

Sealless Immersion Pumps for Industrial Applications

Centrifugal and screw pumps for low,
medium and highpressure applications



Quality Management
DIN EN ISO 9001:2008

Environmental Management
DIN EN ISO 14001

Health and Safety Management
OHSAS 18001

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**Spandau
pumpen®**

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A solution for every application

Main applications

Machine tools / Filter systems

Printing machines / Packaging machines

Cooling / Heating devices

Optical devices



Immersion pumps for highly contaminated fluids

Designation	Q _{max} [l/min]	H _{max} [m]	Type					Page
PR	30	4	centrifugal pump	■		■	■	4
PRT	120	32	centrifugal pump	■				4
PRA	120	32	centrifugal pump		■	■	■	4
HCT	120	32	centrifugal pump			■		4
PMS	400	45	centrifugal pump	■				4
PSH	800	55	centrifugal pump	■				4



Immersion pumps for slightly contaminated fluids

Designation	Q _{max} [l/min]	H _{max} [m]	Type					Page
PRG	60	32	centrifugal pump			■	■	5
PRK	175	33	centrifugal pump	■	■	■		5
PSR	180	255	centrifugal pump	■		■	■	5
PXA	500	250	centrifugal pump	■		■	■	5
PS	1250	110	centrifugal pump	■				5
PSL	1250	110	centrifugal pump	■				5



Immersion pumps for clean liquids

Designation	Q _{max} [l/min]	H _{max} [m]	Type					Page
LMP	670	1200	screw pump	■				6



Atex ink pumps

Designation	Q _{max} [l/min]	H _{max} [m]	Type					Page
PAB	305	20	centrifugal pump		■			7
PNB	810	7	centrifugal pump		■			7

Hydrocyclones

Designation	Q _{max} [l/min]	p [bar]	Type					Page
HDZ-1	70	2,5	hydrocyclone	■				8
HDZ-2	90	2,5	hydrocyclone	■				8

Build on experience

Spandau pumps have been amongst the driving forces in mechanical engineering for more than 80 years. They don't prove their high reliability merely by delivering cooling agents. Thanks to their many good characteristics, they are furthermore the best solution for numerous other applications.

Flexibility and reliability

Versatility is the strength of the Spandau pumps range. Whatever the application a wide range of models and materials is available to choose from. Alongside their work on cooling lubricant circulation for machine tools they undertake work in printing machines, optical devices, or humidifiers and air-conditioning units. Here they supply everything, from severely contaminated to clouded liquids right up to clean media for the high pressure domain.

In addition they are used in laser technology and in the surface- and process-engineering industries. They are extremely robust and long-lived, offer the highest performance in both cryogenic and extremely hot liquids, and can be used both for aggressive as well as abrasive media.

Multiple benefits

Tuned to the particular purpose of the application, the pumps are constructed in such a way that maximal efficiency is achieved. Particularly striking is the economy effect in pumps with rotational-speed control, which adapt their performance and thereby their power consumption to the actual demand.

Spandau pumps require less space, are easy to install and quick to service. This means your costs are lower and the profitability of the unit increases.

There are resulting advantages also for the environment: For instance, their extraordinary durability against cooling lubricant additives ensures that the lifetime of the coolants is extended and there are less waste liquids which have to be disposed of

Standard or made to measure?

Spandau pumps are reliable, repeatedly proven serially-produced items such as for example the PX centrifugal pumps, which are mainly used in machine tools and are available in numerous sizes and immersion depths. Alongside these we develop tailor-made individual pumps for your special requirements. This makes it simple for you to implement the perfect solution for your machine.

In the following we give you an overview of our range of sealless immersion pumps for industrial applications. You can request further information and detailed brochures via our Sales and Service Center in Germany, our international branches and representatives, or directly from our Head Office in Berlin.

Our staff will be pleased to advise you.



