

Laing industrial pumps

. . . with spherical motor, robust and reliable



- Normal suction centrifugal pumps
- Self-priming pumps
- Ecocirc® DC pumps

LAING
einfach · gut · aus prinzip

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About us

Since the 1950s we at Laing have worked in the areas of research, development and production of pumps and heating products. More than 1000 patents worldwide resulted from this work. The original R&D institute located in Southern Germany has over the years evolved into an international company with additional locations in the US, Japan and Hungary and with more than 400 employees. Today, our program consists of:

- Pumps (Shaftless spherical motor pumps)
- Floor heating system connection
- Special products
- Heating controls
- Electrical heaters

We are a flexible and competent partner in the area of pumping and heating. We invite you to try our high quality, economic products.

Normal suction centrifugal pumps



- shaftless spherical motor pumps
- corrosion resistant (Stainless steel, Titanium, Plastic)
- maintenance free, leak-proof
- long life
- blockage resistant
- easy starting after downtime
- quiet
- completely encapsulated stator - no condensation

Normal suction centrifugal pumps

Application

Laing spherical motor pumps are used to circulate aggressive and corrosive media. Applications:

- Process technology
- Laboratory and medical technology
- Environmental technology
- Chemical and pharmaceutical plants
- Food industry

Design

Laing industrial pumps are available in three material combinations:

- Plastic pump housing / stainless steel drive unit
- Plastic pump housing / titanium drive unit
- Stainless steel pump housing / stainless steel running unit

The models S4, S5 and S6 with plastic pump housing are available with an integrated mounting bracket, which enables installation in four different positions.

Laing pumps are designed for continuous operation (approx. 0.8 mm wear path in the carbon bearing = far greater than conventional pumps).

Since all pump parts are also long-term corrosion resistant, reliable, trouble-free operation is guaranteed.

The stators in Laing pump are completely encapsulated by default. This reliably prevents condensation forming in the motor coil, especially when cold media are used.

Laing pumps function according to the spherical motor principle. The only moving part in the pump is a spherically shaped rotor/impeller unit supported by an ultra-hard, low-wear ceramic ball. This type of bearing reliably eliminates bearing play. The pump continues to work silently, even after years of use; one advantage which conventional pumps cannot offer, as they become increasingly louder due to their cylindrical bearings.

Laing pumps generally do not require maintenance. The rotor, which is magnetically held in place, automatically avoids smaller dirt particles and cannot be blocked by them.

As the rotor can be replaced easily, it is seldom necessary to replace the entire pump or motor when the wear limit of the bearing is reached.

Laing normal suction centrifugal industrial pump Model T5-58/550 P

Plastic pump housing with integrated mounting bracket



Seal



Rotor/impeller



Stainless steel separating spherical cap with ceramic bearing ball



Stator

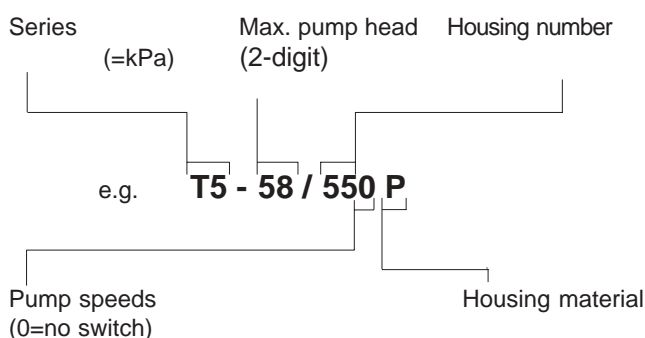
End cap / electrical connection

Technical Data

Motor type:	Shaftless spherical motor
Electrical connection	230 V / 50Hz *
System temperature	- 10°C bis + 110°C (non-freezing) in depending on pump housing material
Insulation class	IP42 / F
Max. power consumption	S1 = 25 W S4 + T4 = 65 W S5 + T5 = 100 W S6 + T6 = 130 W

* other voltages, for example
115 / 230V / 60Hz with UL / CSA approval,
100V / 50 + 60Hz with Dentori approval on request.

