

# DEPA Air Driven Diaphragm Pumps

## Series P Type DL Non metallic pumps

**For use with corrosive and abrasive media in chemical processing, electroplating, effluent treatment and similarly arduous applications.**

DEPA Series P pumps with solid, non metallic components have been developed to transfer a wide span of corrosive liquids, slurries, pastes and sludges for which pumps of metal construction fail to offer the necessary chemical resistance. The pump housings are machined from solid Polypropylene (PP) or Polytetrafluorethylene (PTFE). The elaborate manufacturing process involved ensures the highest possible stability of form and thus the pumping pressure capability is maintained in line with standard DEPA cast metal pump versions. In addition, the solid PP and PTFE form also provides complete external resistance to corrosive environments.

Choice of correspondingly stable, corrosion resistant materials is available for the diaphragms, valve balls and valve seats. See page 2.

These pumps can be supplied with connecting flanges conforming to DIN as well as ANSI standards.

**An electrically conductive plastic pump build also allows transfer of non conductive media in explosive and/or hazardous areas.**

Electrically conductive, non metallic DEPA pumps can be constructed of both PP and PTFE, providing a surface resistance of less than  $10^6$  ohms.

The pumps can be electrically earthed.

### Standard design

Features include overall corrosion resistant construction, maintenance free control valve, stainless steel base with integral anti vibration mounts, stainless steel clamp bands, muffler, air intake filter and flange connection for models DL 25 to DL 80.

### A complete range of accessories simplifies operation and enhances flexibility.

Accessories include pulsation dampeners, monitoring and control systems, various transport devices, quick release couplings and adapters. For more information please contact your local agent.

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■ **Designed for resistance to corrosive media and environments with rugged non metallic construction and components.**

■ **Ideal also for abrasive, viscous and shear sensitive media, and for products with entrained solids.**

■ **Air operation plus electrically conductive plastic housing means suitability for explosive or hazardous areas.**

■ **Tolerance of dry running and harsh usage.**

■ **Minimal maintenance with no lubrication required.**

■ **Positive displacement pumping action minimises product shear.**

■ **Completely enclosed units with no bearings or rotary seals in the product stream.**

■ **Easy control of flow rate by regulating air supply.**

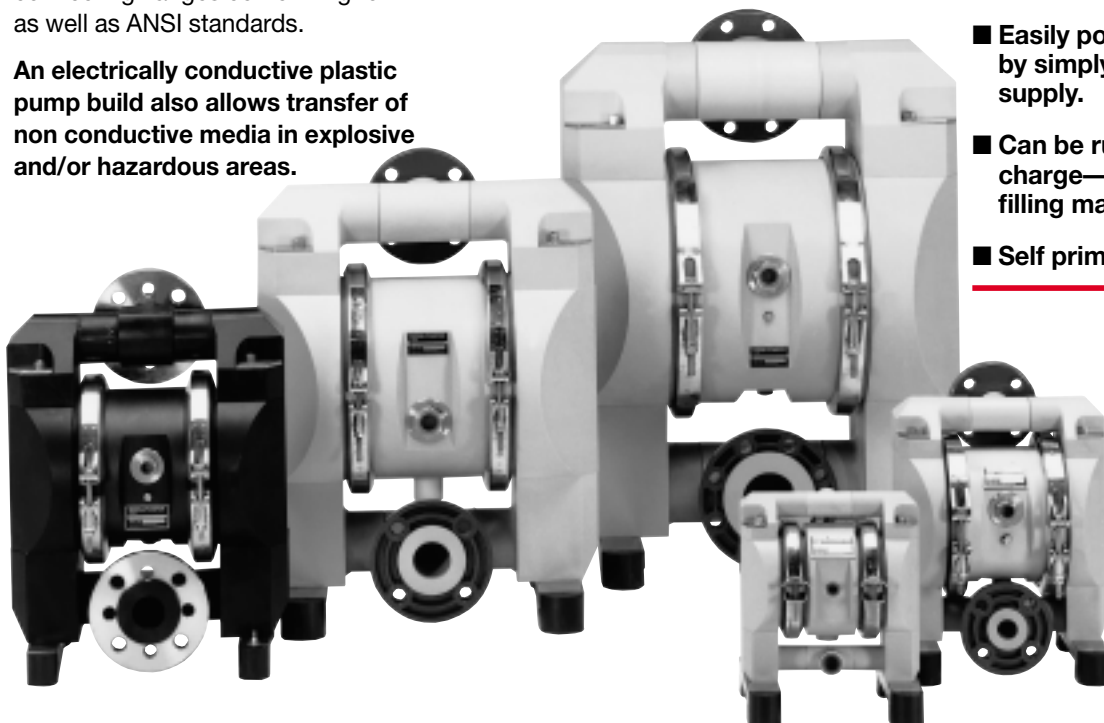
■ **No need for electric motors, special drives or base plates.**

