

# Immersion Pumps PS and PSL (“Slurp Pump”) sealless

1-6014-EN

***Centrifugal pumps of metal  
for clean, polluted  
and viscous fluids***

## **Technical data**

- Delivery rate  
 $Q_{\max} = 1250 \text{ l/min}$
- Delivery head  
 $H_{\max} = 105 \text{ m}$
- Temperature range  
 $0 \text{ }^{\circ}\text{C to } +80 \text{ }^{\circ}\text{C}$

## **Product features**

- Centrifugal pump,  
1- to 7-stage models
- Closed impellers
- Two sizes with identical port  
dimensions
- Immersion depths  
of up to 670 mm
- Operation against dead head  
possible



**Main applications**

- Processing plants
- Humidifiers
- Degreasing facilities
- Filtering installations
- Glass processing machines
- Industrial furnaces
- Refrigeration systems
- Test stands
- Recycling systems
- Washing / cleaning installations
- Machine tools
- etc.

**Fluids delivered**

- Aqueous emulsions, also with chemical additives
- Oils
- Lubricants
- Water with rustproofing additives
- Cooling oils
- etc.

Temperature range: 0 °C to +80 °C  
(other temperature ranges on request).

**Models**

**Model PS:**

Standard model for unproblematic liquids.

**Model PSL – slurr pump:**

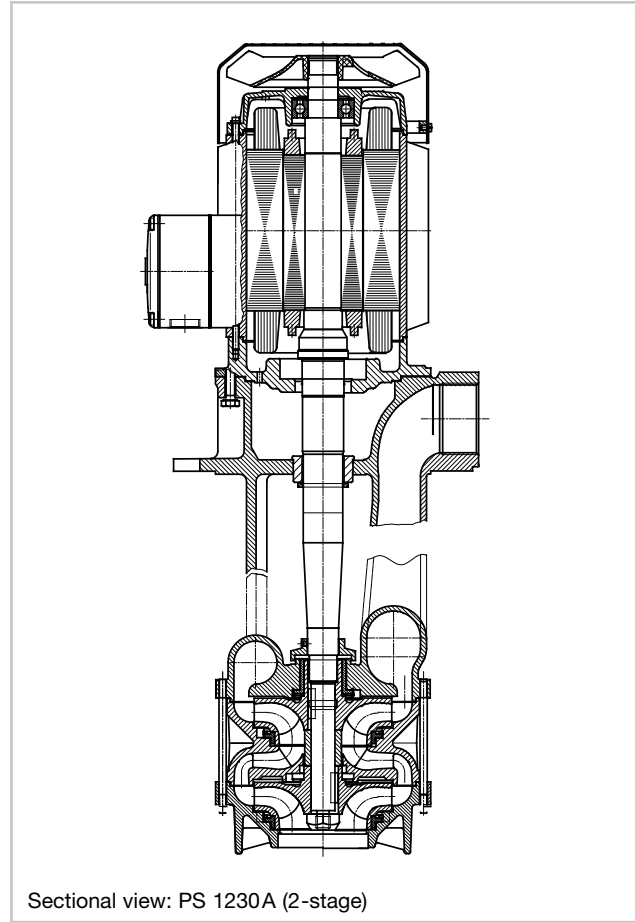
Special “System Spandau” slurr model for liquids carrying large amounts of air.

Principle: the entrapped air is separated from the fluid by centrifugal force and pressed centrally out of the pump along the shaft.

The formation of foam is inhibited to the greatest extent possible, and the pump maintains a stable curve.

**Design features**

- sealless
- free-floating pump shaft, supported only by motor bearings
- closed impellers
- 1- to 7-stage models
- immersion depths of up to 670 mm



Sectional view: PS 1230A (2-stage)

**Mechanical design**

Component	Models PS and PSL
Motor housing	aluminum / cast iron
Pump support	cast iron
Pump bottom	cast iron
Intermediate chamber	cast iron
Impeller	cast iron
Shaft	ETG
Restrictor bushing	sintered iron enhanced with copper
Antifriction bearings	radial deep-groove ball with side plate (Z)

**Optional materials**

Shaft: stainless steel, W-No. 1.4122

Pump parts: special materials or coated surfaces on request

**Electrical design**

The drive motors conform to VDE regulations as well as European motor standards (DIN EN 60034-1/11.95) and the requirements of the CE mark.

