

Peristaltic pumps DL Series



From pumps to process

PCM Pompes' DL Series: the rollers and hose-guides work smoothly together.

The DL Series comprises 6 models: DL 12, DL 18, DL 25, DL 35, DL 45 and DL 55. These pumps are equipped with a reinforced hose, rollers and hose-guides. The combination of rollers and hose-guides reduces the mechanical stresses on the hose, as well as hydraulic shock and hammering. The working life of the hose is increased through the combination of rollers and hose-guides.

▶ Benefits

Of peristaltic technology

- Self-priming
- Can be run dry
- Design sealless
- Rapid, economic maintenance
- Reversible

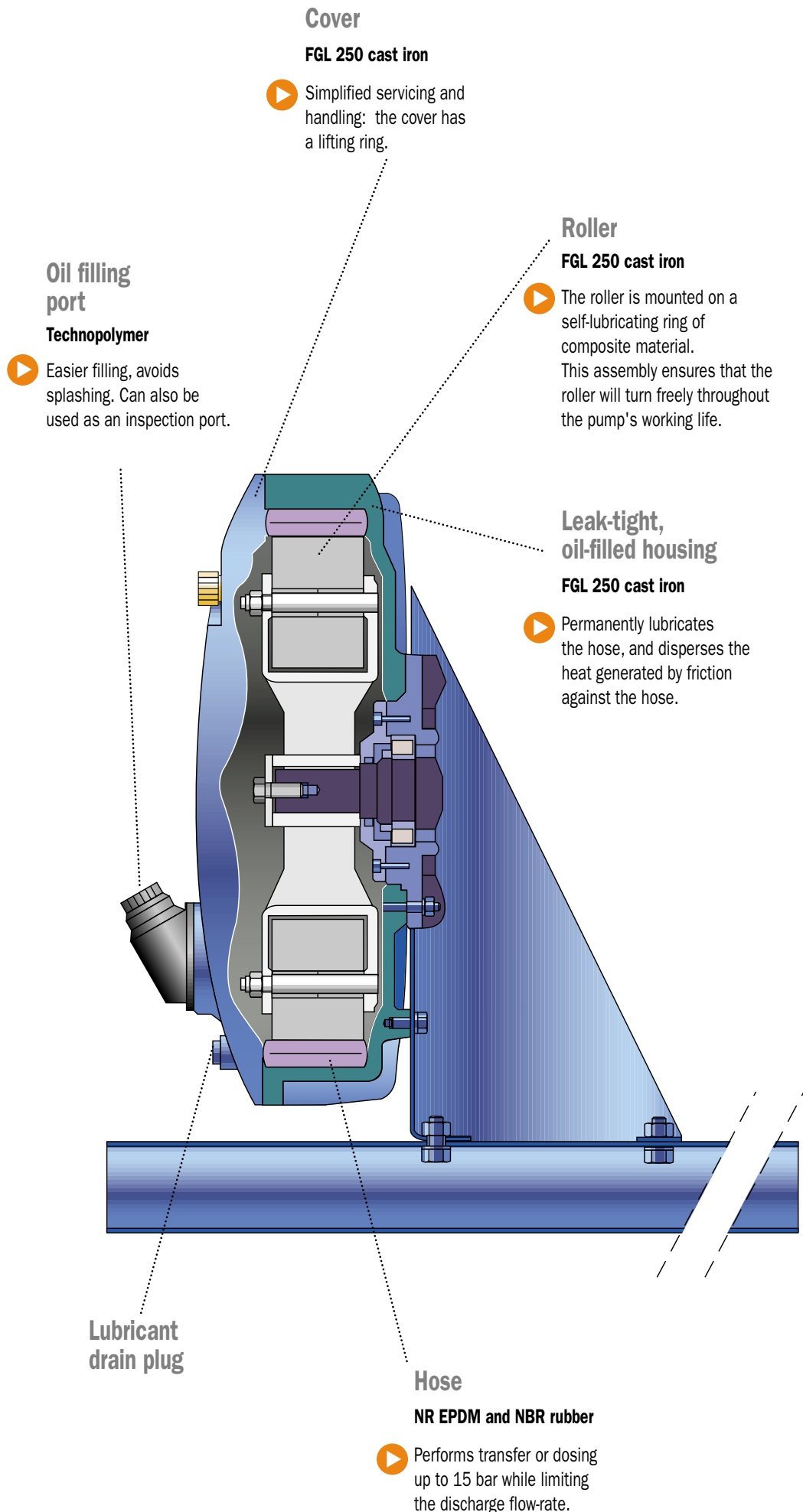
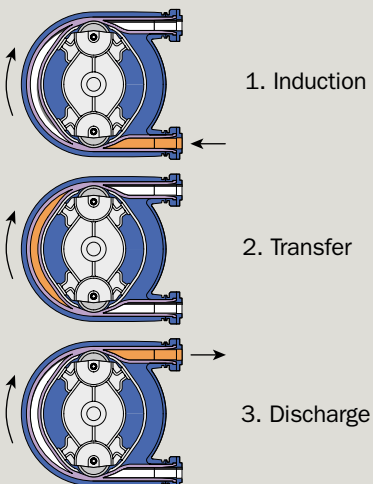
Of experienced designing

- Versatile (varied applications and products)
- Does not alter pumped product
- Control of design, manufacture and associated services.