Model names



Normal suction centrifugal pumps

Product range normal suction centrifugal pumps



Plastic pump housing / stainless steel drive unit

Model	Part number	Materials	Max. pressure (kPa)	Max. Temp. (°C)	Rated input capacity (Watt)	Connection thread	hose barb	Product category
S1-15/830 N	11 00 001	Stainless steel / noryl	100	60	25	½" male		H
S1-15/810 N	11 00 005	Stainless steel / noryl	100	60	25		½"	H
S1-15/790 N	11 00 010	Stainless steel / noryl	100	60	25		¾"	H
S4-36/550 P	21 00 002	Stainless steel / PA 6.6	100	60	65	¾" male		H
S4-36/530 P	21 00 007	Stainless steel / PA 6.6	100	60	65		¾"	H
S5-36/550 P	21 00 012	Stainless steel / PA 6.6	100	60	100	¾" male		H
S5-36/530 P	21 00 017	Stainless steel / PA 6.6	100	60	100		¾"	H
S5-58/550 P	21 00 022	Stainless steel / PA 6.6	100	60	100	¾" male		H
S5-58/530 P	21 00 027	Stainless steel / PA 6.6	100	60	100		¾"	H
S6-36/550 P	21 00 032	Stainless steel / PA 6.6	100	60	130	¾" male		H
S6-36/530 P	21 00 037	Stainless steel / PA 6.6	100	60	130		¾"	H
S6-61/550 P	21 00 042	Stainless steel / PA 6.6	100	60	130	¾" male		H
S6-61/530 P	21 00 047	Stainless steel / PA 6.6	100	60	130		¾"	H
S6-36/610 P	21 00 060	Stainless steel / PA 6.6	100	60	130	1" male		H
S6-36/590 P	21 00 052	Stainless steel / PA 6.6	100	60	130		1"	H



Plastic pump housing / titanium drive unit

Model	Part number	Materials	Max. pressure (kPa)	Max. Temp. (°C)	Rated input capacity (Watt)	Connection thread	hose barb	Product category
T4-36/550 P	21 00 004	Titanium / PA 6.6	100	60	65	¾" male		H
T4-36/530 P	21 00 009	Titanium / PA 6.6	100	60	65		¾"	H
T5-36/550 P	21 00 014	Titanium / PA 6.6	100	60	100	¾" male		H
T5-36/530 P	21 00 019	Titanium / PA 6.6	100	60	100		¾"	H
T5-58/550 P	21 00 024	Titanium / PA 6.6	100	60	100	¾" male		H
T5-58/530 P	21 00 029	Titanium / PA 6.6	100	60	100		¾"	H
T6-36/550 P	21 00 034	Titanium / PA 6.6	100	60	130	¾" male		H
T6-36/530 P	21 00 039	Titanium / PA 6.6	100	60	130		¾"	H
T6-61/550 P	21 00 044	Titanium / PA 6.6	100	60	130	¾" male		H
T6-61/530 P	21 00 049	Titanium / PA 6.6	100	60	130		¾"	H
T6-36/610 P	21 00 062	Titanium / PA 6.6	100	60	130	1" male		H
T6-36/590 P	21 00 054	Titanium / PA 6.6	100	60	130		1"	H







Stainless steel pump housing and drive unit

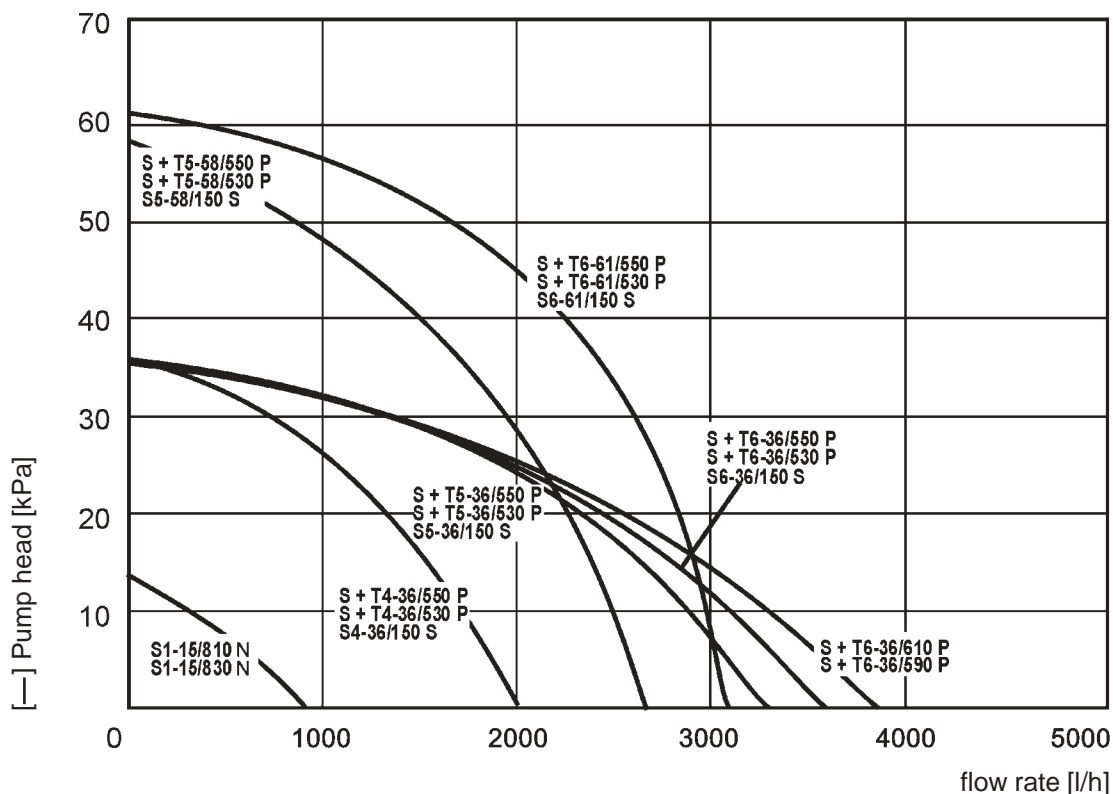
Model	Part number	Materials	Max. pressure (kPa)	Max. Temp. (°C)	Rated input capacity (Watt)	Connection thread	Product category
S4-36/150 S	25 00 000	Stainless steel	1000	110	65	¾" female	H
S5-36/150 S	25 00 005	Stainless steel	1000	110	100	¾" female	H
S5-58/150 S	25 00 010	Stainless steel	1000	110	100	¾" female	H
S6-36/150 S	25 00 015	Stainless steel	1000	110	130	¾" female	H
S6-61/150 S	25 00 020	Stainless steel	1000	110	130	¾" female	H