Designs in conformity with non-European regulations, e.g. Canadian Standards Association (CSA), Underwriters Laboratories INC. (UL) or special requirements, e.g. the USA or Japan, are possible. Moreover, we also produce models for special operating conditions (e.g. exposure to humidity or dust).

The regular models have motor windings designed for continuous operation and connection to a mains voltage of 230/400 V (> 4 kW: mains voltage of  $\Delta$  400 V)  $\pm$  10%, 50 Hz in accordance with IEC 38/5.87.

On request the motors can be customized to all common mains values.

	Standard	Options
Degree of protection (DIN EN 60034-5/4.88)	IP 54	IP 55
Insulation class	F.B	
Ambient temperature (DIN EN 60034-1/11.95)	max. 40 °C	50 °C and higher
Relative humidity (DIN 50015)	max. 92 %	95 % and higher
Site altitude (DIN EN 60034-1/11.95)	< 1000 m above sea level	on request
Electrical parameters	< 4 kW: 230/400 V, 50 Hz 255/440 V, 60 Hz > 4 kW: $\Delta$ 400 V, 50 Hz $\Delta$ 440 V, 60 Hz $\Delta$ 460 V, 60 Hz	on request
Mains operation	three-phase	
Number of poles	2 poles	
Terminal box		
- layout (DIN EN 12157)	layout 1	layout 2, 3 or 4
- material	plastic	light metal
- cable entry (DIN 40430/2.71)	M16x1.5 and M32x1.5	M25x1.5
	Model PS/PSL1110A: M16x1.5	Model PS/PSL1110A: M20x1.5
		Industrial plug in connector
Protective surface coating	synthetic-resin lacquer color: RAL 9005 (black, matt)	Special finish on request.
Special protection		Motor protection (thermistors in the winding/PTC); fan cowl with canopy.



**Installation and operation**

The unit is installed in a vertical position. The maximum permissible level of fluid is 40 mm beneath the mounting flange (cf. following drawing).

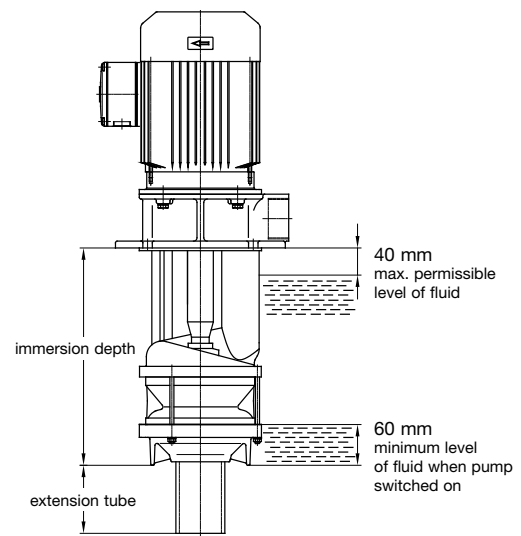
Model PSL: a 60 mm minimum level of liquid is not required. Flow is assured when the liquid covers the intake.

Dry running is not permitted. Before startup, fill the pump with fluid for pumping. There is only limited support for short-term operation without such fluid during the feeding operation.

Operation against dead head is possible without special protective measures.

Direction of rotation: to the right (clockwise) as viewed from above looking down on the ventilation side of the motor.