Characteristics

- Minimum flow-rate: 84 l/h
- Maximum flow-rate: 20 m³/h
- Maximum pressure: 15 bar
- Maximum temperature in continuous operation: 110°C
- Cylinder capacity: 63 to 1700 cm³
- Self-priming: 9 m W.C.
- Speed: 5 to 133 rpm
- Reversible pump
- Hose reinforced by synthetic braid

Operation



Construction

DL Series

12.18.25.35.45.55

Relief-valve plug

Technopolymer

- ▶ Overpressure safety inside pump housing.

Steel hose-guide

E 24 steel

- ▶ This design increases the squeezed surface area of the hose, so lengthening hose working life.

Applicable directives and standards

The pumps of the DL series are manufactured as part of ISO 9001 certified organization and comply with the machine directive and the relevant harmonised CE and NF standards.



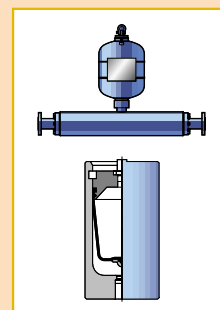
Optional equipment

Pulsation damping chamber

Installed on the discharge side of the pump, it cancels out pulsation during pump operation, as well as start-up hammering. It facilitates the installation of instrumentation components and lengthens hose working life.

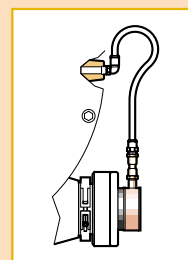
This means that the pulsation damping chamber is regarded as:

- A process accessory.
- A safety part.



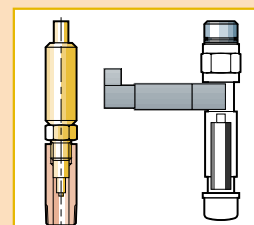
Vacuum pumping

Available from the DL 55 model, this system helps the hose recover its natural shape after it has been squeezed by the rollers.



Hose failure detection (DRT)

Cuts and cracks in the hose cause the product to leak, and when mixed with the oil in the sump, causes the oil level to rise. The DRT unit is designed to report this anomaly, which can be transmitted remotely via a dry contact.



Oil-level sight glass

Technopolymer

- ▶ Magnifying effect, for easy oil-level checking.