Normal suction centrifugal pumps

Accessories normal suction centrifugal pumps

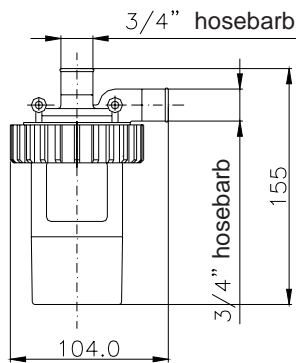
	model	Part number	Description	Product category
Options				
	K 100	95 00 018	Pre-assembled power cord (100 cm) option	H
	KS 100	95 00 035	Pre-assembled power cord ((100 cm) incl. connector option	H
	MW A	95 00 040	Mounting angle for model S1-15 P option	H
	VIT B	95 00 019	Viton-seal for model S4/S5/S6 P + T4/T5/T6 P option	H
	MW A	95 00 040	Mounting plate for S-pumps with plastic housing	H
Replacement rotors for plastic pump housig / stainless steel drive unit				
	F 28	95 00 808	Rotor for model S1-15/830 + 810 + 790 P, incl. seal	H
	F 80	95 00 782	Rotor for model S4-36/550 + 530 P, incl. seal	H
	F 04	95 00 783	Rotor for model S5-36/550 + 530 P, incl. seal	H
	F 81	95 00 786	Rotor for model S5-58-550 + 530 P, incl. seal	H
	F 12	95 00 790	Rotor for model S6-36/550 + 530 P, incl. seal	H
	F 13	95 00 791	Rotor for model S6-61/550 + 530 P, incl. seal	H
	F 88	95 00 794	Rotor for model S6-36/610 + 590 P, incl. seal	H
Replacement rotors for plastic pump housing / titanium drive unit				
	F 82	95 00 721	Rotor for model T4-36/550 + 530 P, incl. seal	H
	F 83	95 00 722	Rotor for model T5-36/550 + 530 P, incl. seal	H
	F 84	95 00 725	Rotor for model T5-58/550 + 530 P, incl. seal	H
	F 85	95 00 723	Rotor for model T6-36/550 + 530 P, incl. seal	H
	F 86	95 00 716	Rotor for model T6-61/550 + 530 P, incl. seal	H
	F 89	95 00 724	Rotor for model T6-36/610 + 590 P, incl. seal	H
Replacement rotors for stainless steel pump housing and drive unit				
	F 02	95 00 799	Rotor for model S4-36/150 S, incl. seal	H
	F 03	95 00 784	Rotor for model S5-36/150 S, incl. seal	H
	F 50	95 00 787	Rotor for model S5-58-150 S, incl. seal	H
	F 10	95 00 792	Rotor for model S6-36/150 S, incl. seal	H
	F 11	95 00 793	Rotor for model S6-61/150 S, incl. seal	H

