

ARGAL

CHEMICAL PUMPS

“MPP” air driven
double diaphragm pumps



USER FRIENDLY BUILD TO LAST

DOUBLE DIAPHRAGM PUMPS

SIMPLE OPERATION

Double diaphragm pumps are operated by compressed air or any non-flammable compressed gas. The pumping stroke begins as air is delivered by the air distribution system, putting pressure on one diaphragm and then the opposite diaphragm. The two diaphragms are linked together by a common rod. The pumping stroke on one side is simultaneously the suction stroke on the opposing diaphragm alternately drawing fluid in one side while discharging fluid from the other side.

MAIN CHARACTERISTICS

Self-priming.
Non-electrical.
Runs dry without damage.
Variable flow rate.
Pumping fluids which contain particles.
Reduced solvent flash-off.
Adequate to pump high viscosity liquids.

TYPICAL APPLICATION

Transfer and recirculation of acid, alkali, ink, solvent, paint, enamel, resin, glue liquids, slurry, used in such industries as: chemical, pharmaceutical, ceramic, lather tanning, textile, metallurgical, paper, civil construction, alimentary.

ARGAL PUMPS ADVANTAGES

Quality built lube free, air operated diaphragm pumps.
Wide range of pump types and sizes (1/4"-3").
Standard NPT or BSP connections available on request.
Will not stall at slow speeds.
100% tested prior to shipment.
Simple modular design.
Dual manifold capability for 3/8"-1/2"-1" models.
Parts interchangeable between models and sizes.
Large solids handling through the Max-Pass valve system 3/8"-1/2"-1" pumps.

PERFORMANCE ENGINEERED

No stallouts:

stallout due to freezing in the air system is virtually eliminated due to the insulating quality of all plastic construction plus the ability to slow air expansion and velocity without compromising performance. Stalling due to low speed is prevented by two pilot air ducts in the distributor which supply a constant air pressure against the air valve spool throughout the discharge stroke preventing the spool/shuttle combination to stop in a neutral position (Fig. 1).

Lube Free Operation

achieved by using dissimilar plastic materials within the air system, shuttle mechanism constructed of lubrication filled materials and surface finishes held to strict engineering tolerances.

All plastic air systems:

in both metallic and plastic pumps prevent destruction of air system components from corrosive atmospheres or diaphragm ruptures. No brass or aluminium components are used within the air system.

All air system are glass filled polypropylene



No vent holes:

there are no vent holes in our air valve. Vent holes needed to prevent stalling in competitive pumps allow corrosive fumes to enter and destroy valuable components. Additionally, if a diaphragm ruptures, fluid leakage cannot be routed to a safe contained zone.

No air lost when fluid discharge line are closed:

air system seals and prevents air consumption when pump is not transferring fluid; low coefficient of friction between the air system component translates in reduced air consumption.

Patented valve system:

Max Pass™, optional valve system tolerates large solids and allows installation of the pump in any position.

- Increases solids handling capability by 300% and suction lift by 25%.
- Abrasion resistant.
- Available in Nitrile, EPDM, Viton®.



The Max-Pass valve is ideal for inks, paints, adhesives, slurries and other specialized applications.

Larger inner volumes:

than competitive models with comparable performances, means more capacity per stroke and less wear on moving parts.

High viscosity applications:

up to 22000 centipoises on all pumps from 3/8" to 3". Up to 4000 centipoises on 1/4" models.

DIAPHRAGMS CONSTRUCTION MATERIALS

Thermoplastic diaphragms:

offer superior chemical and abrasion resistance and increased life cycle. The wide range of applications that these materials can address also make ordering the correct pump much easier.

Diaphragm are executed in materials as various as Geolast®, Santoprene®, PTFE, Viton®.

Geolast®, is a nitrile based thermoplastic elastomer used in place of nitrile (Buna-N) or neoprene and urethane for non aggressive water based applications. Santoprene® is an EPDM based thermoplastic elastomer and is resistant to mild acids.

Geolast®, Santoprene® are registered trademarks of Advanced Elastomer System

Elastomeric diaphragms:

Viton® is a fluorinated elastomer with a broad resistance to most aggressive chemicals.

Viton® is a registered trademarks of DuPont Dow Elastomers

Fluorinated diaphragms:

PTFE is a synthetic fluoropolymer resistant to all chemicals.

Superior PTFE overlay design does not require reduced diaphragm rod stroke, which reduces pump capacity by 20% on competitive pumps.

Back-up diaphragms for PTFE overlays are Santoprene® which offers a chemically resistant as "second line of defence".

Process control:

Solenoid control and cycle counting optional for most pumps.

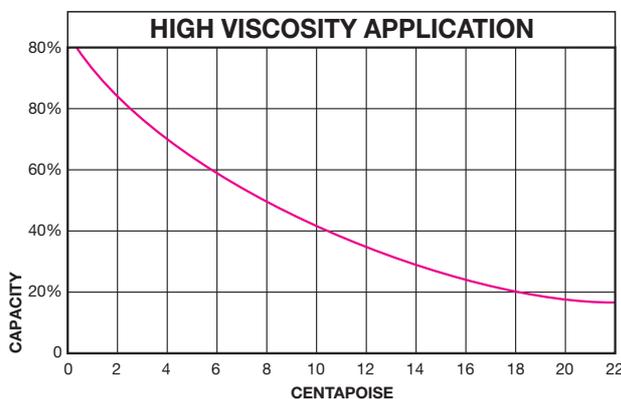
CE and ATEX compliance:

CE safety of Machineries and Quality Control certification have been obtained for all models.

Argal is an ISO 9001:2000 certified company.