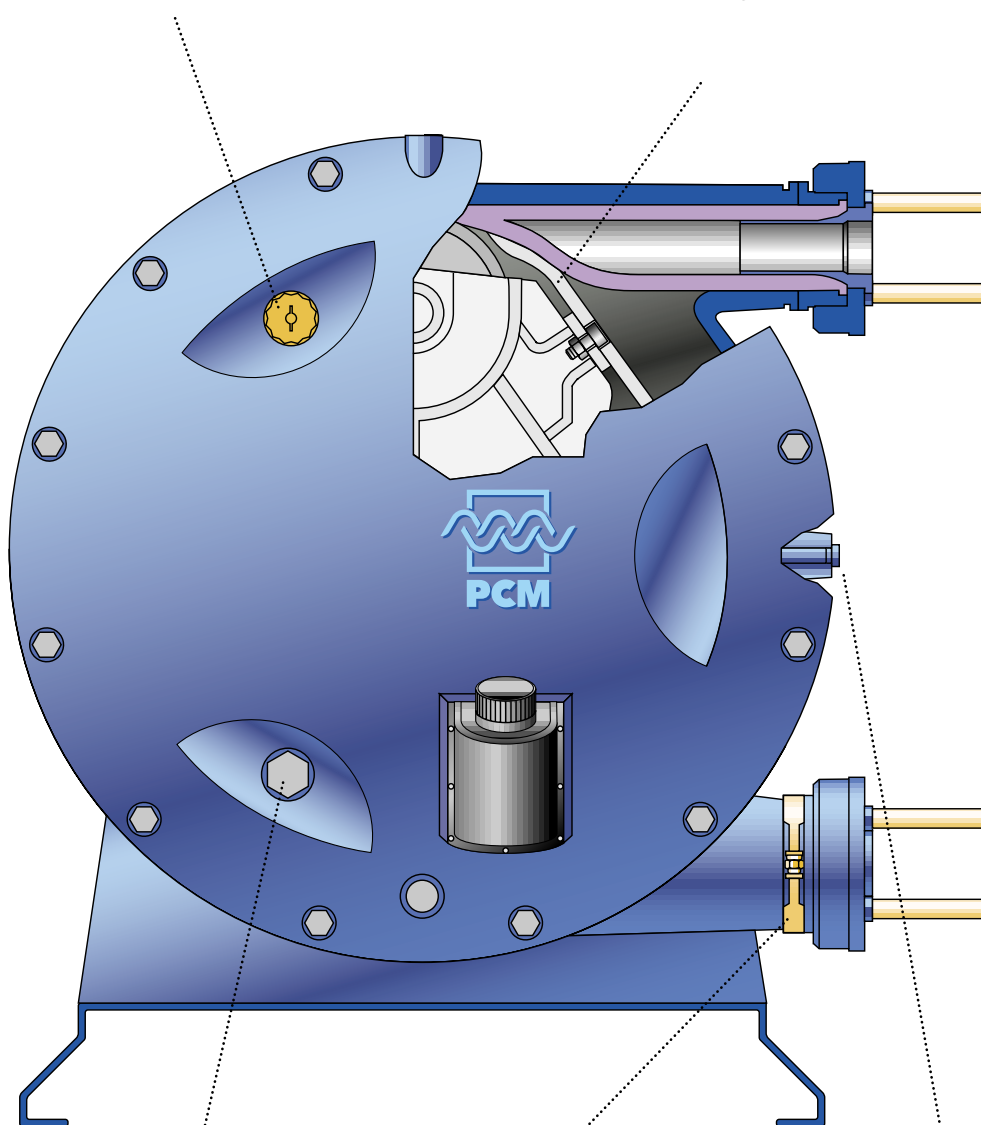
Clamped collar

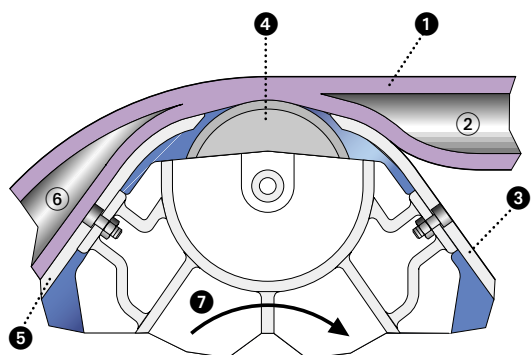
Zinc or stainless steel

- ▶ Clamp type, ensures perfect leak-tightness while facilitating rapid removal.

Vacuum pumping port

- ▶ Available from DL 55 model onwards, it enhances pump performance.

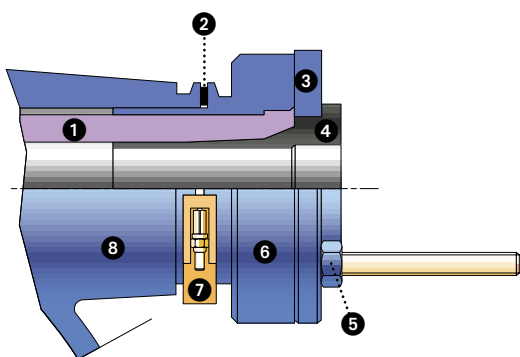




- ① Hose
- ② Hose chamber under pressure
- ③ Hose-guide, leading-edge hose squeeze holder
- ④ Roller
- ⑤ Hose-guide, hose squeeze holder gradually bringing hose chamber ⑥ under pressure
- ⑥ Hose depression chamber
- ⑦ Rotor

New configuration: The rotor/roller/ hose-guide assembly

The PCM Delasco DL series of pumps is equipped with hose-guides in addition to the rollers. The association of rollers and hose-guides combines several advantages: the roller rolls without damaging the hose, the hose-guide increases the squeezed surface area, as well as enabling the roller to act on the hose more gradually. Compared with a conventional peristaltic pump of equivalent flow-rate and pressure, the roller/hose-guide combination lengthens hose life, and requires lower installed power as well as a smaller quantity of oil.



- ① Hose
 - ② Gasket
 - ③ Flange
 - ④ Insert
 - ⑤ Tightener
 - ⑥ Sheath
 - ⑦ Clamped collar
 - ⑧ Housing
- Standard ● Options
▲ On request

Couplings

Fastening the hose with a clamped collar:

- makes for greater leak-tightness under depression
- facilitates assembly and disassembly. Since the number of parts involved in connection is considerably reduced, the hose changing time is cut back by almost 70%.

Coupling details

	DL 12	DL 18	DL 25	DL 35	DL 45	DL 55
Serrated (1)	■	■	—	—	—	—
PPH threaded	■	■	●	●	●	●
Flanges NP 20 (2)	—	▲	■	■	■	■
SMS in AISI 316L	—	●	●	●	●	●
DIN in AISI 316L	▲	▲	▲	▲	▲	▲
Tri-Clamp in AISI 316L	▲	▲	▲	▲	▲	▲
Flange NP 16 (3)	—	▲	●	●	●	●
PPH fast serrated coupling (4)	●	●	●	●	●	●

Other types on consultation

- (1) Stainless steel 316 L or polypropylene couplings. (3) Stainless steel 316 L or polypropylene adapter.
(2) Stainless steel 304 L or polypropylene insert. (4) Max pressure 7 bar.

Hose material available for all pumps

Temperature hose limit.

HOSES	CONTINUOUS OPERATION > 8 H/DAY	INTERMITTENT OPERATION SEQUENCE 10 - 20 MIN. / HOUR	OCCASIONAL OPERATION, INSTANTANEOUS TEMP. PEAK
Reinforced NR	5 to 80 °C	90 °C	100 °C
Reinforced EPDM	5 to 110 °C	120 °C	150 °C
Reinforced NBR	5 to 90 °C	100 °C	110 °C

Hoses

Everything flows through the machined reinforced rubber hose, and no metal part is in contact with the product. The hose lining has a fundamental role: it assures the integrity of the pumped product during transfer and offers high resistance to abrasives.

The hose is available in three grades: NR (Reinforced Natural Rubber), EPDM (Ethylene Propylene Diene Monomer), and NBR (Butadiene-acrylonitrile rubber).