Pump curves

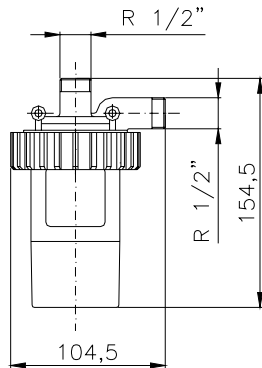


Normal suction centrifugal pumps

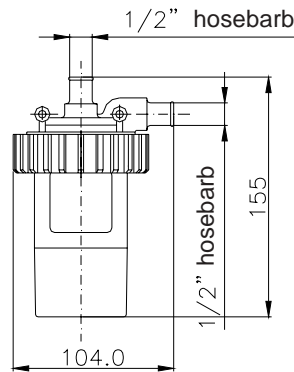
Dimensional drawings



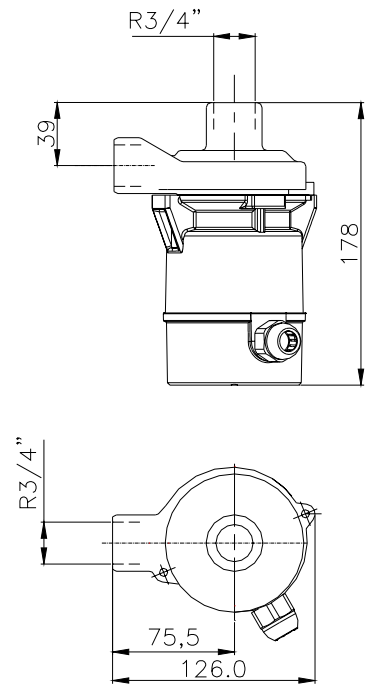
S1-15 / 790 N



S1-15 / 830 N



S1-15 / 810 N



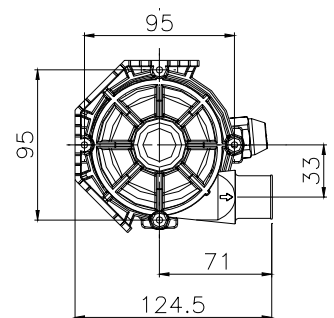
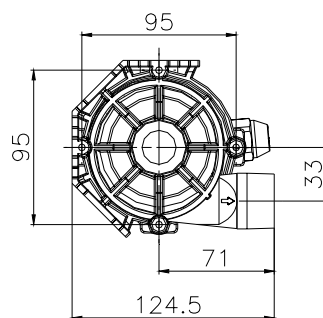
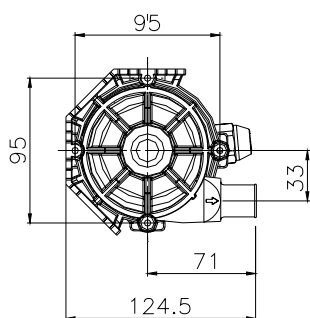
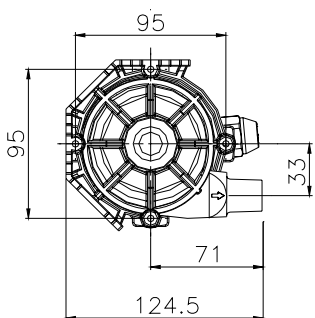
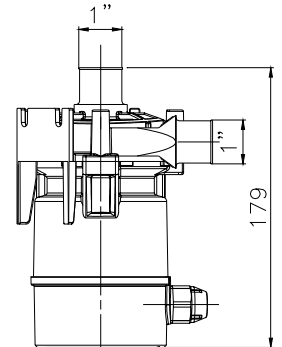
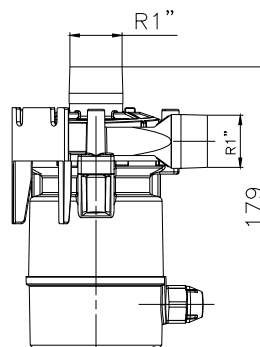
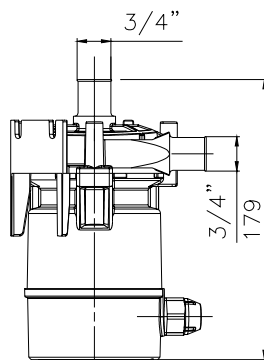
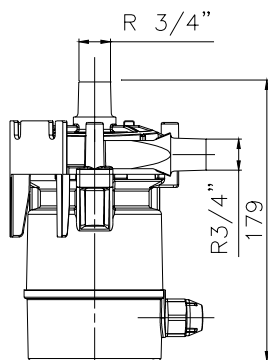
S4-36 / 150 S
S5-36 / 150 S
S5-58 / 150 S
S6-36 / 150 S
S6-61 / 150 S

S+T4-36 / 550 P
S+T5-36 / 550 P
S+T5-58 / 550 P
S+T6-36 / 550 P
S+T6-61 / 550 P

S+T4-36 / 530 P
S+T5-36 / 530 P
S+T5-58 / 530 P
S+T6-36 / 530 P
S+T6-61 / 530 P

S6-36 / 610 P

S6-36 / 590 P



Self-priming pumps



- Self-priming pumps for trouble-free operation
- no long-term interruption of the flow by air/gas pockets
- pumpability of air within the pumped media
- no positive suction head required, suction height approx. 1 m
- maintenance-free and blockage resistant
- quiet

Application

Laing spherical motor pumps are used to circulate aggressive and corrosive media. We recommend that you use the self-priming version wherever the pump cannot be installed below the level of the medium. After it is filled with water or the pumping medium, the pump automatically draws the medium to approx. 1m suction height. Applications:

- Process technology
- Laboratory and medical technology
- Environmental technology
- Chemical and pharmaceutical plants
- Food industry
- Emptying tanks or barrels
- Transferring liquids
- Circulation in pools which are emptied and filled regularly

Design

Laing self-priming pumps are available in two material combinations:

- Plastic pump housing/stainless steel drive unit
- Plastic pump housing/titanium drive unit

The pump housing consists of two parts: The lower part consists of a conventional spiral housing. The upper part ensures that there is a certain water reserve on the pressure side and contains circulation channels through which the water can flow back to the suction mouth. This circulation provides for the self-powered suction effect of the pump.

