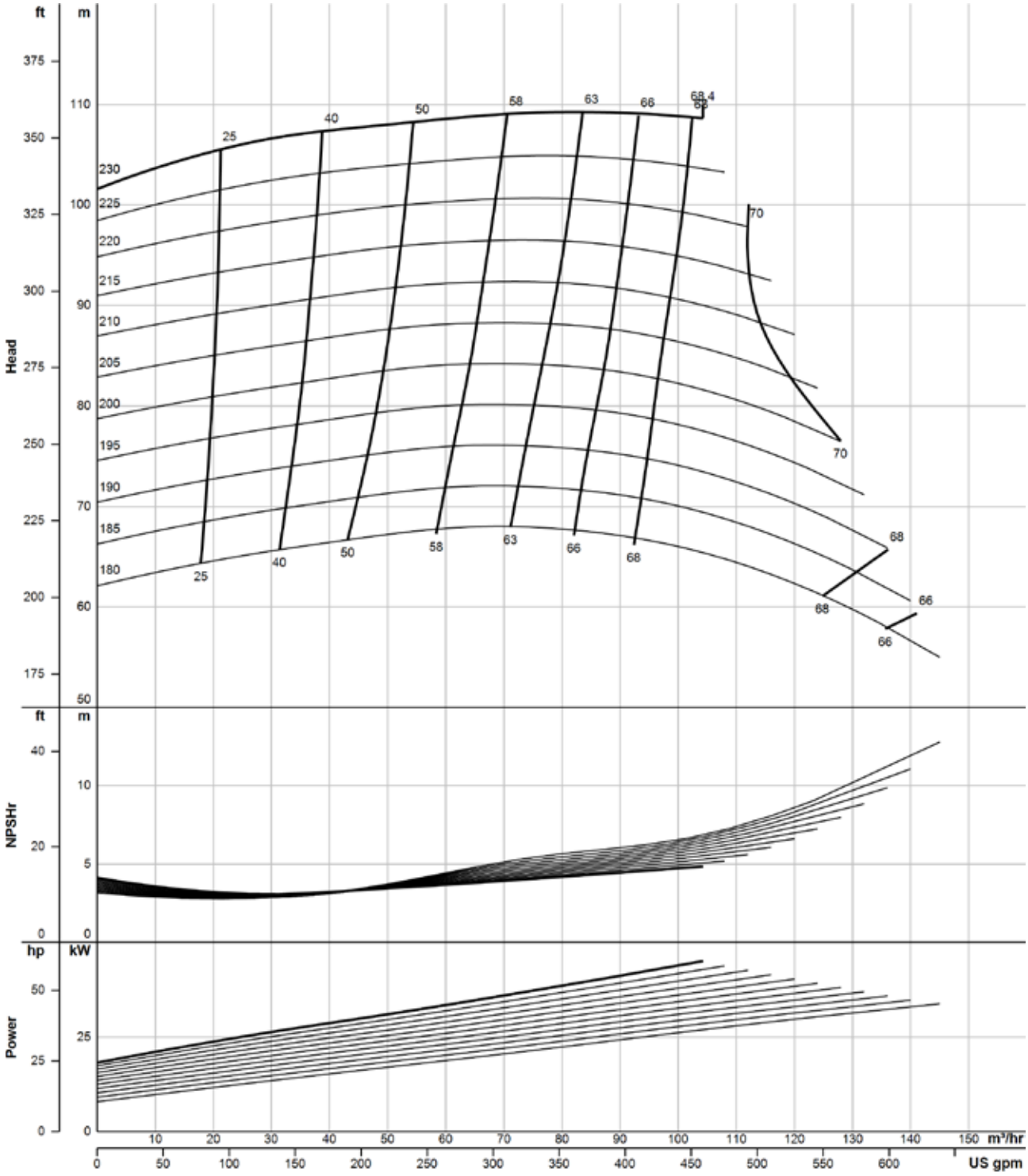

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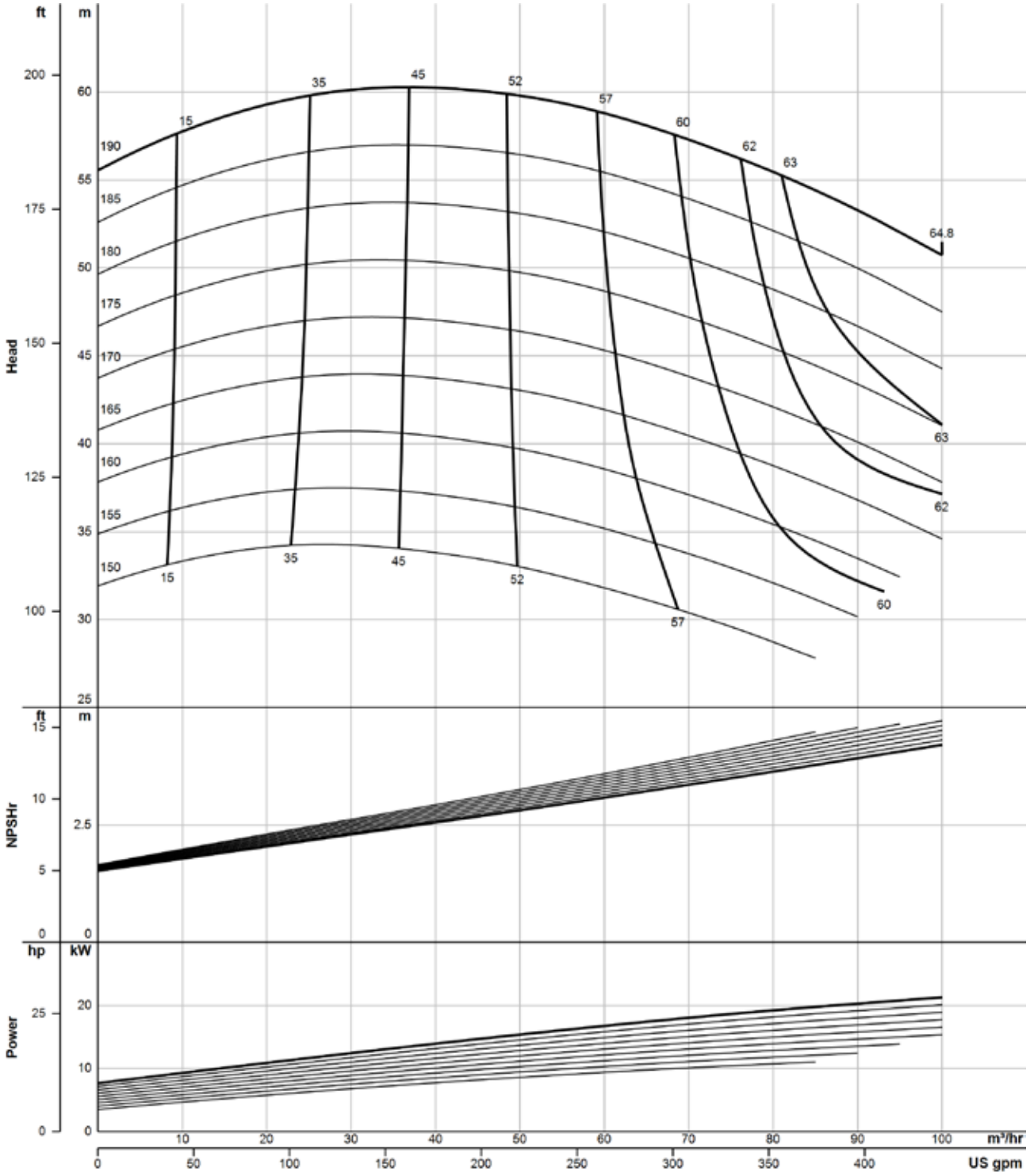

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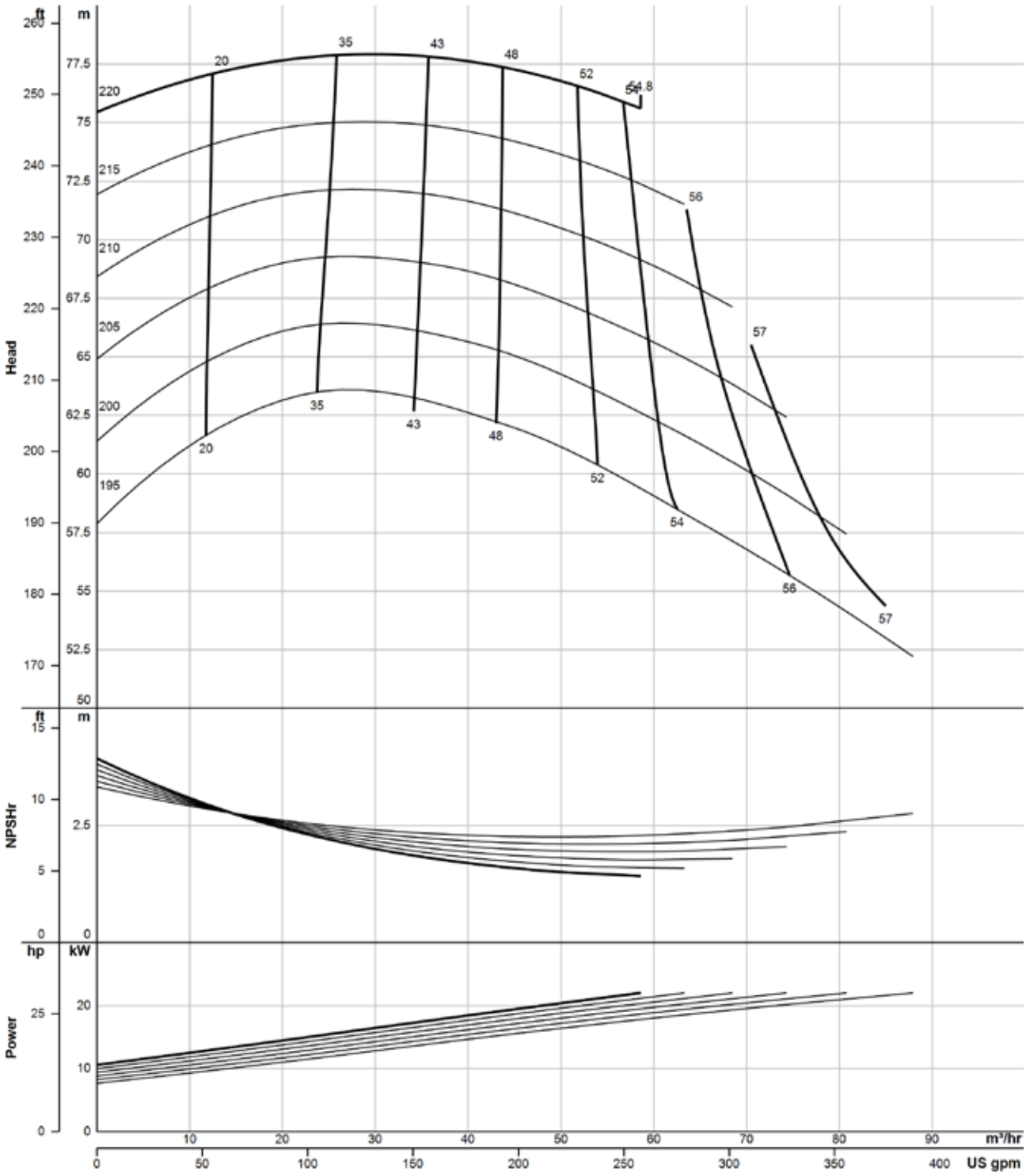