Maximum pressure is reached only with NR hose. In case of use of EPDM and NBR hoses, please consult us.

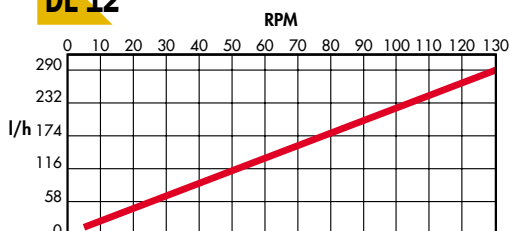
Performance charts

Flow-rates

DL Series 12.18.25.35.45.55

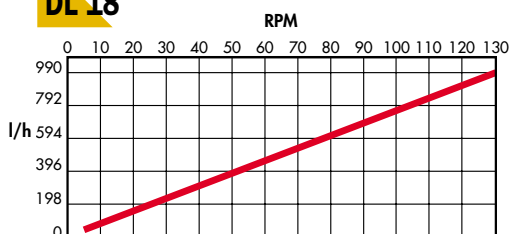
- Continuous use
- Intermittent use
- Outside the area of use

DL 12



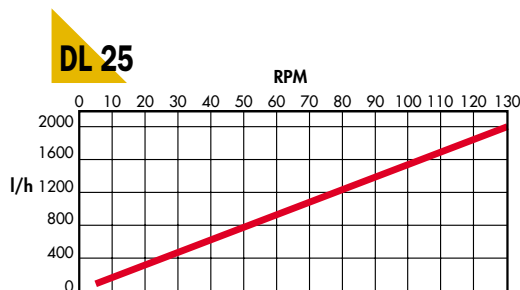
MOTOR POWER (kW)			
TYPE DL 12		Pressure (bar)	
Flow-rate (l/h)	Speed (Tr/min)	5	7.5
42	19	0.18	0.18
69	31	0.25	0.25
87	39	0.25	0.25
125	56	0.37	0.37
158	71	0.55	0.55
192	86	0.55	0.55
257	115	0.75	0.75
19 to 96	8.5 to 43	0.37	0.37
47 to 232	21 to 104	0.55	0.55

DL 18

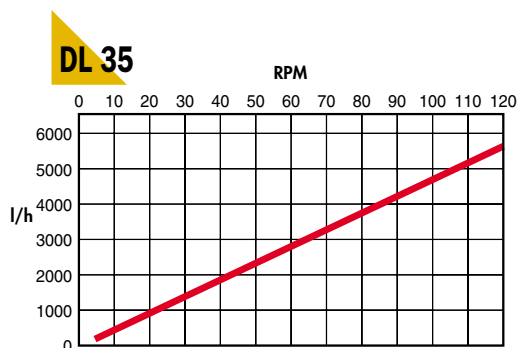


MOTOR POWER (kW)			
TYPE DL 12		Pressure (bar)	
Flow-rate (l/h)	Speed (Tr/min)	5	7.5
84	11	0.12	0.18
122	16	0.18	0.25
160	21	0.25	0.37
312	41	0.37	0.55
426	56	0.55	0.75
548	72	0.75	1.1
639	84	1.1	1.1
776	102	1.1	1.5
982	129	1.5	1.5
43 to 236	5.7 to 31	0.55	0.55
98 to 586	12.9 to 77	1.1	1.1
160 to 1012	21 to 133	1.5	1.5

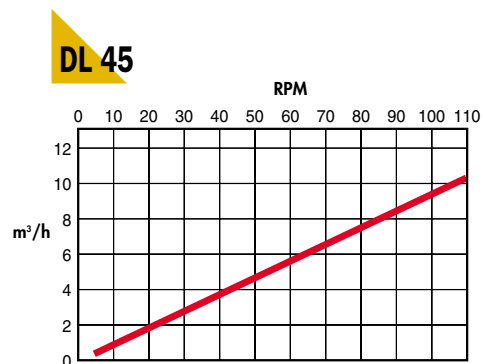
Performance charts Flow-rates (continued) DL Series 12.18.25.35.45.55



TYPE DL 25		MOTOR POWER (kW)			
		Pressure (bar)			
Flow-rate (l/h)	Speed (rpm)	5	7.5	10	15
270	12	0.25	0.25	0.25	0.25
315	14	0.25	0.25	0.25	0.25
450	20	0.25	0.37	0.37	0.37
630	28	0.37	0.55	0.55	0.55
923	41	0.55	0.55	0.75	0.75
1103	49	0.55	0.75	0.75	0.75
1395	62	0.75	1.1	1.1	1.1
1890	84	1.1	1.5	1.5	1.5
2433	117	1.5	1.5	1.5	1.5
170 to 923	7.6 to 41	0.75	0.75	0.75	1.5
290 to 1395	13 to 62	1.5	1.5	1.5	1.5
430 to 2620	19 to 116	1.5	1.5	1.5	1.5