Laing pumps are designed for continuous operation (approx. 0.8 mm wear path in the carbon bearing = far greater than conventional pumps).

Since all pump parts are also long-term corrosion resistant, reliable, trouble-free operation is guaranteed. The stators in Laing pump are completely cast as standard.

This reliably prevents condensation forming in the motor coil, especially when cold media are used.

Laing pumps function according to the spheromotor or spherical motor principle. The only moving part in the pump is a spherically shaped rotor/wheel unit supported by an ultra-hard, low-wear ceramic ball. This type of bearing reliably eliminates bearing play. The pump continues to work silently, even after years of use; one advantage which conventional pumps cannot offer, as they become increasingly louder due to their cylindrical bearing.

Laing pumps generally do not require maintenance. The rotor, which is magnetically held in place, automatically avoids smaller dirt particles and cannot be blocked by them.

As the rotor can be replaced easily, it is seldom necessary to replace the entire pump or motor when the wear limit of the bearing is reached.

Laing industrial pumps Type S4-55/260 P

Upper part
Plastic pump housing
(with circulation channels)

Lower part
Plastic pump housing
(conventional spiral housing)

Seal

Rotor/impeller

Stainless steel separating spherical cap with ceramic bearing ball

Stator

End cap / electrical connection



Technical data

Motor type:	Shaftless spherical motor
Electrical connection	230V / 50Hz *
System temperature	+/- 0°C to + 60°C
Protection class / insulation class	IP42 / F
Max. power consumption	S4 = 65W S5 = 100W S6 = 130W

* other voltages, for example
115 / 230V / 60Hz with UL / CSA approval,
100V / 50 + 60Hz with Dentori approval on request.

Model names

Series	Max. pump height (=kPa)	Housing number (2-digit)
e.g.	S4 - 55 / 260 P	
	Pump speeds (0=no switch)	Housing material

Self-priming pumps

Product range self-priming pumps






Self-priming pumps

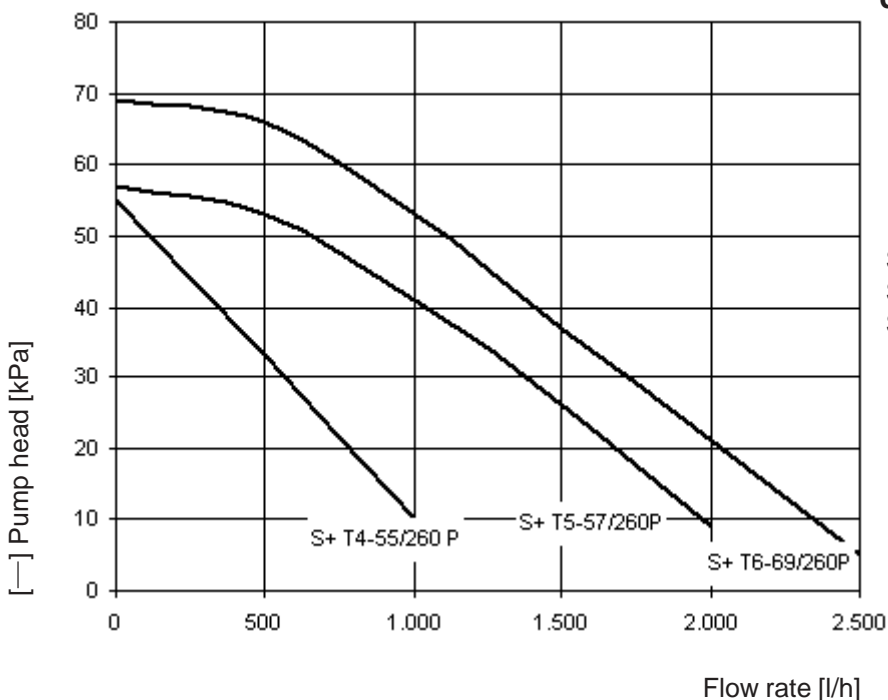


Model	Part number	Materials	Max. pressure (kPa)	Max. Temp. (°C)	Rated input capacity (Watt)	max. suction height (m) in time(min)	Connection hosebarb	Product category
S4-55/260 P	21 00 064	Stainless steel / Noryl	100	60	65	1,2 / 5-8 min	3/4"	H
S5-57/260 P	21 00 065	Stainless steel / Noryl	100	60	100	1,2 / 5-8 min	3/4"	H
S6-69/260 P	21 00 066	Stainless steel / Noryl	100	60	130	1,2 / 1,5 min	3/4"	H
T4-55/260 P	21 00 069	Titanium / Noryl	100	60	65	1,2 / 5-8 min	3/4"	H
T5-57/260 P	21 00 068	Titanium / Noryl	100	60	100	1,2 / 5-8 min	3/4"	H
T6-69/260 P	21 00 067	Titanium / Noryl	100	60	130	1,2 / 5-8 min	3/4"	H

