

IM



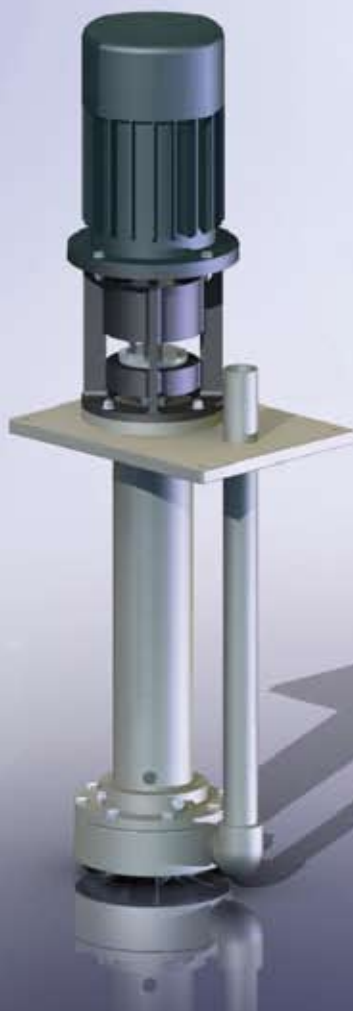
VERTICAL CENTRIFUGAL PUMPS

The **IM** series of resin-encased vertical centrifugal pumps features high-performance pumps for fixed installations with pump immersed directly in the tank and operated by a direct-drive electric motor (**max 3000 rpm**) for fast fluid drainage with **flow rates ranging from 6 to 75 m³/hour**.

The special design of this type of pump avoids the use of internal mechanical seals (subject to heavy wear) and ensures that any accidental spillages are collected in the tank.

The open impeller allows continuous pumping even with very dirty liquids having **apparent viscosity of up to 500 cps (at 20°C) and small suspended solids**.

The choice of pump construction materials allows selection of optimum chemical compatibility with the fluid and/or environment without neglecting the temperature range.



DEBEM

Construction materials: PP, PVDF;

Pump immersed in the tank;

Motor removable even with pump installed;

Weldless;

Usable even with extremely dirty liquids;

High flow rates: from 6 to 75 m³/hour;

Motor replaceable without dismantling pump;

User-friendly bushing replacement;

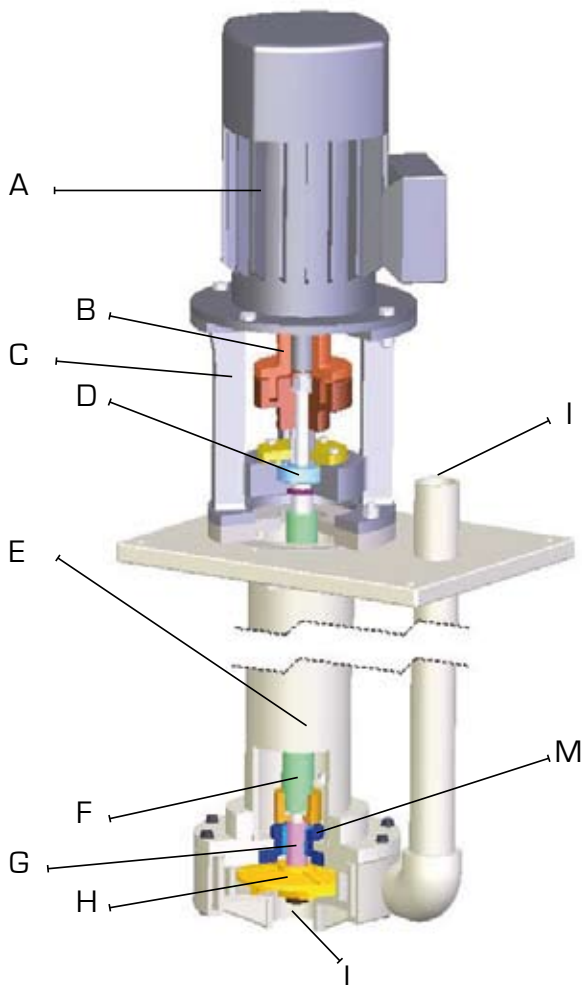
Quick and easy maintenance;

Fully-removable;

Also available without motor.

DESCRIPTION OF THE PUMP

Debem **resin-encased vertical centrifugal pumps** consist of a **solid pump casing** and a **column** fitted to the baseplate supporting the **lantern** that in turn supports the electric motor. **The direct-drive motor is connected** by a flexible coupling on the pump shaft. The **open impeller** is fitted to the other end of the shaft that is supported by a **radial bearing**. This pump's special design allows the **motor** to be **stripped without the need to disconnect the pump** from the system.