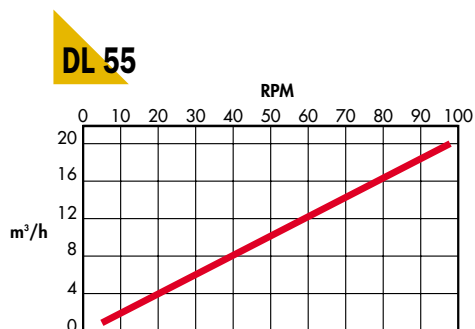


TYPE DL 35		MOTOR POWER (kW)			
		Pressure (bar)			
Flow-rate (l/h)	Speed (rpm)	5	7.5	10	15
510	11	0.37	0.55	0.55	0.75
690	15	0.55	0.75	0.75	1.1
970	21	0.75	1.1	1.1	1.5
1470	32	1.1	1.5	2.2	2.2
1930	42	2.2	2.2	2.2	3
2540	55	2.2	2.2	3	4
3460	74	3	3	4	4
4150	90	3	4	4	4
4650	101	4	4	4	4
5300	115	4	4	4	4
230 to 1390	4,9 to 30	2.2	2.2	2.2	2.2
460 to 2780	10 to 59	3	3	3	3
460 to 2780	10 to 59	4	4	4	4
830 to 4960	18 to 106	4	4	4	4



TYPE DL 45		MOTOR POWER (kW)			
		Pressure (bar)			
Flow-rate (m³/h)	Speed (rpm)	5	7.5	10	15
1.17	11	0.75	0.75	0.75	0.75
2.23	21	1.1	1.1	1.5	1.5
3.4	32	1.5	1.5	2.2	2.2
4.46	42	1.5	2.2	2.2	3
5.84	55	2.2	3	4	4
7.96	76	3	4	5.5	5.5
9.56	91	4	5.5	5.5	5.5
10.73	101	4	5.5	5.5	5.5
0.36 to 2.23	3.5 to 21	2.2	2.2	2.2	2.2
1.06 to 6.26	10 to 59	4	4	4	4
1.27 to 5.84	12 to 55	5.5	5.5	5.5	5.5
1.91 to 10.81	18 to 107	5.5	5.5	5.5	5.5

Performance charts Flow-rates (continued) DL Series 12.18.25.35.45.55



TYPE DL 55		MOTOR POWER (kw)			
		Pressure (bar)			
Flow-rate (m³/h)	Speed (rpm)	5	7.5	10	15
1.99	9.7	0.75	1.1	1.1	1.5
3.08	15	1.1	1.1	1.5	2.2
3.9	19	1.5	2.2	2.2	3
5.95	29	2.2	3	3	4
8	39	3	4	4	5.5
10.46	51	4	5.5	5.5	7.5
12.51	61	5.5	5.5	7.5	
15.38	75	5.5	7.5		
19.07	93	7.5			
3.08 to 19.07	15 to 93	9.2			
1.94 to 10.25	8.3 to 50	7.5	7.5	7.5	7.5
1.4 to 8.6	7 to 42	4	4		

Applications DL Series 12.18.25.35.45.55

DL series pumps are used in many sectors of activity for transferring products such as cement slurry, ceramic slip, fermentation must, liquid soap, and for dosing hydrochloric acid, milk of lime, ammonium sulphate, etc.

They are the ideal solution for applications where the installation conditions and process constraints call for flexibility and robustness:

- Reversibility.
- Seallessness.
- Abrasion resistance.

