



**ARBO**  
Pompen en Filters b.v.



# ARBO immersible pumps

**SumPro** without mechanical seal

Product group 3.1





## Product group 3.1 Seal-less immersible Pumps SumPro



### Applications

For all transport or circulation duties of corrosive liquids, that may contain even high amount of particles or sludge with medium viscosity.

This series of pumps is equipped with a state of the art semi-open impeller that is fixed onto the shaft independent from the direction of rotation.

### Materials

Standard is the material **PPH** that covers a very wide range of duties.

For highly abrasive liquids (high percentage of solids), at special order, impellers or housing parts of High Modulus Polyethylene are available.

For highly corrosive mixtures of acids at higher temperatures even a pump housing entirely made of virgin **PVDF** is available.

For our smaller series, we can make **PTFE** pump housings to deal with strong alkaline at higher temperatures.

Technical details pumps	
Design pressure	PN4
Design standard (BG1/2)	DIN - EN 12157
Max. system pressure	not applicable; "open system"
Min. flow	10 % of max. flow of specific type
Max. flow	36 m <sup>3</sup> /h
Max. head	35 m (60 Hz)
Max. viscosity	350 mPas
Max. solid size	3 mm
Technical details motors	
Standard	Three-phase, multivoltage, TEFC
High efficiency	IE2 efficiency level acc. IEC60034-30
Duty	Continuous duty: S1
Multi Voltage up to IEC100	220-240/380-415V 50 Hz // 440-460 V 60 Hz
Multi Voltage above IEC100	380-415V/ 660V 50 Hz // 440-460 V 60 Hz
Protection class	IP55 (IEC 34-5/ NEN-EN 60034-5)
Insulation Class	"F" (ΔT=80 °C);
Max. ambient temperature	Ambient temperature: -30 to 40°C, at 1000 m.a.s.l.
Max. relative humidity	< 95%
Optional available	
Other voltages	f.i. 480 V/ 3 Ph/ 60 Hz
Other insulation	f.i. Tropicalized
PTC Thermistors	on windings
Thermal or dust protection:	IP56, IP65, IP66, IPW56, IPW65 or IPW66

Materials of construction	Abbreviation	T min. °C	T max. °C
Polypropylene	PP	0	80
High Modulus Polyethylene	HMPE	-50	80
Polyvinylidenfluoride	PVDF	-30	120
Polytetrafluorethylene*	PTFE	-40	140
Conductive plastics for ATEX- zones	PP/PVDF/PE-EL		

\* BG1/2C with SS-316 shaft only

### Ordering code (P.I.C.)

Model	Pump		Materials				Connection		Motor				
	Discharge size (D)	Housing size	Wetted parts	Impeller if different	Gas seal	Gaskets	Discharge (d)	Pole	Power kW	Voltage	Phase	Frequency	Atex
DO	15	55	PP	PVDF		E	R	2	0,12, 0,25	2	1	5	EX
	20	80	PVDF	HMPE	GD	V	U	4	0,37, 0,55	3	3	6	
	25	125				T	CP		0,75, 1,1	4			
	32	160					BB		1,5, 2,2	6			
	40								3,0, 4,0				
	50								5,5, 7,5				



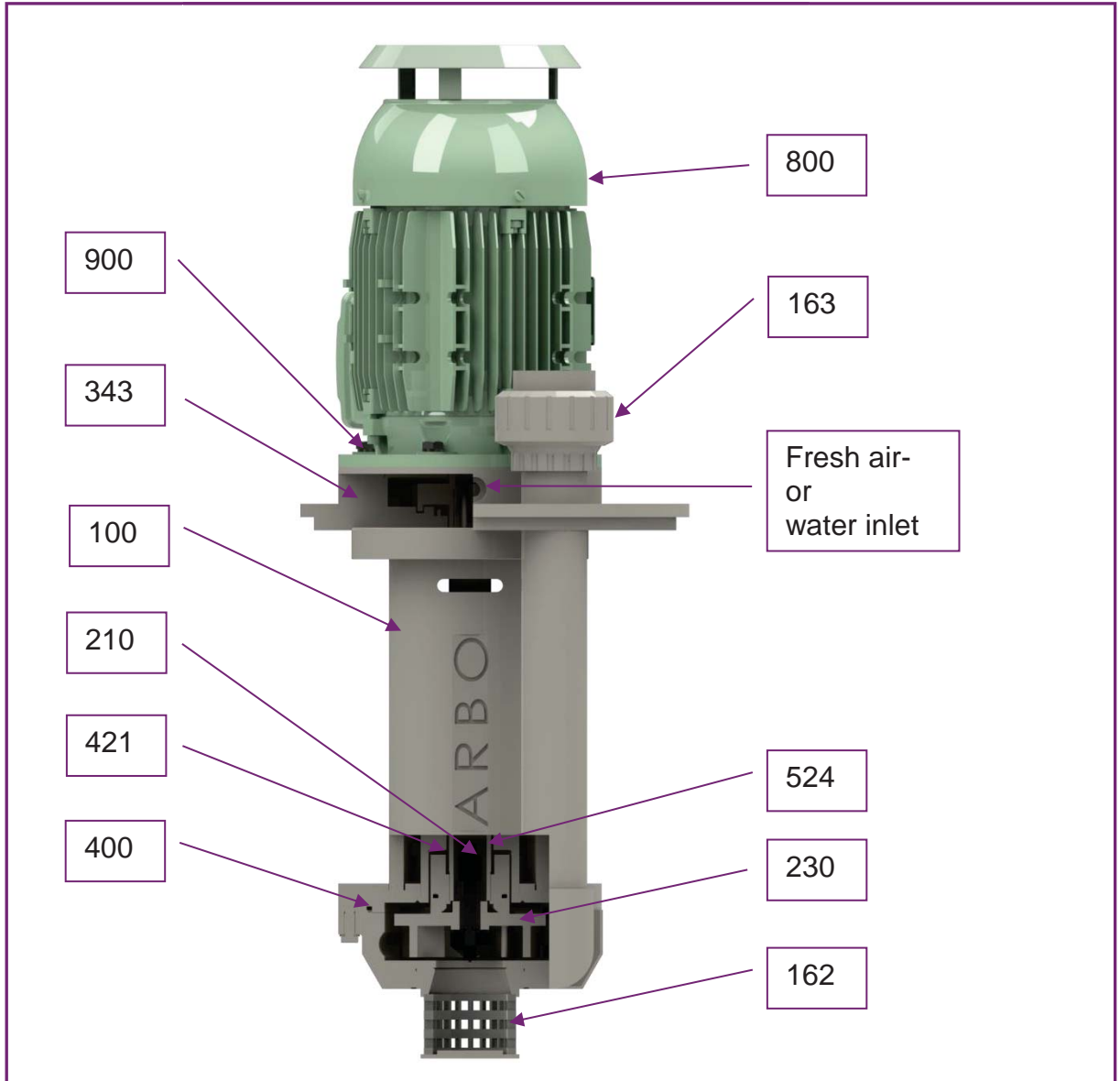


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SumPro Seal-less  
Immersible pumps