**Option**



**Model with extension tube (model PS)**  
if immersion depth deviates from standard.

**Order example**

**PS**  
**PSL 1 2 30A-390**

Model \_\_\_\_\_

Size \_\_\_\_\_

Number of stages \_\_\_\_\_

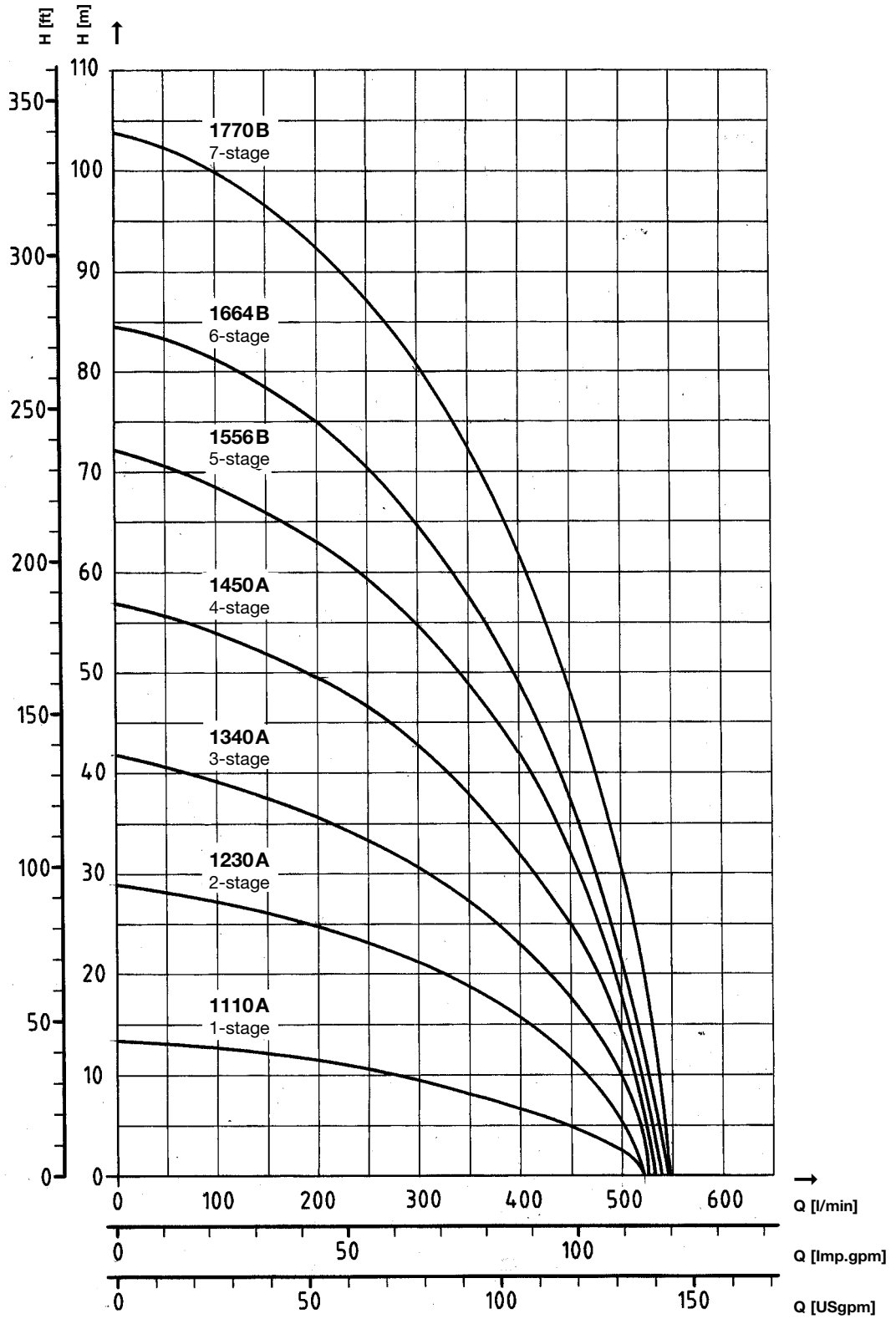
motor power key \_\_\_\_\_