■ **Easily portable and ready to use by simply connecting to air supply.**

■ **Can be run against a closed discharge—a vital benefit for use on filling machines.**

■ **Self priming and submersible.**

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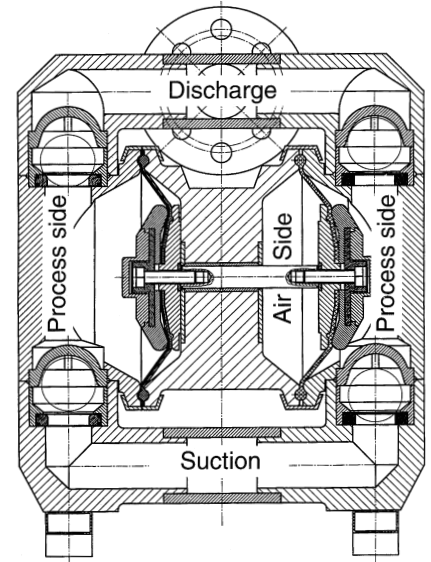
## Series P Type DL Operating Principle

Double acting, positive displacement Series P pumps operate with two alternating pumping chambers. The compressed air which drives the unit is admitted through a control valve, to the rear of each diaphragm in turn, so displacing the medium from alternate pumping chambers.

In the pump illustrated, the right hand pumping chamber is in the intake position. A vacuum has been created by the retraction of the

diaphragm and the pumped medium flows into the chamber. The left hand diaphragm, which is supported by compressed air, simultaneously displaces the medium present in this chamber.

Since the two diaphragms are connected by a common piston rod, suction always occurs in one chamber whilst discharge is occurring in the other.



## Materials of construction available

**DL 40 - PP - E E E**

Pump size	Major subassemblies				Internals	Diaphragm	Seats	Balls
	Housing	Wetted piston	Centre block					
Connections ½ in. <sup>3)</sup> DN 15 <sup>3)</sup>	PP <sup>1)</sup>	PP	PP	PP	NRS	B	B	B
Connections 1 in. DN 25	PP electr. conductive	PP electr. conductive	PP electr. conductive	PP	NBR (Buna N)	N	N	N
Connections 1½ in. DN 40	PTFE <sup>2)</sup>	PTFE	PP	PT	EPDM (Nordel)	E	E	E
Connections 2 in. DN 50	PP electr. conductive	PP electr. conductive	PP electr. conductive	TL	EPDM (grey)	G	-	G
Connections 3 in. DN 80					FKM (Viton)	F	F	-
					PTFE (Teflon)	T	T	T
					Stainless steel	-	-	R
					NBR, steel core	-	-	Y
					EPDM, steel core	-	-	W
					EPDM, grey with steel core	-	-	X
					PTFE, steel core	-	-	Z
					Cone valve, EPDM	-	E	I