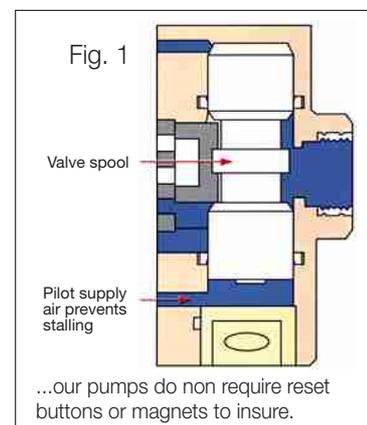
All models are adequate to operate in ATEX areas classified as Cat 3, Zone 2. The metal pumps model 1 1/2" & 2" metal may comply to ATEX Cat 2, Zone 1 on request.

The pump of 1" and smaller size constructed in metal and conductive nylon comply to ATEX Cat 2, Zone 1.



As you can see from the diagram above, as viscosities increase, the capacity of the pump decreases.

Do not exceed 22000 centipoise on all 3/8" up to 3" pumps. Do not exceed 4000 centipoise on 1/4" model.



member of



EXECUTIONS

CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT	
WW	Polypropylene	G Geolast®	T PTFE	WW Polypropylene	N Nitrile	MPP 025 WW G T WW N	65	2,5
WW	Polypropylene	S Santoprene®	T PTFE	WW Polypropylene	E EPDM	MPP 025 WW S T WW E	65	2,5
WW	Polypropylene	T PTFE	T PTFE	WW Polypropylene	T PTFE	MPP 025 WW T T WW T	65	2,5
NY	Nylon	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 025 NY T T NY T	65	2,5
NY	Nylon	G Geolast®	T PTFE	NY Nylon	N Nitrile	MPP 025 NY G T NY N	65	2,5
CY	Conductive Nylon	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 025 CY T T NY T	65	3,5
CY	Conductive Nylon	G Geolast®	T PTFE	NY Nylon	G Geolast®	MPP 025 CY G T NY G	65	3,5
FP	PVDF	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 025 FP T T FP T	90	3,5
FP	PVDF	S Santoprene®	T PTFE	FP PVDF	E EPDM	MPP 025 FP S T FP E	90	3,5

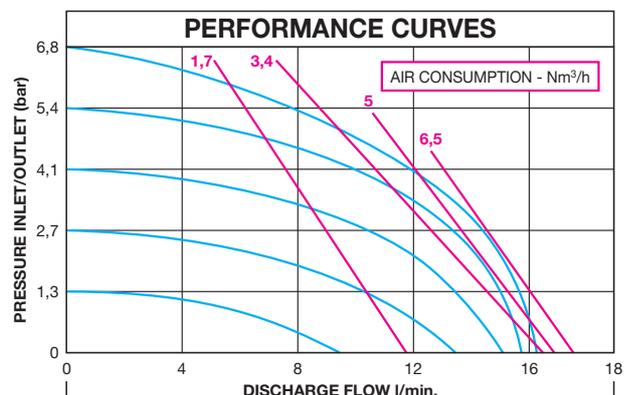
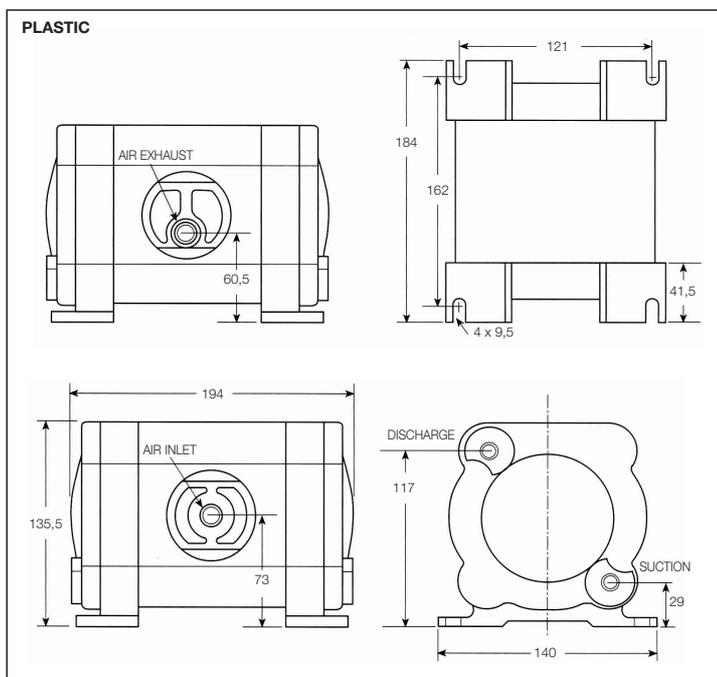
MAIN CHARACTERISTICS

Max Capacity	l/min	16,3
Volume per stroke	ml	23
Max Air Pressure	bar	6,8
Minimum Air Pressure	bar	1,3
Dry lift	m	5
Maximun solids	mm	1,6
Inlet air supply	BSP/NPT F	1/4"
Outlet air supply	BSP/NPT F	1/4"
Fluid Inlet/Discharge	BSP/NPT F	1/4"

Note: Dual manifold inlet/outlet is an option.



