ALFA LAVAL

# Close at hand

**Pumps for Hygienic Fluid Handling Equipment,
May 2024**

# Everything at your fingertips

Tackle the challenges you face with innovative Alfa Laval solutions for hygienic applications. Regularly updated, this convenient online catalogue gives you fast access to our comprehensive product range.

Sustainability is at the core of Alfa Laval technologies. These hygienic components and equipment can help you reduce emissions, contamination risks, energy and water use, and total cost of ownership. They also increase uptime, safety and product integrity.

Wherever you are, you have fast access to the components, equipment and expertise you need through the Alfa Laval global network of more than 1500 partners, supported by our sales companies worldwide. Using our eBusiness portal,our channel partners can locate the products you need, order equipment, or track shipments in real time.

To make your life easier, take advantage of Alfa Laval tools and resources. Simply click on the sales item number to view or download 3D CAD models and 2D drawings from our CAD portal.Or download product documentation, including Q-doc documentation for our UltraPure portfolio, here.

Discover a world of hygienic solutions.

www.alfalaval.com

## Pumps

### Centrifugal pumps


LKH


LKH UltraPure


LKH Evap


LKHPF


LKH Multistage

## Valves

### Double seat valves


Aseptic Mixproof


Unique Mixproof


Unique Mixproof 3-body


Unique Mixproof CP-3


Unique Mixproof UltraPure


Unique Mixproof Large Particle


Unique Mixproof PMO Curd

### Diaphragm valves


Unique DV-ST UltraPure


DV-ST Multiport

### Ball valves


SBV Sanitary

### Shutter valves


Koltek Valves

### Regulating valves

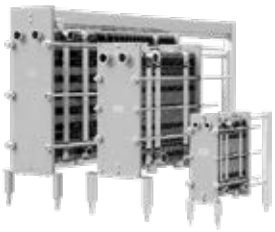

Unique RV-ST


Unique RV-P


CPM-2

## Heat transfer

### Gasketed plate heat exchangers


Hygienic line


FrontLine


BaseLine


Industrial line

## Tank equipment

### Tank cleaning machines


SaniJet 25 UltraPure


SaniJet 20 UltraPure


TJ 40G


TJ 20G


TZ 74


TZ 89


GJ PF FT


GJ A6


GJ A2


GJ 9


Multijet 25

### Agitators


ALS and ALS-SD


ALB


ALT


ALTB

### Mixers


Hybrid Powder Mixer


Rotary Jet Mixer

## Tubes and fittings

### Hygienic tubes and fittings


Flanges, clamps and unions


Bends, tees and reducers


Tubes and tube support

### UltraPure tubes and fittings


UltraPure tubes and fittings

## Filters and strainers


Strainers

LKH Prime

LKH Prime UltraPure

SolidC

## Rotary lobe pumps

OptiLobe

SRU

Mixproof Tank Outlet

Unique Mixproof Horizontal Tank

Unique Mixproof CIP

Unique Mixproof Process

## Double seal valves

SMP-BC

SMP-BC 22

## Single seat valves

Unique SSV

Unique SSV Change-over

Unique SSV FDV

## Control/Check valves

LKC-2 Non-Return

LKC UltraPure

Unique Vacuum Breaker

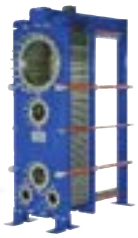
LKUV-2 Air-Relief

## Safety valves

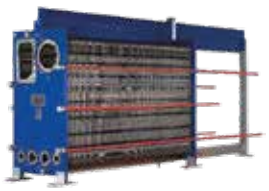
Safety Valve

SB Anti Vacuum House

TS-series



AlfaCond



AlfaVap

## Fusion-bonded plate heat exchangers

AlfaNova

## Brazed plate heat exchangers

Brazed PHE

GJ 8

GJ BB

MultiJet 45

GJ 4

SaniMicro

SaniMidget

SaniMagnum

SaniMidget SB

SaniMagnum SB

SaniMega SB

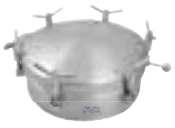
## Static spray balls

LKRK Static Spray Ball

## Tank covers

LeviMag®

LeviMag® UltraPure



LKDC-LP

Type R

LKD

Type CG

Type C

## Membranes and filters

Spiral membranes

Flat sheet membranes

Plate and frame module

LabStak™ modules

Pilot plants

Membrane filtration systems

## Auxiliary membrane equipment

Housing

## Circumferential piston pumps


SX


SX UltraPure


DuraCirc


DuraCirc Aseptic

## Twin screw pumps


Twin Screw

## Gear pumps


M Gear

## Butterfly valves


Unique SSV Aseptic


SSV Tangential


Unique SSV Tank Outlet


Unique SSV Manual


Unique SSSV Small Single Seat


LKB


LKB-F


LKB UltraPure

## Sampling valves


SB Anti Vacuum Valve


SB Pressure Relief Valve


Unique Sampling Valve


SB Membrane Sample Valve


SB Micro Sample Port


SB Micro Sample Port Type M

## Welded spiral heat exchangers


Spiral Heat Exchangers

## Welded plate and block heat exchangers


Combabloc Free Flow

## Scraped surface heat exchangers


Contherm

## Tubular heat exchangers


Pharma-line S and P


Pharma-line Point of Use

## Wall mounted cleaning nozzles


PlusClean®/PlusClean® UltraPure

## Automation Sensing and control


ThinkTop® V70


ThinkTop® V50


ThinkTop® V20


ThinkTop® Basic Intrinsically Safe


IndiTop


Unique Control LKB

## Tank accessories


Sight glasses


Tank feet

## Condition monitoring


CM Connect


CM

## Cleaning validation


Rotacheck

## Service and spare parts


Service kits

## Service tools


Service tools valves


Service tools mixing and blending


Service tools tank cleaning


Service tools pumps

# Alfa Laval Stainless Steel and Rubber Materials

## Technical Information

### Stainless Steel

Our stainless steel material have the following demands to the contents of the most essential alloys:

| Descriptions | Standard | Chrome<br>Cr% | Nickel<br>Ni% | Molybdenum<br>Mo% | Carbon<br>C% |
|---|---|---|---|---|---|
| AISI 304 | ASTM A270 | 18.0-20.0 | 8.0-10.5 | 0.0 | ≤ 0.08 |
| AISI 304L | ASTM A270 | 18.0-20.0 | 8.0-12.0 | 0.0 | ≤ 0.03 |
| AISI 316L | ASTM A270 | 16.0-18.0 | 10.0-14.0 | 2.0-3.0 | ≤ 0.03 |
| 1.4301 (304) | EN 10088-1 (X 5CrNi18-10) | 17.0-19.5 | 8.0-10.5 | 0.0 | ≤ 0.07 |
| 1.4307 (304L) | EN 10088-1 (X 2CrNi18-9) | 17.5-19.5 | 8.0-10.0 | 0.0 | ≤ 0.03 |
| 1.4401 (316) | EN 10088-1 (X 5CrNiMo17-12-2) | 16.5-18.5 | 10.0-13.0 | 2.0-2.5 | ≤ 0.07 |
| 1.4404 (316L) | EN 10088-1 (X 2CrNiMo17-12-2) | 16.5-18.5 | 10.0-13.0 | 2.0-2.5 | ≤ 0.03 |
| 1.4435 (316L) | EN 10088-1 (X 2CrNiMo18-14-3) | 17.0-19.0 | 12.5-15.0 | 2.5-3.0 | ≤ 0.03 |
| 1.4571 (316Ti) | EN 10088-1 (X6CrNiMoTi17-12-2) | 16.5-18.5 | 10.5-13.5 | 2.0-2.5 | ≤ 0.08 |

### Rubber Materials

In order to obtain the longest possible lifetime for rubber seals it is essential to choose the right quality for the actual duty. Consequently when choosing rubber quality, the characteristics of the different rubber types should be considered. All product wetted rubber material are in conformity of FDA.

### EPDM Rubber (Ethylene Propylene)

EPDM rubber is widely used within the food industry as it is resistant to most products used in this sector. Another advantage is that it may be used to a recommend max. temperatures of 140°C (244°F). However, there is one essential limitation, EPDM is not resistant to organic and non-organic oils and fats.

### Actylonitrile Butadiene Rubber, NBR

NBR is the rubber type most frequently used for technical purposes. It is quite resistant to most hydrocarbons, e.g oil, grease and fat. It is sufficiently resistant to diluted lye and nitric acid and may be used to a recommended max. 95°C (203°F). As NBR is attacked by ozone it may not be exposed to ultraviolet rays and should thus consequently be stored so that this is avoided.

### Silicone rubber, Q

The most significant quality of silicone rubber is that it can be applied from temperatures below -50°C (-58°F) to approx. + 180°C (356°F) and still keep its elasticity. The chemical resistance is satisfactory to most products. However, undiluted lye and acids as well as hot water and steam may destroy silicone rubber. The resistance to ozone is good.

### Fluorine rubber, FPM

FPM is often used when other rubber types are unsuited, especially at high temperatures up to approx. 180°C (356°F). The chemical resistance is good to most products, however hot water, steam, lye, acid and alcohol should be avoided. The resistance to ozone is good.

### Hydrogenated actylonitrileButadiene Rubber, HNBR

Mechanically strong and normally resistant to ozone and strong oxidizers, animal and vegetable fats, nonpolar solvents, oils and lubricants, water and aqueous solutions. The recommend max. temperature is 130°C (266°F).

### Perfluoroalkoxy polymer, PFA

PFA is very similar to PTFE, but opposite to those PFA is thermo plastic and has minimal porosity. PFA has a very high mechanical strength which makes it a perfect choice when dealing with abbrasive products. The PFA seal offers longer service intervals. The recommended max. temperature for the PFA seal is 90°C (194°F).

### Product and chemical resistance of flexible rubber materials

The information below is intended as an aid in selecting the best rubber quality for an actual application. It is not possible to state any general lifetime of rubber seals as many factors influence it: chemical attack, temperature, mechanical wear etc. Extreme temperatures, even within the generally accepted limits, may worsen other kinds of attack and thus reduce the lifetime.

### Ratings

1 = Unsuitable.

2 = Limited suitability.

3 = Normal suitability.

4 = High suitability.

- = Not recommended for other reasons.

The table contains data which have been compiled from the results of our own tests and the recommendations of our raw material suppliers. The data should be considered as recommendations only and will be brought up-to-date from time to time. They are based on constant contact with the specified product.

In case of doubt or lack of information it would be advisable to consult us directly, which will enable us to investigate specific applications.

| Product or process | NBR [1] | HNBR [2] | EPDM [3] | Q [4] | FPM [5] | PTFE [6] |
|---|---|---|---|---|---|---|
| Dairy products (milk, cream) | 3 | 3-4 | 3-4 | 3-4 | - | 3-4 |
| Dairy products (sour milk products) | 3 | 3-4 | 3-4 | 3-4 | - | 3-4 |
| Brewery products (beer, hops etc.) | 3 | 3-4 | 3-4 | 1-2 | 2-3 | 3-4 |
| Wine and yeast | 3 | 3-4 | 4 | 4 | 2-3 | 3-4 |
| Animal and vegetable fats: 100°C | 3 | 4 | 1–2 | 3 | 4 | 3-4 |
| Water and water solutions < 70°C | 3 | 4 | 4 | 3 | 2-4 | 3-4 |
| Hot water and steam < 130°C | 1 | 4 | 4 | 2 | - | 3-4 |
| Concentrated fruit juices and etheral oils < 100°C | 1 | - | 1 | 1 | 3 | 3-4 |
| Non-oxydising acids < 80°C | 1-2 | 2 | 3 | 1–2 | 2 | 3-4 |
| Oxydising acids < 80°C | - | 2 | 3 | 1 | 2 | 3-4 |
| Weak concentrate of lye < 100°C | 2 | 3-4 | 4 | 2 | 2 | 3-4 |
| Strong concentrate of lye < 100°C | 1 | 2-3 | 3 | 1 | 1 | 3-4 |
| Mineral oils < 110°C | 3 | 4 | - | - | 4 | 3-4 |
| Aliphatic carburetted hydrogen (hexane) | 3 | 3 | 1 | 1 | 4 | 3-4 |
| Aromatic carburetted hydrogen (benzole) | 1 | 2 | 1 | 1 | 3 | 3-4 |
| Alcohols | 1–3 | 2-3 | 2-3 | 3-4 | 3-4 | 3-4 |
| Ester and ketones | 1-2 | 1-2 | 1-2 | 1-2 | 3-4 | 3-4 |
| Ether | 1 | 2 | 1 | 1-3 | 3-4 | 3-4 |
| Methylene chloride | 1 | 2 | 1 | 2-3 | 3-4 | 3-4 |
| Ozone and atmospheric conditions | 1-2 | 3 | 4 | 4 | 3-4 | 3-4 |

International designation of flexible rubber materials according to ISO R 1629.

ISO = International standard.

### Notes

| | Designation of flexible rubber materials | Abbreviation symbol |
|---|---|---|
| [1] | Nitrile rubber | N |
| [2] | Hydrogenated actylonitrile rubber | H |
| [3] | Ethylene propylene rubber | E |
| [4] | Silicone rubber | Q |
| [5] | Fluorinated rubber | F |
| [6] | Polytetraflour ethylene | |

# Compliance and certification

We can provide documented and certified compliance with a broad spectrum of relevant international and local hygiene standards, worldwide. This helps you significantly reduce the engineering costs of setting up and operating standard-compliant processing plants around the world.

Please find below some examples of regulations, standards, and guidelines applicable to our products used in hygienic applications.

More information can be found in Instruction Manuals on alfalaval.com page.

For special requests please contact your local Alfa Laval organization.

Authorized to carry the 3A symbol

The mission of 3-A SSI is to enhance product safety for consumers of food, beverages, and pharmaceutical products through the development and use of 3-A Sanitary Standards and 3-A Accepted Practices. The 3-A symbol is a registered mark used to identify equipment that meets 3-A Sanitary Standards for design and fabrication.

ATEX-directive is the popular name for the European Directive 2014/34/EU setting the rules for equipment and protective systems intended for use in potentially explosive atmospheres.

Compliance to the Regulation (EC) No. 1935/2004.

The framework regulation (EC) No. 1935/2004 regulates food contact materials and articles within EU. It includes several requirements for materials and articles intended to come into contact with food to ensure material safety.The glass and fork symbol may be used to indicate that the relevant requirements stated in (EC) No. 1935/2004 are met.

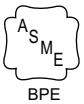
CE marking is a mandatory conformity mark for products placed on the market in the European Economic Area (EEA). With the CE marking on a product the manufacturer ensures that the product conforms with the essential requirements of the applicable EC directives. The letters "CE" stand for "Conformité Européenne" ("European Conformity").

UKCA marking is a mandatory conformity mark for products placed on the market in Great Britain (England, Scotland, and Wales). With the UKCA marking the manufacturer ensures that the product conforms with the relevant requirements of the applicable legislations.

Within United States, requirements for food contact materials and articles are specified by the Food and Drug Administration (FDA) and are regulated under the Code of Federal Regulations, Title 21 “Food and drugs”, Parts 170-199 “Food for human consumption”.

**USP Class VI / ISO 10993**

The United States Pharmacopeia (USP) standards, chapter 87 and 88, and International Organization for Standardization (ISO) standard 10993, sections 5, 6,10 and 11, specifies requirements to ensure biocompatibility of product contact parts intended to be used in pharma applications.




The American Society of Mechanical Engineers Bioprocessing Equipment (ASME BPE) is the Bioprocess Equipment group of the ASME that provides engineers and quality control professionals a measurable way to specify and purchase equipment for the Biotechnology, Pharmaceutical and Personal Care Products industries.

# Alfa Laval hygienic product animations

### Pump animations

Get a look inside our products and see how they work. Mouse over the image and click to see animations. See more at: Alfa Laval - hygienic product animations

### Alfa Laval LKH Centrifugal pumps

### Alfa Laval LKH Prime Centrifugal pumps

Alfa Laval SolidC Centrifugal pumps

Alfa Laval SRU Rotary lobe pump

Alfa Laval SX Rotary lobe pump

Alfa Laval OptiLobe Rotary lobe pump

Alfa Laval DuraCirc® Circumferential piston pump

Alfa Laval twin screw pumps

# Pumps

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# Gear pumps

# Alfa Laval M Gear

## Gear Pumps

### Introduction

The Alfa Laval M Gear is an external gear pump that efficiently transfers low-volume fluids for filling applications. Precision alignment, easy cleaning and simple maintenance make the stainless-steel M Gear pump a solid choice for dosing, sampling and filling machines. This proven rotary positive displacement pump easily adapts to OEM filling machines.

### Application

The Alfa Laval M Gear is designed for uninterrupted production in a broad range of hygienic and industrial applications across the food, chemical, personal care, and many other industries.

### Benefits

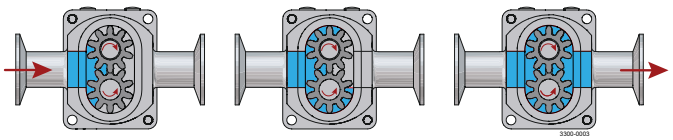
- Wide performance envelope and increased pressure capabilities cover a broad range of process requirements
- Proven performance and predictable, consistent output due to FDA-approved contacting gears
- Increased production with reduced carbon footprint due to high efficiency and low energy consumption
- More uptime and quick, cost-effective maintenance due to fast dismantling for routine service or parts replacement
- Flexible, compact design for easy installation in tight spaces and integration with OEM filling machines

### Working principle

The positive displacement of the pump is created by contacting, contra-rotating multi-lobe gears, where one gear drive drives the secondary within a fully swept pump chamber. The pump is capable of bi-rotational flow without requiring modification.

Fluid is carried through the pump in the cavities formed between the contacting gear and the interior of the case. As the blades disengage, a cavity forms, filling with fluid. As the blades engage, the cavity diminishes, displacing fluid into the outlet port.

The gears are mounted between specially developed PTFE bush bearings, all fitted within the main pump body to ensure precision alignment and high-performance efficiency.



### Certificates

(EC) No. 1935/2004

FDA

## TECHNICAL DATA

| Standard Specification | |
|---|---|
| Pump gears: | PTFE Impregnated 316L or Plain 316L |
| Other product wetted steel parts: | 316L / 1.4404 |
| Bush Bearings: | FDA approved premium grade PTFE resin |
| Inside surface finish: | Mech Ra ≤ 0.8 µm / Mech Ra ≤ 32 µin |
| Bracket - Flange Frame Adaptor | Aluminum |
| Coupling guard: | 304 (1.2 mm thick) |
| Max process temperature: | 60°C / 140°F |
| Connections: | ½" Females Connections: BSP Thread, Bore Hole (No thread) |
| | 1" Male Connections: Tri-Clamp, SMS, DIN11851 |

### Motor

| | Model | | |
|---|---|---|---|
| | **200** | **210** | **220** |
| Power (kW) | 0.25 | 0.37 | 0.55 |
| Poles | 6 or 8 | 6 | 6 |
| Speed (rpm) | 960 or 720 | 960 | 960 |
| Coupling | D71 or D80 | D80 | D80 |
| Drive Specification: | IEC Induction Motor, C-Face / Foot mounted, TEFC, IP55 | | |
| Voltages: | 400v/3ph/50Hz or 460v/3ph/60Hz. | | |

### Warranty

Standard 1-years warranty on M Gear pumps. The warranty covers all non-wear parts on the condition that genuine Alfa Laval Spare Parts are used.

### Shaft seals

Only one single mechanical seal required for the drive shaft for maximum leakage control.

| | |
|---|---|
| Rotary seal face: | Carbon or Silicon Carbide |
| Stationary seal face: | Stainless Steel or Silicon Carbide |
| Elastomers: | EPDM or FPM (FDA conforming) |

Note: Only possible combinations are Stainless Steel / Carbon or Silicon Carbide / Silicon Carbide

### Process data

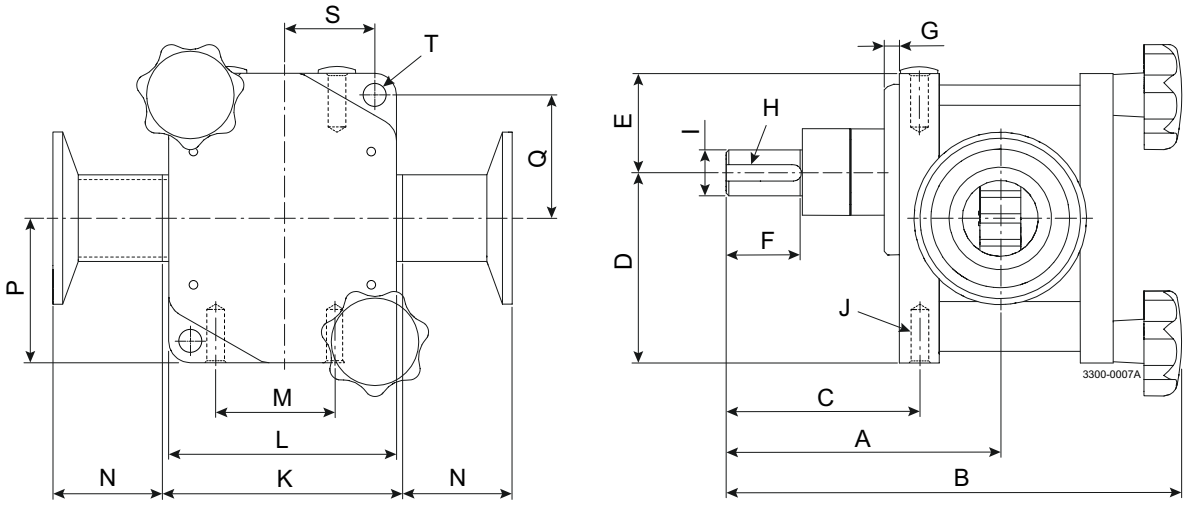
| M Gear Model | Connection | Displacement | Differential pressure | Max. speed | Bare-shaft weight |
|---|---|---|---|---|---|
| | inch | US gal/100 rev | psi | rev/min | lbs |
| **M200** | 1/2" or 1" | 0.159 | 100 | 1360 | 4.4 |
| **M210** | 1/2" or 1" | 0.264 | 100 | 1360 | 4.8 |
| **M220** | 1/2" or 1" | 0.476 | 60 | 1360 | 6.4 |

½" connections only possible with Female Thread connections.

### Pump Performance (at viscosity 65 cP)

| **Pump Model + Speed** | | **Pressure** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **0 PSI** | | | **29 PSI** | | | **58 PSI** | | | **87 PSI** | | | **101 PSI** | | |
| | | **Flow** | **Power** | **Motor** | **Flow** | **Power** | **Motor** | **Flow** | **Power** | **Motor** | **Flow** | **Power** | **Motor** | **Flow** | **Power** | **Motor** |
| | **rev/min** | **GMP** | **HP** | **Frame** | **GMP** | **HP** | **Frame** | **GMP** | **HP** | **Frame** | **GMP** | **HP** | **Frame** | **GMP** | **HP** | **Frame** |
| **M200** | **690** | 1.1 | 0.16 | 80 | 0.99 | 0.16 | 80 | 0.86 | 0.16 | 80 | 0.7 | 0.16 | 80 | 0.63 | 0.16 | 80 |
| | **900** | 1.43 | 0.24 | 80 | 1.3 | 0.24 | 80 | 1.12 | 0.24 | 80 | 0.92 | 0.24 | 80 | 0.84 | 0.34 | 80 |
| | **1360** | 2.13 | 0.34 | 80 | 1.94 | 0.34 | 80 | 1.67 | 0.34 | 80 | | | - | | | |
| **M210** | **690** | 1.76 | 0.16 | 80 | 1.72 | 0.16 | 80 | 1.63 | 0.16 | 80 | 1.58 | 0.24 | 80 | 1.52 | 0.24 | 80 |
| | **900** | 2.31 | 0.24 | 80 | 2.27 | 0.24 | 80 | 2.16 | 0.24 | 80 | 2.07 | 0.34 | 80 | 2 | 0.34 | 80 |
| | **1360** | 3.43 | 0.34 | 80 | 3.39 | 0.34 | 80 | 3.24 | 0.16 | 80 | | | - | | | |
| **M220** | **690** | 3.4 | 0.16 | 80 | 3.24 | 0.16 | 80 | 3.04 | 0.24 | 80 | | | - | | | |
| | **900** | 4.4 | 0.24 | 80 | 4.23 | 0.24 | 80 | 3.96 | 0.34 | 80 | | | - | | | |
| | **1360** | 6.6 | 0.34 | 80 | 6.34 | 0.34 | 80 | | | | | - | | | | |

## Bareshaft Pump Dimensions




Dimensions (inch)

| Models | A | | B | | C | D | E | F | G | H | I | J | K | L | M | N | P | Q | S | T |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | | | | | | | | | | | | | | | | |
| M200 | 2.97 | 5.19 | 5.19 | 5.19 | 2.05 | 2.24 | 1.1 | 0.79 | 0.12 | 0.2*0.1 | 0.55 | 7/32" | 2.75 | 2.64 | 1.26 | 2.05 | 1.67 | 1.42 | 1.06 | ø0.25 |
| M210 | 2.97 | 5.19 | 5.19 | 5.19 | 2.05 | 2.24 | 1.1 | 0.79 | 0.12 | 0.2*0.1 | 0.55 | 7/32" | 2.75 | 2.64 | 1.26 | 2.05 | 1.67 | 1.42 | 1.06 | ø0.25 |
| M220 | 3.5 | 6.25 | 6.25 | 6.25 | 2.05 | 2.24 | 1.1 | 0.79 | 0.12 | 0.2*0.1 | 0.55 | 7/32" | 2.75 | 2.64 | 1.26 | 2.05 | 1.67 | 1.42 | 1.06 | ø0.25 |

[1] 1/2" BSP

[2] 1" Triclamp / SM

[3] 1" DIN11851

# Centrifugal pumps

# Alfa Laval LKH

## Centrifugal Pumps

### Introduction

The Alfa Laval LKH Centrifugal Pump is a premium pump for use in hygienic applications. To increase process productivity, it is distinguished by high efficiency, gentle product treatment, chemical resistance, and a wide range of flow rates, pressures and options.

Precision-engineered, the LKH pump delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

### Application

Designed for Cleaning-in-Place (CIP), the Alfa Laval LKH is ideal for hygienic applications within the dairy, food, beverage and personal care industries that require gentle product treatment and reliable operation.

The LKH pump is available in 13 sizes to handle capacities up to 2200 USGPM and differential pressures up to 525 feet at 60 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified, effective CIP cleanability.
- Wide performance envelope: reduce need for parallel and serial pump installations and ensure pump operating with high efficiency.
- Maximized uptime and reduced maintenance costs: robust mechanical design and ease of maintenance with modular front-loading seals.

### Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in AISI 316L. Four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient and gentle handling of the product as it moves through the pump.

As standard, the LKH pump is equipped with a single mechanical shaft seal but is also available with a single flushed or a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

### Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | AISI 316L |
| Other steel parts: | Stainless steel |
| Inside surface finish: | Mech. ≤ 32 Ra |
| Product wetted elastomers: | EPDM |
| Rotary seal face: | Carbon |
| Stationary seal face: | Silicon Carbide |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3 phase, 60 HZ, 230/460V. 3500 RPM or 1750 RPM. Premium efficiency, Class F. Note different frame sizes. LKH-75 and -90 only low speed (1750 RPM). |

| Motor sizes | |
|---|---|
| 60Hz: | 1 - 100 Hp |

## OPERATING DATA

| Max inlet pressure | |
|---|---|
| LKH-5: | 87 PSI (6 bar) |
| LKH-10 - 60: | 145 PSI (10 bar) |
| LKH-70 - LKH-90 | 72.5 PSI (5 bar) |

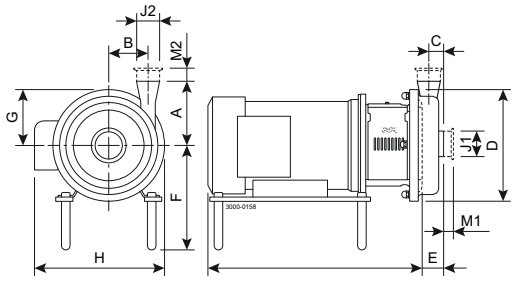
| Temperature | |
|---|---|
| Temperature range: | 14°F to +284° F (EPDM) |
| Flush media: | Max 158°F |
| Flush housing sterilization (pump not in operation): | Max 257°F |

| Flushed shaft seal: | |
|---|---|
| Water pressure inlet: | Max. 14.5 PSI (1 bar) |
| Water consumption: | 4-8 USGPH |

| Double mechanical shaft seal: | |
|---|---|
| Water pressure inlet, LKH-5 to -60: | Max. 72.5 PSI. (5 bar) |
| Water pressure inlet, LKH-70 to -90: | Max. 43.5 PSI. (3 bar) |
| Water consumption: | 4-8 USGPH |

| Connections for flushed and double mechanical shaft seal | |
|---|---|
| LKH-5 - 90: | 1/8" G |

## Dimensions




### Pump specific measures (inch)

| Pump Model | LKH-5 | LKH-10 | LKH-15 | LKH-20 | LKH-25 | LKH-35 | LKH-40 | LKH-45 | LKH-50 | LKH-60 | LKH-70 | LKH-75 | LKH-90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A** | 6.220 | 5.591 | 6.535 | 7.087 | 7.598 | 7.598 | 8.346 | 8.346 | 8.071 | 10.276 | 10.000 | 10.197 | 12.205 |
| **B** | 2.756 | 3.425 | 2.598 | 3.465 | 4.173 | 4.685 | 4.961 | 4.961 | 4.646 | 4.016 | 5.787 | 6.929 | 9.843 |
| **C** | 0.866 | 0.906 | 1.693 | 1.063 | 1.260 | 0.906 | 1.102 | 1.102 | 1.378 | 2.441 | 0.984 | 1.890 | 2.559 |
| **D** | 7.441 | 9.724 | 9.724 | 9.961 | 11.929 | 11.929 | 12.953 | 12.953 | 12.953 | 12.953 | 16.063 | 18.425 | 19.843 |
| **E** | 1.654 | 2.008 | 3.425 | 2.480 | 2.706 | 2.126 | 2.520 | 2.520 | 3.031 | 4.173 | 2.992 | 3.622 | 3.740 |

### Motor specific measures (inch)

| Motor TC/TSC | 56TC | 143TC | 145TC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC | 365TSC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | 1.0 | 1.5 | 2.0 | 3.0 | 5.0 | 7.5 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 40.0 | 50.0 | 60.0 | 75.0 |
| **F(max)*** [1] | 8.110 | 8.110 | 8.110 | 9.094 | 9.094 | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 | 12.598 | 12.598 | 13.622 | 13.622 |
| **G** | 3.307 | 3.504 | 3.543 | 4.488 | 4.488 | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 | 8.425 | 8.504 | 9.331 | 9.331 |
| **H** | 8.937 | 9.094 | 9.094 | 11.102 | 11.102 | 13.071 | 13.071 | 17.795 | 17.795 | 20.945 | 20.945 | 23.346 | 23.346 | 26.811 | 26.811 |
| **I (LKH-5)** | 13.307 | 14.843 | - | 18.268 | - | - | - | - | - | - | - | - | - | - | - |
| **I (LKH-10 to LKH-60)** | - | 14.843 | 15.118 | 17.992 | 18.150 | 21.024 | 21.024 | 26.063 | 27.835 | 28.583 | 30.039 | 33.071 | 34.646 | 34.449 | - |
| **I (LKH-70 to LKH-90)** | - | - | - | - | - | 21.811 | 21.811 | 26.575 | 28.346 | 29.094 | 30.551 | 33.583 | 35.157 | 34.961 | 38.346 |

[1] Possible to reduce dimension F by min. 2.32 inch for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

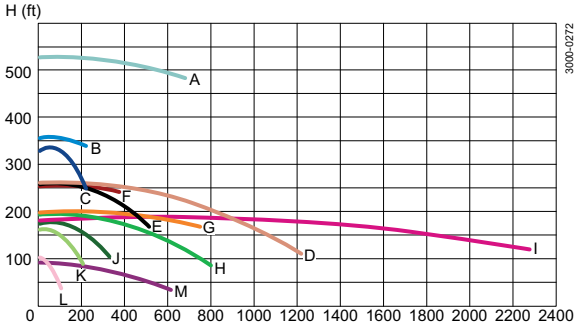
| Pump Model | LKH-5 | LKH-10 | LKH-15 | LKH-20 | LKH-25 | LKH-35 | LKH-40 | LKH-45 | LKH-50 | LKH-60 | LKH-70 | LKH-75 | LKH-90 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor range (TC/TSC)** | 56TC-182TC | 56TC-254TC | 145TC-154TC | 145TC-256TC | 145TC-286TSC | 182TC-286TSC | 182TC-286TSC | 182TC-286TSC | 182TC-324TSC | 213TC-364TSC | 213TC-405TSC | 254TC-326TSC | 286TSC-405TSC |

### Connections (inch)

| Pump Model | | LKH-5 | LKH-10 LKH-20 LKH-35 | LKH-15 LKH-45 LKH-50 LKH-70 | LKH-25 | LKH-40 | LKH-60 LKH-70 | LKH-60 LKH-70 | LKH-90 |
|---|---|---|---|---|---|---|---|---|---|
| **TRI-Clamp** | **M1** | **1.13** | **1.13** | **1.13** | **1.13** | **1.13** | **1.13** | **1.5** | **1.5** |
| | **M2** | **1.13** | **1.13** | **1.13** | **1.13** | **1.13** | **1.13** | **1.13** | **1.5** |
| **J1** [1] | | **2.00"** | **2.50"** | **4.00"** | **3.00"** | **3.00"** | **4.00"** | **6.00"** | **6.00"** |
| **J2** [1] | | **1.50"** | **2.00"** | **3.00"** | **2.50"** | **2.00"** | **4.00"** | **4.00"** | **6.00"** |

[1] Other dimensions available on request.

## Flow chart




A = LKH-70 D = LKH-60 G = LKH-75 J = LKH-20 M = LKH-15
B = LKH-40 E = LKH-25 H = LKH-45 K = LKH-10
C = LKH-35 F = LKH-50 I = LKH-90 L = LKH-5

## Options

- Impeller with reduced diameter.
- Flushed shaft seal.
- Double mechanical shaft seal.
- Rotating seal face of Silicon Carbide.
- Product wetted elastomers NBR, FPM or FEP.
- ½" or ¾" tri clamp drain connection.
- Product wetted surface finish Ra ≤ 20.
- Inducer (LKH-10 to -50).
- Counter flanges, seal rings and bolts for flanged connections (industrial version).
- Standard clearance is 0.02" (0.04" for LKH-70 to LKH-90) and can be made up to 0.098").
- Motor enclosures: washdown, TEFC, explosion proof, inverter duty and others upon request.
- Motor for other voltage and/or frequency.

## Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

**Note!** For further details, see also ESE00698.

# Alfa Laval LKH Multistage

## Centrifugal pumps

### Introduction

The Alfa Laval LKH-110, LKH-110P and LKH-120P pumps are highly efficient multistage centrifugal pumps for use in hygienic applications. Precision-engineered and available with up to four stages, these LKH Multistage Pumps deliver high energy efficiency. Their optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

### Applications

Available in two-, three or four-stage models, the LKH Multistage Pumps save space and energy by replacing up to three booster pumps in a line. Used primarily in high-pressure applications with low capacity, they withstand system pressures up to 40 bar and deliver differential pressures up to 19 bar at 50 Hz. Designed for Cleaning-in-Place (CIP), the pumps are suitable for, but not limited to, many types of filtration applications across the food, beverage, home-personal care, biotechnology and pharmaceutical industries.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified effective CIP cleanability.
- High inlet pressure: designed for inlet pressures up to 40 bar and can therefore be used in the most demanding applications within filtration.
- High differential pressure: reduced need for serial pump installations saves space and energy.

### Standard design

All media contacting steel components like pump casing parts, impellers, and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

As standard, the LKH multistage pump is equipped with an internal single mechanical shaft seal but is also available with a flushed shaft seal. The secondary seal of the flushed seal is a long-lasting lip seal. The front-loading shaft seal makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced

design minimizes the risk of seal opening during unforeseen pressure shock.

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | Acid-resistant steel, AISI 316L and AISI 329L |
| Other steel parts: | Stainless steel, AISI 304 |
| Product wetted seals: | EPDM |
| Other O-rings: | EPDM. |
| Finish: | Polished ≤32Ra and 3A approved. |

| Motor | |
|---|---|
| Standard C-Face, foot mounted motor according to NEMA standard at 3500. Premium efficiency, insulation Class F. High Thrust Bearings Required. | |
| Hp | Horsepower requirements based on flow curves. |
| Voltage and frequency | 3 phase, 60 Hz, 230-460v standard. Other voltages and frequencies available upon request. |

| Connections for FSS: |
|---|
| 6mm tube/Rp 1/8" |

## OPERATING DATA

| Max. outlet pressure, LKHM-110/P, LKHM-120/P: | |
|---|---|
| Limited by the strength of the pump casing: | 580 PSI (40 bar) temperature < 104° F. |
| Limited by the strength of the pump casing: | 290 PSI (20 bar) temperature > 104° F. |

| | |
|---|---|
| Temperature range: | 14°F to +284 °F (EPDM). |
| Water pressure: | Normally atmospheric, max. 15 PSI (flushed seal). |
| Water consumption: | 0.066 -0.13 US GPM (flushed seal). |
| Noise level (at 3.3 ft): | 60-80 dB (A). |

## Max inlet pressure

### (Temperature < 40°C)

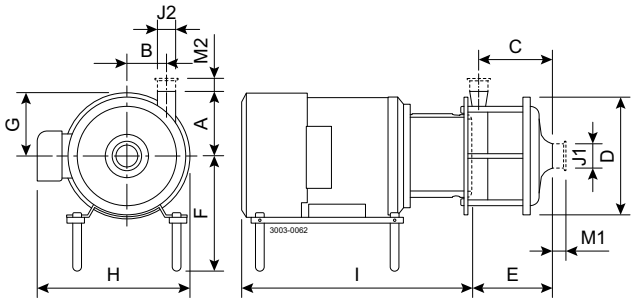
| Pump size | Speed and shaft seal material | | | | | | | | Motor | Backplate |
|---|---|---|---|---|---|---|---|---|---|---|
| | Max 50Hz | | | | Max 60Hz | | | | | |
| | C/SiC | | SiC/SiC | | C/SiC | | SiC/SiC | | | |
| | Max inlet pressure | | | | | | | | | |
| | bar | psi | bar | psi | bar | psi | bar | psi | | |
| LKH-112 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-113 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-114 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-112P | N/A | N/A | 30 | 435 | N/A | N/A | 30 | 435 | Special | Reinforced |
| LKH-113P | N/A | N/A | 30 | 435 | N/A | N/A | 30 | 435 | Special | Reinforced |
| LKH-114P | N/A | N/A | 25 | 363 | N/A | N/A | 25 | 363 | Special | Reinforced |
| LKH-122P | 10 | 145 | 30 | 435 | N/A | N/A | 30 | 435 | Special | Std. |
| LKH-123P | 10 | 145 | 30 | 435 | N/A | N/A | 30 | 435 | Special | Std. |
| LKH-124P | N/A | N/A | 25 | 363 | N/A | N/A | 20 | 290 | Special | Std. |

### (Temperature > 40°C)

| Pump size | Speed and shaft seal material | | | | | | | | Motor | Backplate |
|---|---|---|---|---|---|---|---|---|---|---|
| | Max 50Hz | | | | Max 60Hz | | | | | |
| | C/SiC | | SiC/SiC | | C/SiC | | SiC/SiC | | | |
| | Max inlet pressure | | | | | | | | | |
| | bar | psi | bar | psi | bar | psi | bar | psi | | |
| LKH-112 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-113 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-114 | 10 | 145 | 10 | 145 | 10 | 145 | 10 | 145 | Std. | Std. |
| LKH-112P | N/A | N/A | 20 | 290 | N/A | N/A | 15 | 218 | Special | Reinforced |
| LKH-113P | N/A | N/A | 20 | 290 | N/A | N/A | 20 | 290 | Special | Reinforced |
| LKH-114P | N/A | N/A | 20 | 290 | N/A | N/A | 20 | 290 | Special | Reinforced |
| LKH-122P | 10 | 145 | 30 | 435 | N/A | N/A | 30 | 435 | Special | Std. |
| LKH-123P | 10 | 145 | 30 | 435 | N/A | N/A | 30 | 435 | Special | Std. |
| LKH-124P | N/A | N/A | 25 | 363 | N/A | N/A | 20 | 290 | Special | Std. |

## Dimensions

(inches)




### Pump specific measures

| Pump Model | LKH-112/LKH-112P | LKH-113/LKH113P | LKH-114/LKH-114P | LKH-122 | LKH-123 | LKH-124 |
|---|---|---|---|---|---|---|
| A | 5.512 | 5.512 | 5.512 | 10.433 | 10.433 | 10.433 |
| B | 3.386 | 3.386 | 3.386 | 4.409 | 4.409 | 4.409 |
| C | 2.992 | 4.528 | 6.102 | 3.346 | 5.591 | 7.874 |
| D | 10.079 | 10.079 | 10.079 | 13.189 | 13.189 | 13.189 |
| E | 3.898 | 5.433 | 7.008 | 4.409 | 6.654 | 8.898 |

### Motor specific measures

| Motor TC/TSC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC | 365TSC | 405TSC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | **7.5** | **10.0** | **15.0** | **20.0** | **25.0** | **30.0** | **40.0** | **50.0** | **60.0** | **75.0** | **100.0** |
| F(max)[1] | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 | 12.598 | 12.598 | 13.622 | 13.622 | 13.622 |
| G | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 | 8.425 | 8.504 | 9.331 | 9.331 | 9.331 |
| H | 13.071 | 13.071 | 17.795 | 17.795 | 20.945 | 20.945 | 23.346 | 23.346 | 26.811 | 26.811 | 26.811 |
| I | 21.024 | 21.024 | 26.063 | 27.835 | 28.583 | 30.039 | 33.071 | 34.646 | 34.449 | 38.346 | 38.346 |

[1] Possible to reduce dimension F by min. 2.32 inch for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

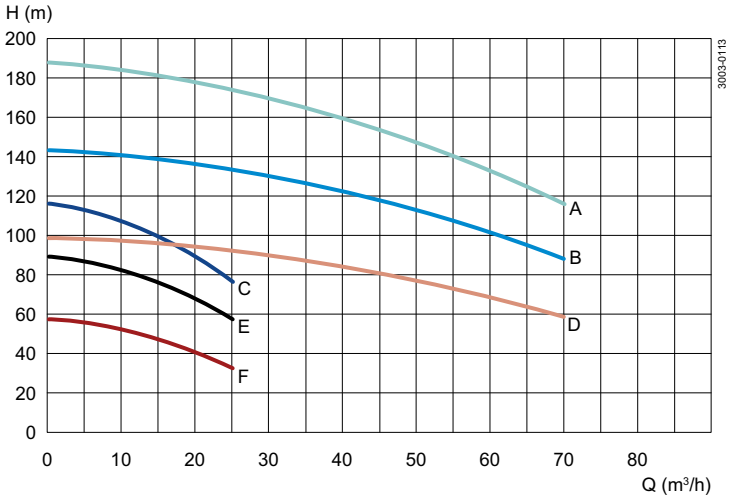
| Pump Model | LKH-112 | LKH-113 | LKH-114 | LKH-122 | LKH-123 | LKH-124 |
|---|---|---|---|---|---|---|
| Motor range (IEC) | 213TC-215TSC | 213TC-286TSC | 213TC-286TSC | 324TSC-364TSC | 324TSC-405TSC | 324TSC-405TSC |
| Dimensional data are based on 2 pole, Sterling motors. | | | | | | |

### Connections

| Pump Model | | LKH-112<br>LKH-113<br>LKH-114 | LKH-122<br>LKH-123<br>LKH-124 |
|---|---|---|---|
| Tri-Clamp | M1 | 1.13 | - |
| | M2 | 1.13 | - |
| Heavy duty clamp | M1 | - | 1.14 |
| | M2 | - | 1.14 |
| Flange acc. To EN1092 | M1 | - | 2.21 |
| | M2 | - | 2.21 |
| J1[1] | | 2" | 3" |
| J2[1] | | 1.5" | 2.5" |

[1] Other dimensions available on request.

## Flow chart




A = LKH-124P
B = LKH-123P
C = LKH-114 -114P
D = LKH-122P
E = LKH-113 -113P
F = LKH-112 -112P

Frequency: 50Hz - Speed (synchr): 3000 rpm

## Options

- Motor with increased safety/flame proof motor. (only LKH-110)
- Flushed shaft seal.
- Impeller with reduced diameter.
- Product wetted seals of Buna (NBR), or Fluorinated rubber (FPM).
- Rotating seal ring of Silicon Carbide.
- Surface roughness, product wetted parts: unpolished, 32Ra, micro inches (0.8 mm), or higher finishes.

## Ordering

Please state the following when ordering:

For exact specification, please use the Anytime Configurator.

Use the following designation:

- Pump size.
- Version, hygienic or industrial.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

# Alfa Laval LKHPF

## Centrifugal pumps

### Introduction

The Alfa Laval LKHPF Centrifugal Pump for High Inlet Pressure is a high-pressure, high-efficiency centrifugal pump suited for high-pressure filtration applications. To increase process productivity, it is distinguished by high efficiency, low energy consumption, gentle product treatment, chemical resistance, and a wide range of flow rates, pressures and options.

Precision-engineered, the LKHP Filtration pump delivers greater energy efficiency than similar premium pumps. Its optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

### Applications

Designed for inlet pressures up to 40 bar and for Cleaning-in-Place (CIP), the Alfa Laval LKHPF pump is ideal for use in filtration systems across the food, beverage, home-personal care, biotechnology and pharmaceutical industries. Tough under pressure, the LKHPF is ideal for demanding nanofiltration and reverse osmosis filtration installations.

The LKHPF pump is available in nine sizes to handle capacities up to 280 m3/h and differential pressures up to 11 bar at 50 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified, effective CIP cleanability.
- Wide performance envelope: reduce need for parallel and serial pump installations and ensure pump operating with high efficiency.
- High inlet pressure: designed for inlet pressures up to 40 bar and can therefore be used in the most demanding applications within filtration.

### Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient and gentle handling of the product as it moves through the pump.

As standard, the LKHPF pump is equipped with an internal single mechanical shaft seal but is also available with a flushed shaft seal. The secondary seal of the flushed seal is a long-lasting lip seal. The front-loading shaft seal makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

With heavy-duty pump casing and backplate, high-pressure internal seals and multiple heavy-duty studs, the pump is capable of handling very high inlet pressures.

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | Acid-resistant steel AISI 316L and AISI 329L. |
| Other steel parts: | Stainless steel AISI 304. |
| Product wetted seals: | EPDM |
| Optional: | NBR (Buna); FPM (Viton) |
| Finish: | Polished ≤32 Ra. |

| Motor |
|---|
| Special high thrust bearing NEMA C-Face motor, foot mounted motor according to NEMA standards at 3500 RPM. Premium efficiency, TEFC, insulation Class F |

| Connections | |
|---|---|
| Connections for flushed shaft seal: | 1/4 tube/Rp 1/8 |

## OPERATING DATA

| Pressure | |
|---|---|
| Max. inlet pressure: | 600 PSI. |
| Water pressure: | Max. 14.5 PSI |

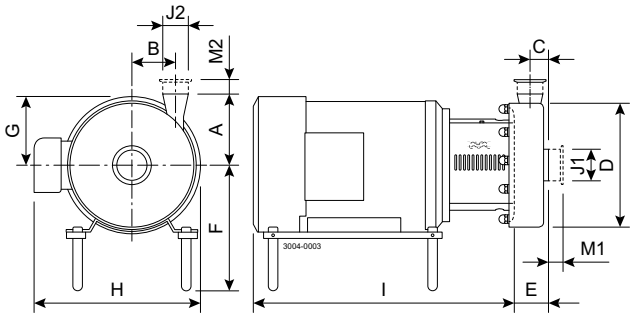
| Temperature | |
|---|---|
| Temperature range: | 14° F to 284° F (EPDM). |

| Water consumption | |
|---|---|
| Water consumption: | 4-8 usgph |

Footnote: (Flushed seal)

| Noise | |
|---|---|
| Noise level (at 3 ft.): | 60 - 80 dB (A). |

## Dimensions (inch)




### Pump specific measures

| Pump Model | LKHPF-10 | LKHPF-20 | LKHPF-25 | LKHPF-35 | LKHPF-40 | LKHPF-45 | LKHPF-50 | LKHPF-60 | LKHPF-70 |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 5.591 | 7.087 | 7.598 | 7.598 | 8.346 | 7.598 | 8.071 | 10.315 | 10.000 |
| **B** | 3.425 | 3.425 | 4.173 | 4.685 | 4.961 | 3.819 | 4.646 | 4.016 | 5.787 |
| **C** | 1.142 | 1.693 | 1.496 | 1.102 | 1.339 | 1.693 | 1.654 | 1.654 | 1.102 |
| **D** | 9.724 | 9.961 | 11.929 | 11.929 | 12.953 | 11.929 | 12.953 | 12.953 | 16.063 |
| **E** | 2.520 | 3.071 | 3.228 | 2.598 | 3.031 | 3.661 | 3.583 | 3.661 | 3.661 |

### Motor specific measures

| Motor TC/TSC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC | 365TSC |
|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | 7.5 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 40.0 | 50.0 | 60.0 | 75.0 |
| **F(max)** [1] | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 | 12.598 | 12.598 | 13.622 | 13.622 |
| **G** | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 | 8.425 | 8.504 | 9.331 | 9.331 |
| **H** | 13.071 | 13.071 | 17.795 | 17.795 | 20.945 | 20.945 | 23.346 | 23.346 | 26.811 | 26.811 |
| **I (LKHPF-10 to LKHPF-60)** | 21.024 | 21.024 | 26.063 | 27.835 | 28.583 | 30.039 | 33.071 | 34.646 | 34.449 | - |
| **I (LKHPF-70)** | 21.811 | 21.811 | 26.575 | 28.346 | 29.094 | 30.551 | 33.583 | 35.157 | 34.961 | 38.346 |

[1] Possible to reduce dimension F by min. 2.32 mm for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

| Pump Model | LKHPF-10 | LKHPF-20 | LKHPF-25 | LKHPF-35 | LKHPF-40 | LKHPF-45 | LKHPF-50 | LKHPF-60 | LKHPF-70 |
|---|---|---|---|---|---|---|---|---|---|
| Motor range (TC/TSC) | 213TC | 213TC-215TC | 213TC-256TC | 213TC-256TC | 215TC-286TSC | 213TC-256TC | 213TC-286TSC | 213TC-364TSC | 234TSC-405TSC |

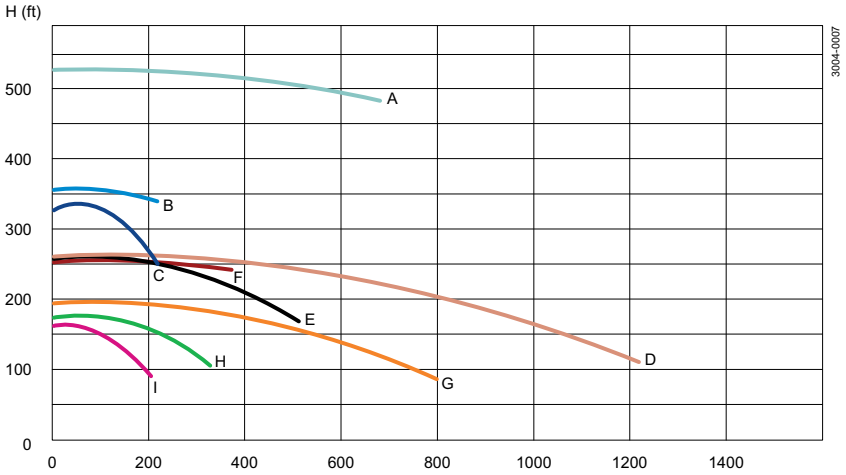
**Note!** Dimensional data are based on 2 pole, Sterling motors.

### Connections

| Pump Model | | LKHPF-10 LKHPF-20 LKHPF-35 | LKHPF-25 | LKHPF-40 | LKHPF-45 LKHPF-50 LKHPF-70 | LKHPF-60 |
|---|---|---|---|---|---|---|
| **Tri-Clamp** | M1 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| | M2 | 1.12 | 1.12 | 1.12 | 1.12 | 1.12 |
| **J1** [1] | | 2.50" | 3.00" | 3.00" | 4.00" | 4.00" |
| **J2** [1] | | 2.00" | 2.50" | 2.00" | 3.00" | 4.00" |

[1] Other dimensions available on request.

## Flow chart




A = LKHPF - 70
B = LKHPF - 40
C = LKHPF - 35
D = LKHPF - 60
E = LKHPF - 25
F = LKHPF - 50
G = LKHPF - 45
H = LKHPF - 20
I = LKHPF - 10

## Options

- Impeller with reduced diameter.
- Motor for other voltage and/or frequency.
- Flushed shaft seal.
- Caunder connection.

## Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Single or flushed shaft seal.
- Elastomer type.
- Optional extras.

## Material grades

- Surface roughness, product wetted parts: unpolished, 32Ra, micro inches (0.8 mm), or higher finishes.
- Seals in Nitrile (NBR/Buna) or Fluorinated rubber (FPM/Viton).

# Alfa Laval LKH UltraPure

## Centrifugal pumps

### Introduction

The Alfa Laval LKH UltraPure Centrifugal Pump is designed for use in high-purity applications where high efficiency, exceptional cleanability, contamination safety, robust design and low maintenance are of paramount importance. With verified cleanability, these pumps provide unobstructed product flow, very low NPSH requirements and excellent hydraulic efficiency.

Precision-engineered, the LKH UltraPure pump delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

### Applications

The Alfa Laval LKH UltraPure pump is designed to meet the stringent demands and regulations of high-purity applications across the biotechnology and pharmaceutical industries which require equipment with the highest material integrity.

All pumps are delivered with a complete Alfa Laval Q-doc package. Q-doc provides easier validation, proof of origin and compliance for inspection according to Good Manufacturing Practice (GMP) and ASME BPE requirements.

The LKH UltraPure pump is available in eight sizes to handle capacities up to 1300 USGPM and differential pressures up to 500 feet at 60 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Maximized uptime and reduced maintenance costs: robust mechanical design and ease of maintenance with modular front-loading seals.
- Low contamination risk: comes with full material traceability and USP Class VI elastomers to reduce risk of process contamination from extractables.
- Smooth qualification, validation and process control: material traceability, and pump supplied with the Alfa Laval Q-doc package in line with Good Documentation Practice (GDP).

### Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in AISI 316L with material traceability 3.1 according to EN 10204. Product wetted elastomers are specified to USP Class VI, 249.8°F, Chapter 88 and Chapter 87. Four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient and gentle handling of the product as it moves through the pump.

As standard, the LKH UltraPure pump is equipped with a single mechanical shaft seal but is also available with a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced

design minimizes the risk of seal opening during unforeseen pressure shock.

## Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | AISI 316L and 329L with material traceability 3.1 according to EN 10204 (Mill test reports) |
| Other steel parts: | Stainless steel |
| Inside surface finish: | Electropolished Ra ≤ 15 µin |
| External finish: | Ra 32 µin |
| Product wetted elastomers: | EPDM - USP Class VI, 249.8°F. Chapter 88, and Chapter 87 |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Silicon Carbide |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3 phase, 60 HZ, 230/460V. 3500 RPM or 1750 RPM. Premium efficiency, Class F. |

| Motor sizes | |
|---|---|
| 60Hz: | 2 - 100 Hp |

## OPERATING DATA

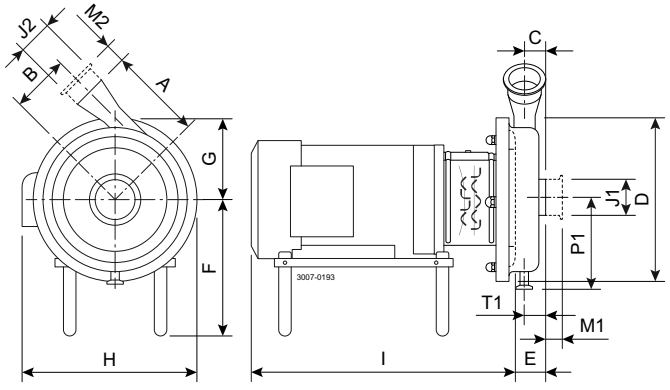
| Max. inlet pressure | |
|---|---|
| LKH UltraPure 10 - 60: | 145 PSI (10 bar) |
| LKH UltraPure 70 | 72.5 PSI (5 bar) |

| Temperature | |
|---|---|
| Temperature range: | 14°F to +284°F (EPDM) |
| Flush media: | Max. 158°F |
| Flush housing sterilization (pump not in operation): | Max. 257°F |

| Double mechanical shaft seal | |
|---|---|
| Water pressure inlet, LKH UltraPure 10 - 60: | Max. 72.5 PSI (5 bar) |
| Water pressure inlet, LKH UltraPure 70: | Max. 43.5 PSI (3 bar) |
| Water consumption: | 4 - 8 USGPH |

| Connections for double mechanical shaft seal | |
|---|---|
| LKH UltraPure 10 - 70: | 1/8" G |

## Dimensions (inch)



## Pump specific measures

| Pump Model | LKH UltraPure-10 | LKH UltraPure-20 | LKH UltraPure-25 | LKH UltraPure-35 | LKH UltraPure-40 | LKH UltraPure-45 | LKH UltraPure-60 | LKH UltraPure-70 |
|---|---|---|---|---|---|---|---|---|
| A | 5.591 | 7.087 | 7.598 | 7.598 | 8.346 | 8.346 | 10.276 | 10.000 |
| B | 3.425 | 3.465 | 4.173 | 4.685 | 4.961 | 4.961 | 4.016 | 5.787 |
| C | 0.906 | 1.063 | 1.260 | 0.906 | 1.102 | 1.102 | 2.441 | 0.984 |
| D | 9.724 | 9.961 | 11.929 | 11.929 | 12.953 | 12.953 | 12.953 | 16.063 |
| E | 2.008 | 2.480 | 2.717 | 2.126 | 2.520 | 2.520 | 4.173 | 2.992 |
| P1 | 5.283 | 5.516 | 6.388 | 6.604 | 7.071 | 5.335 | 6.878 | 8.598 |
| T1 | 0.803 | 1.219 | 1.441 | 0.850 | 1.262 | 1.992 | 0.953 | 1.453 |

## Motor specific measures

| Motor TC/TSC | 143TC | 145TC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC | 365TSC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | **1.0-1.5** | **2.0** | **3.0** | **5.0** | **7.5** | **10.0** | **15.0** | **20.0** | **25.0** | **30.0** | **40.0** | **50.0** | **60.0** | **75.0** |
| F(max.)[1] | 8.110 | 8.110 | 9.094 | 9.094 | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 | 12.598 | 12.598 | 13.622 | 13.622 |
| G | 3.504 | 3.543 | 4.488 | 4.488 | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 | 8.425 | 8.504 | 9.331 | 9.331 |
| H | 9.094 | 9.094 | 11.102 | 11.102 | 13.071 | 13.071 | 17.795 | 17.795 | 20.945 | 20.945 | 23.346 | 23.346 | 26.811 | 26.811 |
| I (LKH-10 to LKH-60) | 14.843 | 15.118 | 17.992 | 18.150 | 21.024 | 21.024 | 26.063 | 27.835 | 28.583 | 30.039 | 33.071 | 34.646 | 34.449 | - |
| I (LKH-70) | - | - | - | - | 21.811 | 21.811 | 26.575 | 28.346 | 29.094 | 30.551 | 33.583 | 35.157 | 34.961 | 38.346 |

[1] Possible to reduce dimension F by min. 2.32 in for all pump models. For smaller models it will be possible to reduce dimension F even further.

## Frame overview

| Pump Model | LKH UltraPure-10 | LKH UltraPure-20 | LKH UltraPure-25 | LKH UltraPure-35 | LKH UltraPure-40 | LKH UltraPure-45 | LKH UltraPure-60 | LKH UltraPure-70 |
|---|---|---|---|---|---|---|---|---|
| Moter range (TC/TSC) | 143TC-254TC | 145TC-256TC | 145TC-286TSC | 182TC-286TSC | 182TC-286TSC | 182TC-286TSC | 213TC-364TSC | 213TC-405TSC |

**Note!** Dimensional data are based on 2 pole, Sterling motors.

## Drain diameter

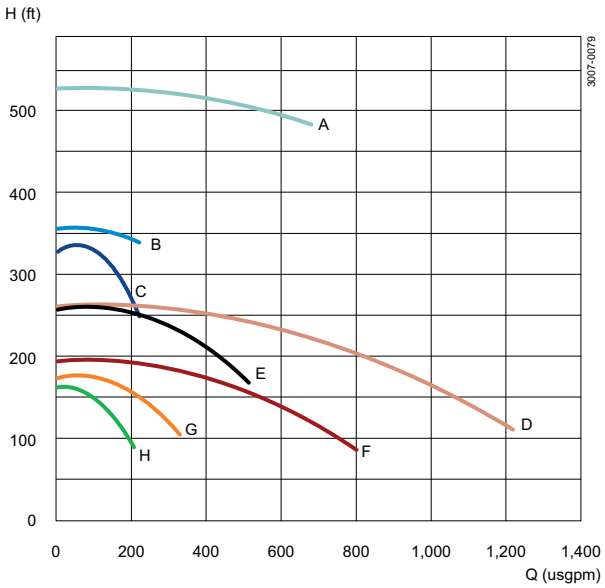
| | TC Clamp |
|---|---|
| 1/2" | 12.7 |

**Note!** Dimensions are for guidance only. For exact measures of specific pump specifications, please refer to Anytime Configurator.

## Connections

| Pump Model | | LKH UltraPure-10 LKH UltraPure-20 LKH UltraPure-35 | LKH UltraPure-25 | LKH UltraPure-40 | LKH UltraPure-45 LKH UltraPure-70 | LKH UltraPure-60 |
|---|---|---|---|---|---|---|
| TRI-Clamp | M1 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| | M2 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| J1 | | 2,50" | 3,00" | 3,00" | 4,00" | 4,00" |
| J2 | | 2,00" | 2,50" | 2,00" | 3,00" | 4,00" |

## Flow chart




A = LKHU 70 D = LKHU 60 G = LKHU 20
B = LKHU 40 E = LKHU 25 H = LKHU 10
C = LKHU 35 F = LKHU 45

**Figure 1. Flow chart – Frequency: 60Hz - Speed (synchr): 3600 rpm**

## Q-doc

**Standard documentation package:**

- Declaration of compliance to EN 10204 type 3.1 (MTR).
- Declaration of compliance to the U.S. Food & Drug Administration CFR 21 (non-metallic parts).
- Declaration of compliance to the U.S. Pharmacopeia (Elastomers and polymers).
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) declaration.
- Declaration of surface finish compliance.
- Declaration of passivation and electro polishing (if specified).
- 3.1 certification in accordance to EN10204.
- Pump performance test certificate.

**Optional documentation:**

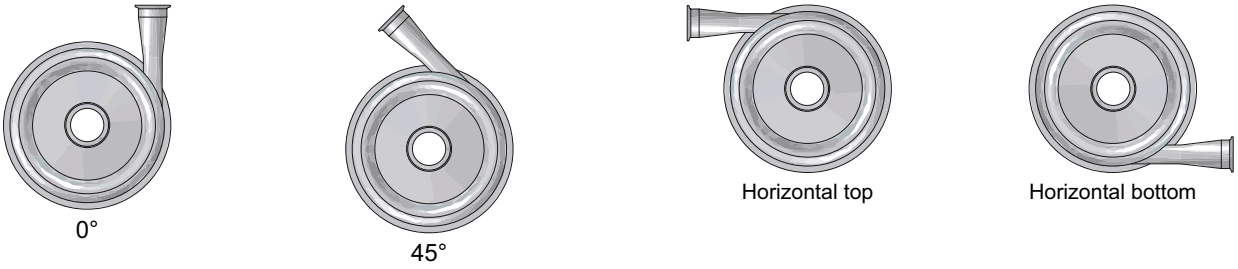
- Hydrostatic test certificate.
- Surface measurement report.
- Delta ferrite report (impeller).

## Options

- Impeller with reduced diameter.
- Impeller with delta ferrite max. 1%.
- Motor for other voltage and/or frequency.
- 1800 rpm. motor
- Motor with increased safety/flame proof motor.
- Double mechanical shaft seal.
- Pump with legs.
- 3/4" drain connection.
- Horizontal drain connection, see illustration below.
- Special flush arrangement with 1/2" Alfa Laval Unique DVST UltraPure diaphragm valve, needle valve and flow meter, see illustration below.
- No drain.
- Product wetted surface finish mechanically polished to Ra ≤ 20 µin.
- Passivated surface.
- Product wetted elastomers FPM or FEP to USP Class VI, 121°C Chapter 88, and Chapter 87.
- Hydrostatic testing with certificate.

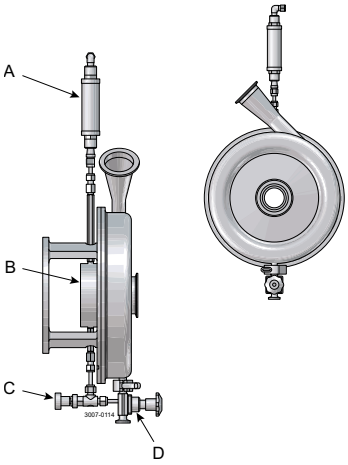
- Surface finish measurement with certificate.
- Horizontal top, 90° or horizontal bottom outlet, see illustration below.

### Available outlet positions




### Flush arrangement

With the flush kit arrangement some process fluid is passing through the flush housing of the double mechanical seal, creating a barrier from the atmosphere to avoid potential process contamination across the seal face.




A = Flow meter

B = Flush Housing

C = Flow control needle valve

D = Alfa Laval Unique DVST UltraPure valve

### Available drain connections

½" or ¾" vertical drain:
- Tri-clamp for ASME.

½" or ¾" horizontal drain:
- Tri-clamp for ASME.

### Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

**Note!** For further details, see also Instruction manual ESE01703. This product has EHEDG certificate.

# Alfa Laval LKH Prime

## Centrifugal pumps

### Introduction

Based on the market-leading Alfa Laval LKH pump, the Alfa Laval LKH Prime Centrifugal Pump is a versatile, highly efficient self-priming pump for use in hygienic applications, especially tank emptying and CIP return applications. With its combination of air-screw technology and advanced design, the pump can remove air from the suction pipe.

Precision-engineered, the LKH Prime delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller and airscrew design minimize recirculation and reduce energy consumption.

### Application

The LKH Prime pump is designed to meet the stringent hygienic requirements across the food, dairy, beverage, and home-personal care industries. It is ideal for tank emptying and CIP return applications. With verified and effective CIP cleanability, the LKH Prime can be used as a product pump as well.

The LKH Prime is available in three sizes to handle capacities up to 100 m3/h and differential pressures up to 7.5 bar at 50 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified and effective CIP cleanability.
- Quiet: operates very quietly compared to other self-priming pumps improving the working environment.
- Reduced capital investment: designed for Cleaning-in-Place (CIP) duties containing entrained air but can also pump product reducing need for additional pump.

### Standard design

All media contacting steel components like pump casing, impeller, airscrew, front cover, recirculation pipe and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient handling of the product as it moves through the pump.

As standard, the LKH prime pump is equipped with a single mechanical shaft seal but is also available with a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

### Working principle

On applications where the pumped media contains a mixture of air and liquid in the suction line, airscrew rotation causes the formation of a continuous liquid ring within the canister. Due to the eccentric position of the canister relative to the airscrew, an

air chamber forms between the liquid ring and the airscrew, which separates into air pockets between the air-screw vanes.

The continuous rotation of the air-screw forces air pockets through the canister into the suction stage of the impeller which are then pumped out via the discharge.

Liquid is returned from the discharge via the recirculation pipe into the canister to ensure the liquid ring is maintained at all times. When there is no air present, the canister and recirculation loop have no function and are fully filled with liquid. The liquid passes through the canister into the suction stage of the impeller, allowing the pump to act as a traditional centrifugal pump.

### Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Standard materials | |
|---|---|
| Product wetted steel parts: | W. 1.4404 (316L) |
| Other steel parts: | Stainless steel |
| Inside surface finish: | Mech Ra ≤ 32 |
| Product wetted elastomers: | EPDM |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3500 RPM. Premium efficiency, Class F. Note different frame sizes. |

| Connections | |
|---|---|
| Connections for double mechanical shaft seal | 1/8" NPT |

| Min/Max speed | |
|---|---|
| Air evacuation: | 2800 - 3600 rpm. |
| Pumping product (no air): | 900 - 3600 rpm. |

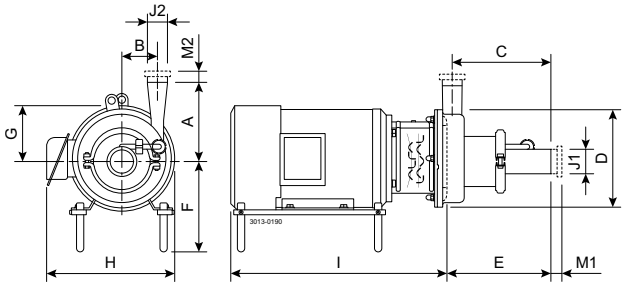
## OPERATING DATA

| Pressure | |
|---|---|
| Max. inlet pressure: | 72.5 PSI (5 bar) |

| Temperature | |
|---|---|
| Temperature range: | 14 °F to 284 °F (EPDM) |

| Double mechanical shaft seal | |
|---|---|
| Water pressure inlet: | Max. 72.5 PSI (5 bar) |
| Water consumption: | 4-8 US gph. |

## Dimensions (inch)




### Pump specific measures

| Pump Model | LKH Prime 10 | LKH Prime 20 | LKH Prime 40 |
|---|---|---|---|
| A | 7.17 | 7.64 | 10.20 |
| B | 3.35 | 3.62 | 4.96 |
| C | 8.74 | 9.76 | 10.67 |
| D | 9.72 | 9.96 | 12.95 |
| E | 9.64 | 11.02 | 11.85 |

### Motor specific measures

| Motor TC/TSC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | **3.0** | **5.0** | **7.5** | **10.0** | **15.0** | **20.0** | **25.0** | **30.0** | **40.0** | **50.0** | **60.0** |
| F(max.)[1] | 9.09 | 9.09 | 9.84 | 9.84 | 10.87 | 10.87 | 11.61 | 11.61 | 12.60 | 12.60 | 13.62 |
| G | 4.49 | 4.49 | 5.39 | 5.39 | 6.77 | 6.77 | 7.68 | 7.68 | 8.43 | 8.50 | 9.33 |
| H | 11.10 | 11.10 | 13.07 | 13.07 | 17.80 | 17.80 | 20.94 | 20.94 | 23.35 | 23.35 | 26.81 |
| I | 17.99 | 18.15 | 21.02 | 21.02 | 26.06 | 27.83 | 28.58 | 30.04 | 33.07 | 34.65 | 34.45 |

[1] Possible to reduce dimension F by min. 2.32 inches for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

| Pump Model | LKH Prime 10 | LKH Prime 20 | LKH Prime 40 |
|---|---|---|---|
| Motor range (TC/TSC) | 182TC-215TC | 182TC-256TC | 254TC-286TSC |

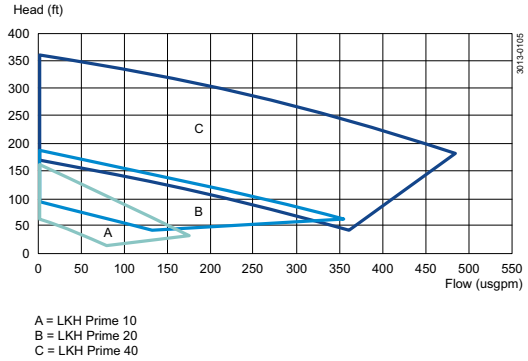
**Note!** Dimensional data are based on 2 pole, Sterling motors.

### Connections

| Pump Model | | LKH Prime 10 | LKH Prime 20 | LKH Prime 40 |
|---|---|---|---|---|
| TRI-Clamp | M1 | 1.13 | 1.13 | 1.13 |
| | M2 | 1.13 | 1.13 | 1.13 |
| J1[1] | | 2.00" | 2.50" | 3.00" |
| J2[1] | | 2.00" | 2.00" | 2.50" |

[1] Other dimensions available on request.

## Flow chart




A = LKH Prime 10
B = LKH Prime 20
C = LKH Prime 40

**Figure 1. Frequency: 60Hz - Speed (synchr): 3600 rpm**

## Options

- Impeller with reduced diameter.
- Motor enclosures: washdown, TEFC, explosion proof, inverter duty and others upon request.
- Double mechanical shaft seal.
- Product wetted surface finish Ra ≤ 20.
- Product wetted elastomers of Nitrile (NBR) or Fluorinated rubber (FPM).
- Rotating seal ring of Silicon Carbide.
- 1/2" or 3/4" tri clamp drain connections (two connections)

## Ordering

**Please state the following when ordering:**

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

# Alfa Laval LKH Prime UltraPure

## Centrifugal pumps

### Introduction

The Alfa Laval LKH Prime UltraPure Centrifugal Pump is designed for use in high-purity applications where high efficiency, exceptional cleanability, contamination safety, robust design and low maintenance are of paramount importance.

Precision-engineered, the LKH Prime UltraPure delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller and airscrew design minimize recirculation and reduce energy consumption.

### Applications

The Alfa Laval LKH Prime UltraPure is designed to meet the stringent demands and regulations of high-purity applications across the biotechnology and pharmaceutical industries that require equipment with the highest material integrity. It is ideal for tank emptying and CIP return applications; it has verified and effective CIP cleanability. The LKH Prime UltraPure can also be used as a product pump.

All pumps are delivered with a complete Alfa Laval Q-doc package. Q-doc provides easier validation, proof of origin and compliance for inspection purposes according to Good Manufacturing Practice (GMP) and ASME BPE requirements.

The LKH Prime UltraPure pump is available in two sizes to handle capacities up to 70 m3/h and differential pressures up to 4 bar at 50 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Quiet: operates very quietly compared to other self-priming pumps, thereby improving the working environment.
- Low contamination risk: comes with full material traceability and USP Class VI elastomers to reduce risk of process contamination from extractables.
- Smooth qualification, validation and process control: material traceability, and pump supplied with the Alfa Laval Q-doc package in line with Good Documentation Practices (GDP).

### Standard design

All media contacting steel components like pump casing, impeller, airscrew, front cover, recirculation pipe and backplate are in W. 1.4404 (AISI 316L) with material traceability 3.1 according to EN 10204. Product wetted elastomers are specified to USP Class VI, 249.8°F, Chapter 88 and Chapter 87. A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient handling of the product as it moves through the pump.

As standard, the LKH prime pump is equipped with a single mechanical shaft seal but is also available with a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced

design minimizes the risk of seal opening during unforeseen pressure shock.

### Working principle

On applications where the pumped media contains a mixture of air and liquid in the suction line, airscrew rotation causes the formation of a continuous liquid ring within the canister. Due to the eccentric position of the canister relative to the airscrew, an air chamber forms between the liquid ring and the airscrew, which separates into air pockets between the air-screw vanes.

The continuous rotation of the airscrew forces air pockets through the canister into the suction stage of the impeller which are then pumped out via the discharge.

Liquid is returned from the discharge via the recirculation pipe into the canister to ensure the liquid ring is maintained at all times. When there is no air present, the canister and recirculation loop have no function and are fully filled with liquid. The liquid passes through the canister into the suction stage of the impeller, allowing the pump to act as a traditional centrifugal pump.

### Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Standard materials | |
|---|---|
| Product wetted steel parts: | AISI 316L and 329L with material traceability 3.1 acc. to EN 10204 (Mill test reports). |
| Other steel parts: | Stainless steel. |
| Inside surface finish: | EP Ra ≤ 15 µin. |
| Product wetted elastomers: | EPDM- USP Class VI, 249.8°F Chapter 88, and Chapter 87. |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3500 RPM. Premium efficiency, Class F. Note different frame sizes. |

| Connections | |
|---|---|
| Connections for double mechanical shaft seal: | 1/8" NPT. |

| Min/max motor speed | |
|---|---|
| Air evacuation: | 2800 - 3600 rpm. |
| Pumping product (no air): | 900 - 3600 rpm. |

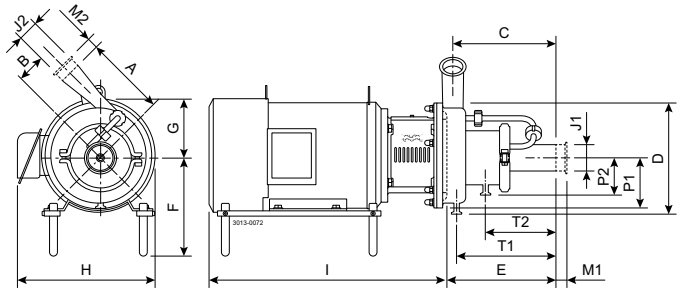
## OPERATING DATA

| Pressure | |
|---|---|
| Max inlet pressure: | 72.5 PSI (5 bar). |

| Temperature | |
|---|---|
| Temperature range: | 14°F to 284°F (EPDM). |

| Double mechanical shaft seal | |
|---|---|
| Water pressure inlet: | Max. 72.5 PSI (5 bar). |
| Water consumption: | 4-8 US gph. |

### Dimensions



## Pump specific measures

| Pump Model | LKH Prime UltraPure 10 | LKH Prime UltraPure 20 |
|---|---|---|
| A | 7.17 | 7.64 |
| B | 3.35 | 3.62 |
| C | 8.74 | 9.76 |
| D | 9.72 | 9.96 |
| E | 9.64 | 11.02 |
| P1 | 4.57 | 4.84 |
| P2 | 3.24 | 3.27 |
| T1 | 8.63 | 9.41 |
| T2 | 6.35 | 6.69 |

## Motor specific measures

| Motor TC/TSC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC |
|---|---|---|---|---|---|---|
| **Motor HP** | **3.0** | **5.0** | **7.5** | **10.0** | **15.0** | **20.0** |
| F(max) [1] | 9.09 | 9.09 | 9.84 | 9.84 | 10.87 | 10.87 |
| G | 4.49 | 4.49 | 5.39 | 5.39 | 6.77 | 6.77 |
| H | 11.10 | 11.10 | 13.07 | 13.07 | 17.80 | 17.80 |
| I | 17.99 | 18.15 | 21.02 | 21.02 | 26.06 | 27.83 |

[1] Possible to reduce dimension F by min. 2.32 inch for all pump models.

## Motor overview

| Pump Model | LKH Prime UltraPure 10 | LKH Prime UltraPure 20 |
|---|---|---|
| Motor range (TC/TSC) | 182TC-215TC | 182TC-256TC |

**Note!** Dimensional data are based on 2 pole, Sterling motors.

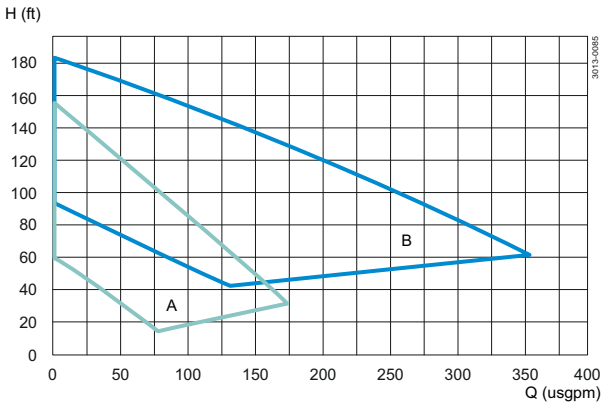
## Connections

| Pump Model | | LKH Prime UltraPure 10 | LKH Prime UltraPure 20 |
|---|---|---|---|
| TRI-Clamp | M1 | 1.13 | 1.13 |
| | M2 | 1.13 | 1.13 |
| J1[1] | | 2.00" | 2.50" |
| J2[1] | | 2.00" | 2.00" |

[1] Other dimensions available on request.

| | TC Clamp |
|---|---|
| 1/2" | 0.5 |
| 3/4" | 0.75 |

## Flow chart




A = LKH Prine UP 10
B = LKH Prine UP 20

**Figure 1. Frequency: 60Hz - Speed (synchr): 3600 rpm**

## Options

- Impeller with reduced diameter.
- Motor with increased safety/flame proof motor.
- Double mechanical shaft seal.
- Product wetted surface finish mechanically polished to Ra 20 µin.
- Passivated surface.
- Product wetted elastomers FPM or FEP to USP Class VI, 249.8°F Chapter 88, and Chapter 87.
- 3/4" drain connection.
- No drain.
- 0° outlet position.
- Hydrostatic testing with certificate.
- Surface finish measurement with certificate.

## Q-doc

**Standard documentation package:**

- Declaration of compliance to EN 10204 type 3.1 (MTR).
- Declaration of compliance to the U.S. Food & Drug Administration CFR 21 (non-metallic parts).
- Declaration of compliance to the U.S. Pharmacopeia (Elastomers and polymers).
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) declaration.
- Declaration of surface finish compliance.
- Declaration of passivation and electro polishing (if specified).
- 3.1 certification in accordance to EN10204.
- Pump performance test certificate.

**Optional documentation:**

- Hydrostatic test certificate.
- Surface measurement report.

## Ordering

Please state the following when ordering:

- Pump size.
- Connections.
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

# Alfa Laval LKH Evap

## Centrifugal pumps

### Introduction

The Alfa Laval LKH Evap Centrifugal Pump is a premium pump for use in hygienic applications. As a low-NPSHr, high-efficiency centrifugal pump, the LKH Evap is a tailored evaporator pump supported by strong and extensive documentation, including a comprehensive vacuum curve package. It features a special scraper impeller, ClearFlow, that solves the product buildup problem in high solids applications, which can prolong production time between cleaning.

Precision-engineered, the LKH Evap pump delivers greater energy efficiency than similar pumps. Its optimized design, premium motor, tight tolerances and advanced impeller design minimize recirculation and reduce energy consumption.

### Applications

The LKH Evap Centrifugal Pump is designed for hygienic applications across the dairy, food, beverage, brewery, alcohol, ethanol, starch and chemical industries. It is ideal for use in evaporation duties for applications, such as liquid concentration and powder processing as well as plant and equipment dewatering.

The LKH Evap pump is available in 10 sizes to handle capacities up to 280 m3/h and differential pressures up to 11 bar at 50 Hz.

### Benefits

- Energy efficient: superior efficiency resulting in reduced energy consumption and CO2 footprint.
- Hygienic: designed according to the most stringent hygienic design standards and with verified and effective Cleaning-in-Place.
- Low NPSHr: reduced NPSHr enables optimized system designs.
- Maximized uptime and reduced maintenance costs: robust mechanical design and ease of maintenance with modular front-loading seals.

### Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

A compression coupling securely attaches the stub shaft to the motor shaft with precision alignment, and the semi-open impeller with a special vane design ensures efficient and gentle handling of the product as it moves through the pump.

As standard, the LKH Evap pump is equipped with a single mechanical shaft seal but is also available with a single flushed or a double mechanical shaft seal. The front-loading shaft seal, with the spring and washers mounted on the atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

LKH Evap is available with the Clear Flow Impeller which is to be used in applications where there is a risk of building up a hard layer of product between impeller and backplate.

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | Acid-resistant steel AISI 316L and AISI 329 |
| Other steel parts: | Stainless steel AISI 304. |
| Finish: | Polished ≤32Ra. and 3A approved. |
| Product wetted seals: | EPDM. |
| Optional: | NBR, FPM, FEP. |
| Single seal SSS/Flushed shaft seal FSS: | SiC/C or SiC/SiC. |
| Double seal DMSS: | SiC/C or SiC/SiC. |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3500 RPM or 1750 RPM. efficiency, Class F. Note different frame sizes.<br>LKH Evap-75 only low speed (1750 RPM). |

| Voltage and frequency |
|---|
| 3 phase, 60 HZ, 230/460V standard. Other voltages and frequencies available upon request. |

| Connections for FSS and DMSS: |
|---|
| 1/4 tube/Rp 1/8 |

## OPERATING DATA

| Max. inlet pressure | |
|---|---|
| LKH Evap-10 to -60 | 145 PSI |
| LKH Evap-70 to -75 | 72.5 PSI |

| Temperature | |
|---|---|
| Temperature range | 14°F to +284°F (EPDM) |

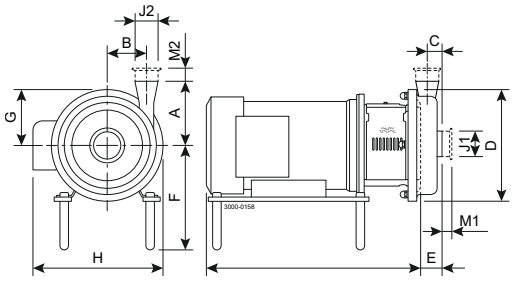
| Flushed shaft seal: | |
|---|---|
| Water pressure inlet: | Max. 14.5 PSI |
| Water consumption: | 4-8 usgph |

| Double mechanical shaft seal: | |
|---|---|
| LKH Evap-5 to -60: | Max. 72.5 PSI |
| LKH Evap-70 to -75: | Max. 43.5 PSI |

| Noise level | |
|---|---|
| Noise level (at 3.3 ft.): | 60 - 85 dB (A) |

| Water consumption: | |
|---|---|
| Water consumption: | 4 - 8 usgph |

## Dimensions




### Pump specific measures (inch)

| Pump Model | LKHevap-10 | LKHevap-15 | LKHevap-20 | LKHevap-25 | LKHevap-35 | LKHevap-40 | LKHevap-45 | LKHevap-50 | LKHevap-60 | LKHevap-70 | LKHevap-75 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 5.591 | 6.535 | 7.087 | 7.598 | 7.598 | 8.346 | 8.346 | 8.071 | 10.276 | 10.000 | 10.197 |
| B | 3.425 | 2.598 | 3.465 | 4.173 | 4.685 | 4.961 | 4.961 | 4.646 | 4.016 | 5.787 | 6.929 |
| C | 0.906 | 1.693 | 1.063 | 1.260 | 0.906 | 1.102 | 1.102 | 1.378 | 2.441 | 0.984 | 1.890 |
| D | 9.724 | 9.724 | 9.961 | 11.929 | 11.929 | 12.953 | 12.953 | 12.953 | 12.953 | 16.063 | 18.425 |
| E | 2.008 | 3.425 | 2.480 | 2.717 | 2.126 | 2.520 | 2.520 | 3.031 | 4.173 | 2.992 | 3.622 |

### Motor specific measures (inch)

| Motor TC/TSC | 143TC | 145TC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC | 324TSC | 326TSC | 364TSC | 365TSC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | **1.0-1.5** | **2.0** | **3.0** | **5.0** | **7.5** | **10.0** | **15.0** | **20.0** | **25.0** | **30.0** | **40.0** | **50.0** | **60.0** | **75.0** |
| F(max)[1] | 8.110 | 8.110 | 9.094 | 9.094 | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 | 12.598 | 12.598 | 13.622 | 13.622 |
| G | 3.504 | 3.543 | 4.488 | 4.488 | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 | 8.425 | 8.504 | 9.331 | 9.331 |
| H | 9.094 | 9.094 | 11.102 | 11.102 | 13.071 | 13.071 | 17.795 | 17.795 | 20.945 | 20.945 | 23.346 | 23.346 | 26.811 | 26.811 |
| I (LKHevap-10 to LKHevap-60) | 14.843 | 15.118 | 17.992 | 18.150 | 21.024 | 21.024 | 26.063 | 27.835 | 28.583 | 30.039 | 33.071 | 34.646 | 34.449 | - |
| I (LKHevap-70 to LKHevap-75) | - | - | - | - | 21.811 | 21.811 | 26.575 | 28.346 | 29.094 | 30.551 | 33.583 | 35.157 | 34.961 | 38.346 |

[1] Possible to reduce dimension F by min. 2.32 inch for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

| Pump Model | LKHevap-10 | LKHevap-15 | LKHevap-20 | LKHevap-25 | LKHevap-35 | LKHevap-40 | LKHevap-45 | LKHevap-50 | LKHevap-60 | LKHevap-70 | LKHevap-75 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Motor range (TC/TSC) | 143TC -254TC | 145TC-254TC | 145TC-256 TC | 145TC-286T SC | 182TC-286T SC | 182TC-286T SC | 182TC-286T SC | 182TC-324T SC | 213TC-326 TC | 254TC-326T SC | 254TC-326T SC |

**Note!** Dimensional data are based on 2 pole. Sterling motors.

### Connections (inch)

| Pump Model | | LKHevap-10 LKHevap-20 LKHevap-35 | LKHevap-15 LKHevap-45 LKHevap-50 LKHevap-70 | LKHevap-15 LKHevap-45 LKHevap-50 | LKHevap-25 | LKHevap-40 | LKHevap-60 | LKHevap-60 LKHevap-75 |
|---|---|---|---|---|---|---|---|---|
| Tri-Clamp | M1 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| | M2 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 | 1.13 |
| J1[1] | | 2.5" | 4.00" | 3.00" | 3.00" | 3.00" | 3.00" | 3.00" |
| J2[1] | | 2.00" | 3.00" | 3.00" | 2.00" | 2.00" | 4.00" | 4.00" |

[1] Other dimensions available on request.

## Options

- Impeller with reduced diameter.
- Motor for other voltage and/or frequency.
- Motor enclosures: washdown, TEFC, explosion proof, inverter duty and others upon request.
- Inducer (only LKH Evap 10 to -50).

- Flushed shaft seal.
- Double mechanical shaft seal.
- Counter connections.
- Clear Flow Impeller. Special designed impeller for applications where there is a risk of building up a hard layer of product between impeller and backplate.
- Surface roughness, product wetted parts: $R_a \leq 32$ µin.
- Product wetted seals of Nitrile (NBR), Fluorinated rubber (FPM) or FEP.
- Rotating seal ring of Silicon Carbide.

### Ordering

Please state the following when ordering:

- Pump size.
- Version, hygienic or industrial.
- Connections.
- Seal and Elastomer Type
- Impeller diameter.
- Motor size.
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

**Note!** For further details, see also instruction manual.

# Alfa Laval SolidC

## Centrifugal pumps

### Introduction

The Alfa Laval SolidC Centrifugal Pump is designed for basic transport of fluids in hygienic applications. It provides reliable, low-maintenance operation. With its hygienic design, cost-effective operation and quick, easy maintenance, the SolidC offers excellent value for money.

### Applications

Designed for Cleaning-in-Place (CIP), the Alfa Laval SolidC is ideal for basic duties across the dairy, food, beverage and personal care industries in which hygienic treatment is required. Typical applications are pumping of CIP solutions, utilities, cooling or heating water, and other simple transport duties.

The SolidC pump is available in four sizes to handle capacities up to 75 m3/hour and differential pressures up to 8 bar at 50Hz.

### Benefits

- Hygienic: designed according to international hygienic design standards and with verified effective CIP cleanability.
- Cost-effective operation: consistent performance ensured.
- Quick and easy maintenance: wear parts changed in just a few minutes.

### Standard design

All media contacting steel components like pump casing, impeller, impeller nut and backplate are in W. 1.4404 (AISI 316L). A stainless steel shroud protects the motor and four adjustable stainless steel legs support the complete unit.

The semi-open impeller with a special vane design and balance holes enhance circulation around the shaft seal and reduce axial forces. This maximizes cleanability while minimizing wear on the shaft seal and motor bearings.

As standard, the SolidC pump is equipped with a single mechanical shaft seal, but is also available with a single flushed mechanical shaft seal. The secondary seal of the flushed seal is a long-lasting lip seal. The front-loading shaft seal, with the spring and washers mounted on the

atmospheric side, makes maintenance fast, easy and inexpensive. It takes just a few minutes to replace the shaft seal. In addition, the balanced design minimizes the risk of seal opening during unforeseen pressure shock.

## TECHNICAL DATA

| Materials | |
|---|---|
| Product wetted steel parts: | AISI 316L and AISI 329L |
| Other steel parts: | Stainless steel AISI 304 |
| Inside surface finish: | 3A polish Ra 32 µin |
| Product wetted elastomers: | EPDM. |
| Rotary seal face: | Carbon |
| Stationary seal face: | Silicon Carbide |

| Motor |
|---|
| Standard C-faced, foot mounted motor according to NEMA standard. 3500 RPM or 1750 RPM. Premium efficiency, Class F. Note frame size per horsepower. |

| Motor sizes | |
|---|---|
| 60 Hz: | 1, 1½, 2, 3, 5, 7.5, 10, 15, 20, 25, 30 Hp. |

## OPERATING DATA

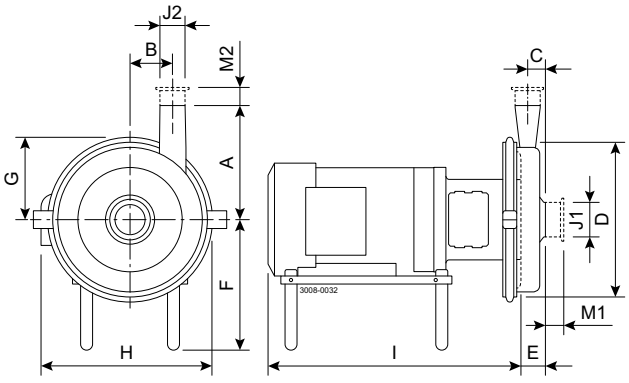
| Max inlet pressure | |
|---|---|
| SolidC 1 - 4: | 58 PSI (4 bar) |

| Temperature | |
|---|---|
| Temperature range: | 14°F to +248°F (EPDM) |
| Flush media: | Max 158°F |

| Flushed shaft seal | |
|---|---|
| Water pressure inlet: | 14.5 PSI |
| Water consumption: | 4-8 usgph |

| Connections for flushed shaft seal | |
|---|---|
| SolidC 1 - 4: | 1/8" G |

### Dimensions (inch)




### Pump specific measures (inch)

| Pump Model | SolidC-1 | SolidC-2 | SolidC-3 | SolidC-4 |
|---|---|---|---|---|
| A | 7.087 | 7.874 | 8.268 | 9.055 |
| B | 2.638 | 3.701 | 4.764 | 4.724 |
| C | 1.102 | 1.378 | 1.220 | 1.063 |
| D | 9.370 | 8.937 | 12.244 | 13.110 |
| E | 1.575 | 1.850 | 1.732 | 1.732 |

### Motor specific measures (inch)

| Motor TC/TSC | 143TC | 145TC | 182TC | 184TC | 213TC | 215TC | 254TC | 256TC | 284TSC | 286TSC |
|---|---|---|---|---|---|---|---|---|---|---|
| **Motor HP** | **1.5** | **2.0** | **3.0** | **5.0** | **7.5** | **10.0** | **15.0** | **20.0** | **25.0** | **295** |
| F(max)[1] | 8.110 | 8.110 | 9.094 | 9.094 | 9.843 | 9.843 | 10.866 | 10.866 | 11.614 | 11.614 |
| G | 3.504 | 3.504 | 4.370 | 4.488 | 5.394 | 5.394 | 6.772 | 6.772 | 7.677 | 7.677 |
| H | 9.094 | 9.094 | 11.102 | 11.102 | 13.071 | 13.071 | 452725.400 | 17.795 | 20.945 | 20.945 |
| I | 15.669 | 16.220 | 18.543 | 18.701 | 22.480 | 22.480 | 26.417 | 28.189 | 29.055 | 30.512 |

[1] Possible to reduce dimension F by min. 0.59 inch for all pump models. For smaller models it will be possible to reduce dimension F even further.

### Motor overview

| Pump Model | SolidC-1 | SolidC-2 | SolidC-3 | SolidC-4 |
|---|---|---|---|---|
| Moter range (TC/TSC) | 143TC-215TC | 182TC-256TC | 184TC-286TSC | 215TC-286TSC |

**Note!** Dimensional data are based on 2 pole, Sterling motors.

### Connections (inch)

| Pump Model | | SolidC-1 | SolidC-2 | SolidC-3 | SolidC-4 |
|---|---|---|---|---|---|
| Tri-Clamp | M1 | 0.50 | 0.50 | 0.50 | 1.13 |
| | M2 | 0.50 | 0.50 | 0.50 | 0.50 |
| J1[1] | | 2.00" | 2.50" | 3.00" | 3.00" |
| J2[1] | | 1.50" | 1.50" | 1.50" | 2.00" |

[1] Other dimensions available on request.

## Options

- Impeller with reduced diameter.
- Flushed shaft seal.
- Rotating seal face of Silicon Carbide.
- Product wetted elastomers NBR or FPM.
- Product wetted surface finish mechanically polished to Ra ≤ 0.8 µm.
- Surface finish measurement with certificate (Ra ≤ 0.8 µm).
- Motor for other voltage and/or frequency.
- Half speed motor.

## Ordering

Please state the following when ordering:

- Pump size.
- Connections. (Tri-Clamp®)
- Impeller diameter.
- Motor size.
- Seal and Elastomer Type
- Voltage and frequency.
- Flow, pressure and temperature.
- Density and viscosity of the product.
- Options.

**Note!** For further details, see also ESE00797.

# Alfa Laval LKH

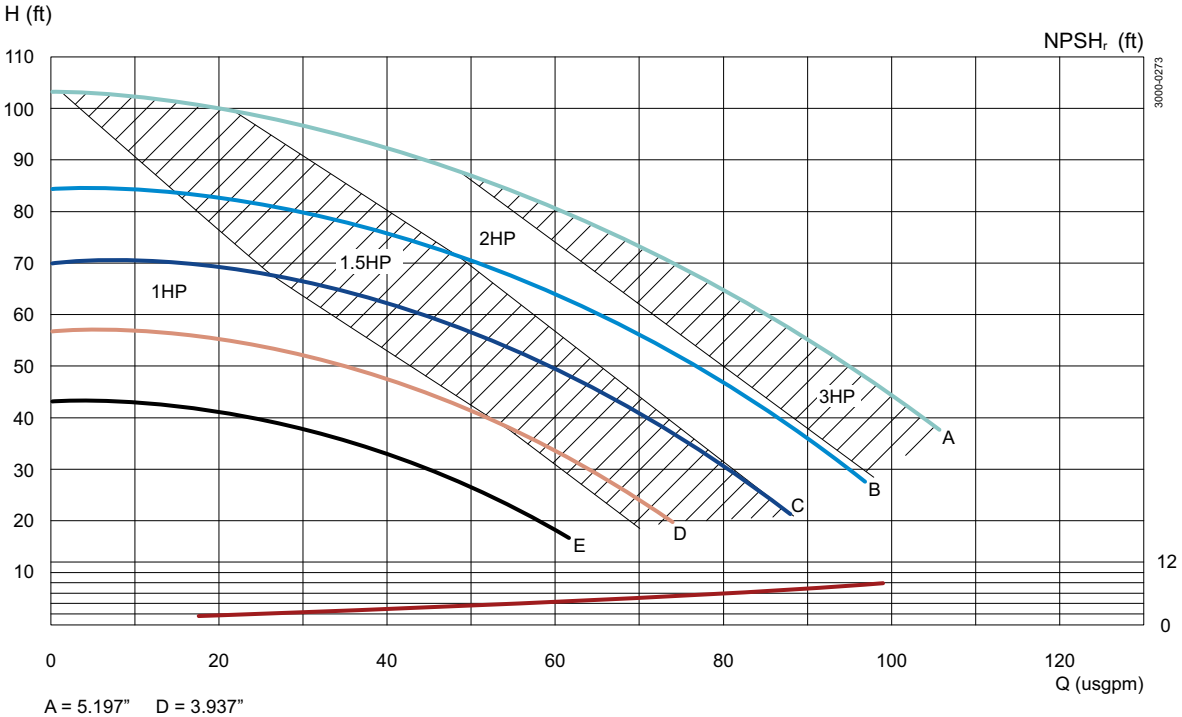
## Performance curves

### LKH-5, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.197" |
| Impeller, Min. dia.: | 3.54" |
| Pump inlet, dia.: | 2", DN 50 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.4 Hp, 3460 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



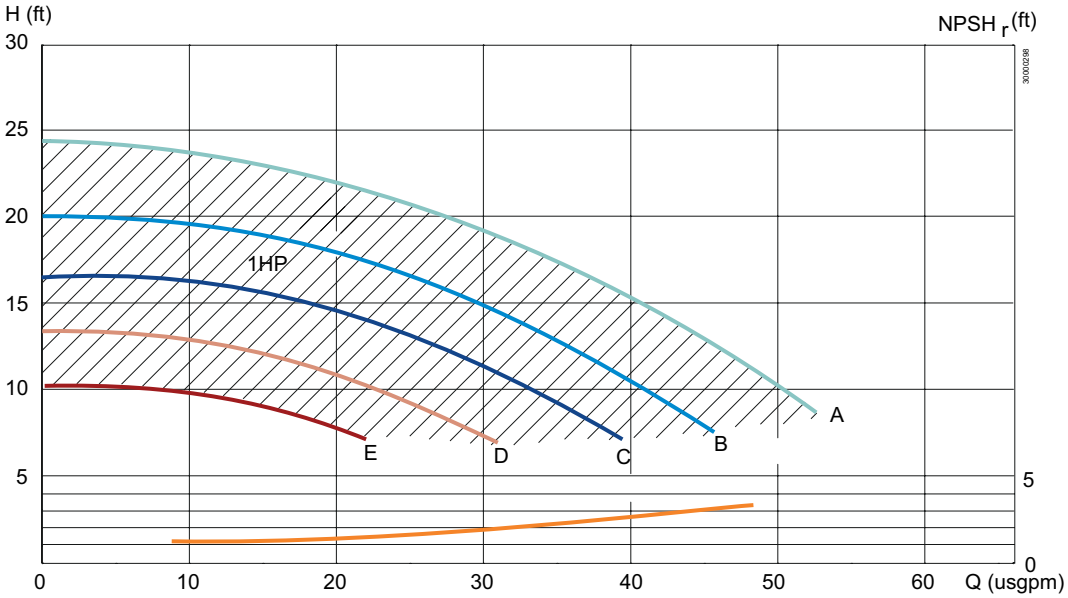

A = 5.197”  D = 3.937”
B = 4.724”  E = 3.543”
C = 4.331”

## LKH-5, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.197" |
| Impeller, Min. dia.: | 3.54" |
| Pump inlet, dia.: | 2", DN 50 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 1.7 Hp, 1700 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



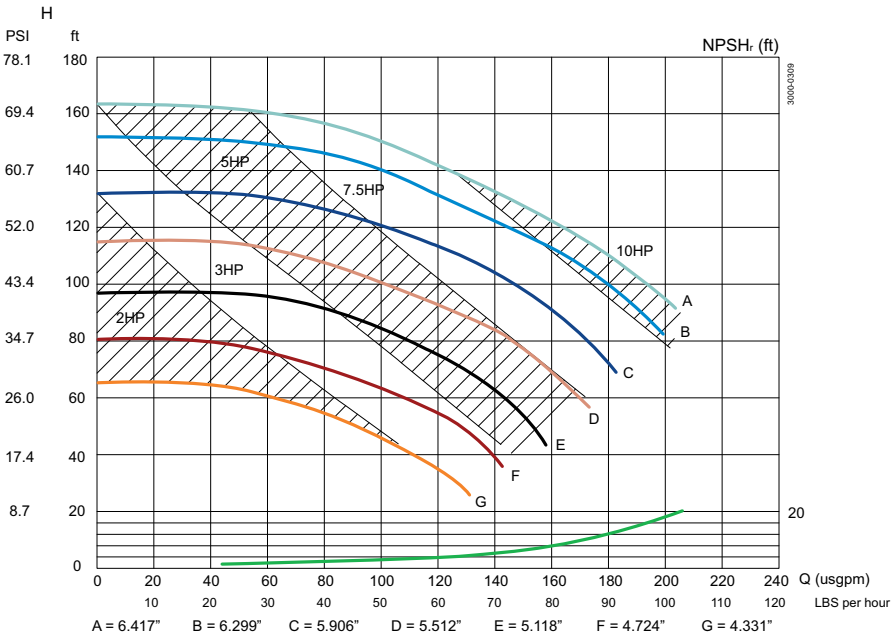

A = 5.197”
B = 4.724”
C = 4.331”
D = 3.937”
E = 3.543”

## LKH-10, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417" |
| Impeller, Min. dia.: | 4.331" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

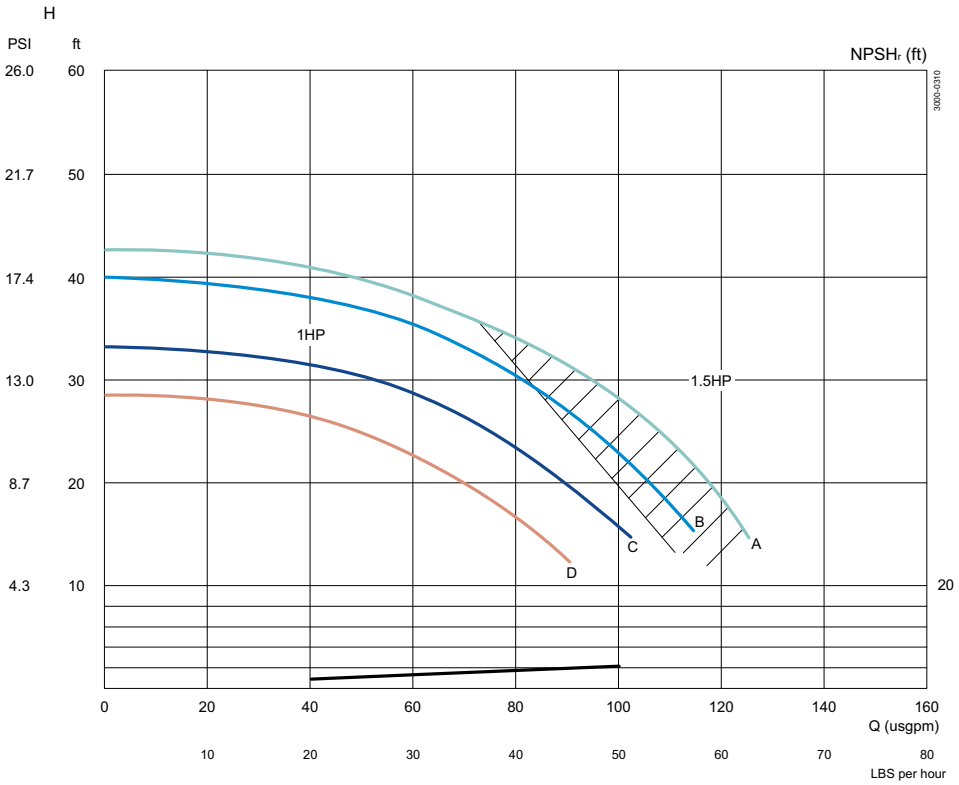


## LKH-10, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417” |
| Impeller, Min. dia.: | 5.512” |
| Pump inlet, dia.: | 2½”, DN 65 |
| Pump outlet, dia.: | 2”, DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



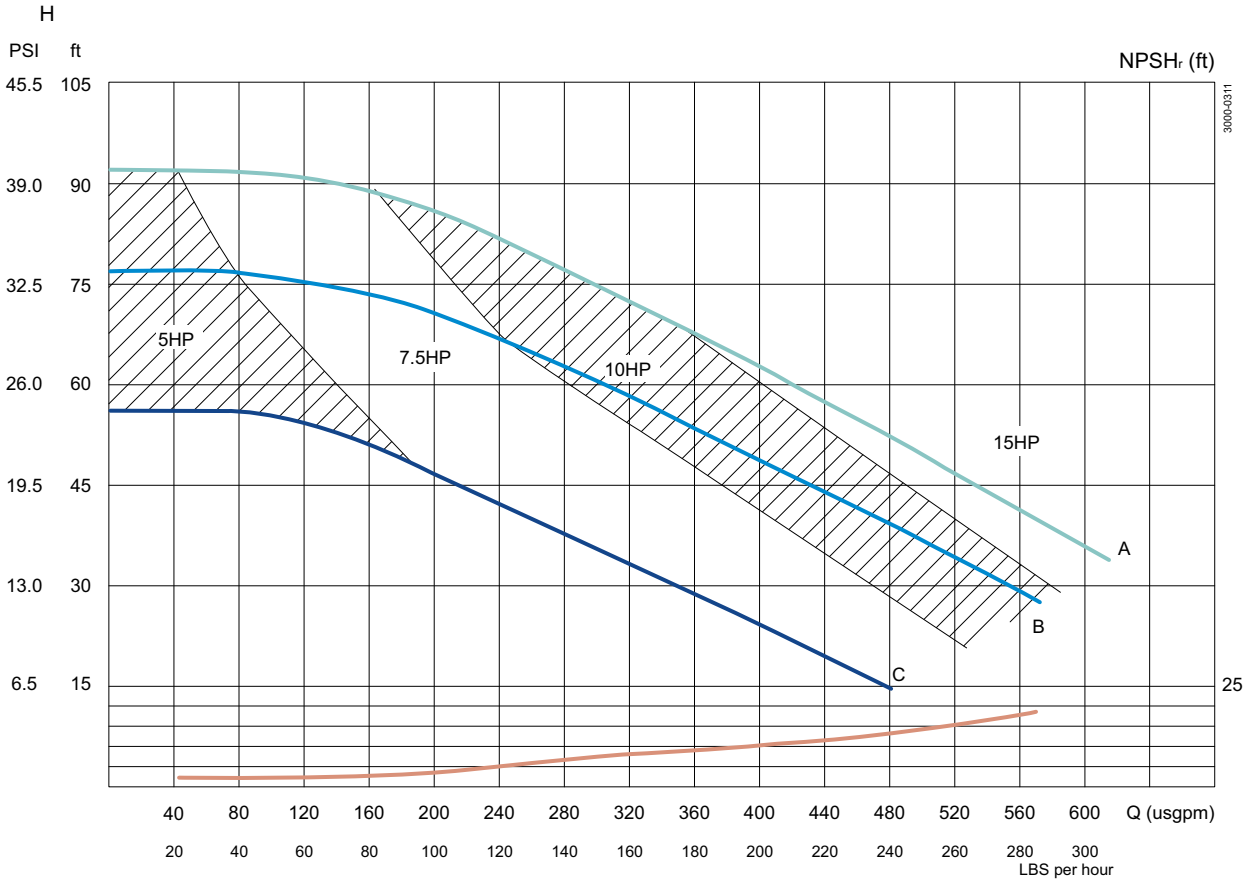

A = 6.417” D = 5.512”
B = 6.299”
C = 5.906”

## LKH-15, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.433" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 4" |
| Pump outlet, dia.: | 3" |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3455 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



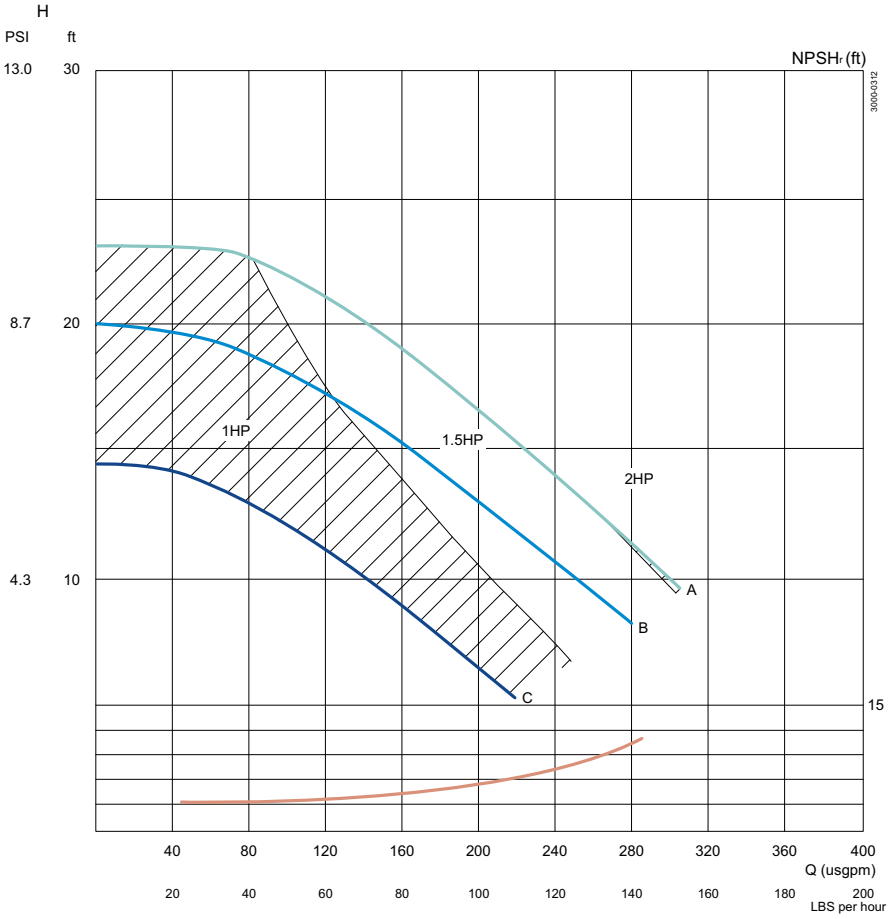

A = 5.433”
B = 5.118”
C = 4.724”

## LKH-15, 60 HZ

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.433" |
| Impeller, Min. dia.: | 4.72" |
| Pump inlet, dia.: | 4" |
| Pump outlet, dia.: | 3" |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1710 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



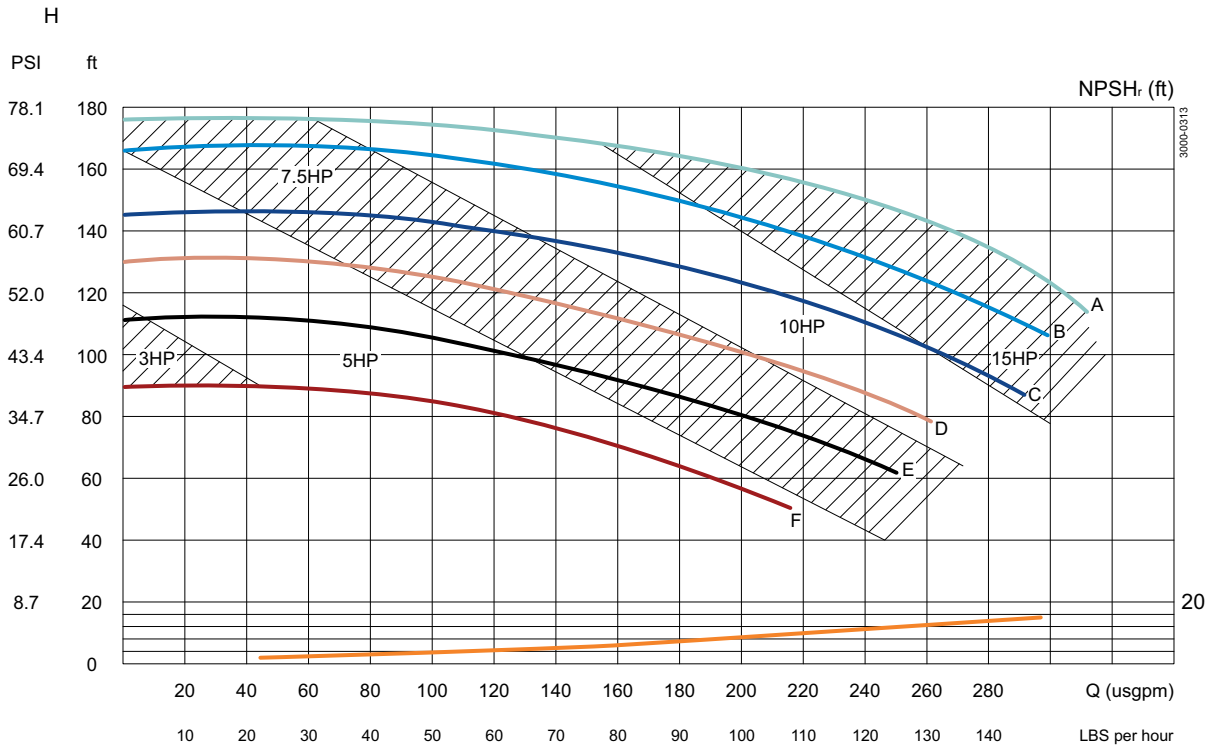

A = 5.433”
B = 5.118”
C = 4.724”

## LKH-20, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 16.8 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



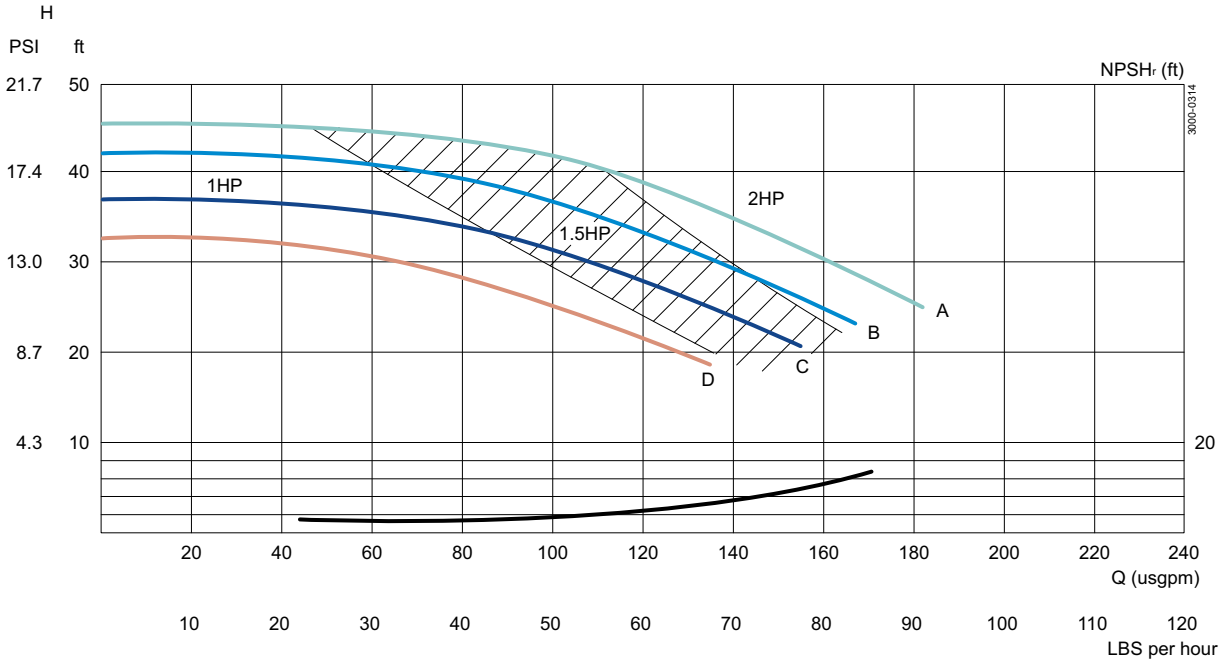

A = 6.496”  D = 5.512”
B = 6.299”  E = 5.118”
C = 5.906”  F = 4.724”

## LKH-20, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



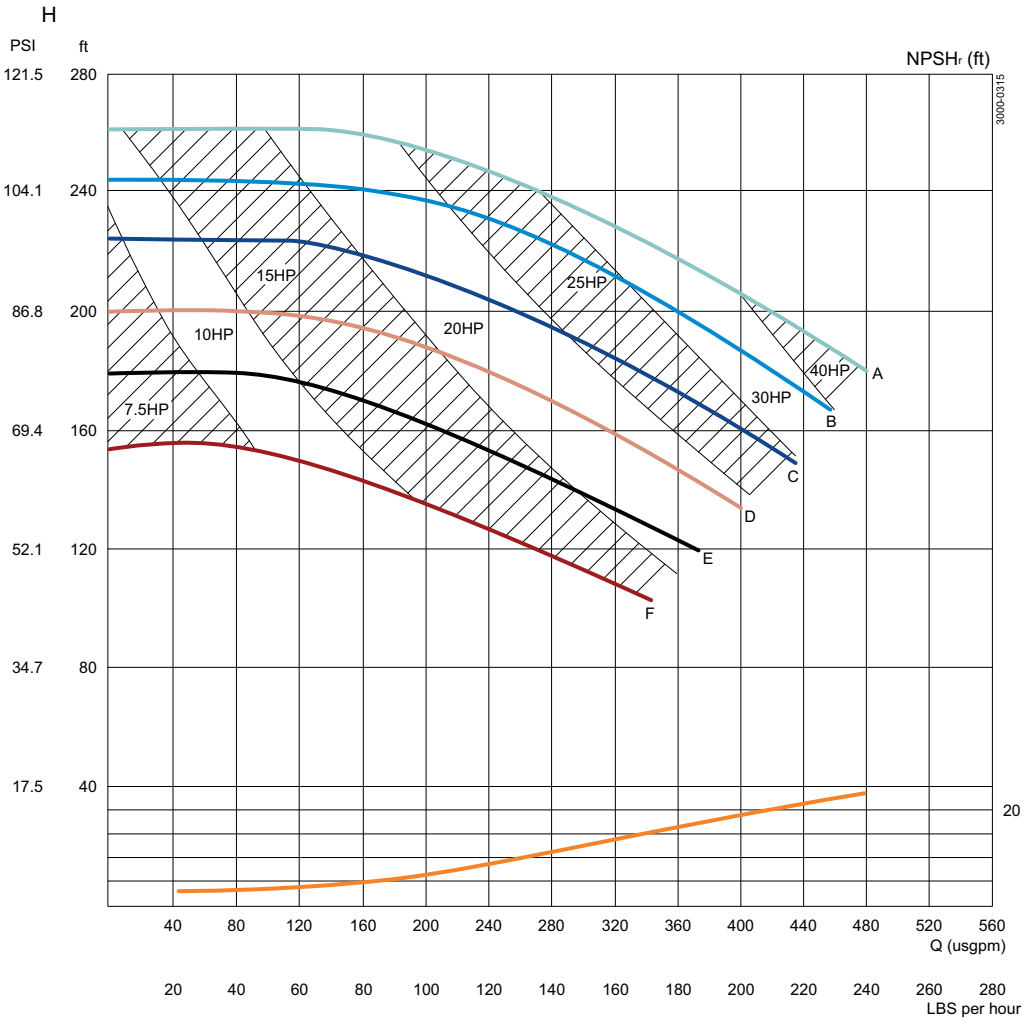

A = 6.496” D = 5.512”
B = 6.299”
C = 5.906”

## LKH-25, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



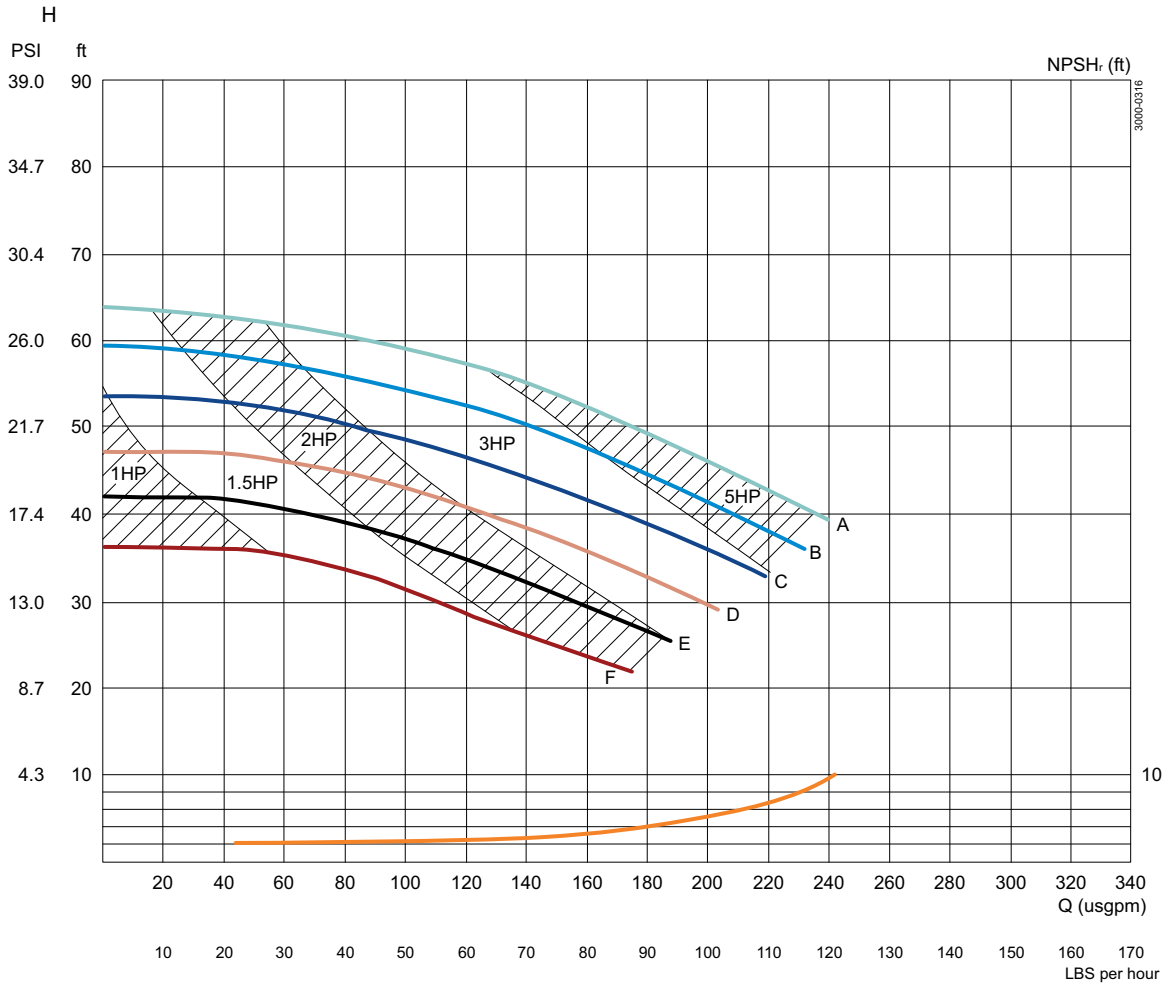

A = 8.07" D = 7.09"
B = 7.87" E = 6.69"
C = 7.48" F = 6.30"

## LKH-25, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp (3.5 kW), 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 3%.

DO NOT FORGET THE SAFETY FACTOR



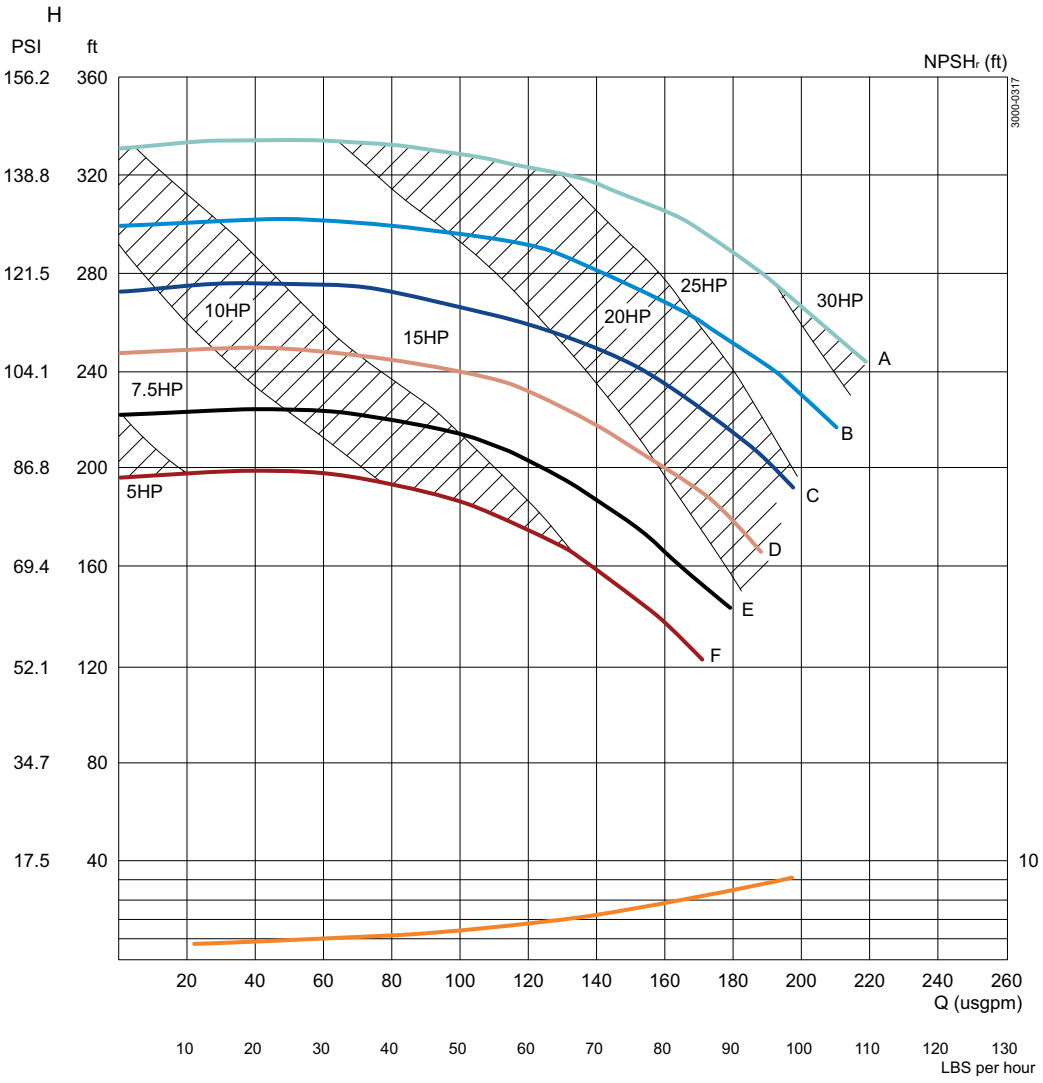

A = 8.070”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKH-35, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2.5", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 28.2 Hp, 3535 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% 16.8-22.8 Hp.
- 3% 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



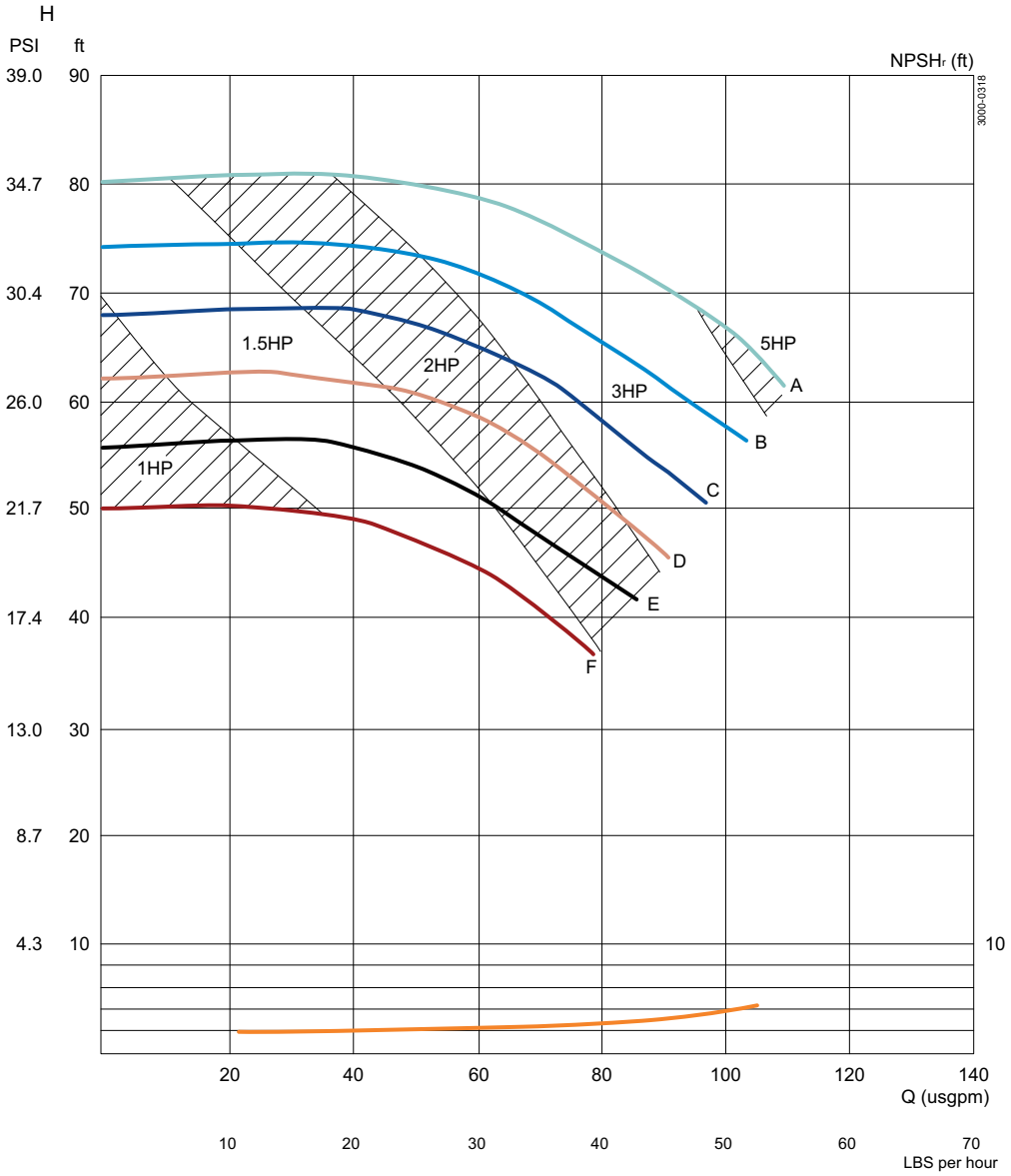

A = 8.661" D = 7.480"
B = 8.268" E = 7.087"
C = 7.874" F = 6.693"

## LKH-35, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.4 Hp, 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 3%

DO NOT FORGET THE SAFETY FACTOR



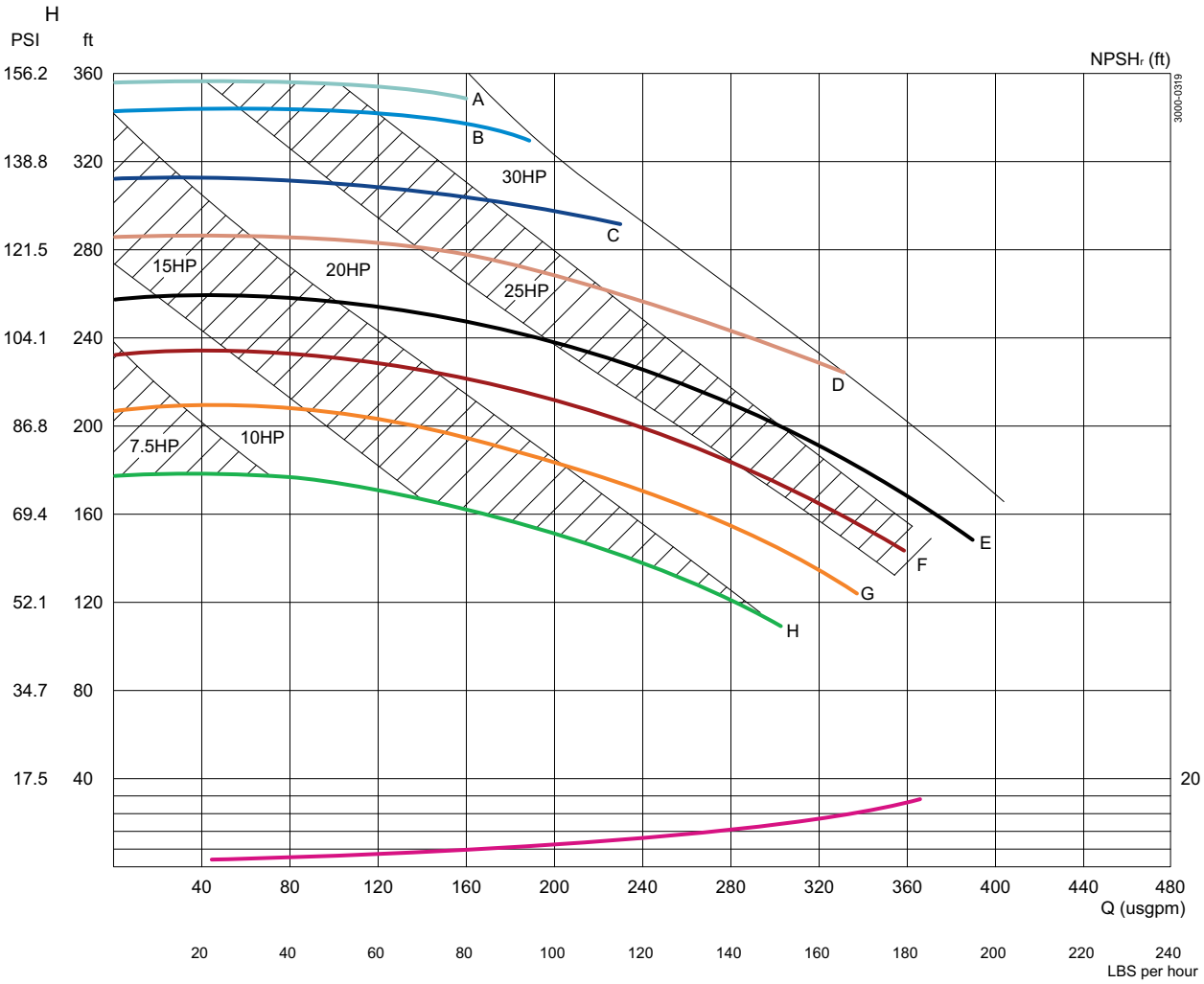

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKH-40, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.291" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 2940 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



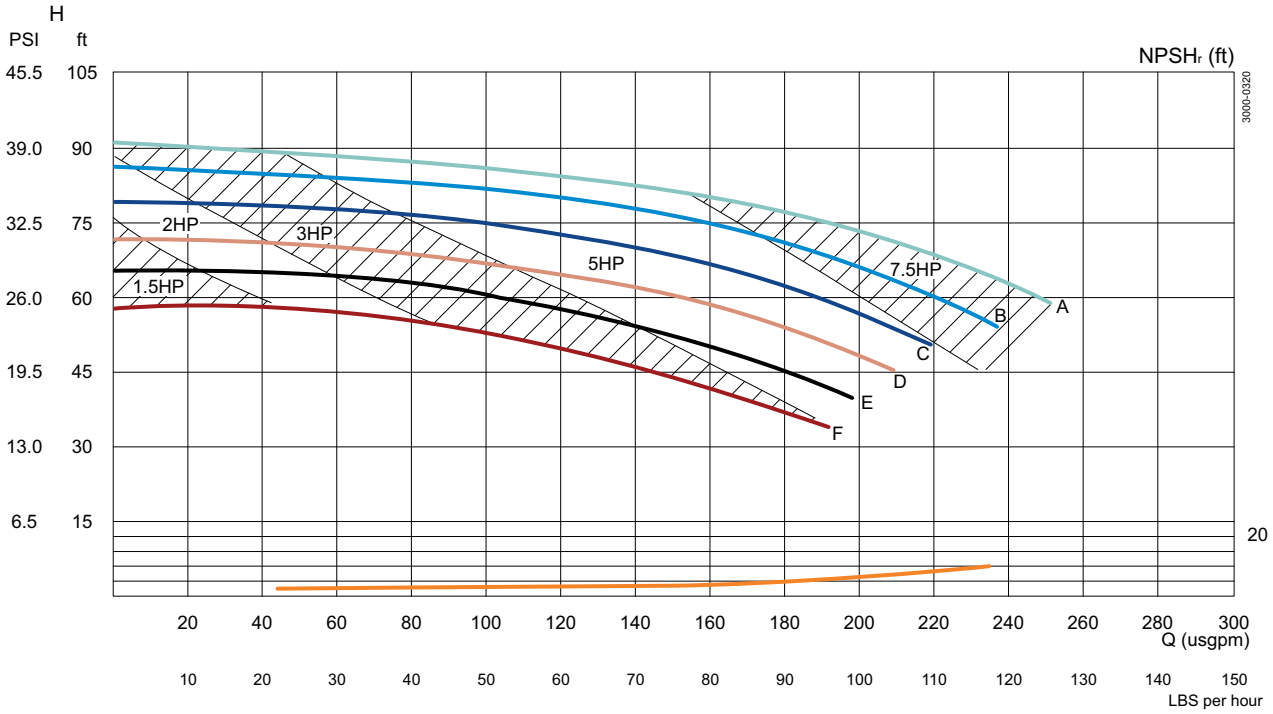

A = 9.252”
B = 9.055”
C = 8.661”
D = 8.268”
E = 7.874”
F = 7.480”
G = 7.087”
H = 6.693 “

## LKH-40, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.291" |
| Impeller, Min. dia.: | 7.480" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



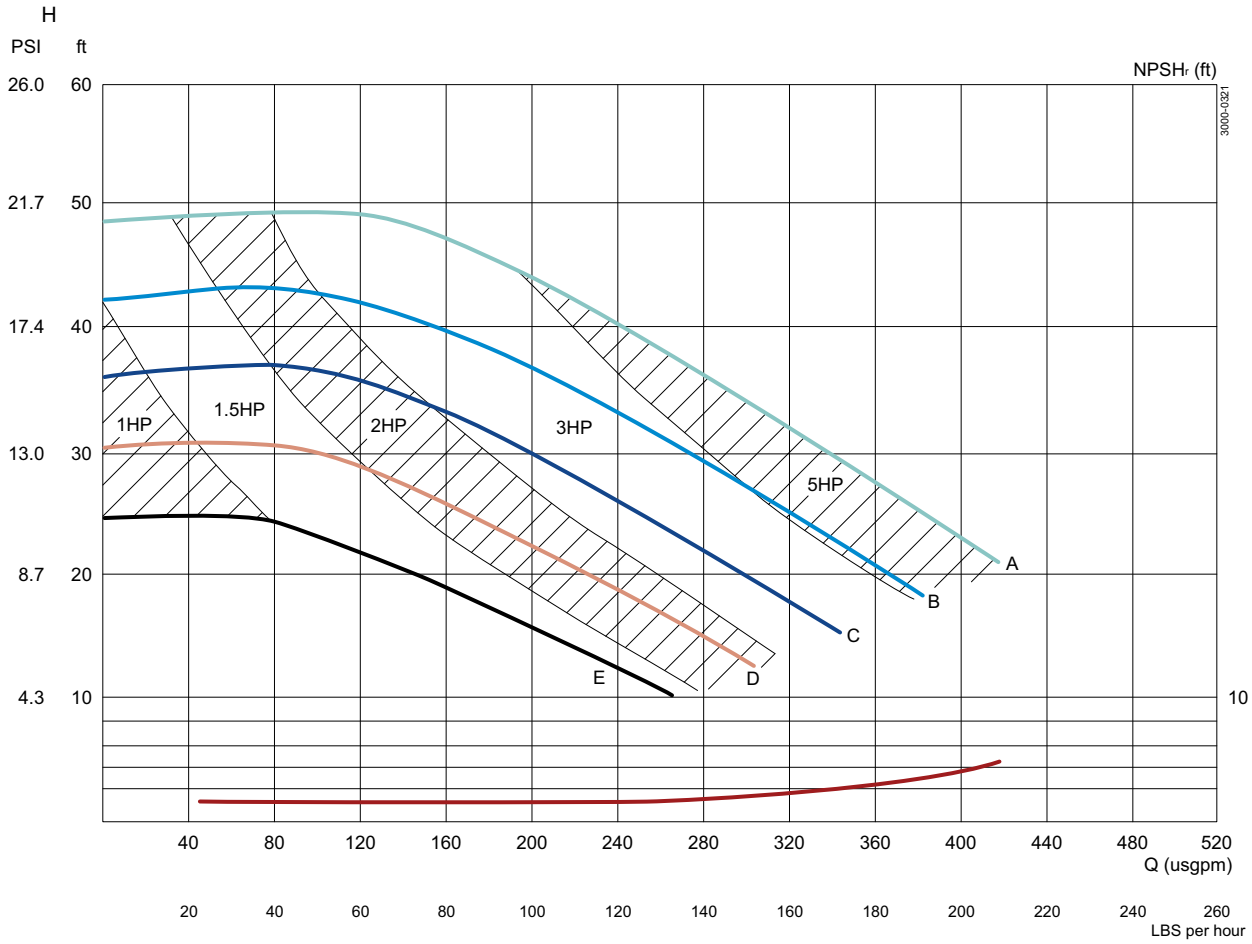

A = 9.252”  D = 8.268”
B = 9.055”  E = 7.874”
C = 8.661”  F = 7.480”

## LKH-45, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



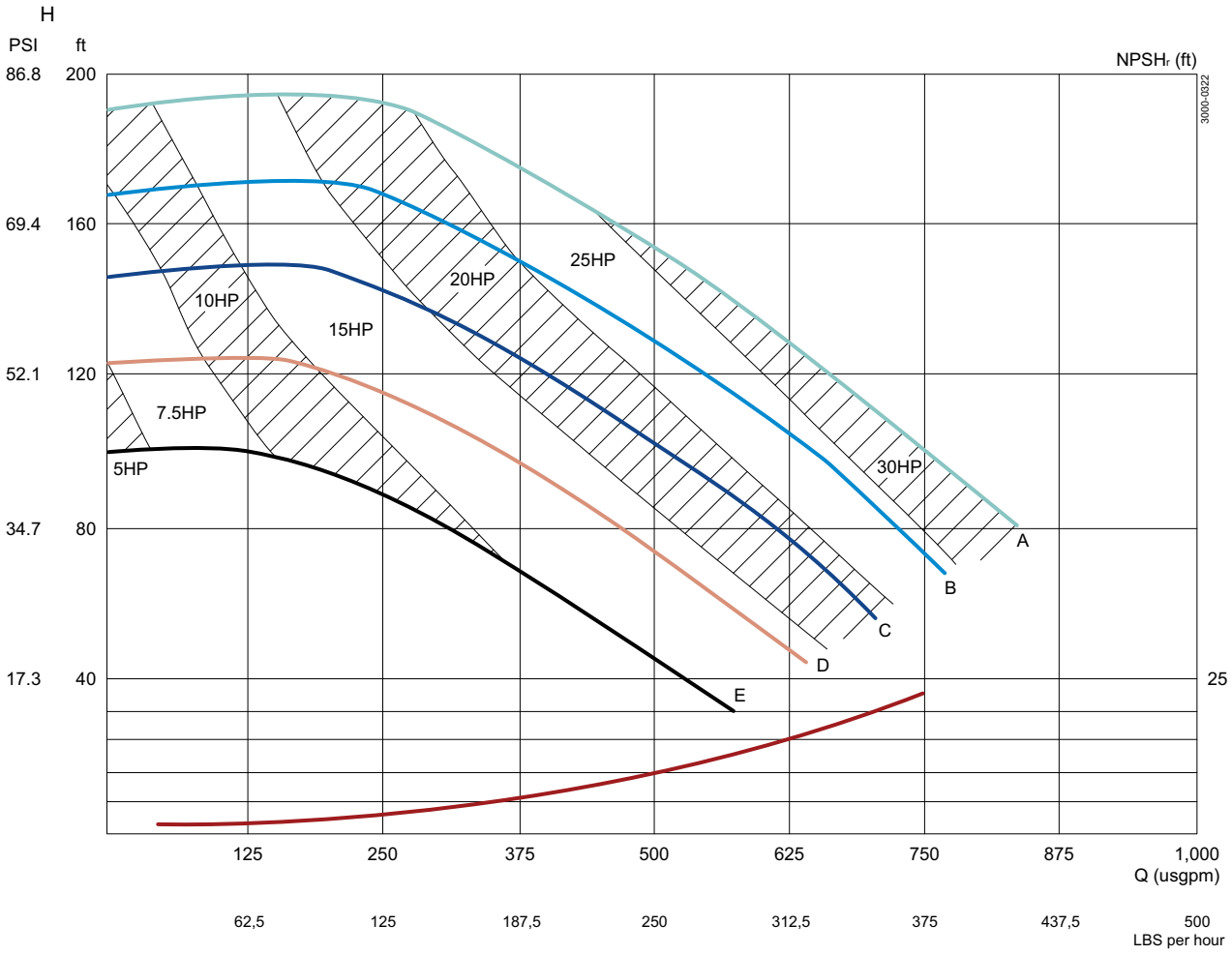

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKH-45, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp, 1720 rpm. asynchr., 60 Hz.
For smaller motors.