Water treatment

DL 45 pump for recovery of spume and floating matter on decanter



Outside dimensions DL Series 12.18.25.35.45.55

Diagram 1

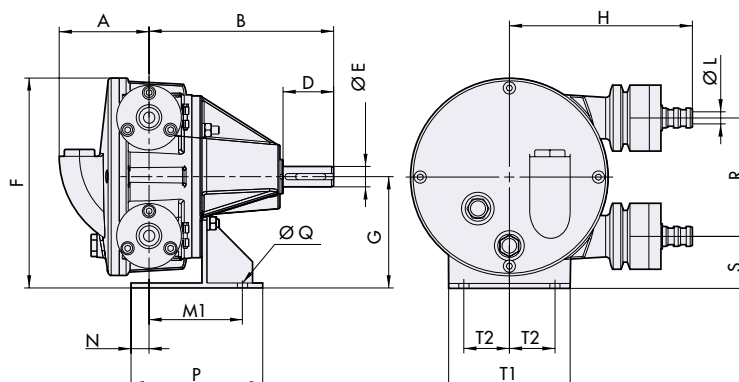


Diagram 2

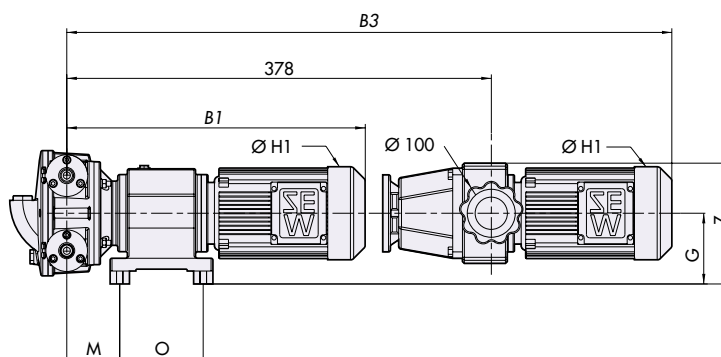


Diagram 3

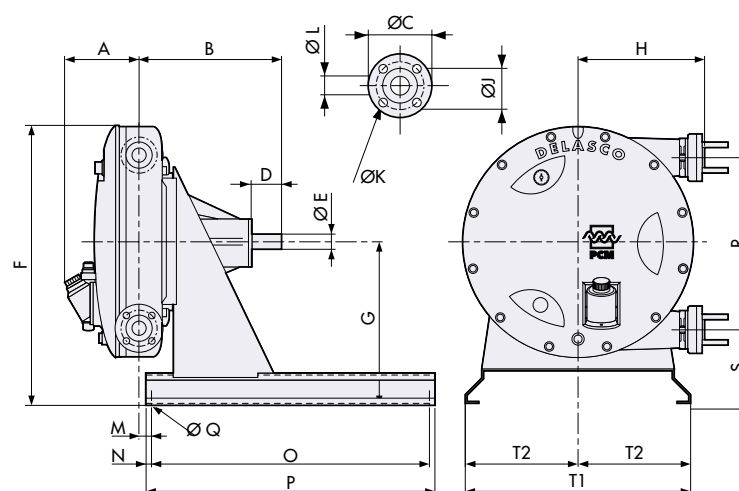
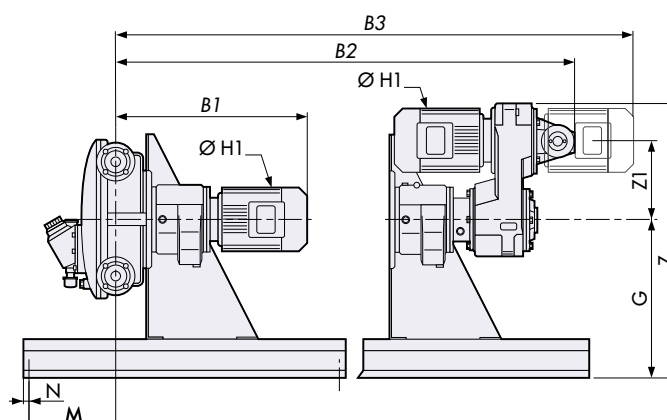


Diagram 4



Outside dimensions

DL Series 12.18.25.35.45.55

Bearing mounted

PUMP	Dia.	A	B	øC	D	øE	F	G	H	øJ	øK	øL	M1	N	O	P	øQ	R	S	T1	T2	Weight (kg)
DL 12	1	89	182	-	51	20j6	208	110	181	*1	11	92	110	-	130	2 x ø10	117	51	120	45	17	
DL 18	3	100	181	-	51	20j6	508	363	237	*2	15	18	30	540	600	4 x ø14	192	267	480	215	40	
DL 25	3	120	266	108	50	25f7	563	363	290	79,4	4 x M14	20	28	30	540	600	4 x ø14	282	222	480	215	87
DL 35	3	214	312	117	70	40f7	732	490	303	88,9	4 x M14	30	20	20	960	1000	4 x ø18	352	314	770	360	190
DL 45	3	222	310	127	70	40f7	810	490	387	98,4	4 x M14	40	20	20	960	1000	4 x ø18	468	252	770	360	287
DL 55	3	253	491	152	100	50f7	965	565	444	120,6	4 x M16	50	45	20	960	1000	4 x ø18	600	262	770	360	515

*1 : serrated coupling Ø20 or R 3/4 threaded

*2 : serrated coupling Ø25 or R 3/4 threaded"