Immersion depth t \_\_\_\_\_

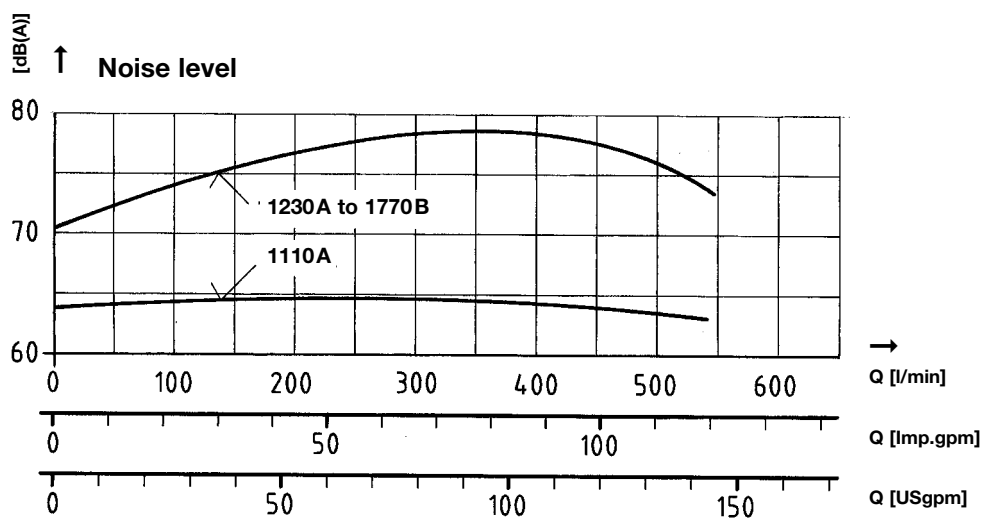
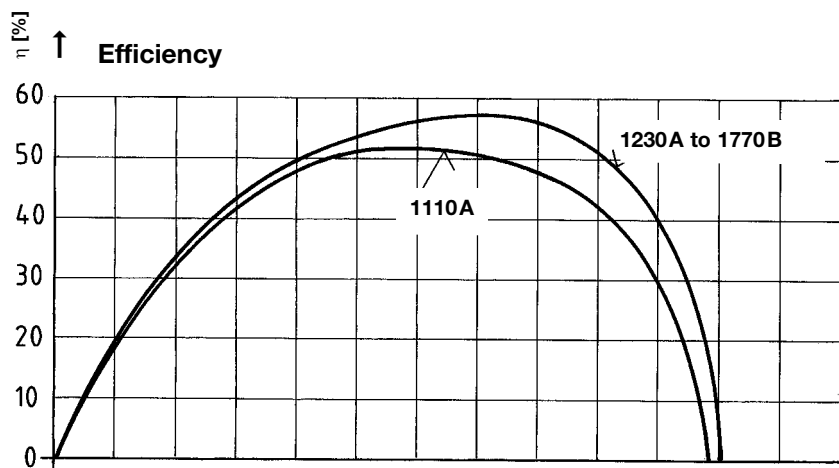
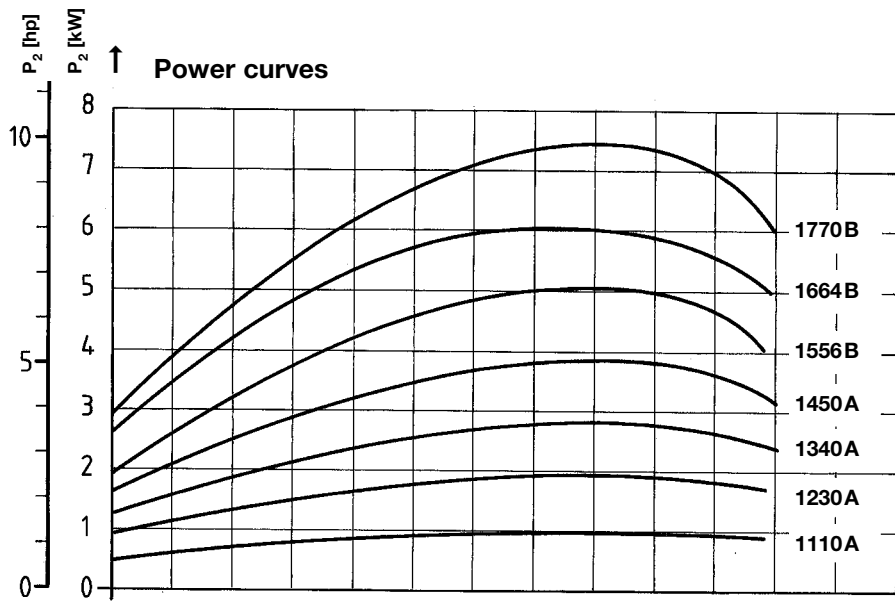
Please indicate electrical parameters, e.g. 230/400 V, 50 Hz. When ordering spare parts, always indicate the 10-place serial number (see motor rating plate).