### MATERIALS OF CONSTRUCTION



Pos.	Description	Standard	Options	
100	Housing parts	PPH	PVDF	PTFE
162	Suction adaptor	PPH	Extended suction pipe w. or w/o strainer	
163	Discharge adaptor	PPH	FIP or GF union (end)	CP- connection
210	Pump shaft	SS		
230	Impeller	PPH	HMPE	PVDF
	Impeller type	Semi-open	Turbine	
343	Pump bracket	PPH		
400	Gaskets	EPDM	VITON	PTFE encapsulated
421	Mechanical seal	NONE; liquid seal	Gas seal	
524	Shaft protecting sleeve	PPH	HMPE	PVDF
800	Motor	2 or 4 pole		
900	Fasteners	SS-316	PEEK	Hasteloy C

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### SumPro Seal-less Immersible pumps

### FEATURES

Any kind of adapter can be ordered:

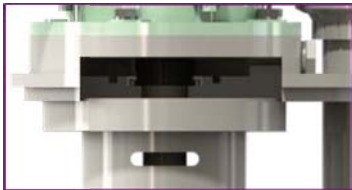
- FIP 3D-unions
- +G.F.+ R" union bush
- Hose adapter
- DIN or ANSI flanges
- Model BB for out of tank

**Labyrinth** prevents fumes from the pump to exit into the atmosphere when the pump is operating:

- **less motor corrosion**
- **better atmosphere around the pump**

**Optional:**

- **unique gas seal available for extremely corrosive or dangerous liquids**



**Motor optimized to run under tough conditions.**

To ensure **100% sealing between pump and motor**, even when the pump is not operating, a hose adapter 1/2" may be connected to a fresh air source.

**Fume barrier protects motor shield and bearings against corrosion**

**Semi-open impeller type:**

- **direction independent fixation**
- for transfer and circulation
- **increased efficiency = less energy consumption**
- **Turbine type available for low flow – high head applications very smooth and quiet**
- **air free operation**, even at very low liquid level
- **anti foam**
- **anti-clogging**

Extra heavy duty **PEEK** lock nut for secure impeller fixation and shaft sealing.

Suction pipe with BSP thread so any kind of adapter can be used. Standard with large surface suction strainer.

Suction pipe extensions available.



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### SumPro Seal-less Immersible pumps

### SELECTION TABLE

Product group	Type	Impeller size Ø mm		Pump performance		Sg. Max	Motor power kW	I nom.
				Q. max	H. max	end-of-curve	2850 min <sup>-1</sup>	
3,1	DO	50 Hz	60 Hz	M3/h	M	(ρ) kg/m <sup>3</sup>	50 Hz	400V/3Ph/ 50Hz
Series (BG)		50 Hz	60 Hz	M3/h	M	(ρ) kg/m <sup>3</sup>	50 Hz	A
1C	15-55	55	55	3,8	3,0	1500	0,12	0,45
	15-80	80	80	5,5	7,0	1500	0,25	0,65
2C	25-80	80	70	7,0	7,0	1200	0,25	0,65
	25-85	85	70	9,1	10,0	1150	0,37	0,96
3	25-95	95	80	10,2	12,0	1150	0,55	1,40
	32-95	95	80	14,7	12,0	1150	0,55	1,40
4	40-125	95	80	21,0	12,0	1200	1,10	2,40
	40-125	105	90	25,0	15,0	1200	1,50	3,20
	40-125	115	95	30,0	18,0	1200	2,20	4,50
	40-125	125TW	105TW	20,0	23,0	1100	2,20	4,50
	40-125	125TW	105TW	20,0	23,0	1100	3,00	4,50

### Options



#### Suction pipe

In order to empty deep sumps ARBO offers suction pipe extension up to a total immersible length of 3 mtr.!

Extended suction pipes are split into sections of 1.2 mtr. maximum for easy transport.

It is recommended to support long suction pipes to the sump wall, however these supports need some flexibility and should not cause vibration.

#### Footvalve (for clean solutions only)

If starting at any level is requested, ARBO offers a very reliable corrosion resistant foot valve to maintain the liquid level inside the pump housing. Filled once, the pump is able to start again even though the liquid level in the sump is below the impeller housing.

#### This construction features:

- Maintenance free operation over long working life
- Service friendliness
- Radial installation/removal
- Quick and precise opening and closing
- Low opening pressure of 0.025 Bar

#### Discharge pipe U-execution

So that you can easily connect your pump into the piping, ARBO offers several connections and adaptors.

Standard for the SumPro series is the U execution. It is a 3D socket welding union complete with O-ring.



#### R-execution

Should you like to have a threaded connection, in order to use any kind of counterpart, please order the R execution. It consists of a +GF+ union bush with O-ring.

#### Optional

You may wish to order different counter parts in f.i. PVC or PE to match your piping.

Union nut      Union end



#### CP-execution

Offers some cost reduction and more flexibility to machine makers who want to use own build-in discharge piping. There is a threaded connection directly to the impeller housing.