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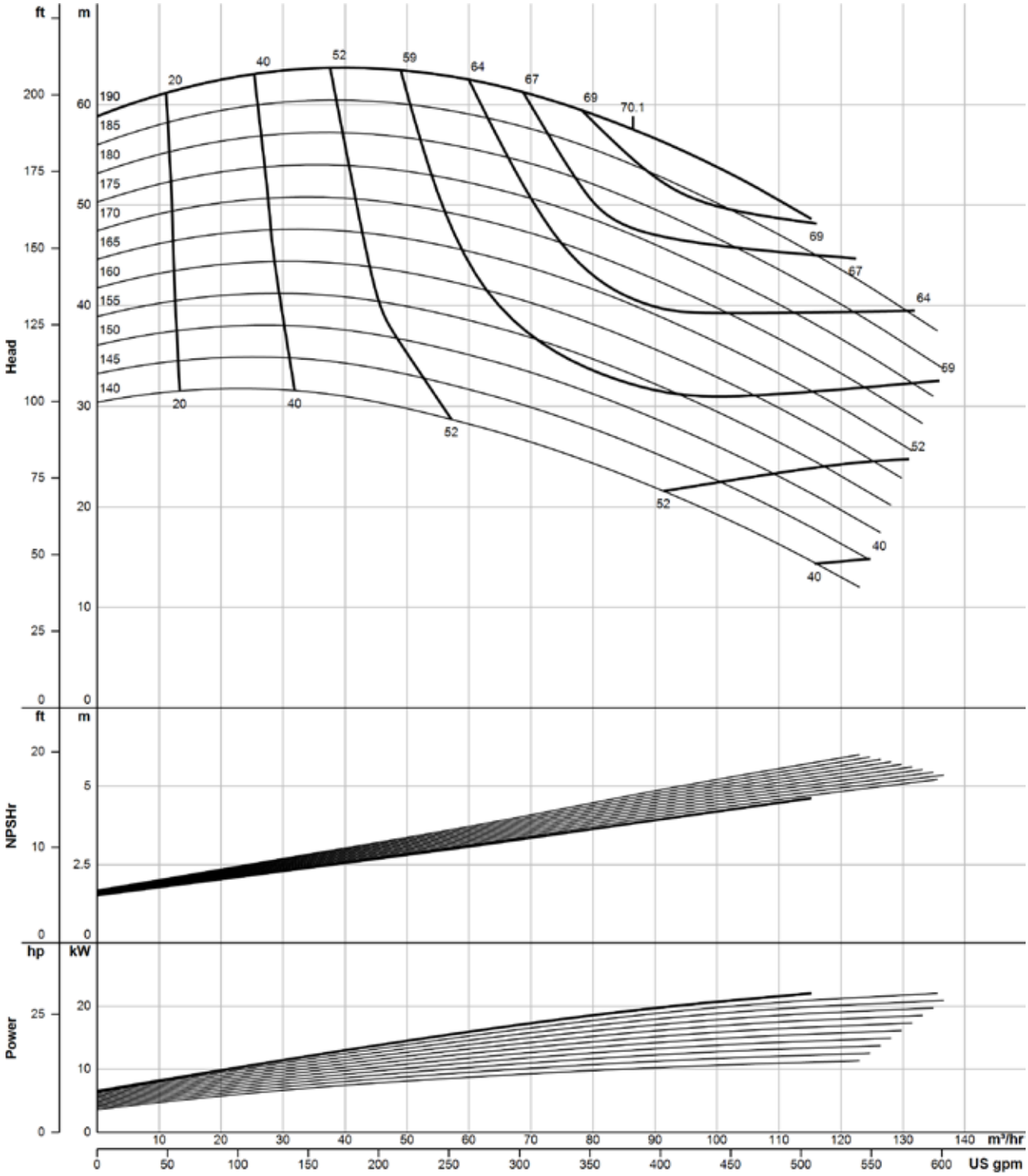

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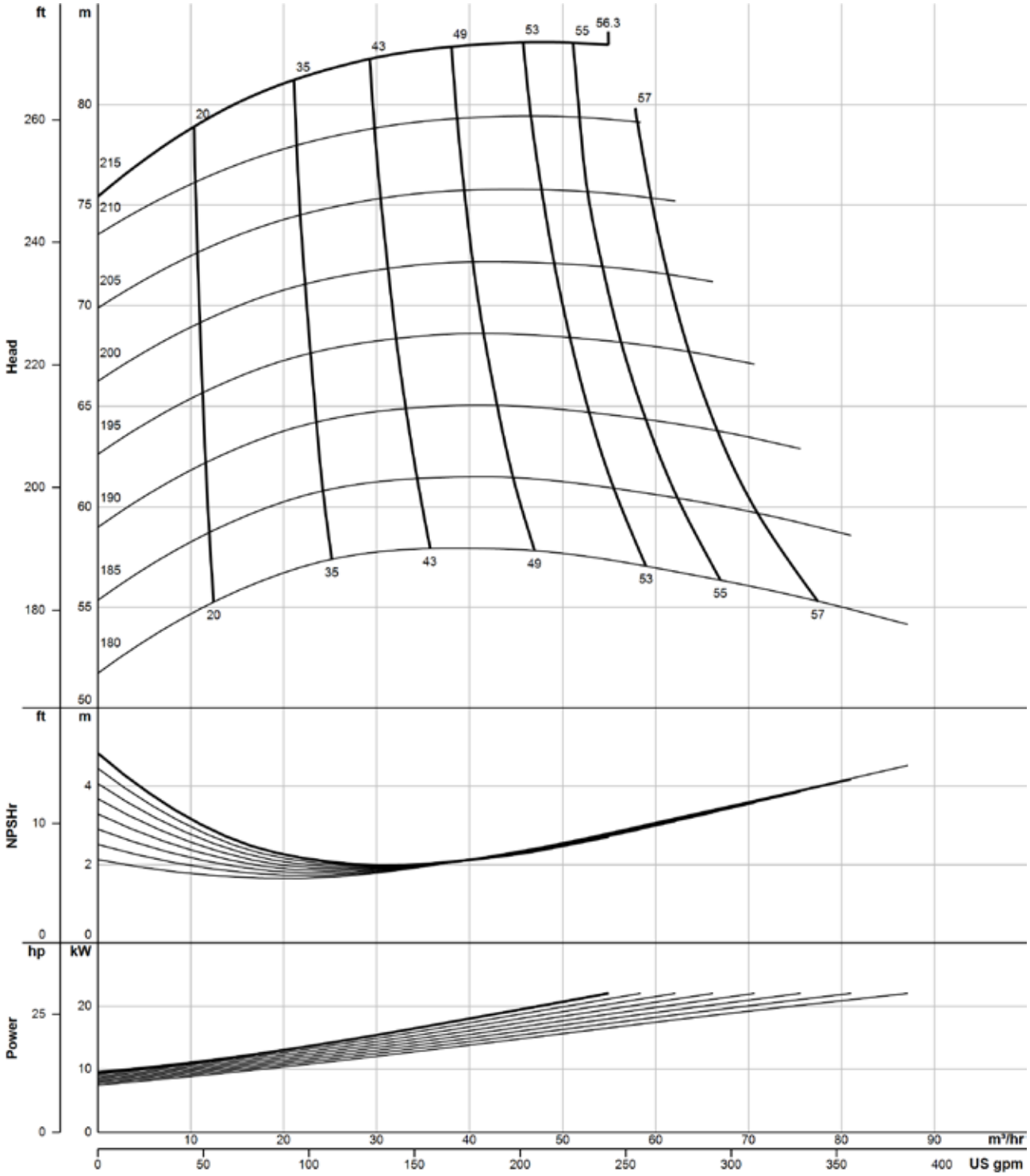

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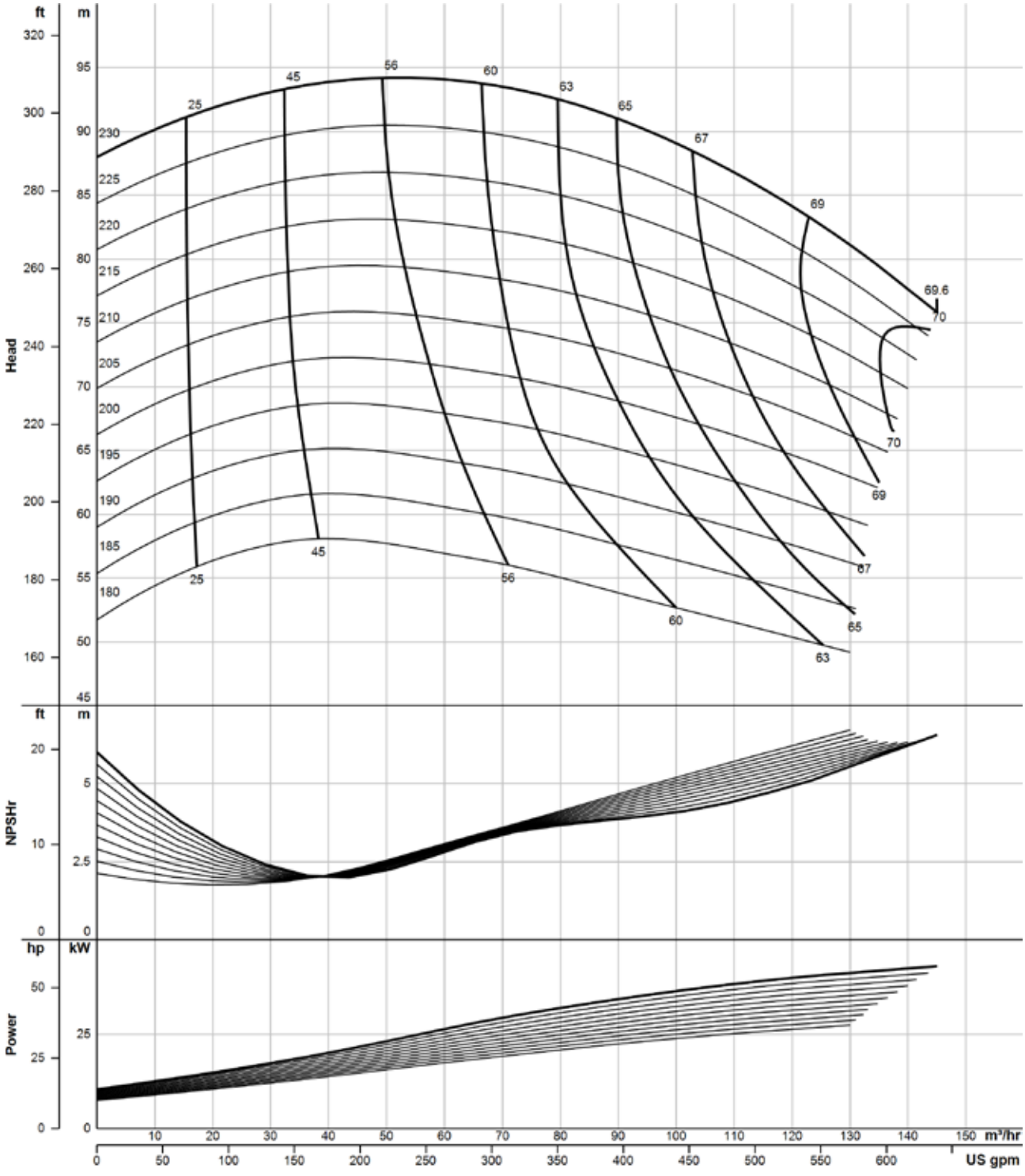