**Size 1,  $Q_{max} = 550$  l/min**

**Characteristics**

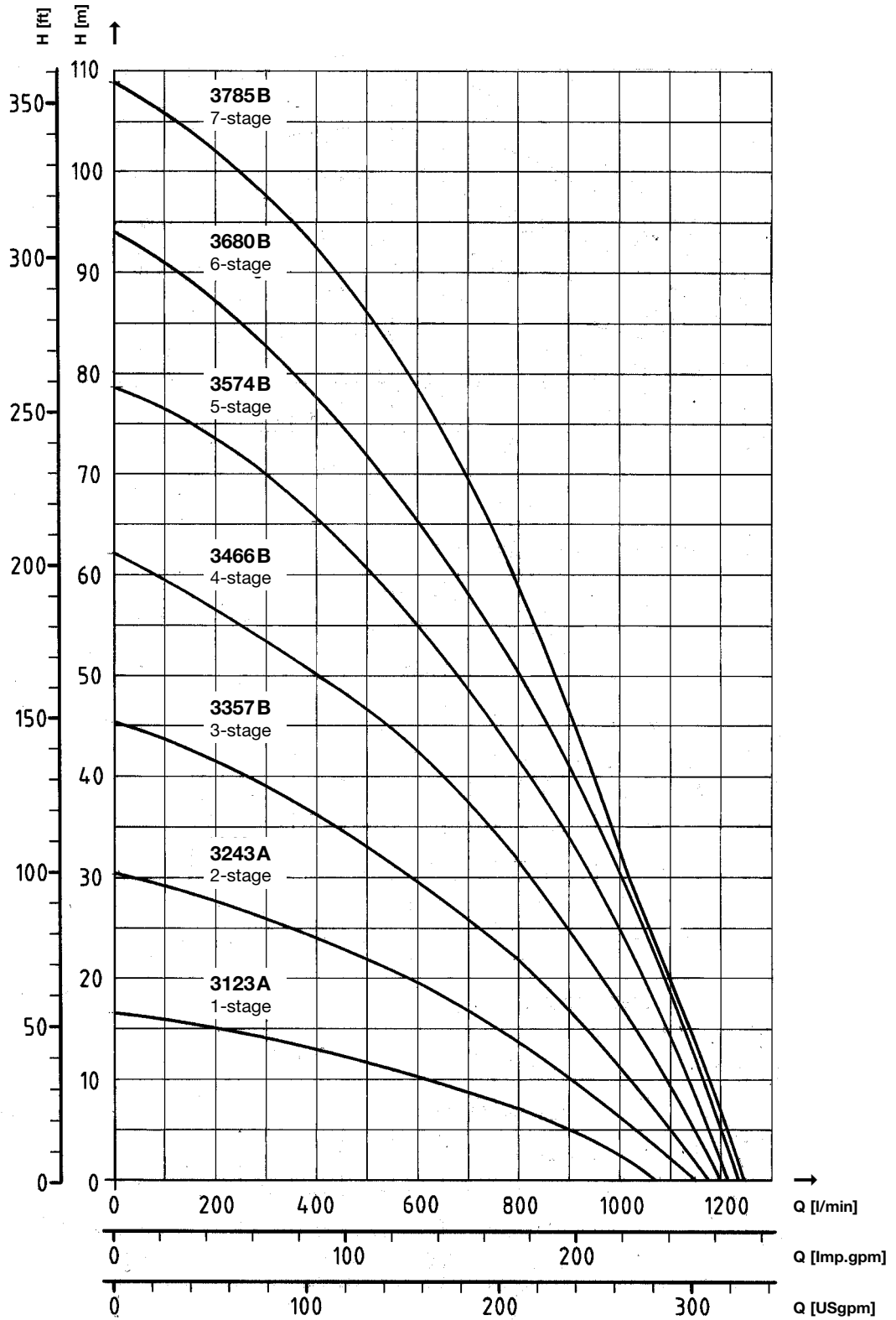