Immersion pumps for highly contaminated fluids

Primary areas of use

- Machine tools / filter systems
- Humidifiers and airconditioning units
- Optical devices

Delivered media

- Various liquids for industrial use
- Clean, clouded or contaminated liquids such as waterbased emulsions (synthetic / mineraloil based), also with chemical additives
- Low-viscosity cooling and cutting oils, mineralbased and synthetic
- Lyes and acids
- Water, including deionized
- other

Features

- Sealless
- Single or multigrade
- Pump shaft with motorside bearing
- Connection dimensions according to DIN 12157

Advantages

- High operational safety
- Low maintenance requirements
- Quietrunning
- Flexible immersion depths, also with pipe extension
- Simple, quick installation and commissioning



Series	Q _{max} [l/min]	H _{max} [m]	Immersion depth [mm]	Temperature [°C]	Material *	Product features	Leaflet
PR	30	4	to 120	0 to +60	PPN	open impellers	1-6011-EN
PRT/PRA	120	32	to 450	-30 to +60	PPU	open impellers	1-6001-EN
HCT	120	32	to 350	-100 to +100	LCP	open impellers	1-6004-EN
PMS	400	45	to 570	-70 to +170	Gray cast iron / steel	open impellers	1-6033-EN
PSH	800	55	to 550	-30 to +80	Gray cast iron / steel	open impellers	1-6005-EN

* full material list see leaflet

Immersion pumps for slightly contaminated fluids

Main applications

- Machine tools / filter systems
- Humidifiers and airconditioning units
- Optical devices

Delivered media

- Wide range of liquids for industrial use
- Clean or slightly contaminated liquids
- Low-viscosity cooling and cutting oils, mineralbased and synthetic
- Cleaning fluids
- Lyes and acids
- Water, including deionized
- other

Features

- Sealless / or mechanical seal
- Single or multigrade
- Pump shaft with motorside bearing
- Connection dimensions according to DIN 12157

Advantages

- High operational safety
- Low maintenance requirements
- Quietrunning
- Flexible immersion depths, also with pipe extension
- Simple, quick installation and commissioning



Series	Q _{max} [l/min]	H _{max} [m]	Immersion depth [mm]	Temperature [°C]	Material *	Product features	Leaflet
PRG	60	32	to 320	0 to +60	POM / GF	closed impellers	1-6007-EN
PRK	175	33	to 410	+5 to +60	POM	open impellers	1-6067-EN
PSR	180	255	to 739	-10 to +80	Gray cast iron / stainless steel	closed impellers	1-6065-EN
PXA	500	250	to 692	-10 to +80	Gray cast iron / stainless steel	closed impellers	1-6062-EN
PS/PSL	1250	110	to 670	0 to +80	Gray cast iron / steel	closed impellers	1-6014-EN

* full material list see leaflet

Immersion pumps for clean liquids

Main applications

- Machine tools / filter systems

Delivered media

- Liquids with lubricating properties such as
 - Oil in water emulsions with min. 4–5% oil content,
 - Cooling and cutting oils
- For clean liquids without abrasive or longfibered components

Design	Standard	Optional
Spindles specially hardened	✓	
Hydrostatic thrust compensation	✓	
Rotary shaft lip-type seal	✓	
Mechanical seal		✓
Screw housing specially hardened	✓	
Guard ring for rotary shaft lip-type seal	✓	
Rotary spindle guidance in suction area	✓	
Leakage monitoring	✓	
Installation outside the reservoir with foot flange and external leakage feed-back system		✓
Druckanschluss: Druckbegrenzungsventil mit Rohrgewinde nach DIN 3852*	✓	
Pressure port: SAE flange		✓
4-pole motor		✓
Regulated speed motor		✓

* for series 27–38 pressure restriction valve is not standard



Features

- Screw pump: triplescrew, selfpriming
- Drive and pump connected using standard pump mounts
- 16 sizes for demandbased type model selection

Advantages

- Highdurability materials
- Simple, quick installation and commissioning
- High operational safety
- Long lifetimes