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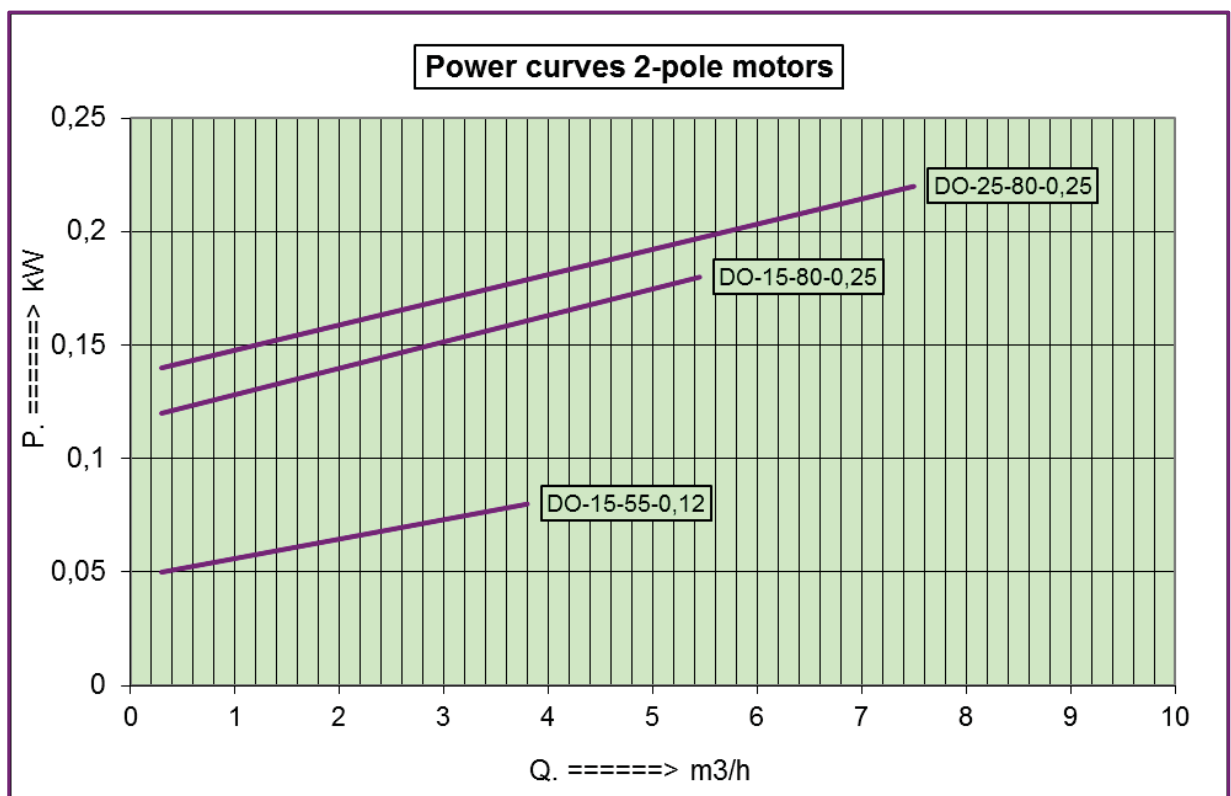
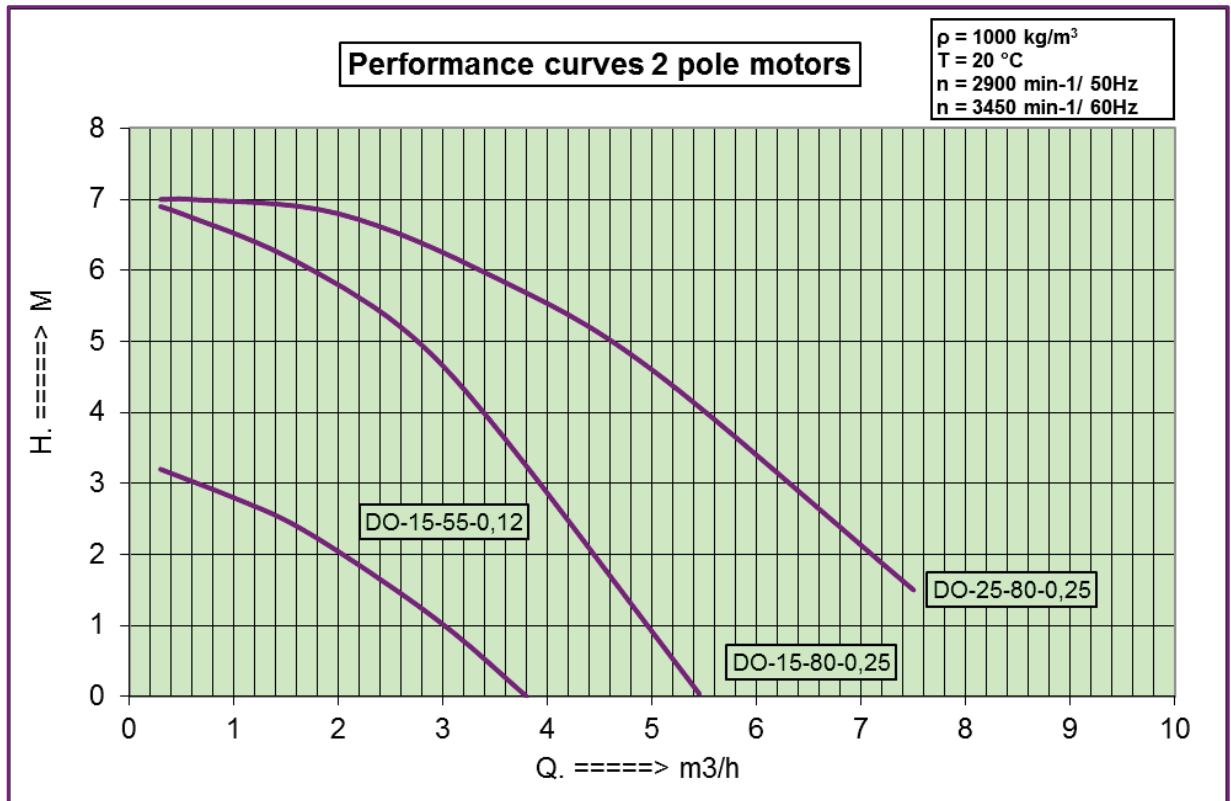


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SumPro Seal-less  
Immersible pumps