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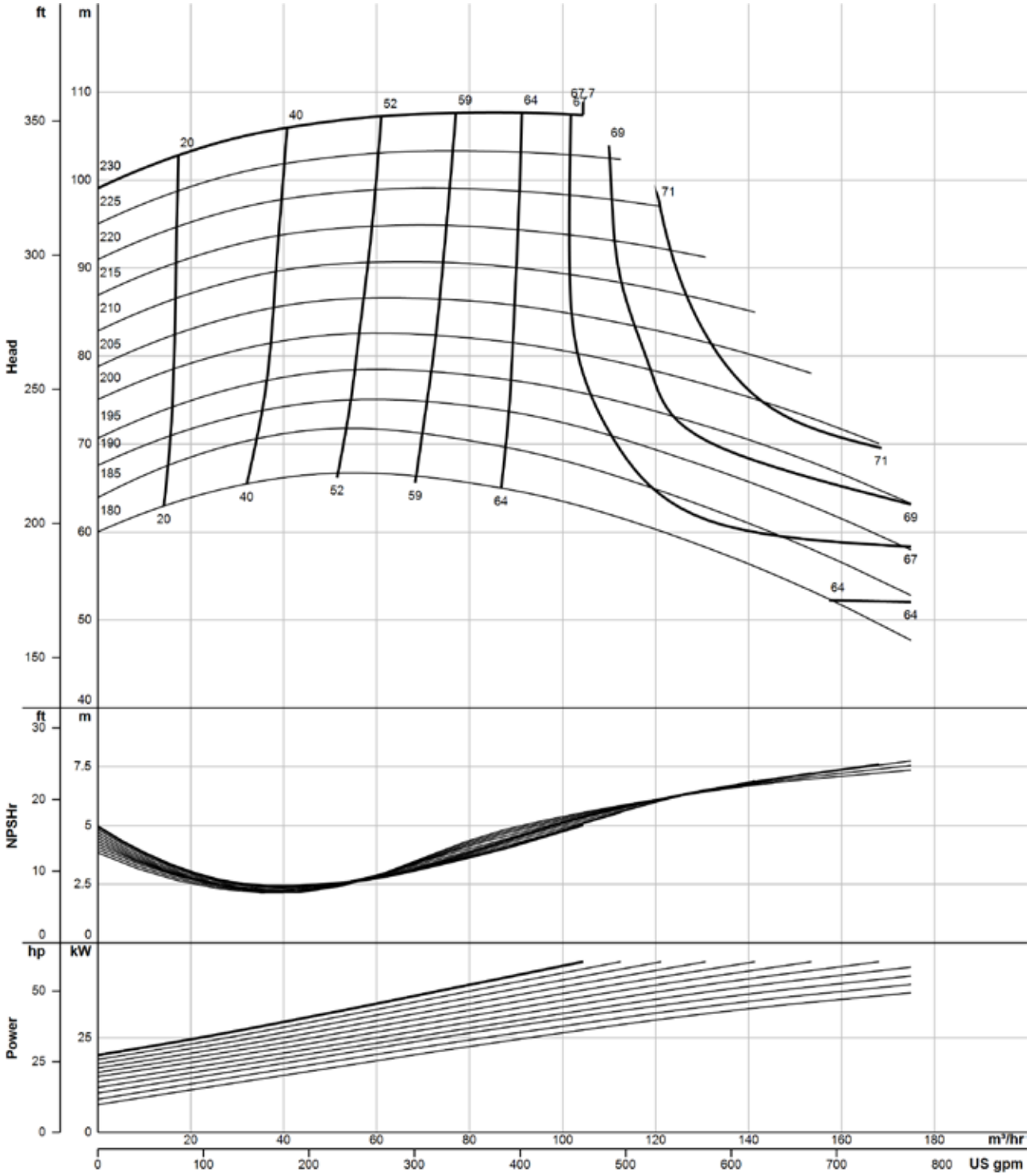
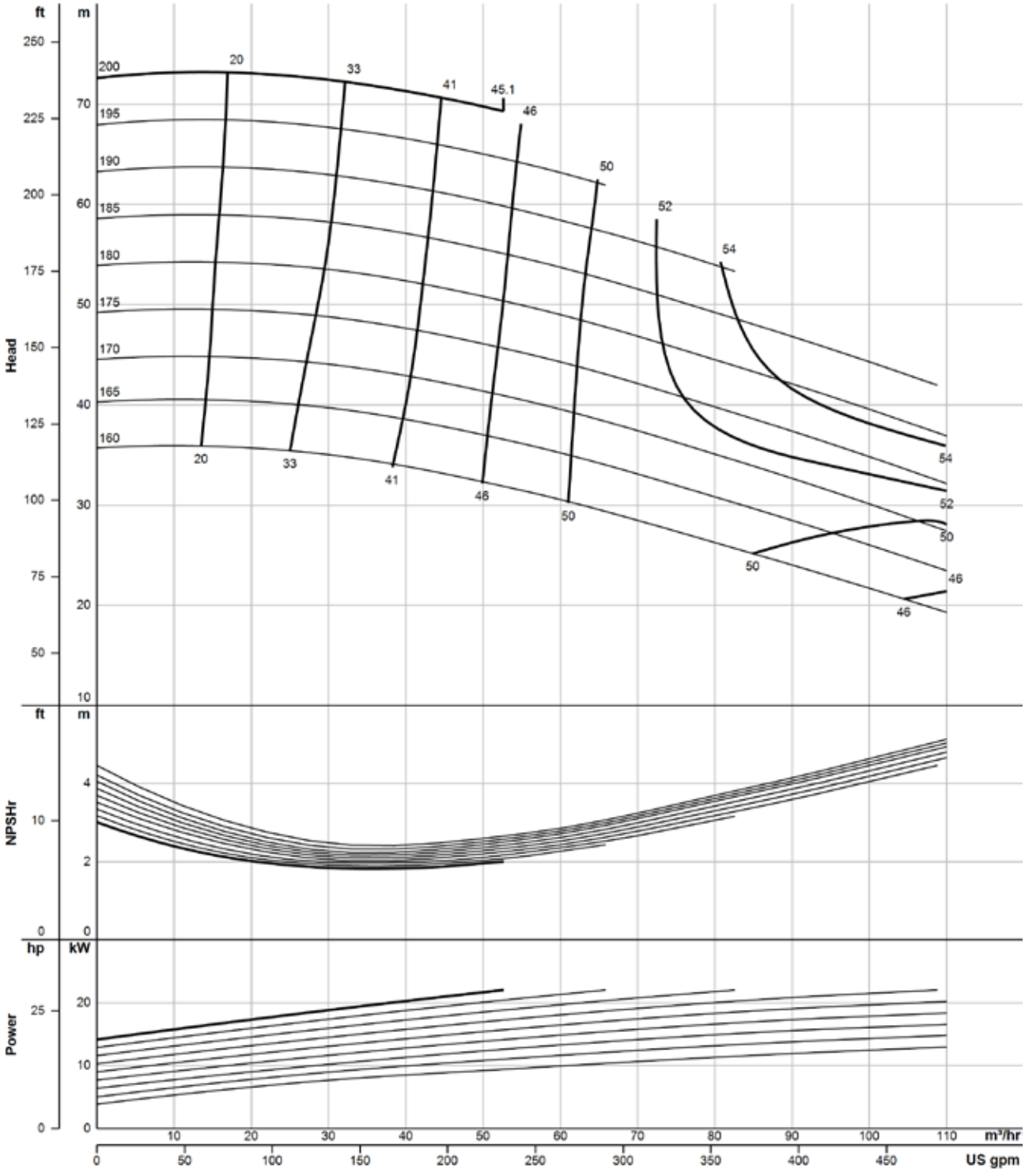
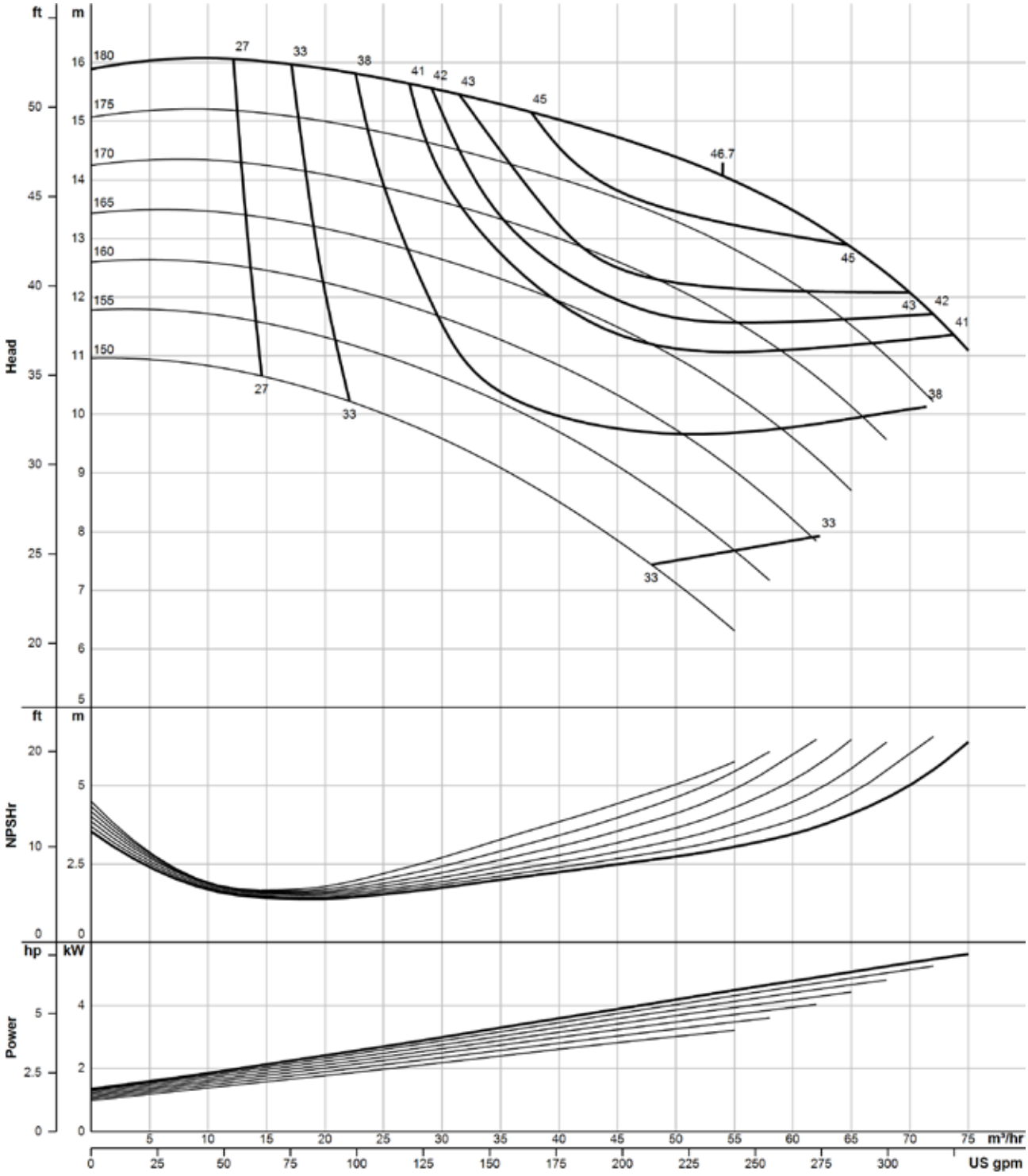


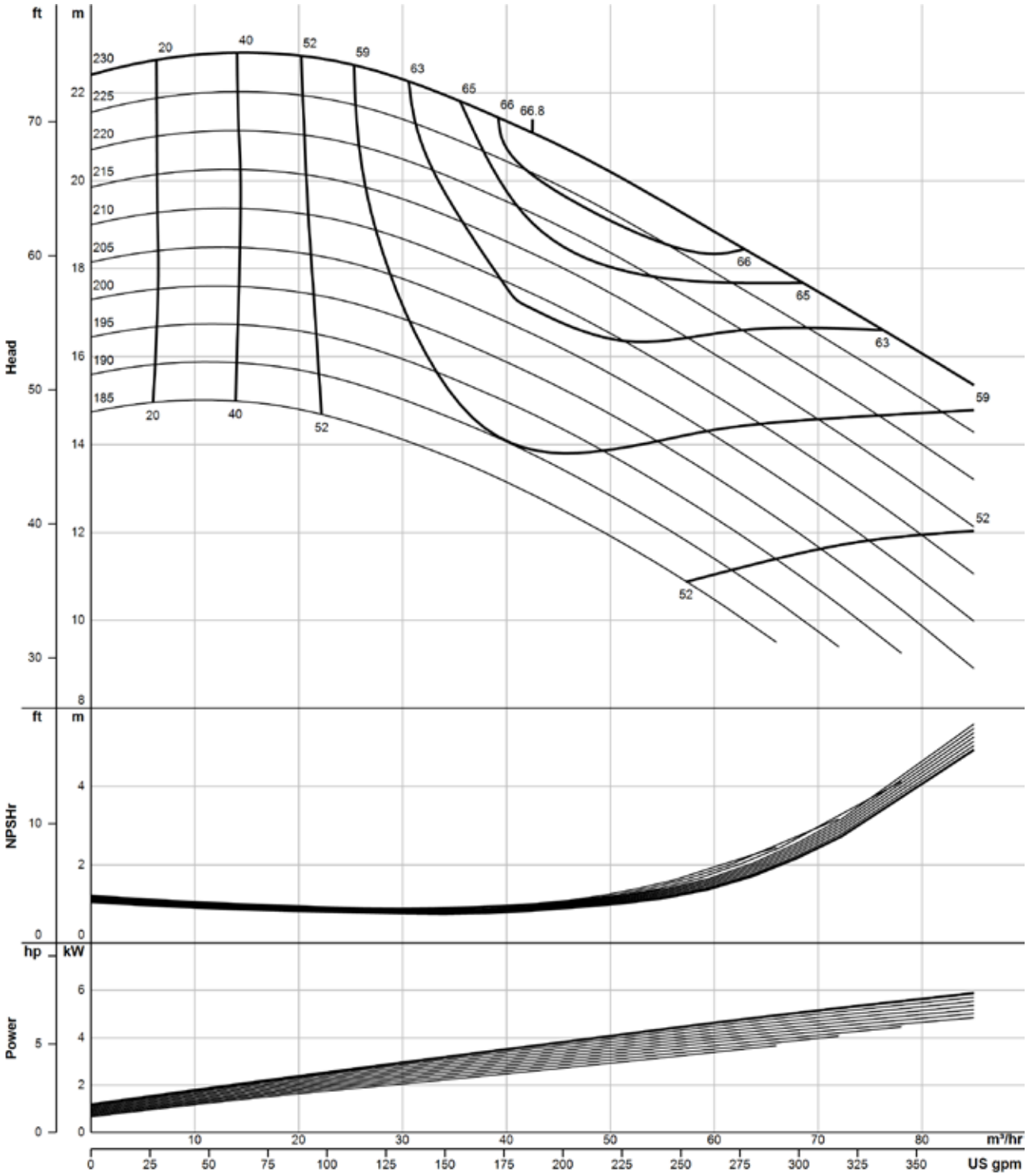
The flow charts are based on water, temperature 20 °C