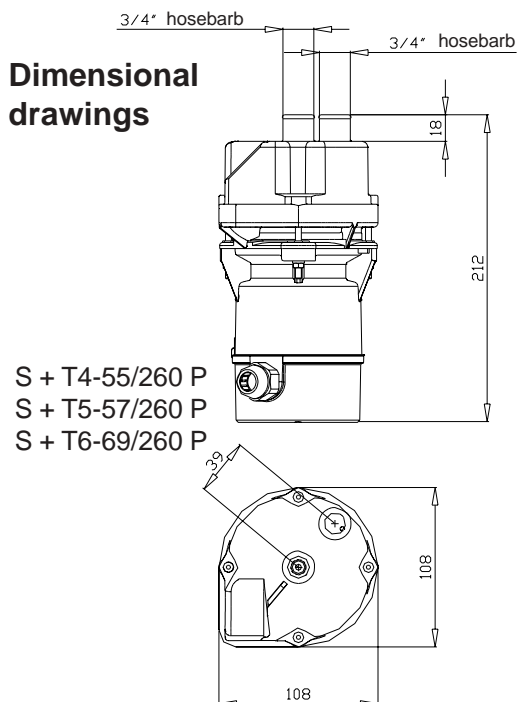
Accessories self-priming pumps

Model	Part number	Description	Product category	
Options				
	K 100	95 00 018	Pre-assembled power cord (100 cm) option	H
	VIT B	95 00 019	Viton-seal S4/S5/S6 P + T4/T5/T6 P option	H
Replacement rotor for plastic pump housing / stainless steel drive unit				
	F 74	95 00 803	Rotor for model S4-55/260 P, incl. seal	H
	F 110	95 00 804	Rotor for model S5-57/260 P, incl. seal	H
	F 107	95 00 805	Rotor for model S6-69/260 P, incl. seal	H
Replacement rotor for plastic pump housing / titanium drive unit				
	F 84	95 00 744	Rotor for model T4-55/260 P, incl. seal	H
	F 84	95 00 744	Rotor for model T5-57/260 P, incl. seal	H
	F 86	95 00 746	Rotor for model T6-69/260 P, incl. seal	H

Pump curves



Dimensional drawings



S + T4-55/260 P
S + T5-57/260 P
S + T6-69/260 P

... Economic DC Pumps for circulating systems



- high efficiency
- low power consumption
- maintenance free
- quiet
- easy speed control
- small size
- long life

Applications

The Ecocirc® can be used wherever circulation is needed without a direct connection to AC power. Ecocirc® DC pumps can also be attached directly to the DC power supply of most boiler controls due to their low power consumption.

Areas of Application:

- Mobile Homes (e.g. hot water heating in a mobile home, weekend home or boat)
- Ponds and aquariums
- Domestic hot water systems
- Circulating systems for industrial use (e.g. medical applications)
- Car heaters

Design

The Ecocirc® D1, D2, D3 and D4 are direct current wet rotor pumps and are driven by an electronically commutated stator. The only moving part of the pump is a spherically suspended rotor/impeller, which is supported on a long-lived ceramic ball bearing.

This design results in several advantages:

- The heat release is very low
- The Ecocirc® DC pump flow rate can be easily controlled by voltage variation over a very wide range.
- The rotor/impeller suspended on the ceramic bearing located in the pumped fluid is self-realigning and therefore the pump noise does not increase over time.
- The magnetically held rotor can tilt to avoid blockage by small debris. Maintenance is not necessary under normal conditions and even after lengthy shutdown periods a reliable startup is virtually guaranteed.
- The parts exposed to the fluid are completely corrosion resistant and ensure long life.
- The Ecocirc® DC pump is small in size and can be easily placed in confined areas.
- Access to the wetted parts of the pump is very easy as the volute is mounted to the motor body by a simple screw ring attachment.
- The Ecocirc® pump housing can also be used with a compatible Laing AC motor drive unit.

Laing Ecocirc® DC pumps Model D1-09 / 810 NX

Pump housing

Rotor

Seal

Screw ring

Extremely hard ceramic ball

Stator

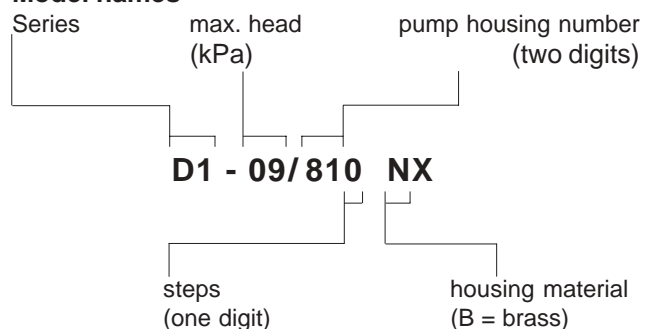


Technical data

Motor design	Electronically commutated spherical motor
Rated voltage	12 V DC (24 V DC on request)
Power consumption	see diagram
Voltage range	with 12 V from 6 to 24 V with 24 V from 6 to 30 V
Acceptable media	domestic hot water, heating water, Water-/Glycole mixtures*, other media on request;
Maximum system pressure	10 bar for pumps with brass housings 1,5 bar for pumps with plastic housings
temperature range**	- 10° to + 95° C for pumps with brass housings +/- 0° to + 60° C for pumps with plastic housings