### PERFORMANCE CURVES DO-BG1-2C - 2-pole



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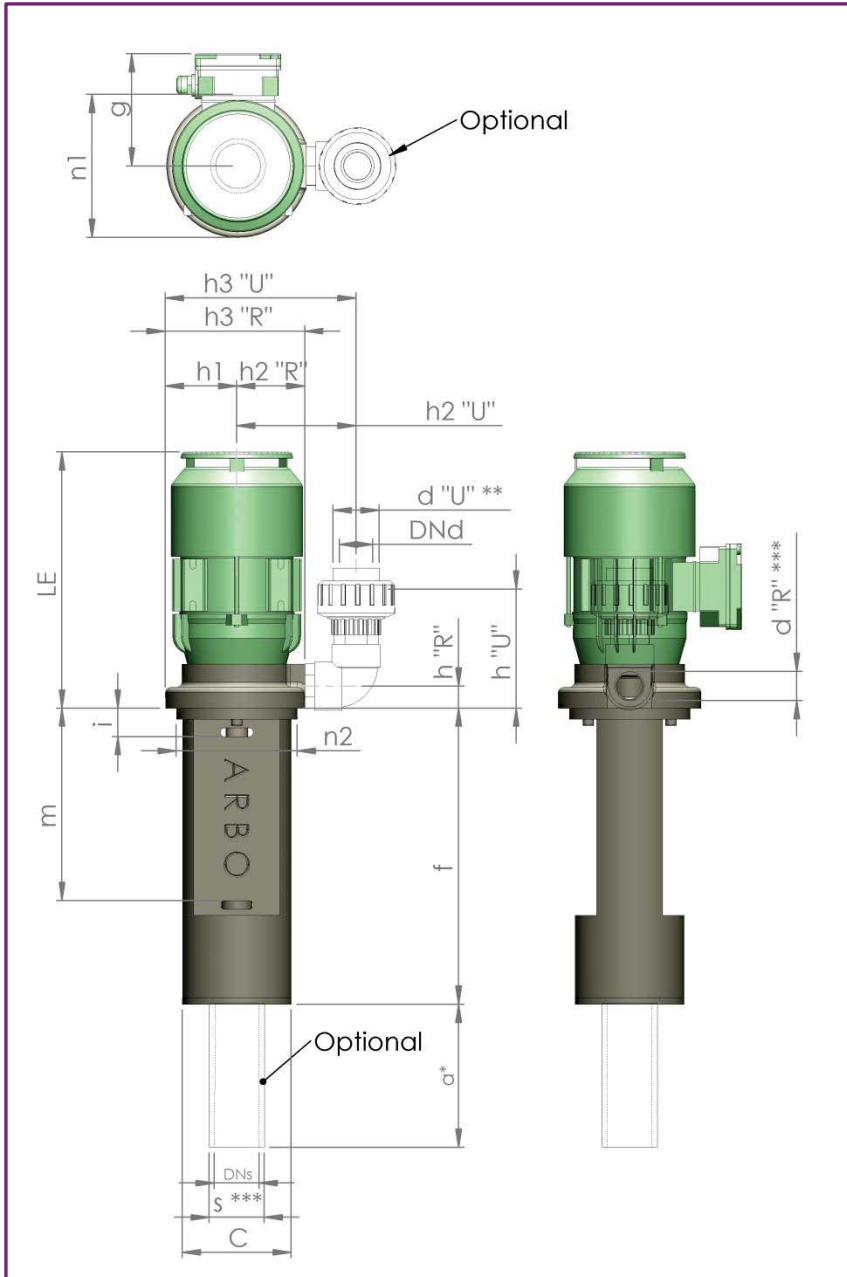


# ARBO

## Pompen en Filters b.v.

### DIMENSIONS / WEIGHTS DO-BG1-2C

DO type	Motor IEC	Impeller Ø mm		Weight KG		Box size CM
		Min.	Max.	PP	PVDF	
15-55	63M	55	55	6	8	81x41x42
15-80	63M	55	80	6	8	81x41x42
25-80	63M	55	80	6	8	81x41x42



DO type	Motor IEC	a*	C	g	h1	h2 "R"	h2 "U"	h3 R	h3 "U"	h "R"	h "U"	Dimensions (mm)										Max.
												i	m	n1	n2	DNd	d "R"	d "U"	DNs	s	f	
15-55	63M	*	99	105	65	62,5	110	127,5	175	20	95	50	173	130	110	20	3/4"	1 1/4"	32	2"	270	195
15-80	63M	*	99	105	65	62,5	110	127,5	175	20	95	50	173	130	110	20	3/4"	1 1/4"	32	2"	270	195
25-80	63M	*	99	105	65	62,5	110	127,5	175	20	95	50	173	130	110	25	1"	1 1/2"	32	2"	270	195