DIMENSIONS



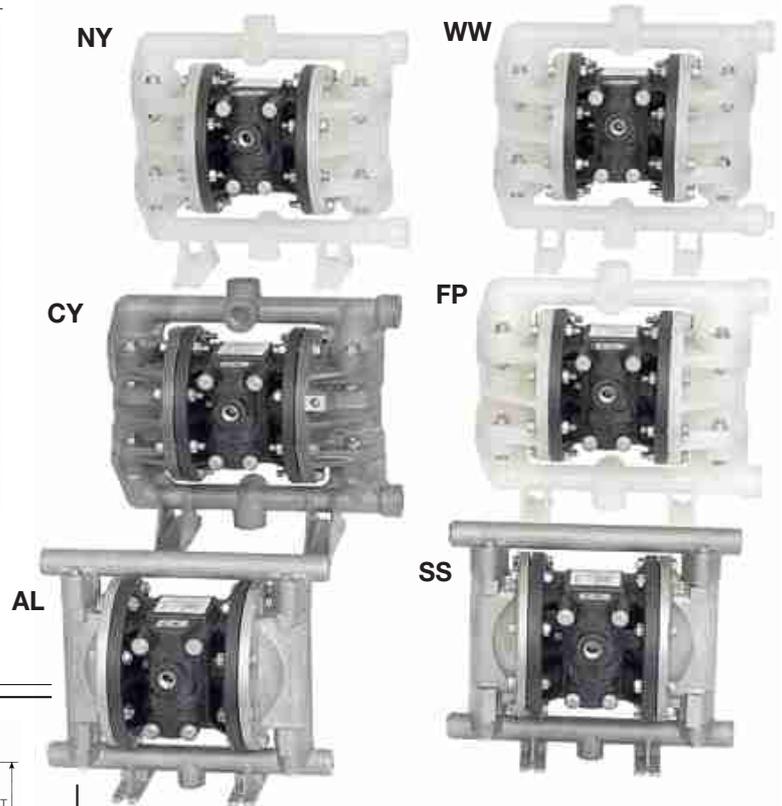
EXECUTIONS

CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT
WW Polypropylene	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 050 WW G G WW N	65	4,5
WW Polypropylene	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 050 WW S S WW E	65	4,5
WW Polypropylene	T PTFE	T PTFE	WW Polypropylene	T PTFE	MPP 050 WW T T WW T	65	4,5
WW Polypropylene	V Viton®	V Viton®	WW Polypropylene	V Viton®	MPP 050 WW V V WW V	65	4,5
NY Nylon	G Geolast®	G Geolast®	FP PVDF	N Nitrile	MPP 050 NY G G FC N	90	4,5
NY Nylon	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 050 NY T T FP T	90	4,5
NY Nylon	V Viton®	V Viton®	FP PVDF	V Viton®	MPP 050 NY V V FP V	90	4,5
CY Conductive Nylon	T PTFE	T PTFE	SS Stainless Steel	T PTFE	MPP 050 CY T T SS T	65	5,5
CY Conductive Nylon	G Geolast®	G Geolast®	SS Stainless Steel	N Nitrile	MPP 050 CY G G SS N	65	5,5
CY Conductive Nylon	V Viton®	V Viton®	SS Stainless Steel	V Viton®	MPP 050 CY V V SS V	65	5,5
FP PVDF	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 050 FP T T FP T	90	5,5
FP PVDF	S Santoprene®	S Santoprene®	FP PVDF	E EPDM	MPP 050 FP S S FP E	90	5,5
FP PVDF	V Viton®	V Viton®	FP PVDF	V Viton®	MPP 050 FP V V FP V	90	5,5
AL Aluminum	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 050 AL G G WW N	90	5
AL Aluminum	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 050 AL S S WW E	90	5
AL Aluminum	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 050 AL T T NY T	90	5
AL Aluminum	V Viton®	V Viton®	NY Nylon	V Viton®	MPP 050 AL V V NY V	90	5
SS 316 Stainless Steel	G Geolast®	G Geolast®	SS Stainless Steel	N Nitrile	MPP 050 SS G G SS N	90	9
SS 316 Stainless Steel	S Santoprene®	S Santoprene®	SS Stainless Steel	E EPDM	MPP 050 SS S S SS E	90	9
SS 316 Stainless Steel	T PTFE	T PTFE	SS Stainless Steel	T PTFE	MPP 050 SS T T SS T	90	9
SS 316 Stainless Steel	V Viton®	V Viton®	SS Stainless Steel	V Viton®	MPP 050 SS V V SS V	90	9

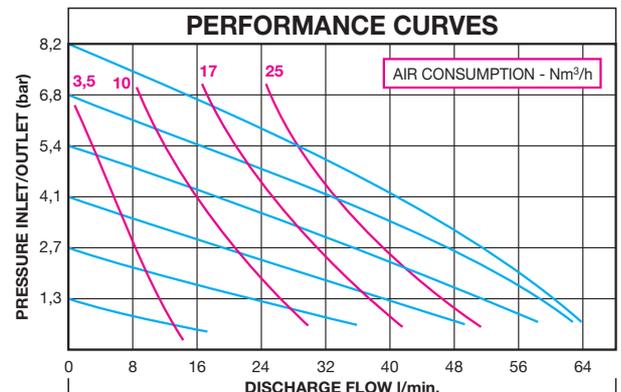
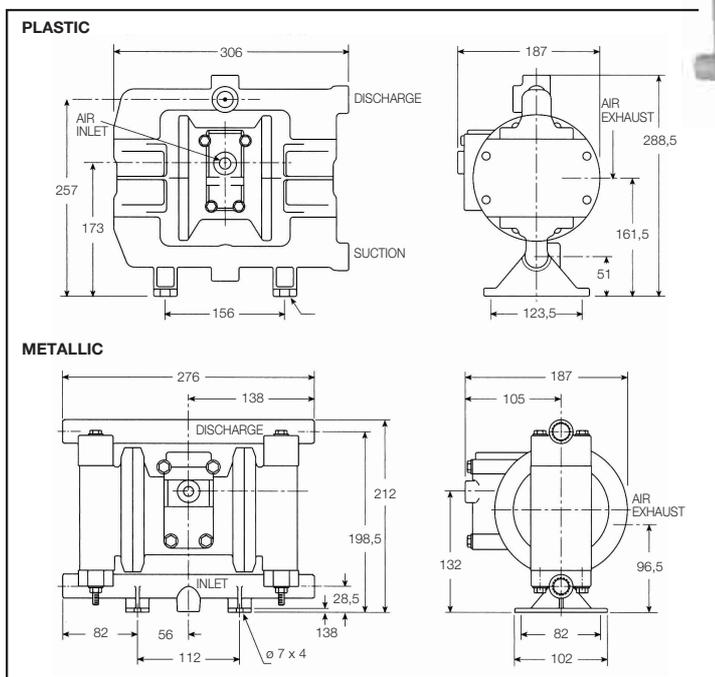
MAIN CHARACTERISTICS

Max Capacity	l/min	64,5
Volume per stroke	ml	95
Max Air Pressure	bar	8,2
Minimum Air Pressure	bar	1,3
Dry lift - with PTFE balls	m	3
Dry lift - other balls check	m	4,5
Dry lift - with Max-Pass™ valves	m	6
Maximun solids	mm	3,2
Max solids - with Max-Pass™ valves (optional)	mm	9,5
Inlet air supply	BSP/NPT F	1/4"
Outlet air supply	BSP/NPT F	3/8"
Fluid Inlet/Discharge	BSP/NPT F	1/2"

Note: Dual manifold split/delivery is an option.