DO NOT FORGET THE SAFETY FACTOR



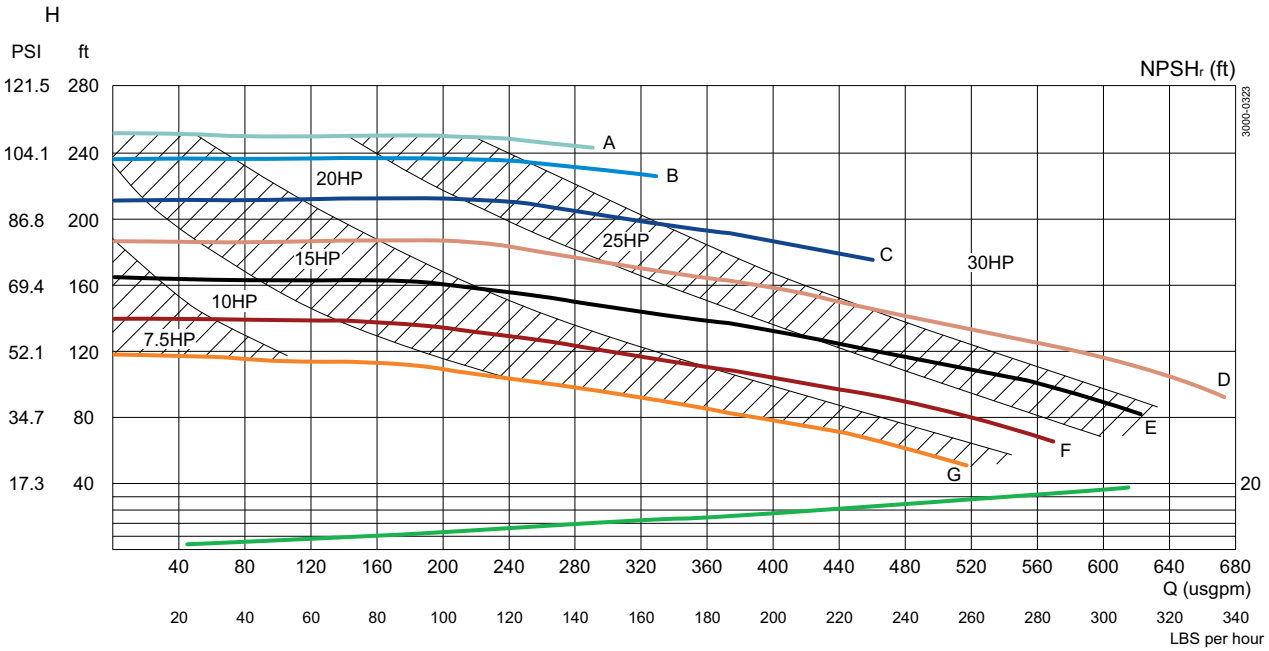

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKH-50, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 5.906" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



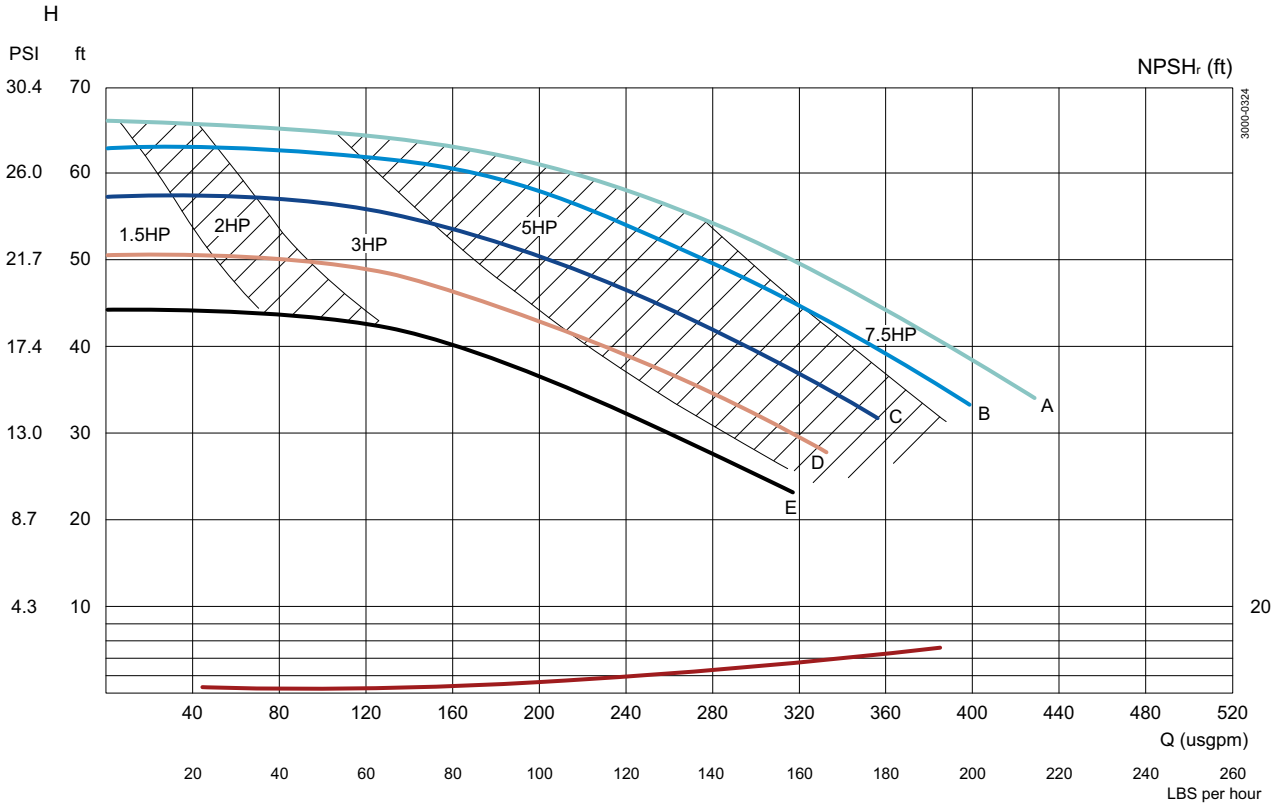

A = 8.071”  D = 7.087”  G = 5.906”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKH-50, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

The curves refer to motor: 6.0 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



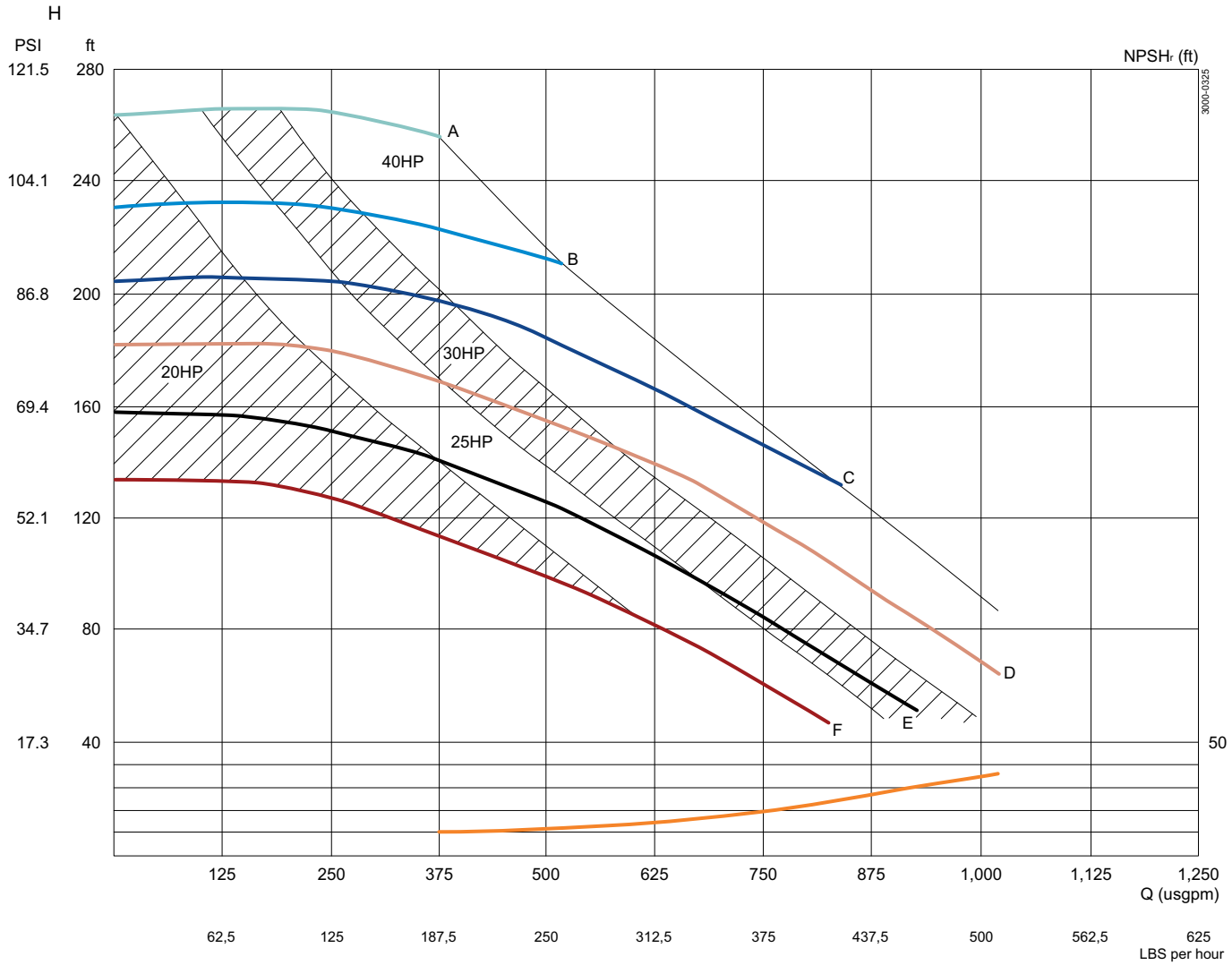

A = 8.070" D = 7.087
B = 7.874" E = 6.693
C = 7.480

## LKH-60, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4" mm, DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 46.9 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
3% for 16.8-28.2 Hp.
6% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



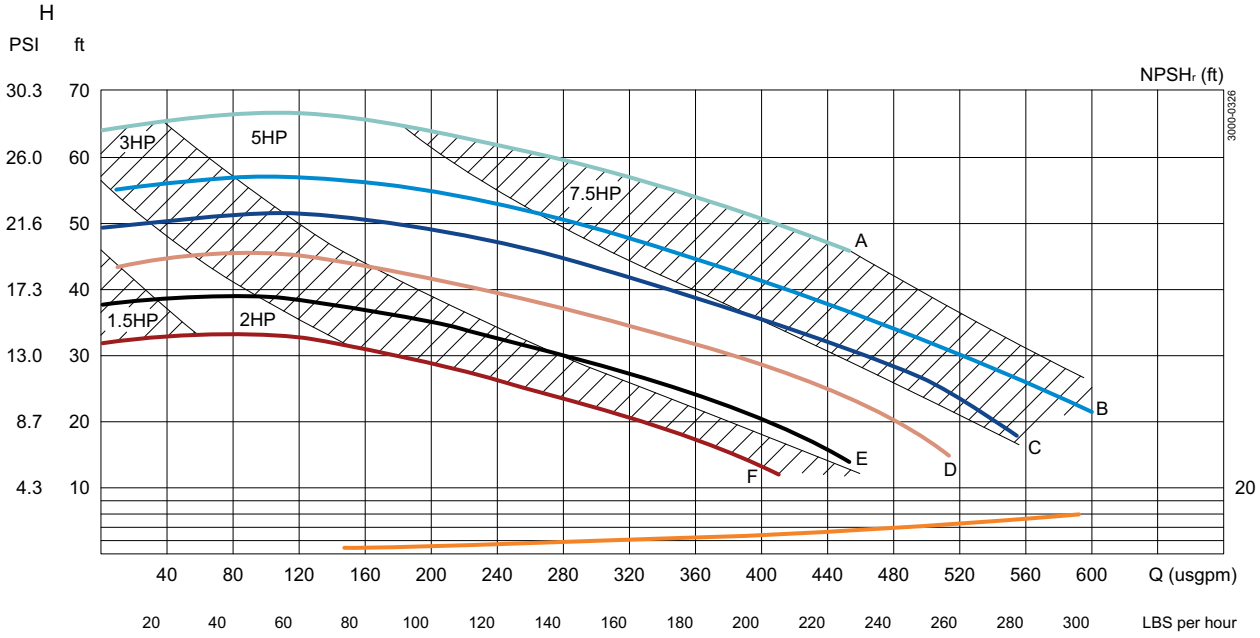

A = 8.268”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKH-60, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4", DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%.

DO NOT FORGET THE SAFETY FACTOR



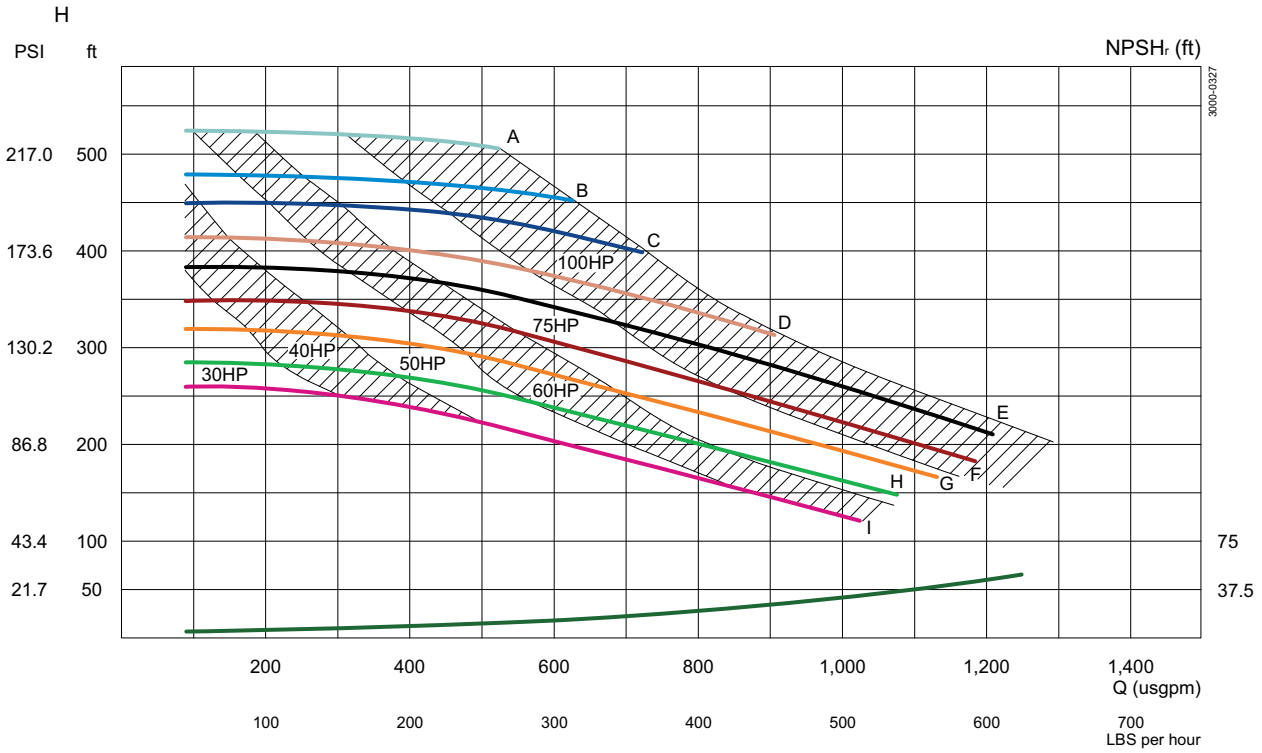

A = 8.286”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKH-70, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 115.3 Hp, 3565 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with: -3%.

DO NOT FORGET THE SAFETY FACTOR



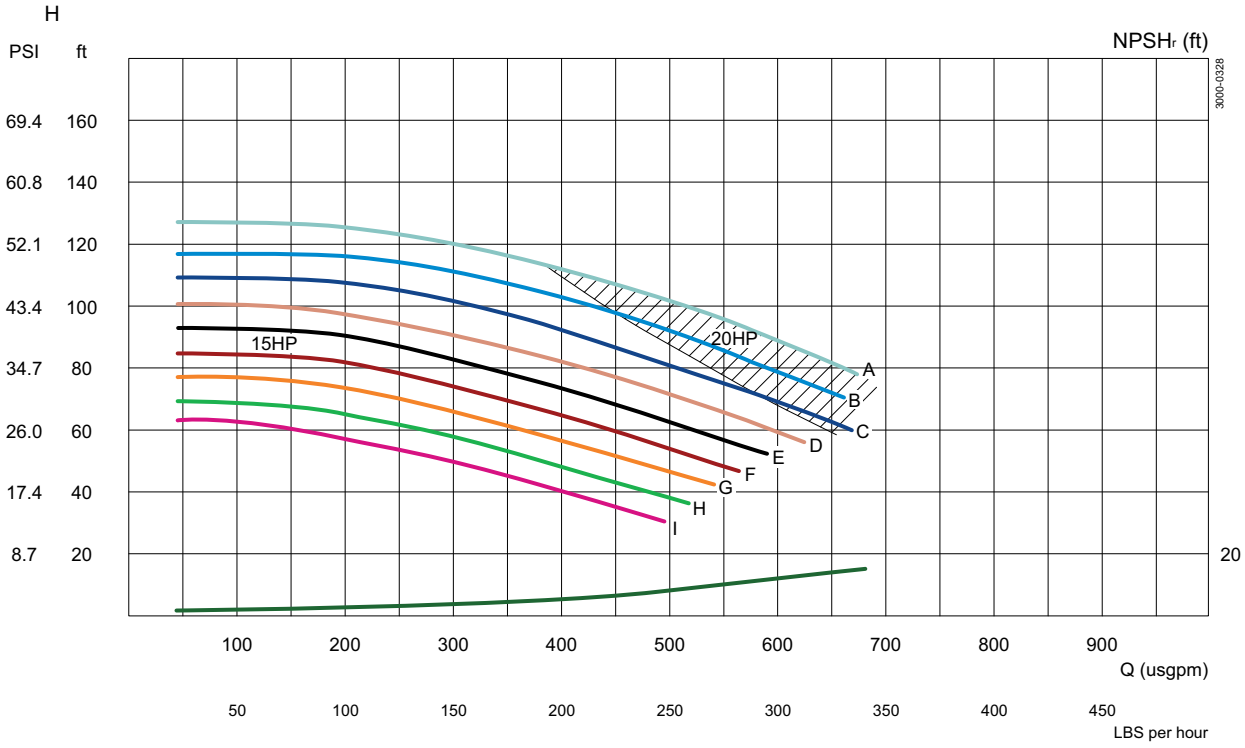

A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

## LKH-70, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor: 22.8 Hp, 1750 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR




A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

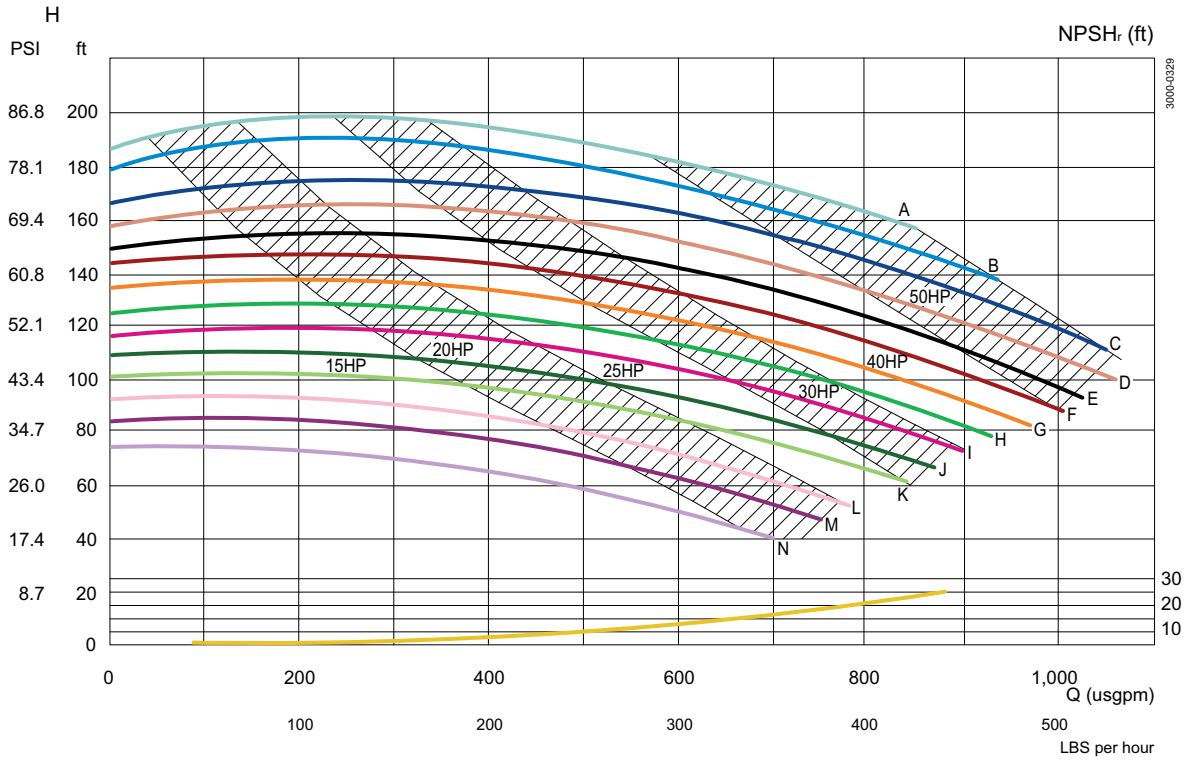
## LKH-75, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 13.7” |
| Impeller, Min. dia.: | 8.7” |
| Pump inlet, Dia.: | 4” DN100 |
| Pump outlet, Dia.: | 4” DN100 |

Performance data refer to water at 68°F (20°C).

**Note!** The curves refer to max. motor: 40 Hp (30 kW), 1775 rpm. asynchr., 60 Hz. If Clear Flow impeller is mounted the performance can be up to 10% lower than on the curves shown.

DO NOT FORGET THE SAFETY FACTOR.



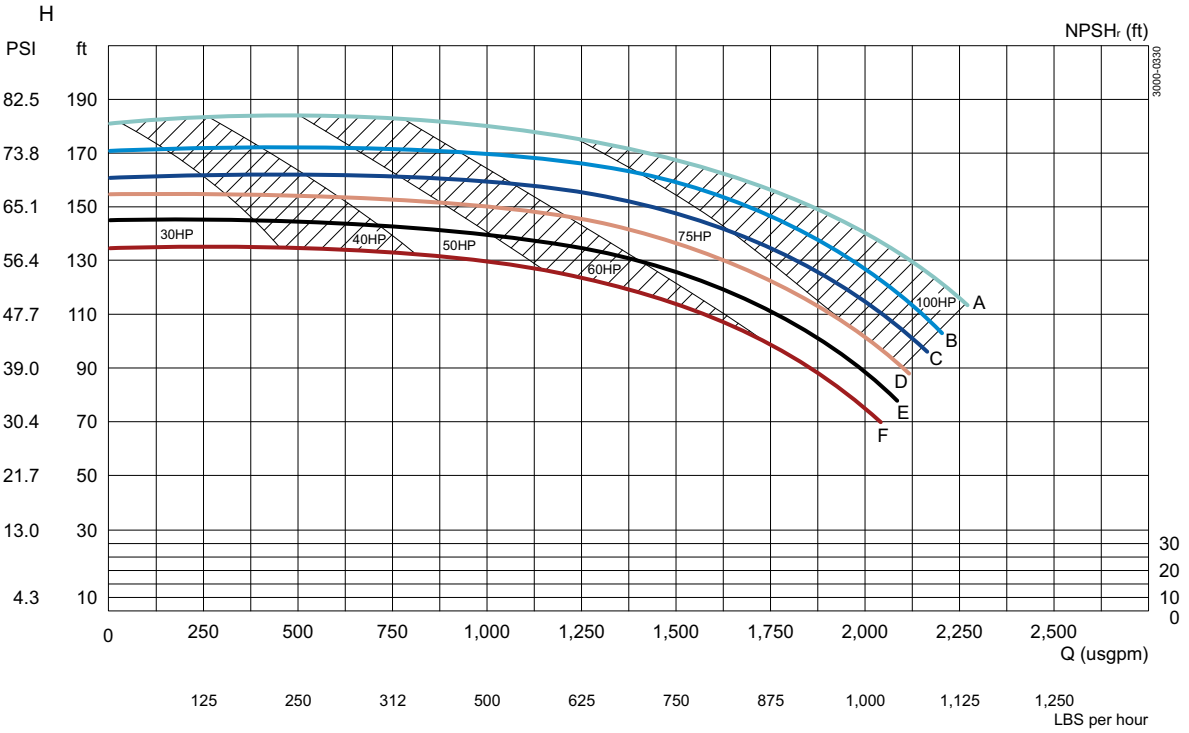

A = 13.7” D = 12.6” G = 11.4” J = 10.2” M = 9.1”
B = 13.4” E = 12.2” H = 11.0” K = 9.8” N = 8.7”
C = 13.0” F = 11.8” I = 10.6” L = 9.4”

## LKH-90, 60 Hz

| | 60 Hz |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 13.7" |
| Impeller, Min. dia.: | 11.81" |
| Pump inlet, dia.: | 6", DN 150 |
| Pump outlet, dia.: | 6", DN 150 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 75 kW, 1490 rpm. asynchr., 50 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR




A = 13.70”  D = 12.60”
B = 13.39”  E = 12.20”
C = 12.99”  F = 11.81”

# Alfa Laval LKH Multi—Stage

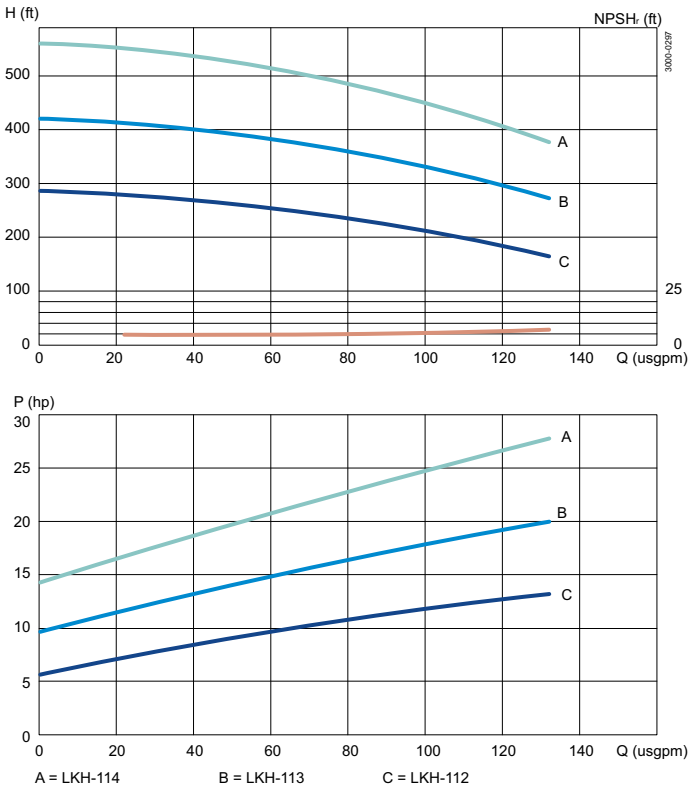
## Performance curves

### LKH-110 Multi-Stage, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5%. |
| Impeller, LKH-112: | 2 x dia.: 6.42” |
| Impeller, LKH-113: | 3 x dia.: 6.42” |
| Impeller, LKH-114: | 4 x dia.: 6.42” |
| Pump inlet, Dia.: | 2”, DN 50 |
| Pump outlet, Dia.: | 1½”, DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor: LKH-112, 16.8 Hp 3515 rpm. asynchr, 60 Hz. LKH-113, 22.8 Hp 3505 rpm. asynchr, 60 Hz. LKH-114, 28.2 Hp 3510 rpm. asynchr, 60 Hz. For smaller motors, reduce head (H) by: 3%.

DO NOT FORGET THE SAFETY FACTOR

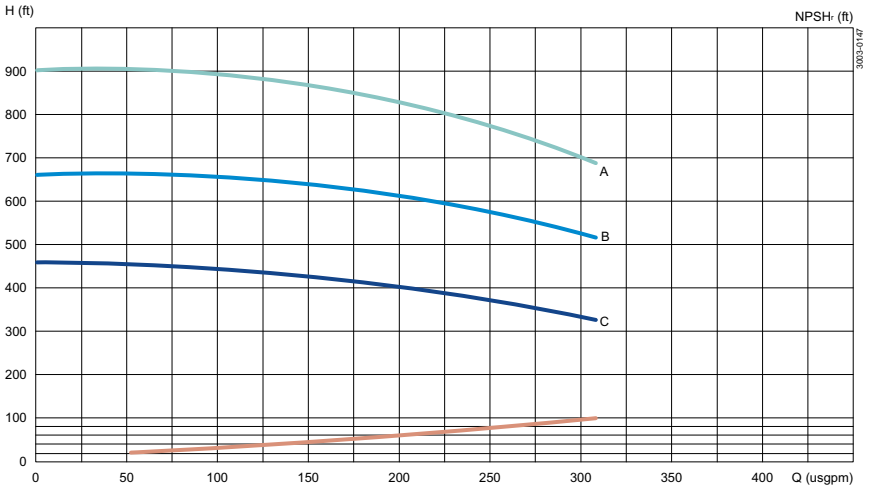


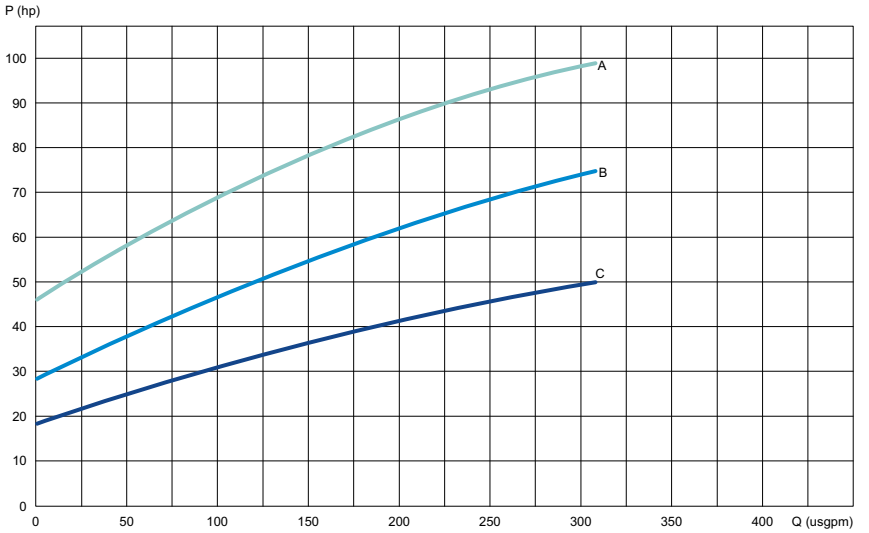
## LKH-120/P Multi-Stage, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5%. |
| Impeller, LKH-122/P: | 8.11” |
| Impeller, LKH-123/P: | 8.11” |
| Impeller, LKH-124/P: | 8.11” |
| Pump inlet, dia.: | 3”, DN 80 |
| Pump outlet, dia.: | 2½”, DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor:
LKH-122/P, 50 Hp, 3510 rpm. asynchr., 60 Hz
LKH-123/P, 75 Hp, 3540 rpm. asynchr., 60 Hz
LKH-124/P, 100 Hp 3570 rpm. aysnchr., 60 Hz
For smaller motors, reduce head (H) by 3%
For inlet pressure > 10 bar, reduce head (H) by 5%

DO NOT FORGET THE SAFETY FACTOR




A = LKH-124/P
B = LKH-123/P
C = LKH-122/P

# Alfa Laval LKHPF

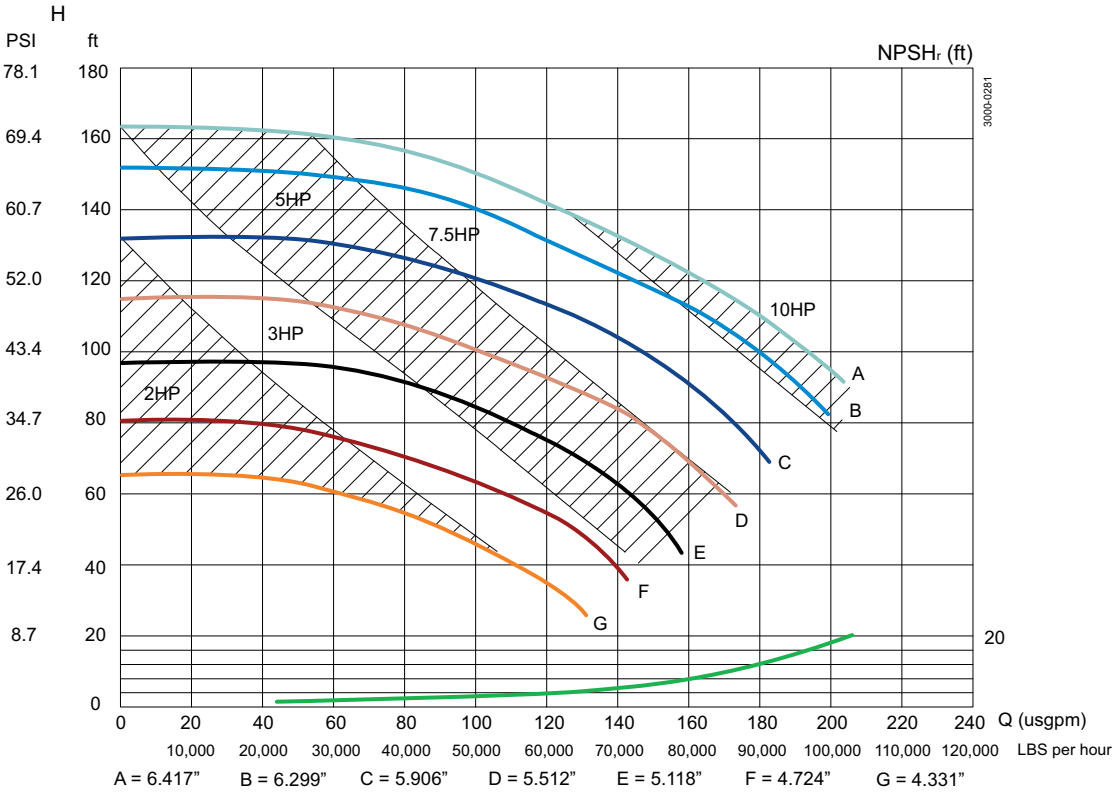
## Performance curves

### LKHPF-10, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

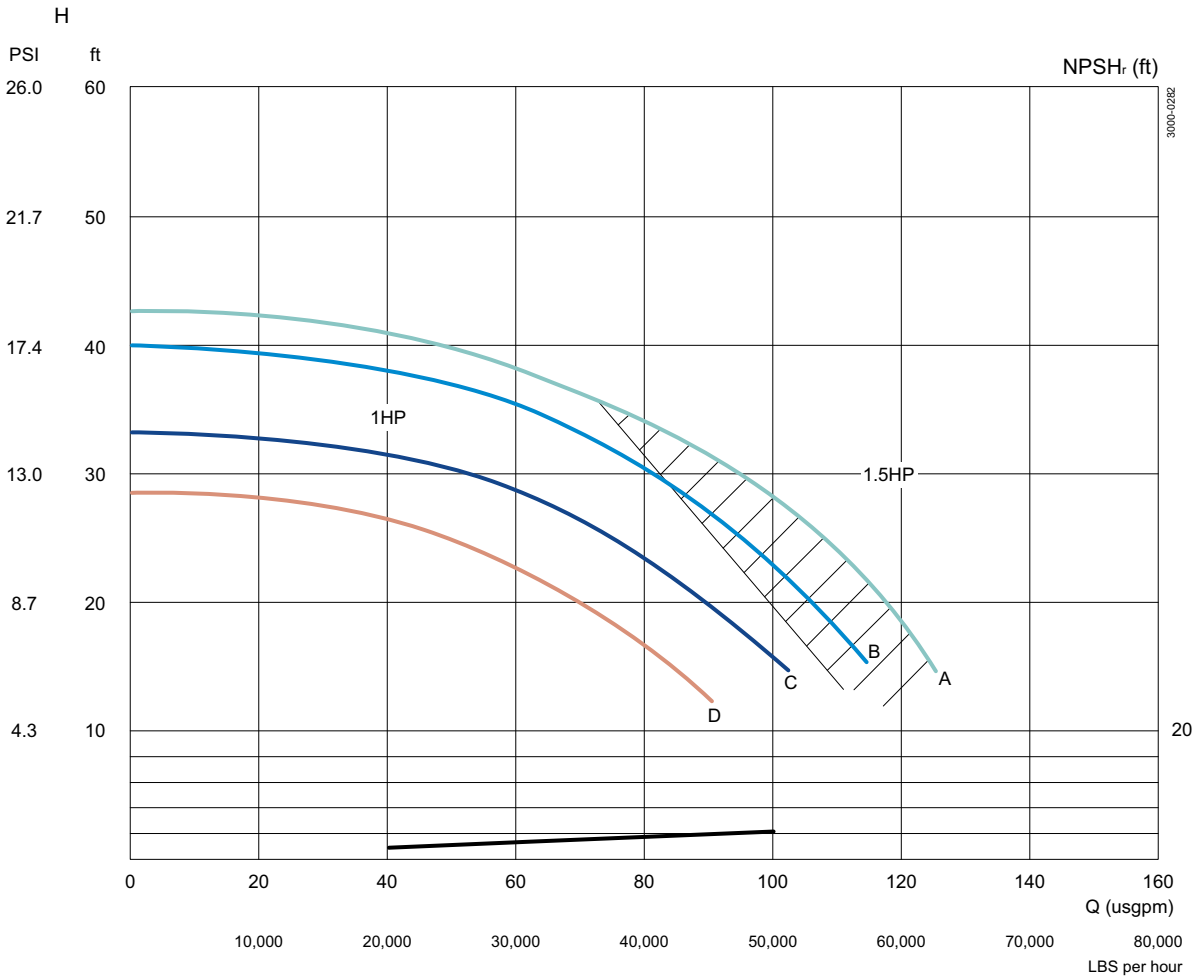


## LKHPF-10, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417” |
| Impeller, Min. dia.: | 5.512” |
| Pump inlet, dia.: | 2½”, DN 65 |
| Pump outlet, dia.: | 2”, DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



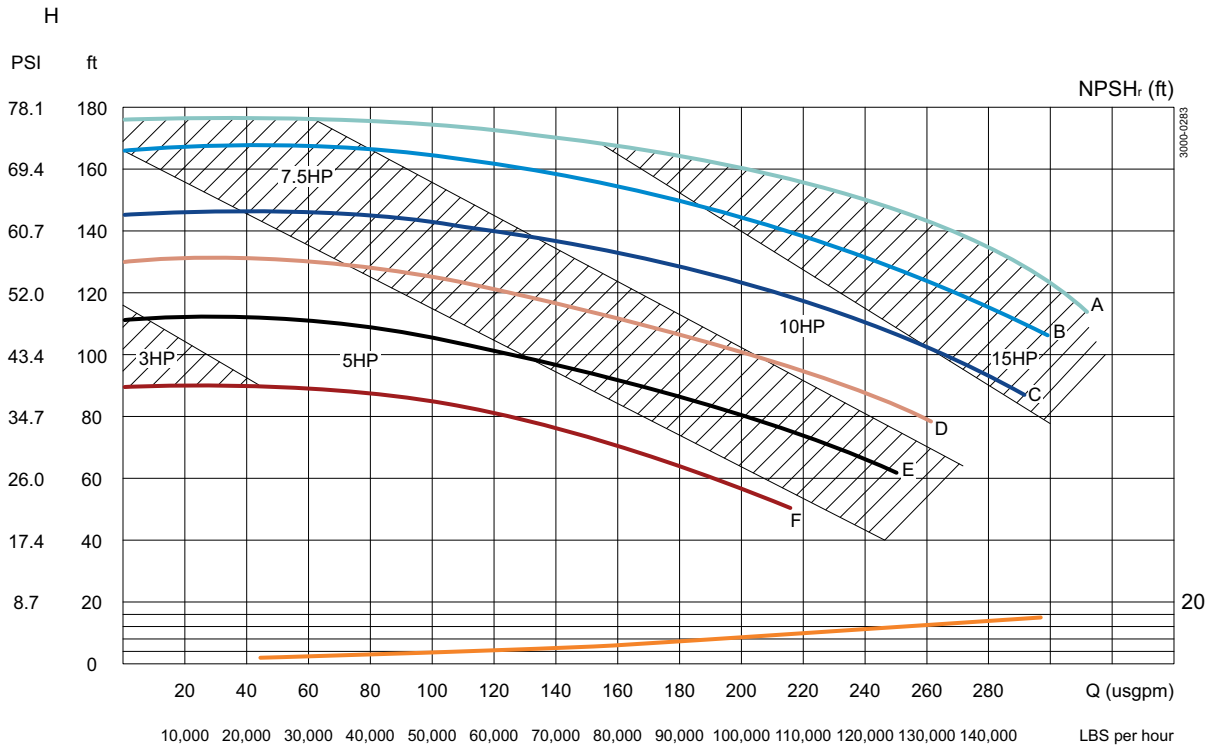

A = 6.417” D = 5.512”
B = 6.299”
C = 5.906”

## LKHPF-20, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 16.8 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



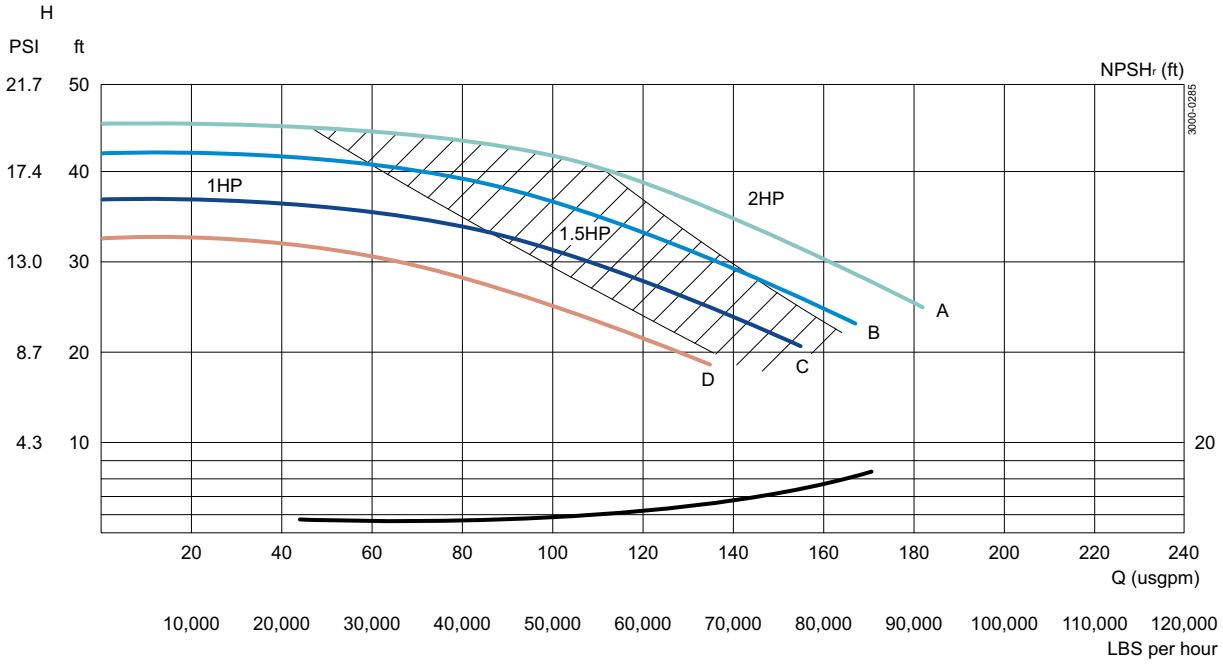

A = 6.496”  D = 5.512”
B = 6.299”  E = 5.118”
C = 5.906”  F = 4.724”

## LKHPF-20, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



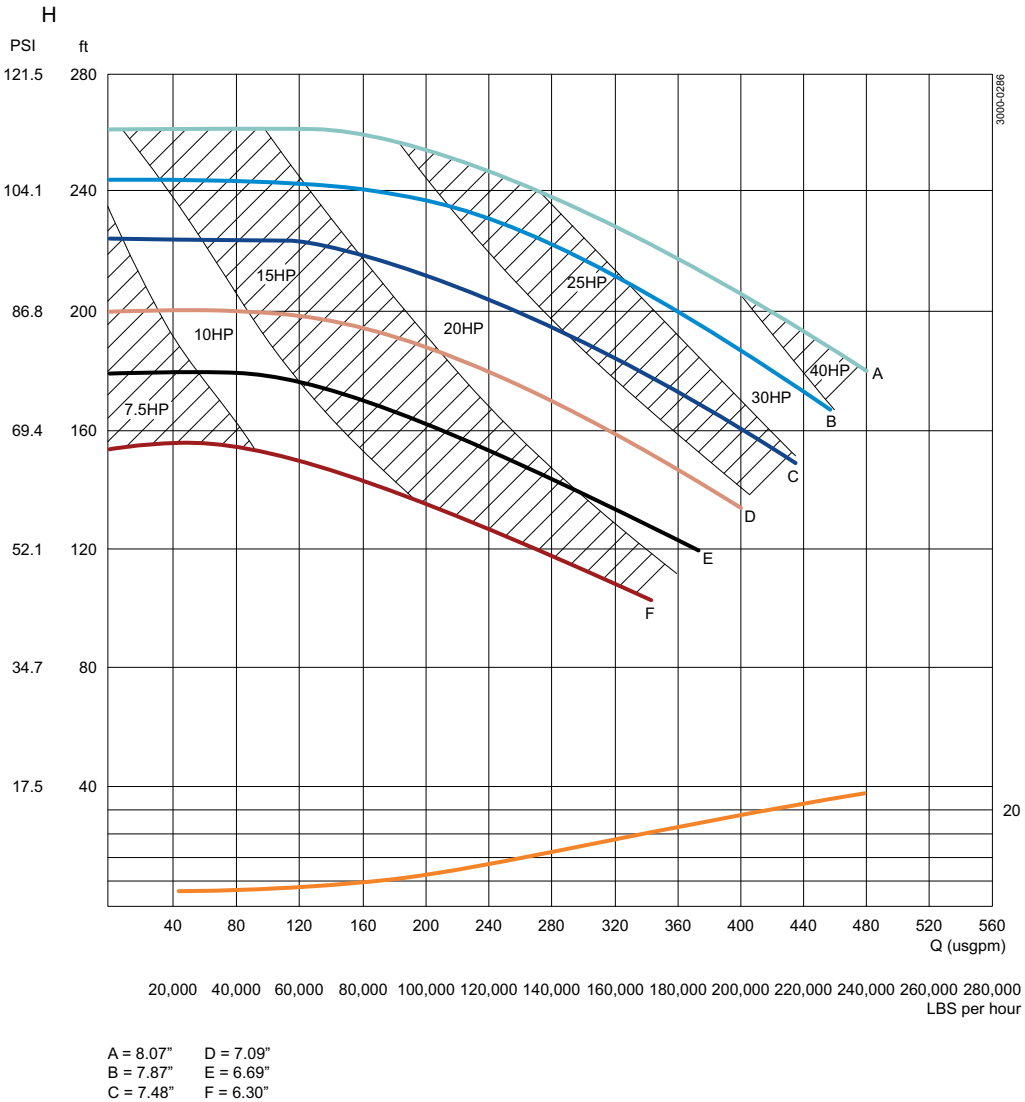

A = 6.496”  D = 5.512”
B = 6.299”
C = 5.906”

## LKHPF-25, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



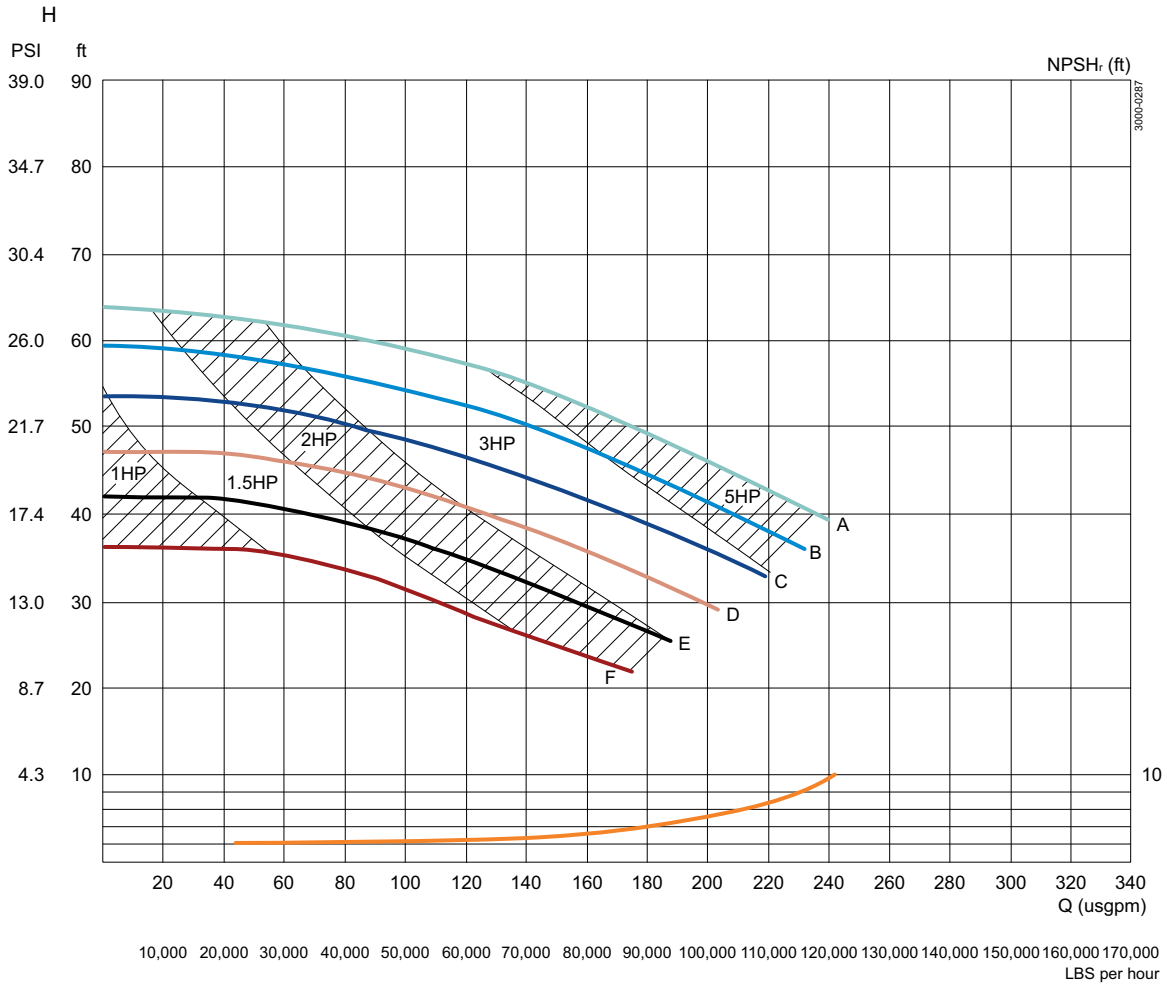

A = 8.07" D = 7.09"
B = 7.87" E = 6.69"
C = 7.48" F = 6.30"

## LKHPF-25, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp (3.5 kW), 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%

DO NOT FORGET THE SAFETY FACTOR



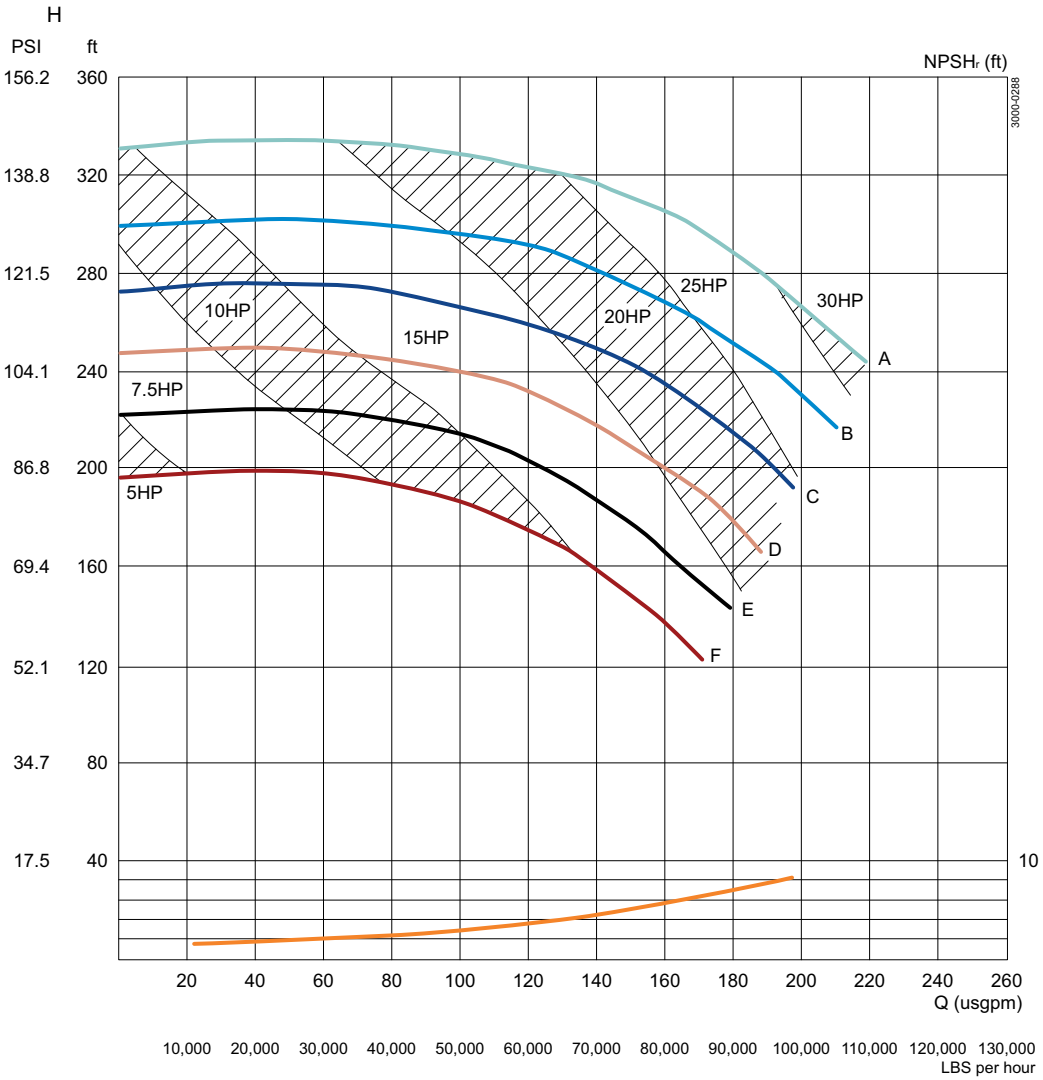

A = 8.070”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHPF-35, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2.5", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 28.2 Hp, 3535 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% 16.8-22.8 Hp.
- 3% 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



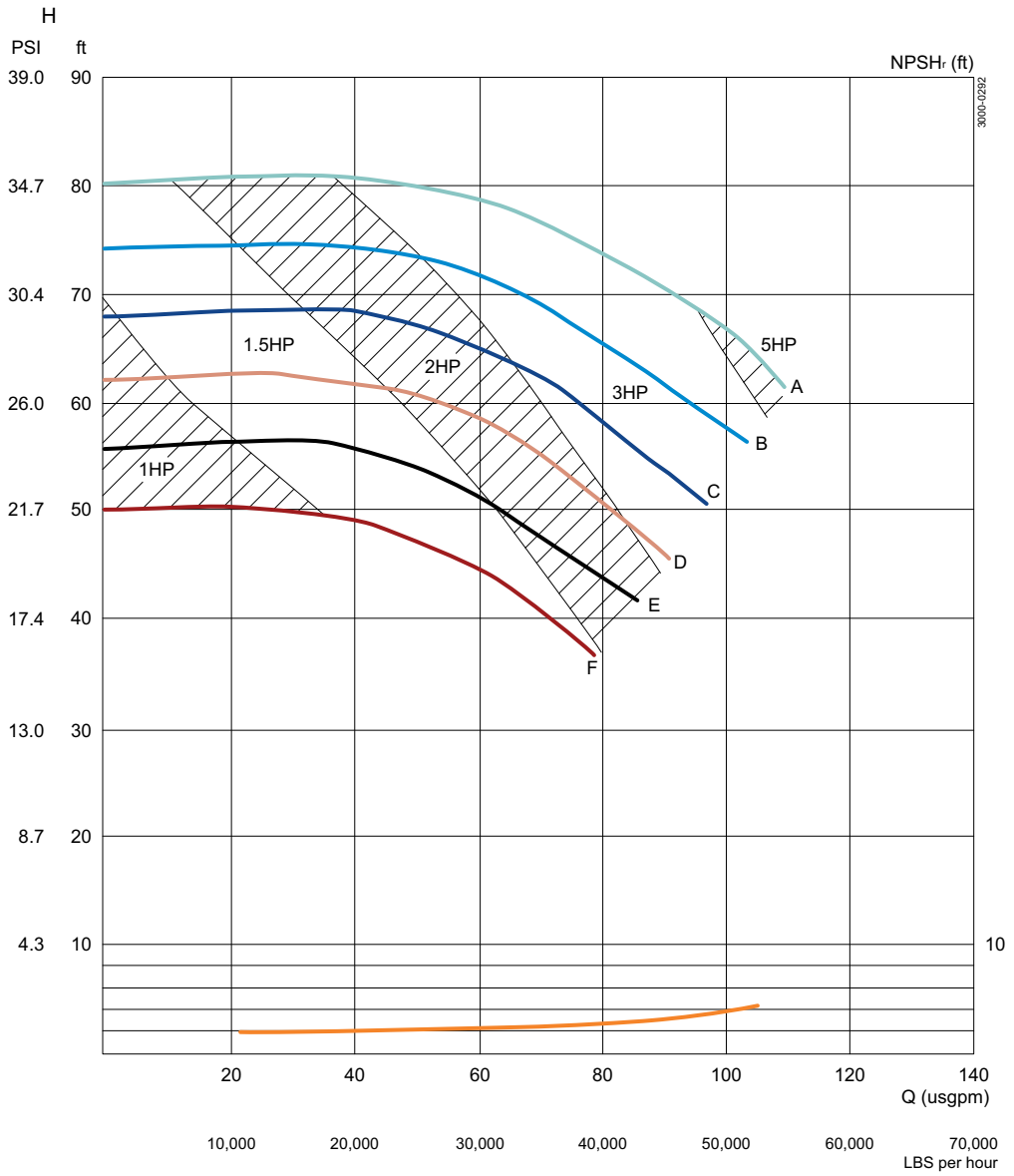

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHPF-35, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.4 Hp, 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%