\* extension to max. 1000 mm total immersible length

\*\* male straight pipe thread

\*\*\* female straight pipe thread

minimum level  
maximum level

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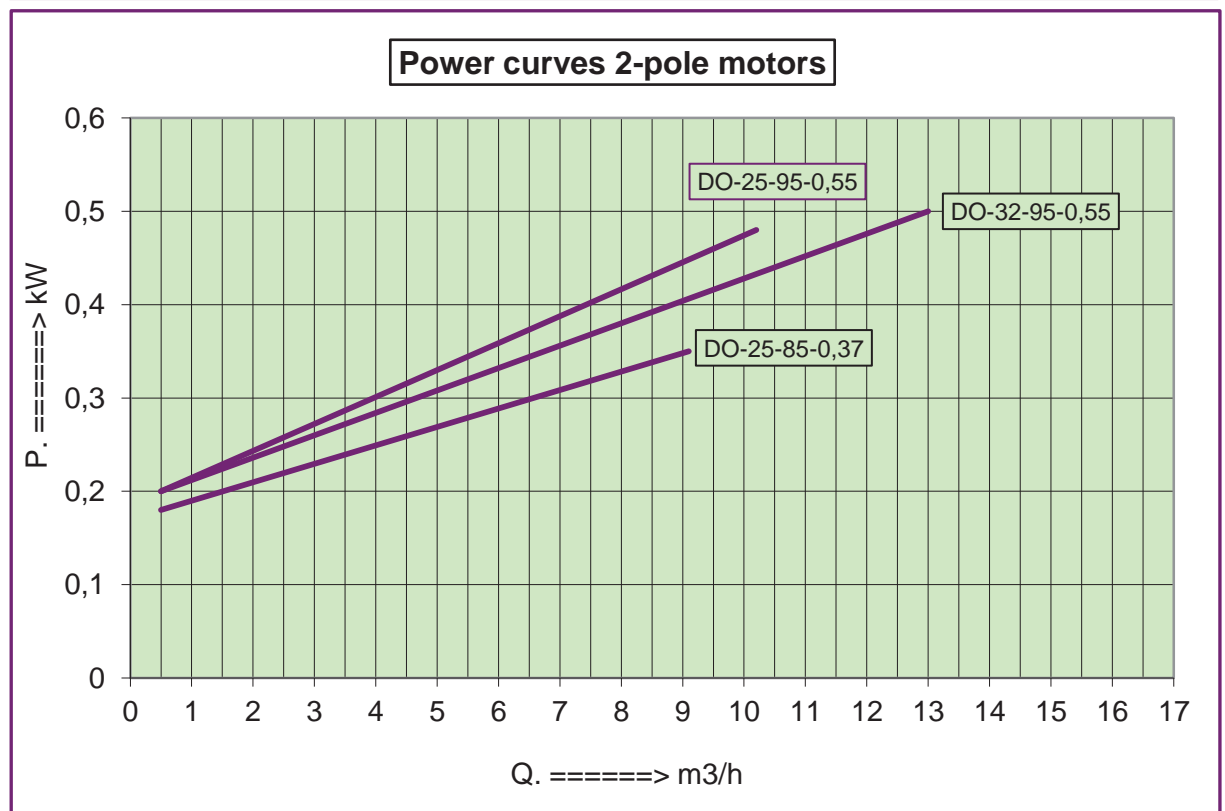
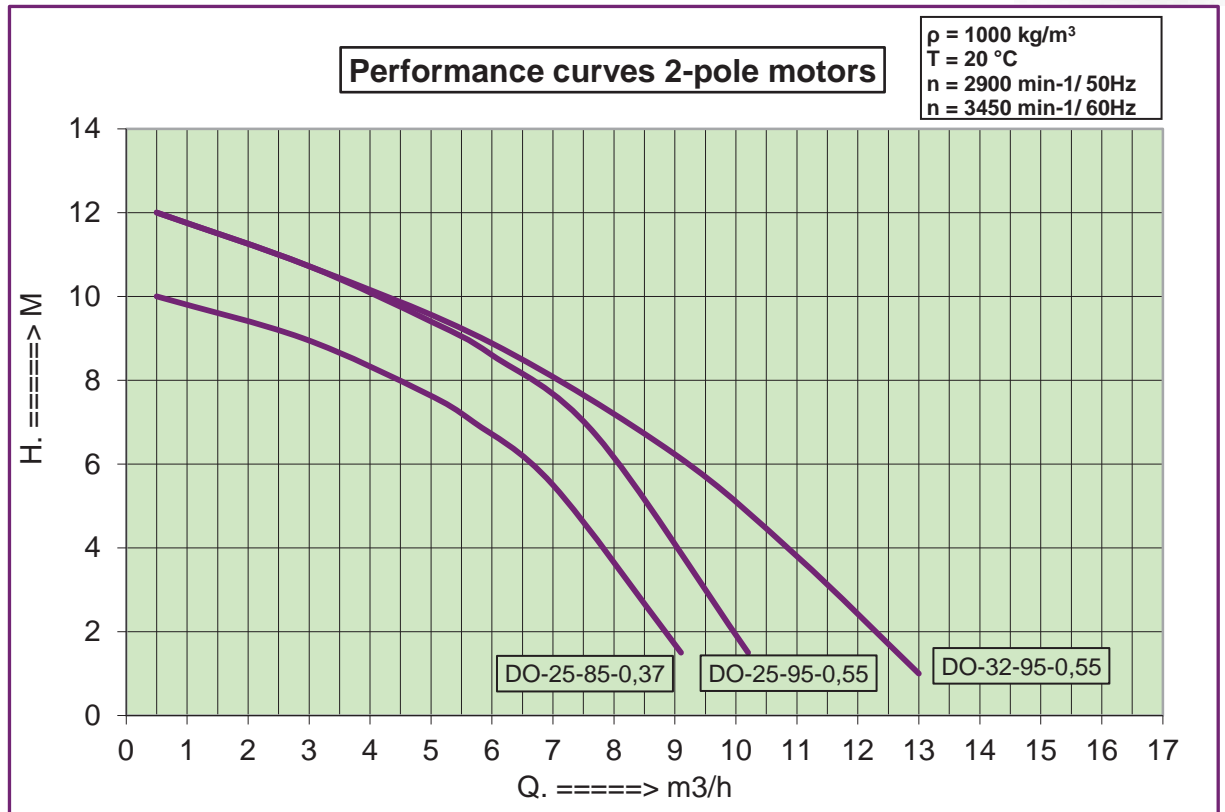
# ARBO