DIMENSIONS



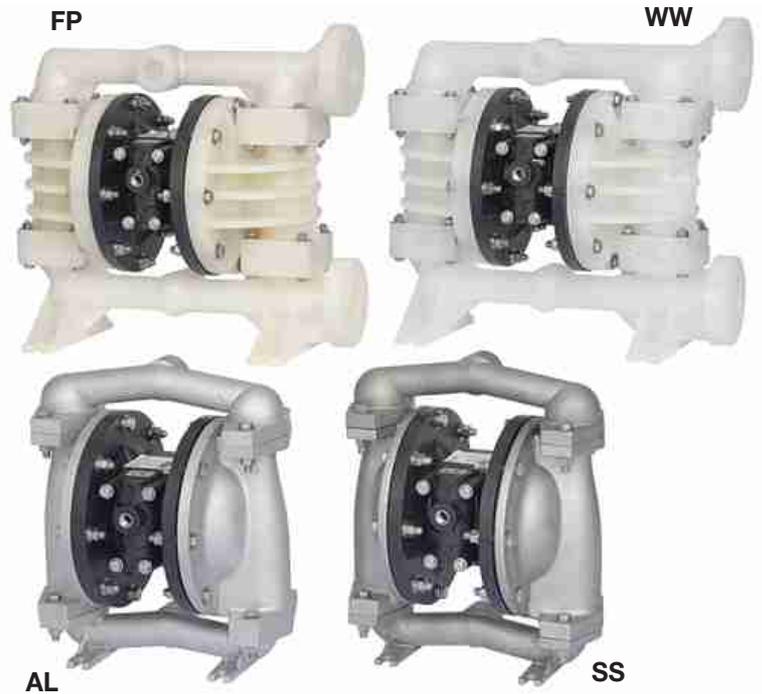
EXECUTIONS

CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT
WW Polypropylene	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 100 WW G G WW N	65	9,5
WW Polypropylene	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 100 WW S S WW E	65	9,5
WW Polypropylene	T PTFE	T PTFE	WW Polypropylene	T PTFE	MPP 100 WW T T WW T	65	9,5
WW Polypropylene	V Viton®	V Viton®	WW Polypropylene	V Viton®	MPP 100 WW V V WW V	65	9,5
FP PVDF	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 100 FP T T FP T	90	14
FP PVDF	S Santoprene®	S Santoprene®	FP PVDF	E EPDM	MPP 100 FP S S FP E	90	14
FP PVDF	V Viton®	V Viton®	FP PVDF	V Viton®	MPP 100 FP V V FP V	9,5	14
AL Aluminum	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 100 AL G G WW N	9,5	10,5
AL Aluminum	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 100 AL S S WW E	9,5	10,5
AL Aluminum	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 100 AL T T NY T	9,5	10,5
AL Aluminum	V Viton®	V Viton®	NY Nylon	V Viton®	MPP 100 AL V V NY V	14	10,5
SS 316 Stainless Steel	G Geolast®	G Geolast®	SS Stainless Steel	N Nitrile	MPP 100 SS G G SS N	14	20,5
SS 316 Stainless Steel	S Santoprene®	S Santoprene®	SS Stainless Steel	E EPDM	MPP 100 SS S S SS E	14	20,5
SS 316 Stainless Steel	T PTFE	T PTFE	SS Stainless Steel	T PTFE	MPP 100 SS T T SS T	10,5	20,5
SS 316 Stainless Steel	V Viton®	V Viton®	SS Stainless Steel	V Viton®	MPP 100 SS V V SS V	10,5	20,5

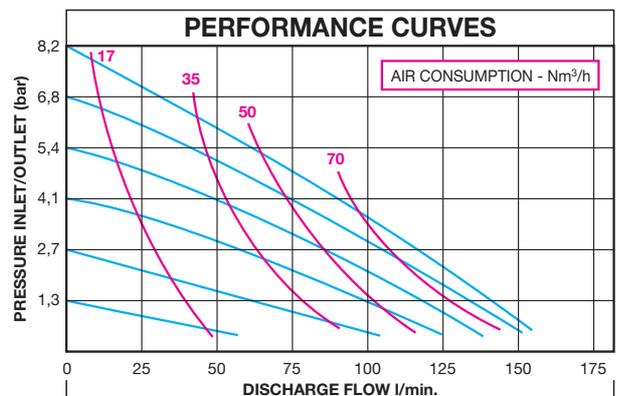
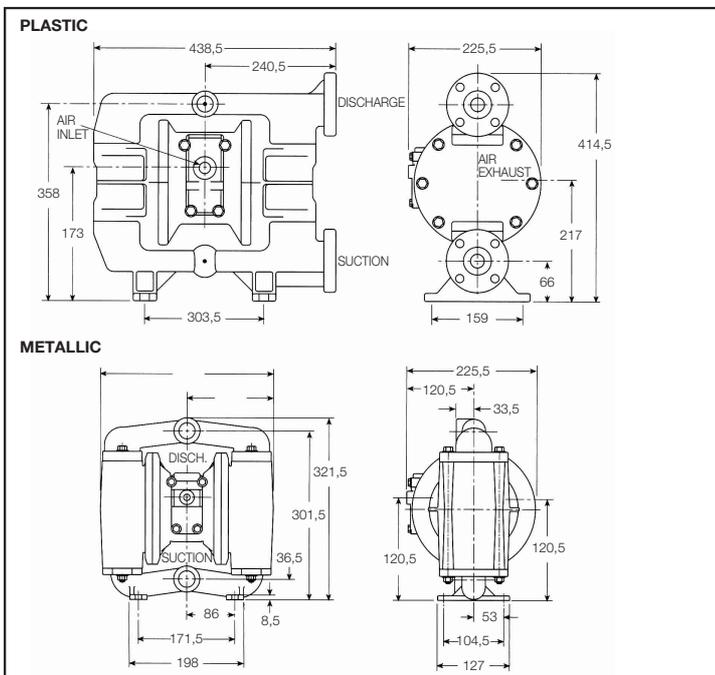
MAIN CHARACTERISTICS