DO NOT FORGET THE SAFETY FACTOR



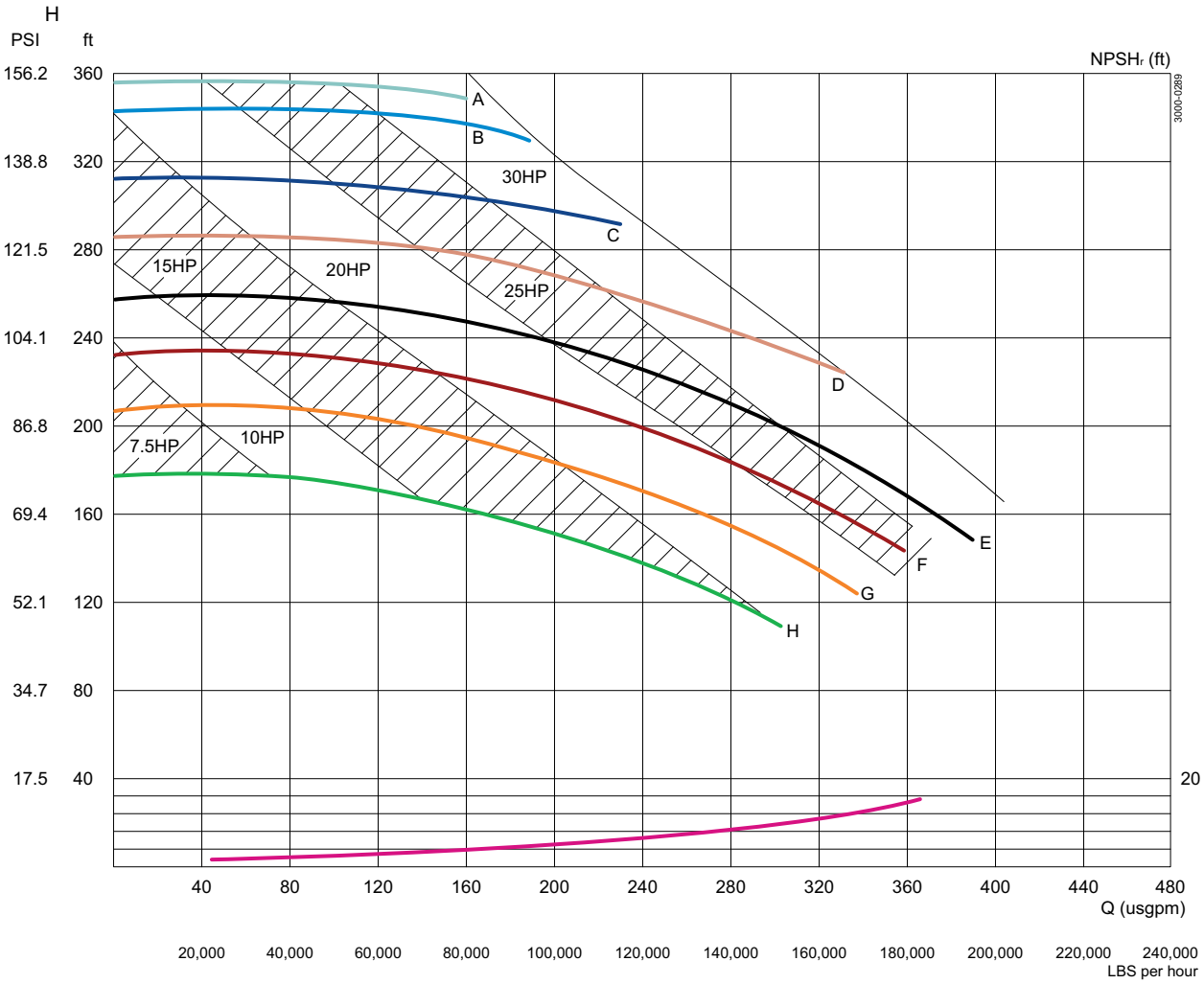

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHPF-40, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 2940 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



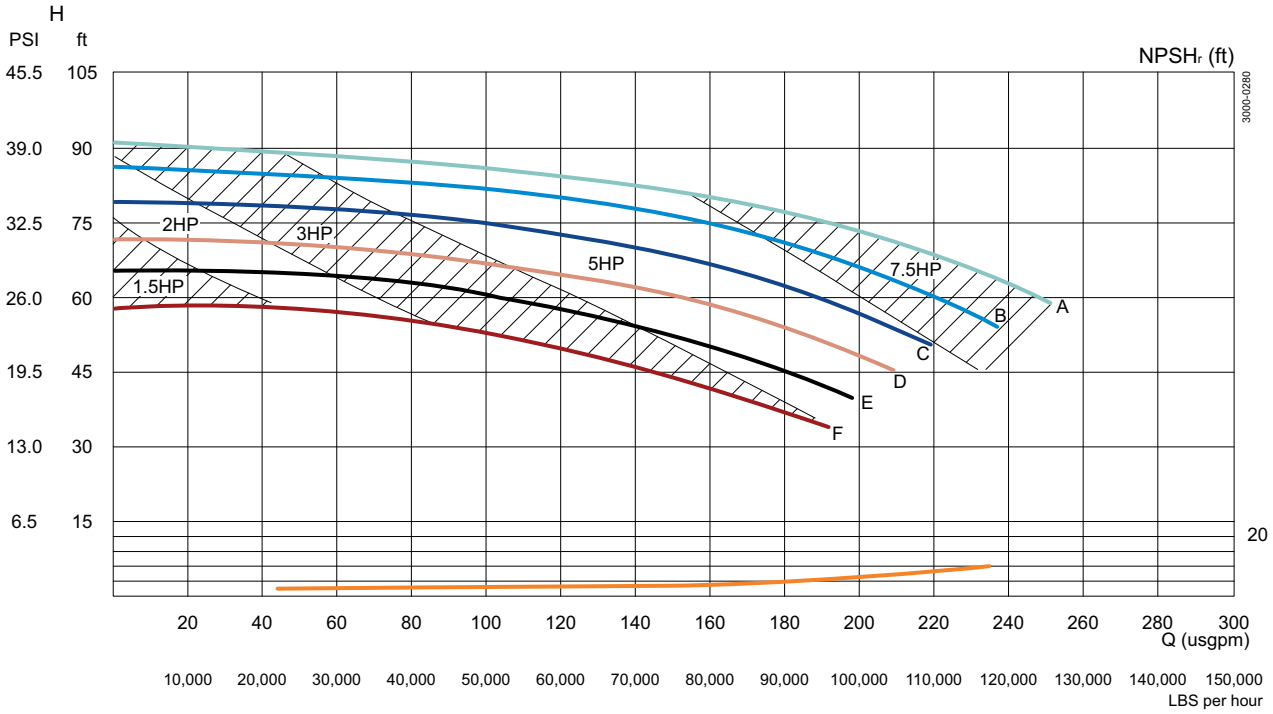

A = 9.252”
B = 9.055”
C = 8.661”
D = 8.268”
E = 7.874”
F = 7.480”
G = 7.087”
H = 6.693 “

## LKHPF-40, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 7.480" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



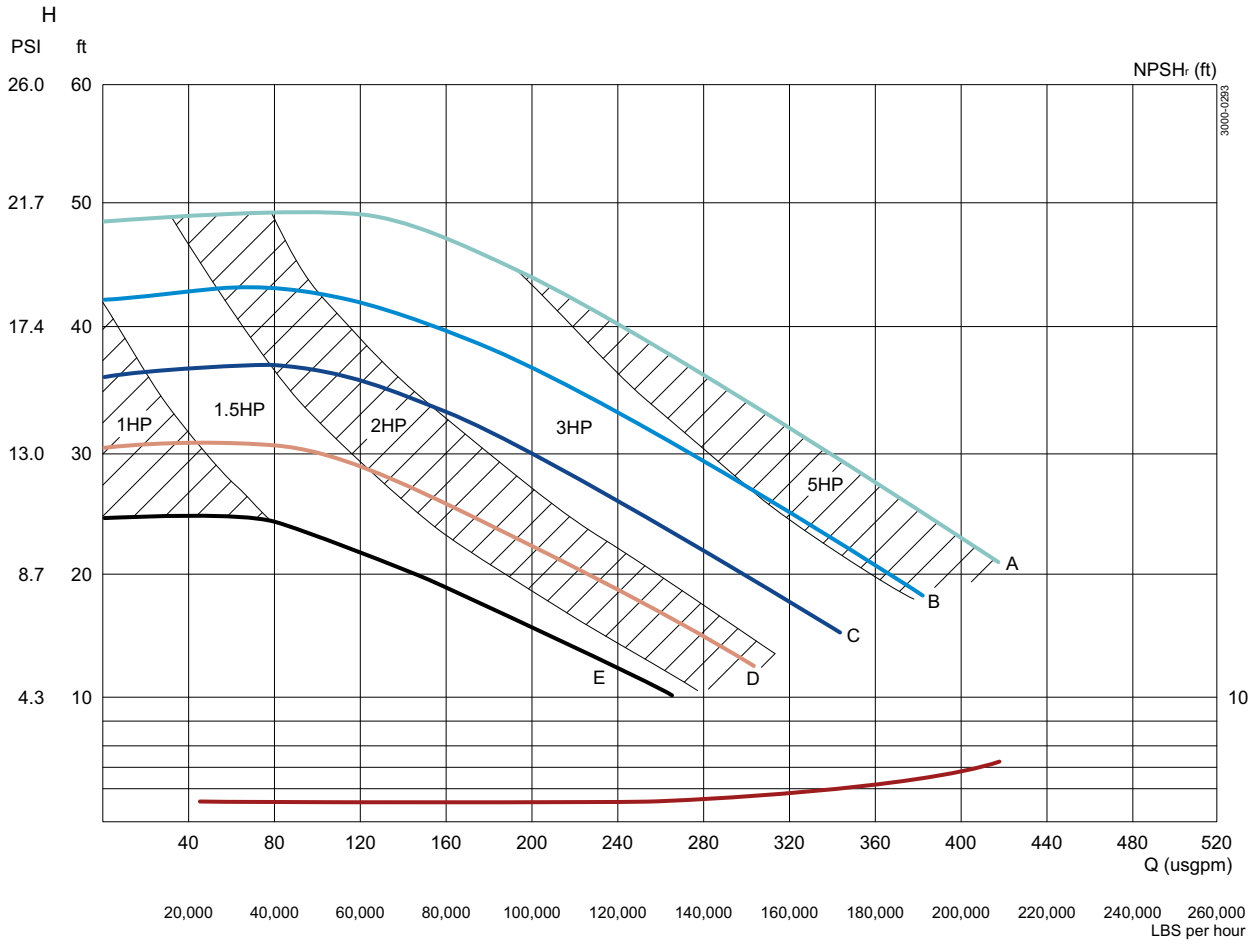

A = 9.252”  D = 8.268”
B = 9.055”  E = 7.874”
C = 8.661”  F = 7.480”

## LKHPF-45, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



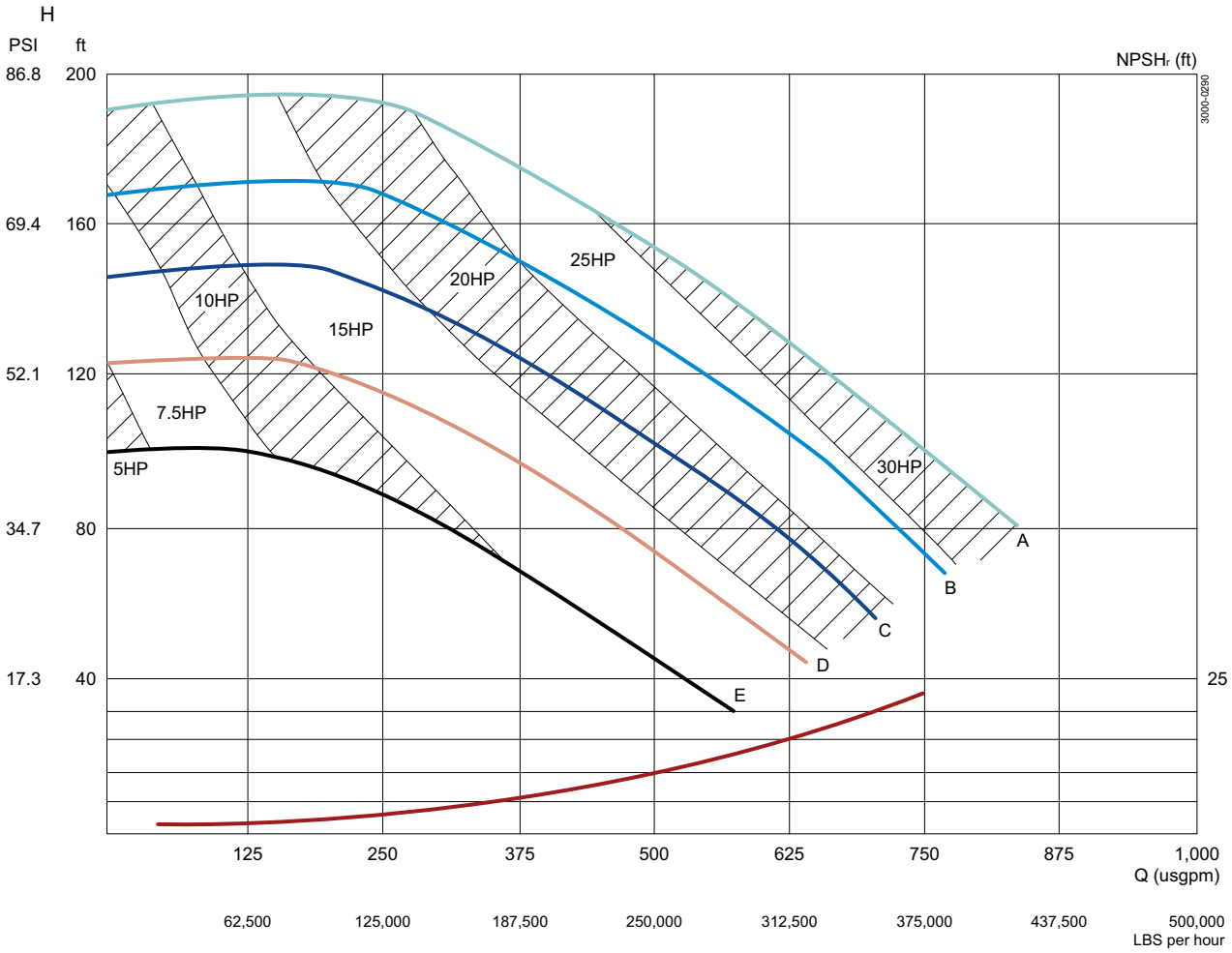

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKHPF-45, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp, 1720 rpm. asynchr., 60 Hz.
For smaller motors.

DO NOT FORGET THE SAFETY FACTOR



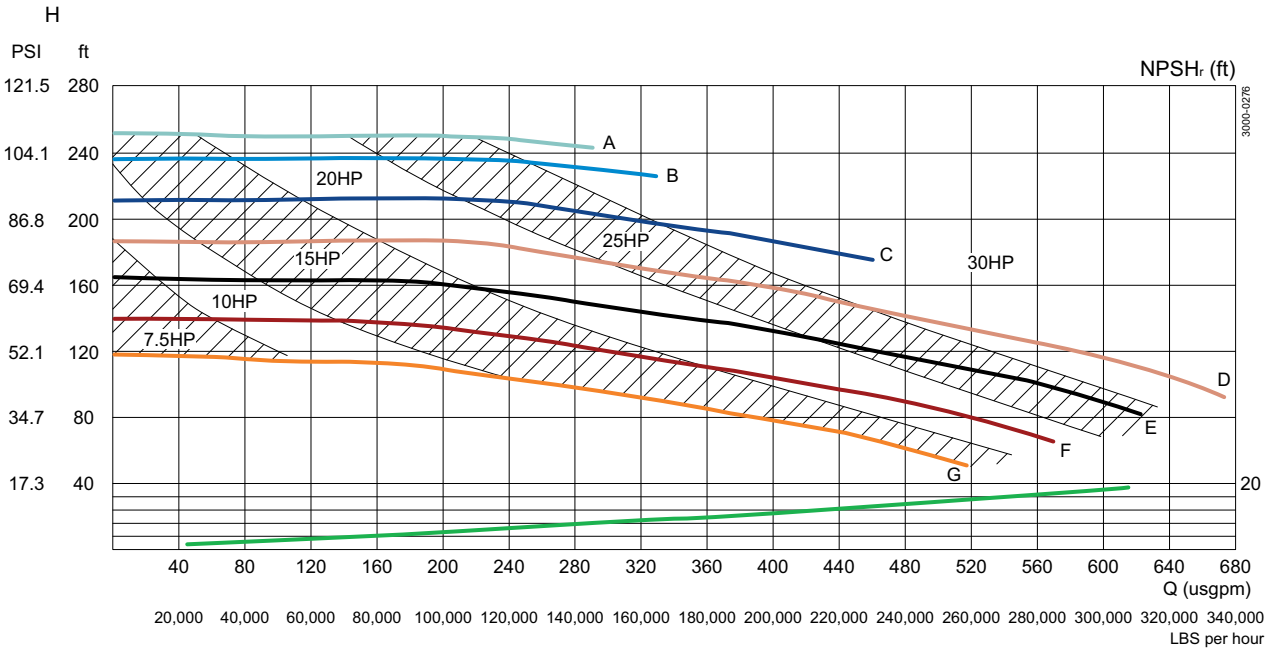

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKHPF-50, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 5.906" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



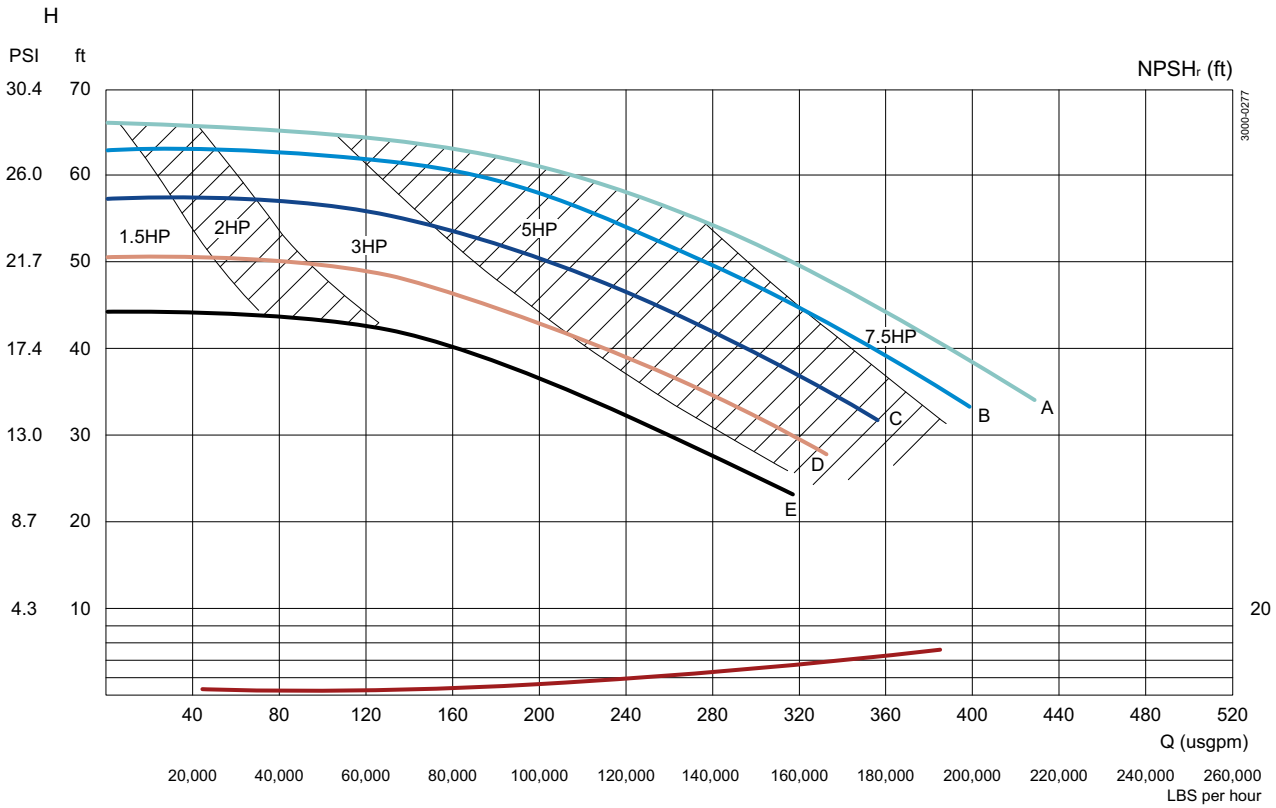

A = 8.071”  D = 7.087”  G = 5.906”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHPF-50, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

The curves refer to motor: 6.0 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



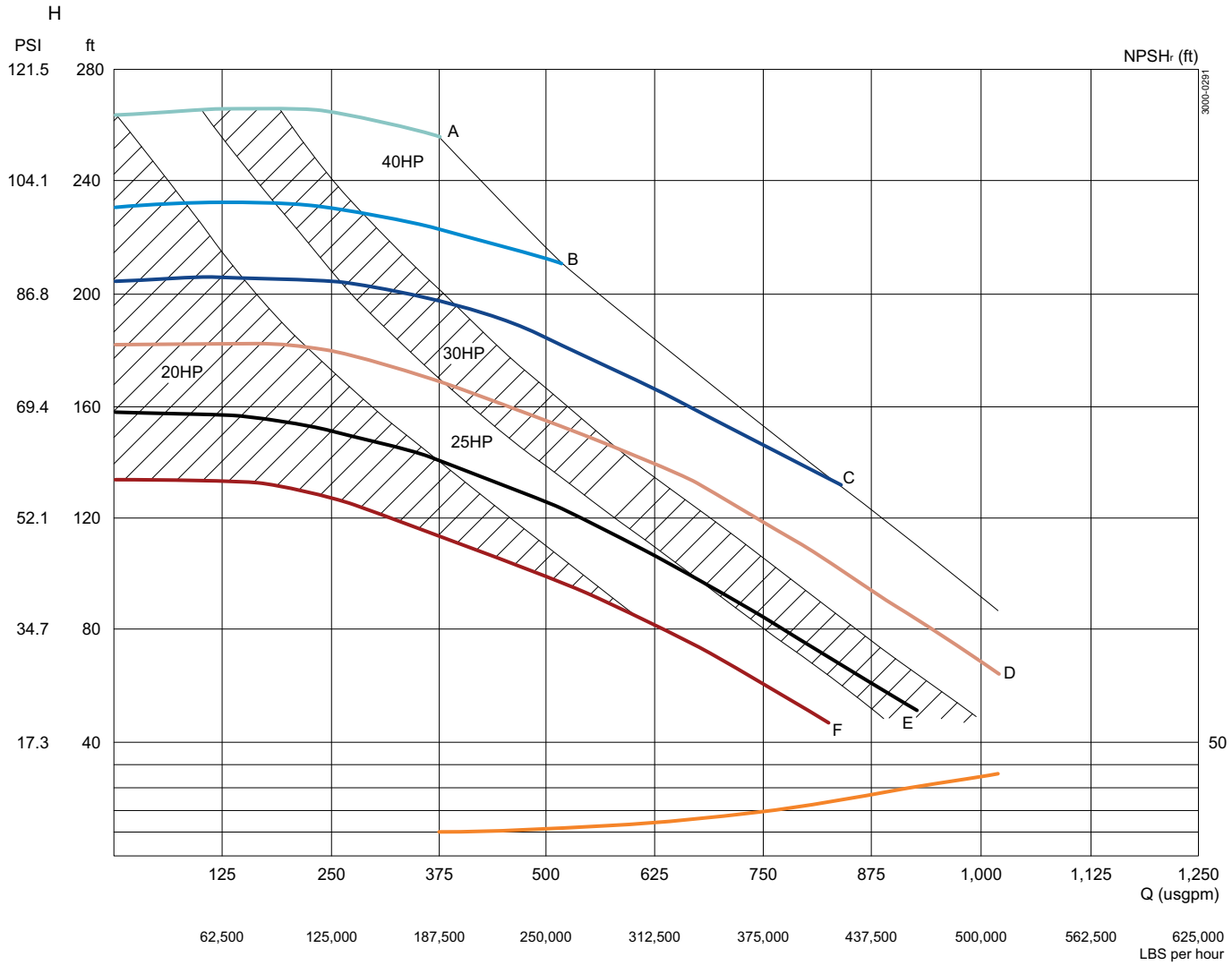

A = 8.070”
B = 7.874”
C = 7.480
D = 7.087
E = 6.693

## LKHPF-60, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4" mm, DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 46.9 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
3% for 16.8-28.2 Hp.
6% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



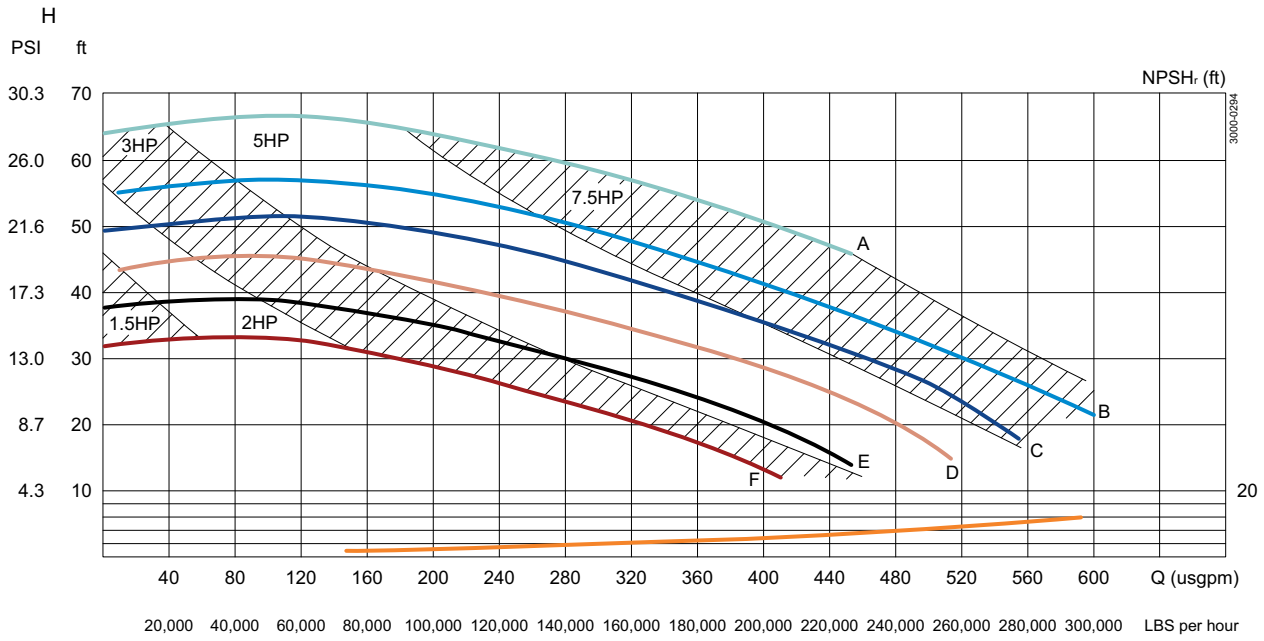

A = 8.268”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHPF-60, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4", DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%.

DO NOT FORGET THE SAFETY FACTOR



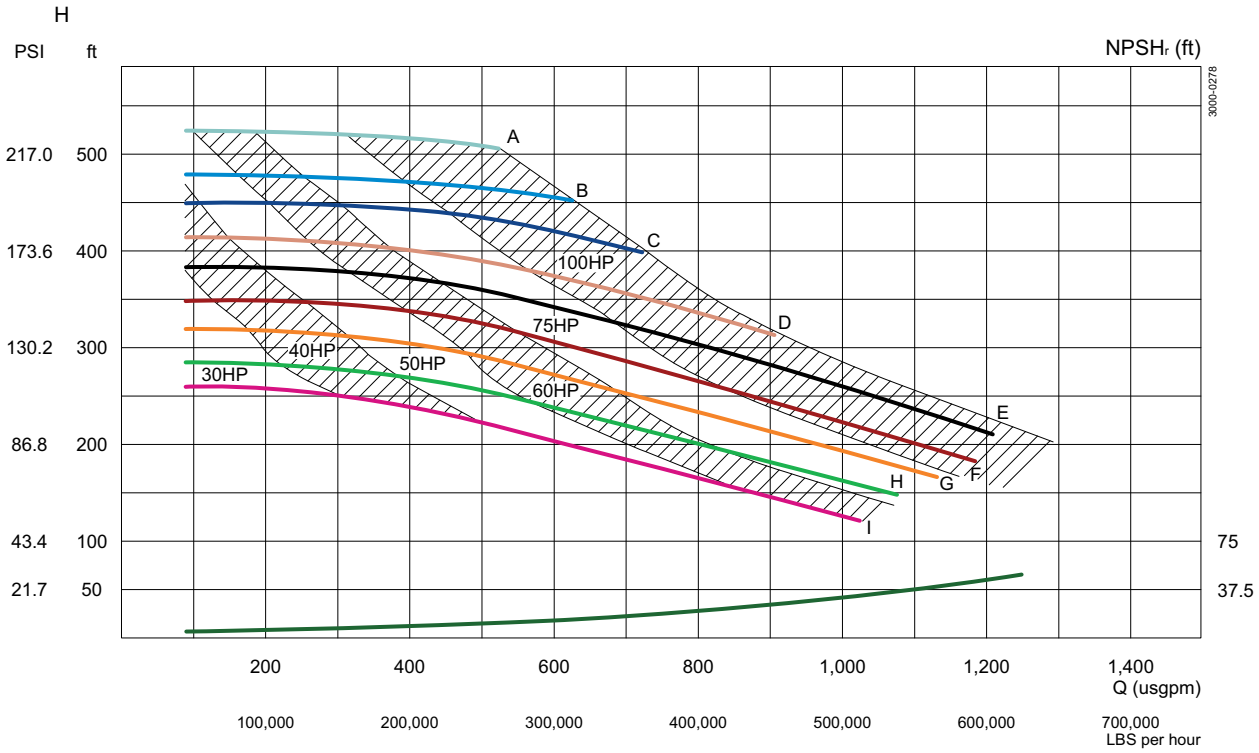

A = 8.286”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHPF-70, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 115.3 Hp, 3565 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with: -3%.

DO NOT FORGET THE SAFETY FACTOR



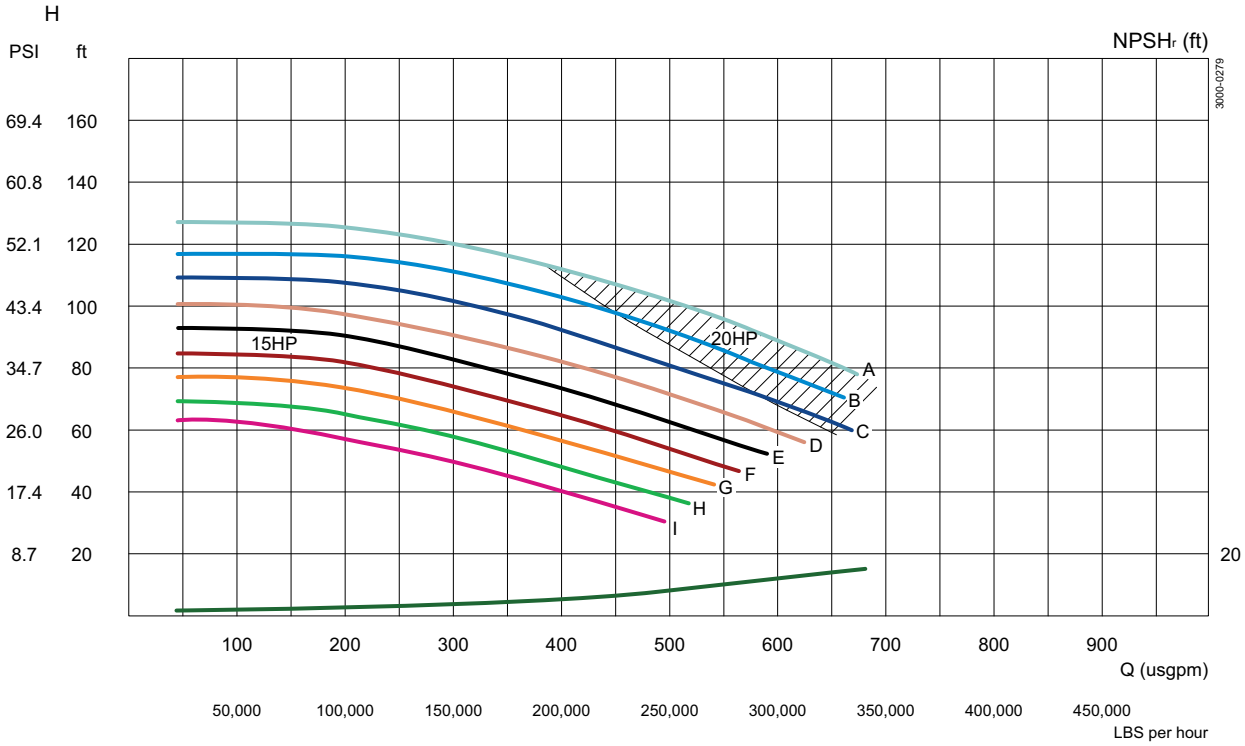

A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

## LKHPF-70, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor: 22.8 Hp, 1750 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR




A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

# Alfa Laval LKH UltraPure

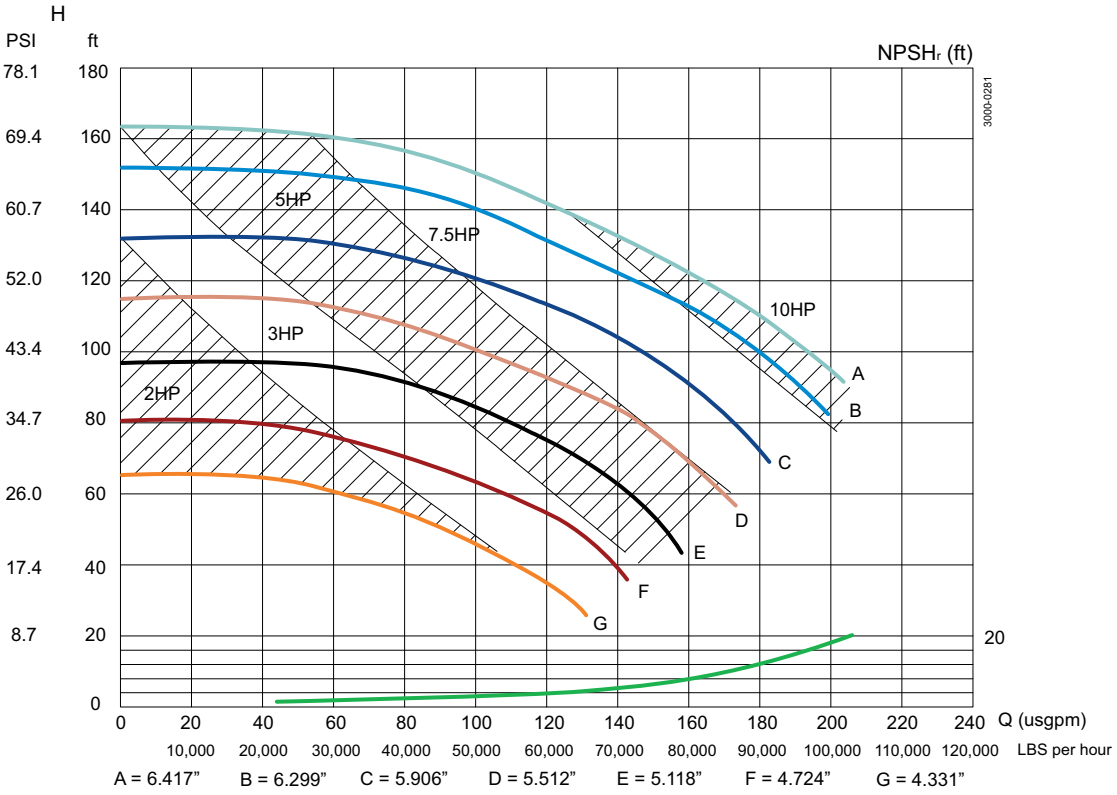
## Performance curves

### LKHUP-10, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

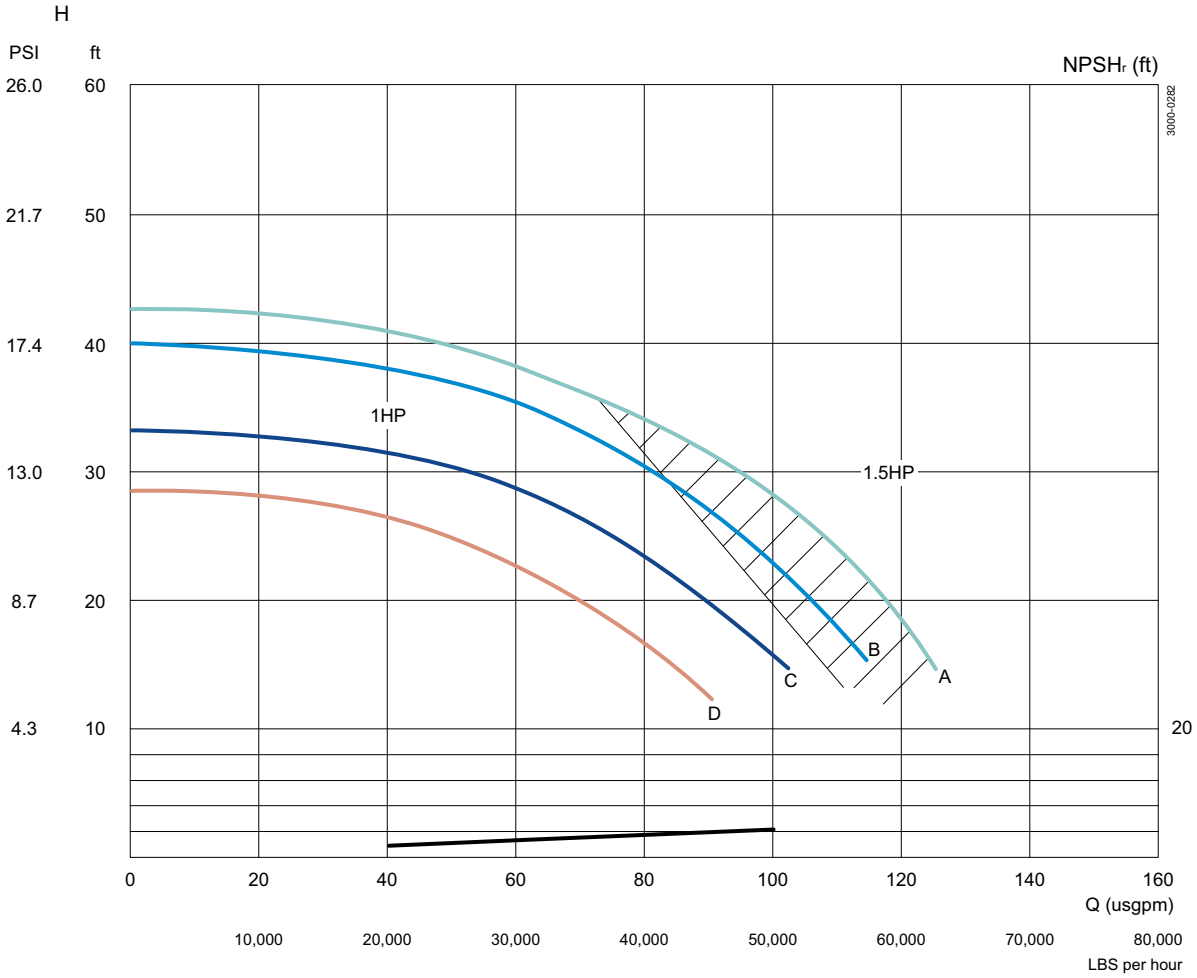


## LKHUP-10, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417” |
| Impeller, Min. dia.: | 5.512” |
| Pump inlet, dia.: | 2½”, DN 65 |
| Pump outlet, dia.: | 2”, DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



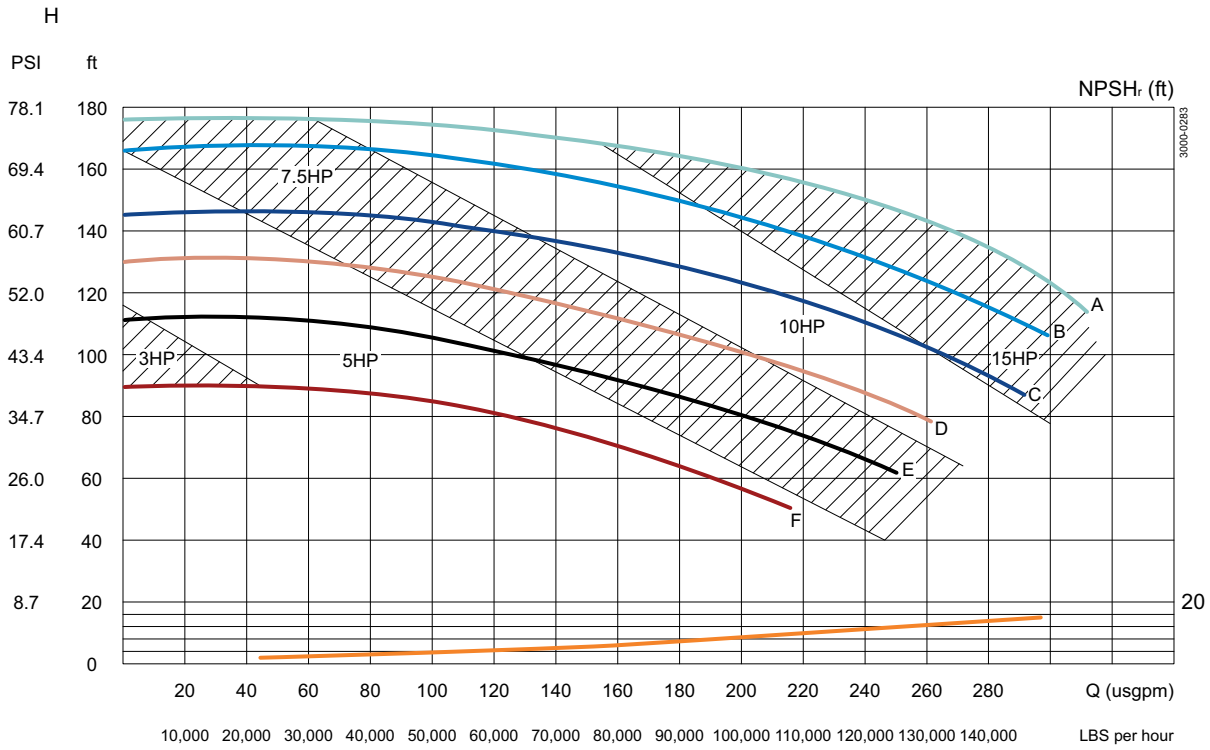

A = 6.417” D = 5.512”
B = 6.299”
C = 5.906”

## LKHUP-20, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 16.8 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



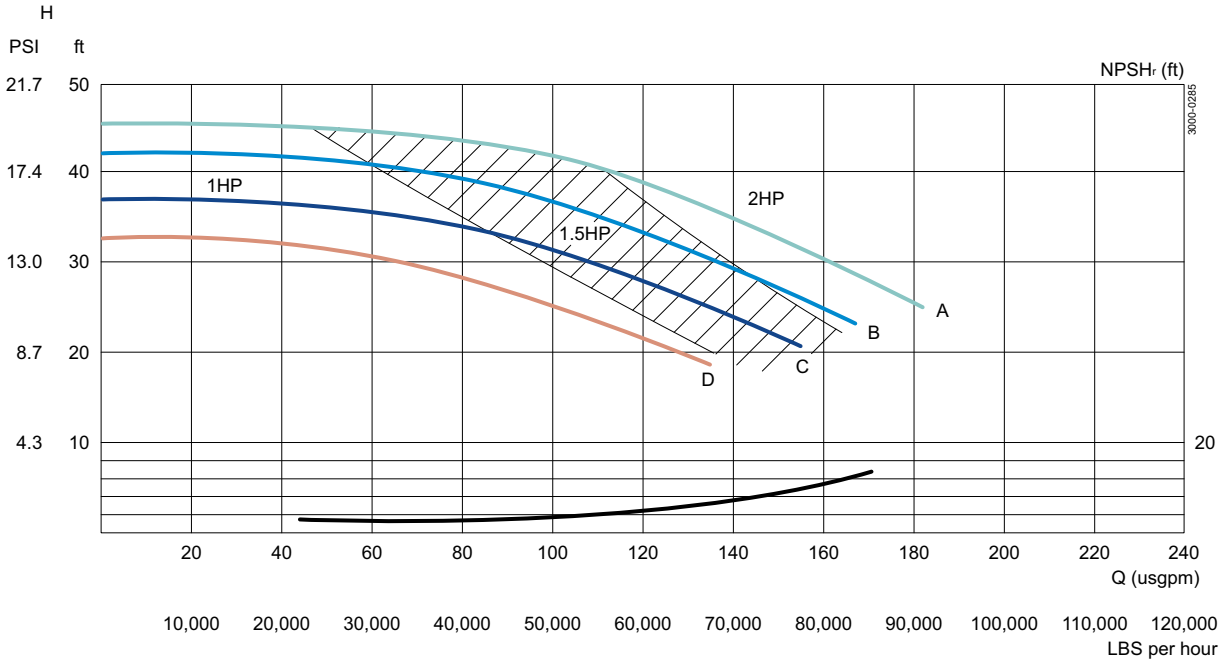

A = 6.496”  D = 5.512”
B = 6.299”  E = 5.118”
C = 5.906”  F = 4.724”

## LKHUP-20, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



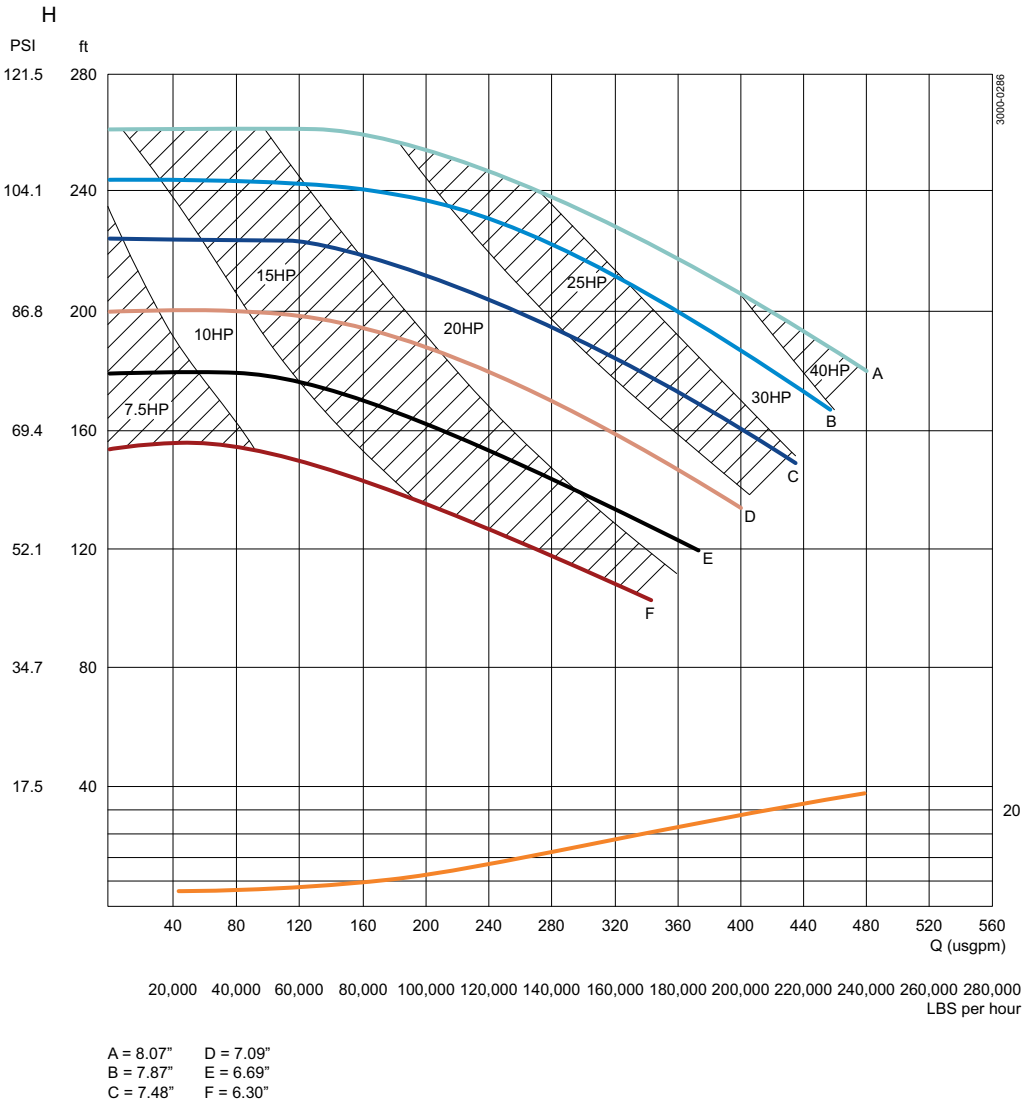

A = 6.496”  D = 5.512”
B = 6.299”
C = 5.906”

## LKHUP-25, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



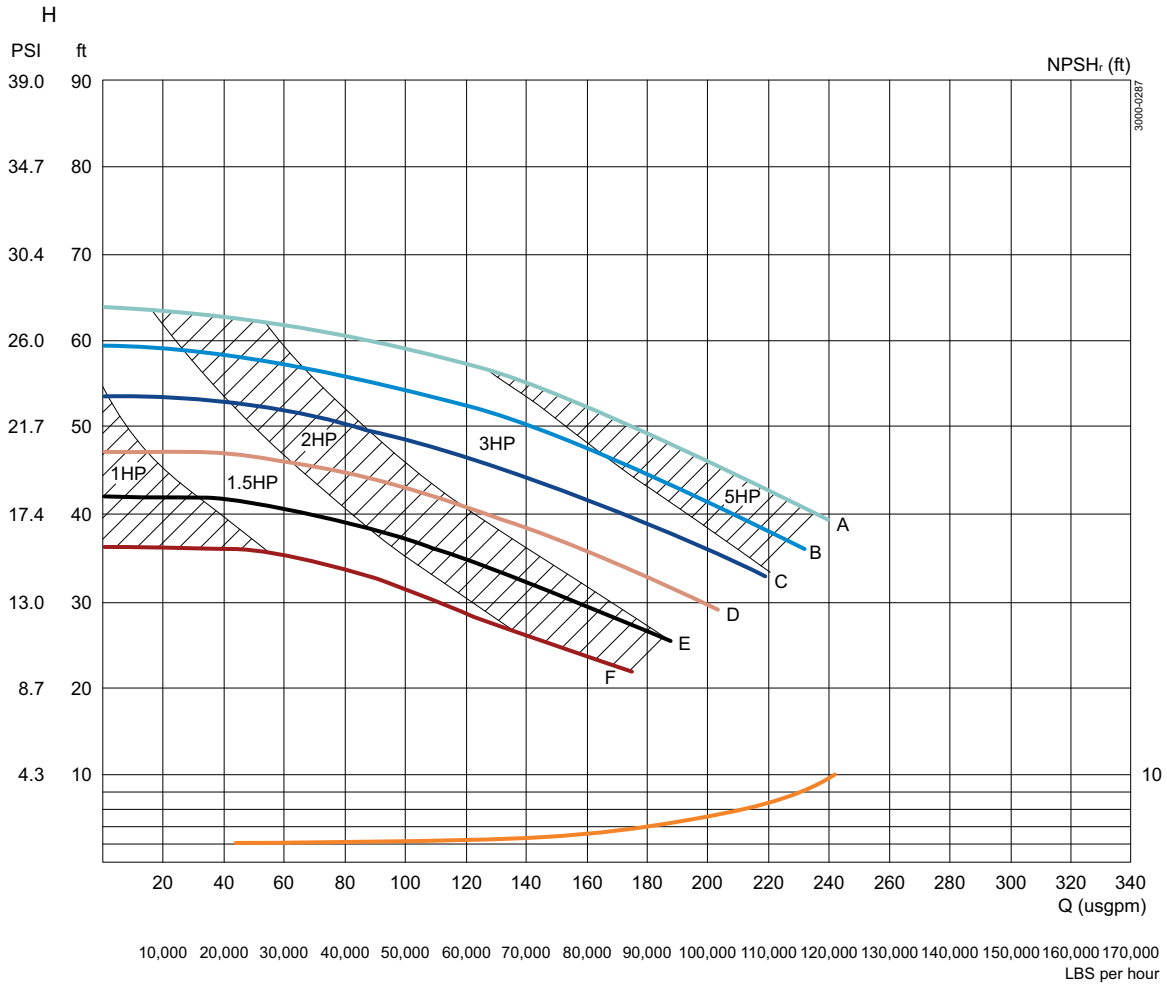

A = 8.07" D = 7.09"
B = 7.87" E = 6.69"
C = 7.48" F = 6.30"

## LKHUP-25, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp (3.5 kW), 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 3%.

DO NOT FORGET THE SAFETY FACTOR



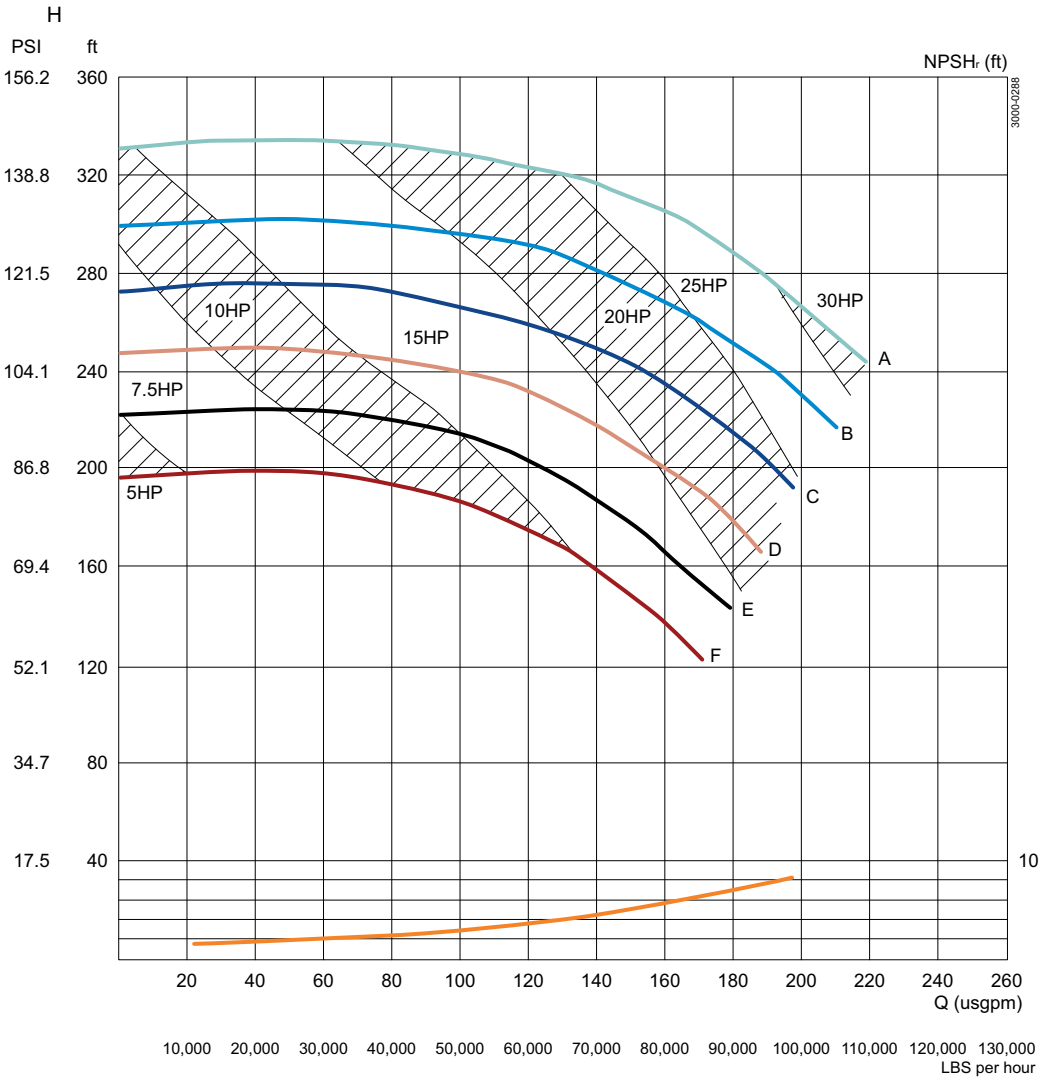

A = 8.070”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHUP-35, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2.5", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 28.2 Hp, 3535 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% 16.8-22.8 Hp.
- 3% 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



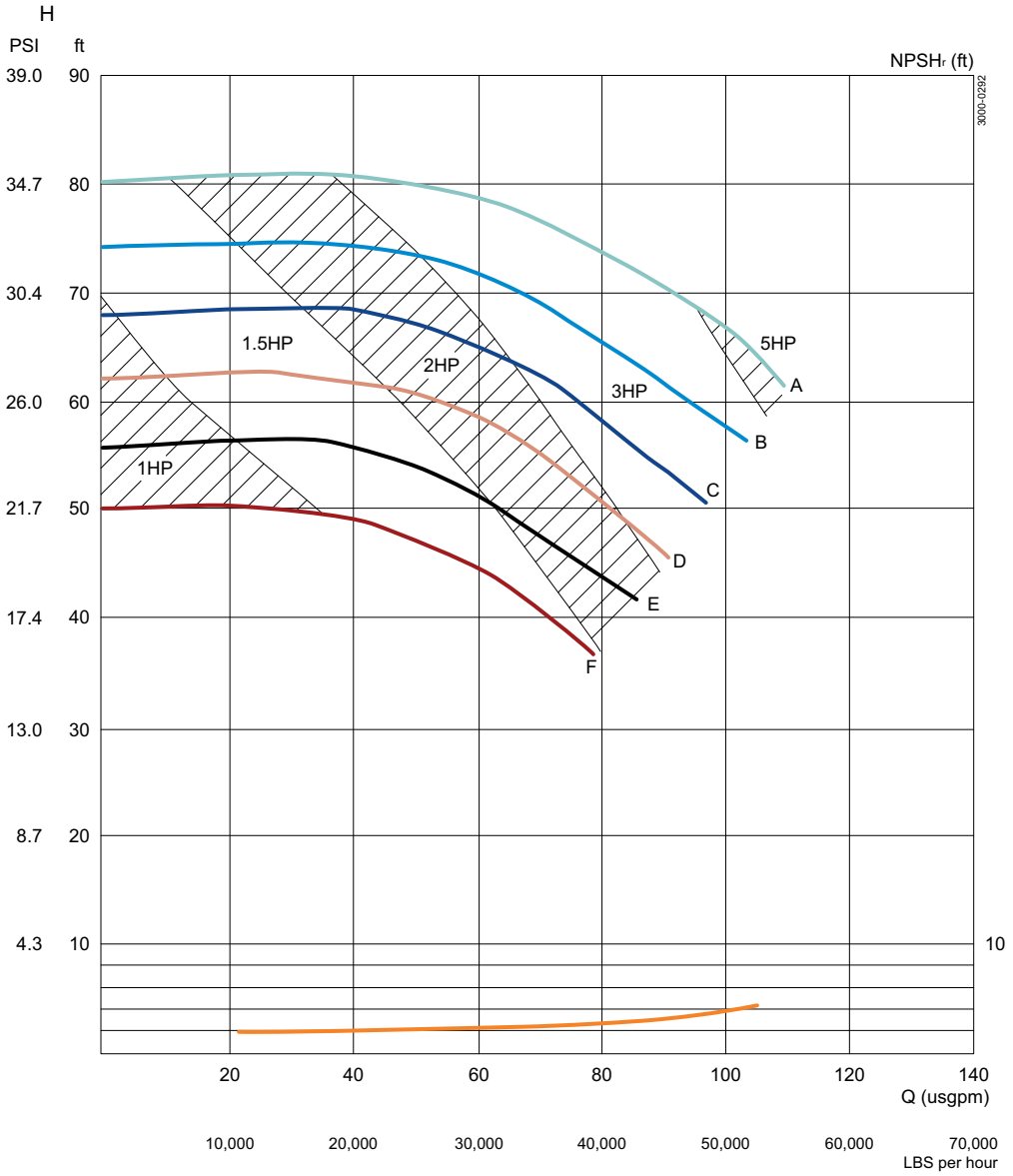

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHUP-35, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.4 Hp, 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 3%

DO NOT FORGET THE SAFETY FACTOR



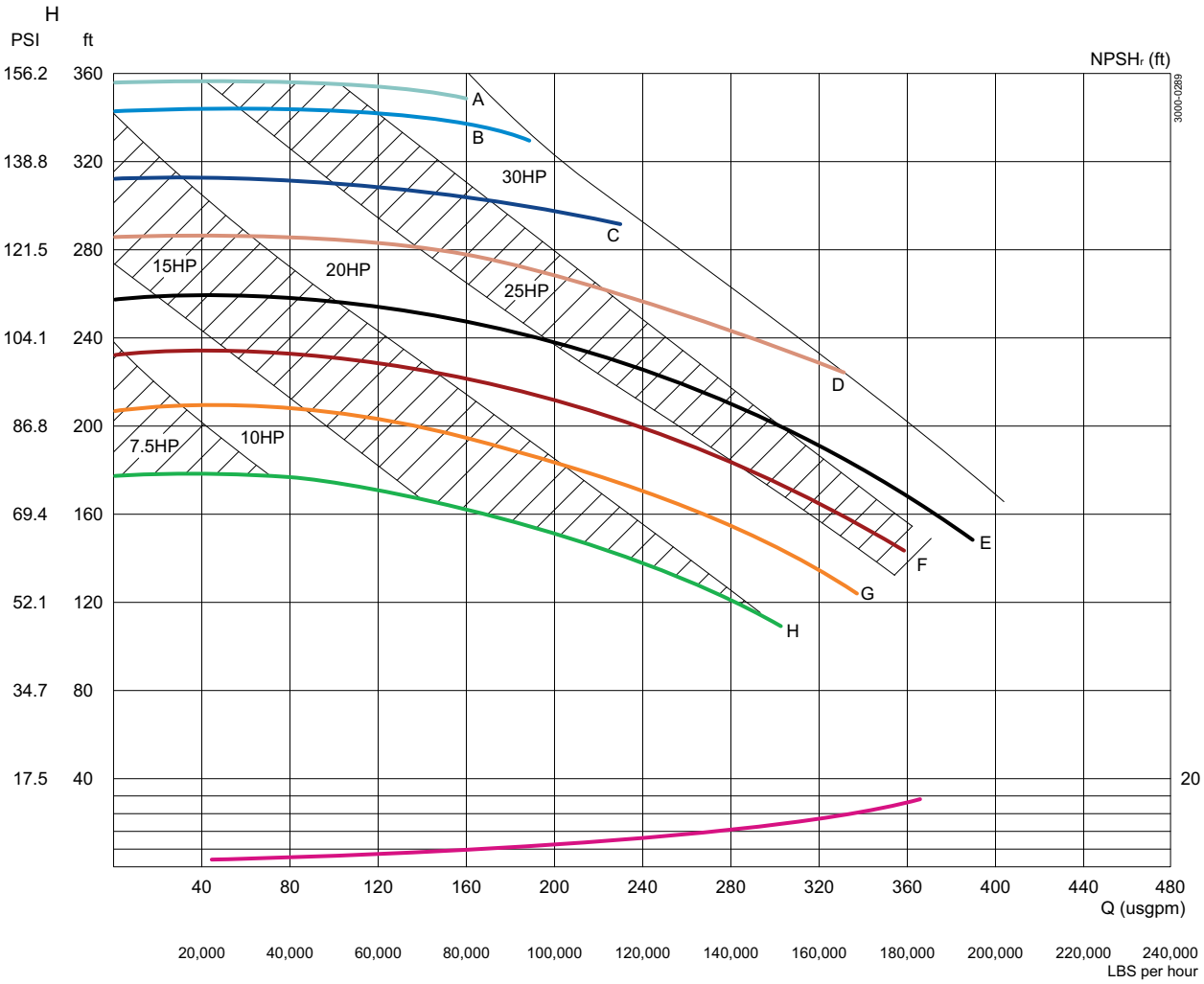

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHUP-40, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 2940 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



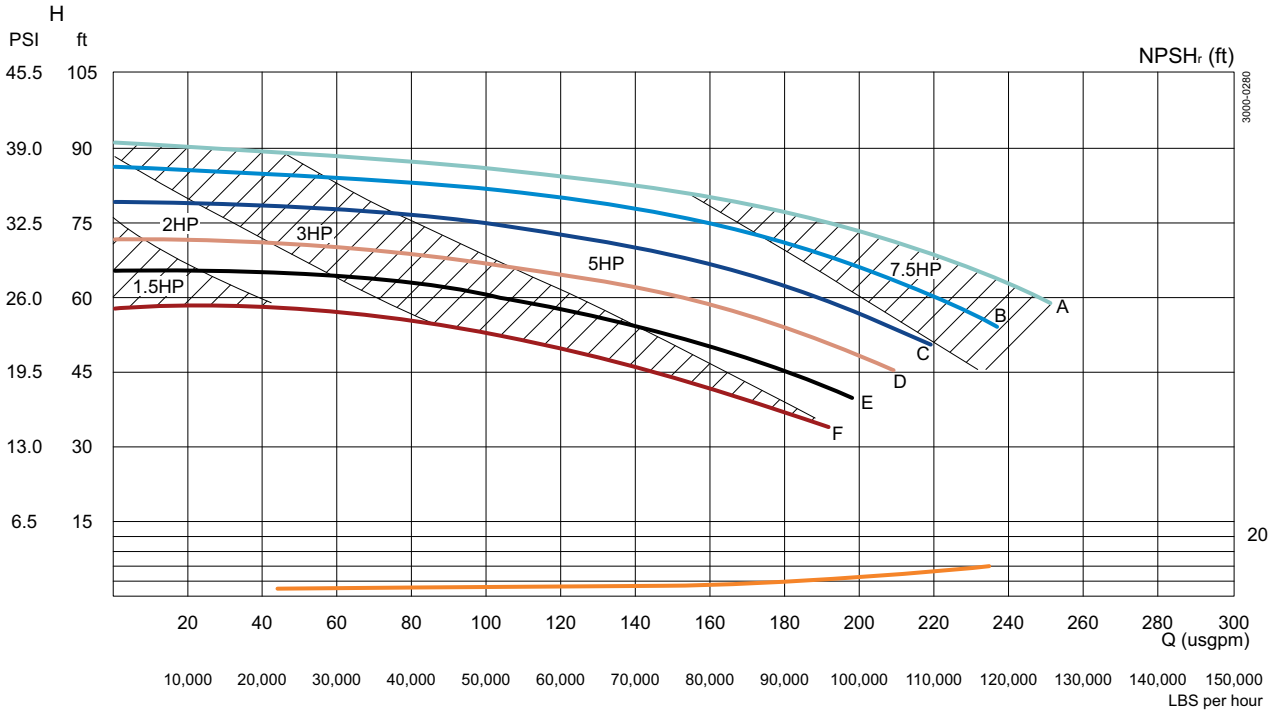

A = 9.252”
B = 9.055”
C = 8.661”
D = 8.268”
E = 7.874”
F = 7.480”
G = 7.087”
H = 6.693 “

## LKHUP-40, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 7.480" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



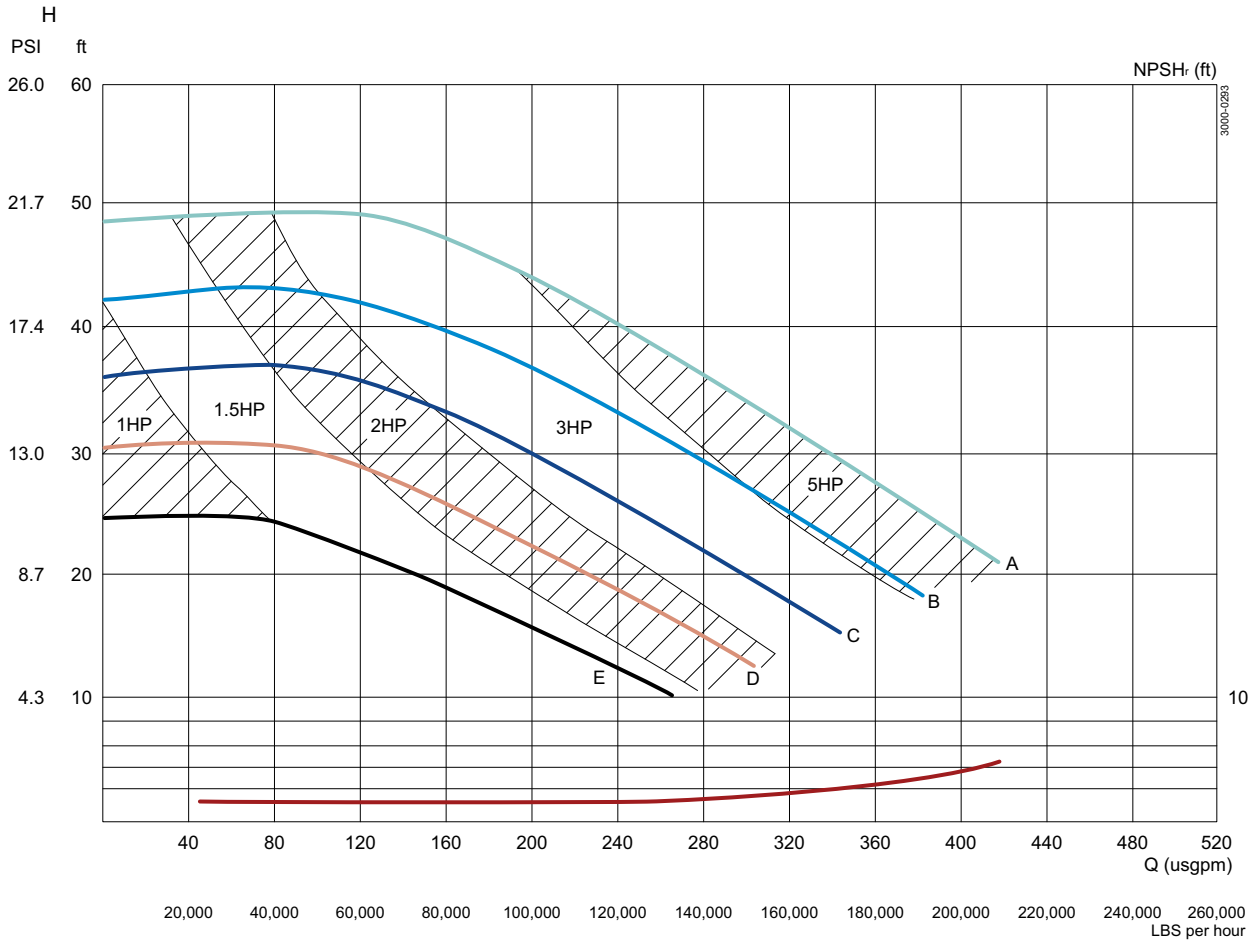

A = 9.252”  D = 8.268”
B = 9.055”  E = 7.874”
C = 8.661”  F = 7.480”

## LKHUP-45, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



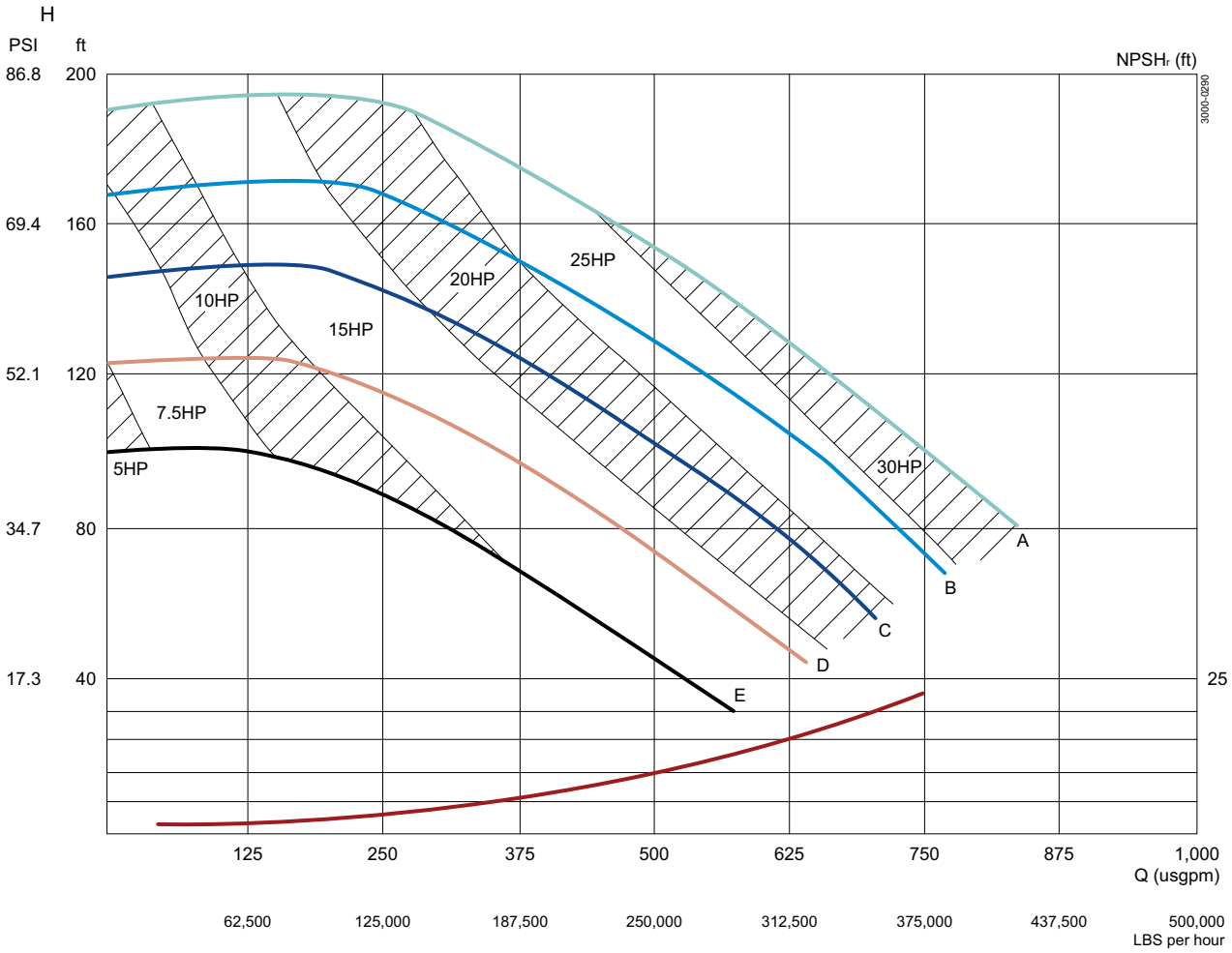

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKHUP-45, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp, 1720 rpm. asynchr., 60 Hz.
For smaller motors.