<sup>1)</sup> Polypropylene

<sup>2)</sup> Polytetrafluorethylene

<sup>3)</sup> Flange connection optional

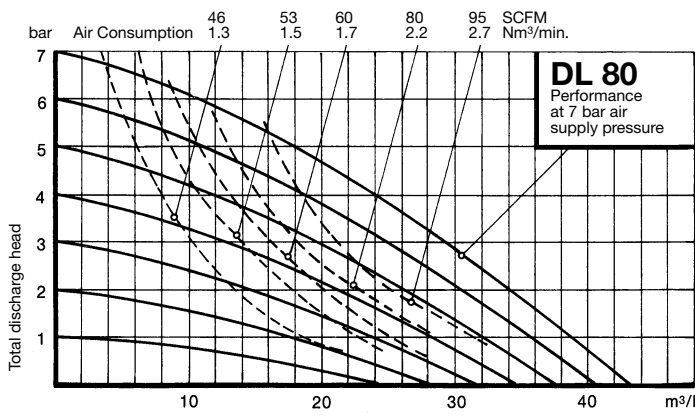
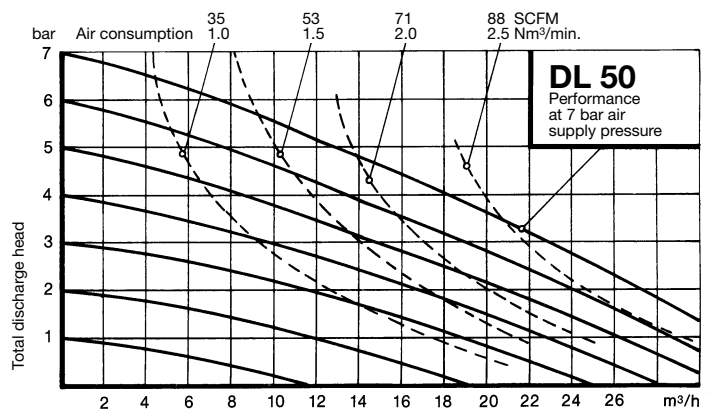
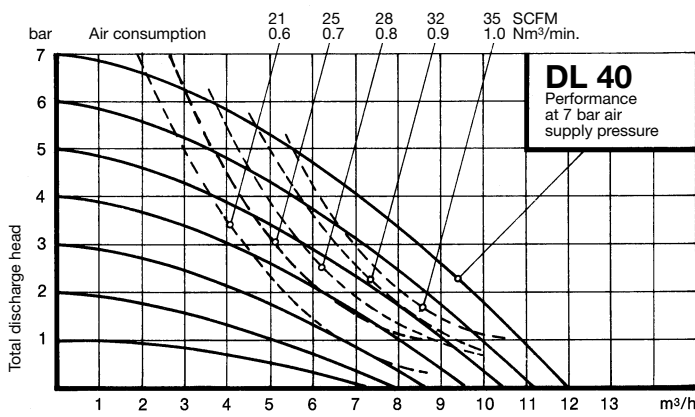
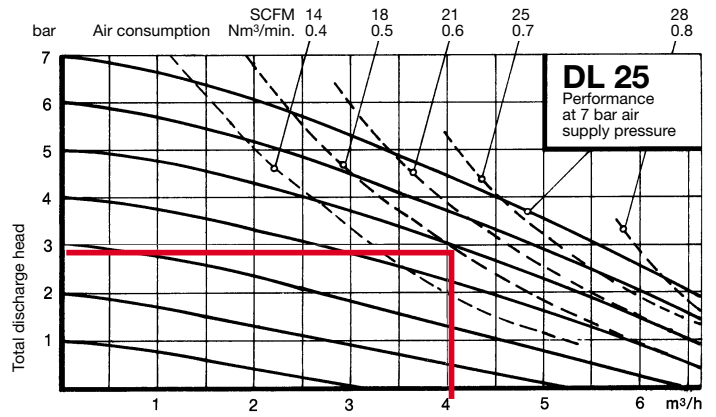
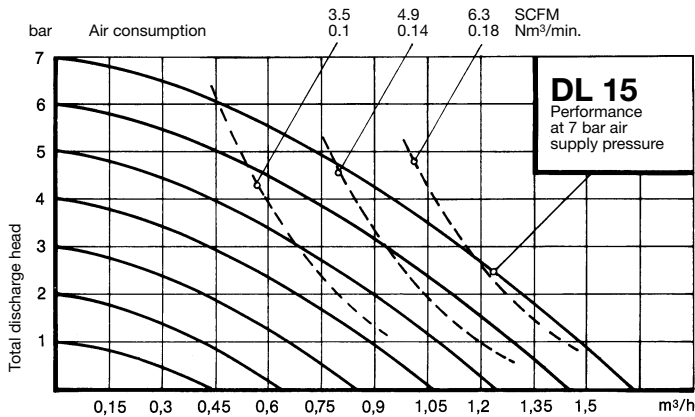
Particle sizes and suction lifts					
Pump size	15	25	40	50	80
Particle size in mm	3.5	4	6	8	10
Suction lift in m WC dry <sup>5)</sup>	3.5	5.5	5.8	5.8	6
Wetted	9	8.7	9	9	9

<sup>5)</sup> For pumps equipped with valve seats and valve balls of PTFE and those with cone valves, a decrease in suction lift must be expected.