## Pompen en Filters b.v.



SumPro Seal-less immersible

PUMPS PERFORMANCE CURVES DO-BG3 - 2-pole



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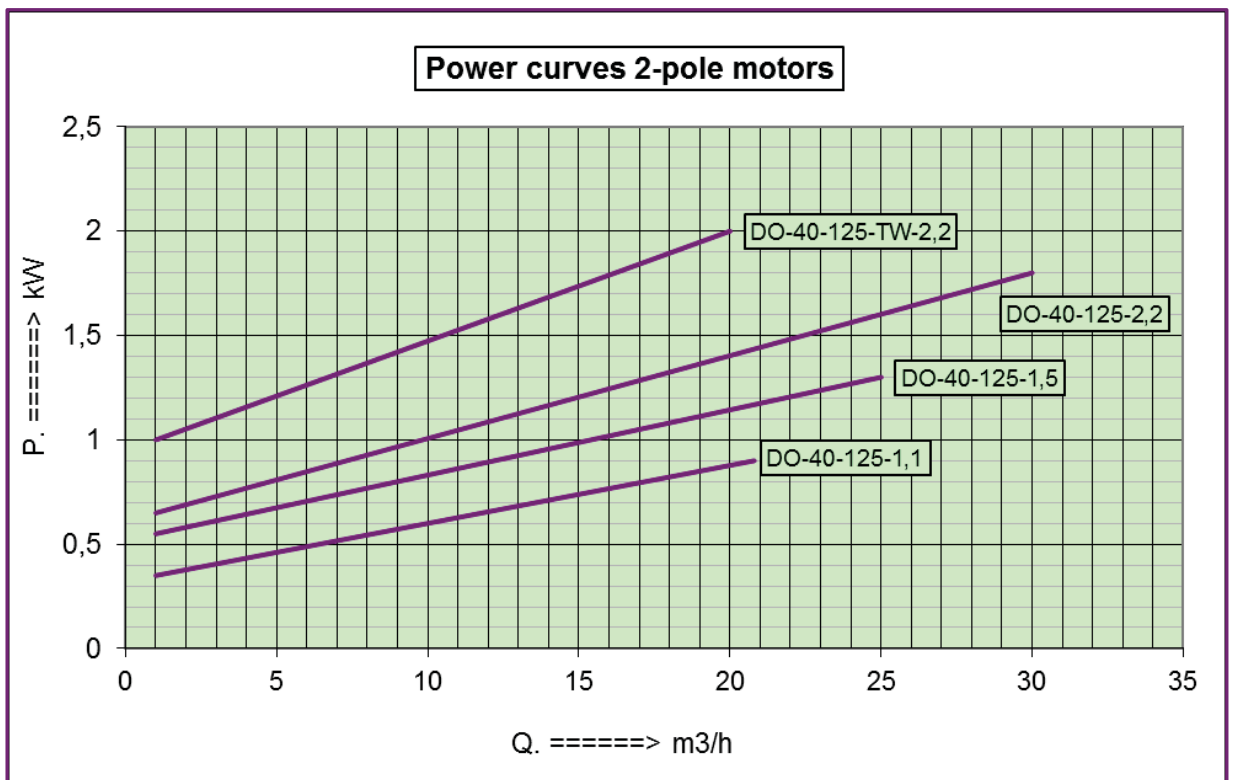
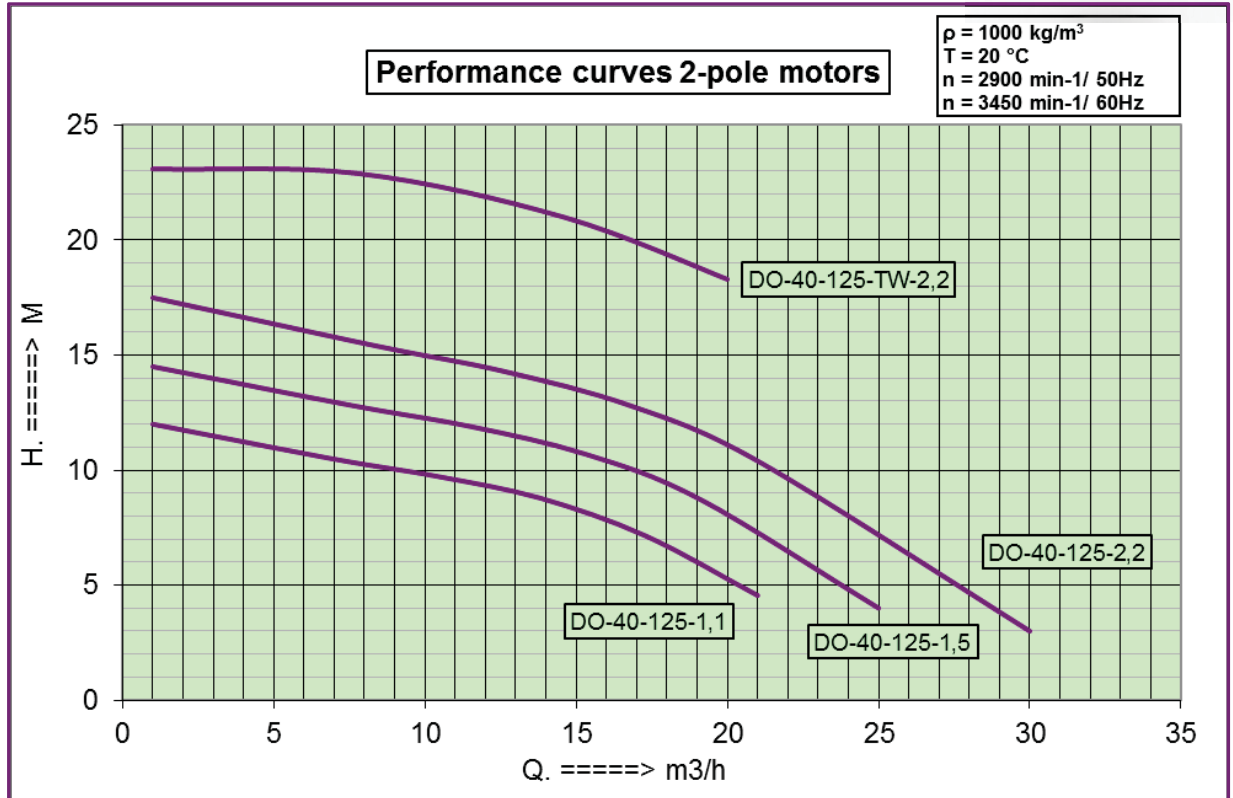
# ARBO

## Pompen en Filters b.v.



SumPro Seal-less immersible

PUMPS PERFORMANCE CURVES DO-BG4 - 2 pole



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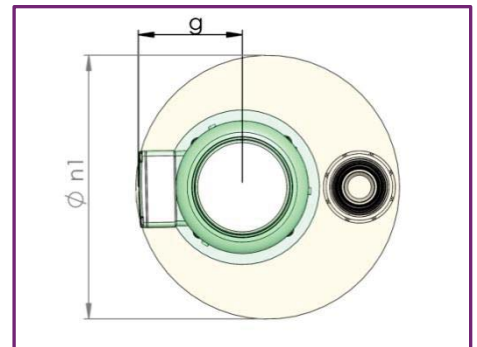
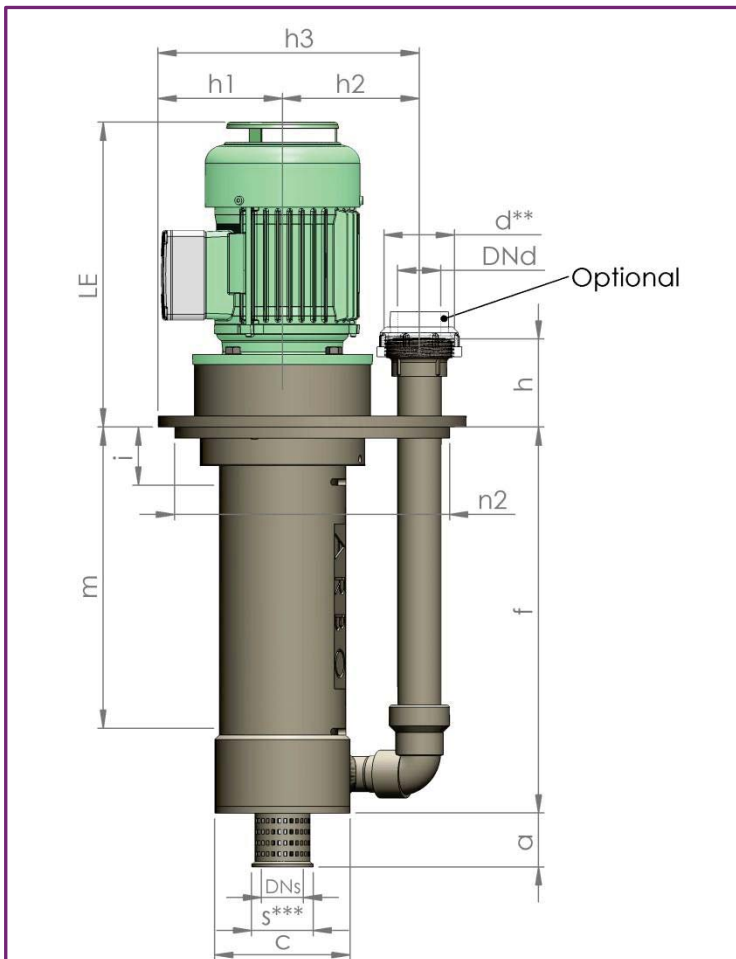