DO NOT FORGET THE SAFETY FACTOR



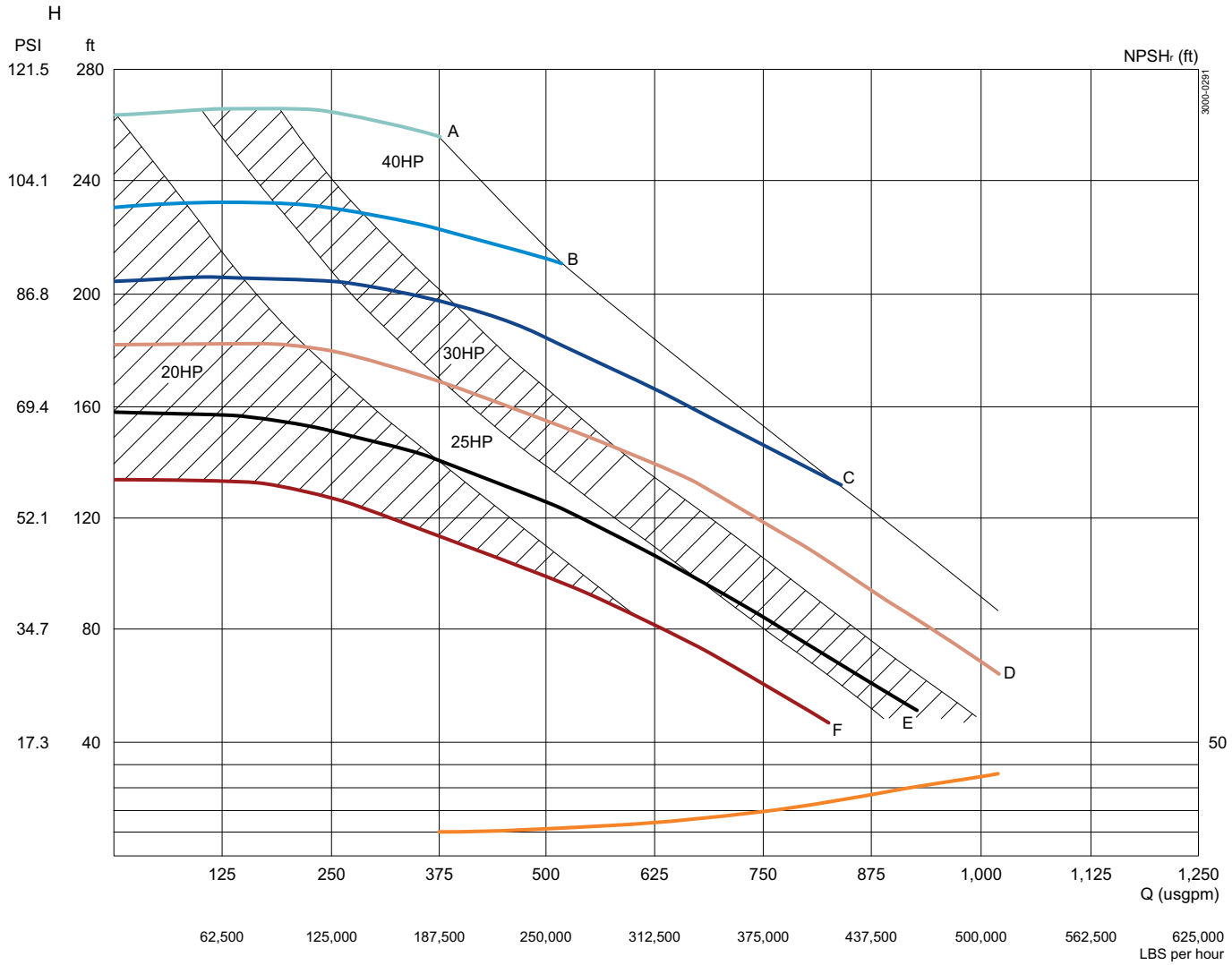

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKHUP-60, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4" mm, DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 46.9 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
3% for 16.8-28.2 Hp.
6% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



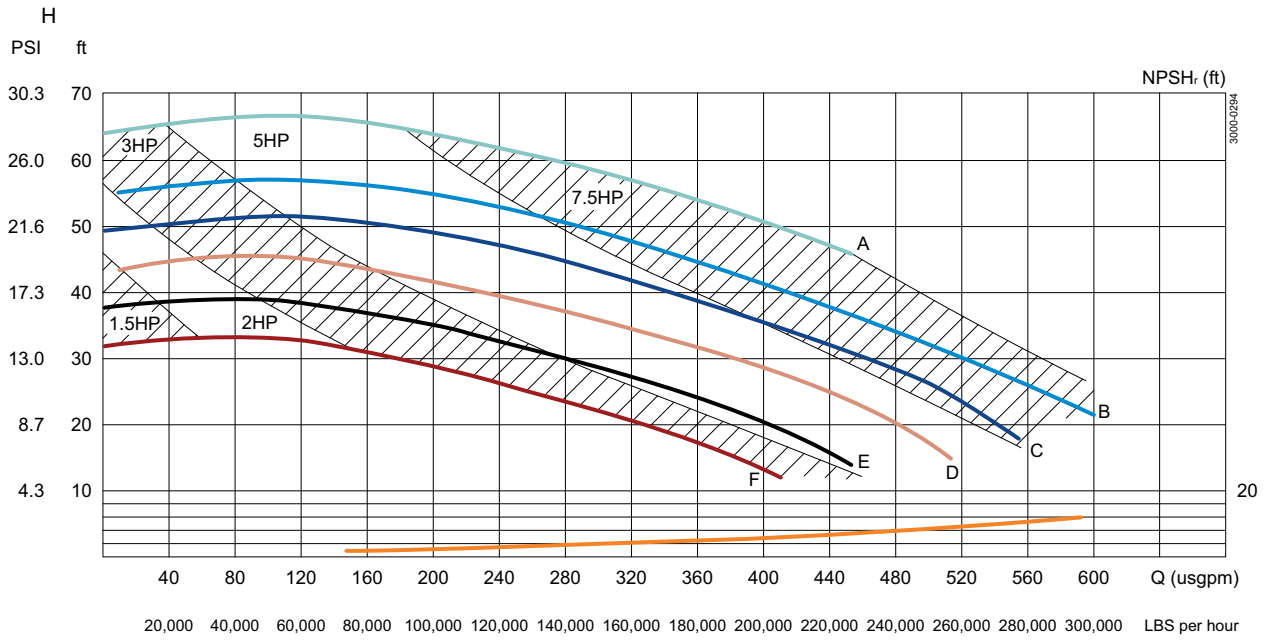

A = 8.268”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHUP-60, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4", DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%.

DO NOT FORGET THE SAFETY FACTOR



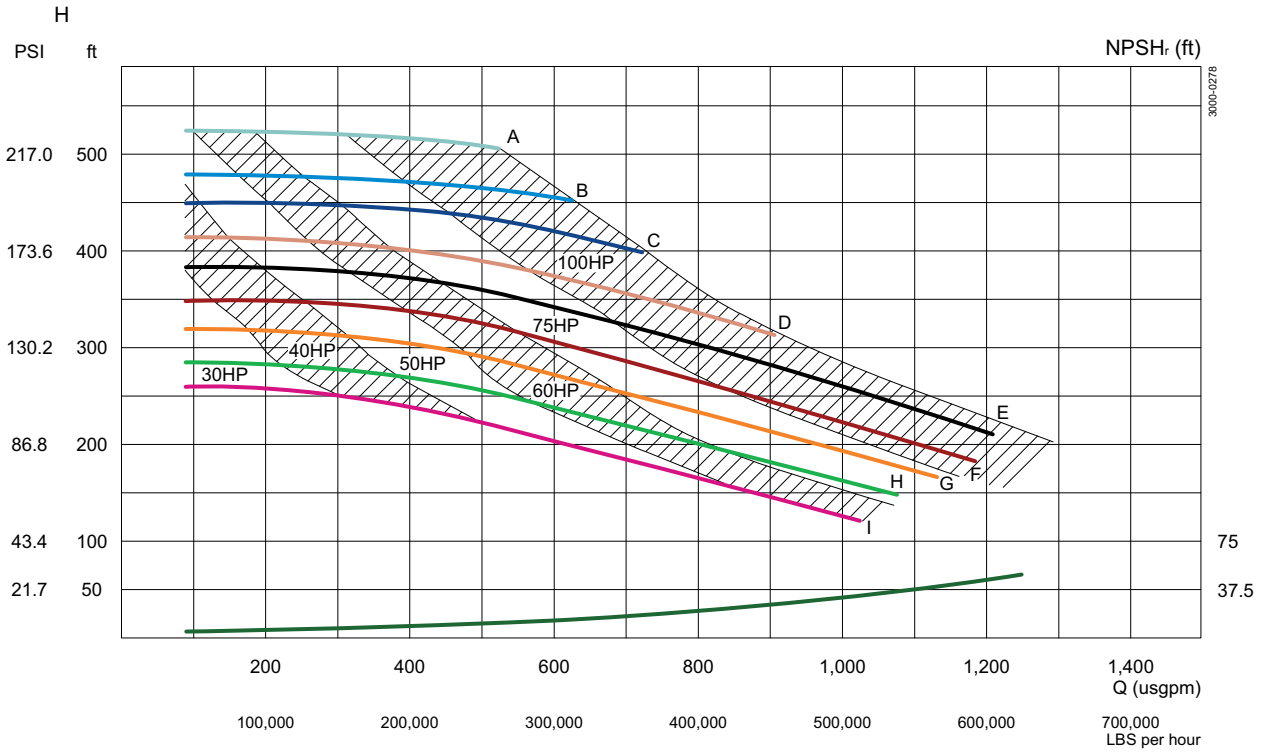

A = 8.286”
B = 7.874”
C = 7.480”
D = 7.087”
E = 6.693”
F = 6.299”

## LKHUP-70, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 115.3 Hp, 3565 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with: -3%.

DO NOT FORGET THE SAFETY FACTOR



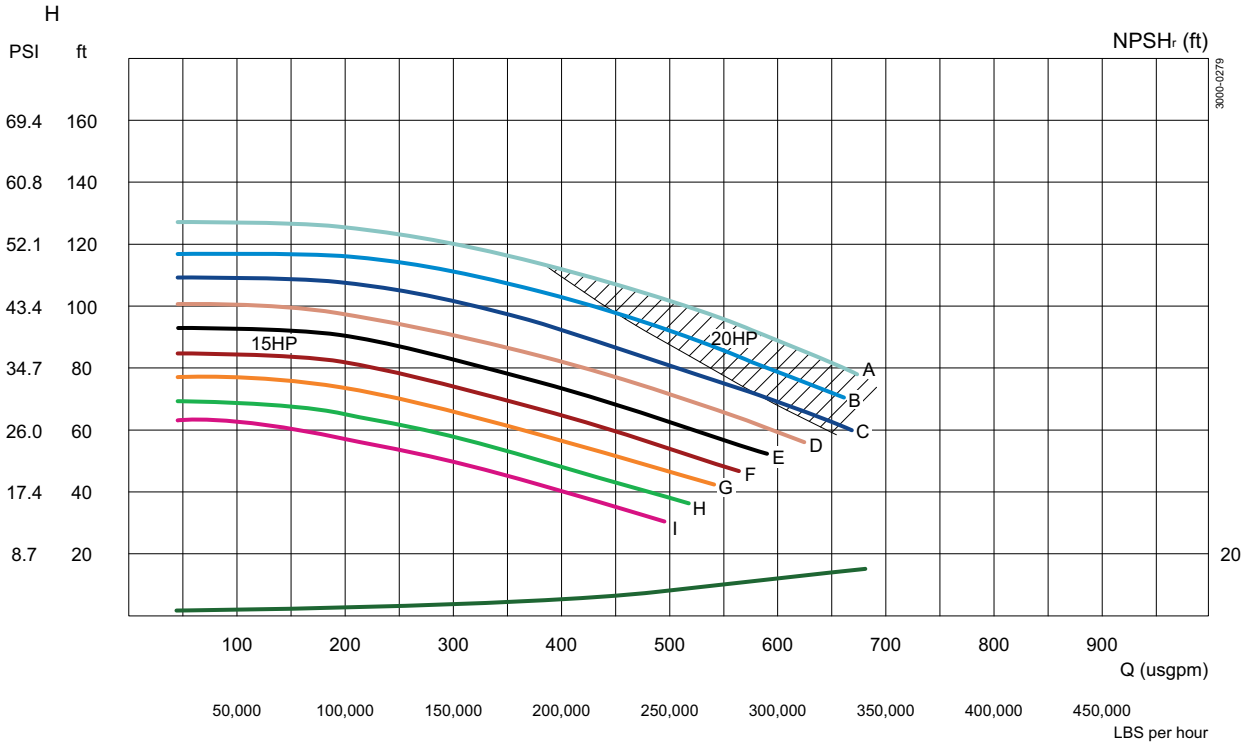

A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

## LKHUP-70, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor: 22.8 Hp, 1750 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR




A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

# Alfa Laval LKH Prime

## Performance curves

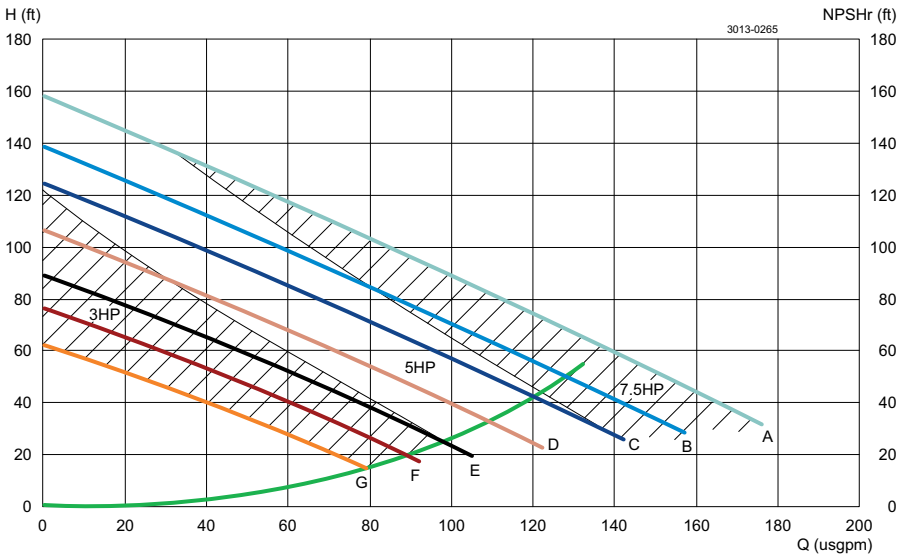
### LKH Prime 10

| | 60 Hz |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 5.906” (150 mm) |
| Impeller, Min. dia.: | 3.543” (90 mm) |
| Pump inlet, dia.: | 2” (51 mm, DN 50) |
| Pump outlet, dia.: | 2” (51 mm, DN 50) |
| Performance data refer to water at 68 °F. (20 °C) | |

**Note!** The curves refer to motor: 10 Hp (7.5 kW), 3490 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

DO NOT FORGET THE SAFETY FACTOR



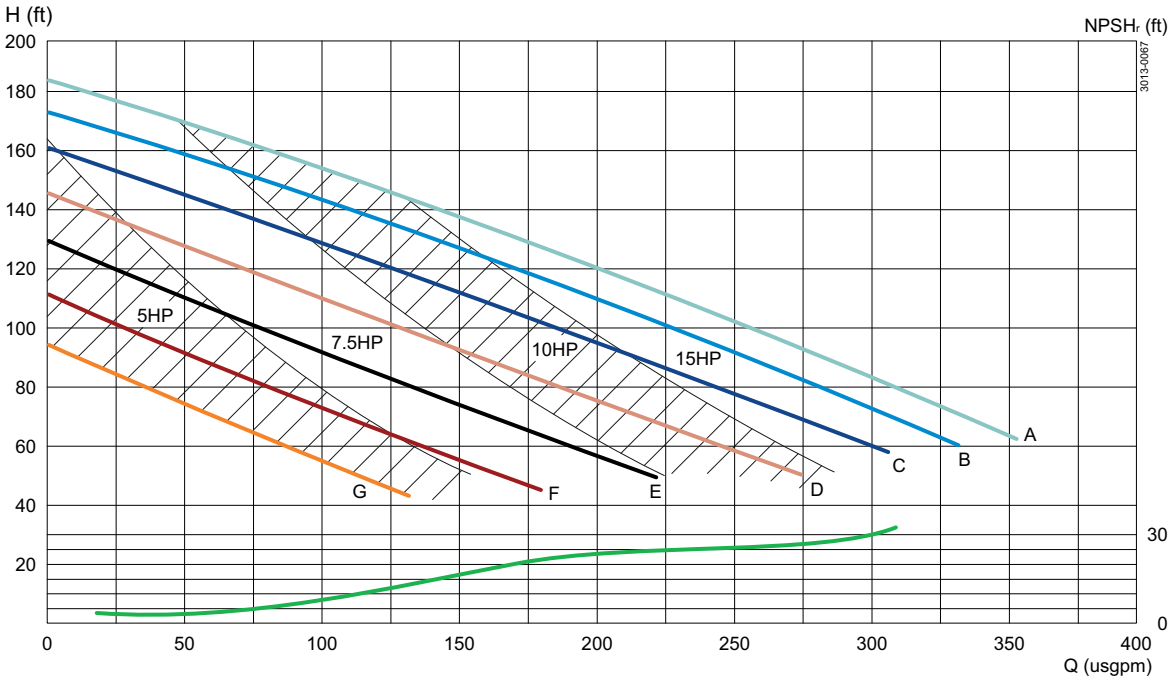

A = 5.91"
B = 5.51"
C = 5.12"
D = 4.72"
E = 4.33"
F = 3.94"
G = 3.54"

## LKH Prime 20

| | 60 Hz |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 6.496” (165 mm) |
| Impeller, Min. dia.: | 4.331” (110 mm) |
| Pump inlet, dia.: | 2.5” (63.5 mm, DN 65) |
| Pump outlet, dia.: | 2” (51 mm, DN 50) |
| Performance data refer to water at 68 °F. (20 °C) | |

**Note!** The curves refer to motor: 17.5 Hp (13 kW), 3547 rpm. asynchr.,60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



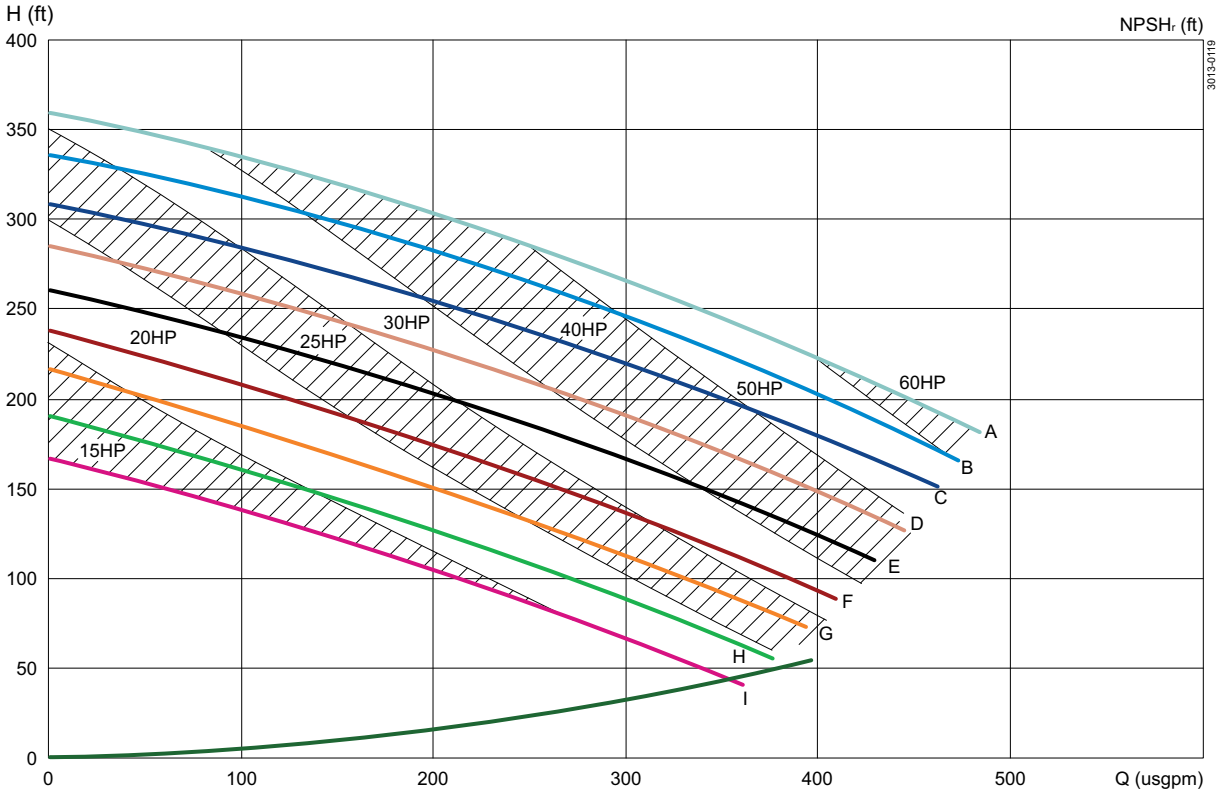

A = 6.50" D = 5.51" G = 4.33"
B = 6.30" E = 5.12"
C = 5.91" F = 4.72"

## LKH Prime 40

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 9.251" (235mm) |
| Impeller, Min. dia.: | 6.299" (160mm) |
| Pump inlet, dia.: | 3" (76.1mm/ DN80) |
| Pump outlet, dia.: | 2½" (63.5mm/ DN65) |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 60Hp (45kW), 3520 Rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR




A = 9.25" D = 8.27" G = 7.09"
B = 9.06" E = 7.87" H = 6.69"
C = 8.66" F = 7.48" I = 6.30"

# Alfa Laval LKH Prime UltraPure

## Performance curves

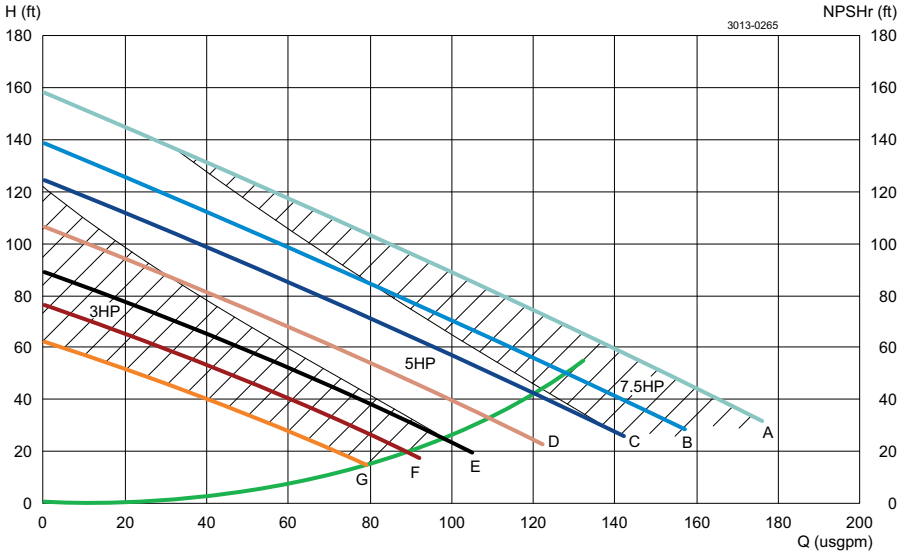
### LKH Prime UltraPure 10

| | 60 Hz |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 5.906" (150 mm) |
| Impeller, Min. dia.: | 3.543" (90 mm) |
| Pump inlet, dia.: | 2" (51 mm, DN 50) |
| Pump outlet, dia.: | 2" (51 mm, DN 50) |
| Performance data refer to water at 68 °F. (20 °C) | |

**Note!** The curves refer to motor: 10 Hp (7.5 kW), 3490 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

DO NOT FORGET THE SAFETY FACTOR



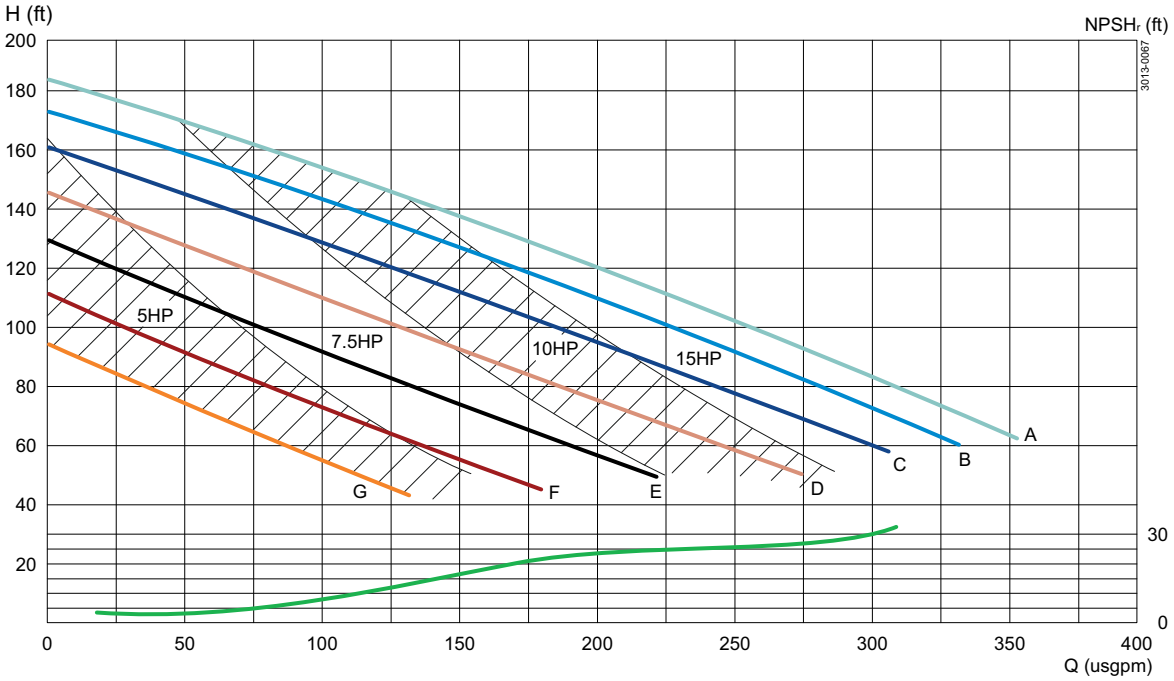

A = 5.91"
B = 5.51"
C = 5.12"
D = 4.72"
E = 4.33"
F = 3.94"
G = 3.54"

## LKH Prime UltraPure 20

| | 60 Hz |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 6.496" (165 mm) |
| Impeller, Min. dia.: | 4.331" (110 mm) |
| Pump inlet, dia.: | 2.5" (63.5 mm, DN 65) |
| Pump outlet, dia.: | 2" (51 mm, DN 50) |
| Performance data refer to water at 68 °F. (20 °C) | |

**Note!** The curves refer to motor: 17.5 Hp (13 kW), 3547 rpm. asynchr.,60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR




A = 6.50"
B = 6.30"
C = 5.91"
D = 5.51"
E = 5.12"
F = 4.72"
G = 4.33"

# Alfa Laval LKH evap

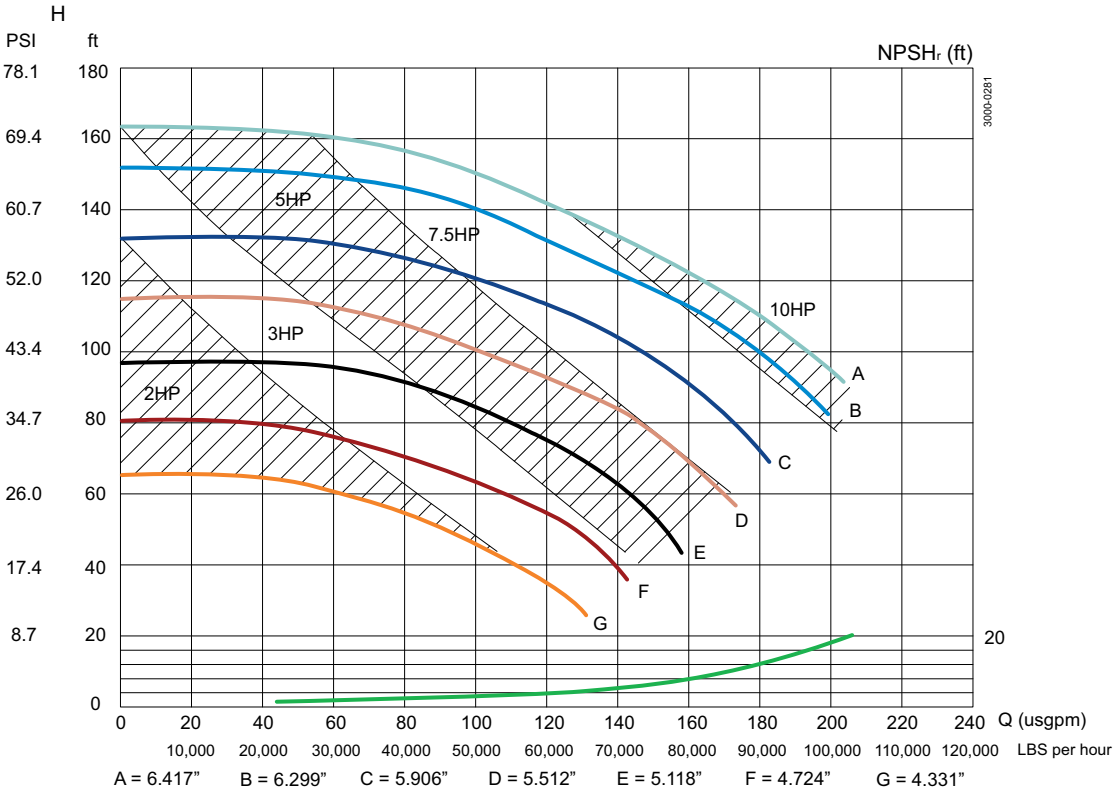
## Performance curves

### LKHevap-10, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR

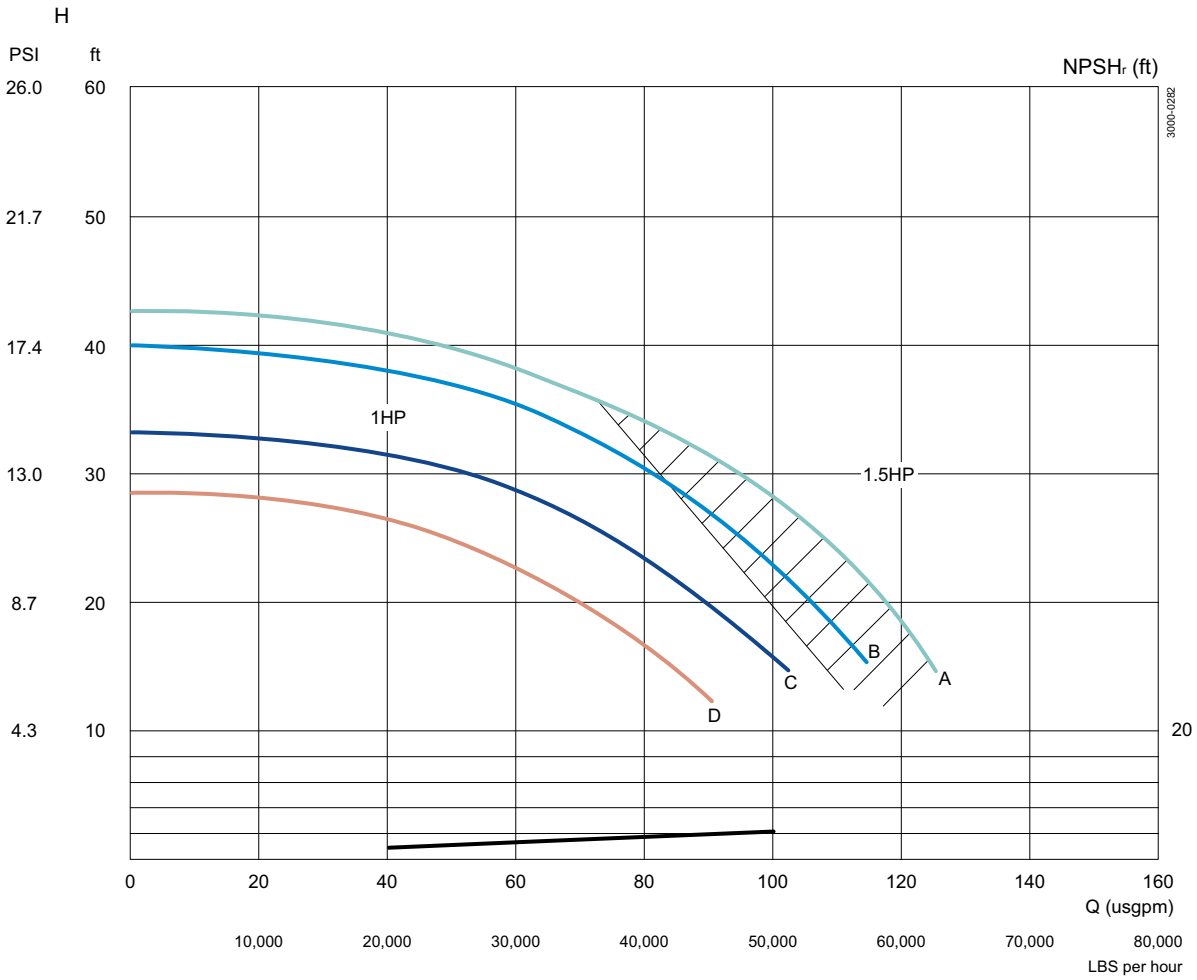


## LKHevap-10, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.417” |
| Impeller, Min. dia.: | 5.512” |
| Pump inlet, dia.: | 2½”, DN 65 |
| Pump outlet, dia.: | 2”, DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



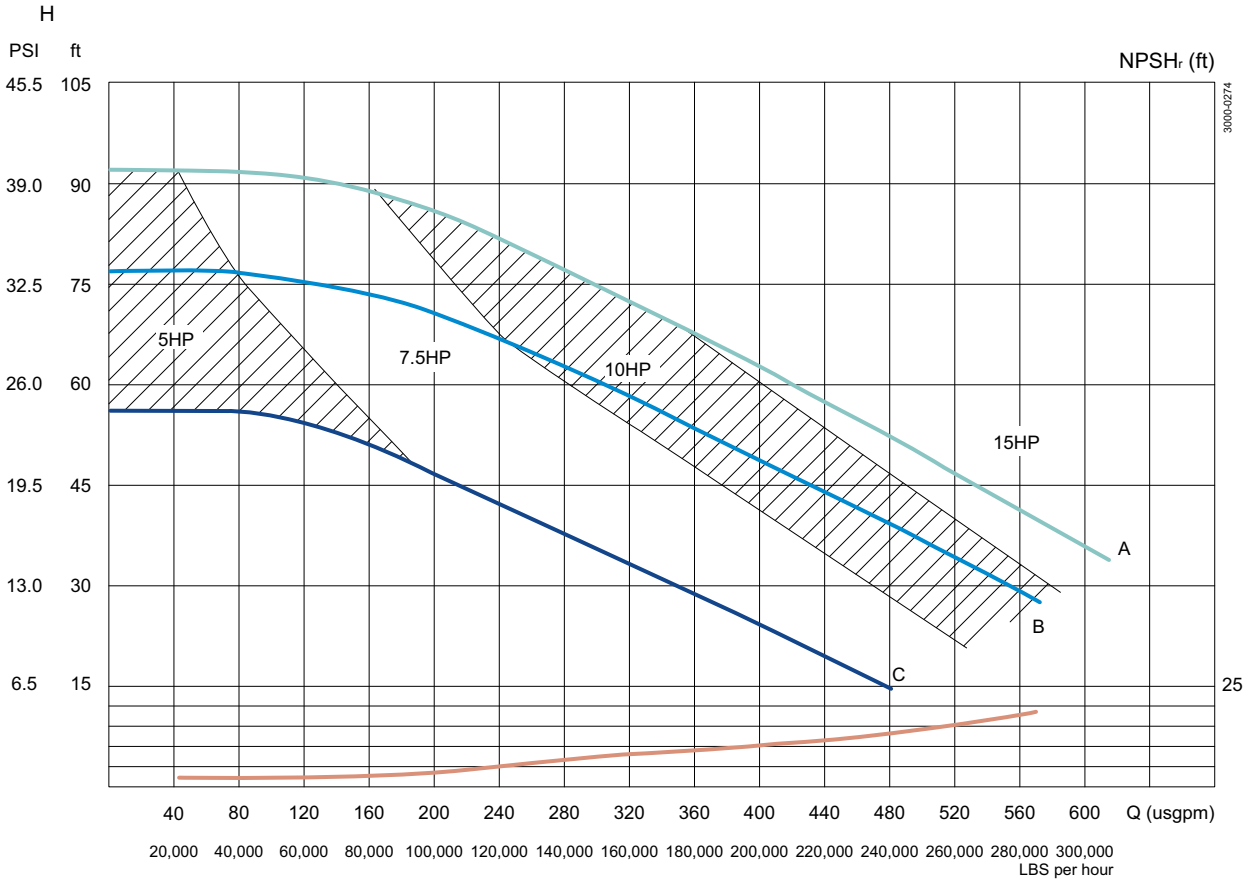

A = 6.417” D = 5.512”
B = 6.299”
C = 5.906”

## LKHevap-15, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.433" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 4" |
| Pump outlet, dia.: | 3" |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 11.5 Hp, 3455 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



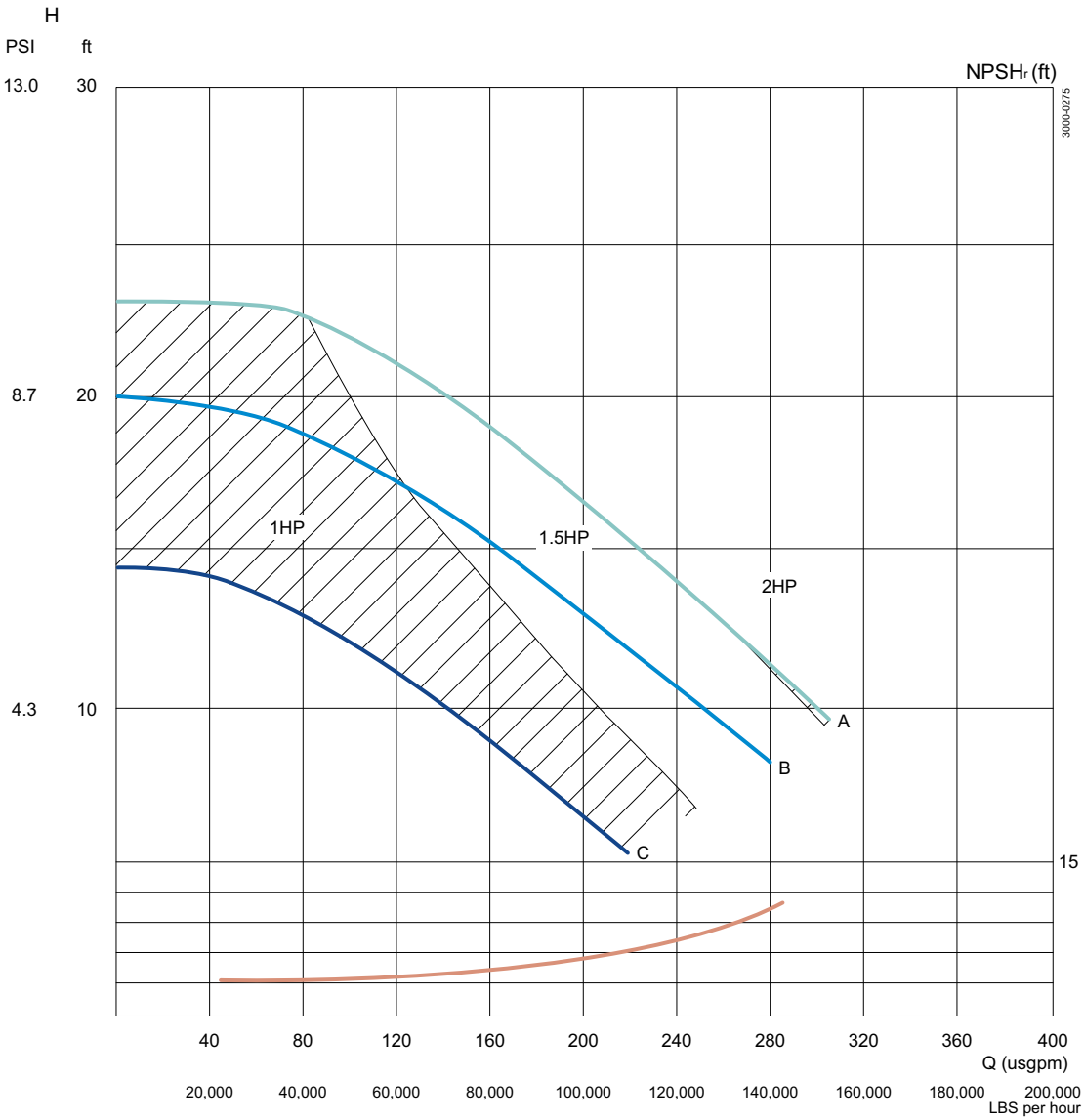

A = 5.433”
B = 5.118”
C = 4.724”

## LKHevap-15, 60 HZ

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 5.433" |
| Impeller, Min. dia.: | 4.72" |
| Pump inlet, dia.: | 4" |
| Pump outlet, dia.: | 3" |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1710 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



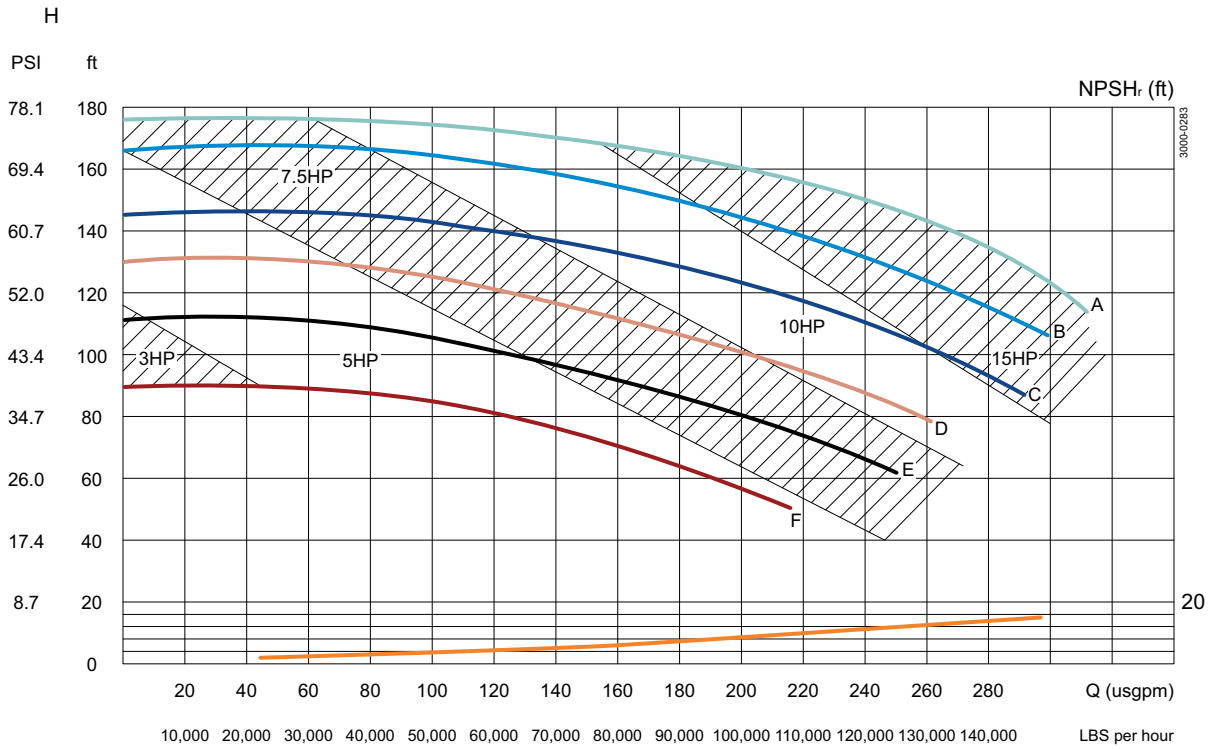

A = 5.433”
B = 5.118”
C = 4.724”

## LKHevap-20, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 4.724" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 16.8 Hp, 3500 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



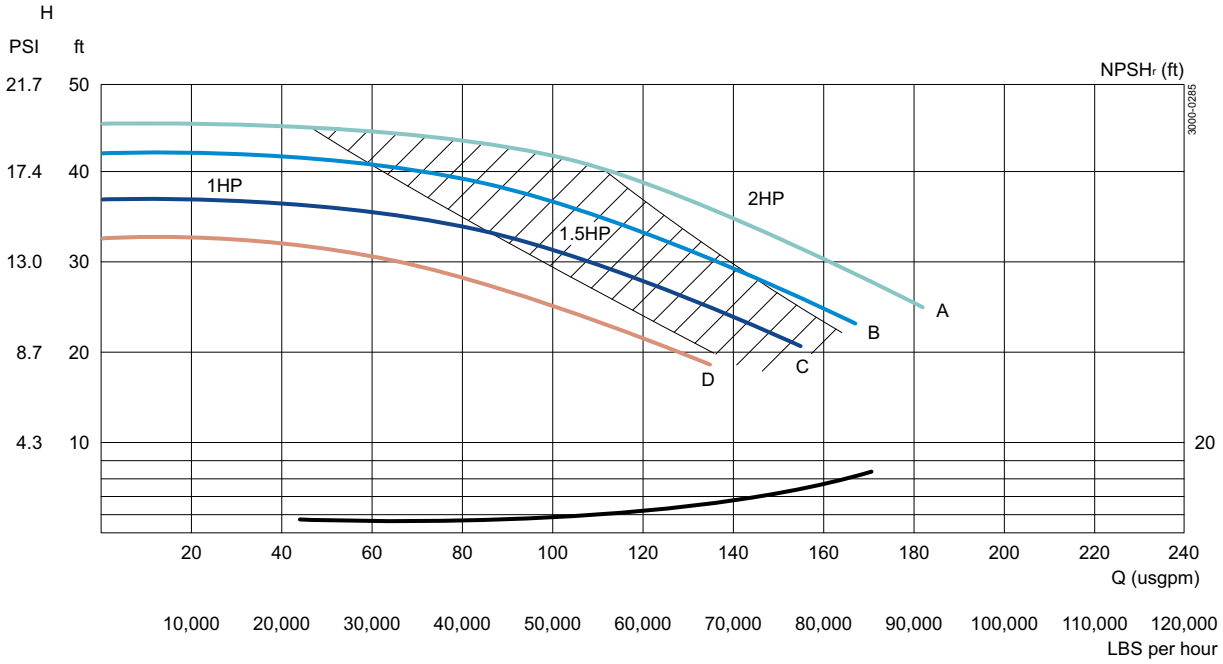

A = 6.496”  D = 5.512”
B = 6.299”  E = 5.118”
C = 5.906”  F = 4.724”

## LKHevap-20, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 6.496" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 2.4 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



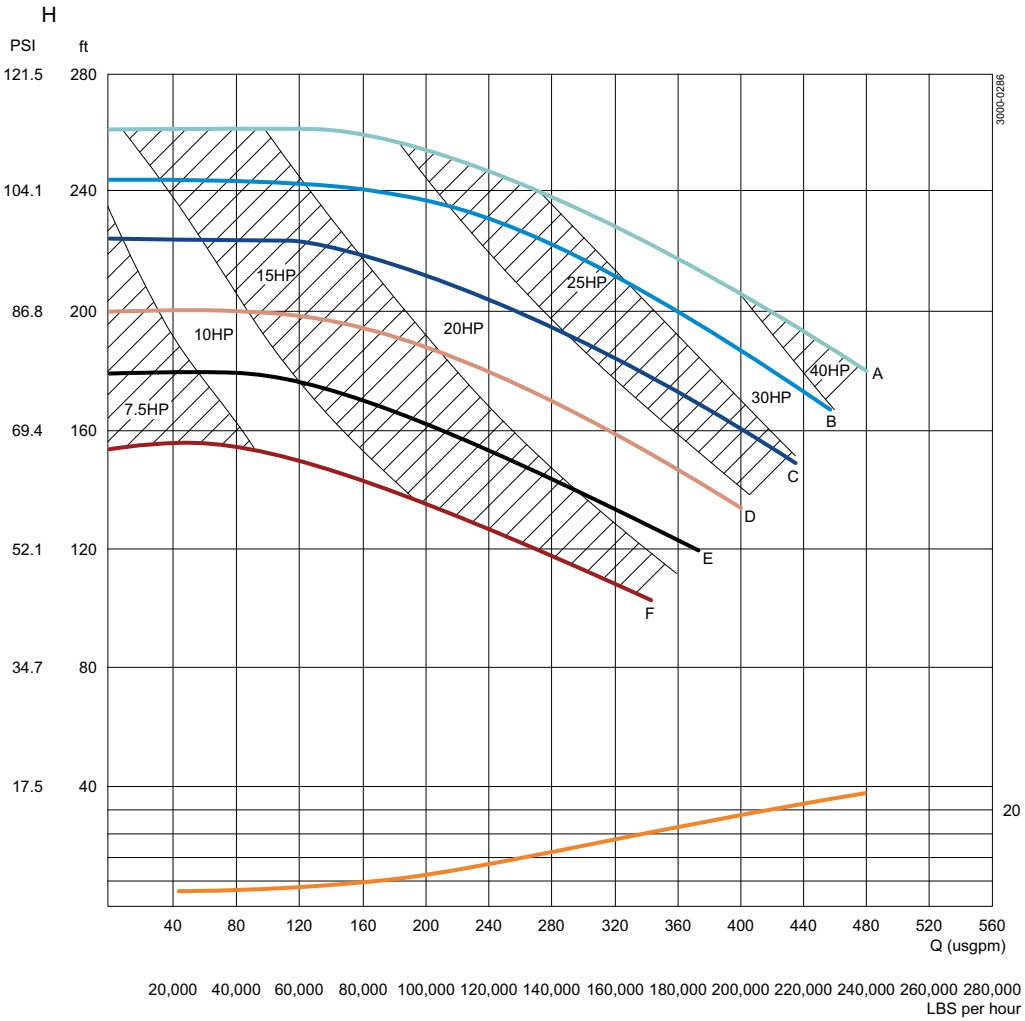

A = 6.496”  D = 5.512”
B = 6.299”
C = 5.906”

## LKHevap-25, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



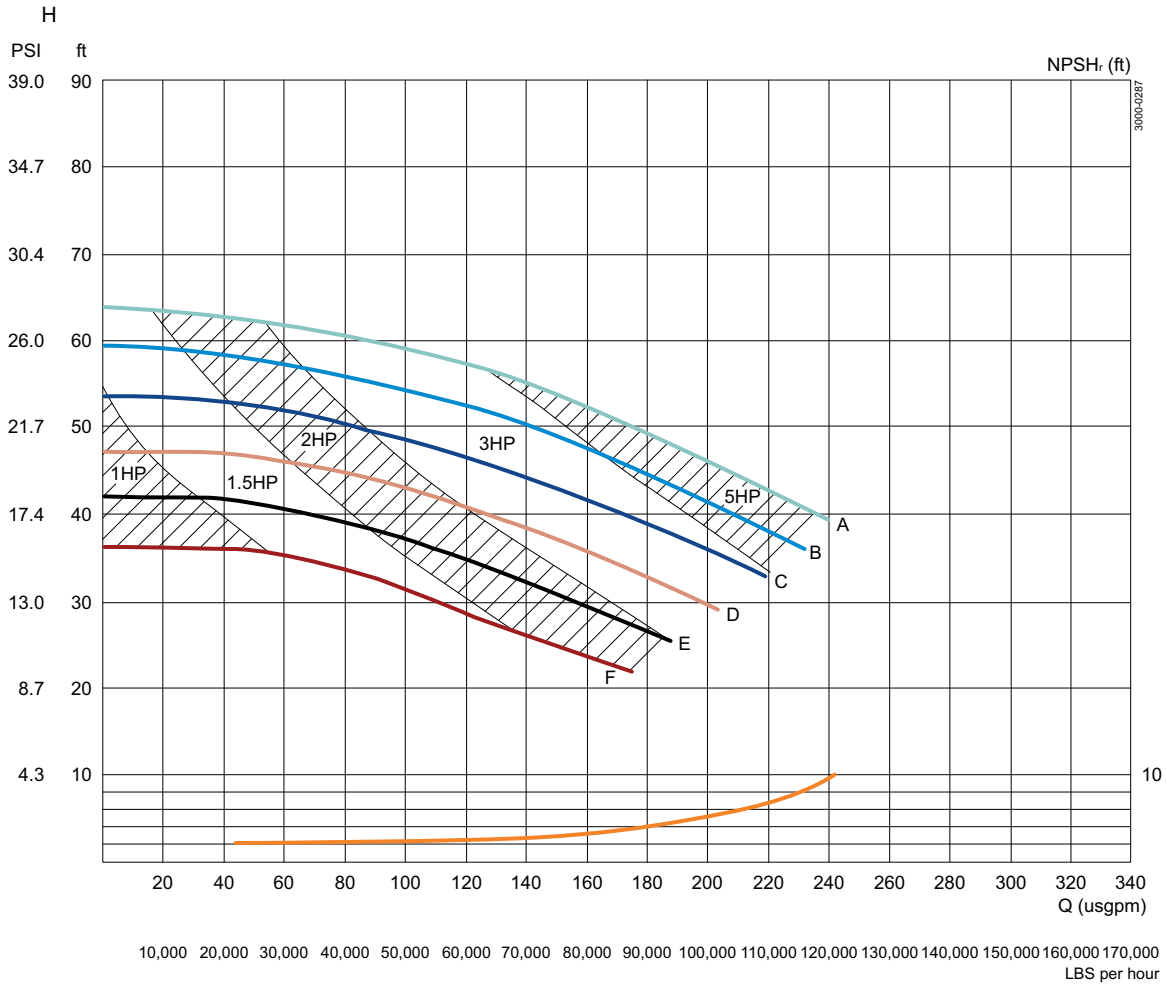

A = 8.07" D = 7.09"
B = 7.87" E = 6.69"
C = 7.48" F = 6.30"

## LKHevap-25, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2½", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp (3.5 kW), 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



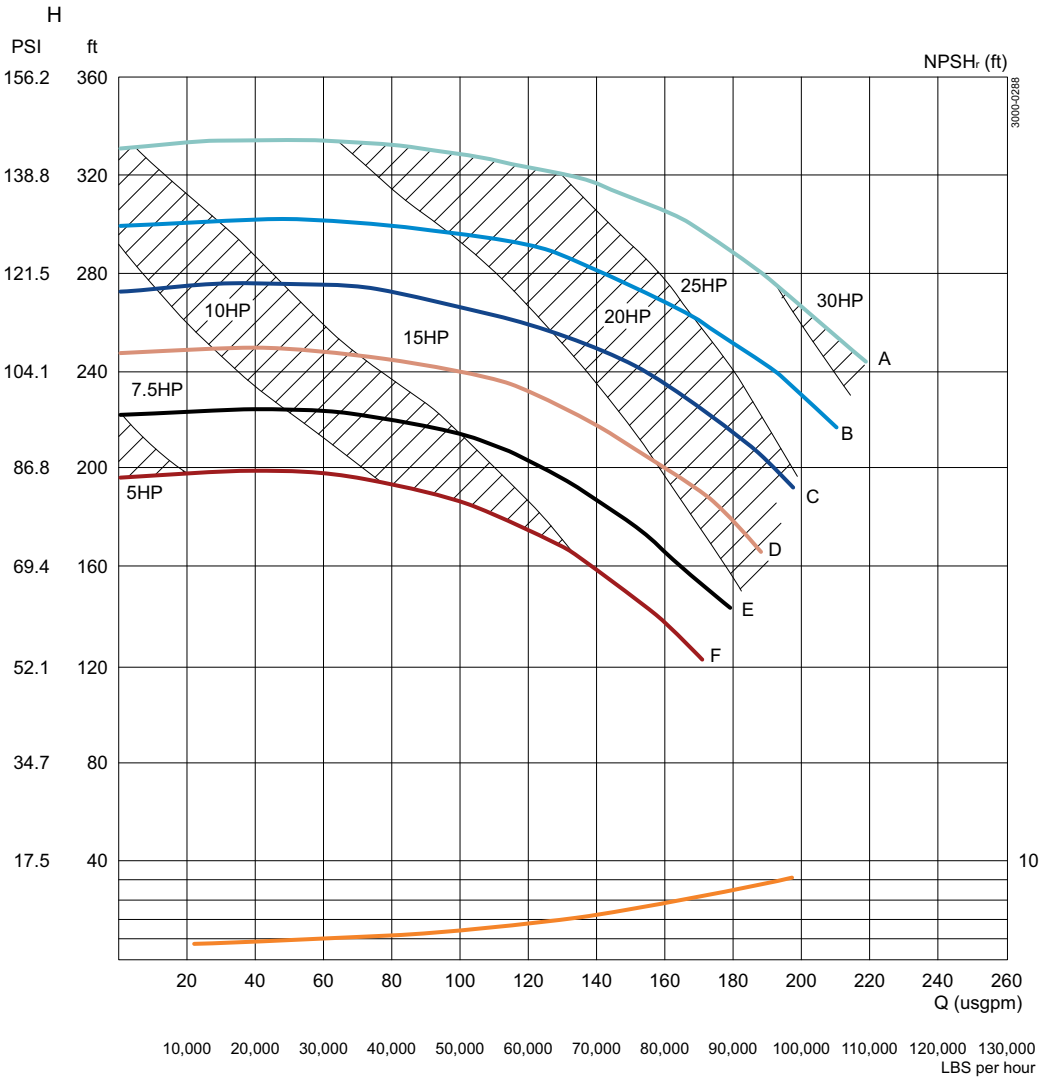

A = 8.070”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHevap-35, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2.5", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 28.2 Hp, 3535 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% 16.8-22.8 Hp.
- 3% 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



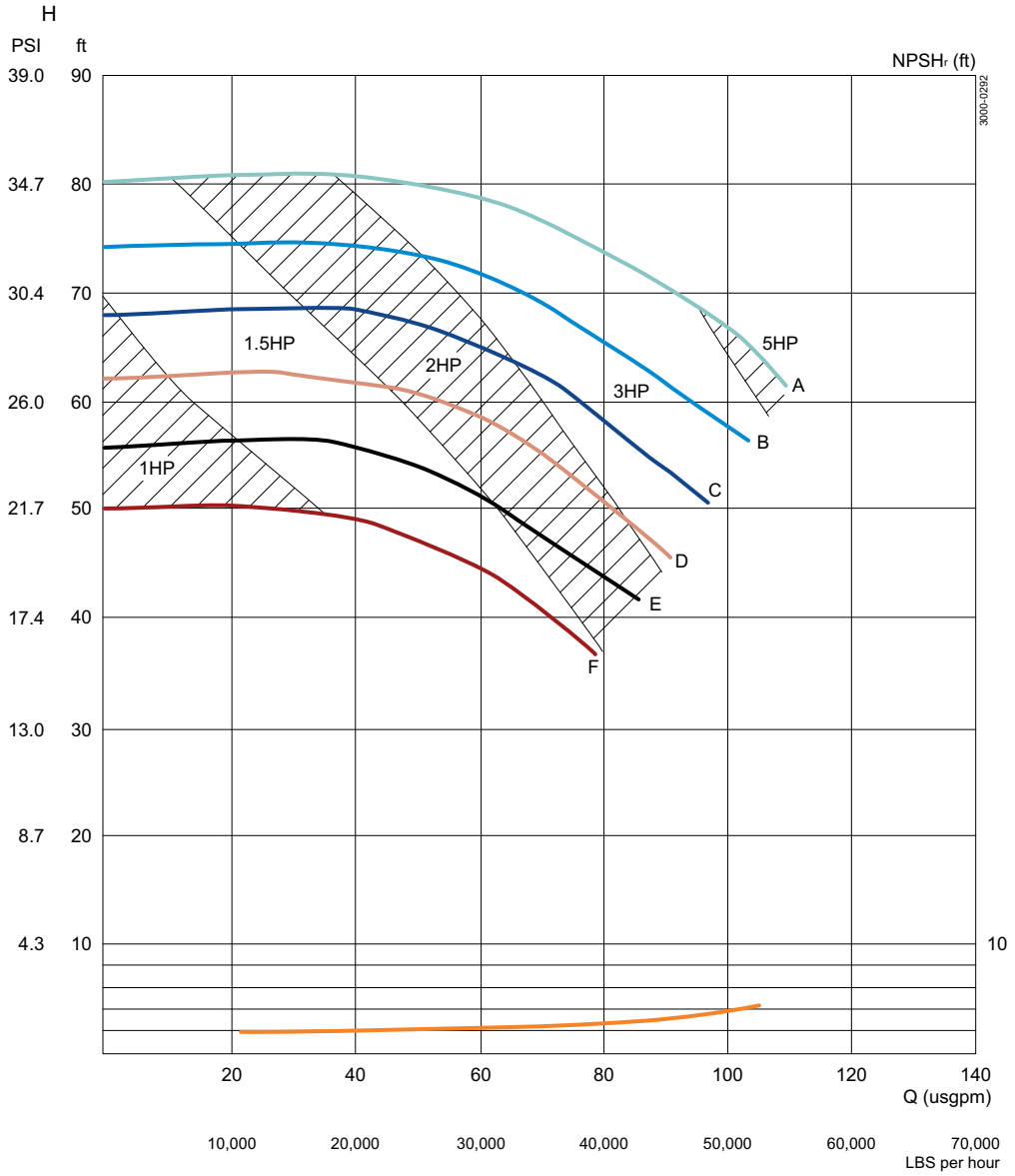

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHevap-35, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.661" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.4 Hp, 1720 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with: 3%.