LMP screw pumps with frequency converters

- Up to 70% energy savings
- Speed adjustment ensures effective delivery rate and usage
- Lower heat input in the overall system and thus reduced effort required for cooling capacity

Series	Q _{max} [l/min]	H _{max} [m]	Immersion depth [mm]	Temperature [°C]	Product features	Leaflet
LMP	670	120	to 600	0 to +80	Gusseisen mit Lamellengraphit	1-6064-EN

* full material list see leaflet

Atex ink pumps

Main applications

- Printing and Packaging machines

Delivered media

- Paints containing solvents
- Varnishes and enamels
- Waterbased paints
- Cleaning fluids

Features

- Sealless
- Single and dual grade
- Open impellers
- ATEX approved
- Protection class EExd – “flameproof enclosure”
- Also for viscosities > 20 mm²/s
- Connection dimensions according to DIN 12157

Advantages

- Highstrength and good chemical resistance for minimum weight
- High operational safety, low maintenance requirements
- PAB: Fast change of paint by simple separation of motor and pump part

Special features

The pump series PAB and PNB are ATEX approved – they are appropriately certified and labeled, and approved for use in the following hazard types:

Zone	0	1	2
allowed	no	yes	yes



Series	Q _{max} [l/min]	H _{max} [m]	Immersion depth [mm]	Temperature [°C]	Material *	Product features	Leaflet
PAB	305	20	to 440	0 to +60	Gray cast iron / Aluminum	Model with removable motor (aluminum housing)	1-6036-EN
PNB	830	8	to 620	0 to +60	Gray cast iron	Model with nonremovable motor	1-6036-EN

* full material list see leaflet

Hydrocyclones

Main applications

- Purification to grinders without filter

Delivered media

- Water and emulsions
- Low-viscosity oils < 20 mm²/s

Features

- Low wear and corrosion resistant plastic

Advantages

- Constant detergency
- Two or more cyclones installed in parallel increase cleaning performance by a respective multiple (cyclone battery)
- Two or more cyclones installed in linear connection increases the purity

Hydrocyclones



Series	Q [l/min]	p [bar]	Temperature [°C]	Product features	Leaflet
HDZ-1	70	2,5	+5 to +60	High degree of purity (clean water)	1-6206-EN
HDZ-2	90	2,5	+5 to +60	Lower degree of purity (clean water)	1-6206-EN

For the right pump by:

Fax: +49 (0)30 72002-261

Email: SpandauPumpen@skf.com

Sender company, city, person to contact

Date:

Operating area:

Quantity:

Working point

Delivery head [m]:

Delivery rate [l/min]:

Delivery medium

Type:

Temperature range [°C]:

Density [kg/dm³]:

Viscosity at operating temperature [mm²/s]:

pH value:

Chemical analysis (separate page if necessary):

Solids content [ppm]:

Grain size [µm]:

Special characteristics:

Immersion depth [mm]:

Material specifications/recommendations (if no delivery medium chem. specified)

Housing:

Impeller:

Shaft:

Seals:

Accessories:

Electrical parameters

Europe Δ/Y 230/400 V, 50 Hz ⊥ 230 V, 50 Hz Δ 400 V, 50 Hz

USA Δ/Y 265/460 V, 60 Hz YY/Y 230/460 V, 60 Hz (option)

Japan Δ 200 V, 50 Hz Δ 200-220 V, 60 Hz

Other Δ/Y 230/400 V, 50/60 Hz

Additional electrical parameters:

Insulation class: F.B

Type of enclosure IEC 34: IP 55

Ambient temperature [°C] (if >40 °C):

Options

Motor protection (thermistor in winding/PTC):

Fan cowl, with canopy:

Industrial connectors (DESINA):

Frequency converter operation:

Special operating conditions:

Additional information:

We would like to have brochures on:

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Immersion pumps for slightly contaminated fluids

Immersion pumps for clean liquids

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