The data apply to fluids with a viscosity of 1 mm<sup>2</sup>/s at a density of 1 kg/dm<sup>3</sup>

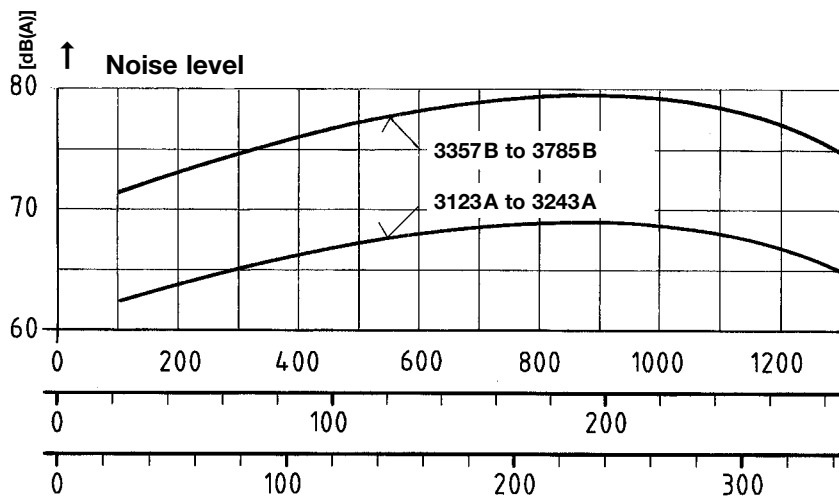
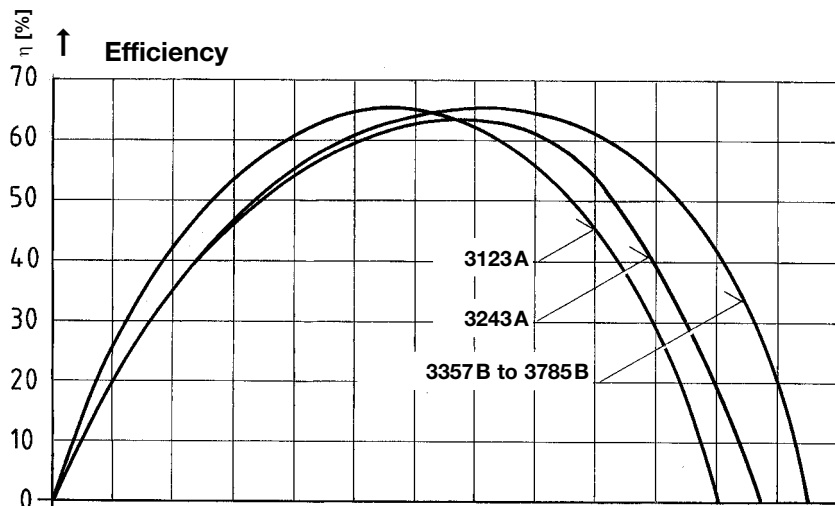
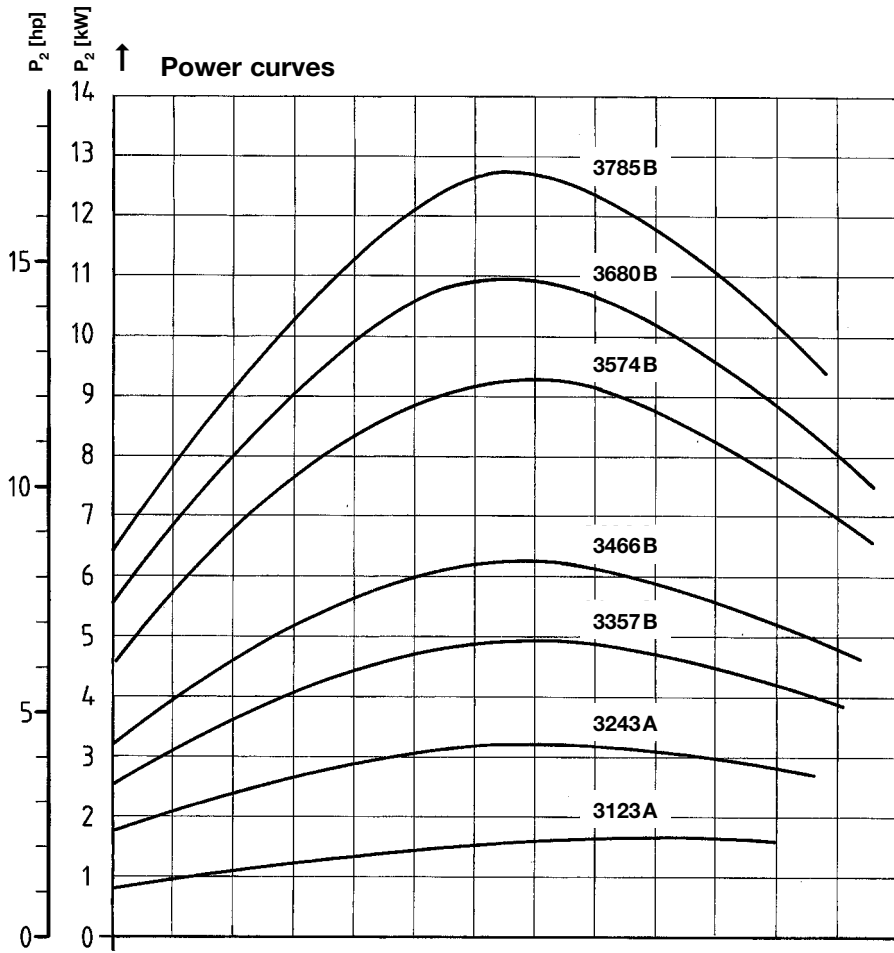