Max Capacity	l/min	155
Volume per stroke	ml	315
Max Air Pressure	bar	8,2
Minimum Air Pressure	bar	1,3
Dry lift - with PTFE balls	m	3
Dry lift - other balls check	m	4,5
Dry lift - with Max-Pass™ valves	m	5,5
Maximun solids	mm	6,5
Max solids - with Max-Pass™ valves optional for plastic pumps	mm	19
Max solids - with Max-Pass™ valves optional for metal pumps	mm	12,7
Inlet air supply	BSP/NPT F	1/4"
Outlet air supply	BSP/NPT F	3/8"
Fluid Inlet/Discharge plastic pumps	Flanged ND	25
Fluid Inlet/Discharge metal pumps	BSP/NPT F	1"

Note for plastic pumps:
BSP 1" threaded connections are available
Optional threaded center ports must be specified



DIMENSIONS



EXECUTIONS

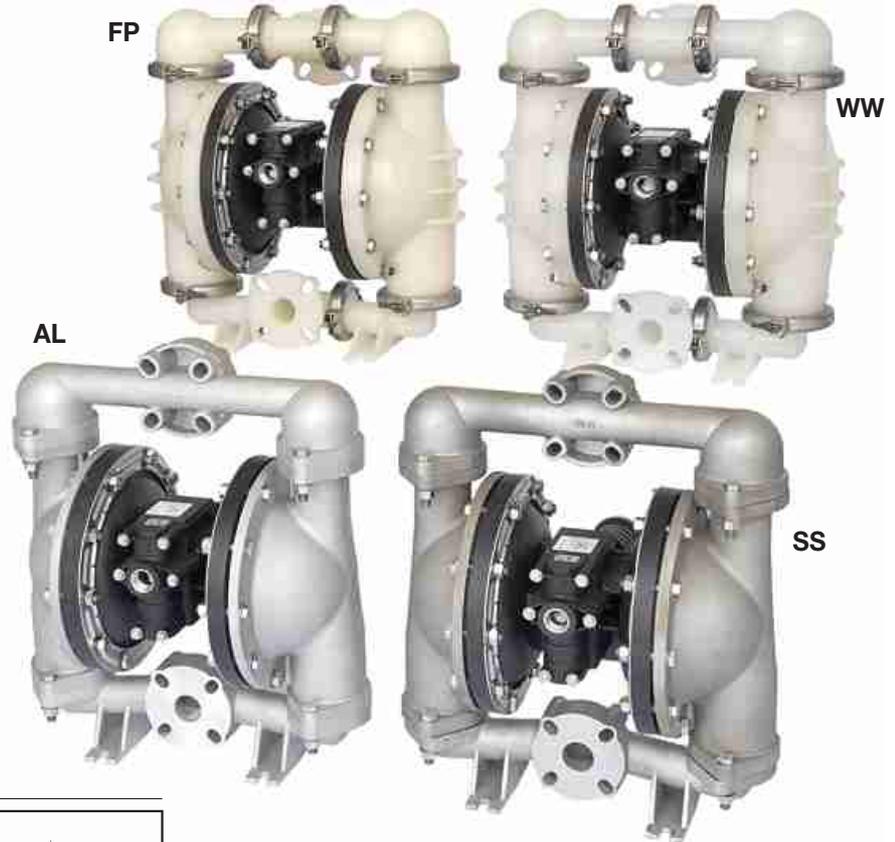
CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT
WW Polypropylene	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 150 WW G G WW N	65	21
WW Polypropylene	T PTFE	T PTFE	WW Polypropylene	T PTFE	MPP 150 WW T T WW T	65	21
WW Polypropylene	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 150 WW S S WW E	65	21
FP PVDF	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 150 FP T T FP T	90	30
FP PVDF	S Santoprene®	S Santoprene®	FP PVDF	E EPDM	MPP 150 FP S S FP E	90	30
AL Aluminum	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 150 AL G G WW N	90	27,5
AL Aluminum	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 150 AL S S WW E	90	27,5
AL Aluminum	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 150 AL T T NY T	90	27,5
SS 316 Stainless Steel	G Geolast®	G Geolast®	SS Stainless Steel	N Nitrile	MPP 150 SS G G SS N	90	60
SS 316 Stainless Steel	S Santoprene®	S Santoprene®	SS Stainless Steel	E EPDM	MPP 150 SS S S SS E	90	60
SS 316 Stainless Steel	T PTFE	T PTFE	SS Stainless Steel	T PTFE	MPP 150 SS T T SS T	90	60