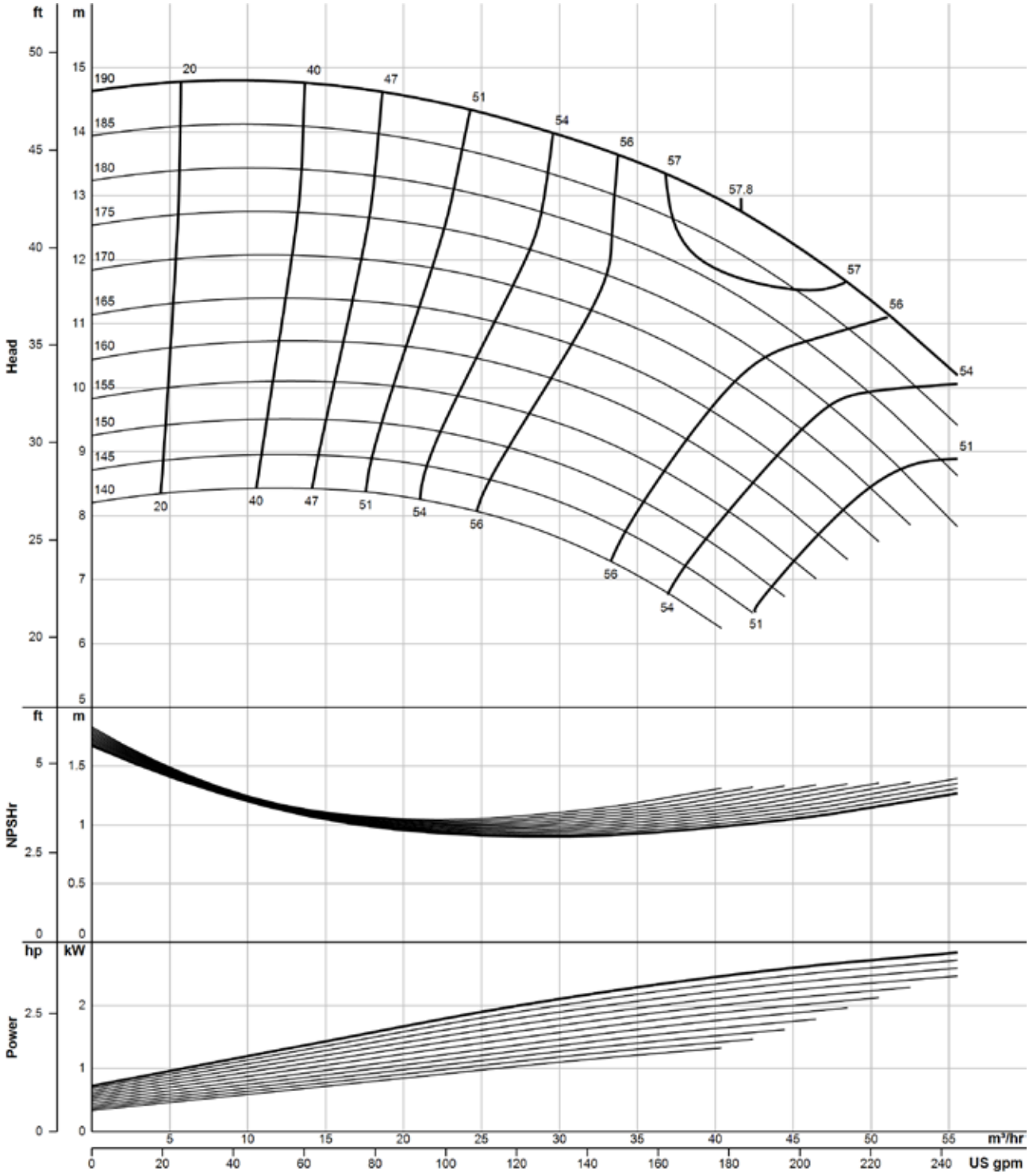
The flow charts are based on water, temperature 20 °C



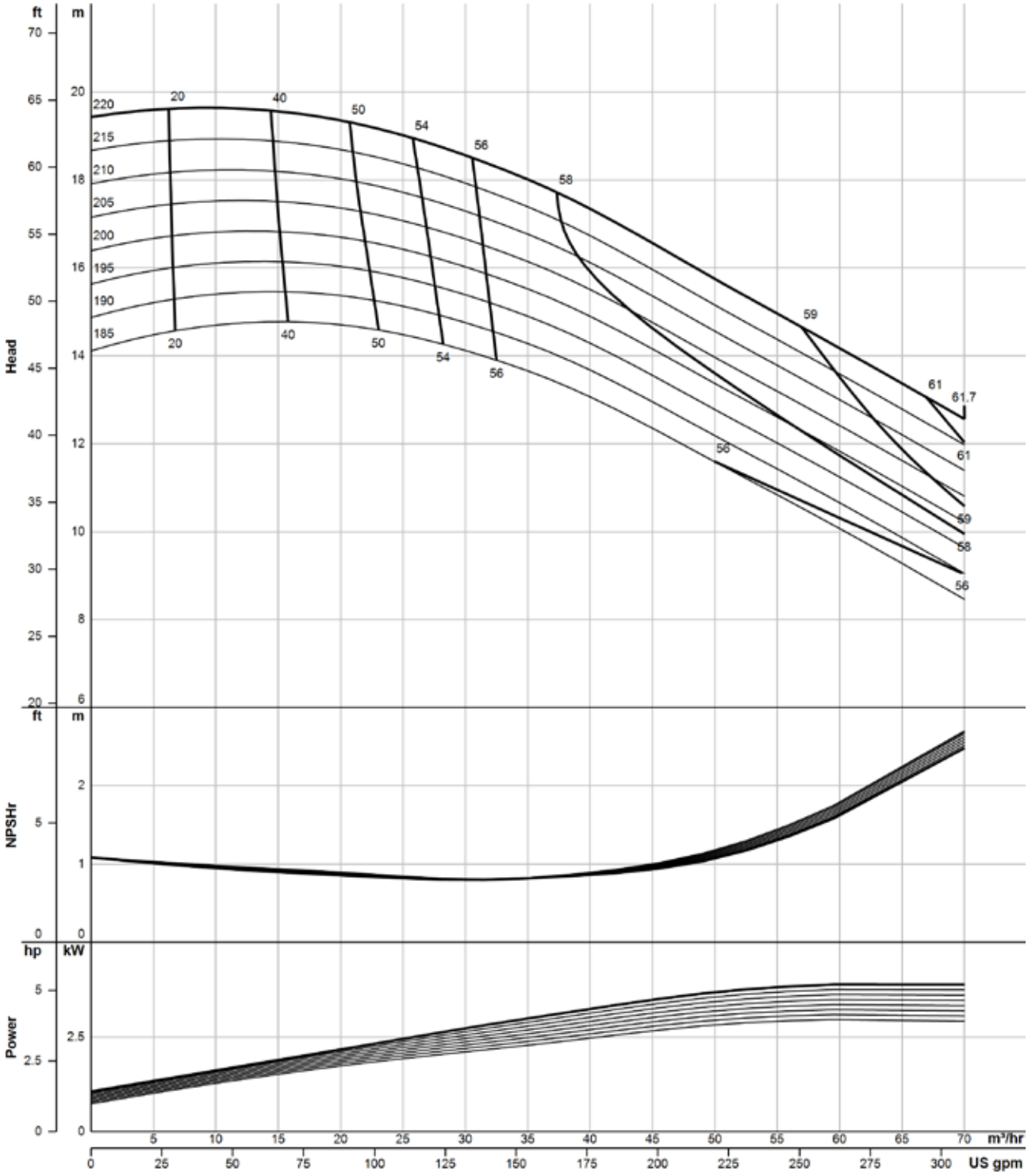
The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



The flow charts are based on water, temperature 20 °C



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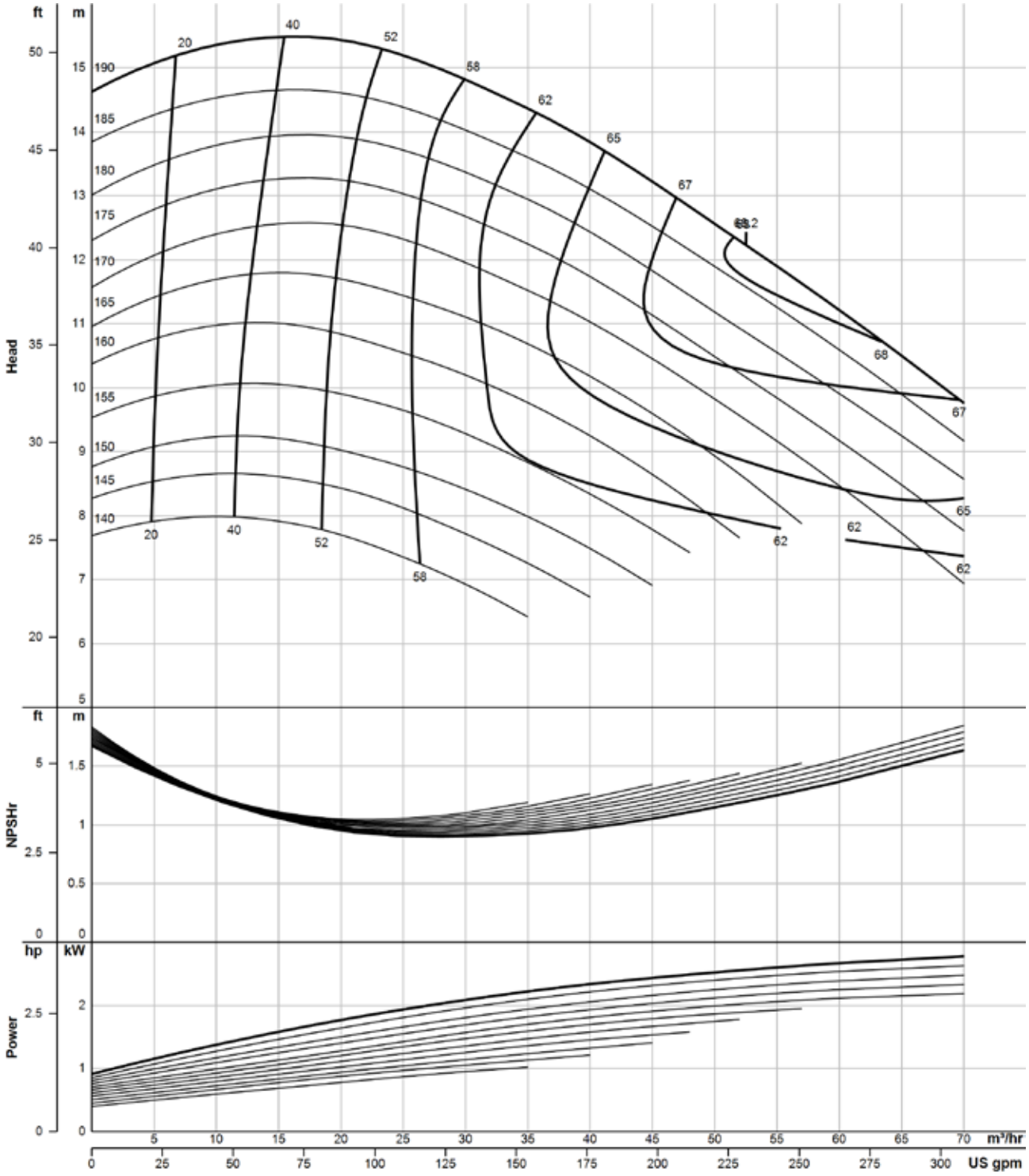