* with more than 20 % glycole the pump performance is significantly decreased
** non-freezing

Model names



ECOCIRC® DC pumps



Model 70, brass,
Inline / 65mm
connection 1/2"
female thread



Model 10, brass
Inline / 110mm
including ball valve and
check valve connection
1 1/4 male thread**



Model 83, Noryl,
angled housing,
connection 1/2" male thread



Model 81, Noryl
angled housing,
connection 1/2" hosebarb



Model 79, Noryl
angled housing,
connection 3/4" hosebarb

Model	Part number	Rated Input Capacity	Pump housing material	Housing design / Length / Others	Connection	Product category
D1-09/700 BX	60 00 203	3,5 W	brass	Inline / 65mm	1/2" female thread	H
D1-07/100 BX	60 00 213		brass	Inline / 110mm / RV+KV*	1 1/4" male thread**	
D1-09/830 NX	60 00 223		noryl	Angled housing	1/2" male thread	
D1-09/810 NX	60 00 233		noryl	Angled housing	1/2" hosebarb	
D1-09/790 NX	60 00 243		noryl	Angled housing	3/4" hosebarb	
D2-15/700 BX	60 00 205	6W	brass	Inline / 65mm	1/2" female thread	H
D2-13/100 BX	60 00 215		brass	Inline / 110mm / RV+KV*	1 1/4" male thread**	
D2-15/830 NX	60 00 225		noryl	Angled housing	1/2" male thread	
D2-15/810 NX	60 00 235		noryl	Angled housing	1/2" hosebarb	
D2-15/790 NX	60 00 245		noryl	Angled housing	3/4" hosebarb	
D3-24/700 BX	60 00 210	10W	brass	Inline / 65mm	1/2" female thread	H
D3-21/100 BX	60 00 220		brass	Inline / 110mm / RV+KV*	1 1/4" male thread**	
D3-24/830 NX	60 00 230		noryl	Angled housing	1/2" male thread	
D3-24/810 NX	60 00 240		noryl	Angled housing	1/2" hosebarb	
D3-24/790 NX	60 00 250		noryl	Angled housing	3/4" hosebarb	
D4-34/700 BX	60 00 212	17W	brass	Inline / 65mm	1/2" female thread	H
D4-31/100 BX	60 00 222		brass	Inline / 110mm / RV+KH*	1 1/4" male thread**	
D4-34/830 NX	60 00 232		noryl	Angled housing	1/2" male thread	
D4-34/810 NX	60 00 242		noryl	Angled housing	1/2" hosebarb	
D4-34/790 NX	60 00 252		noryl	Angled housing	3/4" hosebarb	
D4-67/700 BX	60 00 212	17W	brass	Inline / 65mm	1/2" female thread	H
D4-67/100 BX	60 00 222		brass	Inline / 110mm / RV+KH*	1 1/4" male thread**	
D4-67/830 NX	60 00 232		noryl	Angled housing	1/2" male thread	
D4-67/810 NX	60 00 242		noryl	Angled housing	1/2" hosebarb	
D4-67/790 NX	60 00 252		noryl	Angled housing	3/4" hosebarb	