Maximum operating temperature		°C
PP pumps	PP	60
PTFE pumps with internals of	NRS	80
	NBR, EPDM	100
	FKM	140
	PTFE	110

Pump weight in kg	Housing type			
	PP	PL	PT	TL
Pump size 15	5	5	8	8
25	10	10	14	14
40	17	17	26	26
50	34	34	58	58
80	60	-	-	-

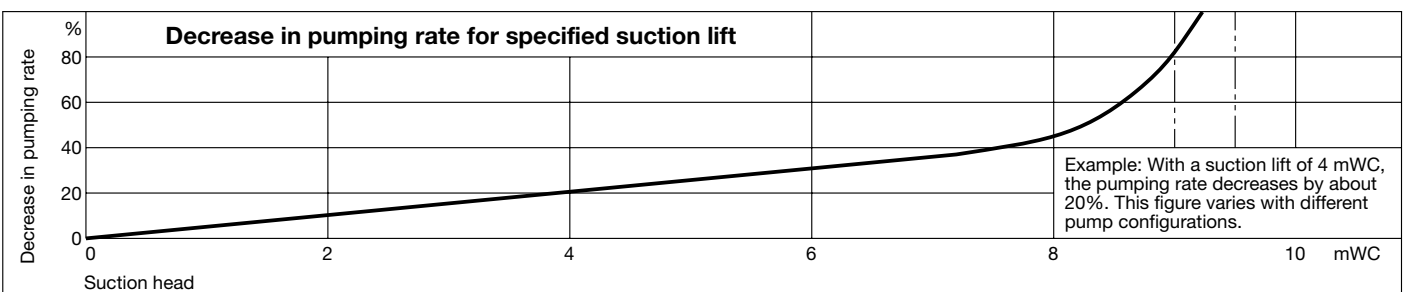
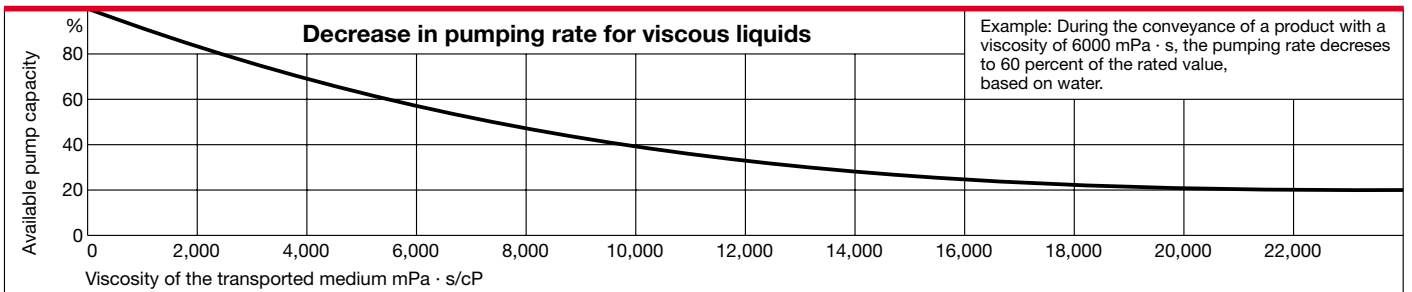
# Performance characteristics of Series P Type DL non metallic models



### Example: To help you select the correct pump size

Required pump rate is 4 m<sup>3</sup>/h and required total discharge head is 30m. The correct selection in DL 25, the required air pressure is 5 bar and the air consumption is 0.5 Nm<sup>3</sup>/min.

The indicated pumping rates are based on water.