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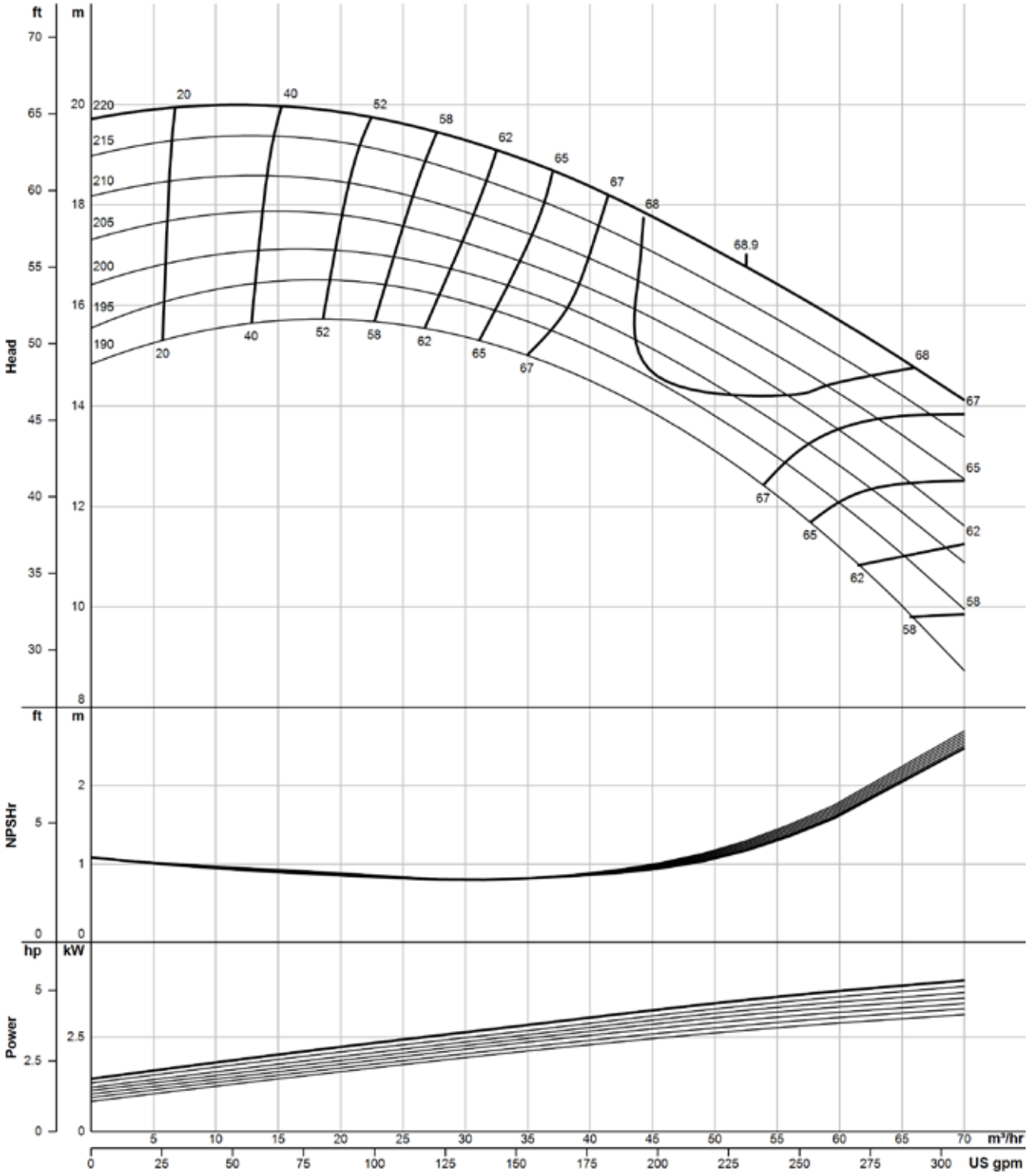

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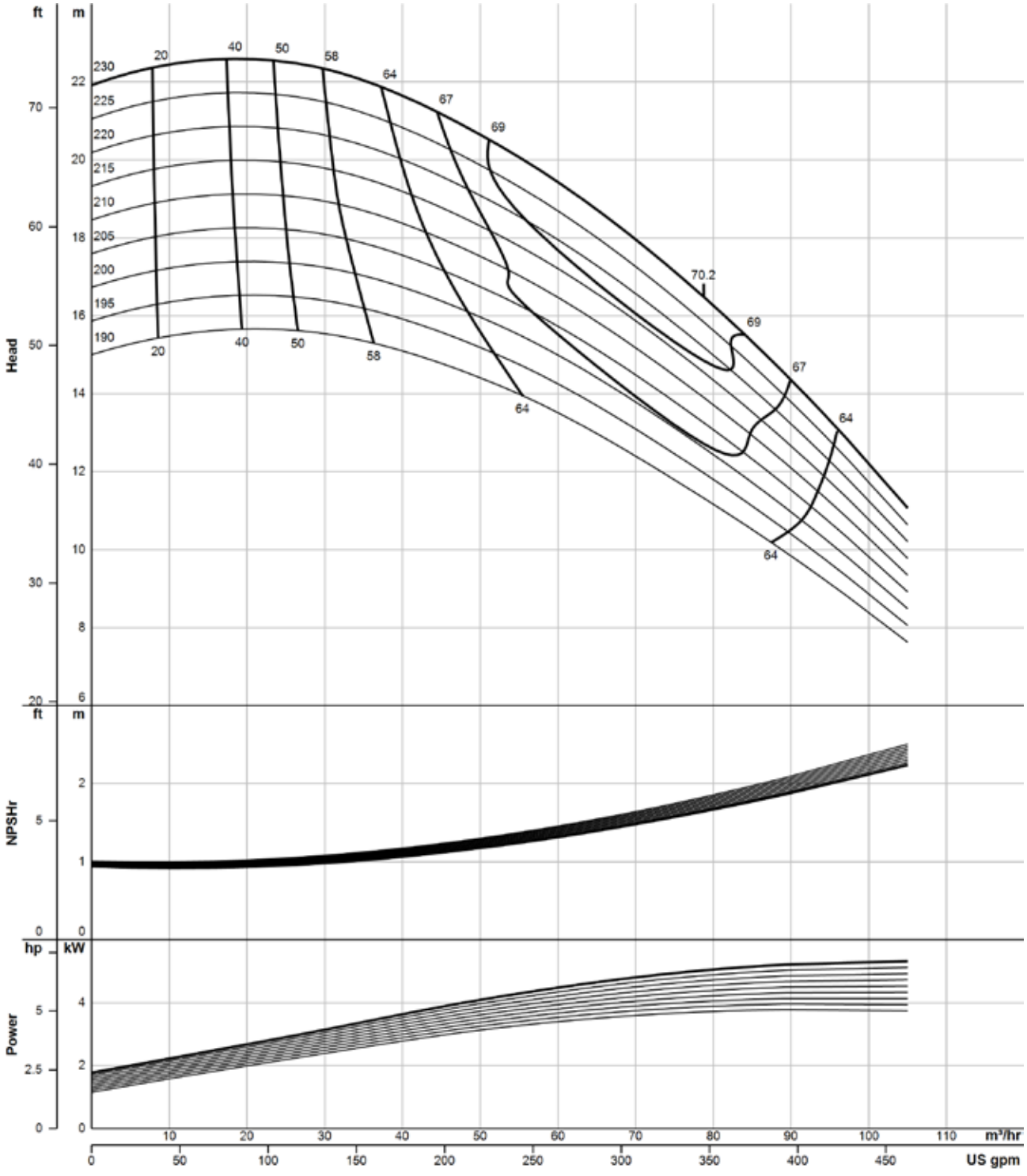
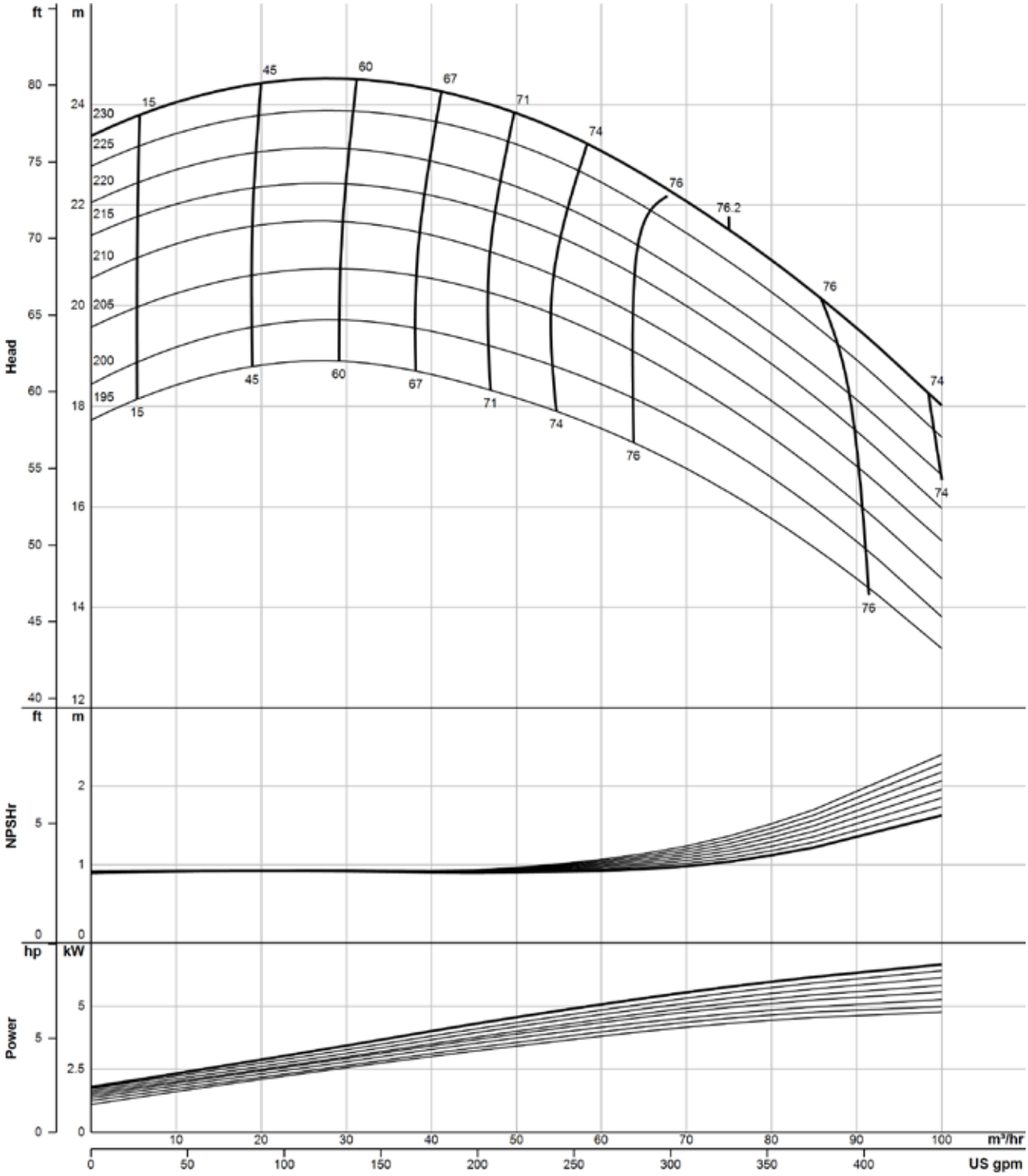