MAIN CHARACTERISTICS

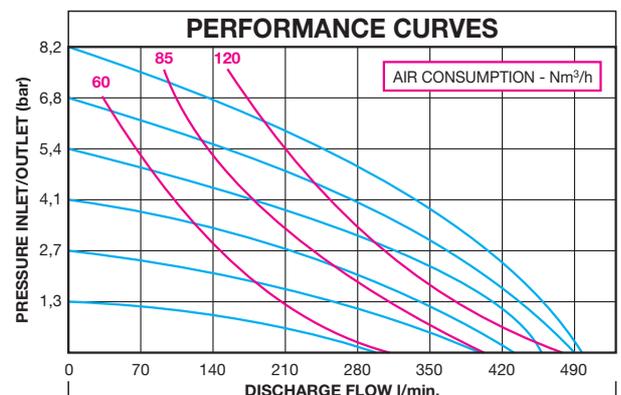
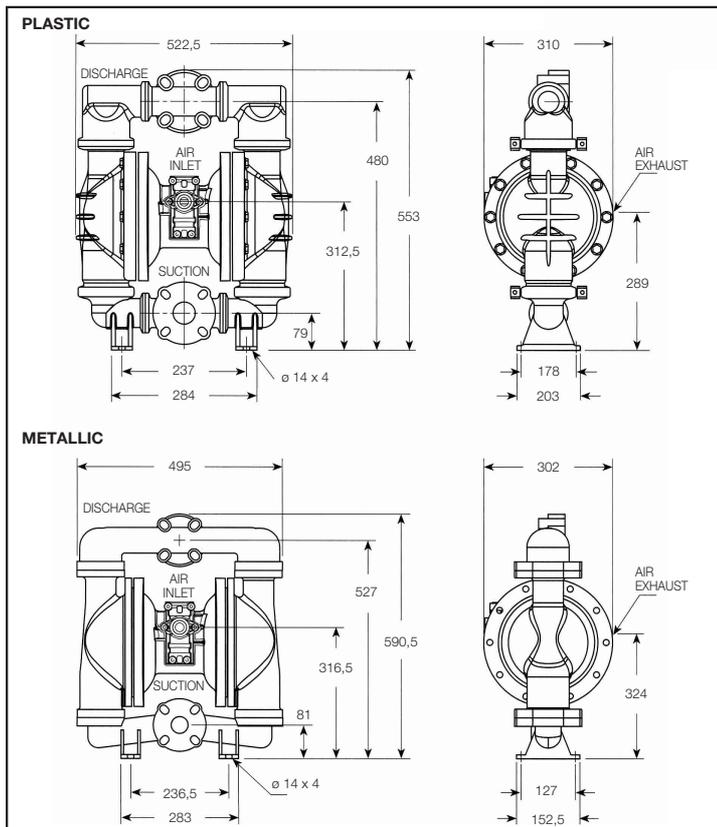
Max Capacity	l/min	490
Volume per stroke	l	1,75
Max Air Pressure	bar	8,2
Minimum Air Pressure	bar	1,3
Dry lift - with PTFE balls	m	3
Dry lift - other balls check	m	4,5
Maximun solids	mm	6,5
Inlet air supply	BSP/NPT F	3/4"
Outlet air supply	BSP/NPT F	3/4"
Fluid Inlet/Discharge	Flanged ND	40

Note:

Flanges are ISO and ANSI 1 1/2" compatible.



DIMENSIONS



EXECUTIONS

CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT
WW Polypropylene	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 200 WW G G WW N	65	22
WW Polypropylene	T PTFE	T PTFE	WW Polypropylene	T PTFE	MPP 200 WW T T WW T	65	22
WW Polypropylene	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 200 WW S S WW E	65	22
FP PVDF	T PTFE	T PTFE	FP PVDF	T PTFE	MPP 200 FP T T FP T	90	31,5
FP PVDF	S Santoprene®	S Santoprene®	FP PVDF	E EPDM	MPP 200 FP S S FP E	90	31,5
AL Aluminum	G Geolast®	G Geolast®	WW Polypropylene	N Nitrile	MPP 200 AL G G WW N	90	28
AL Aluminum	S Santoprene®	S Santoprene®	WW Polypropylene	E EPDM	MPP 200 AL S S WW E	90	28
AL Aluminum	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 200 AL T T NY T	90	28
SS 316 Stainless Steel	G Geolast®	G Geolast®	SS Stainless Steel	N Nitrile	MPP 200 SS G G SS N	90	60
SS 316 Stainless Steel	S Santoprene®	S Santoprene®	SS Stainless Steel	E EPDM	MPP 200 SS S S SS E	90	60
SS 316 Stainless Steel	T PTFE	T PTFE	SS Stainless Steel	T PTFE	MPP 200 SS T T SS T	90	60