Monobloc assembly

PUMP	Dia.	M _{max} (kW)	Ø H1															M					
			0,12	0,18	0,25	0,37	0,55	0,75	1,1	1,5	2,2	3	4	5,5	7,5	9,2							
PUMP	Dia. 2	DL 12	B1	-	406	415	465	465	-	-	-	-	-	-	-	-	-	-	-	-	-	82	
			B3	-	-	-	601	651	651	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			O	-	130	130	130	130	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Z	-	-	-	188	188	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			MB1	-	39	39	40	43	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			MB3	-	-	-	53	55	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Dia. 3	DL 18	B1	405	405	405	414	464	464	484	484	-	-	-	-	-	-	-	-	-	-	-	182
			B2	-	-	-	-	514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			B3	-	-	-	-	-	-	614	614	-	-	-	-	-	-	-	-	-	-	-	-
			Z	-	-	-	-	632	-	685	685	-	-	-	-	-	-	-	-	-	-	-	-
			Z1	-	-	-	-	182	-	238	238	-	-	-	-	-	-	-	-	-	-	-	-
			MB1	53	53	53	54	57	57	62	62	-	-	-	-	-	-	-	-	-	-	-	-
	MB2-MB3	-	-	-	-	73	-	86	86	-	-	-	-	-	-	-	-	-	-	-	-		
	Dia. 4	DL 25	B1	-	-	426	435	485	485	505	505	558	-	-	-	-	-	-	-	-	-	-	170
			B2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			B3	-	-	-	-	-	573	-	636	-	-	-	-	-	-	-	-	-	-	-	-
			Z	-	-	-	-	632	-	685	685	-	-	-	-	-	-	-	-	-	-	-	-
			Z1	-	-	-	-	182	-	238	238	-	-	-	-	-	-	-	-	-	-	-	-
			MB1	-	-	82	83	84	85	89	90	95	-	-	-	-	-	-	-	-	-	-	-
	MB3	-	-	-	-	102	-	114	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dia. 4	DL 35	B1	-	-	-	505	555	555	573	573	623	623	659	-	-	-	-	-	-	-	-	265	
		B2	-	-	-	-	-	-	-	-	701	701	-	-	-	-	-	-	-	-	-		
		B3	-	-	-	-	-	-	-	-	-	-	863	-	-	-	-	-	-	-	-		
		Z	-	-	-	-	-	-	-	-	831	831	919	-	-	-	-	-	-	-	-		
		Z1	-	-	-	-	-	-	-	-	245	245	305	-	-	-	-	-	-	-	-		
		MB1	-	-	-	204	208	208	214	214	221	221	231	-	-	-	-	-	-	-	-		
MB2-MB3	-	-	-	-	-	-	-	-	263	268	303	-	-	-	-	-	-	-	-				
Dia. 4	DL 45	B1	-	-	-	-	-	553	571	571	621	621	657	702	-	-	-	-	-	-	265		
		B2	-	-	-	-	-	-	-	-	699	-	-	-	-	-	-	-	-	-			
		B3	-	-	-	-	-	-	-	-	-	-	861	906	-	-	-	-	-	-			
		Z	-	-	-	-	-	-	-	-	831	-	919	919	-	-	-	-	-	-			
		Z1	-	-	-	-	-	-	-	-	245	-	305	305	-	-	-	-	-	-			
		MB1	-	-	-	-	308	311	311	318	318	328	333	-	-	-	-	-	-	-			
MB2-MB3	-	-	-	-	-	-	-	360	-	400	410	-	-	-	-	-	-	-					
Dia. 4	DL 55	B1	-	-	-	-	-	620	639	639	689	689	724	769	789	-	-	-	-	-	245		
		B2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
		B3	-	-	-	-	-	-	-	-	-	-	928	-	1018	1078	-	-	-				
		Z	-	-	-	-	-	-	-	-	-	-	997	-	1105	1105	-	-	-				
		Z1	-	-	-	-	-	-	-	-	-	-	-	-	380	380	-	-	-				
		MB1	-	-	-	-	507	515	515	523	523	532	538	560	-	-	-	-	-				
MB3	-	-	-	-	-	-	-	-	-	605	-	680	690	-	-	-	-						

The dimensions are given for guidance and are not binding on the manufacturer.

MB1, MB2, MB3: Weight in kg

MB1: Weight of motor-gear configuration; MB2/MB3 : Weight of variable-speed motor gear.

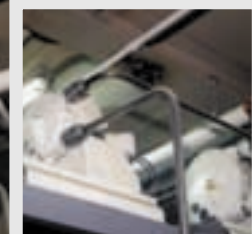
Manufacturing ceramic decorative ornaments

Pumps supplying the production line with ceramic slip. These DL 55 pumps are equipped with the vacuum pumping system and the hose-failure detector.



Manufacturing of pet-food

DL 18 dosing pumps for colouring agents and aromas installed with negative suction.



Surface treatment

Surface treatment bath transfer pump. This DL 25 pump is installed vertically and equipped with a starter.



The technical advantages of the peristaltic pump mean that it can satisfy a very wide range of applications in a large number of different sectors of activity.

SECTOR OF ACTIVITY	APPLICATION EXAMPLES
Water treatment	<ul style="list-style-type: none"> • Lime milk dosing • Bacteriological sludge transfer • Filter press feed
Paper and board	<ul style="list-style-type: none"> • Coating fluid transfer • Titanium dioxide (TiO₂) transfer • Waste- and solid-bearing water transfer • Glue or resin transfer
Building, civil engineering, quarrying, ceramics industry	<ul style="list-style-type: none"> • Liquid enamel transfer • Slip transfer • Coating transfer • Ooze dragging • Sludge transfer from settling tanks • Cement grout transfer • Glue and emulsion transfer
Agro-food	<ul style="list-style-type: none"> • Wine lees, grape must transfer • Fruit purée transfer • Potato waste transfer • Process sludge transfer • Slaughterhouse wastes/greasy water/offal/blood transfer
Chemistry	<ul style="list-style-type: none"> • Solid-bearing effluent transfer • Liquid chalk transfer • Soda aluminate transfer • Sulphate and oxide transfer
Other industries	<ul style="list-style-type: none"> • Coating product transfer (Foundry) • Bentonite transfer • Nuclear effluent transfer

This table is not exhaustive. It lists the commonest applications. Obviously there are many more in a variety of fields.

PUMPED PRODUCTS

Specific gravity

Maximum specific gravity: 2.
For higher values, please consult us.

Particles

The maximum particle size must not exceed 1/3 of hose inner diameter. Soft particles (whole fruit or fruit segments; meat or fish pieces) can be the same size as the hose diameter.

Dry matter

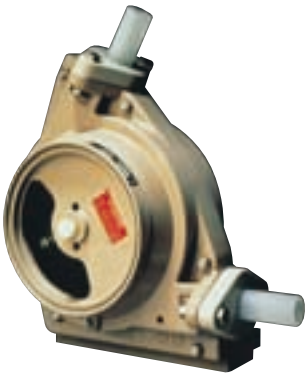
Dry-matter concentration can be as high as 25% to 60%, depending upon specific gravity. Pump speed should be adjusted so as to avoid wringing solid-bearing liquids, or clogging on the inlet side.