# ARBO

## Pompen en Filters b.v.

### DIMENSIONS / WEIGHTS DO-BG3-4 R and U execution

DO type	Motor IEC	Impeller Ø mm		Weight KG		Box size CM
		Min.	Max.	PP	PVDF	
25-85	71M	70	85	12	14	81x41x42
25-95	71M	70	95	12,5	14,5	81x41x42
32-95	71M	70	95	13,5	15,5	81x41x42
40-125	80M	80	95	18,5	21,0	81x41x42
40-125	90S	80	125	21	24,0	81x41x42
40-125	90L	80	125	23,5	27,0	81x41x42



DO type	Motor IEC	a*	C	g	Dimensions (mm)										Max.			
					h1	h2	h3	h	i	m	n1	n2	DNd	d		DNs	s	f
25-85	71M	49	123	110	113	127	215	80	50	280	250	140	25	1 1/2"	32	2"	358	270
25-95	71M	49	123	110	113	127	215	80	50	280	250	140	25	1 1/2"	32	2"	358	270
32-95	71M	49	123	110	113	127	238	80	50	280	280	140	32	2"	32	2"	358	270
40-125	80M	53	200	140	210,5	153,5	263,5	80	55	265	300	180	40	2 1/4"	50	2 3/4"	359	310
40-125	90S	53	200	155	210,5	153,5	263,5	80	55	265	300	180	40	2 1/4"	50	2 3/4"	359	360
40-125	90L	53	200	155	210,5	153,5	263,5	80	55	265	300	180	40	2 1/4"	50	2 3/4"	359	360

\* extension to max. 3000 mm total immersible length

\*\* male straight pipe thread

\*\*\* female straight pipe thread

minimum starting level

maximum level

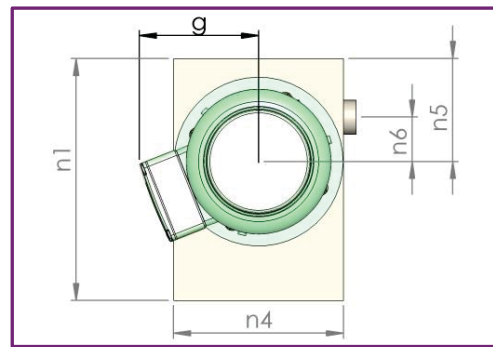
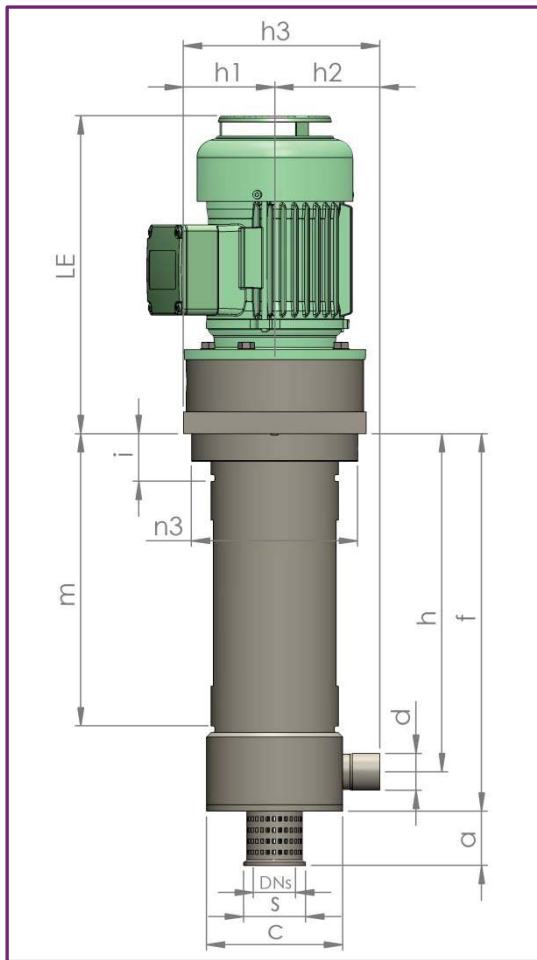


# ARBO

## Pompen en Filters b.v.

### DIMENSIONS / WEIGHTS DO-BG2-4 CP execution

DO type	Motor IEC	Impeller Ø mm		Weight KG		Box size CM
		Min.	Max.	PP	PVDF	
20-80	63M	70	85	12	14	81x41x42
25-85	71M	70	85	12	14	81x41x42
25-95	71M	70	95	12,5	14,5	81x41x42
32-95	71M	70	95	13,5	15,5	81x41x42
40-125	80M	80	95	18,5	21,0	81x41x42
40-125	90S	80	125	21	24,0	81x41x42
40-125	90L	80	125	23,5	27,0	81x41x42



DO type	Motor IEC	Dimensions (mm)																	Max. LE	
		a*	C	g	h1	h2	h3	h	i	m	n1	n3	n4	n5	n6	d**	DNs	s***		f
20-80	63M	49	123	92	73	73	146	305	40	270	203	140	146	100	42,5	3/4"	32	2"	358	270
25-85	71M	49	123	122	82,5	95	177,5	305	40	270	235	150	165	100	42,5	1"	32	2"	358	270
25-95	71M	49	123	122	82,5	95	177,5	305	40	270	235	150	165	100	42,5	1"	32	2"	358	270
32-95	71M	49	123	122	82,5	95	177,5	305	40	270	235	150	165	100	42,5	1"	32	2"	358	270
40-125	80M	53	200	149	102,5	114	216,5	319	45	255	300	180	205	124,5	62,5	1 1/2"	50	2 3/4"	359	310
40-125	90S	53	200	149	102,5	114	216,5	319	45	255	300	180	205	124,5	62,5	1 1/2"	50	2 3/4"	359	360
40-125	90L	53	200	149	102,5	114	216,5	319	45	255	300	180	205	125	62,5	1 1/2"	50	2 3/4"	359	360

\* extension to max. 3000 mm total immersible length

\*\* male straight pipe thread

\*\*\* female straight pipe thread

minimum starting level

maximum level

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# ARBO

## Pompen en Filters b.v.

### SumPro Seal-less vertical PUMPS **MODEL BB**

This pump, for 'out of tank' use offers the same advantages as the standard Sumpro series.