**Size 3,  $Q_{max} = 1250$  l/min**

**Characteristics**

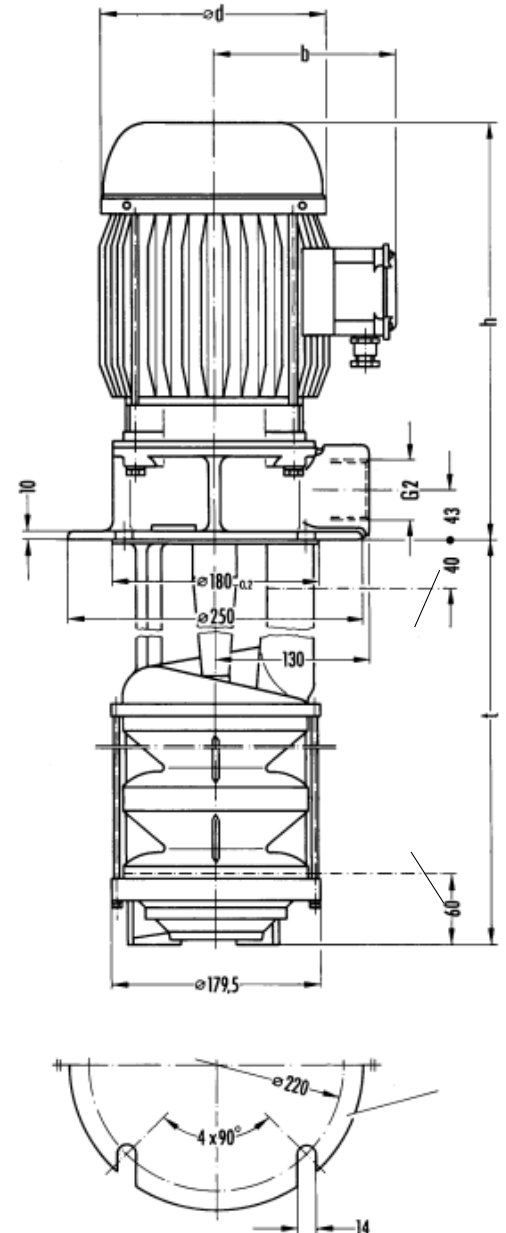


The data apply to fluids with a viscosity of 1 mm<sup>2</sup>/s at a density of 1 kg/dm<sup>3</sup>



→  
 Q [l/min]  
 Q [Imp.gpm]  
 Q [USgpm]

Dimensions and Weights						Electrical Data					Oil <sup>1)</sup>
Model	t [mm]	weight [kg]	ød	b	h	Rated voltage	Rated power	Rated speed	Rated current	Noise level <sup>2)</sup>	Rated current at 400 V [A]
						Δ / Y ±10% [V]	[kW]	50 Hz [rpm]	Δ / Y [A]	[dB(A)]	
PS/PSL1110A 1-stage	250	30	140	104	305	230/400	1	2769	4.07/2.35	62-64	2.35
	320	36									
	450										
	550										
PS/PSL1230A 2-stage	320	42	176	149	347.5	230/400	2.2	2850	8/4.6	65-77	5
	390	48									
	520										
	620										
PS/PSL1340A 3-stage	390	53	176	149	347.5	230/400	3	2840	10.7/6.2	68-74	6.8
	460	56									
	590										
PS/PSL1450A 4-stage	460	62	196	155	380	230/400	4	2860	13.5/7.8	69-75	8.6
	530	65									
	660										
PS/PSL1556B 5-stage	530	72	260	198	442	Δ 400	5.5	2880	11	68-76	12.5
	600	74									
PS/PSL1664B 6-stage	600	83	260	198	442	Δ 400	5.8	2870	11.6	69-75	12.5
PS/PSL1770B 7-stage	670	132	260	198	442	Δ 400	7.5	2890	14.6	72-75	16
PS/PSL312A 1-stage	250	34	176	149	347.5	230/400	2.2	2850	8/4.6	63-65	5
	320	40									
	450										
	550										
PS/PSL3243A 2-stage	320	46	176	149	357.5	230/400	3.6	2810	12.8/7.4	67-75	7.4
	390	52									
	520										
	620										
PS/PSL3357B 3-stage	390	54	260	198	442	Δ 400	5.5	2880	11	70-77	12.5
	460	58									
	590										
PS/PSL3466B 4-stage	460	83	260	198	442	Δ 400	7.5	2890	14.6	70-78	16
	530	85									
PS/PSL3574B 5-stage	530	113	260	198	480	Δ 400	9	2880	18.5	73-79	22.5
	600	115									
PS/PSL3680B 6-stage	600	120	260	198	480	Δ 400	11	2880	21.5	75-79	22.5
PS/PSL3785B 7-stage	670	136	260	198	540	Δ 400	15	2890	28.5	75-80	30



Dimensions in mm.

<sup>2)</sup> to DIN EN 60034-9/5.96

<sup>1)</sup> Viscosity  
30 mm<sup>2</sup>/s

<sup>\*)</sup> not necessary for model PSL

**Please note:**

All equipment may only be installed and/or assembled by qualified personnel. Observe existing safety regulations.

To avoid errors please consult our operating instructions.

This brochure was presented by:

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