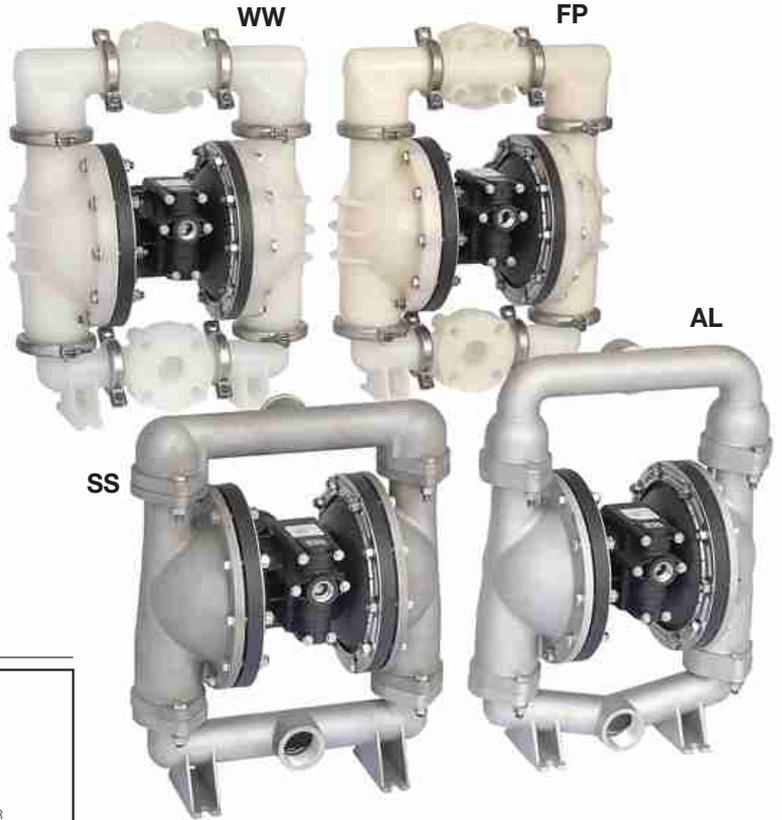
MAIN CHARACTERISTICS

Max Capacity	l/min	680
Volume per stroke	l	1,82
Max Air Pressure	bar	8,2
Minimum Air Pressure	bar	1,3
Dry lift - with PTFE balls	m	3
Dry lift - other balls check	m	4,5
Maximun solids	mm	6,5
Inlet air supply	BSP/NPT F	3/4"
Outlet air supply	BSP/NPT F	3/4"
Fluid Inlet/Discharge plastic pumps	Flanged ND	50
Fluid Inlet/Discharge metal pumps	BSP/NPT F	2"

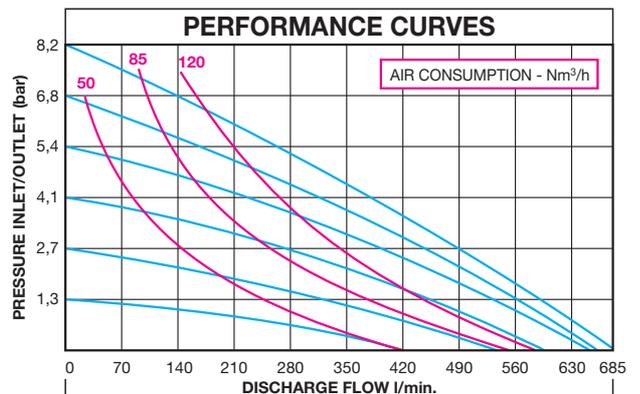
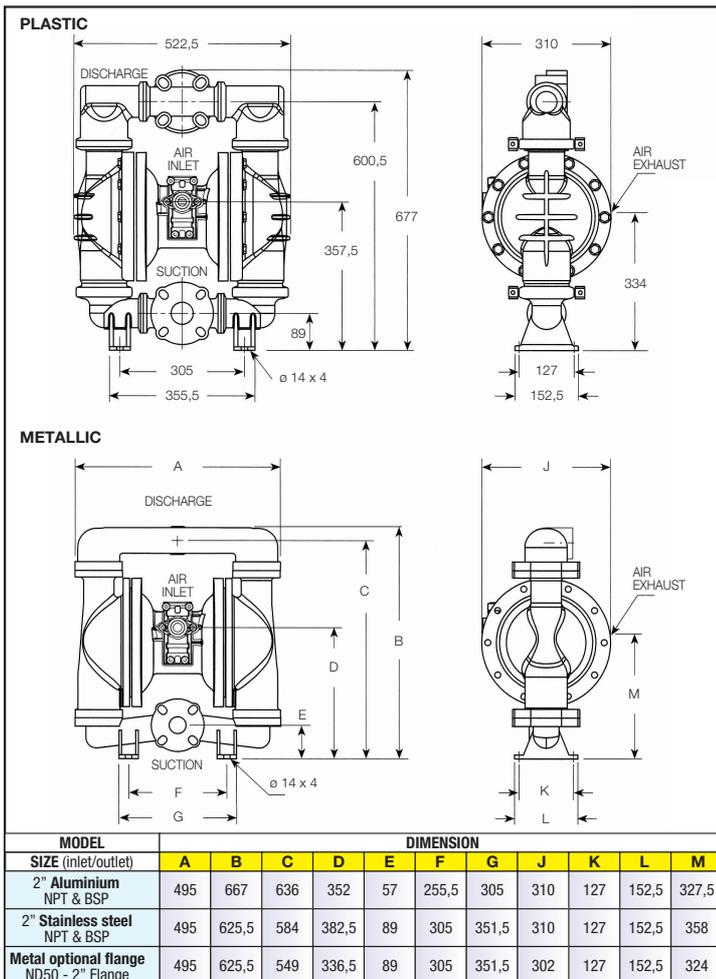
Note for plastic pumps:

Flanges are ISO and ANSI 2" compatible.