Viscosity

0 to 40 000 centipoises depending on hose diameter and pump rotation speed. For high viscosities, examination of a sample, or a pumping test may sometimes be necessary. Please consult us.

The PCM DELASCO range

The variety of different constructions and of elastomer hoses of the peristaltic pumps in the PCM Delasco range means that they can cover a wide variety of applications calling for versatility and flexibility.

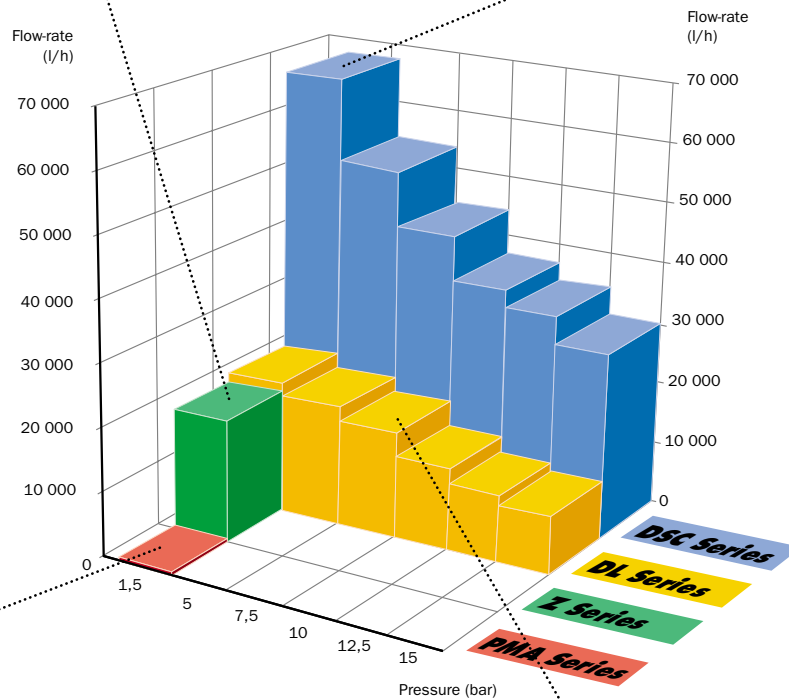


Z SERIES

The peristaltic pump for low pressures.
Flow-rate: 18 m³/h
Pressure: up to 1.5 bar.

DSC SERIES

The pump with the reinforced hose for high pressures.
Flow-rate: 68 m³/h
Pressure: up to 15 bar.



PMA SERIES

Special low flow-rate pump.
Flow-rate: 200 l/h
Pressure: up to 1.5 bar.



DL SERIES

Peristaltic pump combining rollers and hose-guides for longer hose life and better leak-tightness in depression.
Flow-rate: 20 m³/h
Pressure: up to 15 bar.

Service Charter

PCM's commitment is embodied in the Service Charter.

PCM are constantly striving to work closer with their partners by responding to their customers' needs and offering services of Quality. Further information is contained in the PCM Services brochure. To obtain your copy call:

33 (0)1 41 08 15 15.



Equipment repair and overhaul...

Speed and efficiency. Our technical assistance staff undertake repairs to pumps and regularly overhaul equipment which is already installed.

Maintenance Contract...

PCM offer maintenance contracts drawn up to suit the requirements and operating conditions of each production unit.

Spare parts...

Unbeatable delivery. PCM hold a permanent stock of spare parts and accessories so that they can respond to all urgent enquiries.

Technical assistance...

PCM recommend that their customers take out a maintenance contract to ensure that their pumps provide optimum performance. PCM's technical assistance staff regularly visit installations to perform preventive or corrective maintenance.

Training...

PCM offer a two-day training course designed to give maintenance personnel a thorough understanding of how to use and maintain positive displacement pumps.

Pumpexpress...

Availability and reactivity. Complete pumps are available for delivery at any time. This new service allows PCM to meet urgent requests for equipment.

Loan or hire...

A service tailored to customers' requirements. PCM provides pumps on their customers' sites throughout all stages of a project.

PCM DOSYS

Precision dosing and continuous blending systems

PCM EQUIPMENT

Lobe and rotary piston pumps, pipeliner-grinders

PCM MOINEAU

The widest range of progressive cavity pumps

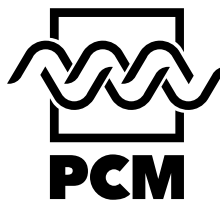
PCM's range of products also includes:

PCM MOINEAU OILFIELD

Progressive cavity pumps for crude oil extraction

PCM PRÉCI-POMPE

Electro-mechanical diaphragm and piston dosing pumps



From pumps to process

Head Office:

PCM POMPES

17 rue Ernest Laval - BP 35

92173 VANVES Cedex

FRANCE

Tél : 33 (0)1 41 08 15 15

Fax : 33 (0)1 41 08 15 00

Internet : <http://www.pcmpompes.com>

E-mail : pcm@pcmpompes.com

In the United Kingdom:

PCM POMPES Ltd

Pilot Road, Phoenix Parkway,

CORBYS NN17 5YF

ENGLAND

Tél : (44) 1 536 740 200

Fax : (44) 1 536 740 201

E-mail : sales@pcmpumps.co.uk