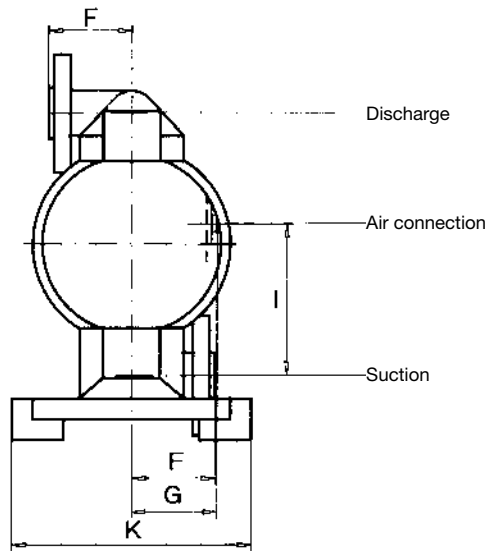
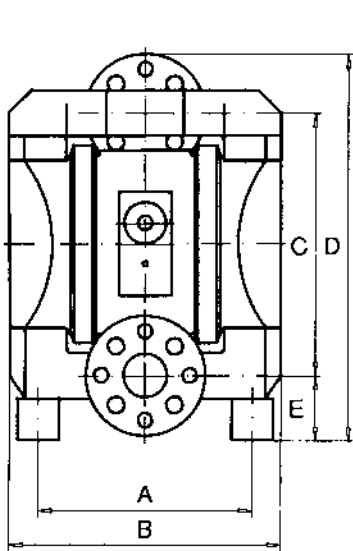
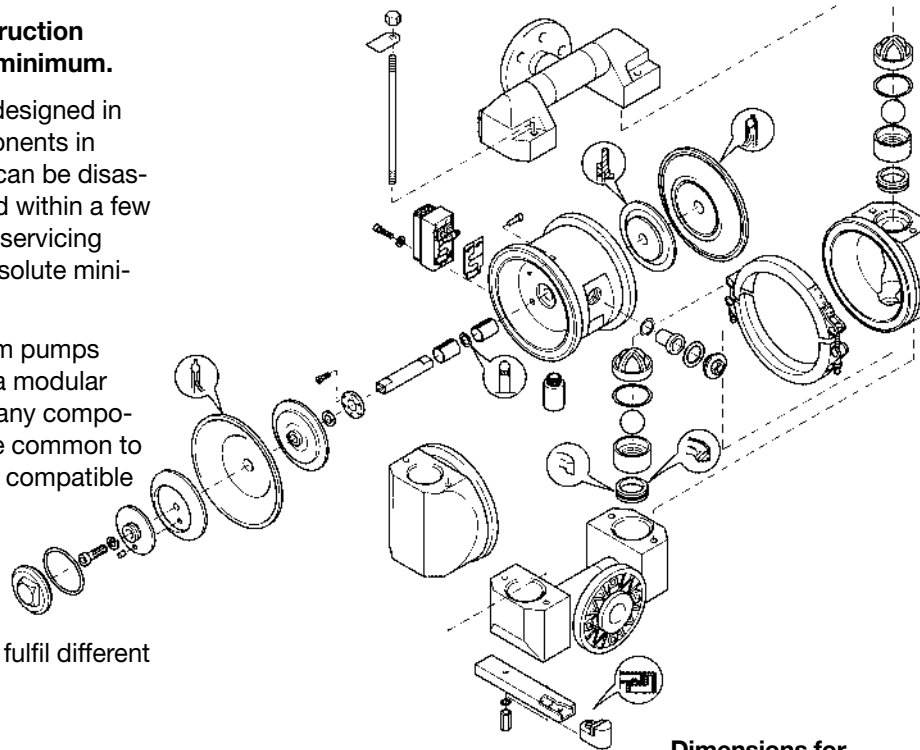


**Extremely rugged construction reduces downtime to a minimum.**

DEPA pumps have been designed in such a way that all components in contact with the product can be disassembled and reassembled within a few minutes. This means that servicing work is reduced to the absolute minimum.

DEPA air driven diaphragm pumps have been developed as a modular system. Consequently, many components—some of which are common to all versions—are mutually compatible and interchangeable.

This flexible construction allows quick and simple changing of the internals for all Type DL models, to fulfil different applications.



**Dimensions for all non metallic models**

	Size				
	15 <sup>4)</sup>	25	40	50	80
<b>A</b>	170	207	267	340	418
<b>B</b>	212	264	353	450	558
<b>C</b>	185	252	334	448	578
<b>D</b>	265	370	484	622	785
<b>E</b>	60	62	80	91	107
<b>F</b>	28	80	92	126	125
<b>G</b>	55	82	86	123	153
<b>I</b>	95	107	148	251	316
<b>K</b>	195	230	255	340	420
Air connection	¼ in.	⅜ in.	½ in.	¾ in.	¾ in.

<sup>4)</sup> Dimensions without flange

**There is a DEPA diaphragm pump for practically every liquid that flows.**

DEPA air driven diaphragm pumps are available in three different basic con-

structions: cast metal, solid plastic and highly polished stainless steel (CIP compatible). Special purpose designed models are available for powders, high pressures up to 21 bar

and drum pumping of hard-to-handle drum contents.

For more information please contact your local supplier.