The flow charts are based on water, temperature 20 °C



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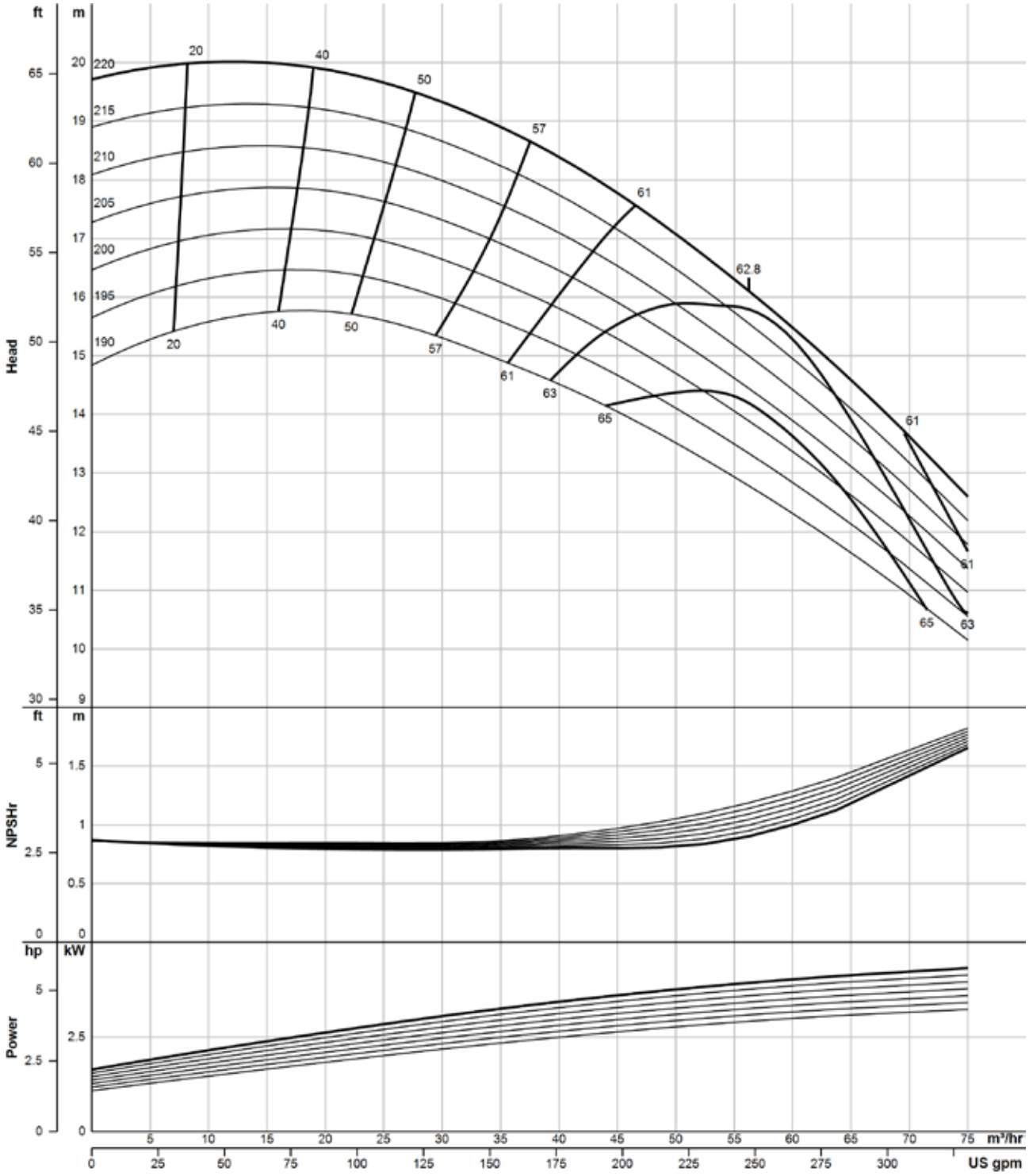

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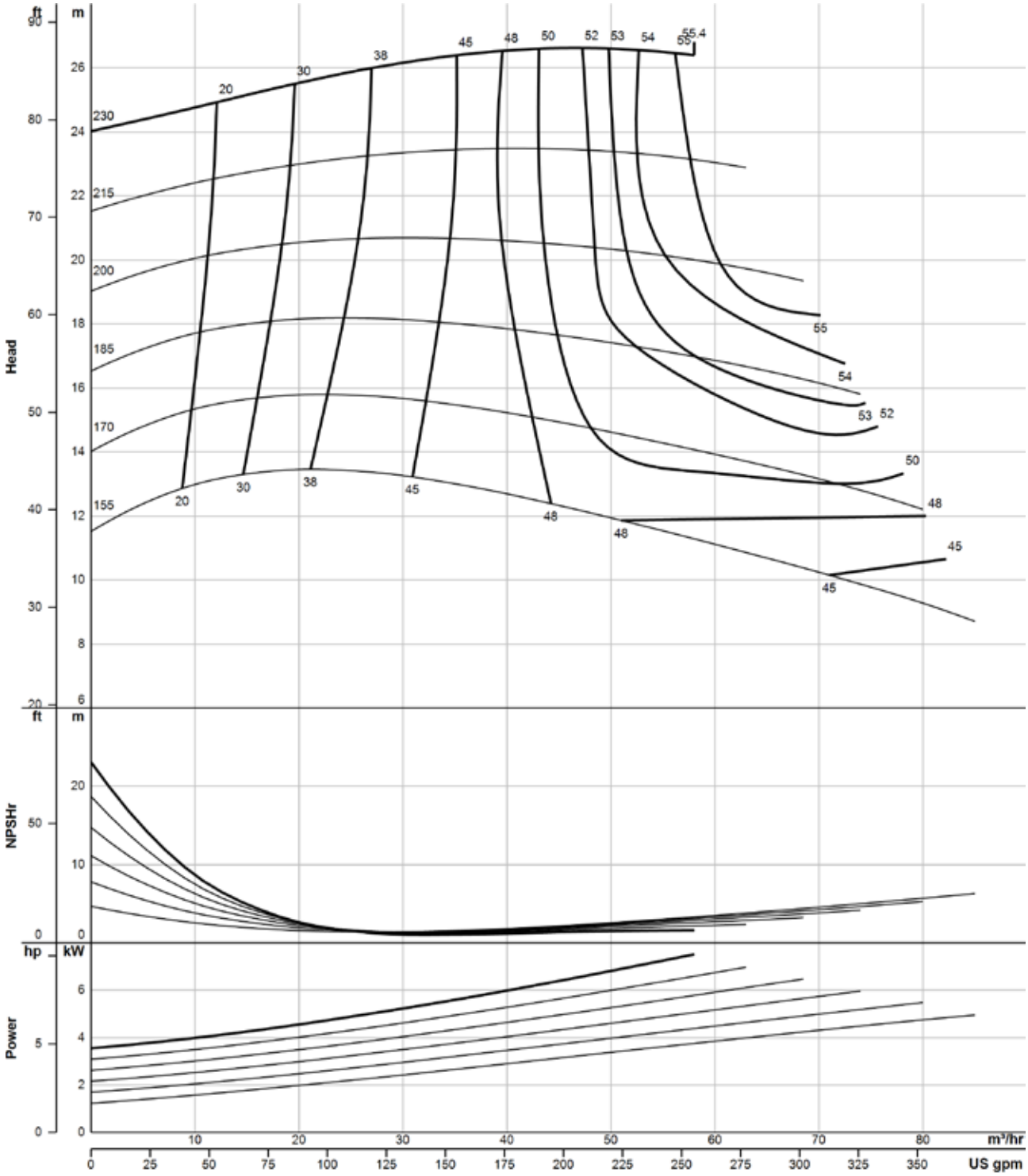

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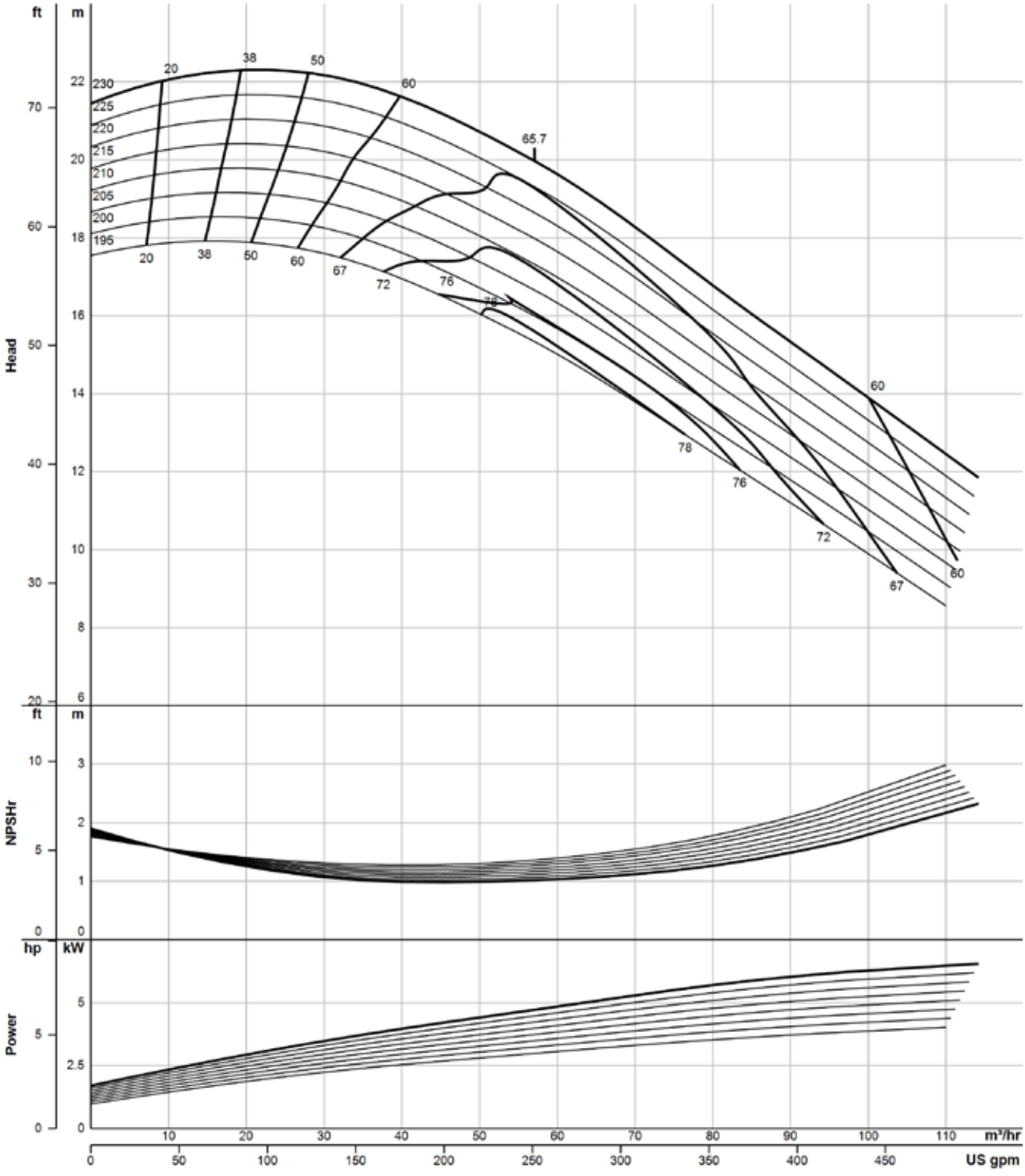