DO NOT FORGET THE SAFETY FACTOR



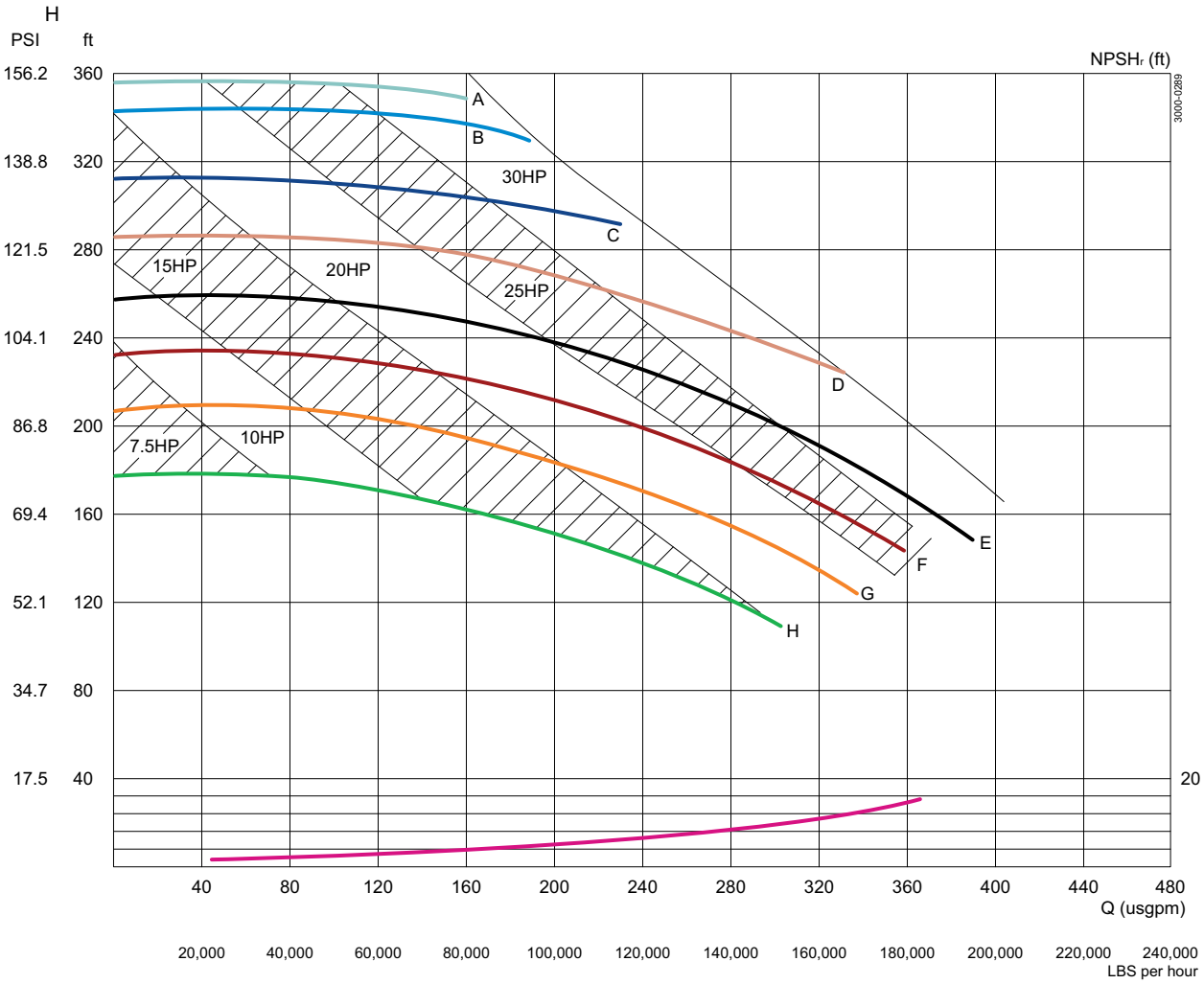

A = 8.661”
B = 8.268”
C = 7.874”
D = 7.480”
E = 7.087”
F = 6.693”

## LKHevap-40, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 2940 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



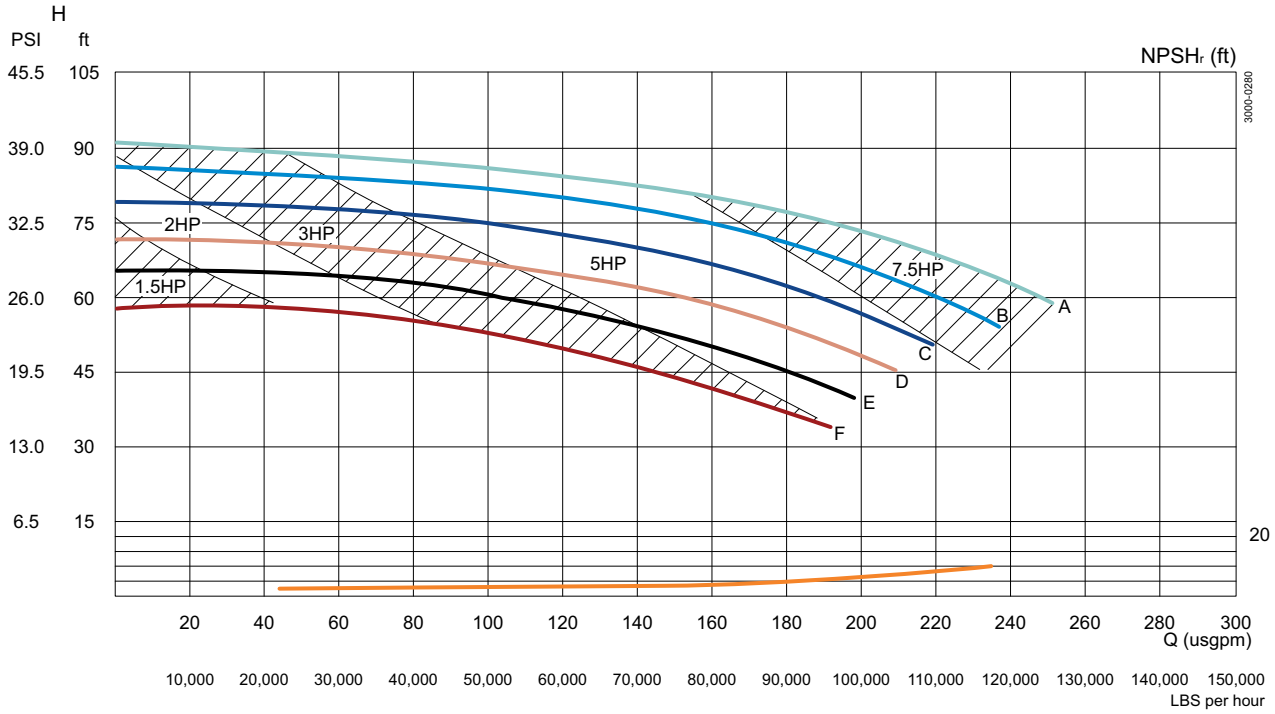

A = 9.252”
B = 9.055”
C = 8.661”
D = 8.268”
E = 7.874”
F = 7.480”
G = 7.087”
H = 6.693 “

## LKHevap-40, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 9.252" |
| Impeller, Min. dia.: | 7.480" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 65 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



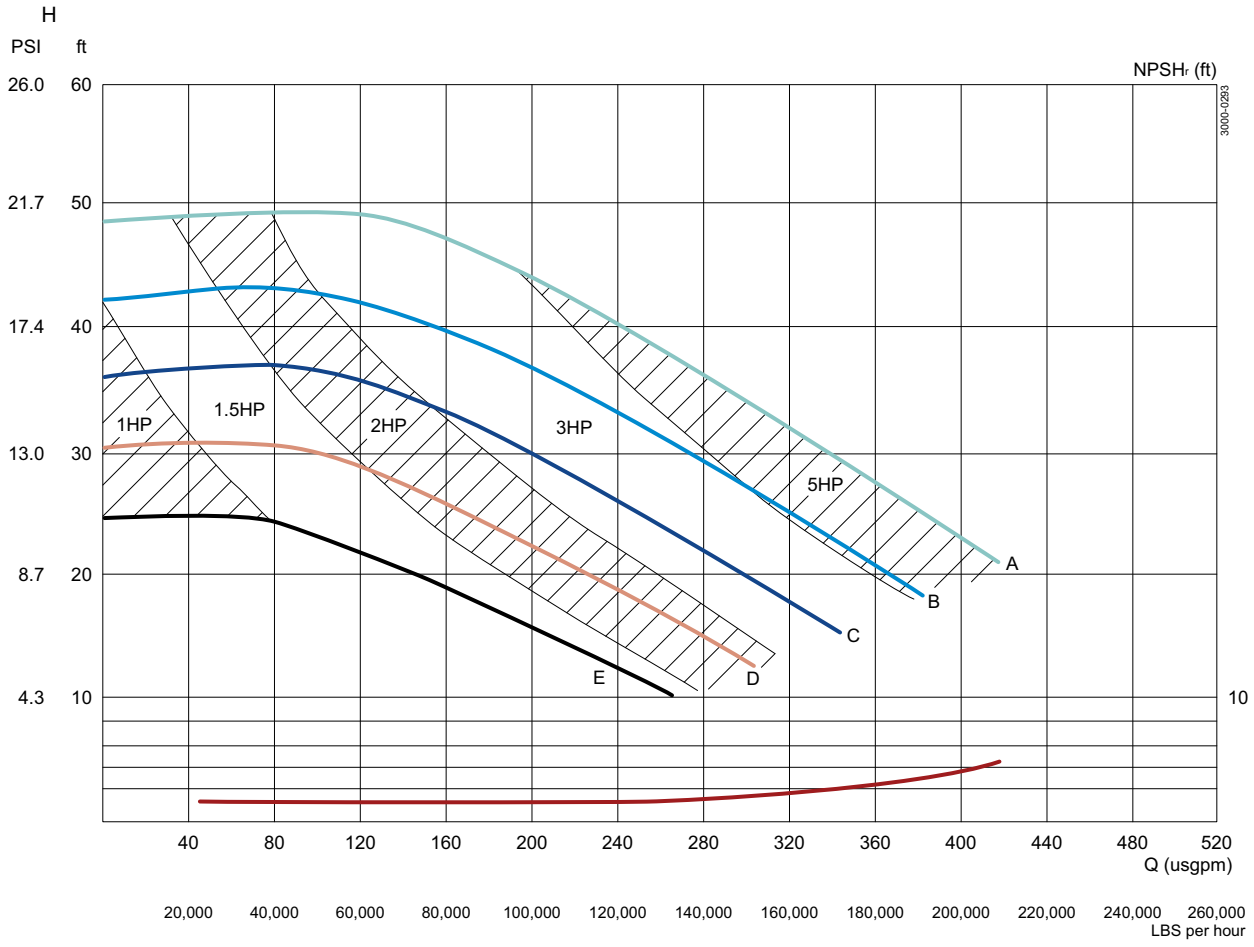

A = 9.252”  D = 8.268”
B = 9.055”  E = 7.874”
C = 8.661”  F = 7.480”

## LKHevap-45, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3545 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



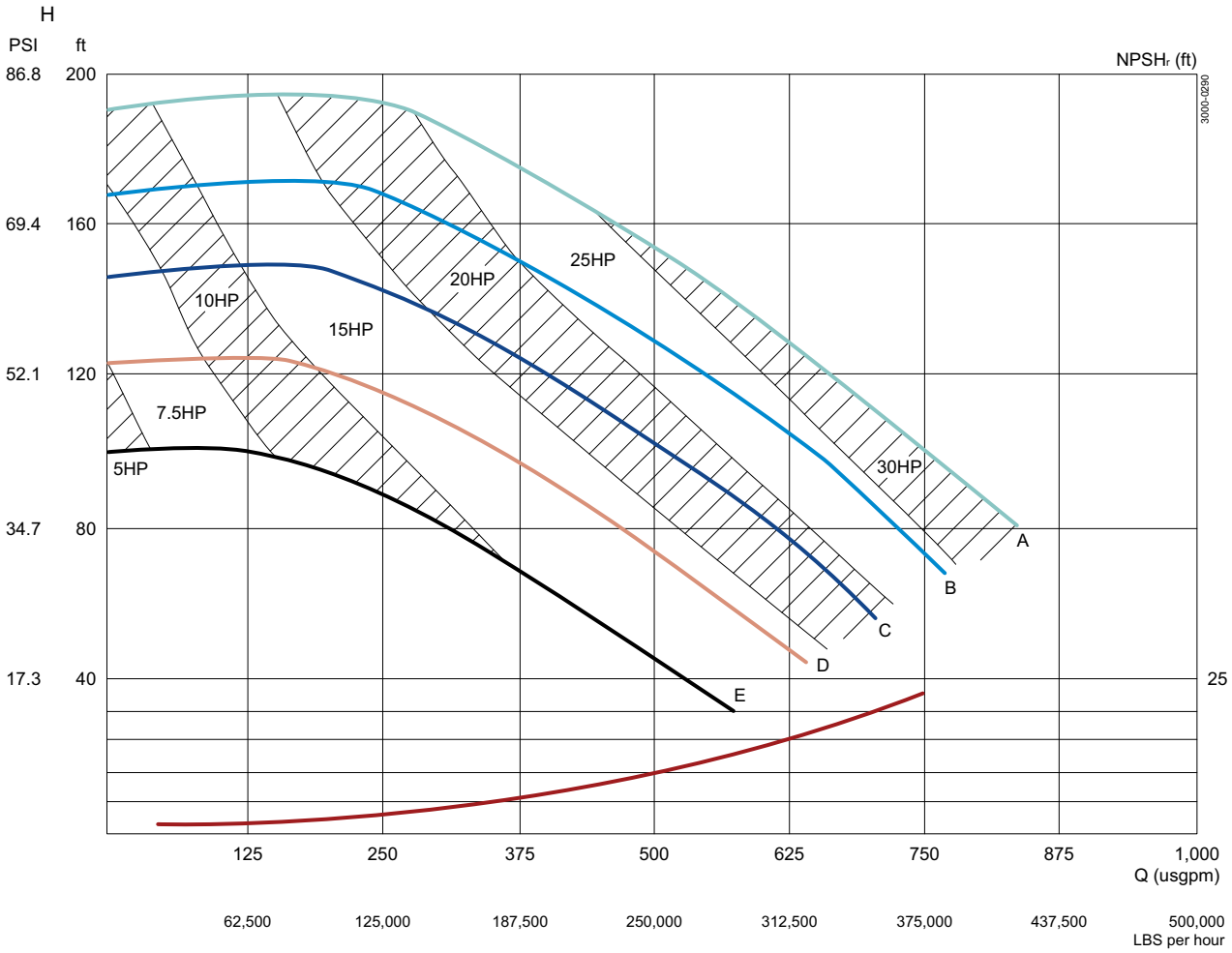

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKHevap-45, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 7.008" |
| Impeller, Min. dia.: | 5.512" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 4.7 Hp, 1720 rpm. asynchr., 60 Hz.
For smaller motors.

DO NOT FORGET THE SAFETY FACTOR



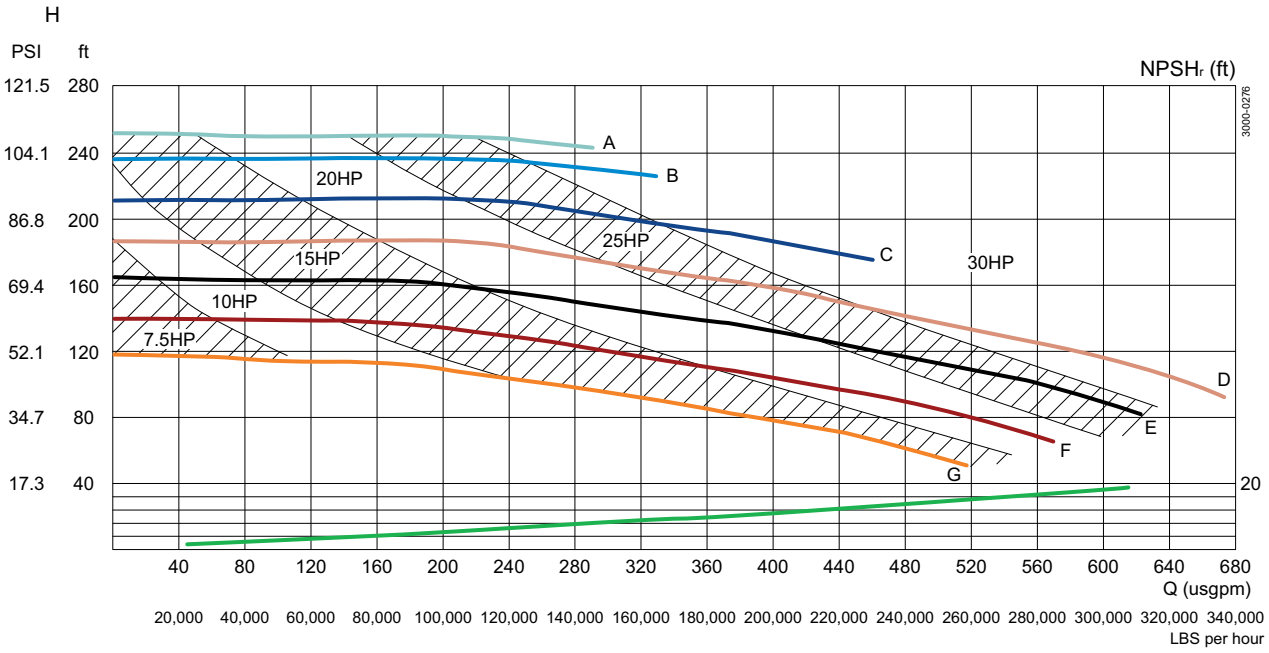

A = 7.008”
B = 6.693”
C = 6.299”
D = 5.906”
E = 5.512”

## LKH-50evap, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 5.906" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
- 3% for 16.8-28.2 Hp.
- 5% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



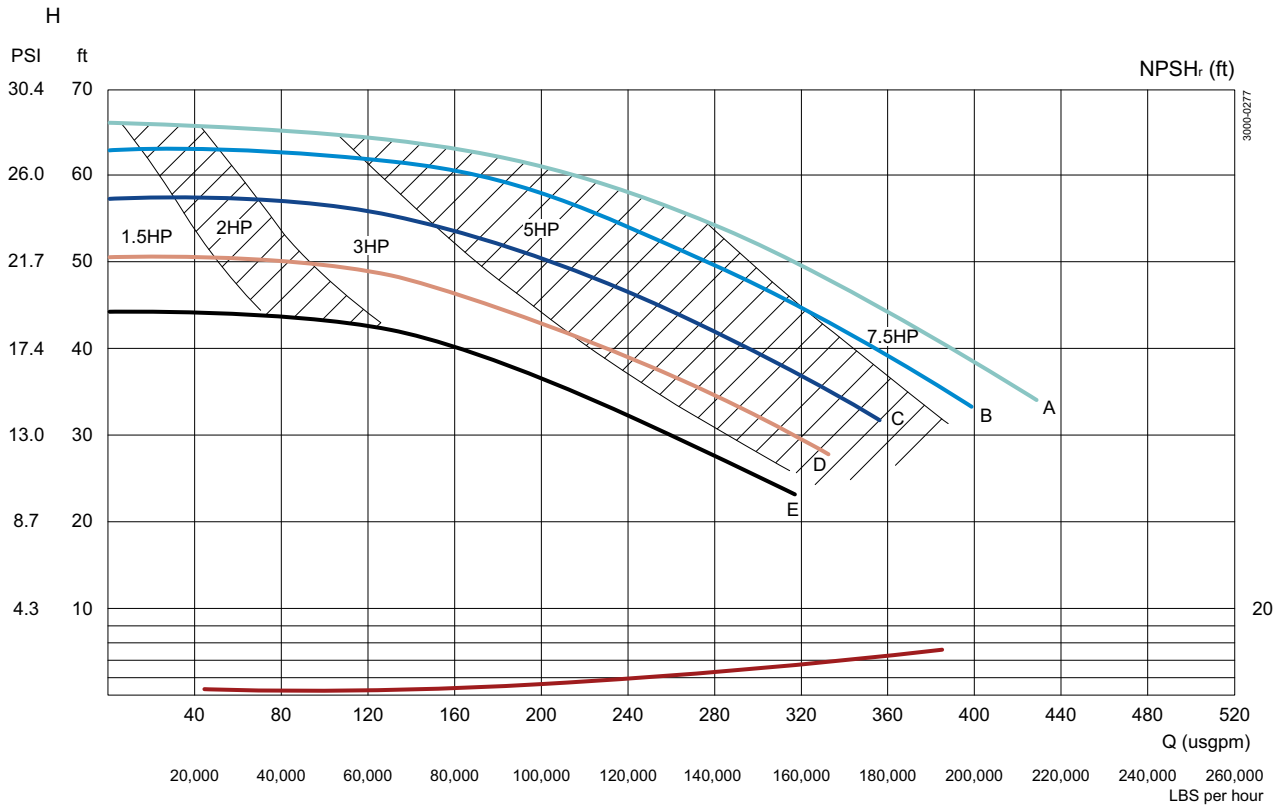

A = 8.071” D = 7.087” G = 5.906”
B = 7.874” E = 6.693”
C = 7.480” F = 6.299”

## LKHevap-50, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.070" |
| Impeller, Min. dia.: | 6.693" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

The curves refer to motor: 6.0 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%

DO NOT FORGET THE SAFETY FACTOR



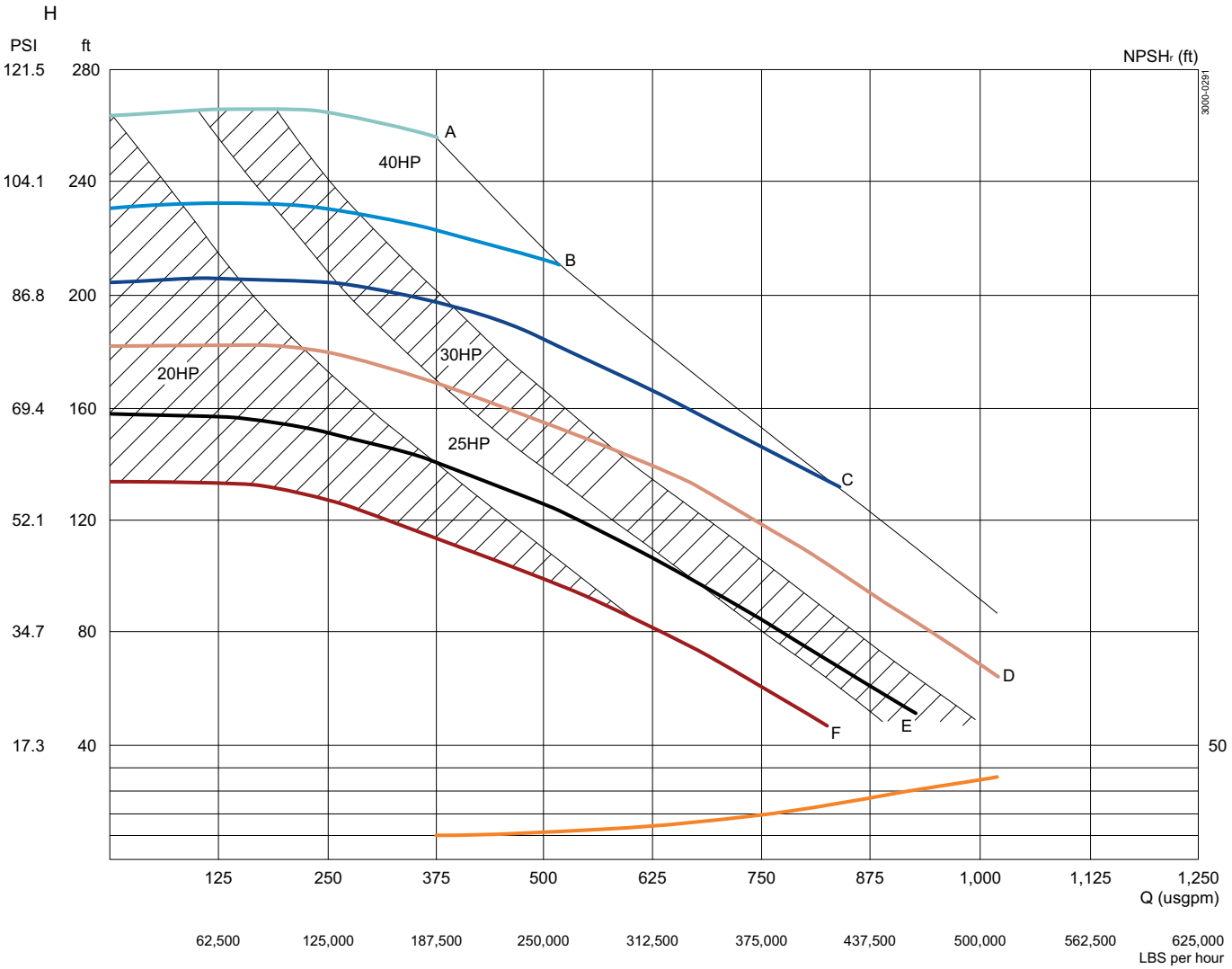

A = 8.070”
B = 7.874”
C = 7.480
D = 7.087
E = 6.693

## LKHevap-60, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4" mm, DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 46.9 Hp, 3500 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with:
3% for 16.8-28.2 Hp.
6% for 8.5-11.5 Hp.

DO NOT FORGET THE SAFETY FACTOR



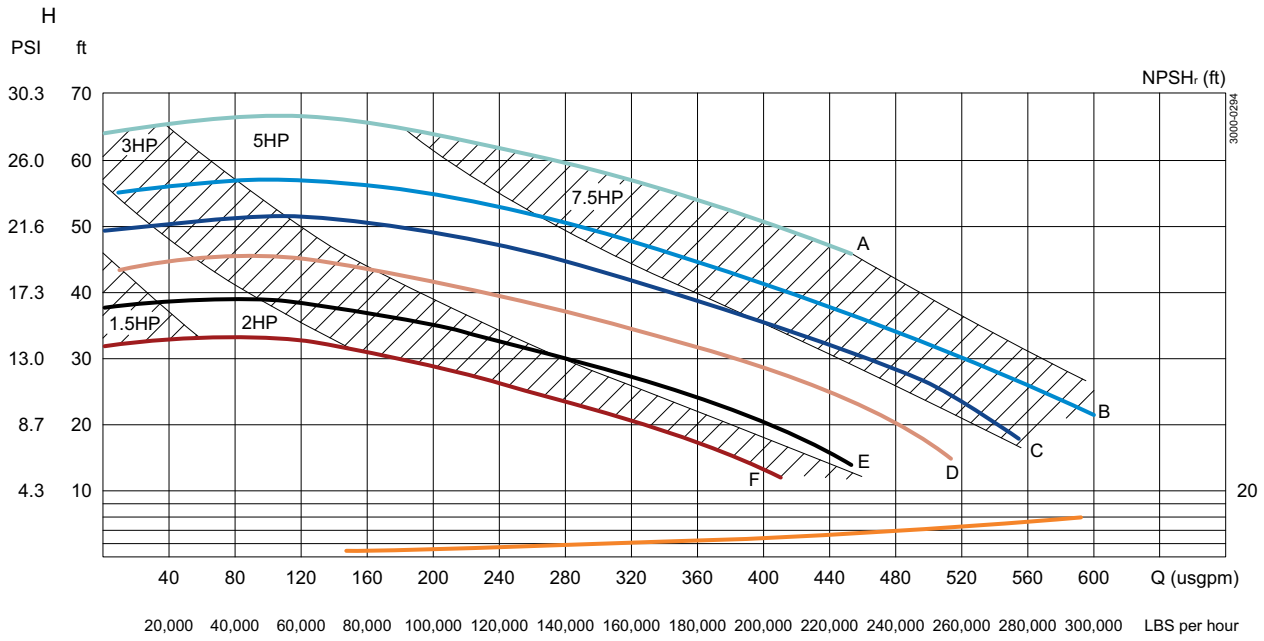

A = 8.268”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHevap-60, 60Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 8.268" |
| Impeller, Min. dia.: | 6.299" |
| Pump inlet, dia.: | 4", DN 100<br>6", DN 150 |
| Pump outlet, dia.: | 4", DN 100 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.5 Hp, 1750 rpm. asynchr., 60 Hz. For smaller motors, reduce head (H) with 5%.

DO NOT FORGET THE SAFETY FACTOR



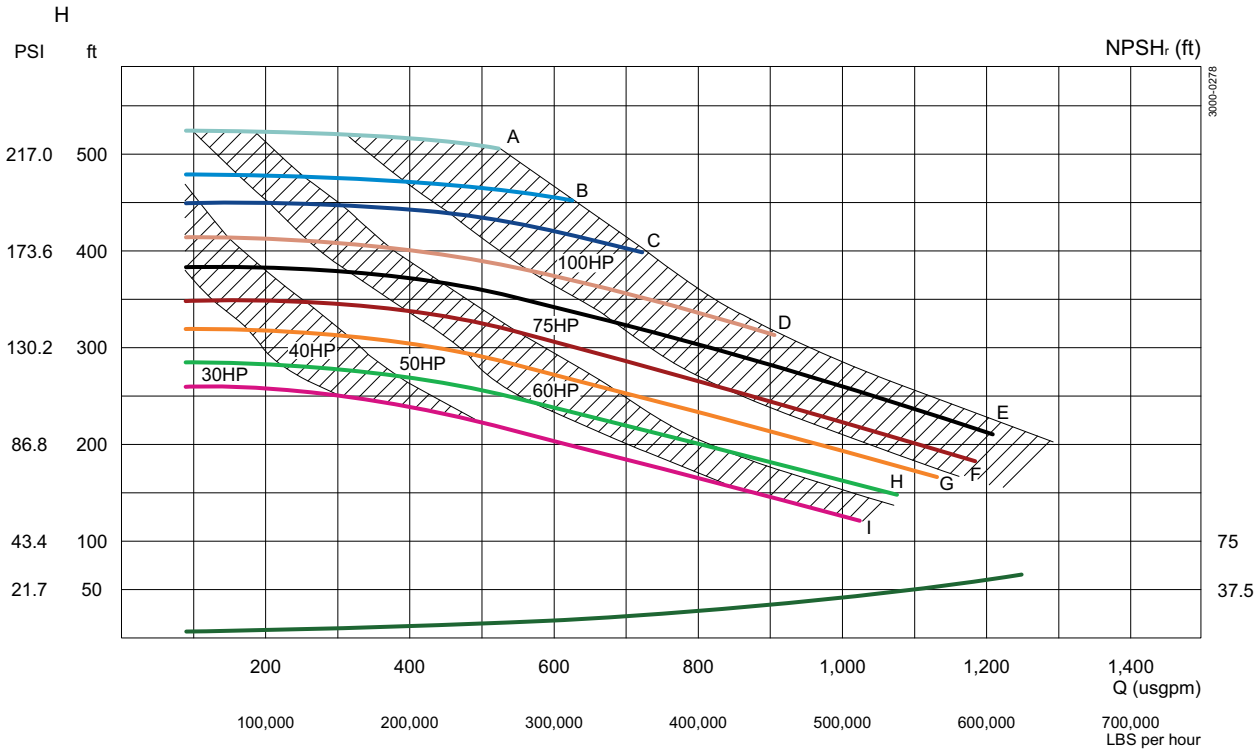

A = 8.286”  D = 7.087”
B = 7.874”  E = 6.693”
C = 7.480”  F = 6.299”

## LKHevap-70, 60 Hz

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 115.3 Hp, 3565 rpm. asynchr., 60 Hz.
For smaller motors, reduce head (H) with: -3%.

DO NOT FORGET THE SAFETY FACTOR



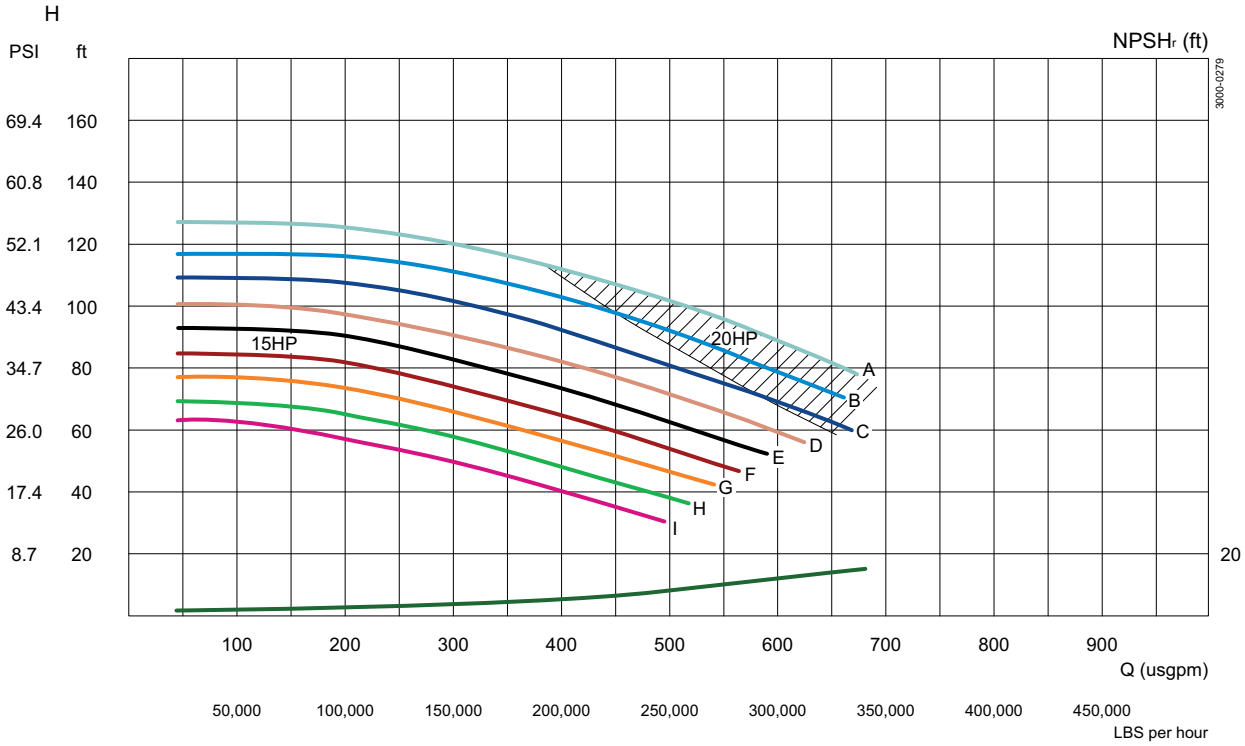

A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

## LKHevap-70, 60 Hz

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±5% |
| Impeller, Max. dia.: | 11.024" |
| Impeller, Min. dia.: | 7.874" |
| Pump inlet, dia.: | 4", DN 100 |
| Pump outlet, dia.: | 3", DN 80 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to max. motor: 22.8 Hp, 1750 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR




A = 11.024”
B = 10.630”
C = 10.236”
D = 9.843”
E = 9.449”
F = 9.055”
G = 8.661”
H = 8.268”
I = 7.874”

# Alfa Laval SolidC

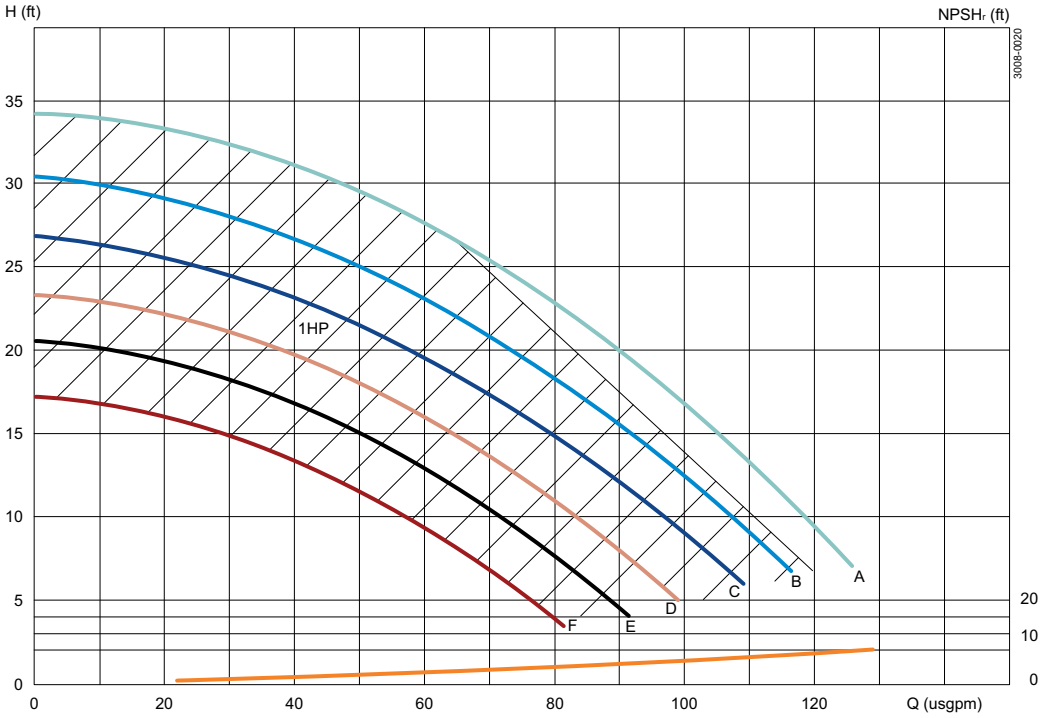
## Performance curves

### SolidC-1, 60 Hz (1800 rpm. synchr.)

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 6.30" |
| Impeller, Min. dia.: | 4.33" |
| Pump inlet, dia.: | 2", DN 50 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!**
The curves refer to motor: 2.4 Hp, 1710 rpm. asynchr., 60 Hz

DO NOT FORGET THE SAFETY FACTOR



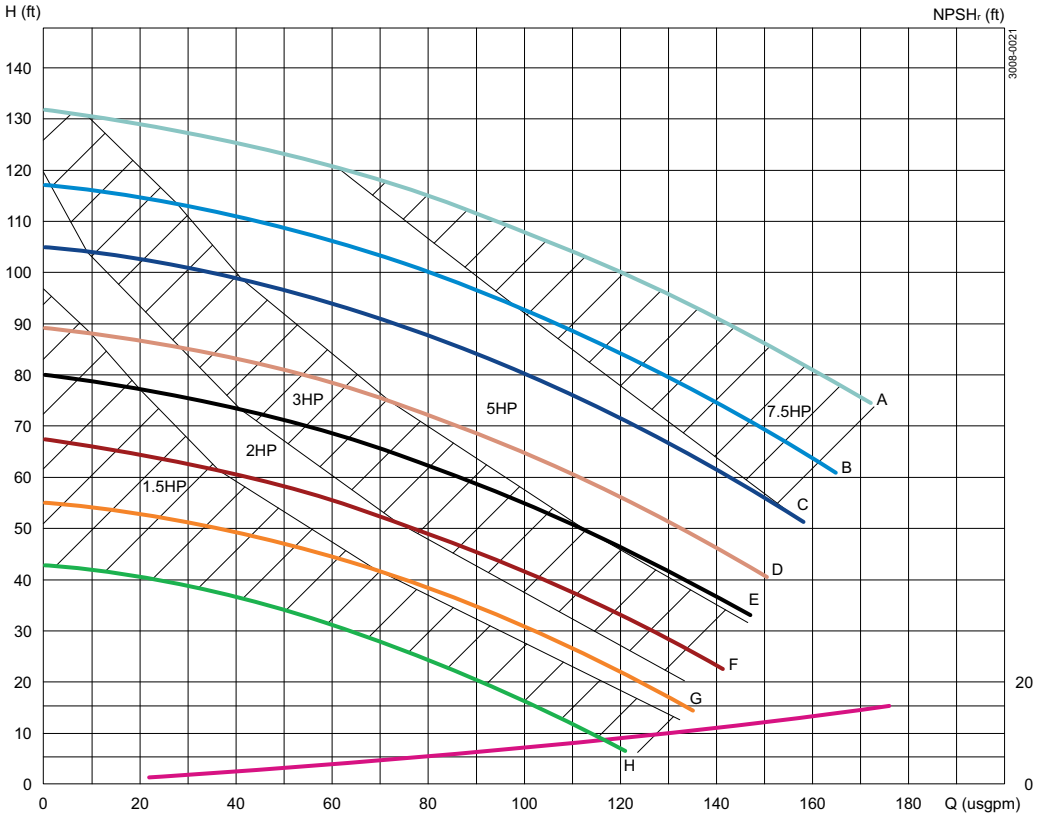

A = 6.30" D = 5.12"
B = 5.91" E = 4.72"
C = 5.51" F = 4.33"

## SolidC-1, 60 Hz (3600 rpm. synchr.)

| | |
|---|---|
| Motor: | 3600 rpm. synchr |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 6.30" |
| Impeller, Min. dia.: | 3.54" |
| Pump inlet, dia.: | 2", DN 50 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 58 °F | |

**Note!**
The curves refer to max. motor: 8.85 HP, 3540 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



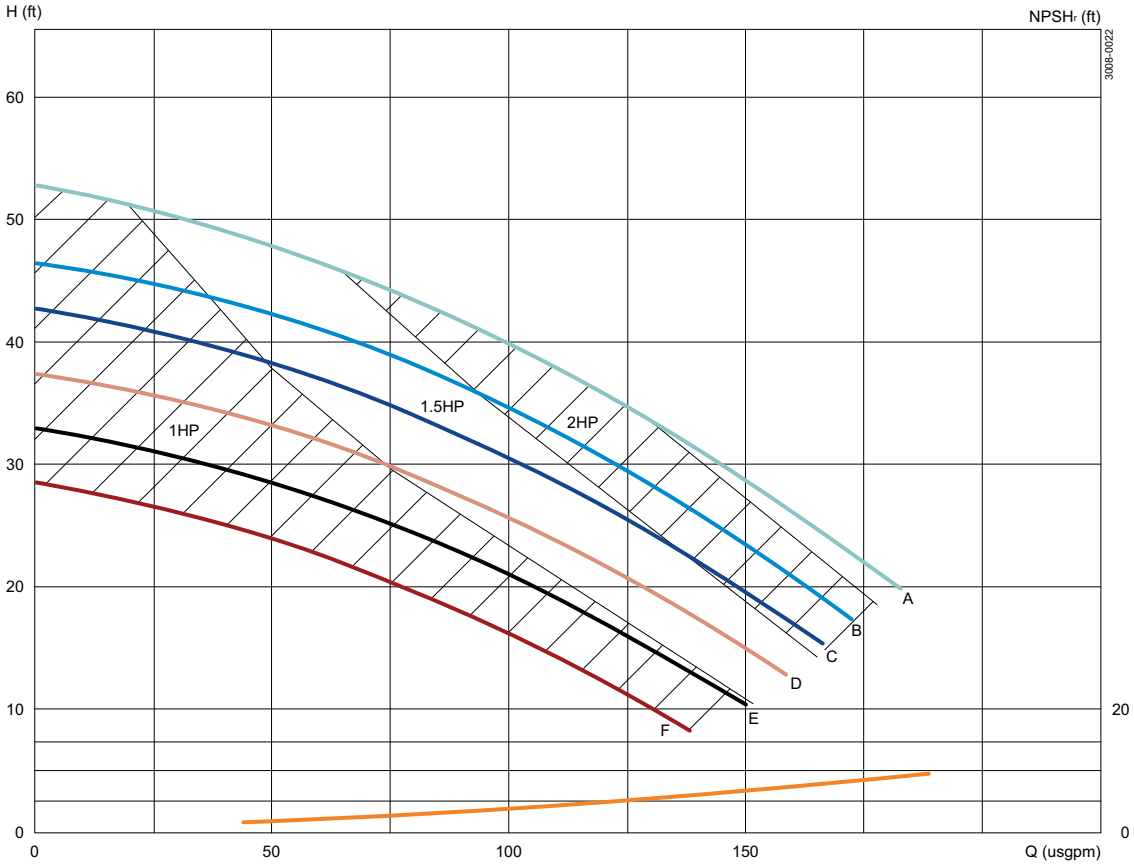

A = 6.30" D = 5.12" G = 3.94"
B = 5.91" E = 4.72" H = 3.54"
C = 5.51" F = 4.33"

## SolidC-2, 60 Hz (1800 rpm. synchr.)

| Motor: | **1800 rpm. synchr.** |
|---|---|
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 7.48" |
| Impeller, Min. dia.: | 5.51" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3,6 Hp, 1710 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



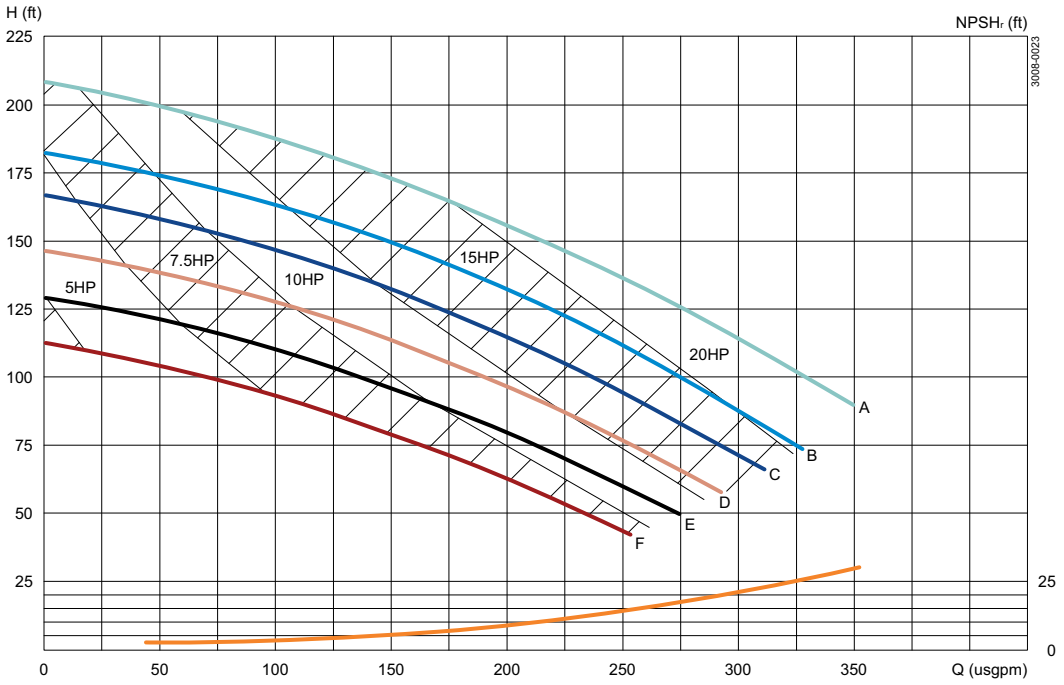

A = 7.48" D = 6.30"
B = 7.09" E = 5.91"
C = 6.69" F = 5.51"

## SolidC-2, 60 Hz (3600 rpm. synchr.)

| Motor: | **3600 rpm. synchr.** |
|---|---|
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 7.48" |
| Impeller, Min. dia.: | 5.51" |
| Pump inlet, dia.: | 2½", DN 65 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 22.8 Hp, 3535 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



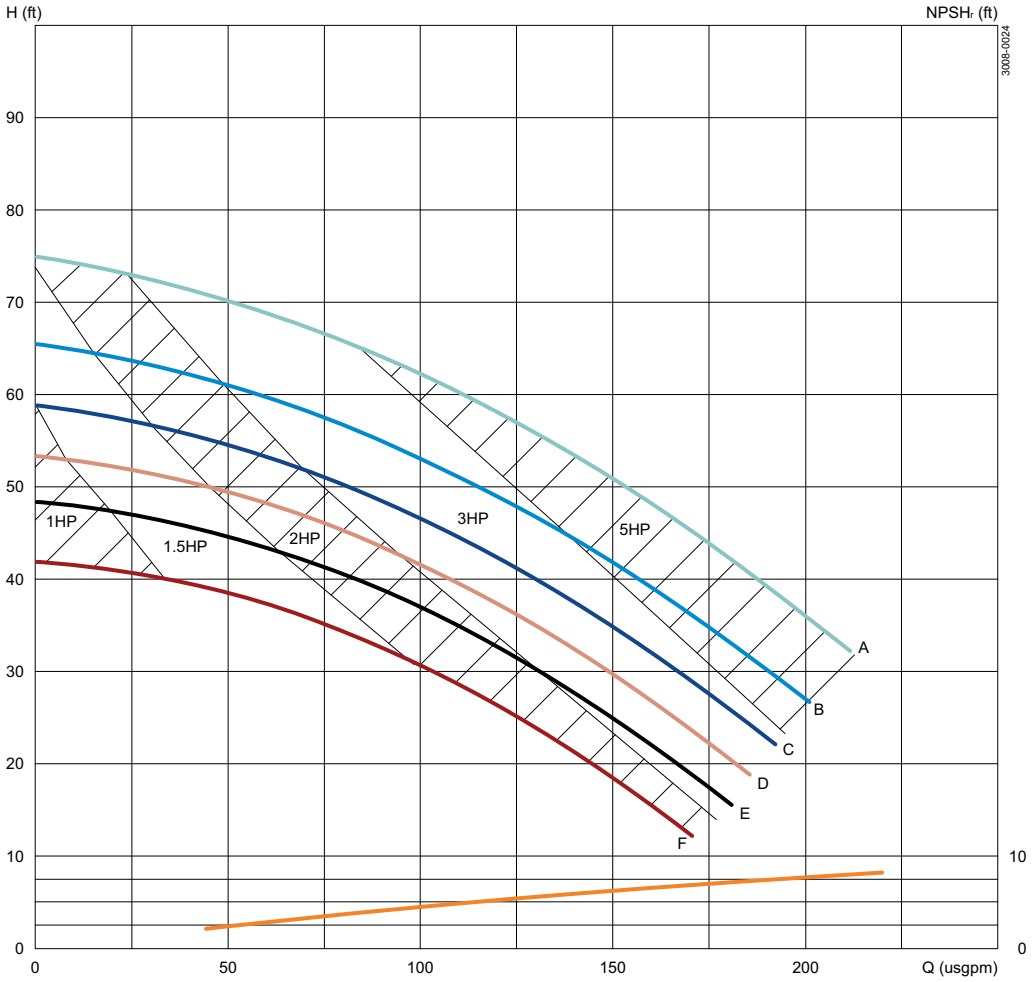

A = 7.48" D = 6.30"
B = 7.09" E = 5.91"
C = 6.69" F = 5.51"

## SolidC-3, 60 Hz (1800 rpm. synchr.)

| Motor: | **1800 rpm. synchr.** |
|---|---|
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 8.66" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 8.4 Hp, 1720 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



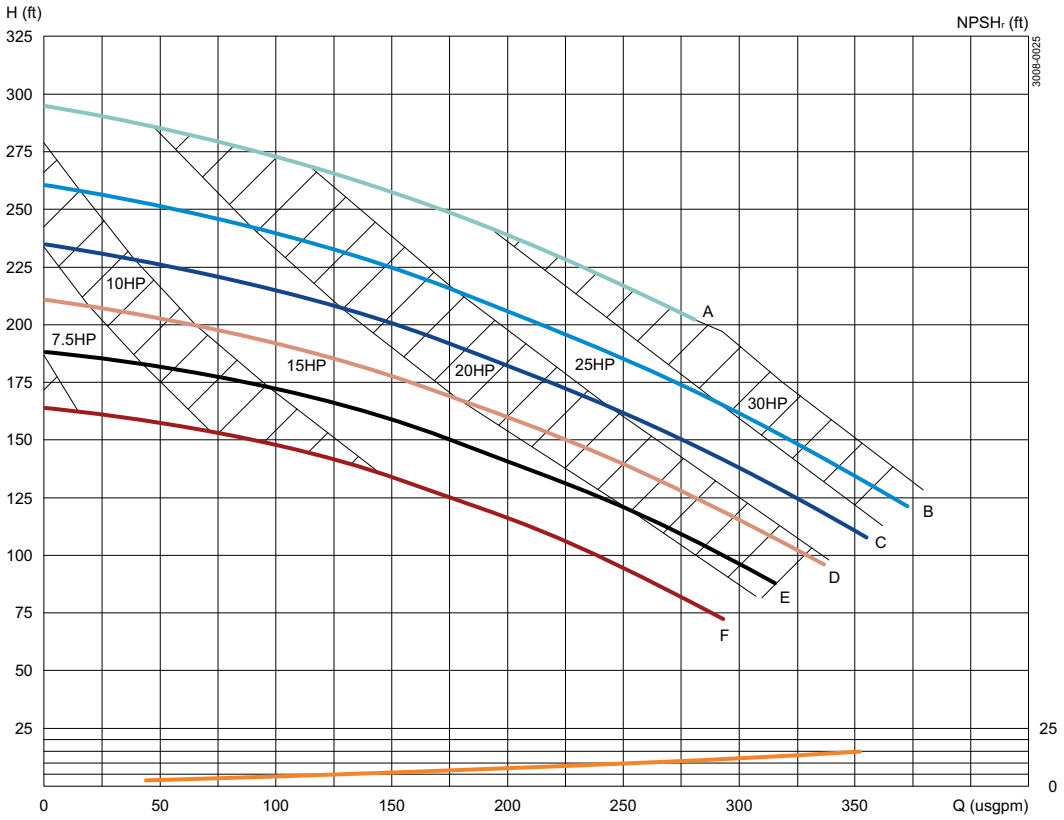

A = 8.66"
B = 8.27"
C = 7.87"
D = 7.48"
E = 7.09"
F = 6.69"

## SolidC-3, 60 Hz (3600 rpm. synchr.)

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 8.66" |
| Impeller, Min. dia.: | 6.69" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 1½", DN 40 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 3.6 kW, 1720 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



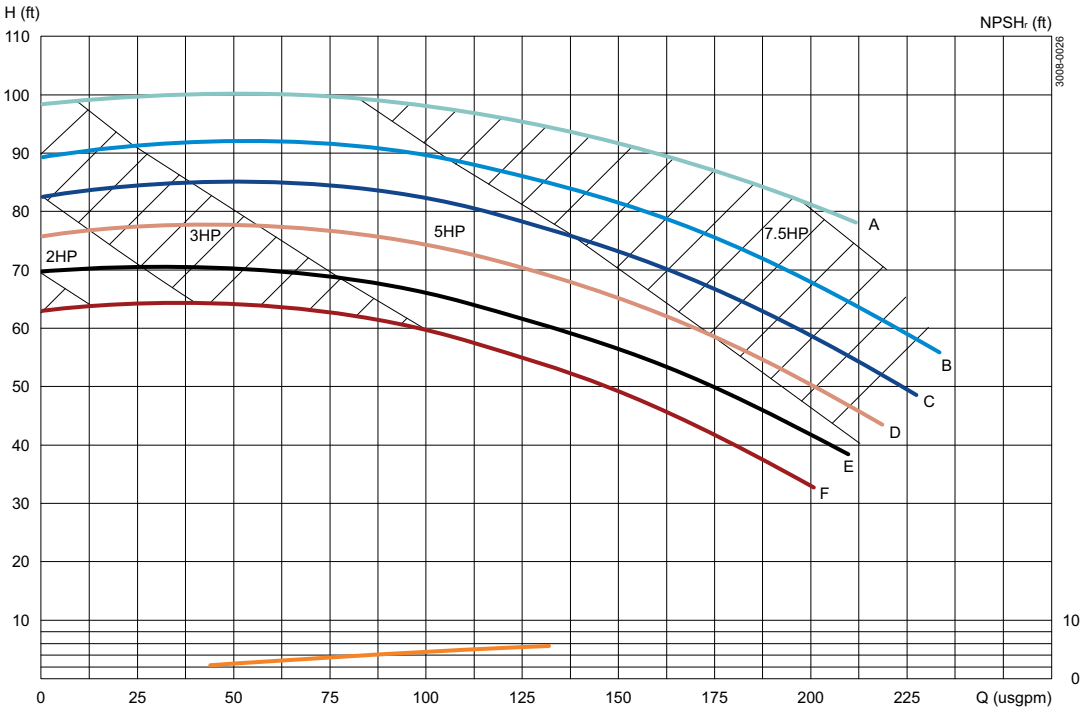

A = 8.66" D = 7.48"
B = 8.27" E = 7.09"
C = 7.87" F = 6.69"

## SolidC-4, 60 Hz (1800 rpm. synchr.)

| | |
|---|---|
| Motor: | **1800 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 9.84" |
| Impeller, Min. dia.: | 7.87" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2", DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 9.1 Hp, 1770 rpm. asynchr., 60 Hz.

DO NOT FORGET THE SAFETY FACTOR



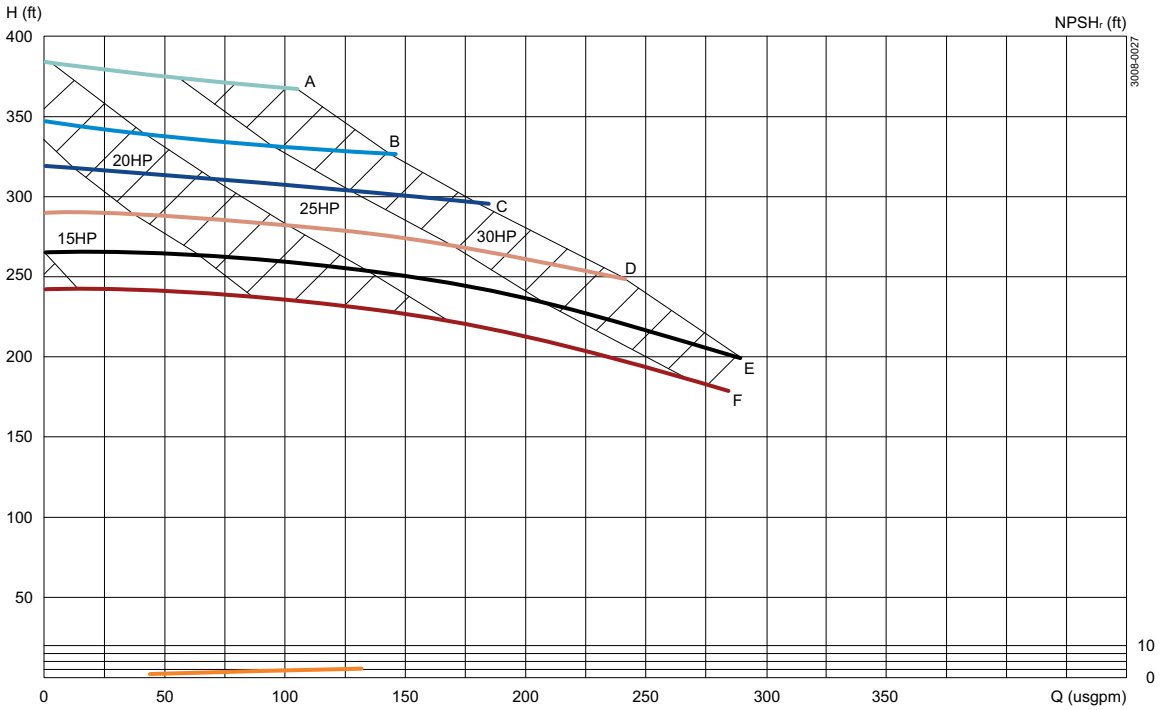

A = 9.84”
B = 9.44”
C = 9.06”
D = 8.66”
E = 8.27”
F = 7.87”

## SolidC-4, 60 Hz (3600 rpm. synchr.)

| | |
|---|---|
| Motor: | **3600 rpm. synchr.** |
| Tolerance: | ±8% for Q<br>±6% for H |
| Impeller, Max. dia.: | 9.84" |
| Impeller, Min. dia.: | 7.87" |
| Pump inlet, dia.: | 3", DN 80 |
| Pump outlet, dia.: | 2, DN 50 |
| Performance data refer to water at 68 °F | |

**Note!** The curves refer to motor: 33.5 Hp, 3555 rpm. asynchr., 60 Hz

DO NOT FORGET THE SAFETY FACTOR

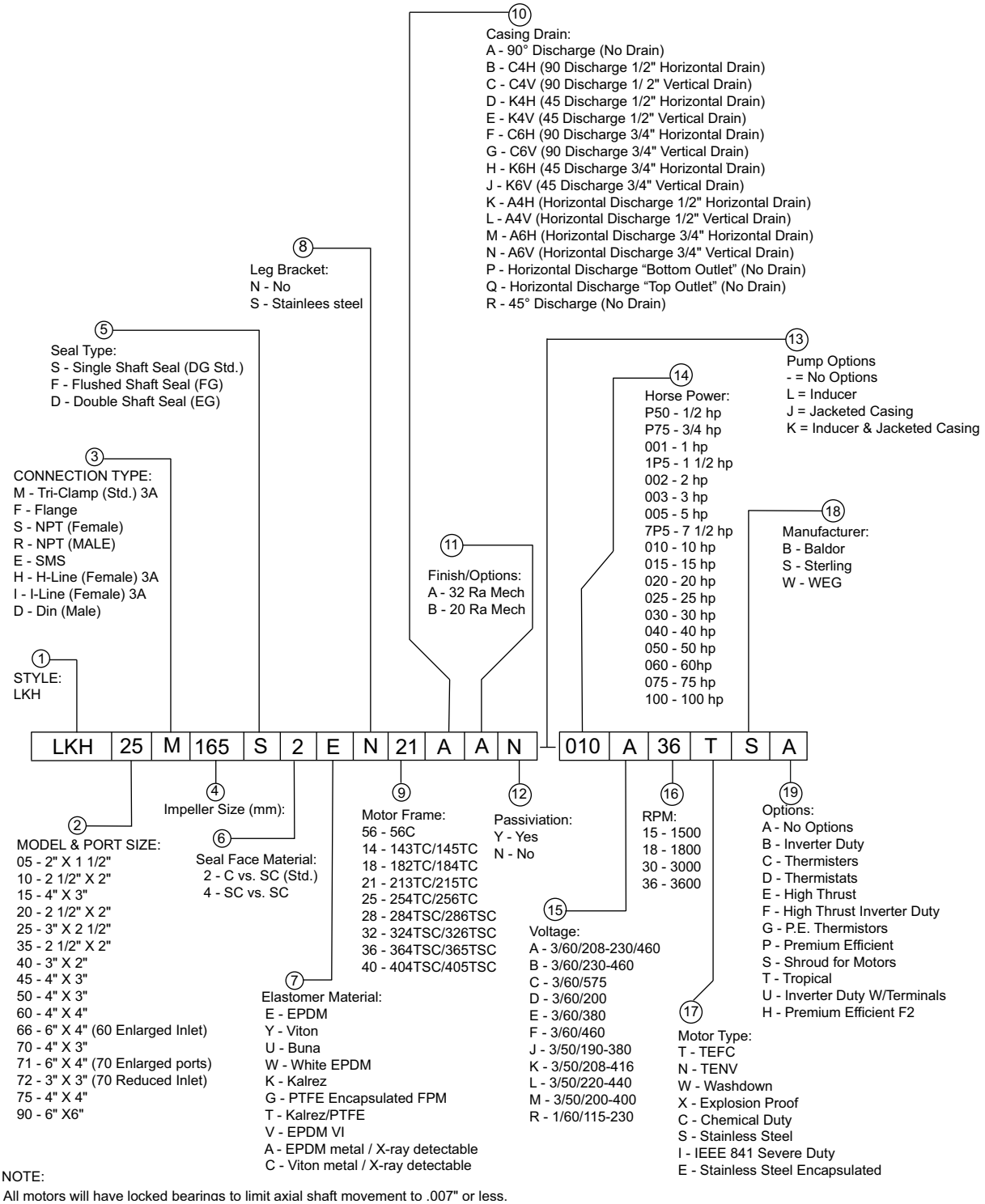



A = 9.84”
B = 9.44”
C = 9.06”
D = 8.66”
E = 8.27”
F = 7.87”

# Alfa Laval LKH

## Product description

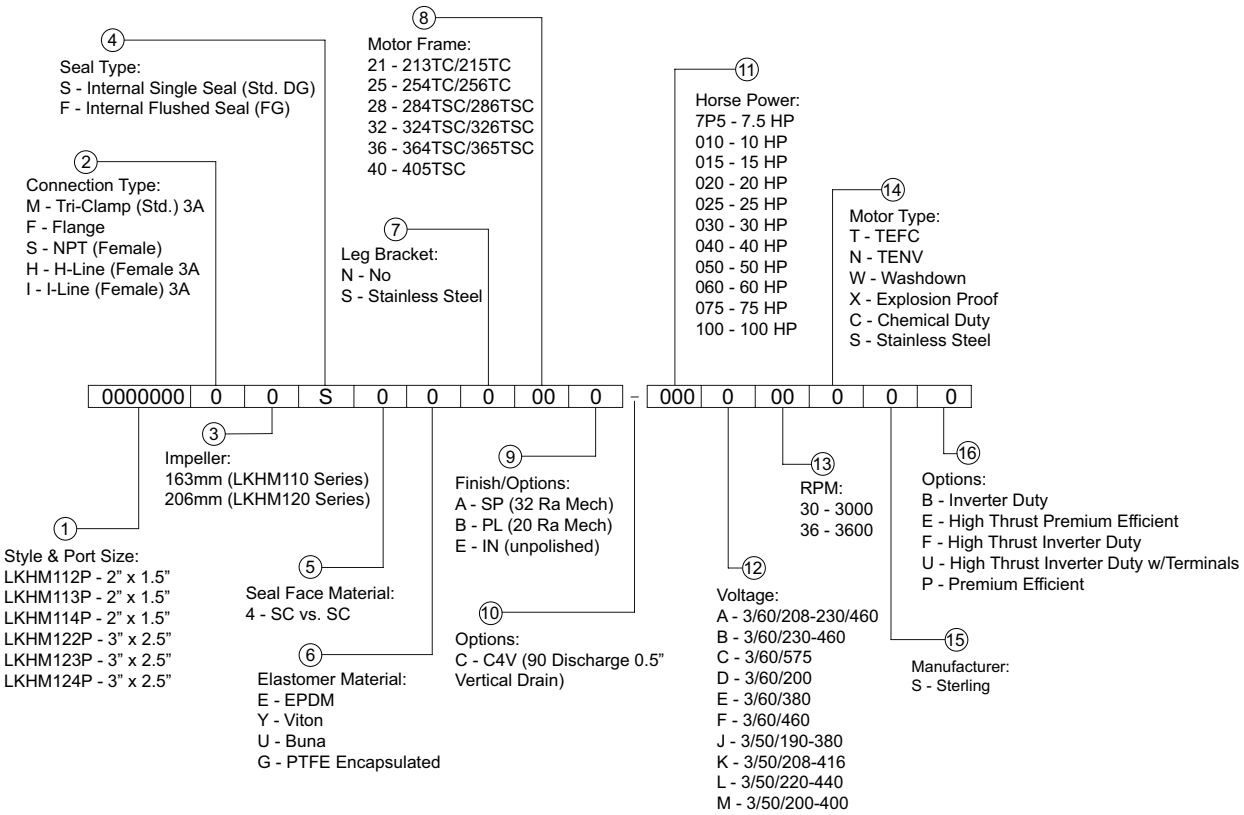
### LKH Centrifugal Pumps




NOTE:
All motors will have locked bearings to limit axial shaft movement to .007" or less.

# Alfa Laval LKH Multistage

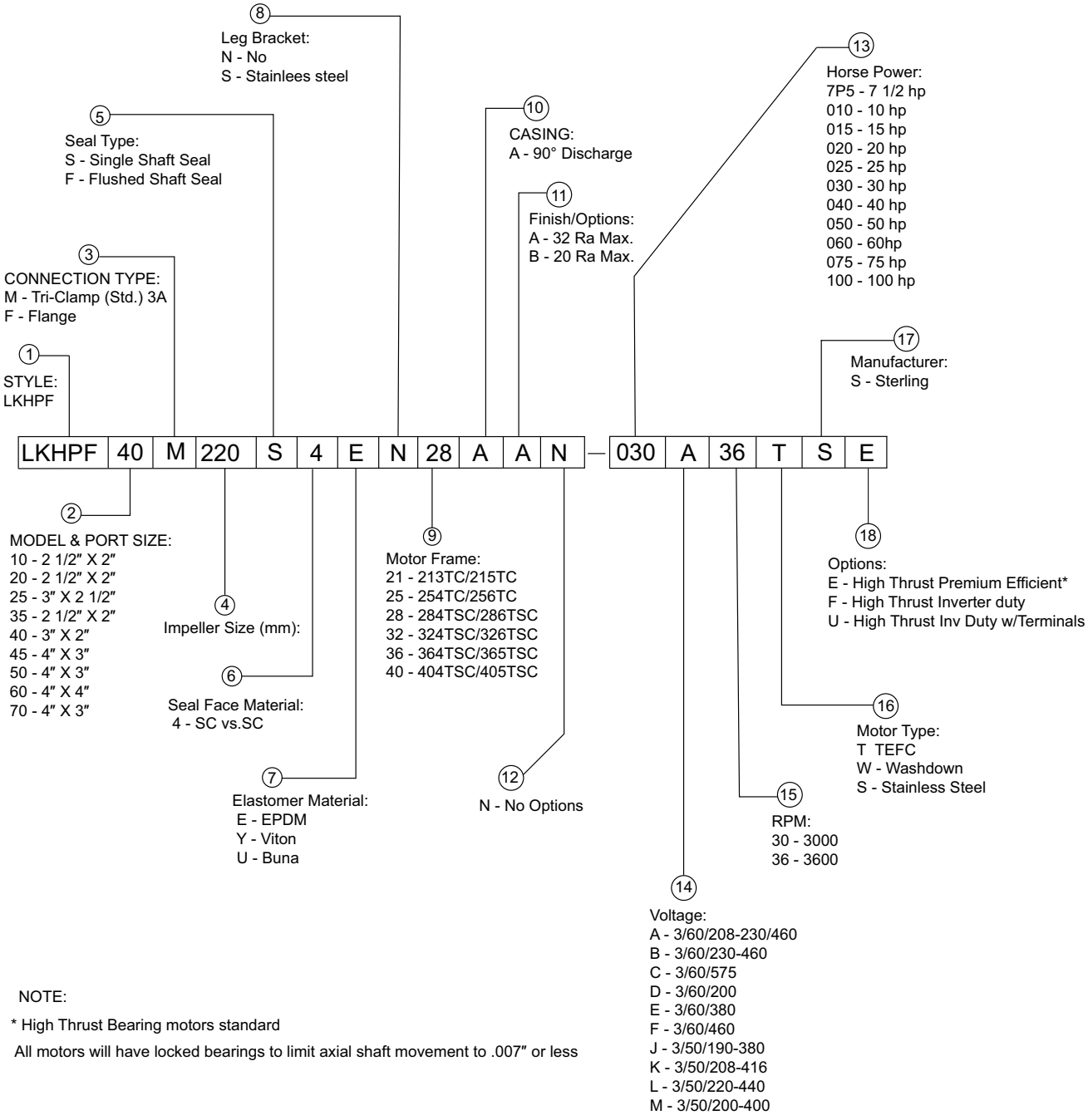
## Product description




Note:
All motors will have locked bearings to limit axial shaft movement to .007” or less

# Alfa Laval LKHPF

## Product description



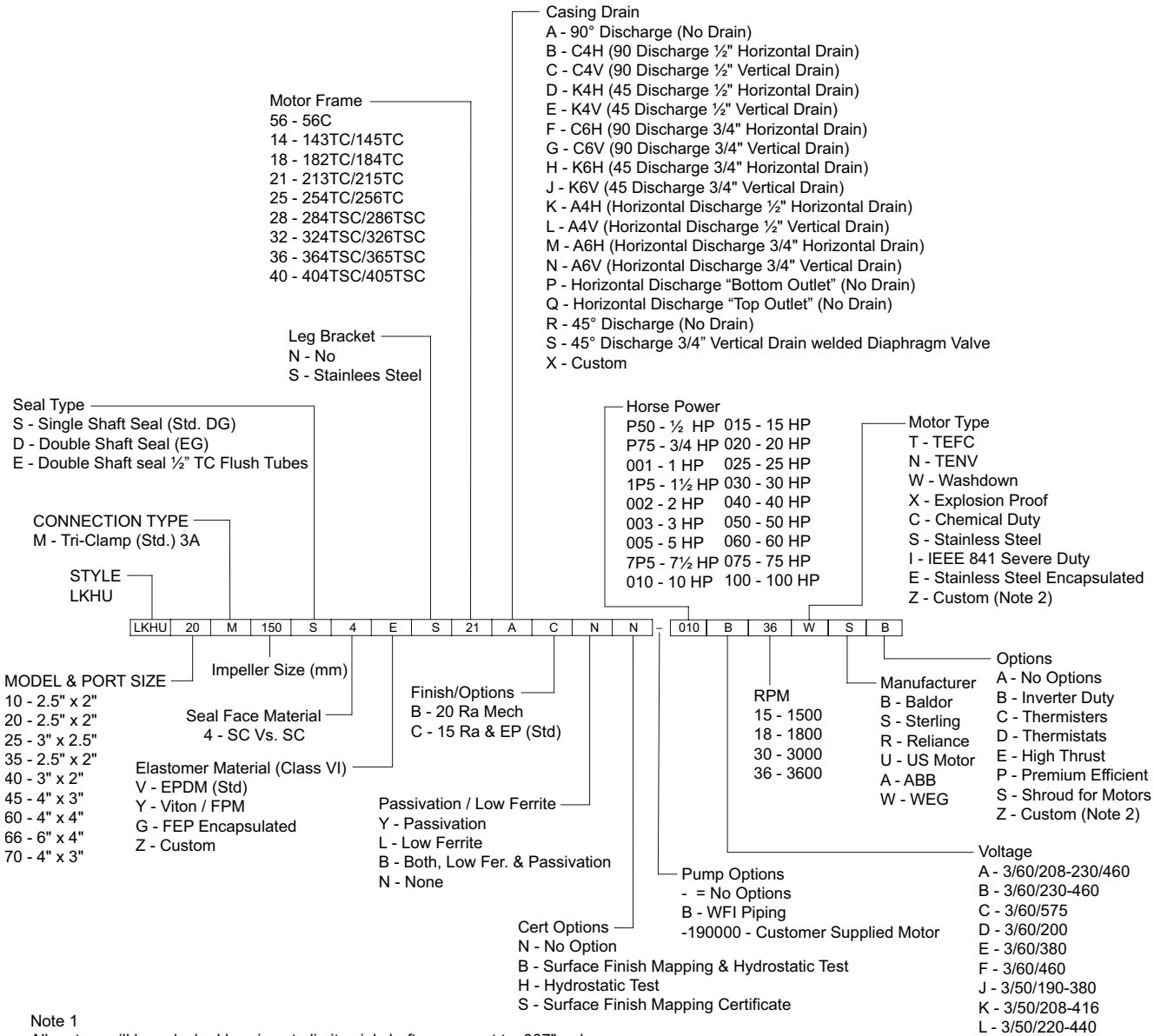

NOTE:

* High Thrust Bearing motors standard

All motors will have locked bearings to limit axial shaft movement to .007″ or less

# Alfa Laval LKH UltraPure

## Product description




Note 1
All motors will have locked bearings to limit axial shaft movement to .007" or less.