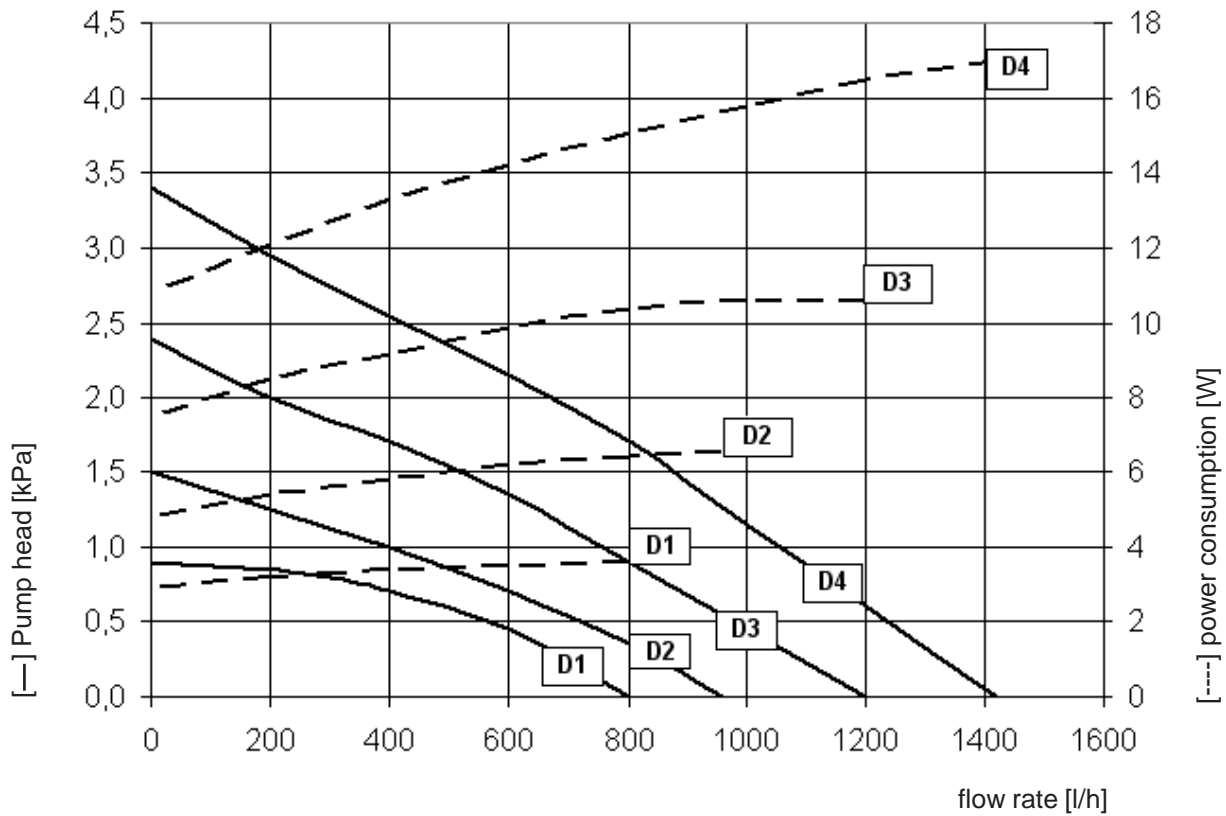
* integrated check valve and ball valve

** for connection to 3/4" union components. Housing has additionally a 1/2" female connection

Accessories, components and spare parts for Laing Ecocirc®

Type	Part number	Description	Product category
RV 1/2"	95 00 001	Brass check valve 1/2" male x 1/2" female thread	H
KH 1/2"	95 00 020	Brass ball valve chrome plated 1/2" male x 1/2" female thread	H
AV 1/2"	95 00 024	2 pcs. of brass union fitting 1/2" male x 1/2" female thread	H
AV 3/4"	95 00 025	2 pcs. of brass half union fitting 1 1/4" female x 3/4" female thread	H
F 72	95 00 732	Rotor incl. seal for D1, D2, D3 and D4	H
MW A	95 00 041	Mounting plate for D-pumps with plastic housings	H

Pump curves ECOCIRC®



Dimensional drawings ECOCIRC®

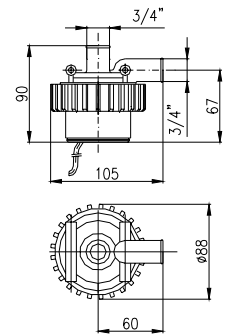
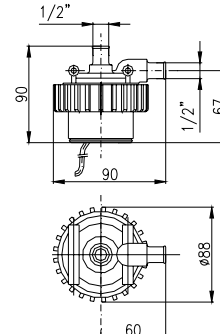
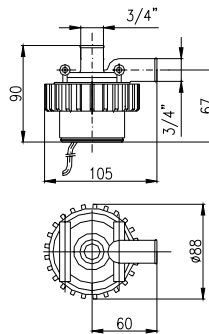
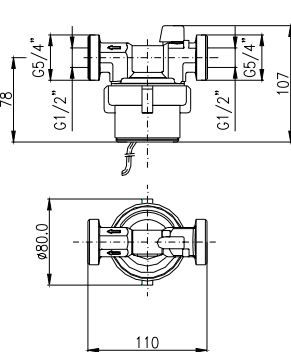
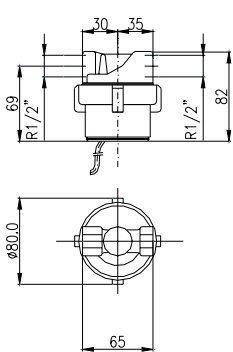
D1-09/700 BX
D2-15/700 BX
D3-24/700 BX
D4-34/700 BX

D1-07/100 BX
D2-13/100 BX
D3-21/100 BX
D4-31/100 BX

D1-09/830 NX
D2-15/830 NX
D3-24/830 NX
D4-34/830 NX

D1-09/810 NX
D2-15/810 NX
D3-24/810 NX
D4-34/810 NX

D1-09/790 NX
D2-15/790 NX
D3-24/790 NX
D4-34/790 NX



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