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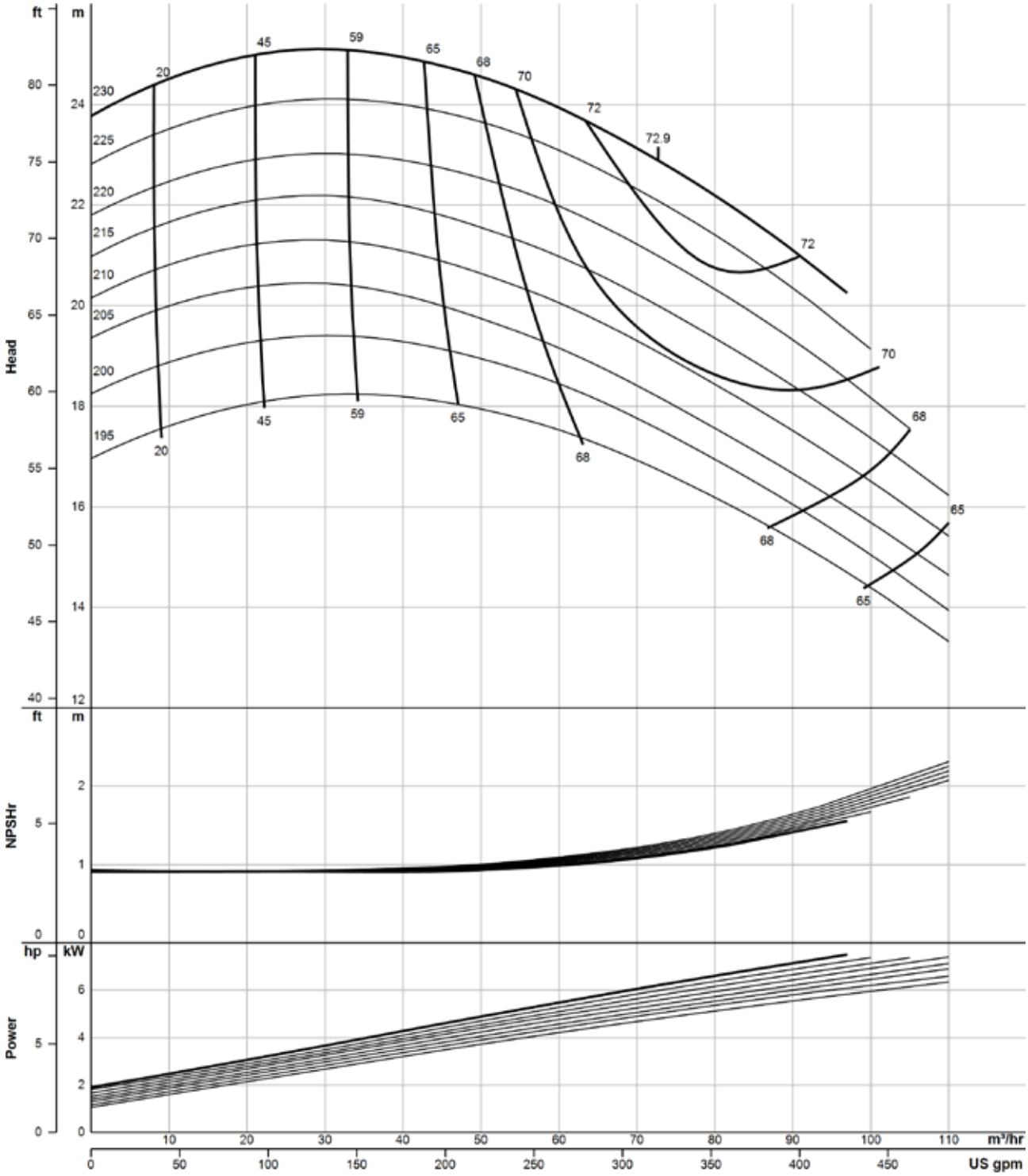

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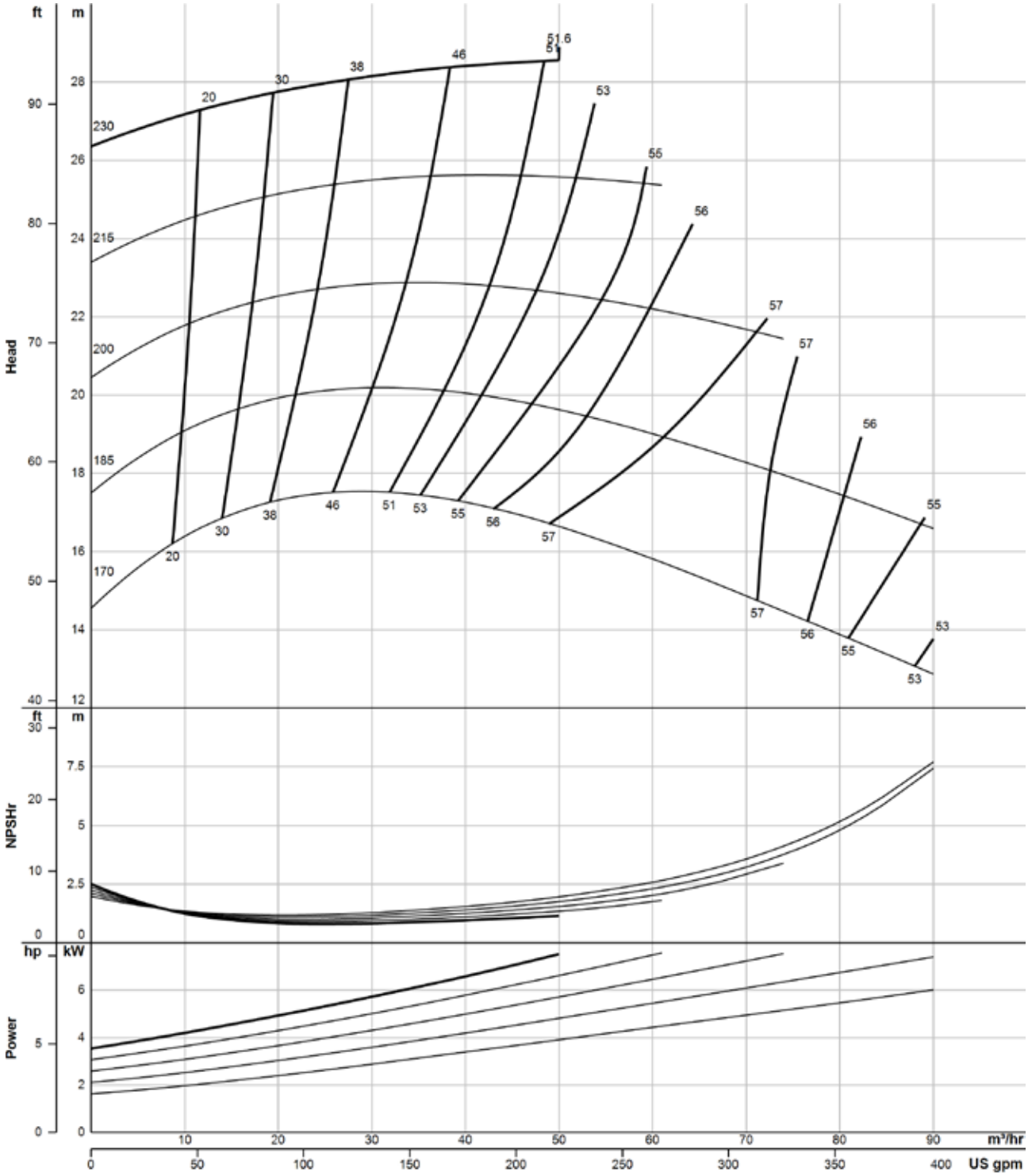

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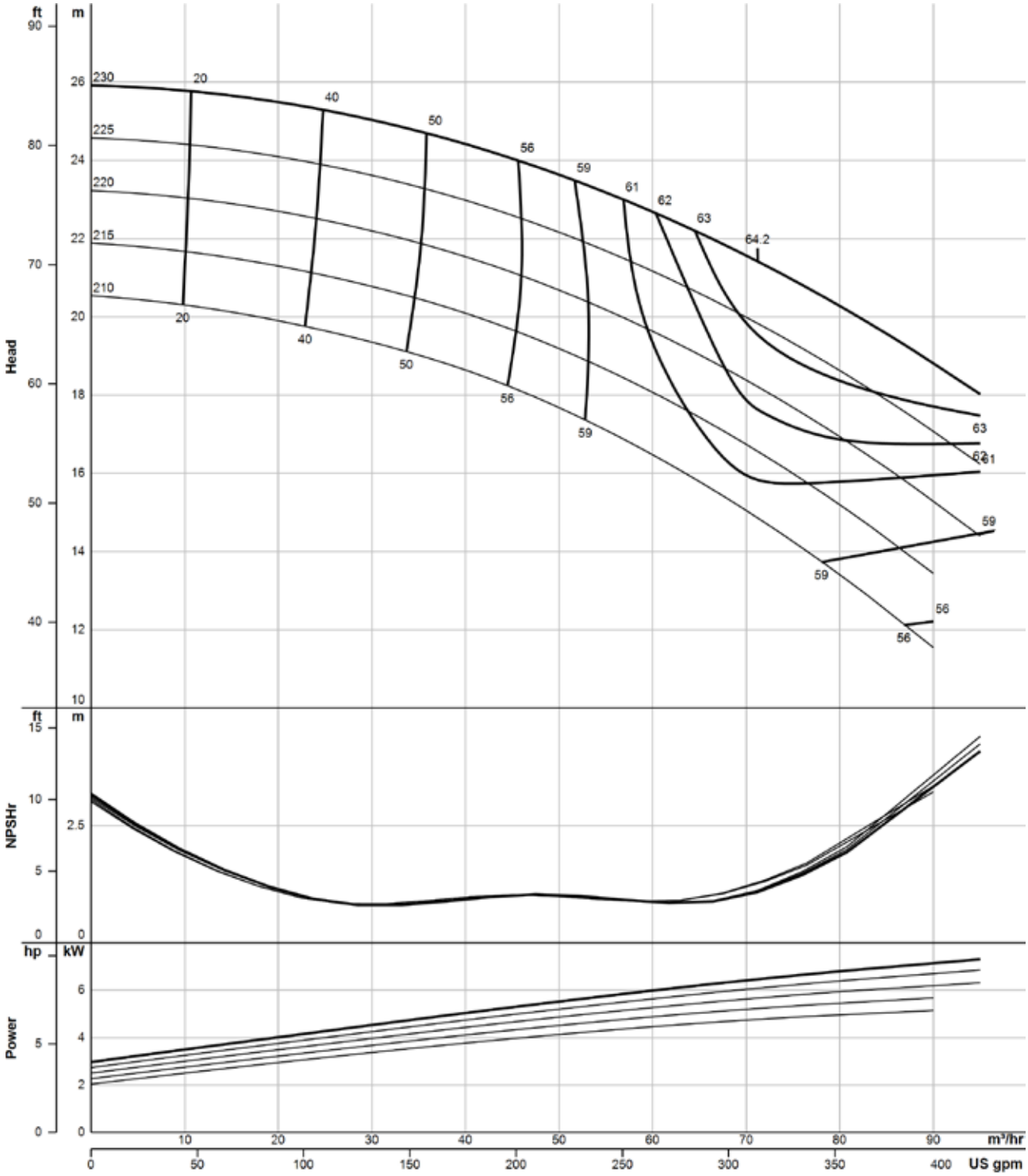

The flow charts are based on water, temperature 20 °C

INQUIRY SHEET · CENTRIFUGAL PUMPS 1/2

engineering for a better world

GEA Hygienic Pumps

Contact Data

Company:

Contact Person: E-mail:

Phone: Country:

Preferred Range

☐ VARIPUMP ☐ SMARTPUMP ☐ No requirement

Liquid Data

*Liquid: Solids: ☐ No ☐ Yes:

*Liquid temperature [°C/°F]: Kind of solids:

*Density [kg/dm³]: Size of solids [mm]:

*Viscosity [mPas]: Abrasive: ☐ No ☐ Yes

Concentration [%]:

Operating Conditions

*Duty point 1 *Flow [m³/h/gpm]: *Head [m lc]:

Duty point 2 Flow [m³/h/gpm]: Head [m lc]:

☐ End-suction pump: ☐ Self-priming pump:

Inlet pressure (NPSHa) [m]: Suction head [m]:

Vacuum at inlet: ☐ No ☐ Yes: Gas content: ☐ No ☐ < 5 % ☐ > 5 %

Vacuum, abs. [mbar]:

System pressure [bar]:

Cleaning / Sterilization

CIP: ☐ No ☐ Yes: SIP: ☐ No ☐ Yes:

CIP Temperature [°C/°F]: SIP Temperature [°C/°F]:

CIP Flow [m³/h/gpm]: SIP Duration [min]:

CIP Head [m Fls]:

Pump execution

***Connection Type**

☐ Tri Clamp (DIN 32676) ☐ ANSI Flange ☐ DIN 11851

☐ DIN 11853-2/11864-2 ☐ Other:

Connection Size DN_I/DN_O:

Other:

Drainable: ☐ No ☐ Yes

Execution and Design

☐ Pump in Bloc version with motor

☐ Pump in long coupled version with base plate and standard motor

☐ With stainless steel motor shroud

☐ 3-A stainless steel adjustable feet

☐ Combi foot

☐ On Trolley

☐ Cast iron foot

☐ Stainless steel foot

☐ Motor foot

☐ Horizontal

☐ Vertical

☐ Vertical with stainless steel stand

INQUIRY SHEET · CENTRIFUGAL PUMPS 2/2

engineering for a better world

GEA Hygienic Pumps

Surface Roughness

- ☐ Not specified
- ☐ $R_a \leq 3.2$ µm
- ☐ $R_a \leq 0.8$ µm
- ☐ $R_a \leq 0.4$ µm