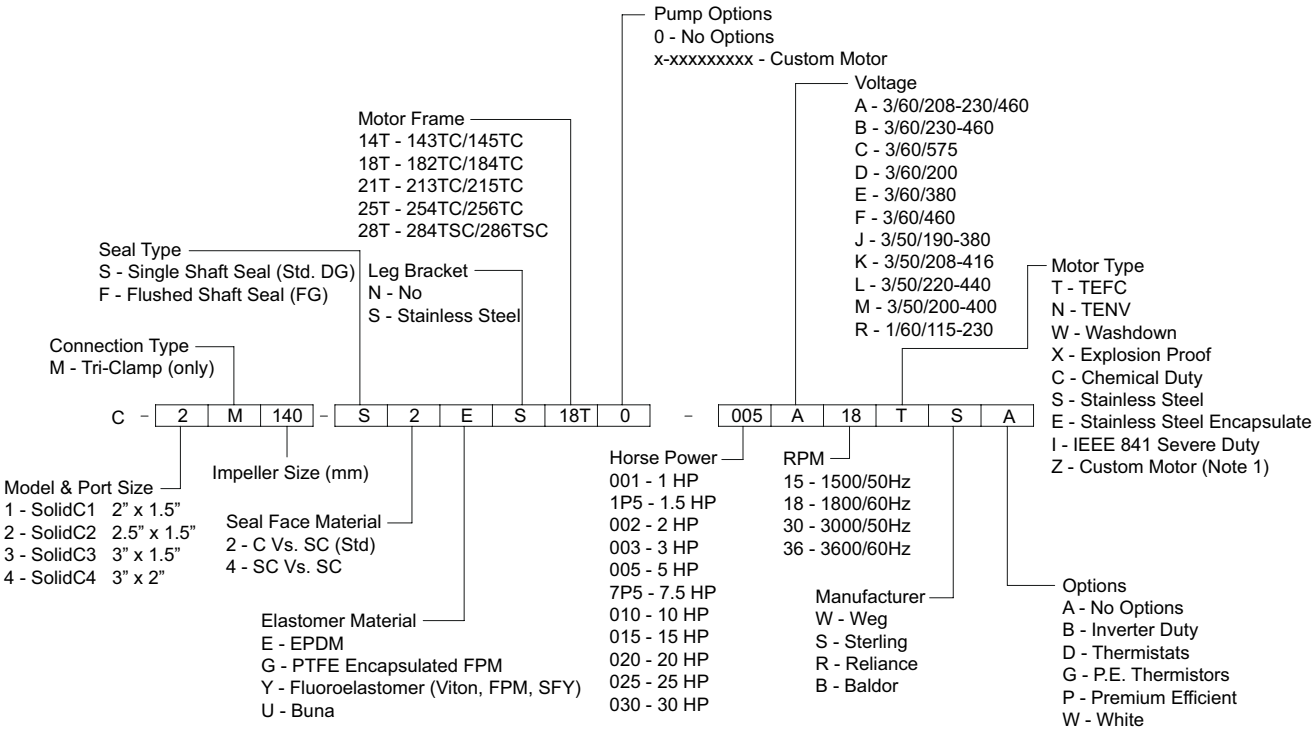
The LKH-70 will have special High Thrust Bearings designed for the following axial loads:

| HP | RPM | Frame | Axial Load (LBS) |
|---|---|---|---|
| 30 | 3600 | 286TSC | 650 |
| 40 | 3600 | 324TSC | 820 |
| 50 | 3600 | 326TSC | 980 |
| 60 | 3600 | 364TSC | 1150 |
| 75 | 3600 | 365TSC | 1150 |
| 100 | 3600 | 405TSC | 1150 |

Note 2
Custom Motor...
The "Z" in Position 18 & 20 are used simultaneously not individualy.
Ex. -010B36ZSZ

# Alfa Laval SolidC

## Product description

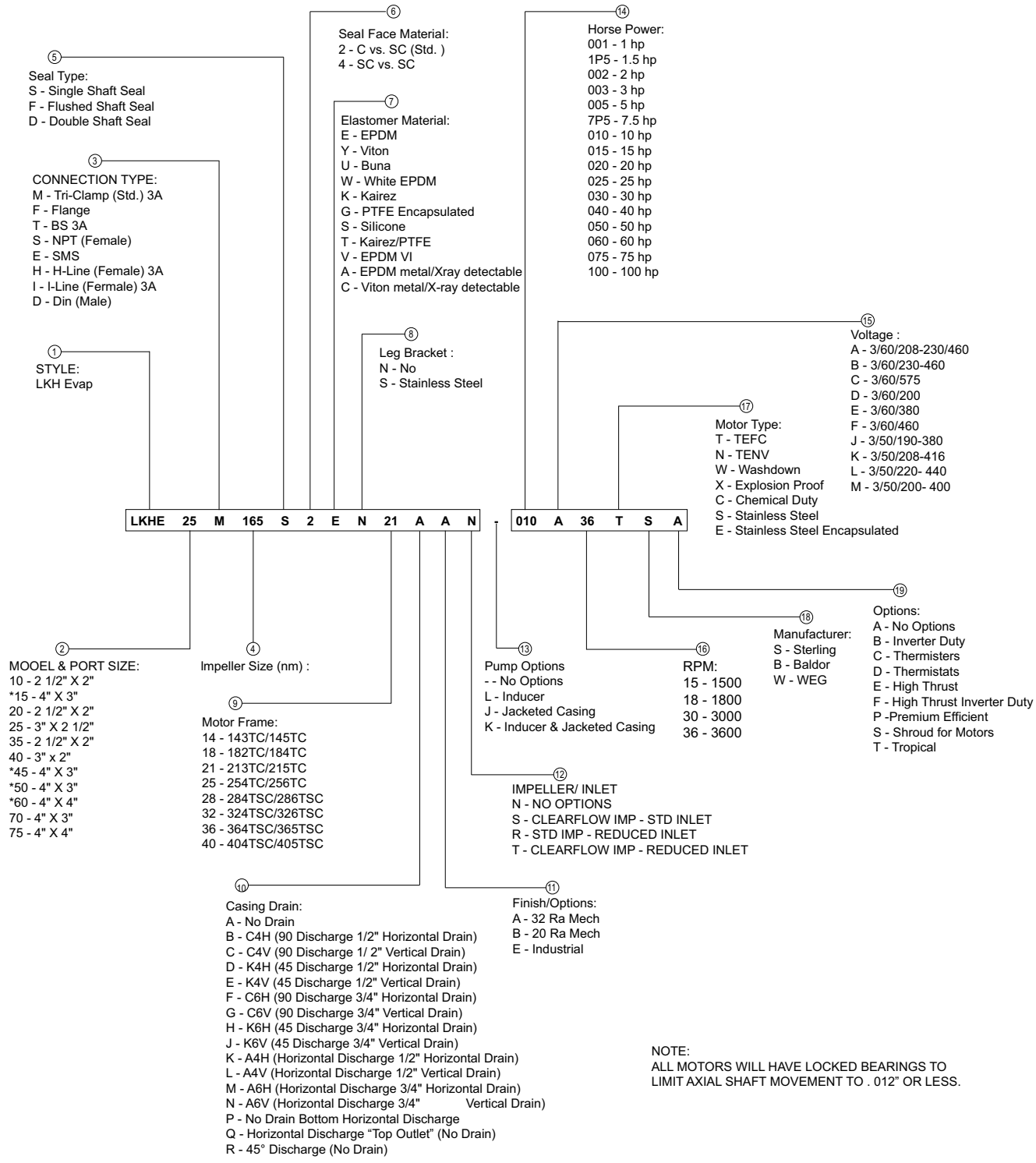



Note 1
Custom motor note...

The “Z” in Position 13 and 15 are used simultaneously not individualy
Ex. -010B36ZSZ

# Alfa Laval LKH Evap

## Product description




* AVAILABLE WITH OPTIONAL REDUCED 3" INLET (SEE POSITION 12)

# Circumferential piston pumps

**Product leaflet**

# Alfa Laval DuraCirc

## Circumferential Piston Pump

### Introduction

The Alfa Laval DuraCirc delivers the perfect balance of durability, reliability, high efficiency and superior hygienic performance. Combined with design features enabling simple service, the DuraCirc keeps process running. In additional to a class leading range of flow and pressure capabilities, DuraCirc comes with globally recognized hygienic certification. The innovative design also includes features that make cleaning and maintenance faster, easier and more dependable.

### Applications

Designed for Cleaning-in-Place (CIP), the Alfa Laval DuraCirc is ideal for hygienic applications within the dairy, food, beverage, home and personal care industries. The highly efficient design is particularly suited to applications that are low in viscosity with medium to high discharge pressures and require equipment that can be cleaned in place.

The DuraCirc Circumferential Piston Pump is available with 13 different pump head displacements to handle flow rates up to 656 US gpm and differential pressures up to 40 bar.

### Benefits

- DuraCirc Hi-Life rotors provides high efficiency while eliminating contact to casing thus increasing pump life.
- Certified to both EHEDG and 3A, reducing both process cross contamination risk and CIP cycle time, maintaining process yield as well as cutting cleaning costs.
- Truly front-loading single seal, full component interchangeability without complicated maintenance procedures, long life bearing operation and one single long-life lubricant making service faster and easier, increasing process uptime.
- Robust, durable design via strong gearcase incorporating increased diameter shafts and optimally positioned heavy-duty bearings, minimizes risk of pump head contact, reducing service requirement, maintaining process continuity.
- DuraCirc Uni-Fit port option allows easy direct replacement of other major brands into existing process systems, without changing pipework.

### Standard design

Twin-wing Hi-Life piston rotors made of special non-galling alloy are standard. All other media contacting steel components, like the rotor case, front cover and rotor nuts are in W. 1.4404 (AISI 316L). With stainless steel gear case and feet, the DuraCirc pump has an all stainless steel exterior, making it exceptional corrosion resistant.

The gearbox is as standard designed with duplex shafts and a strong, long life bearing arrangement. This provides for a very robust and rigid shaft assembly design – a prerequisite for the very high volumetric efficiency achieved.

With profiled defined compression elastomers and an optimised shaft seal location, the DuraCirc is designed according to the most stringent hygienic design standards and with verified and effective CIP cleanability.

The pump features a front-loading single mechanical seal, which allows quick and easy inspection or replacement without the

need to disassemble pipework. Single flushed and double mechanical shaft seals as well as O-ring seals are available as options.

The Alfa Laval DuraCirc can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

## Working principle

The rotor pistons rotate around the circumference of the channel in the pump casing. This continuously generates a partial vacuum at the suction port as the rotors unmesh, causing fluid to enter the pump. The fluid is transported around the channel by the rotor pistons, and is displaced as the rotor pistons re-mesh, generating pressure at the discharge port. The direction of flow is reversible.

Authorized to carry the 3A symbol

## Technical data

| Standard specification | |
|---|---|
| Piston rotors: | DuraCirc Hi-Life, Non-Galling Alloy |
| Other product wetted steel parts: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 0.8 |
| Shafts: | Duplex 1.4460 (329) |
| Gear box: | Stainless steel |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Product wetted elastomers: | EPDM |
| Other elastomers: | FPM |
| Shaft seal: | Single mechanical |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Carbon |

| Shaft seals | |
|---|---|
| Single mechanical, single mechanical with flush, double mechanical and single and flushed O-ring seal available. | |
| Max process pressure, mechanical seal, SiC/Car: | 217 PSI |
| Max process pressure, mechanical seal, SiC/SiC: | Max pressure of pump |
| Max flush pressure, single flush: | 7.25 PSI |
| Max flush pressure, double mechanical seal, SiC/Car: | 232 PSI |
| Max flush pressure, double mechanical seal, SiC/SiC: | 290 PSI |
| Max process pressure, O-ring seal: | 102 PSI |
| Max flush pressure, O-ring seal: | 7.25 PSI |
| Flush water consumption: | 7 gallon/hour |
| Flush connections, DuraCirc 32-43: | NPT 1/8" |
| Flush connections, DuraCirc 52-74: | NPT 1/4" |

| Temperature | |
|---|---|
| Max process and CIP temperature: | 302°F |

| Motors |
|---|
| Gear motor, 4 poles, to Nema standard, premium efficiency, suitable for frequency conversion. |

| Warranty |
|---|
| Extended 3-years warranty on DuraCirc pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

## Process data

| Pump Model | Displacement | | | Inlet/Outlet | | Diff. Pressure | | Max speed |
|---|---|---|---|---|---|---|---|---|
| | Litres/rev | Imp gall/100 rev | US gall/100 rev | mm | inch | Bar | PSI | rpm |
| 32 | 0,03 | 0.66 | 0.79 | 25 | 1 | 25 | 362 | 1000 |
| 33 | 0,06 | 1.32 | 1.58 | 40 | 1½ | 25 | 362 | 1000 |
| 34 | 0,12 | 2.64 | 3.17 | 50 | 2 | 16 | 232 | 1000 |
| 42 | 0,23 | 5.06 | 6.07 | 50 | 2 | 20 | 290 | 750 |
| 43 | 0,29 | 6.38 | 7.66 | 50 | 2 | 13 | 188 | 750 |
| 52 | 0,38 | 8.36 | 10.03 | 50 | 2 | 37 | 536 | 750 |

| Pump Model | Displacement | | | Inlet/Outlet | | Diff. Pressure | | Max speed |
|---|---|---|---|---|---|---|---|---|
| | Litres/rev | Imp gall/100 rev | US gall/100 rev | mm | inch | Bar | PSI | rpm |
| 53 | 0,59 | 12.97 | 15.57 | 65 | 2½ | 25 | 362 | 750 |
| 54 | 0,96 | 21.12 | 25.3 | 80 | 3 | 16 | 232 | 750 |
| 62 | 1,44 | 31.67 | 38.04 | 80 | 3 | 37 | 536 | 600 |
| 63 | 1,97 | 43.33 | 52.03 | 100 | 4 | 25 | 362 | 600 |
| 72 | 1,92 | 42.23 | 50.7 | 100 | 4 | 40 | 580 | 600 |
| 73 | 2,86 | 62.91 | 75.55 | 150 | 6 | 25 | 362 | 600 |
| 74 | 4,14 | 91.1 | 109.4 | 150 | 6 | 16 | 232 | 600 |

## Dimensions

(inch)

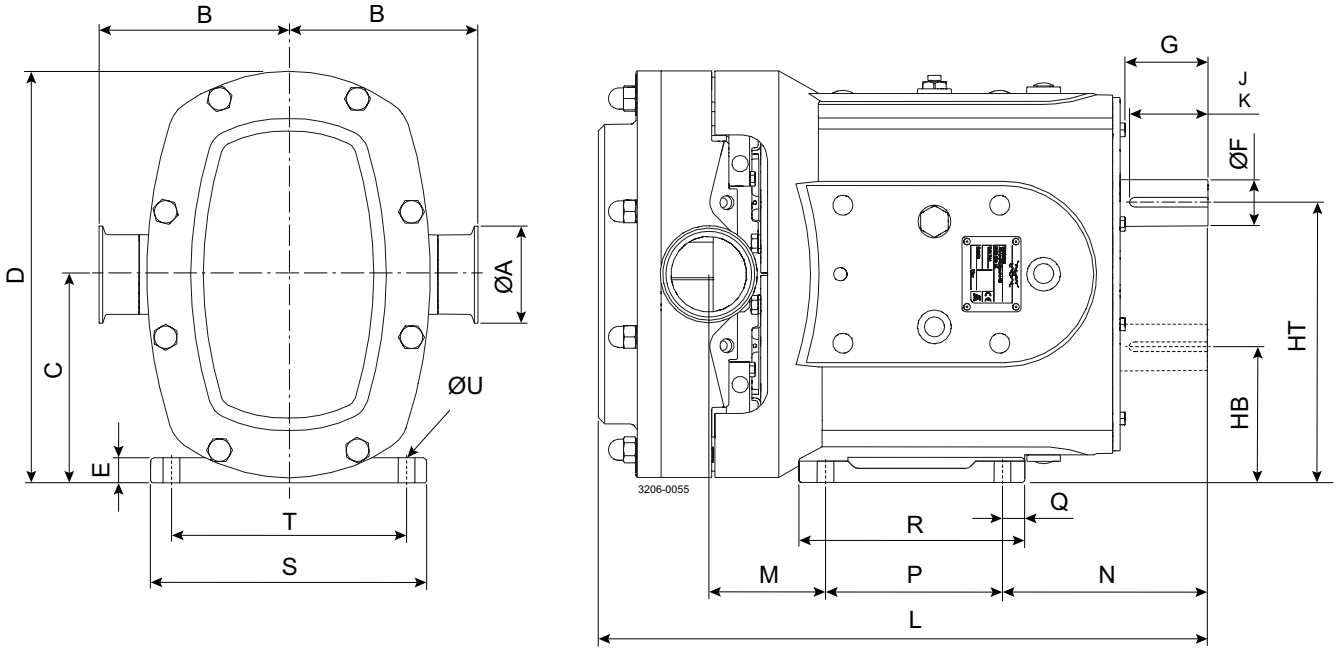



**Figure 1. Horizontally ported**

ØU = 4 Holes

J = Key Length

K = Key Width

## DuraCirc Uni-Fit dimensions

| Pump Model | A | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.0 | 3.5 | 4.2 | 8.3 | 0.5 | 0.9 | 1.7 | 2.9 | 5.6 | 1.3 | 0.2 | 13.0 | 2.0 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 33 | 1.5 | 3.5 | 4.2 | 8.3 | 0.5 | 0.9 | 1.7 | 2.9 | 5.6 | 1.3 | 0.2 | 13.2 | 2.0 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 34 | 1.5 | 3.5 | 4.2 | 8.3 | 0.5 | 0.9 | 1.7 | 2.9 | 5.6 | 1.3 | 0.2 | 14.0 | 2.4 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 42 | 1.5 | 4.3 | 5.2 | 10.3 | 0.4 | 1.1 | 2.2 | 3.5 | 6.9 | 1.6 | 0.3 | 16.3 | 2.8 | 5.5 | 4.9 | 0.6 | 6.2 | 7.3 | 6.0 | 0.6 |
| 43 | 2.0 | 4.3 | 5.2 | 10.3 | 0.4 | 1.1 | 2.2 | 3.5 | 6.9 | 1.6 | 0.3 | 16.6 | 3.2 | 5.5 | 4.9 | 0.6 | 6.2 | 7.3 | 6.0 | 0.6 |
| 52 | 2.0 | 5.4 | 7.3 | 13.7 | 1.6 | 1.5 | 2.6 | 5.1 | 9.6 | 2.5 | 0.4 | 18.6 | 3.3 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 53 | 2.5 | 5.4 | 7.3 | 13.7 | 1.6 | 1.5 | 2.6 | 5.1 | 9.6 | 2.5 | 0.4 | 19.1 | 3.5 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 54 | 3.0 | 5.4 | 7.3 | 13.7 | 1.6 | 1.5 | 2.6 | 5.1 | 9.6 | 2.5 | 0.4 | 20.2 | 4.4 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 62 | 3.0 | 6.3 | 9.4 | 17.2 | 2.3 | 1.8 | 3.3 | 6.4 | 12.3 | 2.8 | 0.6 | 23.1 | 4.6 | 7.8 | 6.3 | 1.0 | 8.8 | 9.8 | 8.5 | 0.6 |
| 63 | 4.0 | 6.3 | 9.4 | 17.2 | 2.3 | 1.8 | 3.3 | 6.4 | 12.3 | 2.8 | 0.6 | 23.9 | 4.9 | 7.8 | 6.3 | 1.0 | 8.8 | 9.8 | 8.5 | 0.6 |
| 72 | 4.0 | 7.4 | 10.4 | 19.8 | 1.7 | 2.4 | 4.1 | 6.9 | 13.9 | 3.5 | 0.7 | 27.6 | 4.3 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |
| 73 | 6.0 | 8.0 | 10.4 | 19.8 | 1.7 | 2.4 | 4.1 | 6.9 | 13.9 | 3.5 | 0.7 | 28.5 | 4.8 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |
| 74 | 6.0 | 8.5 | 10.4 | 19.8 | 1.7 | 2.4 | 4.1 | 6.9 | 13.9 | 3.5 | 0.7 | 29.9 | 5.7 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |

**Note!** DuraCirc Uni-Fit is an option to meet port to port and port height dimensions of other major brands.

## DuraCirc standard dimensions

| Pump Model | A | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.0 | 4.1 | 4.5 | 8.7 | 0.5 | 0.9 | 1.7 | 3.2 | 5.9 | 1.3 | 0.2 | 13.0 | 2.0 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 33 | 1.5 | 4.1 | 4.5 | 8.7 | 0.5 | 0.9 | 1.7 | 3.2 | 5.9 | 1.3 | 0.2 | 13.2 | 2.0 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 34 | 2.0 | 4.1 | 4.5 | 8.7 | 0.5 | 0.9 | 1.7 | 3.2 | 5.9 | 1.3 | 0.2 | 13.9 | 2.4 | 4.9 | 3.9 | 1.0 | 5.5 | 5.9 | 4.9 | 0.5 |
| 42 | 2.0 | 4.9 | 5.2 | 10.3 | 0.4 | 1.1 | 2.2 | 3.5 | 6.9 | 1.6 | 0.3 | 16.3 | 2.8 | 5.5 | 4.9 | 0.6 | 6.2 | 7.3 | 6.1 | 0.6 |
| 43 | 2.0 | 4.9 | 5.2 | 10.3 | 0.4 | 1.1 | 2.2 | 3.5 | 6.9 | 1.6 | 0.3 | 16.6 | 3.2 | 5.5 | 4.9 | 0.6 | 6.2 | 7.3 | 6.1 | 0.6 |
| 52 | 2.0 | 5.9 | 6.4 | 12.8 | 0.7 | 1.5 | 2.6 | 4.2 | 8.7 | 2.5 | 0.4 | 18.6 | 3.3 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 53 | 2.5 | 5.9 | 6.4 | 12.8 | 0.7 | 1.5 | 2.6 | 4.2 | 8.7 | 2.5 | 0.4 | 19.1 | 3.5 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 54 | 3.0 | 6.3 | 6.4 | 12.8 | 0.7 | 1.5 | 2.6 | 4.2 | 8.7 | 2.5 | 0.4 | 20.2 | 4.4 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 62 | 3.0 | 7.3 | 7.9 | 15.7 | 0.8 | 1.8 | 3.3 | 4.9 | 10.8 | 2.8 | 0.6 | 23.1 | 4.6 | 7.8 | 6.3 | 1.0 | 8.8 | 9.8 | 8.5 | 0.6 |
| 63 | 4.0 | 7.3 | 7.9 | 15.7 | 0.8 | 1.8 | 3.3 | 4.9 | 10.8 | 2.8 | 0.6 | 23.9 | 4.9 | 7.8 | 6.3 | 1.0 | 8.8 | 9.8 | 8.5 | 0.6 |
| 72 | 4.0 | 8.0 | 9.5 | 18.9 | 0.9 | 2.4 | 4.1 | 6.0 | 13.0 | 3.5 | 0.7 | 27.6 | 4.3 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |
| 73 | 6.0 | 8.0 | 9.5 | 18.9 | 0.9 | 2.4 | 4.1 | 6.0 | 13.0 | 3.5 | 0.7 | 28.5 | 4.8 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |
| 74 | 6.0 | 8.0 | 9.5 | 18.9 | 0.9 | 2.4 | 4.1 | 6.0 | 13.0 | 3.5 | 0.7 | 29.9 | 5.7 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |

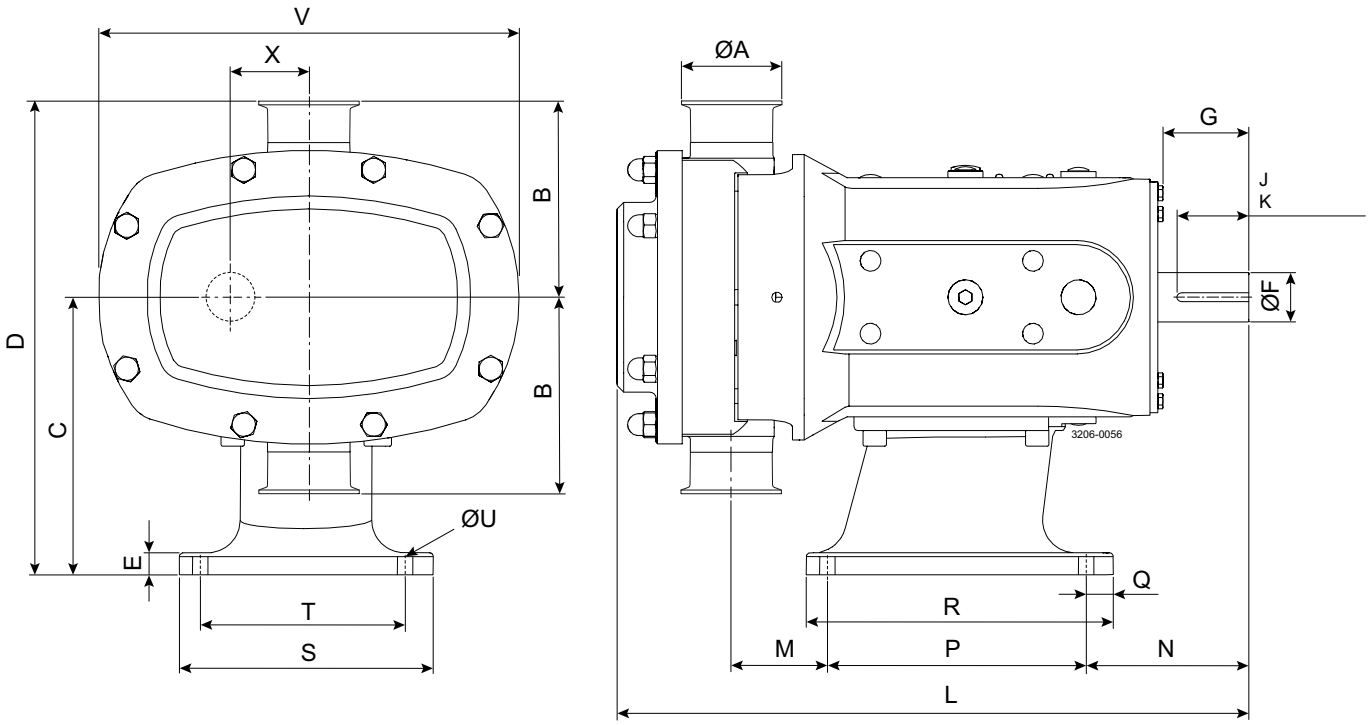



**Figure 2. Vertically ported**

ØU = 4 Holes

J = Key Length

K = Key Width

## DuraCirc standard dimensions

| Pump Model | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32 | 1.0 | 4.1 | 5.8 | 9.9 | 0.5 | 0.9 | 1.7 | 1.3 | 0.2 | 13.0 | 2.0 | 4.9 | 4.0 | 1.6 | 6.3 | 5.1 | 4.0 | 0.5 | 8.0 | 1.3 |
| 33 | 1.5 | 4.1 | 5.8 | 9.9 | 0.5 | 0.9 | 1.7 | 1.3 | 0.2 | 13.2 | 2.0 | 4.9 | 4.0 | 1.6 | 6.3 | 5.1 | 4.0 | 0.5 | 8.0 | 1.3 |
| 34 | 2.0 | 4.1 | 5.8 | 9.9 | 0.5 | 0.9 | 1.7 | 1.3 | 0.2 | 13.9 | 2.4 | 4.9 | 4.0 | 1.6 | 6.3 | 5.1 | 4.0 | 0.5 | 8.0 | 1.3 |
| 42 | 2.0 | 4.9 | 6.9 | 11.8 | 0.6 | 1.1 | 2.2 | 1.6 | 0.3 | 16.3 | 2.0 | 5.1 | 6.1 | 1.9 | 8.7 | 6.3 | 4.9 | 0.6 | 10.0 | 1.7 |
| 43 | 2.0 | 4.9 | 6.9 | 11.8 | 0.6 | 1.1 | 2.2 | 1.6 | 0.3 | 16.6 | 2.4 | 5.1 | 6.1 | 1.9 | 8.7 | 6.3 | 4.9 | 0.6 | 10.0 | 1.7 |
| 52 | 2.0 | 5.9 | 8.4 | 14.3 | 0.7 | 1.5 | 2.6 | 2.5 | 0.4 | 18.6 | 2.4 | 5.2 | 7.9 | 0.7 | 9.1 | 7.5 | 5.9 | 0.6 | 12.8 | 2.2 |
| 53 | 2.5 | 5.9 | 8.4 | 14.3 | 0.7 | 1.5 | 2.6 | 2.5 | 0.4 | 19.1 | 2.6 | 5.2 | 7.9 | 0.7 | 9.1 | 7.5 | 5.9 | 0.6 | 12.8 | 2.2 |
| 54 | 3.0 | 6.3 | 8.4 | 14.6 | 0.7 | 1.5 | 2.6 | 2.5 | 0.4 | 20.2 | 3.5 | 5.2 | 7.9 | 0.7 | 9.1 | 7.5 | 5.9 | 0.6 | 12.8 | 2.2 |
| 62 | 3.0 | 7.3 | 10.1 | 17.4 | 0.7 | 1.8 | 3.3 | 2.8 | 0.6 | 23.1 | 3.3 | 192 | 7.9 | 1.7 | 10.2 | 8.7 | 7.1 | 0.6 | 15.6 | 3.0 |
| 63 | 4.0 | 7.3 | 10.1 | 17.4 | 0.7 | 1.8 | 3.3 | 2.8 | 0.6 | 23.9 | 3.6 | 192 | 7.9 | 1.7 | 10.2 | 8.7 | 7.1 | 0.6 | 15.6 | 3.0 |

| Pump Model | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 72 | 4.0 | 8.0 | 11.6 | 19.6 | 0.8 | 2.4 | 4.1 | 3.5 | 0.7 | 27.6 | 3.8 | 8.4 | 10.2 | 1.2 | 12.2 | 9.8 | 8.3 | 0.6 | 18.7 | 3.5 |
| 73 | 6.0 | 8.0 | 11.6 | 19.6 | 0.8 | 2.4 | 4.1 | 3.5 | 0.7 | 28.5 | 4.3 | 8.4 | 10.2 | 1.2 | 12.2 | 9.8 | 8.3 | 0.6 | 18.7 | 3.5 |
| 74 | 6.0 | 8.0 | 11.6 | 19.6 | 0.8 | 2.4 | 4.1 | 3.5 | 0.7 | 29.9 | 5.2 | 8.4 | 10.2 | 1.2 | 12.2 | 9.8 | 8.3 | 0.6 | 18.7 | 3.5 |

## Options

- Silicon Carbide/Silicon Carbide mechanical seal faces.
- Single mechanical shaft seal with flush.
- Double mechanical shaft seal.
- EDPM or FPM O-ring seal, single and flushed.
- Product wetted elastomers in FPM or FFPM.
- High efficiency Hi-Flow rotor.
- Horizontal or vertical porting.
- Heating and cooling jacket.
- Rectangular inlet.
- Aseptic option (see separate data sheet)
- Stainless steel shroud covering coupling and motor.
- Baseplate fitted with adjustable stainless steel ball feet.

## Pump sizing

In order to correctly size a circumferential piston pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

Product/Fluid Data

- Fluid to be pumped
- Viscosity
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

# Alfa Laval DuraCirc Aseptic

## Circumferential Piston Pump

### Introduction

The Alfa Laval DuraCirc Aseptic delivers the perfect balance of durability, reliability, high efficiency and superior hygienic performance. Combined with design features enabling simple service, the DuraCirc Aseptic keeps process running. In additional to a class leading range of flow and pressure capabilities and globally recognized hygienic certification, DuraCirc Aseptic specification allows for a sterile environment to be maintained within the pump. The innovative design also includes features that make cleaning and maintenance faster, easier and more dependable.

### Applications

Designed for sterile flushing at all product media to atmosphere interfaces, as well as Cleaning-in-Place (CIP), the Alfa Laval DuraCirc Aseptic is ideal for aseptic processing within the dairy, food, beverage, home and personal care industries. The highly efficient design is particularly suited to applications that are low in viscosity with medium to high discharge pressures and require equipment that can be cleaned in place.

The DuraCirc Aseptic Circumferential Piston Pump is available with 5 different pump head displacements to handle flow rates up to 453 US gpm and differential pressures up to 25 bar.

### Benefits

- Ability to introduce steam barrier on all media/atmosphere interfaces - front cover, ports and mechanical seals, allows for sterile pump operation.
- High volumetric efficiency performance allowing for optimized pump selection, reducing capital cost, whilst improving process yield.
- Certified to both EHEDG and 3A, reducing both process cross contamination risk and CIP cycle time, maintaining process yield whilst cutting cleaning costs.

- Full component interchangeability without complicated maintenance procedures, long life bearing operation and one single long-life lubricant making service faster and easier, increasing process uptime.
- Robust, durable design via strong gearcase incorporating increased diameter shafts and optimally positioned heavy-duty bearings, minimizes risk of pump head contact, reducing service requirement, maintaining process continuity.

### Standard design

Twin-wing Hi-Life piston rotors made of special non-galling alloy are standard. All other media contacting steel components, like the rotor case, front cover and rotor nuts are in W. 1.4404 (AISI 316L). With stainless steel gear case and feet, the DuraCirc pump has an all stainless steel exterior, making it exceptional corrosion resistant.

The gearbox is as standard designed with duplex shafts and a strong, long life bearing arrangement. This provides for a very

robust and rigid shaft assembly design – a prerequisite for the very high volumetric efficiency achieved.

With profiled defined compression elastomers and an optimised shaft seal location, the DuraCirc is designed according to the most stringent hygienic design standards and with verified and effective CIP cleanability.

The pump features a double mechanical seal prepared for sterile flushing. Furthermore, with special double sealing designs the pump is prepared for sterile flushing at the port connections and in the front cover.

The Alfa Laval DuraCirc Aseptic can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

## Working principle

The rotor pistons rotate around the circumference of the channel in the pump casing. This continuously generates a partial vacuum at the suction port as the rotors unmesh, causing fluid to enter the pump. The fluid is transported around the channel by the rotor pistons, and is displaced as the rotor pistons re-mesh, generating pressure at the discharge port. The direction of flow is reversible.

Authorized to carry the 3A symbol

## Technical data

| Standard specification | |
|---|---|
| Piston rotors: | DuraCirc Hi-Life, Non-Galling Alloy |
| Other product wetted steel parts: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 0.8 |
| Shafts: | Duplex 1.4460 (329) |
| Gear box: | Stainless steel |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Product wetted elastomers: | EPDM |
| Other elastomers: | FPM |
| Shaft seal: | Double mechanical |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Silicon Carbide |

| Shaft seals | |
|---|---|
| Max flush pressure, double mechanical seal: | 290 PSI |
| Max flush pressure, port connections and front cover: | 58 PSI |
| Flush connections, DuraCirc 32-43: | NPT 1/8" |
| Flush connections, DuraCirc 52-74: | NPT 1/4" |
| Flush connections, port connections and front cover: | BSP/G 1/8" or NPT 1/8" |

| Temperature | |
|---|---|
| Max process and CIP temperature: | 302°F |

| Motors |
|---|
| Gear motor, 4 poles, to Nema standard, premium efficiency, suitable for frequency conversion. |

| Warranty |
|---|
| Extended 3-years warranty on DuraCirc pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

## Process data

| Pump Model | Displacement | | | Inlet/Outlet | | Diff. Pressure | | Max speed |
|---|---|---|---|---|---|---|---|---|
| | Litres/rev | Imp gall/100 rev | US gall/100 rev | mm | inch | Bar | PSI | rpm |
| 42 | 0,23 | 5.06 | 6.07 | 50 | 2 | 20 | 290 | 750 |
| 53 | 0,59 | 12.97 | 15.57 | 65 | 2½ | 25 | 362 | 750 |
| 54 | 0,96 | 21.12 | 25.3 | 80 | 3 | 16 | 232 | 750 |
| 63 | 1,97 | 43.33 | 52.03 | 100 | 4 | 25 | 362 | 600 |
| 73 | 2,86 | 62.91 | 75.55 | 150 | 6 | 25 | 362 | 600 |

## Dimensions

(inch)

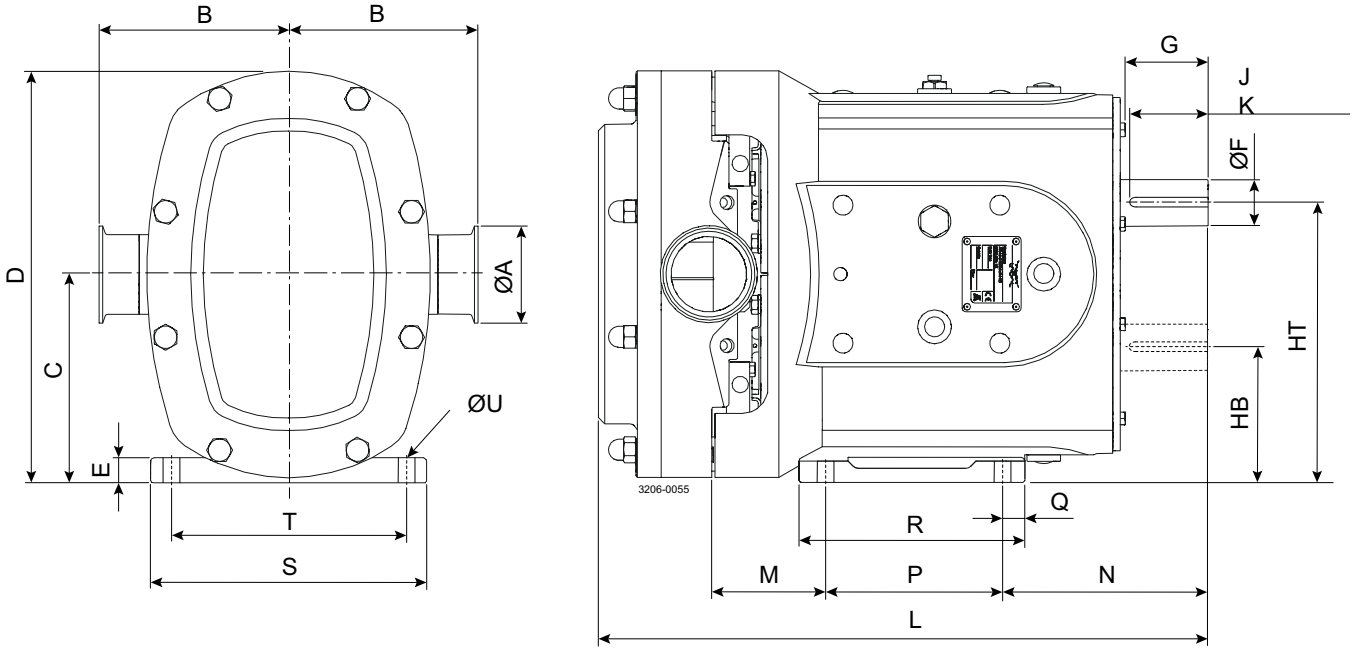



**Figure 1. Horizontally ported**

ØU = 4 Holes

J = Key Length

K = Key Width

| Pump Model | A | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 2.0 | 4.9 | 5.2 | 10.3 | 0.4 | 1.1 | 2.2 | 3.5 | 6.9 | 1.6 | 0.3 | 16.3 | 2.8 | 5.5 | 4.9 | 0.6 | 6.2 | 7.3 | 6.1 | 0.6 |
| 53 | 2.5 | 5.9 | 6.4 | 12.8 | 0.7 | 1.5 | 2.6 | 4.2 | 8.7 | 2.5 | 0.4 | 19.1 | 3.5 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 54 | 3.0 | 6.3 | 6.4 | 12.8 | 0.7 | 1.5 | 2.6 | 4.2 | 8.7 | 2.5 | 0.4 | 20.2 | 4.4 | 6.6 | 5.5 | 0.9 | 7.1 | 8.7 | 7.5 | 0.6 |
| 63 | 4.0 | 7.3 | 7.9 | 15.7 | 0.8 | 1.8 | 3.3 | 4.9 | 10.8 | 2.8 | 0.6 | 23.9 | 4.9 | 7.8 | 6.3 | 1.0 | 8.8 | 9.8 | 8.5 | 0.6 |
| 73 | 6.0 | 8.0 | 9.5 | 18.9 | 0.9 | 2.4 | 4.1 | 6.0 | 13.0 | 3.5 | 0.7 | 28.5 | 4.8 | 9.7 | 8.5 | 0.8 | 10.9 | 11.0 | 9.7 | 0.6 |

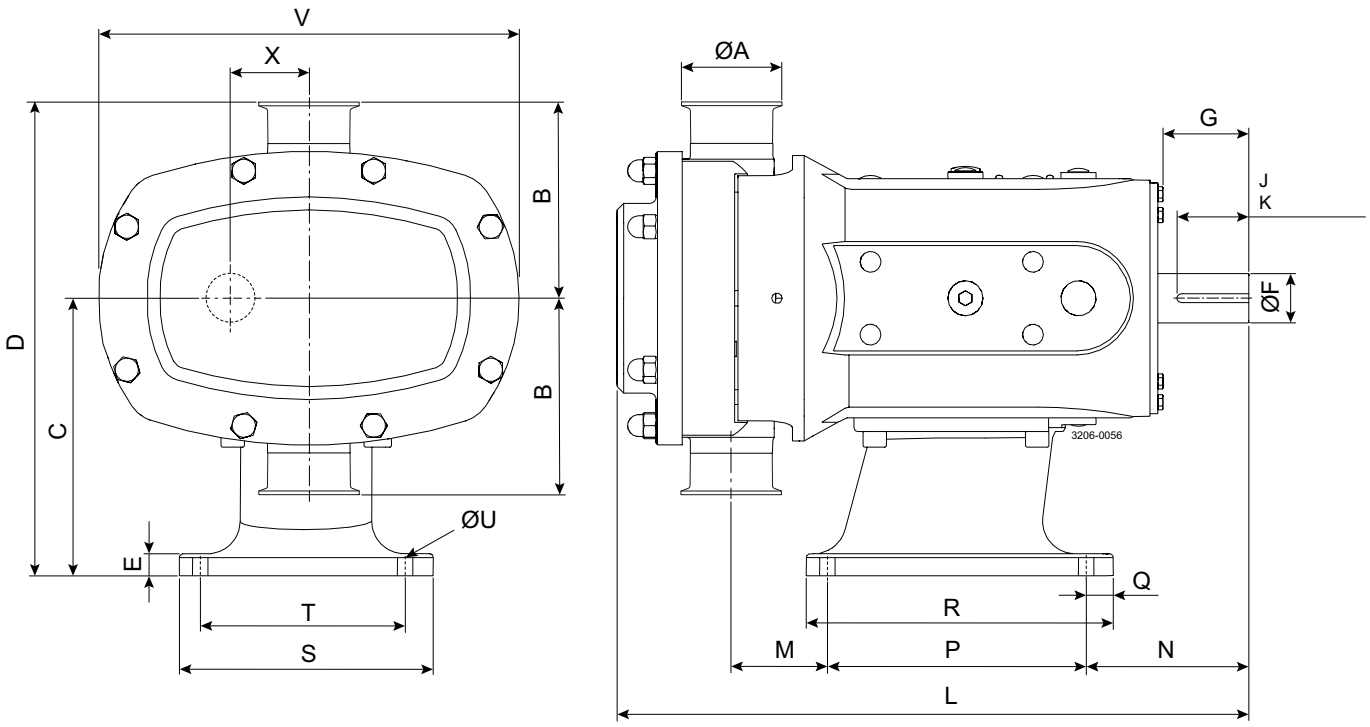



**Figure 2. Vertically ported**

ØU = 4 Holes

J = Key Length

K = Key Width

| Pump Model | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42 | 2.0 | 4.9 | 6.9 | 11.8 | 0.6 | 1.1 | 2.2 | 1.6 | 0.3 | 16.3 | 2.0 | 5.1 | 6.1 | 1.9 | 8.7 | 6.3 | 4.9 | 0.6 | 10.0 | 1.7 |
| 53 | 2.5 | 5.9 | 8.4 | 14.3 | 0.7 | 1.5 | 2.6 | 2.5 | 0.4 | 19.1 | 2.6 | 5.2 | 7.9 | 0.7 | 9.1 | 7.5 | 5.9 | 0.6 | 12.8 | 2.2 |
| 54 | 3.0 | 6.3 | 8.4 | 14.6 | 0.7 | 1.5 | 2.6 | 2.5 | 0.4 | 20.2 | 3.5 | 5.2 | 7.9 | 0.7 | 9.1 | 7.5 | 5.9 | 0.6 | 12.8 | 2.2 |
| 63 | 4.0 | 7.3 | 10.1 | 17.4 | 0.7 | 1.8 | 3.3 | 2.8 | 0.6 | 23.9 | 3.6 | 192 | 7.9 | 1.7 | 10.2 | 8.7 | 7.1 | 0.6 | 15.6 | 3.0 |
| 73 | 6.0 | 8.0 | 11.6 | 19.6 | 0.8 | 2.4 | 4.1 | 3.5 | 0.7 | 28.5 | 4.3 | 8.4 | 10.2 | 1.2 | 12.2 | 9.8 | 8.3 | 0.6 | 18.7 | 3.5 |

## Options

- Product wetted elastomers in FPM
- High efficiency Hi-Flow rotor.
- Horizontal or vertical porting.
- Heating and cooling jacket.
- Stainless steel shroud covering coupling and motor.
- Baseplate fitted with adjustable stainless steel ball feet.

## Pump sizing

In order to correctly size a circumferential piston pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

Product/Fluid Data

- Fluid to be pumped
- Viscosity
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

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# Rotary lobe pumps

# Alfa Laval OptiLobe

## Rotary lobe pumps

### Introduction

The Alfa Laval OptiLobe Rotary Lobe Pump is a cost-effective alternative for general applications that require gentle product treatment and easy serviceability. Versatile, dependable and energy efficient, this hygienic positive displacement pump enhances both process flexibility and operational reliability.

The pump is designed according to the most stringent hygienic design standards and with verified, effective Cleaning-in-Place.

### Applications

The OptiLobe Rotary Lobe Pump is designed for gentle product treatment in general applications across the dairy, food, beverage, home and personal care industries.

The OptiLobe pump is available with 10 different pump head displacements based on five different gearbox modules to handle flow rates up to 77 $m^3$/h and differential pressures up to 8 bar.

### Benefits

- Cost-effective, hygienic pump.
- Optimal product quality due to gentle, low-shear operation.
- Robust design for long service life.
- Easy maintenance due to self-setting, front-loading seals.
- Low total cost of ownership.

### Standard design

All media contacting steel components, like the rotor case, front cover, rotors and rotor nuts, are in W. 1.4404 (AISI 316L). With stainless steel bearing housing, canister and feet, the OptiLobe pump has an all stainless steel exterior, making it corrosion resistant.

The pump features the Alfa Laval EasyFit front-loading seal, which allows quick and easy inspection or replacement without the need to disassemble pipework. Single and single-flushed shaft seals are available as options.

The Alfa Laval OptiLobe can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

### Working principle

A gear train in the pump gearbox drives the rotors and provides accurate synchronization of the tri-lobe rotors. The movement of the counter-rotating rotors creates a partial vacuum that allows atmospheric pressure or other external pressures to force fluid into the pump chamber. As the rotors revolve, an expanding cavity forms, filling with fluid. As the blades disengage, each dwell forms a cavity. As the rotor blades engage, the cavity diminishes and fluid is displaced into the outlet port.

### Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Standard specification | |
|---|---|
| Product wetted steel parts: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 31 |
| Gear canister: | Stainless steel |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Rotor: | Tri-lobe |
| Product wetted elastomers: | EPDM |
| Other elastomers: | NBR |
| Shaft seal: | Single mechanical EasyFit |
| Rotary seal face: | Carbon |
| Stationary seal face: | Stainless steel |

| Shaft seals | |
|---|---|
| EasyFit single and single flush available. All options are fully front loading and interchangeable. | |
| Max flush pressure, single flush: | 7 psi |
| Water consumption, single flush: | 8 gph |
| Flush connections: | BSPT or NPT |

| Temperature | |
|---|---|
| Max process and CIP temperature (dependent on rotor selection) | 266°F |

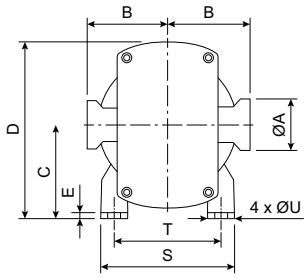
| Motors |
|---|
| Gear motor, 4 poles, to NEMA standard, premium efficiency, suitable for frequency conversion. |

| Warranty |
|---|
| Extended 3-years warranty on OptiLobe pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

## Process data

| | Displacement | | | Inlet/Outlet | | Diff. Pressure | | Max Speed |
|---|---|---|---|---|---|---|---|---|
| | Litres/ rev | Imp gall/ 100 rev | US gall/ 100 rev | mm | inch | bar | psi | rpm |
| OptiLobe 12 | 0.06 | 1.23 | 1.48 | 25 | 1 | 8 | 115 | 1000 |
| OptiLobe 13 | 0.10 | 2.18 | 2.61 | 40 | 1.5 | 8 | 115 | 1000 |
| OptiLobe 22 | 0.17 | 3.74 | 4.49 | 40 | 1.5 | 8 | 115 | 1000 |
| OptiLobe 23 | 0.21 | 4.62 | 5.55 | 40 | 1.5 | 8 | 115 | 1000 |
| OptiLobe 32 | 0.32 | 7.04 | 8.45 | 50 | 2 | 8 | 115 | 1000 |
| OptiLobe 33 | 0.40 | 8.80 | 10.57 | 50 | 2 | 8 | 115 | 1000 |
| OptiLobe 42 | 0.64 | 14.08 | 16.91 | 65 | 2.5 | 8 | 115 | 1000 |
| OptiLobe 43 | 0.82 | 18.04 | 21.66 | 80 | 3 | 8 | 115 | 1000 |
| OptiLobe 52 | 1.17 | 25.74 | 30.89 | 80 | 3 | 8 | 115 | 750 |
| OptiLobe 53 | 1.72 | 37.84 | 45.41 | 100 | 4 | 8 | 115 | 750 |

## Dimensions (inch)



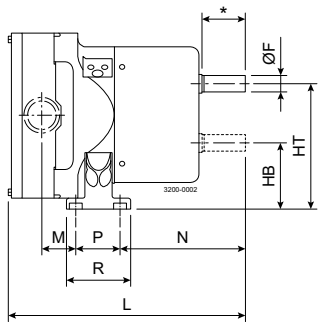
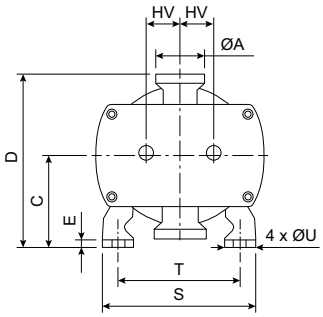




Figure 1. Horizontally Ported



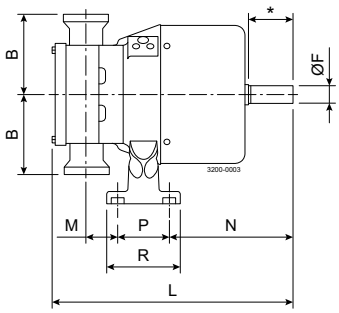




Figure 2. Vertically Ported

* Shaft length G; Key width K; Key length J.

| | Pump Model | A (FLANGE <O>) | B (Port Width Dim) | C (Port Height Dim) | D (Overall Height) | E (Foot Thickness) | F (Shaft <O>) | G (Shaft Length) | HB (Btm Shaft Height) | HT (Top Shaft Height) | HV (SHAFT OFFSET) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 12 | 0.98 | 3.39 | 3.74 | 6.73 | 0.45 | 0.63 | 1.57 | 2.68 | 4.80 | 1.06 |
| | 13 | 1.57 | 3.39 | 3.74 | 6.73 | 0.45 | 0.63 | 1.57 | 2.68 | 4.80 | 1.06 |
| 20 | 22 | 1.57 | 3.78 | 4.72 | 8.48 | 0.57 | 0.79 | 1.97 | 3.31 | 6.14 | 1.42 |
| | 23 | 1.57 | 3.78 | 4.72 | 8.48 | 0.57 | 0.79 | 1.97 | 3.31 | 6.14 | 1.42 |
| 30 | 32 | 1.97 | 4.72 | 5.35 | 9.88 | 0.57 | 0.94 | 1.99 | 3.62 | 7.09 | 1.73 |
| | 33 | 1.97 | 4.72 | 5.35 | 9.88 | 0.57 | 0.94 | 1.99 | 3.62 | 7.09 | 1.73 |
| 40 | 42 | 2.56 | 5.12 | 6.26 | 11.57 | 0.77 | 1.18 | 2.20 | 4.17 | 8.35 | 2.09 |
| | 43 | 3.15 | 5.43 | 6.26 | 11.57 | 0.77 | 1.18 | 2.20 | 4.17 | 8.35 | 2.09 |
| 50 | 52 | 3.15 | 6.38 | 7.72 | 14.41 | 0.81 | 1.77 | 3.52 | 5.20 | 10.24 | 2.52 |
| | 53 | 3.94 | 6.38 | 7.72 | 14.41 | 0.81 | 1.77 | 3.52 | 5.20 | 10.24 | 2.52 |

| | Pump Model | J (Key Length) | K (Key Width) | L (Overall Length) | M (Front Bolt Hole to Port) | N (Back Bolt Hole to End of Shaft) | P (Bolt Hole Length) | R (Foot Length) | S (Foot Width) | T (Bolt Hole Width) | U (Bolt Hole <O>) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 12 | 1.18 | 0.20 | 9.07 | 1.08 | 4.23 | 2.36 | 3.31 | 4.96 | 3.70 | 0.39 |
| | 13 | 1.18 | 0.20 | 9.59 | 1.36 | 4.23 | 2.36 | 3.31 | 4.96 | 3.70 | 0.39 |
| 20 | 22 | 1.26 | 0.26 | 10.91 | 1.38 | 5.49 | 2.36 | 3.54 | 6.38 | 4.88 | 0.47 |
| | 23 | 1.26 | 0.26 | 11.26 | 1.73 | 5.49 | 2.36 | 3.54 | 6.38 | 4.88 | 0.47 |
| 30 | 32 | 1.57 | 0.31 | 11.97 | 1.38 | 6.18 | 2.52 | 3.74 | 7.56 | 5.91 | 0.47 |
| | 33 | 1.57 | 0.31 | 12.44 | 1.85 | 6.18 | 2.52 | 3.74 | 7.56 | 5.91 | 0.47 |
| 40 | 42 | 1.57 | 0.31 | 14.61 | 2.02 | 6.34 | 3.94 | 5.71 | 9.25 | 7.09 | 0.55 |
| | 43 | 1.57 | 0.31 | 15.24 | 2.38 | 6.34 | 3.94 | 5.71 | 9.25 | 7.09 | 0.55 |
| 50 | 52 | 2.76 | 0.55 | 16.08 | 2.44 | 4.80 | 4.72 | 6.69 | 11.22 | 8.27 | 0.55 |
| | 53 | 2.76 | 0.55 | 20.02 | 3.13 | 4.80 | 4.72 | 6.69 | 11.22 | 8.27 | 0.55 |

## Options

- Single mechanical shaft seal with flush.
- Silicon Carbide/Carbon seal faces.
- Silicon Carbide/Silicon Carbide seal faces.
- Product wetted elastomers in FPM.
- Heating and cooling front cover.
- Horizontal or vertical porting.
- Stainless steel shroud covering coupling and motor.
- Baseplate fitted with adjustable stainless steel ball feet.

## Pump sizing

In order to correctly size a rotary lobe pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

Product/Fluid Data

- Fluid to be pumped
- Viscosity
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

# Alfa Laval SRU

## Rotary lobe pump

### Introduction

The Alfa Laval SRU Rotary Lobe Pump is a reliable positive displacement pump for the gentle handling of sensitive process fluids. The pump is carefully engineered to provide reliable performance, trouble-free operation and superior energy efficiency for demanding applications. It is an excellent choice for duties that require contamination-proof pumps to meet high standards of hygiene, low-shear and low-pulsation operation.

The pump is designed according to the most stringent hygienic design standards and with verified, effective Cleaning-in-Place.

### Applications

The SRU Rotary Lobe Pump is designed for gentle handling of sensitive process fluids across the dairy, food, beverage, brewing, chemical, pharmaceutical, and home and personal care industries.

Its smooth, low-shear pumping action makes the pump suitable for handling media of varying viscosities, whether low or high- from creams, gels, emulsions, and aerated mixtures to delicate cells and organic solids in suspension.

The SRU Rotary Lobe Pump is available with 12 different pump head displacements based on six different gearbox modules to handle flow rates up to 106 $m^3/h$ and differential pressures up to 20 bar.

### Benefits

- Consistent performance.
- Minimal risk of contamination.
- Low maintenance, increased process uptime.
- Modular design for greater flexibility to configure exactly the right solution for specific process requirements.

### Standard design

All media contacting steel components, like the rotor case, front cover, rotors and rotor nuts, are in W. 1.4404 (AISI 316L). The robust cast iron gearbox provides maximum shaft rigidity and easy oil seal replacement. The gearbox design is universal, which enables the flexibility of mounting pumps with the inlet and outlet ports in either a vertical or horizontal plane by changing the foot and its position.

The standard Alfa Laval SRU Rotary Lobe Pump has tri-lobe rotors. Optional bi-lobe rotors for handling fluids containing large delicate solids are available. All rotors are available in three temperature ratings enabling the pump to be operated at maximum process temperatures of 158°F, 266°F and 392°F for both fluid pumped and CIP.

Single, single flushed, and double mechanical shaft seals as well as packed gland, unflushed or flushed, are available.

The Alfa Laval SRU can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

### Working principle

A gear train in the pump gearbox drives the rotors and provides accurate synchronization of the tri-lobe rotors. The movement of the counter-rotating rotors creates a partial vacuum that allows atmospheric pressure or other external pressures to force fluid into the pump chamber. As the rotors revolve, an expanding

cavity forms, filling with fluid. As the blades disengage, each dwell forms a cavity. As the rotor blades engage, the cavity diminishes and fluid is displaced into the outlet port.

## TECHNICAL DATA

| Standard specification | |
|---|---|
| Product wetted steel parts: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 31 |
| Gearbox: | Cast iron |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Rotor: | Tri-lobe, 158°F |
| Product wetted elastomers: | EPDM |
| Other elastomers: | NBR |
| Shaft seal: | Single mechanical (R90) |
| Rotary seal face: | Carbon |
| Stationary seal face: | Stainless steel |

| Shaft seals | |
|---|---|
| Single, single flush, double mechanical and packed gland, flushed and unflushed, available. For EHEDG compliance Hyclean type must be used. | |
| Max flush pressure, single flush: | 7 psi |
| Max flush pressure, double mechanical: | 1 bar over product pressure |
| Max flush pressure, packed gland, flushed: | 1 bar over product pressure |
| Water consumption, flushed or double mechanical: | 0.13 gallon/min |
| Flush connections: | BSPT or NPT |

| Temperature | |
|---|---|
| Max process and CIP temperature (dependent on rotor selection) | 158°F , 266°F or 392°F |

| Motor |
|---|
| Gear motor, 4 poles, to IEC metric standard, 50/60 Hz, suitable for frequency conversion, IP55, insulation class F. |

| Warranty |
|---|
| Extended 3-years warranty on SRU pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

## Flows/Pressures/Connections

| SRU Series | Build Selection | | | SRU Model | Displacement | | | Inlet and Outlet Connection Size | | | | Differential Pressure (see note 1) | | Maximum Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pump Head Code | Gear-box | Shaft | | Litres/rev | Imp gall/ 100 rev | US gall/ 100 rev | Hygienic | | Enlarged | | bar | psi | rev/min |
| | | | | | | | | mm | in | mm | in | | | |
| 1 | 005 | L or H | D | SRU1NLD | 0.053 | 1.17 | 1.4 | 25 | 1 | - | - | 8 | 115 | 1000 |
| | 008 | L or H | D | SRU1WLD | 0.085 | 1.87 | 2.25 | 25 | 1 | 40 | 1.5 | 5 | 75 | 1000 |
| 2 | 013 | L or H | S | SRU2NLS | 0.128 | 2.82 | 3.38 | 25 | 1 | 40 | 1.5 | 10 | 145 | 1000 |
| | 013 | L or H | D | SRU2NLD | 0.128 | 2.82 | 3.38 | 25 | 1 | 40 | 1.5 | 15 | 215 | 1000 |
| | 018 | L or H | S | SRU2WLS | 0.181 | 3.98 | 4.78 | 40 | 1.5 | 50 | 2 | 7 | 100 | 1000 |
| | 018 | L or H | D | SRU2WLD | 0.181 | 3.98 | 4.78 | 40 | 1.5 | 50 | 2 | 10 | 145 | 1000 |
| 3 | 027 | L or H | S | SRU3NLS | 0.266 | 5.85 | 7.03 | 40 | 1.5 | 50 | 2 | 10 | 145 | 1000 |
| | 027 | L or H | D | SRU3NLD | 0.266 | 5.85 | 7.03 | 40 | 1.5 | 50 | 2 | 15 | 215 | 1000 |
| | 038 | L or H | S | SRU3WLS | 0.384 | 8.45 | 10.15 | 50 | 2 | 65 | 2.5 | 7 | 100 | 1000 |
| | 038 | L or H | D | SRU3WLD | 0.384 | 8.45 | 10.15 | 50 | 2 | 65 | 2.5 | 10 | 145 | 1000 |
| 4 | 055 | L or H | S | SRU4NLS | 0.554 | 12.19 | 14.64 | 50 | 2 | 65 | 2.5 | 10 | 145 | 1000 |
| | 055 | L or H | D | SRU4NLD | 0.554 | 12.19 | 14.64 | 50 | 2 | 65 | 2.5 | 20 | 290 | 1000 |
| | 079 | L or H | S | SRU4WLS | 0.79 | 17.38 | 20.87 | 65 | 2.5 | 80 | 3 | 7 | 100 | 1000 |
| | 079 | L or H | D | SRU4WLD | 0.79 | 17.38 | 20.87 | 65 | 2.5 | 80 | 3 | 15 | 215 | 1000 |
| 5 | 116 | L or H | S | SRU5NLS | 1.16 | 25.52 | 30.65 | 65 | 2.5 | 80 | 3 | 10 | 145 | 600 |
| | 116 | L or H | D | SRU5NLD | 1.16 | 25.52 | 30.65 | 65 | 2.5 | 80 | 3 | 20 | 290 | 600 |
| | 168 | L or H | S | SRU5WLS | 1.68 | 36.95 | 44.39 | 80 | 3 | 100 | 4 | 7 | 100 | 600 |
| | 168 | L or H | D | SRU5WLD | 1.68 | 36.95 | 44.39 | 80 | 3 | 100 | 4 | 15 | 215 | 600 |

| SRU Series | Build Selection | | | SRU Model | Displacement | | | Inlet and Outlet Connection Size | | | | Differential Pressure (see note 1) | | Maximum Speed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pump Head Code | Gear-box | Shaft | | Litres/rev | Imp gall/ 100 rev | US gall/ 100 rev | Hygienic | | Enlarged | | bar | psi | rev/min |
| | | | | | | | | mm | in | mm | in | | | |
| 6 | 260 | L or H | S | SRU6NLS | 2.60 | 57.20 | 68.70 | 100 | 4 | 100 | 4 | 10 | 145 | 600 |
| | 260 | L or H | D | SRU6NLD | 2.60 | 57.20 | 68.70 | 100 | 4 | 100 | 4 | 20 | 290 | 600 |
| | 353 | L or H | S | SRU6WLS | 3.53 | 77.65 | 93.26 | 100 | 4 | 150 | 6 | 7 | 100 | 600 |
| | 353 | L or H | D | SRU6WLD | 3.53 | 77.65 | 93.26 | 100 | 4 | 150 | 6 | 15 | 215 | 600 |

L - Horizontal Porting
H - Vertical Porting
S - Stainless Steel
D - Duplex Stainless Steel

**Note 1. These pressure ratings may vary for pumps with certain threaded connections.**

## Maximum Solid Size Capability

| | Max. size of spherical solids | | | |
|---|---|---|---|---|
| | Bi-lobe rotors | | Tri-lobe rotors | |
| | mm | in | mm | in |
| SRU1/005 | 8 | 0.31 | 6 | 0.24 |
| SRU1/008 | 8 | 0.31 | 6 | 0.24 |
| SRU2/013 | 8 | 0.31 | 6 | 0.24 |
| SRU2/018 | 13 | 0.51 | 9 | 0.35 |
| SRU3/027 | 13 | 0.51 | 9 | 0.35 |
| SRU3/038 | 16 | 0.63 | 11 | 0.43 |
| SRU4/055 | 16 | 0.63 | 11 | 0.43 |
| SRU4/079 | 22 | 0.87 | 15 | 0.59 |
| SRU5/116 | 22 | 0.87 | 15 | 0.59 |
| SRU5/168 | 27 | 1.06 | 18 | 0.71 |
| SRU6/260 | 27 | 1.06 | 18 | 0.71 |
| SRU6/353 | 37 | 1.46 | 24 | 0.94 |

## Weight

| | Bare Shaft Pump (lbs) | |
|---|---|---|
| | Horizontal porting | Vertical porting |
| SRU1N | 37 | 39 |
| SRU1W | 41 | 44 |
| SRU2N | 66 | 70 |
| SRU2W | 68 | 72 |
| SRU3N | 121 | 127 |
| SRU3W | 127 | 134 |
| SRU4N | 242 | 256 |
| SRU4W | 254 | 267 |
| SRU5N | 326 | 408 |
| SRU5W | 344 | 425 |
| SRU6N | 503 | 573 |
| SRU6W | 514 | 584 |

## Shaft Seal Options

- Single or single flush/quench. R90 or Hyclean type mechanical seals.
- Double R90 type mechanical seal for flush (steam barrier for aseptic application).
- Packed gland (unflushed or flushed versions).

**Note!** EHEDG compliance only for Hyclean type mechanical seals.

## Materials for Mechanical Seals

Carbon/Stainless steel, Tungsten Carbide/Tungsten Carbide, Silicon Carbide/Silicon Carbide or variations of these materials to suit fluid being pumped and/or application requirements. (N.B. Material variants are not available on all R90/Hyclean seal types).