#### Dry run resistant

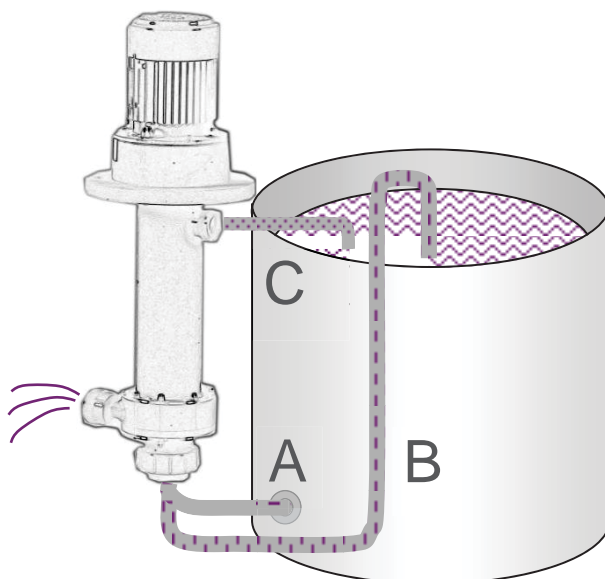
Although the pump is "dry-mounted" it can be run dry without damage as there is no seal and no bearing in the pump housing. An advantage when handling abrasive or crystallizing liquids.

#### Space effective

Additional advantages are that it can be used where there is insufficient space inside the tank, and that it can pump over a second circuit by tapping the suction pipe, for example, for pre-coating or flushing operations.

#### Corrosion resistant

There is no metal to liquid contact; wetted parts of the pump can be **PP** or **PVDF** according to suitability for the intended use. Gaskets of EPDM are standard and optional are Viton or PTFE-encapsulated O-rings.



The suction pipe can be connected directly through the tank wall (**A**) **or** it can be in the form of a siphon pipe (**B**), as shown in the drawing.

In the event of a closed valve on the discharge pipe, the overflow pipe (**C**) relieves pressure by conducting the liquid back into the tank.

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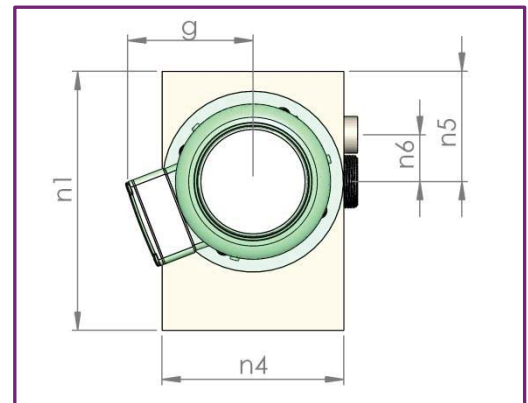
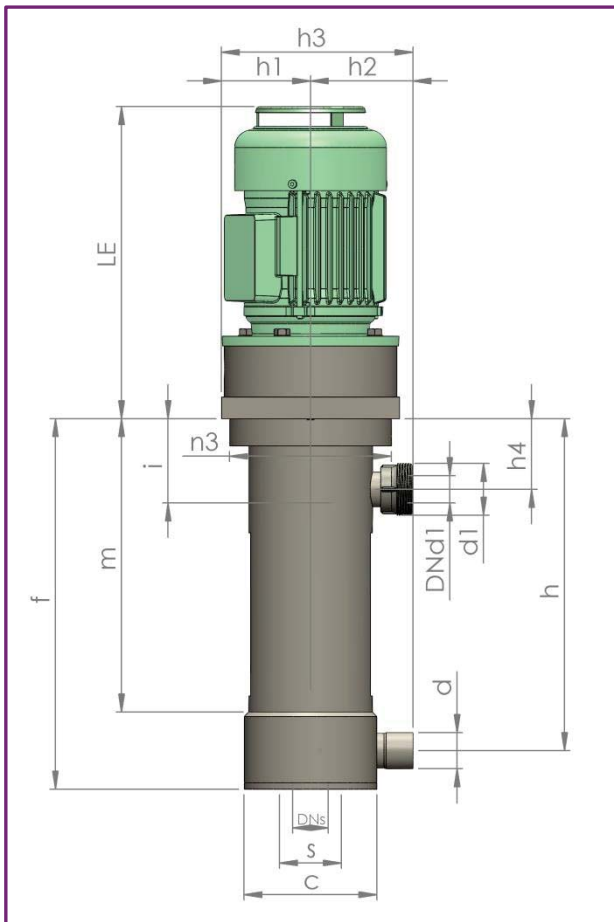


# ARBO

## Pompen en Filters b.v.

### DIMENSIONS / WEIGHTS DO-BG3-4 BB execution

DO type	Motor IEC	Impeller Ø mm		Weight KG		Box size CM
		Min.	Max.	PP	PVDF	
25-85	71M	70	85	12	14	81x41x42
25-95	71M	70	95	12,5	14,5	81x41x42
32-95	71M	70	95	13,5	15,5	81x41x42
40-125	80M	80	95	18,5	21,0	81x41x42
40-125	90S	80	125	21	24,0	81x41x42
40-125	90L	80	125	23,5	27,0	81x41x42



DO type	Motor IEC	C	g	h1	h2	h3	h4	h	h	i	m	n1	n3	n4	n5	n6	d**	DNd1	d1**	DNf	s***	f	LE	Max.
25-85	71M	123	122	82,5	95	177,5	65	305	100	270	235	150	165	100	42,5	1"	25	1"	32	2"	358	270	270	
25-95	71M	123	122	82,5	95	177,5	65	305	100	270	235	150	165	100	42,5	1"	25	1"	32	2"	358	270	270	
32-95	71M	123	122	82,5	95	177,5	65	305	100	270	235	150	165	100	42,5	1"	25	1"	32	2"	358	270	270	
40-125	80M	200	149	102,5	114	216,5	65	319	100	270	300	180	205	125	62,5	1 1/2"	32	2"	50	2 3/4"	359	310	310	
40-125	90S	200	149	102,5	114	216,5	65	319	100	270	300	180	205	125	62,5	1 1/2"	32	2"	50	2 3/4"	359	360	360	
40-125	90L	200	149	102,5	114	216,5	65	319	100	270	300	180	205	125	62,5	1 1/2"	32	2"	50	2 3/4"	359	360	360	

\*\* male straight pipe thread

\*\*\* female straight pipe thread

minimum starting level

maximum level



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M Pumps, Centrifugal,  
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