Note for stainless steel pumps: Optional tri-clamp fittings



DIMENSIONS

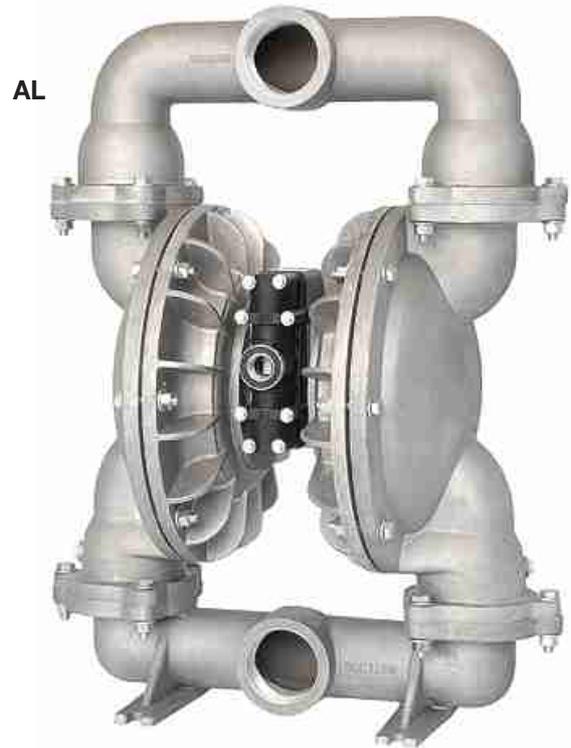


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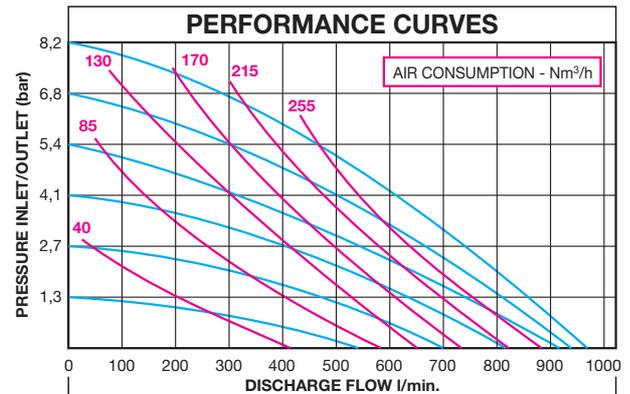
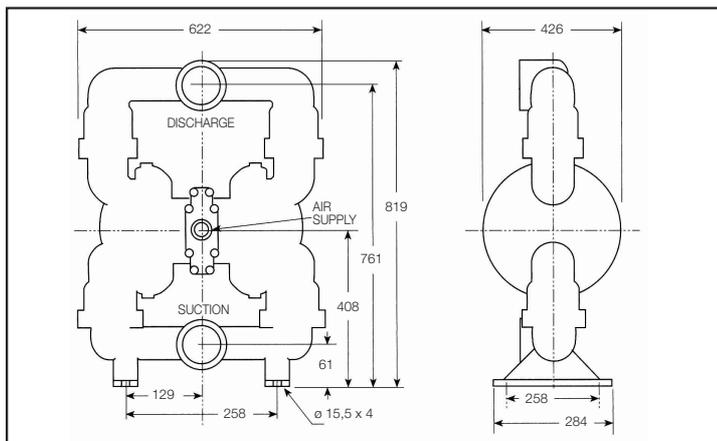
CHAMBERS	DIAPHRAGMS	VALVE/BALL	VALVE SEATS	O-Rings	ARGAL CODE	MAX T.°C	WEIGHT
AL Aluminum	U Urethane	G Geolast®	NO Nitrile	0 N/A	MPP 300 AL U G NO 0	90	59
AL Aluminum	S Santoprene®	S Santoprene®	E0 EPDM	0 N/A	MPP 300 AL S S E0 0	90	59
AL Aluminum	T PTFE	T PTFE	NY Nylon	T PTFE	MPP 300 AL T T NY T	90	59
AL Aluminum	V Viton®	V Viton®	V0 Viton®	0 N/A	MPP 300 AL V V V0 0	90	59

MAIN CHARACTERISTICS

Max Capacity	l/min	960
Volume per stroke	l	4,67
Max Air Pressure	bar	8,2
Minimum Air Pressure	bar	1,3
Dry lift - with PTFE balls	m	3
Dry lift - other balls check	m	4,5
Maximun solids	mm	11
Inlet air supply	BSP/NPT F	3/4"
Outlet air supply	BSP/NPT F	3/4"
Fluid Inlet/Discharge	BSP/NPT F	3"
Accessories: Carry handles and strainer base		



DIMENSIONS



ACCESSORIES



Drum Kits

The many advantages of diaphragm pumps make them ideal for drum evacuation. Drum mounting kits are available for pumps up to 1" in size.



Solenoid Control

The solenoid control valve is used for remote, electrical control of a pump through a PC, PLC, relay or switch. The solenoid control valve replaces the air valve assembly. The control signal is a solution to "on demand" fluid transfer requirements. Supply voltage: 220V AC/50Hz, 120V AC/60Hz, 24V DC. The solenoid control can be used on pumps 3/8" and larger.



Cycle Counting

The cycle count valve is integral to the air valve. The sensor at the bottom of the air valve is provided (the configuration for data acquisition and control is not provided). Every time a cycle is completed, an impulse is sent from the cycle count valve to a data acquisition center for automated input to a PC, PLC, relay or switch. The cycle count can be used on pumps 3/8" and larger.

Production Program

TMB range

Installed powers: W.15+100
Bodies materials: GFR/PP

- Magnetic drive



AM range

Installed powers: kW 0,18+0,55
Bodies materials: GFR/PP - E-CTFE

- Magnetic drive



ROUTE range

Installed powers: kW 0,55+7,5
Bodies materials: GFR/PP - CFF/E-CTFE

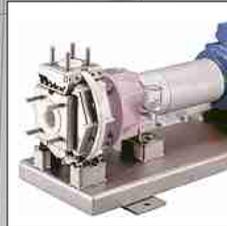
- Magnetic drive
- Sealed



FRONTIERA range

Installed powers: kW 0,55+15
Bodies materials: PP - E-CTFE

- Magnetic drive
- Sealed



ZME range

Installed powers: kW 5,5+15
Bodies materials: PP - E-CTFE

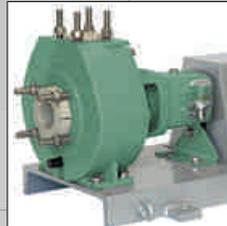
- Sealed



ZGE range (ISO 2858)

Installed powers: kW 0,55+300
Bodies materials: PP - PVDF - PVC - PE HMW

- Sealed



ZMA and ZGA range

Installed powers: kW 0,75+11
Bodies materials: PP - PVDF - PVC

- Self priming
- Sealed



ZM range

Installed powers: kW 0,75+11
Bodies materials: GFR/PP - CFF/PVDF

- Sealed



KGK range

Installed powers: kW 0,25+15
Bodies materials: GFR/PP - PVDF - PVC
Lengths 250+4000 mm



K range (KG and KM)

Installed powers: kW 0,75+37
Bodies materials: GFR/PP - PVDF - PVC
Lengths 400+3000 mm



EQUIPRO range

Available motor power: 0,25+4 kW
Material versions: GFR/PP - PVDF
Lengths 275 - 450 mm



LAGUNA range

Range: from 500 to 40.000 l/h
Filter materials: PP - PVDF
Pump materials: GFR/PP - CFF/E-CTFE



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