## Pump Sizing

In order to correctly size a rotary lobe pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

## Product/Fluid Data

- Fluid to be pumped
- Viscosity
- SG/Density
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

## Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

## Standard Specification Options

- Tri-clamp inlet and outlet ports standard
- Specification of inlet and outlet ports (Screwed male to BSP, DIN11851, SMS. ISS/IDF, RJT, or Flanged to EN1092-1 B1 PN16, ASA/ANSI 150, BS10E and other standards).
- Rotorcase Cover with integral Pressure Relief Valve.
- Heating/Cooling Saddle Jackets for Rotorcase and Jacket for Rotorcase Cover (not available when relief valve fitted).
- Bi-lobe Rotors in stainless steel and non-galling alloy.
- Complete pump unit comprising: Pump + Baseplate (mild or stainless steel) + coupling with guard + Geared electric motor suitable for (or supplied with) frequency speed control or manual variable speed drive (advise motor enclosure and electrical supply).

## Dimensions (inch)

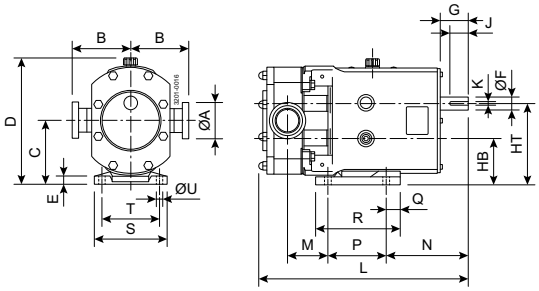



**Figure 1. Horizontally ported**

A1 — denotes hygienic port dimension

A2 — denotes enlarged port dimension

| PUMP | A1 | A2 | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SRU1N | 1.00 | - | 3.74 | 3.56 | 7.44 | 0.39 | 0.63 | 1.57 | 2.68 | 4.45 | 1.18 | 0.2 | 11.18 | 1.65 | 4.88 | 3.15 | 0.39 | 3.94 | 3.94 | 3.15 | 0.39 |
| SRU1W | 1.00 | 1.50 | 3.74 | 3.56 | 7.44 | 0.39 | 0.63 | 1.57 | 2.68 | 4.45 | 1.18 | 0.2 | 11.57 | 1.89 | 4.88 | 3.15 | 0.39 | 3.94 | 3.94 | 3.15 | 0.39 |
| SRU2N | 1.00 | 1.50 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.35 | 5.71 | 1.26 | 0.24 | 13.35 | 2.36 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SRU2W | 1.50 | 2.00 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.35 | 5.71 | 1.26 | 0.24 | 13.74 | 2.50 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SRU3N | 1.50 | 2.00 | 4.92 | 5.41 | 10.71 | 0.71 | 1.10 | 2.36 | 3.94 | 6.89 | 1.57 | 0.31 | 17.28 | 3.25 | 6.93 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SRU3W | 2.00 | 2.50 | 4.92 | 5.41 | 10.71 | 0.71 | 1.10 | 2.36 | 3.94 | 6.89 | 1.57 | 0.31 | 17.80 | 3.43 | 6.93 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SRU4N | 2.00 | 2.50 | 5.91 | 6.42 | 12.80 | 0.79 | 1.49 | 3.15 | 4.53 | 8.31 | 2.48 | 0.39 | 21.30 | 3.98 | 8.82 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SRU4W | 2.50 | 3.00 | 5.91 | 6.42 | 12.80 | 0.79 | 1.49 | 3.15 | 4.53 | 8.31 | 2.48 | 0.39 | 21.97 | 4.33 | 8.82 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SRU5N | 2.50 | 3.00 | 6.89 | 7.68 | 15.04 | 0.87 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 24.76 | 3.80 | 10.98 | 7.09 | 1.38 | 9.45 | 8.27 | 7.09 | 0.55 |
| SRU5W | 3.00 | 4.00 | 6.89 | 7.68 | 15.04 | 0.87 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 25.67 | 4.25 | 10.98 | 7.09 | 1.38 | 9.45 | 8.27 | 7.09 | 0.55 |
| SRU6N | 4.00 | - | 7.48 | 8.86 | 17.17 | 0.87 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 29.45 | 4.88 | 10.51 | 10.24 | 0.79 | 11.81 | 8.66 | 7.48 | 0.55 |
| SRU6W | 4.00 | 6.00 | 7.48 | 8.86 | 17.17 | 0.87 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 30.63 | 5.49 | 10.51 | 10.24 | 0.79 | 11.81 | 8.66 | 7.48 | 0.55 |

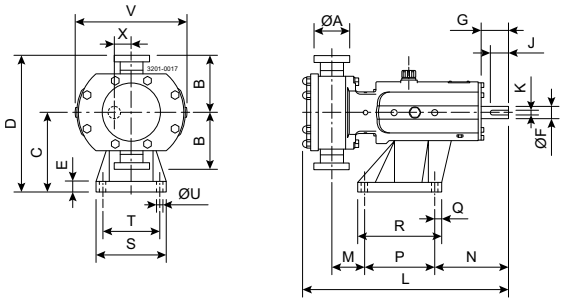



**Figure 2. Vertically ported**

A1 — denotes hygienic port dimension

A2 — denotes enlarged port dimension

| PUMP | A1 | A2 | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SRU1N | 1.00 | - | 3.74 | 4.45 | 8.19 | 0.59 | 16 | 1.57 | 1.18 | 5 | 11.18 | 1.93 | 4.61 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 6.85 | 0.89 |
| SRU1W | 1.00 | 1.50 | 3.74 | 4.45 | 8.19 | 0.59 | 16 | 1.57 | 1.18 | 5 | 11.57 | 2.17 | 4.61 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 6.85 | 0.89 |
| SRU2N | 1.00 | 1.50 | 4.13 | 5.79 | 9.92 | 0.63 | 22 | 1.97 | 1.26 | 6 | 13.35 | 2.64 | 4.88 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.39 | 1.18 |
| SRU2W | 1.50 | 2.00 | 4.13 | 5.79 | 9.92 | 0.63 | 22 | 1.97 | 1.26 | 6 | 13.74 | 2.78 | 4.88 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.39 | 1.18 |
| SRU3N | 1.50 | 2.00 | 4.92 | 6.89 | 11.81 | 0.87 | 28 | 2.36 | 1.57 | 8 | 17.28 | 2.66 | 6.34 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.69 | 1.48 |
| SRU3W | 2.00 | 2.50 | 4.92 | 6.89 | 11.81 | 0.87 | 28 | 2.36 | 1.57 | 8 | 17.80 | 2.83 | 6.34 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.69 | 1.48 |
| SRU4N | 2.00 | 2.50 | 5.91 | 8.39 | 14.29 | 0.98 | 38 | 3.15 | 2.48 | 10 | 12.30 | 3.07 | 7.76 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 11.85 | 1.89 |
| SRU4W | 2.50 | 3.00 | 5.91 | 8.39 | 14.29 | 0.98 | 38 | 3.15 | 2.48 | 10 | 21.97 | 3.43 | 7.76 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 11.85 | 1.89 |
| SRU5N | 2.50 | 3.00 | 6.89 | 10.12 | 17.01 | 1.06 | 45 | 4.33 | 2.76 | 14 | 24.76 | 3.60 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.82 | 2.36 |
| SRU5W | 3.00 | 4.00 | 6.89 | 10.12 | 17.01 | 1.06 | 45 | 4.33 | 2.76 | 14 | 25.67 | 4.05 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.82 | 2.36 |
| SRU6N | 4.00 | - | 7.48 | 11.61 | 19.09 | 1.06 | 48 | 4.33 | 2.76 | 14 | 29.45 | 4.88 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |
| SRU6W | 4.00 | 6.00 | 7.48 | 11.61 | 19.09 | 1.06 | 48 | 4.33 | 2.76 | 14 | 30.63 | 5.49 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |

# Alfa Laval SX

## Rotary lobe pumps

### Introduction

The Alfa Laval SX Rotary Lobe Pump is designed with optimized pump head geometry and multi-lobe rotors to ensure low-shear operation with minimum pulsation. This makes the SX the best choice for maintaining the integrity of delicate products.

The pump is designed according to the most stringent hygienic design standards and with verified, effective Cleaning-in-Place (CIP) and Sterilization-in-Place (SIP).

### Applications

The SX Rotary Lobe pump is designed for gentle transportation of process fluids in hygienic and ultra-clean applications in the biotechnology and pharmaceutical industries, in the home and personal care sector, and for demanding food applications.

The SX Rotary Lobe Pump is available with 14 different pump head displacements based on seven different gearbox modules to handle flow rates up to 115 $m^3$/h and differential pressures up to 15 bar.

### Benefits

- Low pulsation and very gentle pumping, making the pump ideal for sensitive products.
- Minimized shearing for protecting end-product quality.
- Low maintenance, increased process uptime.
- Maximized performance and minimized risk of contamination.

### Standard design

All media contacting steel components, like the rotor case, front cover, rotors and rotor nuts, are in W. 1.4404 (AISI 316L). The robust cast iron gearbox provides maximum shaft rigidity and easy oil seal replacement. The gearbox design is universal which enables the flexibility of mounting pumps with the inlet and outlet ports in either a vertical or horizontal plane by changing the foot and its position.

The standard Alfa Laval SX has four-lobe rotors rated to 302°F, facilitating use with CIP and SIP processes.

Fully front-loading and fully interchangeable single, single flushed, and double mechanical shaft seals are available. All media contacting elastomers are controlled compression joints, the latest technology where static and dynamic elastomer seals are used to prevent leakage of pumped media to the atmosphere.

The Alfa Laval SX can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

### Working principle

A gear train in the pump gearbox drives the rotors and provides accurate synchronization of the multi-lobe rotors. The movement of the counter-rotating rotors creates a partial vacuum that allows atmospheric pressure or other external pressures to force fluid into the pump chamber. As the rotors revolve, an expanding cavity forms, filling with fluid. As the blades disengage, each dwell forms a cavity. As the rotor blades engage, the cavity diminishes, and fluid is displaced into the outlet port.

## TECHNICAL DATA

| Standard specification | |
|---|---|
| Product wetted steel parts: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 32 |
| Gearbox: | Cast iron |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Rotor: | Four-lobe |
| Product wetted elastomers: | EPDM |
| Other elastomers: | FPM |
| Shaft seal: | Single mechanical (R00) |
| Rotary seal face: | Carbon |
| Stationary seal face: | Stainless steel |

| Shaft seals | |
|---|---|
| Single, single flush and double mechanical available. All options are fully front loading and interchangeable. | |
| Max flush pressure, single flush: | 7.25 psi |
| Max flush pressure, double mechanical: | 1 bar over product pressure |
| Water consumption, flushed or double mechanical: | 0.13 gallon/min |
| Flush connections: | BSPT or NPT |

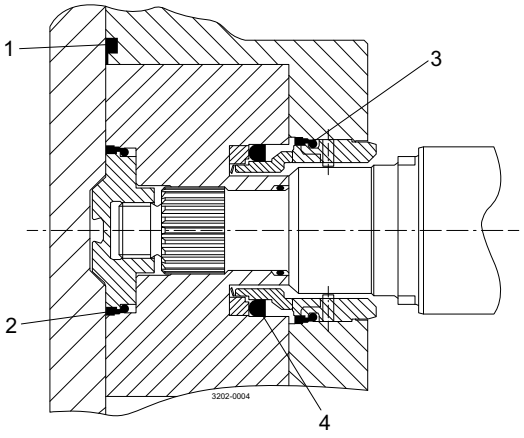
| Temperature | |
|---|---|
| Max process and CIP temperature | 302°F |

| Motor |
|---|
| Gear motor, 4 poles, to IEC metric standard, 50/60 Hz, suitable for frequency conversion, IP55, insulation class F. |

| Warranty |
|---|
| Extended 3-years warranty on SX pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

### Media contacting elastomers

All media contacting elastomers are controlled compression joints, the latest technology where static and dynamic elastomer seals are used to prevent pumped media leaking to atmosphere.




1. Front cover compression joint
2. Spline sealing cup seal
3. Cup seal
4. Squad ring

## Flows/Pressures/Connections

| SX Series | SX Model | Displacement | | | Inlet and Outlet Connection Size | | Differential Pressure (see note 1) | | Maximum Speed |
|---|---|---|---|---|---|---|---|---|---|
| | | Litre/rev | Imp gall/100 rev | US gall/100 rev | mm | in | bar | psi | rev/min |
| 1 | SX1NLD | 0.05 | 1.11 | 1.32 | 25 | 1 | 12 | 175 | 1200 |
| | SX1WLD | 0.07 | 1.54 | 1.85 | 40 | 1.5 | 7 | 100 | 1200 |
| 2 | SX2NLD | 0.128 | 2.82 | 3.38 | 40 | 1.5 | 15 | 215 | 1000 |
| | SX2WLD | 0.181 | 3.98 | 4.78 | 50 | 2 | 7 | 100 | 1000 |
| 3 | SX3NLD | 0.266 | 5.85 | 7.03 | 50 | 2 | 15 | 215 | 1000 |
| | SX3WLD | 0.35 | 7.70 | 9.25 | 65 | 2.5 | 7 | 100 | 1000 |
| 4 | SX4NLD | 0.46 | 10.12 | 12.15 | 50 | 2 | 15 | 215 | 1000 |
| | SX4WLD | 0.63 | 13.86 | 16.65 | 65 | 2.5 | 10 | 145 | 1000 |
| 5 | SX5NLD | 0.82 | 18.04 | 21.67 | 65 | 2.5 | 15 | 215 | 600 |
| | SX5WLD | 1.15 | 25.30 | 30.38 | 80 | 3 | 10 | 145 | 600 |
| 6 | SX6NLD | 1.40 | 30.80 | 36.99 | 80 | 3 | 15 | 215 | 500 |
| | SX6WLD | 1.90 | 41.80 | 50.20 | 100 | 4 | 10 | 145 | 500 |
| 7 | SX7NLD | 2.50 | 55.00 | 66.05 | 100 | 4 | 15 | 215 | 500 |
| | SX7WLD | 3.80 | 83.60 | 100.40 | 150 | 6 | 10 | 145 | 500 |

**Note 1.** These pressure ratings may vary for pumps with certain threaded connections.

## Maximum Solid Size Capability

| Pump sizes | Max. size of spherical solids (in) |
|---|---|
| SX1 | 0.28 |
| SX2 | 0.39 |
| SX3 | 0.51 |
| SX4 | 0.63 |
| SX5 | 0.75 |
| SX6 | 0.98 |
| SX7 | 1.10 |

## Weight

| Model | Bare Shaft Pump (lbs.) | |
|---|---|---|
| | Horizontal porting | Vertical porting |
| SX1NLD | 37 | 39 |
| SX1WLD | 39 | 41 |
| SX2NLD | 75 | 77 |
| SX2WLD | 77 | 79 |
| SX3NLD | 130 | 134 |
| SX3WLD | 134 | 138 |
| SX4NLD | 247 | 254 |
| SX4WLD | 260 | 267 |
| SX5NLD | 342 | 342 |
| SX5WLD | 364 | 364 |
| SX6NLD | 613 | 613 |
| SX6WLD | 639 | 639 |
| SX7NLD | 741 | 758 |
| SX7WLD | 789 | 807 |

## Shaft Seal Options

- Single or single flush/quench (steam barrier for aseptic application) R00 type mechanical seals.
- Double R00 type mechanical seal for flush.

All sealing options are fully front loading and fully interchangeable without the need for additional housings or pump component changes. Specialised seal setting of the mechanical seal is not required as the seal is dimensionally set on assembly. This feature further enhances fast and efficient on-site seal interchangeability.

## Materials for Mechanical Seals

Carbon/Stainless Steel, Silicon Carbide/Silicon Carbide or variations of these materials to suit fluid being pumped and/or application requirements. The seal seat and face material combinations are all EHEDG compliant.

## Standard Specification Options

- Tri-clamp inlet and outlet ports standard.
- Screwed male inlet and outlet ports to DIN11851, DIN11864, SMS, ISS/IDF, RJT or Tri-clamp.
- Heating/Cooling Jacket for Rotorcase Cover.
- ATEX compliance.
- Complete pump unit comprising: Pump + Baseplate (mild or stainless steel) + coupling with guard + Geared electric motor suitable for (or supplied with) frequency speed control or manual variable speed drive (advise motor enclosure and electrical supply).

## Pump Sizing

In order to correctly size a rotary lobe pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

Product/Fluid Data

- Fluid to be pumped
- Viscosity
- SG/Density
- Pumping temperature, minimum, normal and maximum
- Cleaning in Place temperature(s), minimum, normal and maximum

Performance Data

- Flow rate, minimum, normal and maximum
- Discharge head/pressure (closest to pump outlet)
- Suction condition

## Bareshaft Pump Dimensions

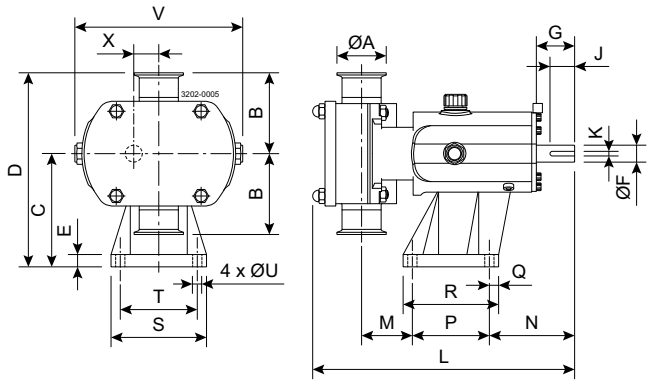



**Figure 1. Vertically ported**

**All dimensions in inches, except where noted**

| PUMP | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SX1NLD | 1.00 | 3.74 | 4.45 | 8.19 | 0.63 | 0.63 | 1.57 | 1.18 | 0.20 | 11.14 | 2.11 | 3.94 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 7.05 | 0.93 |
| SX1WLD | 1.50 | 3.74 | 4.45 | 8.19 | 0.63 | 0.63 | 1.57 | 1.18 | 0.20 | 11.65 | 2.36 | 3.94 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 7.05 | 0.93 |
| SX2NLD | 1.50 | 4.13 | 5.79 | 9.92 | 0.63 | 0.87 | 1.97 | 1.26 | 0.24 | 12.87 | 2.30 | 4.37 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.62 | 1.28 |
| SX2WLD | 2.00 | 4.13 | 5.79 | 9.92 | 0.63 | 0.87 | 1.97 | 1.26 | 0.24 | 13.50 | 2.58 | 4.37 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.62 | 1.28 |
| SX3NLD | 2.00 | 4.92 | 6.89 | 11.81 | 0.87 | 1.10 | 2.36 | 1.57 | 0.31 | 17.09 | 2.85 | 5.59 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.96 | 1.48 |
| SX3WLD | 2.50 | 4.92 | 6.89 | 11.81 | 0.87 | 1.10 | 2.36 | 1.57 | 0.31 | 17.72 | 3.07 | 5.59 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.96 | 1.48 |
| SX4NLD | 2.00 | 5.91 | 8.39 | 14.29 | 0.98 | 1.50 | 3.15 | 2.48 | 0.39 | 20.35 | 2.95 | 6.85 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 12.09 | 1.95 |
| SX4WLD | 2.50 | 5.91 | 8.39 | 14.29 | 0.98 | 1.50 | 3.15 | 2.48 | 0.39 | 21.10 | 3.20 | 6.85 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 12.09 | 1.95 |
| SX5NLD | 2.50 | 6.89 | 10.12 | 17.01 | 1.06 | 1.77 | 4.33 | 2.76 | 0.55 | 23.70 | 2.40 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.81 | 2.36 |
| SX5WLD | 3.00 | 6.86 | 10.12 | 17.01 | 1.06 | 1.77 | 4.33 | 2.76 | 0.55 | 24.80 | 3.17 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.81 | 2.36 |
| SX6NLD | 3.00 | 7.48 | 11.61 | 19.09 | 1.06 | 1.89 | 4.33 | 2.76 | 0.55 | 27.20 | 3.07 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |
| SX6WLD | 4.00 | 7.48 | 11.61 | 19.09 | 1.06 | 1.89 | 4.33 | 2.76 | 0.55 | 28.31 | 3.54 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |
| SX7NLD | 4.00 | 8.07 | 14.37 | 22.44 | 1.02 | 2.36 | 4.33 | 3.54 | 0.71 | 30.20 | 3.70 | 11.34 | 11.02 | 0.98 | 12.99 | 11.42 | 9.45 | 0.71 | 18.70 | 3.21 |
| SX7WLD | 6.00 | 8.07 | 14.37 | 22.44 | 1.02 | 2.36 | 4.33 | 3.54 | 0.71 | 32.32 | 4.76 | 11.34 | 11.02 | 0.98 | 12.99 | 11.42 | 9.45 | 0.71 | 18.70 | 3.21 |

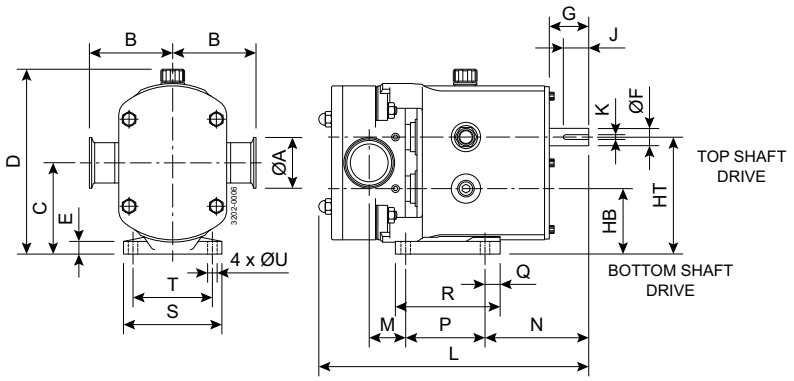



**Figure 2. Horizontally ported**

**All dimensions in inches, except where noted**

| PUMP | A | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SX1NLD | 1.00 | 3.74 | 3.54 | 7.40 | 0.39 | 0.63 | 1.57 | 2.62 | 4.47 | 1.18 | 0.20 | 11.14 | 1.16 | 4.61 | 3.15 | 0.98 | 4.53 | 3.94 | 3.15 | 0.39 |
| SX1WLD | 1.50 | 3.74 | 3.54 | 7.40 | 0.39 | 0.63 | 1.57 | 2.62 | 4.47 | 1.18 | 0.20 | 11.65 | 1.69 | 4.61 | 3.15 | 0.98 | 4.53 | 3.94 | 3.15 | 0.39 |
| SX2NLD | 1.50 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.25 | 5.81 | 1.26 | 0.24 | 12.87 | 1.52 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SX2WLD | 2.00 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.25 | 5.81 | 1.26 | 0.24 | 13.50 | 1.79 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SX3NLD | 2.00 | 4.92 | 5.43 | 10.75 | 0.71 | 1.1 | 2.36 | 3.96 | 6.91 | 1.57 | 0.31 | 17.09 | 2.74 | 6.89 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SX3WLD | 2.50 | 4.92 | 5.43 | 10.75 | 0.71 | 1.1 | 2.36 | 3.96 | 6.91 | 1.57 | 0.31 | 17.72 | 2.95 | 6.89 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SX4NLD | 2.00 | 5.91 | 6.42 | 12.80 | 0.79 | 1.5 | 3.15 | 4.47 | 8.37 | 2.48 | 0.39 | 20.35 | 2.95 | 8.81 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SX4WLD | 2.50 | 5.91 | 6.42 | 12.80 | 0.79 | 1.5 | 3.15 | 4.47 | 8.37 | 2.48 | 0.39 | 21.10 | 3.21 | 8.81 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SX5NLD | 2.50 | 6.89 | 7.68 | 15.04 | 0.87 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 23.70 | 2.60 | 10.98 | 7.09 | 1.38 | 9.45 | 8.27 | 7.09 | 0.55 |
| SX5WLD | 3.00 | 6.89 | 7.68 | 15.04 | 0.87 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 24.80 | 3.37 | 10.98 | 7.09 | 1.38 | 9.45 | 8.27 | 7.09 | 0.55 |
| SX6NLD | 3.00 | 7.48 | 8.86 | 17.17 | 0.87 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 28.20 | 3.07 | 10.51 | 10.2 | 0.79 | 11.81 | 8.66 | 7.48 | 0.55 |
| SX6WLD | 4.00 | 7.48 | 8.86 | 17.17 | 0.87 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 28.31 | 3.54 | 10.51 | 10.2 | 0.79 | 11.81 | 8.66 | 7.48 | 0.55 |
| SX7/NLD | 3.94 | 8.07 | 10.89 | 20.63 | 1.06 | 2.36 | 4.33 | 7.68 | 14.09 | 3.54 | 0.71 | 30.20 | 3.90 | 10.75 | 11.42 | 0.98 | 13.39 | 11.42 | 9.45 | 0.71 |
| SX7/WLD | 5.91 | 8.07 | 10.89 | 20.63 | 1.06 | 2.36 | 4.33 | 7.68 | 14.09 | 3.54 | 0.71 | 32.32 | 4.96 | 10.75 | 11.42 | 0.98 | 13.39 | 11.42 | 9.45 | 0.71 |

# Alfa Laval SX UltraPure

## Rotary lobe pumps

### Introduction

The Alfa Laval SX UltraPure Rotary Lobe Pump is designed with optimized pump head geometry and multi-lobe rotors to ensure low-shear operation with minimum pulsation. This makes the SX UltraPure the best choice for maintaining the integrity of delicate products in high-purity applications.

The pump is designed according to the most stringent hygienic design standards and with verified, effective Cleaning-in-Place (CIP) and Sterilization-in-Place (SIP).

### Applications

The SX UltraPure Rotary Lobe Pump is designed for gentle transportation of process fluids in high-purity applications across the biotechnology, pharmaceutical, and home and personal care industries.

The SX UltraPure is available with 14 different pump head displacements based on seven different gearbox modules to handle flow rates up to 30380 gallon/h and differential pressures up to 218 psi (15 bar).

### Benefits

- Low pulsation and very gentle pumping, making the pump ideal for sensitive products.
- Minimized shearing to protect end-product quality.
- Low maintenance, increased process uptime.
- Low contamination risk due to full material traceability and USP Class VI elastomers that reduce the risk of process contamination from extractables.
- Smooth qualification, validation and process control: material traceability, and pump supplied with the Alfa Laval Q-doc package in line with Good Documentation Practices.

### Standard design

All media contacting steel components, like the rotor case, front cover, rotors and rotor nuts, are in W. 1.4404 (AISI 316L). The stainless steel gearbox provides maximum shaft rigidity and easy oil seal replacement. The gearbox design is universal, which enables the flexibility of mounting pumps with the inlet and outlet ports in either a vertical or horizontal plane by changing the foot and its position.

The standard Alfa Laval SX UltraPure has four-lobe rotors rated to 302°F, facilitating use with CIP and SIP processes.

Fully front-loading and fully interchangeable single, single flushed and double mechanical shaft seals are available. All media contacting elastomers are controlled compression joints, the latest technology where static and dynamic elastomer seals are used to prevent leakage of pumped media to the atmosphere.

The Alfa Laval SX UltraPure can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, gear motor and shroud for easy, plug-and-play installation.

### Working principle

A gear train in the pump gearbox drives the rotors and provides accurate synchronization of the multi-lobe rotors. The movement of the counter-rotating rotors creates a partial vacuum that allows atmospheric pressure or other external pressures to force fluid into the pump chamber. As the rotors

revolve, an expanding cavity forms, filling with fluid. As the blades disengage, each dwell forms a cavity. As the rotor blades engage, the cavity diminishes and fluid is displaced into the outlet port.

## Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Standard specification | |
|---|---|
| Product wetted steel parts: | W. 1.4404 (316L) with material traceability 3.1 according to EN 10204 |
| Inside surface finish: | Mech Ra ≤ 32 |
| Gearbox: | Stainless steel |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Rotor: | Four-lobe |
| Product wetted elastomers: | EPDM - USP Class VI, 121°C. Chapter 88, and Chapter 87 |
| Other elastomers: | FPM |
| Shaft seal: | Single mechanical (R00) |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Silicon Carbide |

| Shaft seals | |
|---|---|
| Single, single flush and double mechanical available. All options are fully front loading and interchangeable. | |
| Max. flush pressure, single flush: | Max. 7.25 psi |
| Max. flush pressure, double mechanical: | Max. 1 bar over product pressure |
| Water consumption, flushed or double mechanical: | 0.13 gallon/min |
| Flush connections: | BSPT or NPT |

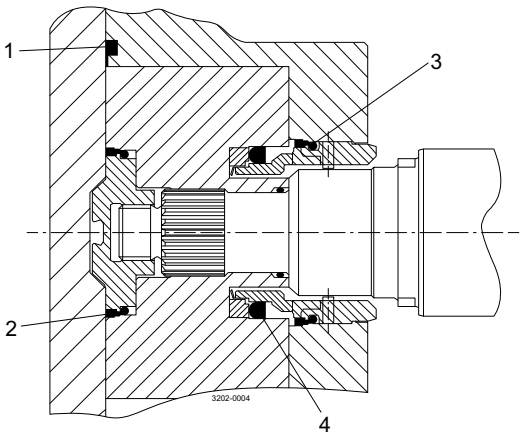
| Temperature | |
|---|---|
| Max. process and CIP temperature: | 302ºF |

| Motor |
|---|
| Gear motor, 4 poles, to IEC metric standard, 50/60 Hz, suitable for frequency conversion, IP55, insulation class F. |

| Warranty |
|---|
| Extended 3-years warranty on SX UltraPure pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

## Media contacting elastomers

All media contacting elastomers are controlled compression joints, the latest technology where static and dynamic elastomer seals are used to prevent pumped media leaking to atmosphere.




1. Front cover compression joint.
2. Spline sealing cup seal.
3. Cup seal.
4. Squad ring.

## Flows/Pressures/Connections

| SX Model | Displacement | | | Inlet and Outlet Connection Size | | Differential Pressure [1] | | Maximum Speed |
|---|---|---|---|---|---|---|---|---|
| | Litre/rev | Imp gall/100 rev | US gall/100 rev | mm | in | bar | psi | rev/min |
| SX UltraPure 1NDL | 0.05 | 1.11 | 1.32 | 25 | 1 | 12 | 175 | 1200 |
| SX UltraPure 1WLD | 0.07 | 1.54 | 1.85 | 40 | 1.5 | 7 | 100 | 1200 |
| SX UltraPure 2NDL | 0.128 | 2.82 | 3.38 | 40 | 1.5 | 15 | 215 | 1000 |
| SX UltraPure 2WLD | 0.181 | 3.98 | 4.78 | 50 | 2 | 7 | 100 | 1000 |
| SX UltraPure 3NDL | 0.266 | 5.85 | 7.03 | 50 | 2 | 15 | 215 | 1000 |
| SX UltraPure 3WLD | 0.35 | 7.70 | 9.25 | 65 | 2.5 | 7 | 100 | 1000 |
| SX UltraPure 4NDL | 0.46 | 10.12 | 12.15 | 50 | 2 | 15 | 215 | 1000 |
| SX UltraPure 4WLD | 0.63 | 13.86 | 16.65 | 65 | 2.5 | 10 | 145 | 1000 |
| SX UltraPure 5NDL | 0.82 | 18.04 | 21.67 | 65 | 2.5 | 15 | 215 | 600 |
| SX UltraPure 5WLD | 1.15 | 25.30 | 30.38 | 80 | 3 | 10 | 145 | 600 |
| SX UltraPure 6NDL | 1.40 | 30.80 | 36.99 | 80 | 3 | 15 | 215 | 500 |
| SX UltraPure 6WLD | 1.90 | 41.80 | 50.20 | 100 | 4 | 10 | 145 | 500 |
| SX UltraPure 7NDL | 2.50 | 55.00 | 66.05 | 100 | 4 | 15 | 215 | 500 |
| SX UltraPure 7WLD | 3.80 | 83.60 | 100.40 | 150 | 6 | 10 | 145 | 500 |

[1] These pressure ratings may vary for pumps with certain threaded connections.

## Weight

| Model | Bare Shaft Pump lbs. | |
|---|---|---|
| | Horizontal porting | Vertical porting |
| SX UltraPure 1NLD | 37 | 39 |
| SX UltraPure 1WLD | 39 | 41 |
| SX UltraPure 2NLD | 75 | 77 |
| SX UltraPure 2WLD | 77 | 79 |
| SX UltraPure 3NLD | 130 | 134 |
| SX UltraPure 3WLD | 134 | 138 |
| SX UltraPure 4NLD | 247 | 254 |
| SX UltraPure 4WLD | 260 | 267 |
| SX UltraPure 5NLD | 342 | 342 |
| SX UltraPure 5WLD | 364 | 364 |
| SX UltraPure 6NLD | 613 | 613 |
| SX UltraPure 6WLD | 639 | 639 |
| SX UltraPure 7NLD | - | 750 |
| SX UltraPure 7WLD | - | 798 |

## Shaft Seal Options

- Single or single flush/quench (steam barrier for aseptic application) R00 type mechanical seals.
- Double R00 type mechanical seal for flush.

All sealing options are fully front loading and fully interchangeable without the need for additional housings or pump component changes. Specialised seal setting of the mechanical seal is not required as the seal is dimensionally set on assembly. This feature further enhances fast and efficient on-site seal interchangeability.

## Materials for Mechanical Seals

As standard the SX UltraPure is supplied with EHEDG compliant Silicon Carbide/Silicon Carbide seal faces avoiding any risk of potential extractable contamination.

## Standard Specification Options

- Screwed male inlet and outlet ports to DIN11851, SMS, RJT, Triclamp for ASME, DIN 32676 Clamp, DIN 11864-1 (Union) Form A, DIN 11864-2 (Flange) Form A or DIN 11864-3 (Clamp) Form A.
- Heating/Cooling Jacket for Rotorcase Cover.
- Product wetted surface finish electropolished to Ra 15 µin.
- Passivated surface.
- Surface finish measurement with certificate.
- Hydrostatic testing with certificate.
- ATEX compliance.

- Complete pump unit comprising: Pump + stainless steel baseplate + coupling with guard + Geared electric motor suitable for (or supplied with) frequency speed control or manual variable speed drive (advise motor enclosure and electrical supply).
- Low delta ferrite material for product wetted components.
- High alloy materials for product wetted components i.e. AL6XN or Titanium.

## Q-doc

**Standard documentation package:**

- Declaration of compliance with Regulation (EC) No.: 1935/2004.
- Declaration of compliance to EN 10204 type 3.1 (MTR).
- Declaration of compliance to the U.S. Food & Drug Administration CFR 21 (non-metallic parts).
- Declaration of compliance to the U.S. Pharmacopeia (Elastomers and polymers).
- TSE (Transmissible Spongiform Encephalopathy) / ADI (Animal Derivative Ingredient) declaration.
- Declaration of surface finish compliance.
- Declaration of passivation and electro polishing (if specified).
- 3.1 certification in accordance to EN10204.
- Pump performance test certificate.

**Optional documentation:**

- Hydrostatic test certificate.
- Surface measurement report.

## Pump Sizing

In order to correctly size a rotary lobe pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection.

Product/Fluid Data:

- Fluid to be pumped.
- Viscosity.
- SG/Density.
- Pumping temperature, minimum, normal and maximum.
- Cleaning in Place temperature(s), minimum, normal and maximum.

Performance Data:

- Flow rate, minimum, normal and maximum.
- Discharge head/pressure (closest to pump outlet).
- Suction condition.

## Bareshaft Pump Dimensions

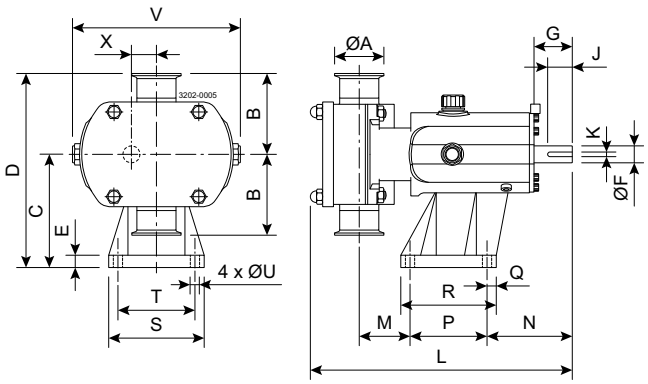



**Figure 1. Vertically ported**

**All dimensions in inches, except where noted**

| PUMP | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SX UltraPure 1NLD | 1.00 | 3.74 | 4.45 | 8.19 | 0.63 | 0.63 | 1.57 | 1.18 | 0.20 | 10.87 | 2.13 | 3.94 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 7.05 | 0.93 |
| SX UltraPure 1WLD | 1.50 | 3.74 | 4.45 | 8.19 | 0.63 | 0.63 | 1.57 | 1.18 | 0.20 | 11.38 | 2.36 | 3.94 | 3.15 | 0.87 | 4.49 | 4.09 | 3.15 | 0.39 | 7.05 | 0.93 |
| SX UltraPure 2NLD | 1.50 | 4.13 | 5.79 | 9.92 | 0.63 | 0.87 | 1.97 | 1.26 | 0.24 | 12.76 | 2.32 | 4.37 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.62 | 1.28 |
| SX UltraPure 2WLD | 2.00 | 4.13 | 5.79 | 9.92 | 0.63 | 0.87 | 1.97 | 1.26 | 0.24 | 13.39 | 2.60 | 4.37 | 3.94 | 0.47 | 4.88 | 4.88 | 3.94 | 0.47 | 8.62 | 1.28 |

| PUMP | A | B | C | D | E | F | G | J | K | L | M | N | P | Q | R | S | T | U | V | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SX UltraPure 3NLD | 2.00 | 4.92 | 6.89 | 11.81 | 0.87 | 1.10 | 2.36 | 1.57 | 0.31 | 16.97 | 2.83 | 5.59 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.96 | 1.48 |
| SX UltraPure 3WLD | 2.50 | 4.92 | 6.89 | 11.81 | 0.87 | 1.10 | 2.36 | 1.57 | 0.31 | 17.60 | 3.03 | 5.59 | 6.10 | 0.59 | 7.28 | 6.10 | 4.92 | 0.55 | 9.96 | 1.48 |
| SX UltraPure 4NLD | 2.00 | 5.91 | 8.39 | 14.29 | 0.98 | 1.50 | 3.15 | 2.48 | 0.39 | 20.24 | 2.95 | 6.85 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 12.09 | 1.95 |
| SX UltraPure 4WLD | 2.50 | 5.91 | 8.39 | 14.29 | 0.98 | 1.50 | 3.15 | 2.48 | 0.39 | 20.98 | 3.19 | 6.85 | 7.87 | 0.67 | 9.21 | 7.24 | 5.91 | 0.55 | 12.09 | 1.95 |
| SX UltraPure 5NLD | 2.50 | 6.89 | 10.12 | 17.01 | 1.18 | 1.77 | 4.33 | 2.76 | 0.55 | 23.58 | 2.40 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.58 | 2.36 |
| SX UltraPure 5WLD | 3.00 | 6.86 | 10.12 | 17.01 | 1.18 | 1.77 | 4.33 | 2.76 | 0.55 | 24.65 | 3.19 | 10.39 | 7.87 | 0.79 | 9.45 | 8.66 | 7.09 | 0.55 | 13.58 | 2.36 |
| SX UltraPure 6NLD | 3.00 | 7.48 | 11.61 | 19.09 | 1.18 | 1.89 | 4.33 | 2.76 | 0.55 | 27.05 | 3.03 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |
| SX UltraPure 6WLD | 4.00 | 7.48 | 11.61 | 19.09 | 1.18 | 1.89 | 4.33 | 2.76 | 0.55 | 28.15 | 3.50 | 10.51 | 10.24 | 0.79 | 11.81 | 9.84 | 8.27 | 0.55 | 15.75 | 2.76 |
| SX UltraPure 7NLD | 4.00 | 8.07 | 14.37 | 22.44 | 1.18 | 2.36 | 4.33 | 3.54 | 0.71 | 30.04 | 3.70 | 11.34 | 11.02 | 0.98 | 12.99 | 11.42 | 9.45 | 0.71 | 18.70 | 3.21 |
| SX UltraPure 7WLD | 6.00 | 8.07 | 14.37 | 22.44 | 1.18 | 2.36 | 4.33 | 3.54 | 0.71 | 32.17 | 4.76 | 11.34 | 11.02 | 0.98 | 12.99 | 11.42 | 9.45 | 0.71 | 18.70 | 3.21 |

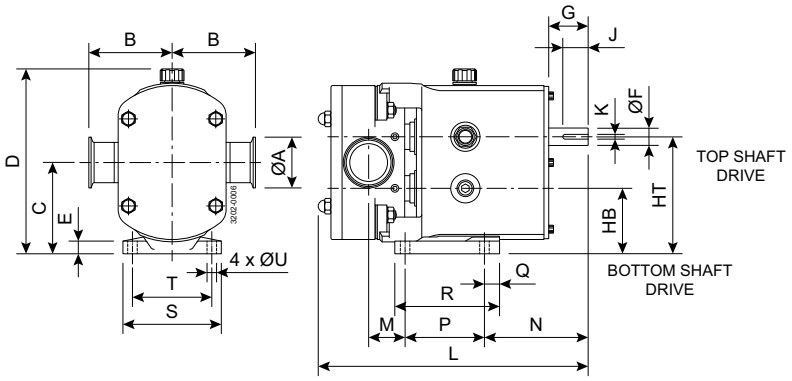



**Figure 2. Horizontally ported**

**All dimensions in inches, except where noted**

| PUMP | A | B | C | D | E | F | G | HB | HT | J | K | L | M | N | P | Q | R | S | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SX UltraPure 1NLD | 1.00 | 3.74 | 3.54 | 7.40 | 0.39 | 0.63 | 1.57 | 2.62 | 4.47 | 1.18 | 0.20 | 10.87 | 1.46 | 4.61 | 3.15 | 0.98 | 4.53 | 3.94 | 3.15 | 0.39 |
| SX UltraPure 1WLD | 1.50 | 3.74 | 3.54 | 7.40 | 0.39 | 0.63 | 1.57 | 2.62 | 4.47 | 1.18 | 0.20 | 11.38 | 1.69 | 4.61 | 3.15 | 0.98 | 4.53 | 3.94 | 3.15 | 0.39 |
| SX UltraPure 2NLD | 1.50 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.25 | 5.81 | 1.26 | 0.24 | 12.76 | 1.54 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SX UltraPure 2WLD | 2.00 | 4.13 | 4.53 | 9.17 | 0.63 | 0.87 | 1.97 | 3.25 | 5.81 | 1.26 | 0.24 | 13.39 | 1.81 | 5.16 | 3.94 | 0.75 | 5.20 | 4.88 | 3.94 | 0.47 |
| SX UltraPure 3NLD | 2.00 | 4.92 | 5.43 | 10.75 | 0.71 | 1.1 | 2.36 | 3.96 | 6.91 | 1.57 | 0.31 | 16.97 | 2.72 | 6.89 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SX UltraPure 3WLD | 2.50 | 4.92 | 5.43 | 10.75 | 0.71 | 1.1 | 2.36 | 3.96 | 6.91 | 1.57 | 0.31 | 17.60 | 2.91 | 6.89 | 4.92 | 1.18 | 7.13 | 6.06 | 4.92 | 0.55 |
| SX UltraPure 4NLD | 2.00 | 5.91 | 6.42 | 12.80 | 0.79 | 1.5 | 3.15 | 4.47 | 8.37 | 2.48 | 0.39 | 20.24 | 2.95 | 8.86 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SX UltraPure 4WLD | 2.50 | 5.91 | 6.42 | 12.80 | 0.79 | 1.5 | 3.15 | 4.47 | 8.37 | 2.48 | 0.39 | 20.98 | 3.19 | 8.86 | 5.91 | 1.38 | 7.95 | 7.24 | 5.91 | 0.55 |
| SX UltraPure 5NLD | 2.50 | 6.89 | 7.68 | 14.80 | 0.79 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 23.58 | 1.81 | 10.98 | 7.09 | 1.38 | 10.83 | 8.27 | 7.09 | 0.55 |
| SX UltraPure 5WLD | 3.00 | 6.89 | 7.68 | 14.80 | 0.79 | 1.77 | 4.33 | 5.31 | 10.04 | 2.76 | 0.55 | 24.65 | 2.60 | 10.98 | 7.09 | 1.38 | 10.83 | 8.27 | 7.09 | 0.55 |
| SX UltraPure 6NLD | 3.00 | 7.48 | 8.86 | 16.89 | 0.79 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 27.05 | 3.07 | 10.47 | 10.2 | 1.57 | 14.57 | 8.66 | 7.48 | 0.55 |
| SX UltraPure 6WLD | 4.00 | 7.48 | 8.86 | 16.89 | 0.79 | 1.89 | 4.33 | 6.10 | 11.61 | 2.76 | 0.55 | 28.15 | 3.54 | 10.47 | 10.2 | 1.57 | 14.57 | 8.66 | 7.48 | 0.55 |

# Alfa Laval OptiLobe

## Product description

| L22 - | 15 - | M - | Q02 - | A - | A - | A - | A |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

**1 Model Size**
L12
L13
L22
L23
L32
L33
L42
L43
L52
L53

**2 Port Size**
10 (25 mm) 1"
15 (40 mm) 1½"
20 (50 mm) 2"
25 (65 mm) 2½"
30 (80 mm) 3"
40 (100 mm) 4 "

**3 Model Size**
M = Triclamp

**4 Seal /Elastomer**
Q02 - Easy Fit SS/C FPM
Q06 - Easy Fit SS/C EPDM
Q12 - Easy Fit SC/C FPM
Q16 - Easy Fit SC/C EPDM
Q22 - Easy Fit SC/SC FPM
Q26 - Easy Fit SC/SC EPDM
S02 - Easy Fit SS/C Flush FPM
S06 - Easy Fit SS/C Flush EPDM
S12 - Easy Fit SC/C Flush FPM
S16 - Easy Fit SC/C Flush EPDM
S22 - Easy Fit SC/SC Flush FPM
S26 - Easy Fit SC/SC Flush EPDM

**5 Rotor Type & Clearance**
A = SS Trilobe (8 bar, 130°C, 266°F)

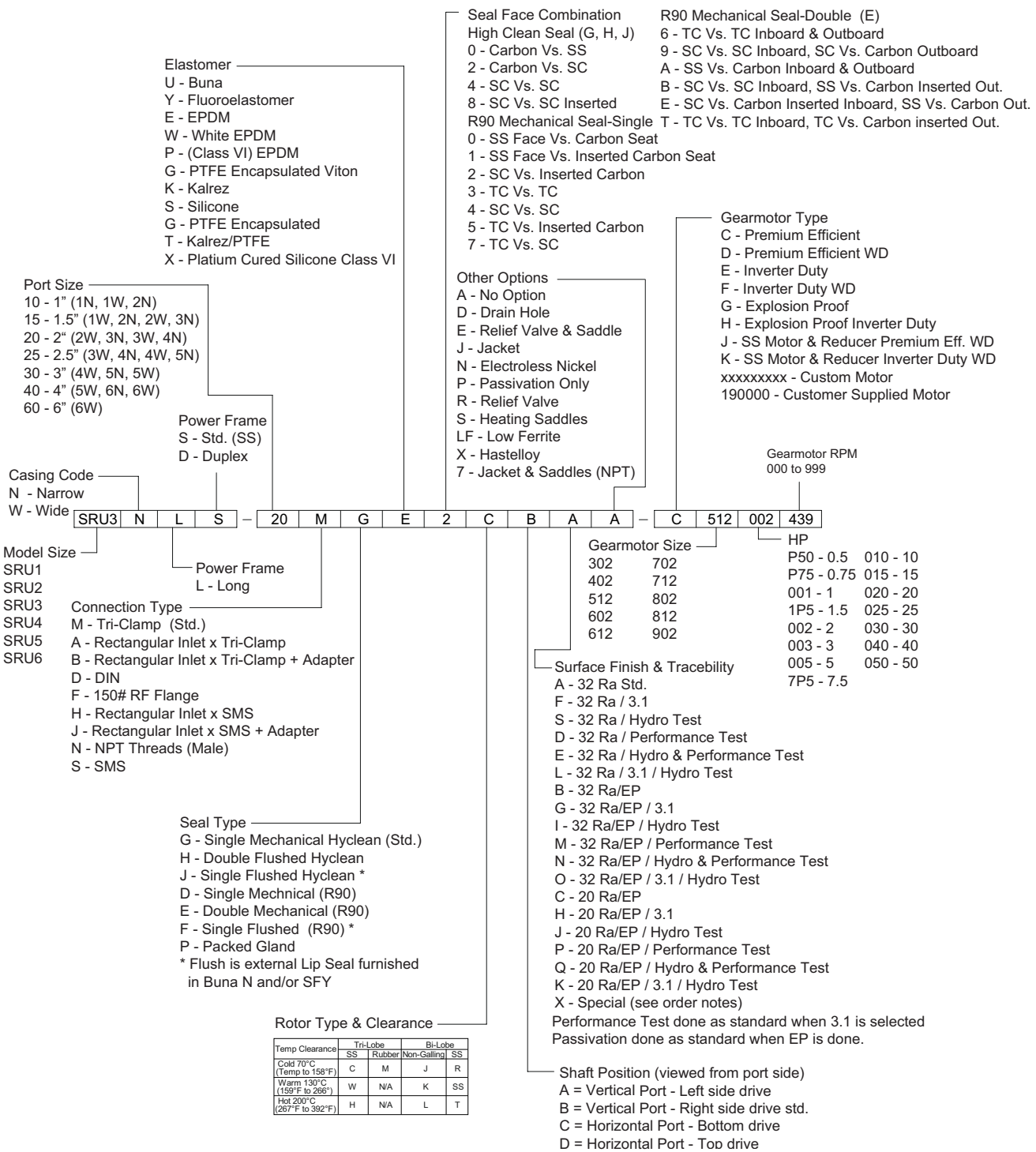
**6 Shaft Position**
A - Vertical Left Side Drive
B - Vertical Right Side Drive
C - Horizontal Bottom Drive
D - Horizontal Top Drive

**7 Surface Finish**
A = Standard 32 Ra

**8 Elastomer**
A = No Options

# Alfa Laval SRU

## Product description



# Alfa Laval SX

## Product description

| SX3 | N | L | D | - | 20 | M | D | E | 2 | 03 | A | A | 1 | - | C | 512 | 002 | 439 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ❶ | ❷ | ❸ | ❹ | | ❺ | ❻ | ❼ | ❽ | ❾ | ❿ | ⓫ | ⓬ | ⓭ | | ⓮ | ⓯ | ⓰ | ⓱ |
| 0000 | 0 | 0 | 0 | - | 00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 000 | 000 | 000 |

❶ MODEL SIZE
SX1
SX2
SX3
SX4
SX5
SX6
SX7

❷ CASING CODE
N - Narrrow
W - wide

❸ POWER FRAME
L - Long

❹ SHAFT MATERIAL
D - Duplex

❺ PORT SIZE
10 - 1″ (1N)
15 -1.5″ (1W, 2N)
20 - 2″ (2W, 3N, 4N)
25 - 2.5″ (3W, 4W, 5N)
30 - 3″ (5W, 6N)
40 - 4″ (6W, 7N)
60 - 6″ (7W)

❻ CONNECTION TYPE
M - Tri-clamp

❼ SEAL TYPE
D - Single Mechanical (R00)
E - Double Mechanical Flushed (R00)
F - Single Mechanical Flushed[2] (R00)

[2]Flush is external lip seal-furnished in Buna and/or SFY (Fluoroelastomer)

❽ ELASTOMER
E - EPDM (Class IV)
X - Silicone
V - FPM (Viton)

❾ SEAL FACE COMBINATIONS
0 - Carbon vs. SS
2 - Carbon vs. SC
4 - SC vs. SC

❿ ROTOR TYPE & CLEARANCE
03 - 43 PSI (3 bar)
05 - 70 PSI (5 bar)
07 - 100 PSI (7 bar)
10 - 145 PSI (10 bar)
12 - 174 PSI (12 bar)
15 - 215 PSI (15 bar)

⓫ SHAFT POSITION
A - Horizontal Port - (Top Side Drive)
B - Horizontal Port - (Bottom Side Drive)
C - Vertical Port - (Left Side Drive - Bi-Directional)

⓬ SURFACE FINISH & TRACEABILITY
A - 32 Ra Std.
D - 32 Ra/Performance test

⓭ COVER OPTIONS
0 - Custom
1 - No option
2 - Jacket
3 - 1/2” Tri-clamp drain
4 - Aseptic

⓮ GEAR MOTOR TYPE
C - Premium Efficient
D - Premium Efficient WD
E - Inverter Duty
F - Inverter Duty WD
G - Explosion Proof
H - Explosion Proof Inverter Duty
J - SS Motor & Reducer Premium Eff WD
K - SS Motor & Reducer Inverter Duty WD
L - Inverter Duty W/D 50 Hz

⓯ GEAR MOTOR SIZE

| | |
|---|---|
| 302 | 702 |
| 402 | 712 |
| 512 | 802 |
| 602 | 812 |
| 612 | 902 |

⓰ HP

| | |
|---|---|
| P50 - 0.5 | 010 - 10 |
| P75 - 0.75 | 015 - 15 |
| 001 - 1 | 020 - 20 |
| 1P5 - 1.5 | 025 - 25 |
| 002 - 2 | 030 - 30 |
| 003 - 3 | 040 - 40 |
| 005 - 5 | 050 - 50 |
| 7P5 - 7.5 | |

⓱ GEAR MOTOR RPM
000 to 999

* Sterling gearmotors are standard others available upon request.

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# Twin screw pumps

**Product leaflet**

# Alfa Laval OS Twin screw

## Twin screw pumps

### Introduction

The Alfa Laval Twin Screw Pump combines process duties typically handled by positive displacement with Cleaning-in-Place (CIP) duties typically handled by centrifugal pumps. This provides a robust and reliable platform that offers greater process flexibility.

Designed for process flexibility, the Alfa Laval Twin Screw Pump is built on a robust, reliable platform that meets stringent hygienic standards. It is capable of handling both product transfer and CIP. Its low pulsation characteristics and excellent solids-handling capability reduce the risk of product damage, thereby improving product quality.

The pump is designed according to the most stringent hygienic design standards and with verified, effective CIP.

### Applications

Designed for handling sensitive, abrasive and high and low viscosity fluids, the Alfa Laval Twin Screw Pump is ideal for use in hygienic applications across the dairy, food, beverage, and home and personal care industries. Quiet and virtually pulse-free, the pump provides smooth and gentle operation, making it an excellent choice for handling sensitive products.

Two-in-one operation provides easy handling of process media of varying viscosities as well as CIP fluids. This simplifies piping and pump control, cutting costs and minimizing contamination risks.

Superior suction performance with excellent lift capability and low NPSHr provides installation flexibility and increases product recovery.

The Alfa Laval Twin Screw Pump is available in sixteen models based on four frame sizes. Each frame is available with an assortment of different screw profiles for varying pressure, flow and solids-handling capabilities.

### Benefits

- Greater process flexibility.
- Ease of service, increased process uptime.
- Robust reliable design, reducing cost of ownership and increasing process uptime.

- Improved product quality.
- Exceptional hygiene and cleanability.

### Standard design

All media contacting steel components, like pump casing, front cover and feed screws are in W. 1.4404 (AISI 316L). Furthermore, the pump casing is diffusion hardened. A stainless steel gearbox, end cover and foot ensure increased life and assist in washdown.

The gearbox is designed with the timing gears located between the bearing sets, rather than external to them. This allows the bearing location to be optimized in order to provide maximum support to the shaft assembly, thereby providing a robust rigid design. The internal gearcase design optimizes oil circulation to both sets of bearings and the timing gears with an oil sump design. This improves the lubrication effect on both bearings and timing gears, minimizing the energy produced due to friction and thereby reducing heat generation within the pump gearbox.

The front-loading, self-setting cartridge design makes it easy to replace the shaft seal while the pump is in place. Single, single flush and double mechanical cartridge seals are available. All options are fully front-loading and interchangeable.

The Alfa Laval Twin Screw Pump can be supplied either as a bare shaft pump or mounted on a base plate complete with coupling, guard, shroud and a direct coupled motor or a gear motor for easy, plug-and-play installation.

## Working principle

The Alfa Laval Twin Screw Pump is a positive displacement pump. As the pump rotates, the intermeshing of the two contra-rotating screws, along with the pump casing, form volumetric chambers. These chambers fill with the pumped fluid and move the fluid axially from the suction side of the pump to the higher pressure discharge side.

## Certificates

Authorized to carry the 3A symbol

## TECHNICAL DATA

| Standard specification | |
|---|---|
| Pump casing: | W. 1.4404 (316L), diffusion hardened |
| Screws, front cover, seal housing: | W. 1.4404 (316L) |
| Inside surface finish: | Mech Ra ≤ 0.8 (≤ 32) |
| Gear box: | Stainless steel |
| Base plate: | Stainless steel |
| Coupling guard: | Stainless steel |
| Product wetted elastomers: | EPDM |
| Other elastomers: | FPM |
| Shaft seal: | Single flush |
| Rotary seal face: | Silicon Carbide |
| Stationary seal face: | Silicon Carbide |

| Shaft seals | |
|---|---|
| Single, Single flush and double mechanical cartridge seals available. All options are fully front loading and interchangeable. | |
| Max. flush pressure, single flush: | 0.5 bar (7.25 psi) |
| Max. flush pressure, double mechanical: | 16 bar (max. 6 bar over product pressure) (232 psi (max. 87 psi over product pressure)) |
| Water consumption, single flush and double mechanical: | 0.5 l/min. (0.13 gallon/min.) |
| Flush connections, OS10-30: | G 1/4" or NPT 1/4" |
| Flush connections, OS40-46: | G 1/2" or NPT 1/2" |

| Pressure | |
|---|---|
| Max. inlet pressure: | 16 bar (232 psi) |
| Max. discharge pressure: | 16 bar (232 psi) |

| Temperature | |
|---|---|
| Max. process temperature: | 100ºC (212ºF) |
| Max. CIP/SIP temperature: | 150ºC (302ºF) |

| Motor |
|---|
| Direct coupled motor, 4, 6 or 8 poles, or gear motor, 4 poles, to either IEC metric standard, 50/60 Hz, suitable for frequency conversion, IP55, insulation class F or Nema standard, premium efficiency, suitable for frequency conversion. |

| Warranty |
|---|
| Extended 3-years warranty on Alfa Laval Twin Screw pumps. The warranty covers all non wear parts on the condition that genuine Alfa Laval Spare Parts are used. |

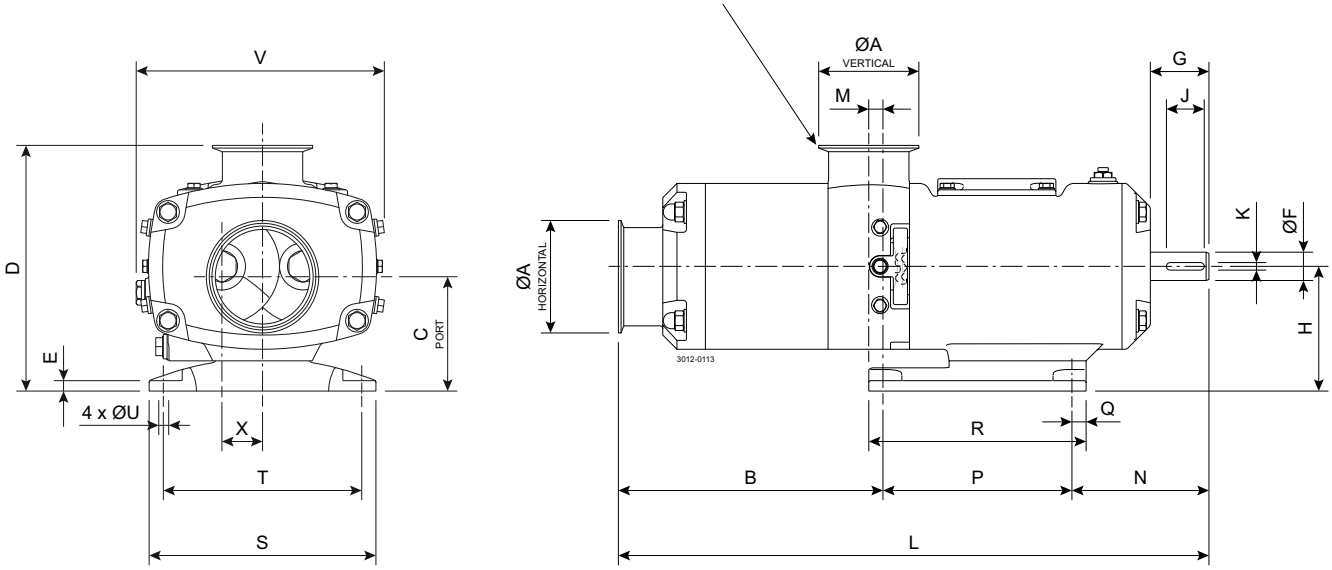
## Operating data

| Model | Max. Flow | | Max. Differential Pressure | | Max. speed | | Max. Particle Size | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Process | CIP | | |
| | m3/h | gpm | bar | psi | rpm | rpm | mm | inch |
| OS12 | 6.1 | 27 | 16 | 232 | 2800 | 3300 | 6 | 0.24 |
| OS14 | 10.4 | 46 | 12 | 174 | 2800 | 3300 | 11 | 0.43 |
| OS16 | 16.0 | 70 | 8 | 116 | 2800 | 3300 | 17 | 0.67 |
| OS22 | 18.2 | 80 | 16 | 232 | 2500 | 3300 | 12 | 0.47 |
| OS24 | 24.3 | 107 | 12 | 174 | 2500 | 3300 | 16 | 0.63 |
| OS26 | 36.5 | 161 | 8 | 116 | 2500 | 3300 | 24 | 0.94 |
| OS27 | 45.7 | 201 | 6 | 87 | 2500 | 3300 | 15 | 0.59 |

| Model | Max. Flow | | Max. Differential Pressure | | Max. speed | | Max. Particle Size | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Process | CIP | | |
| | m3/h | gpm | bar | psi | rpm | rpm | mm | inch |
| OS28 | 38.7 | 170 | 5.5 | 80 | 2000 | 2000 | 32 | 1.26 |
| OS32 | 34.8 | 153 | 16 | 232 | 2200 | 3000 | 16 | 0.63 |
| OS34 | 46.6 | 205 | 12 | 174 | 2200 | 3000 | 21 | 0.83 |
| OS36 | 69.9 | 308 | 8 | 116 | 2200 | 3000 | 32 | 1.26 |
| OS37 | 88.0 | 387 | 6 | 87 | 2200 | 3000 | 20 | 0.79 |
| OS38 | 84.8 | 373 | 5.5 | 80 | 2000 | 2000 | 42 | 1.65 |
| OS42 | 66.8 | 294 | 16 | 232 | 1800 | 2800 | 21 | 0.83 |
| OS44 | 89.5 | 394 | 12 | 174 | 1800 | 2800 | 29 | 1.14 |
| OS46 | 134.3 | 591 | 8 | 116 | 1800 | 2800 | 43 | 1.69 |

## Dimension mm (inch)

PUMP SHOWN WITH TRI-CLAMP, SUCTION AND DISCHARGE CONNECTIONS




| Model | ØA Vertical | B | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U | V[1] | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | mm (inch) | | | | | | | | | | |
| OS12 | 25 (1) | | | | | | | | | | | | | | | | | | | |
| OS14 | 40 (1½) | 170 (6.69) | 180 (7.09) | 7 (0.28) | 18 (0.71) | 50 (1.97) | 90 (3.54) | 40 (1.57) | 6 (0.24) | 405 (15.94) | 10 (0.39) | 110 (4.33 | 125 (4,92 ) | 10 (0.39) | 145 (5.70) | 155 (6.10) | 135 (5.31) | 9 (0.35) | 188,5 (7.42) | 28 (1.10) |
| OS16 | 50 (2) | | | | | | | | | | | | | | | | | | | |
| OS22 | 40 (1½) | | | | | | | | | | | | | | | | | | | |
| OS24 | 50 (2) | 222,5 (8.76) | 220 (8.66) | 9 (0.35) | 20 (0.79) | 54,5 (21.4 6) | 112 (4.41) | 40 (1.57) | 6 (0.24) | 505 (19.88) | 12,5 (0.49) | 117,5 (4.63) | 165 (6.50 ) | 12,5 (0.49) | 190 (7.48) | 200 (7.87) | 175 (6.89) | 11 (0.43) | 216 (8.50) | 33 (1.30) |
| OS26 | 65 (2½) | | | | | | | | | | | | | | | | | | | |
| OS27 | 65 (2½) | | | | | | | | | | | | | | | | | | | |
| OS28 | 65 (2½) | 252,5 (9.9) | ” | ” | ” | ” | ” | ” | ” | 535 (21.1) | ” | ” | ” | ” | ” | ” | ” | ” | ” | ” |

[1] Dimension 'V'is with flush plugs installed - NPT adaptors will increase this dimension by ~10mm

| Model | ØA Vertical | B | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U | V[1] | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | mm (inch) | | | | | | | | | | |
| OS32 | 65 (2½) | | | | | | | | | | | | | | | | | | | |
| OS34 | 65 (2½) | 280 | 260 | 11 | 30 | 62 | 132 | 40 | 8 | 625 | 15 | 145 | 200 | 15 | 230 | 240 | 210 | 13 | 262,5 | 43 |
| OS36 | 80 (3) | (11.02) | (10.24) | (0.43) | (1.18) | (2.44) | (5.20) | (1.57) | (0.31) | (24.61) | (0.59) | (5.71) | (7.87 ) | (0.59) | (9.06) | (9.45) | (8.27) | (0.51) | (10.33 ) | (1.69) |
| OS37 | 80 (3) | | | | | | | | | | | | | | | | | | | |
| OS38 | 80 (3) | 320 (12.6) | ” | ” | ” | ” | ” | ” | ” | 665 (26.2) | ” | ” | ” | ” | ” | ” | ” | ” | ” | ” |
| OS42 | 80 (3) | | | | | | | | | | | | | | | | | | | |
| OS44 | 80 (3) | 360 (14.17) | 350 (13.78 | 15 (0.59) | 45 (1.77) | 87 (3.43) | 180 (5.51) | 70 (2.76) | 14 (0.55) | 790 (31.10) | 20 (0.79) | 180 (7.09) | 250 (9.84) | 20 (0.79) | 290 (11.42) | 320 (12.60) | 280 (11.02) | 17,5 (0.68) | 346 (13.62 ) | 58 (2.28) |
| OS46 | 100 (4) | | | | | | | | | | | | | | | | | | | |

[1] Dimension 'V'is with flush plugs installed - NPT adaptors will increase this dimension by ~10mm

| Model | ØA Horizontal | C | | | |
|---|---|---|---|---|---|
| | | DIN11851<br>DIN 11864-1-A-A<br>DIN 11864-2-A-A | SMS | Tri-Clamp<br>DIN 11864-1-A-C<br>DIN 11864-2-A-C | BS 4825-4 (IDF)<br>BS 4825-5 (RJT) |
| | mm (inch) | mm | mm | mm (inch) | mm |
| OS12 | 40 (1.5) | 72 | 70.75 | 70.4 (2.77) | 70.45 |
| OS14 | 50 (2) | 78 | 77.25 | 76.75 (3.02) | 76.8 |
| OS16 | 65 (2.5) | 86 | 83.15 | 83.1 (3.27) | 83.15 |
| OS22 | 50 (2) | 90 | 89.3 | 88.75 (3.49) | 88.8 |
| OS24 | 65 (2.5) | 98 | 95.15 | 95.10 (3.74) | 95.15 |
| OS26<br>OS27<br>OS28 | 80 (3) | 105.5 | 101.45 | 101.45 (4.00) | 101.5 |
| OS32<br>OS34 | 80 (3) | 111.5 | 107.45 | 107.45 (4.23) | 107.5 |
| OS36<br>OS37<br>OS38 | 100 (4) | 121 | 119.8 | 119.7 (4.71) | 119.8 |
| OS42<br>OS44 | 100 (4) | 148.5 | 147.3 | 147.2 (5.80) | 147.3 |
| OS46 | 150 (6) | 173.5 | - | 171.93 (6.77) | - |

## Options

- Single mechanical shaft seal
- Double mechanical shaft seal
- Silicon Carbide/Carbon seal faces
- Product wetted elastomers in FPM or FFPM
- Diffusion hardened screws
- Heating jacket
- Rectangular inlet
- Hydrostatic testing with certificate
- Reversed flow
- Bottom inlet or outlet
- Stainless steel shroud covering coupling and motor

- Baseplate fitted with adjustable stainless steel ball feet
- ATEX / Ex-proof approval

### Pump sizing

In order to correctly size a twin screw pump some essential information is required. Provision of this information listed below enables our Technical Support personnel to obtain the optimum pump selection. Specific CIP data are important as well.

Product/Fluid Data:

- Fluid to be pumped.
- Viscosity.
- Pumping temperature, minimum, normal and maximum.
- Cleaning in Place temperature(s), minimum, normal and maximum.

Performance Data:

- Flow rate, minimum, normal and maximum.
- Discharge head/pressure (closest to pump outlet).
- Suction condition.

**Note!**
For further details, see also 100000817.
This product has EHEDG certificate.

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## This is Alfa Laval

Alfa Laval is active in the areas of Energy, Marine, and Food & Water, offering its expertise, products, and service to a wide range of industries in some 100 countries. The company is committed to optimizing processes, creating responsible growth, and driving progress – always going the extra mile to support customers in achieving their business goals and sustainability targets.

Alfa Laval's innovative technologies are dedicated to purifying, refining, and reusing materials, promoting more responsible use of natural resources. They contribute to improved energy efficiency and heat recovery, better water treatment, and reduced emissions. Thereby, Alfa Laval is not only accelerating success for its customers, but also for people and the planet. Making the world better, every day. It's all about Advancing better™.

## How to contact Alfa Laval

Contact details for all countries are continually updated on our web site. Please visit www.alfalaval.com to access the information.



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