Ferrite Content

- ☐ Not specified
- ☐ Fe < 1%

Shaft Seal

- ☐ Single mechanical seal
- ☐ Flushed mechanical seal

Material Shaft Seal

- ☐ Carbon/Stainless Steel
- ☐ SiC/SiC
- ☐ Carbon/SiC
- ☐ other: _____

Elastomer

- ☐ EPDM
- ☐ FKM (Viton)
- ☐ other: _____

Motor Data

Power supply:

- ☐ 3~ 400V/50 Hz
- ☐ 3~ 460V/60 Hz
- ☐ 3~ 200V/50 Hz
- ☐ 3~ 200V/60 Hz
- ☐ other: _____
- ☐ 3~ 380V/60 Hz

Motor speed [1/min]: _____

PTC-Thermistors: ☐ No ☐ Yes

2 wire-Thermistors: ☐ No ☐ Yes

Variable speed drive ☐ No ☐ Yes:

- ☐ External frequency converter (not on motor)
- ☐ Integrated frequency converter (on motor)

Explosion protection ☐ No ☐ Yes

ATEX ☐ No ☐ Yes:

Ex-Zone: _____

Temperature class: _____

Ambient temperature [°C/°F]: _____

EXP Motor ☐ No ☐ Yes:

Temperature class: _____

Ambient Temperature [°C/°F]: _____

Class: _____

Division: _____

Group: _____

Certificates/Documentation

- ☐ 3-A Sanitary Standard certification
- ☐ Inspection certificate 3.1 acc. to DIN EN 10204
- ☐ Test report 2.2 acc. to DIN EN 10204
- ☐ EHEDG certification
- ☐ Further certificates and documentation: _____
- ☐ FDA declaration of conformity
- ☐ Surface roughness test report
- ☐ Delta ferrite test report

Further Information

** Fields marked with an asterisk are mandatory for a pump selection*

V1.0-2018

2.1		Works certificate according to DIN EN 10204: Declaration of the compliance with the order. This certificate is issued by the manufacturer.
2.2		Test report according to DIN EN 10204: Declaration of the compliance with the order under specification of the results of non-specific tests. This certificate is issued by the manufacturer.
3.1		Inspection certificate 3.1 according to DIN EN 10204: Declaration of the compliance with the order under specification of the results of specific tests. This certificate is issued by an authority which is independent of manufacturing and is validated by the manufacturers authorized inspection representative.
3-A		3-A Sanitary Standards, Inc. (3-A SSI) is an independent, non-profit corporation dedicated to advancing hygienic equipment design for the food, beverage, and pharmaceutical industries.
AS-i		Actuator Sensor interface. BUS system for the lowest field level.
ASME-BPE		Standard of the ASME's – bioprocessing equipment association
ATEX		Atmosphères Explosibles. ATEX comprises the directives of the European Union in the area of explosion protection. For one thing, this is the ATEX equipment directive 94/9/EC, for another, the ATEX workplace directive 1999/92/EC.
cCSAus		Test of a product by CSA according to applicable safety standards in Canada and the USA.
CE		Conformité Européenne. By affixing the CE mark, the manufacturer confirms that the product complies with the European directives applicable to the specific product.
CSA		Canadian Standards Association. A non-governmental Canadian organization which issues standards as well as checking and certifying the safety of products. It is now globally active.
cULus		Test of a product by UL according to applicable safety standards in Canada and the USA.
DIN EN ISO 9001:2015		This norm is the basis for a multitude of varied organizations in different industries worldwide for quality assurance and quality management. It is the most widespread standards of ISO (International Organisation for Standardization).
EAC		Euroasion conformity. The symbol is used similar to the European CE mark. The manufacturer or supplier confirms that the machine has passed all necessary compliance procedures in one of the Member States of the customs union.
EG 1935/2004		Materials in contact with the product used in pumps from GEA Hilge are in accordance with EC regulation 1935/2004. This defines a general framework for materials and objects intended to come into contact with foodstuffs.
EHEDG		European Hygienic Engineering & Design Group. European supervisory authority for foodstuffs and pharmaceuticals. This authority issues approvals and certificates for products and materials that are used in the foodstuffs and pharmaceuticals industries.
FDA		Food and Drug Administration. US supervisory authority for foodstuffs and pharmaceuticals. This authority issues approvals and certificates for products and materials that are used in the foodstuffs and pharmaceuticals industries.
UL		Underwriters Laboratories. An organization founded in the USA for checking and certifying products and their safety.
USP Class VI		The United States Pharmacopeial Convention (USP) is a scientific nonprofit organization that sets standards to help protecting public health. Class VI administer tests and impacts of material and their substances on animal and human tissues.

Abbreviation	Explanation
°C	Degrees Celsius, unit of measurement for temperature
°F	Degrees Fahrenheit, unit of measurement for temperature
3D	Three-dimensional
A	Ampere, unit of measurement of current intensity or Output, term used in automation
AC	Alternating Current
ADI free	All elastomer compounds are free of animal-derived ingredients
AISI	American Iron and Steel Institute, association of the American steel industry
ANSI	American National Standards Institute, American body for standardizing industrial processes
approx.	approximately
AS-i	Actuator Sensor interface, standard for fieldbus communication
ASME	American Society of Mechanical Engineers, professional association of mechanical engineers in the USA
ASME-BPE	Standard of the ASME's – bioprocessing equipment association
ATEX	Atmosphères Explosibles, synonymous with the directives of the European Union for potentially explosive areas
bar	Unit of measurement for pressure. All pressure values [bar/psi] refer to positive pressure [bar_g/psi_g], unless specifically stated otherwise.
bar_g	Unit of measurement for pressure relative to atmospheric pressure
CAN	Controller Area Network; asynchronous serial bus system
CE	Conformité Européenne, administrative symbol for the free movement of industrial products
CIP	Cleaning In Place, designates a process for cleaning technical process systems.
CRN	Canadian Registration Number, is issued by a Canadian Jurisdiction and covers pressure vessels, fittings, or pressure piping. It is a necessary authorization allowing these components to be in operation in Canada.
CSA	Canadian Standards Association, a non-governmental Canadian Standardization organization
Cv	The Cv value corresponds to the water flow rate through a valve (in US gal / min) at a pressure differential of 1 PSI and a water temperature of 5 °C to 30 °C. kv = 14,28 Cv (USA).
Cvs	The Cv values of a valve at nominal stroke (100 % opening) is designated the Cvs value.
dB	Decibel, one tenth of a bel, named after Alexander Graham Bell and used for identifying levels and dimensions
DC	Direct Current
DIN	Deutsches Institut für Normung e. V. Standardization organization in the Federal Republic of Germany, DIN = synonym for standards issued by the organization

Abbreviation	Explanation
DIP	Dual Inline Package, design of a switch
DN	Diameter Nominal, DIN nominal width
Device Net	Network system used in the automation industry to interconnect control devices for data exchange
E	Input, term used in automation
EAC	Certification of technical conformity from the customs union of Russia/Belarus/Kazakhstan
Pressure Equipment Directive 97/23/EC	Directive of the European Parliament and the Council Directive for layout and conformity evaluation for pressure equipment and assemblies with a maximum pressure (PS) of more than 0.5 bars.
EG No. 1935/2004	Regulation of the European Parliament which lays down common rules for materials which come, or may come, into contact with food, either directly or indirectly.
EHEDG	European Hygienic Engineering and Design Group. Consortium of equipment manufacturers, food industries, research institutes as well as public health authorities
EN	European standard, rules of the European Committee for Standardization
EPDM	Ethylene propylene diene rubber, acronym acc. to DIN/ISO 1629
Ex	Synonym for ATEX
FDA	Food and Drug Administration, official foodstuffs monitoring in the United States
FEM calculation	Finite Element Method; calculation process for simulating solids
FKM	Fluorinated rubber, acronym acc. to DIN/ISO 1629
GOST	Gosudarstvennyy Standart, Certification of conformity for components according to standards and regulations of the Russian Federation
H	Henry, unit of measurement for inductance
HNBR	Hydrated acrylonitrile butadiene rubber, acronym acc. to DIN/ISO 1629
Hz	Hertz, unit of frequency named after Heinrich Hertz
I	Formula symbol for electrical current
IEC	International Electrotechnical Commission, international standardization organization for electrical and electronic engineering
IP	Ingress Protection/International Protection, index of protection class acc. to IEC 60529
IPS	Iron Pipe Size, American pipe dimension
ISA	International Society of Automation, international US organization of the automation industry
ISO	International Organization for Standardization, international organization that produced international standards, ISO = synonym for standards from the organization
kg	Kilogram, unit of measurement for weight
Kv	The Kv value corresponds to the water flow rate through a valve (in m^3/h) at a pressure differential of 0.98 bar and a water temperature of 5 °C to 30 °C.

Abbreviation	Explanation
Kvs	The Kv values of a valve at nominal stroke (100 % opening) is designated the Kvs value
L	Conductive
LED	Light-Emitting Diode
mm	Millimeter, unit of measurement for length
M	Metric, system of units based on the meter or Mega, one million times a unit
m^3/h	Cubic meters per hour, unit of measurement for volumetric flow
max.	Maximum
NAMUR	Standardization working association for measuring and control technology in the chemical industry, synonym for the interface type of the organization, especially for potentially explosive atmospheres
NC	Normally Closed; valve or solenoid valve control which is closed in idle status
NO	Normally Open; valve or solenoid valve control which is open in idle status
NOT-element	Logic element, NOT gate
NPN	Signal transmission against reference potential, current-consuming
NPT	National Pipe Thread, US thread standard for self-sealing pipe fittings
OD	Outside Diameter, pipe dimension
ODVA	Open DeviceNet Vendor Association, global association for network standards
PA 12/L	Polyamide
Pg	Armored thread
PN	Nominal pressure for pipeline systems according to EN 1333, rated pressure in bar at room temperature (20 °C)
PNP	Signal transmission against reference potential, current-supplying
PPO	Polyphenylene oxide, thermoplastic material
PS	Maximum permitted operating pressure at which the components can operate safely at maximum allowable temperature (TS)
psi	Unit of measurement for pressure, pound-force per square inch, 1 psi = 6894.75 Pa. All pressure values [bar/psi] refer to positive pressure [bar_g/psi_g], unless specifically stated otherwise.
psi_g	Unit of measurement for pressure relative to atmospheric pressure
PV	Solenoid valve
R_a in µm	Average roughness value, describes the roughness of a technical surface
International Protection-Code IP67, IP66, IP69K	Classifies and rates the degree of protection provided against intrusion dust, accidental contact, and water

Abbreviation	Explanation
SES	GEA Tuchenhagen control head for Ex areas, control top system of GEA Tuchenhagen
SET-UP	Self-learning installation, the SET-UP procedure carries out all necessary settings for generating messages during commissioning and maintenance.
SIP	Sterilization in Place, refers to a process for cleaning technical process systems
SMS	Svensk Mjölk Standard, Scandinavian pipe dimension
SW	Indicates the size of a tool spanner, "Schlüsselweite"
TA-Luft VDI 2440	If a product is certified according to TA Luft it meets the requirements for proof of high grade performance according to TA Luft of 1.0x 10-4 mbar x l / (s x m) at service conditions under the VDI guideline 2440. The product will hence be tested for tightness.
TS	Maximum permitted operating temperature
UL	Underwriters Laboratories, a certification organization established in the USA
USP Class VI	The United States Pharmacopeial Convention (USP) is a scientific nonprofit organization that sets standards to help protecting public health. Class VI administer tests and impacts of material and their substances on animal and human tissues.
UV	Ultraviolet, ultraviolet radiation is a wavelength of light
V	Volt, unit of measurement for voltage
VMQ	High-polymer vinyl methyl polysiloxane, silicone rubber, MVQ = synonym
W	Watt, unit of measurement for power
Y	Control air connection for the working cylinder, designation from pneumatic systems
µ	Micro, one millionth of a unit
Ω	Ohm, the unit of electrical resistance named after Georg Simon Ohm

engineering for
a better world

We live our values.

Excellence • Passion • Integrity • Responsibility • GEA-versity

"Engineering for a better world" is the driving and energizing principle connecting GEA's workforce. As one of the largest systems suppliers, GEA makes an important contribution to a sustainable future with its solutions and services, particularly in the food, beverage and pharmaceutical sectors. Across the globe, GEA's plants, processes and components contribute significantly to the reduction of CO_2 emissions, plastic use as well as food waste in production.

GEA is listed on the German MDAX and the STOXX® Europe 600 Index and also included in the DAX 50 ESG and MSCI Global Sustainability indexes.

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