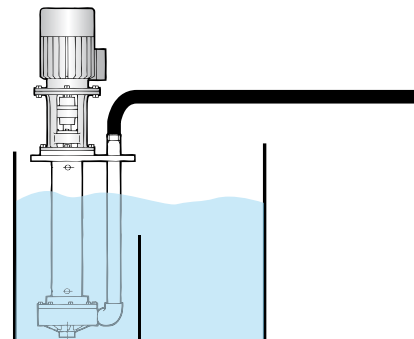
- A** = electric motor
- B** = drive coupling
- C** = lantern
- D** = radial bearing
- E** = outer column
- F** = shaft sleeve
- G** = ceramic bushing
- H** = impeller
- I** = delivery duct
- L** = intake duct
- M** = bushing

HOW IT WORKS

The impeller is integral with the shaft and direct-drive electric motor and is rotated at a preset speed with the centrifugal effect producing suction on the intake side and discharge on the delivery side.

INSTALLATION

IM vertical centrifugal pumps should only be **installed with the shaft positioned vertically and the pump immersed in the tank**. Suitable devices should be fitted to prevent dry running and/or the formation of a vortex and possible air suction. These pumps **should only operate WHILST FILLED**; running dry or with air bubbles can cause damage to the internal bushing.



CHEMICAL COMPATIBILITY

The **type of liquid, temperature** and working environment are factors to be considered when deciding on the best choice of **construction materials for the pump and its correct chemical compatibility**. The table below gives some examples of the most commonly-used substances:

SUBSTANCE	Polypropylene	PVDF (Halar®)	EPDM (Dutral®)	PTFE (Teflon®)	FPM (Viton®)
Acetaldehyde	A1	D	A	A	D
Acetamide	A1	C	A	A	B
Vinyl acetate	B1	A2	B2	A2	A1
Acetylene	A1	A	A	A	A
Vinegar	A	B	A	A	A
Acetone	A	D	A	A	D
Fatty acids	A	A	D	A	A

A = very good

B = good

C = poor, not recommended

D = severe etching, not recommended

- = information not available

1 = satisfactory up to 22°C (72°F)

2 = satisfactory up to 48°C (120°F)

For further information, please do not hesitate to contact DEBEM's technical service department.

IM PUMPS COMPOSITION CODES

ex. **IM95PV0800N**

IM95 in PP + O RING Viton + column length 800 + Three-phase motor

IM95	P	V	0800	N
Pump model	Pump material	O RING	Column length	Motor
IM 80 - IM 80 IM 90 - IM 90 IM 95 - IM 95 IM 110 - IM 110 IM 120 - IM 120 IM 130 - IM 130 IM 140 - IM 140 IM 150 - IM 150 IM 155 - IM 155 IM 160 - IM 160 IM 180 - IM 180	P - Polypropylene F - PVDF	D - EPDM V - Viton	0250 - 250 mm ** 0500 - 500 mm 0800 - 800 mm 1000 - 1000 mm 1250 - 1250 mm	N* - Three-phase motor M - Single-phase motor A - ATEX motor

* Standard motor is the three-phase induction type with European voltage (2-pole) 50Hz - ** only available for IM 80/90 pumps

FLANGED PUMPS

IM pumps are also available with a flange coupling



model	flange	stub-end material	size
IM 80 PP	PN 16 in PVC	PP	DEL. DN 25
IM 90 PP	PN 16 in PVC	PP	DEL. DN 25
IM 95 PP	PN 16 in PVC	PP	DEL. DN 40
IM 110 PP	PN 16 in PVC	PP	DEL. DN 40
IM 120 PP	PN 16 in PVC	PP	DEL. DN 40
IM 130 PP	PN 16 in PVC	PP	DEL. DN 40
IM 140 PP	PN 16 in PVC	PP	DEL. DN 40
IM 150 PP	PN 16 in PVC	PP	DEL. DN 50
IM 155 PP	PN 16 in PVC	PP	DEL. DN 50
IM 160 PP	PN 16 in PVC	PP	DEL. DN 50
IM 180 PP	PN 16 in PVC	PP	DEL. DN 50
IM 80 PVDF	PN 16 in PVC	PVDF	DEL. DN 25
IM 90 PVDF	PN 16 in PVC	PVDF	DEL. DN 25
IM 95 PVDF	PN 16 in PVC	PVDF	DEL. DN 40
IM 110 PVDF	PN 16 in PVC	PVDF	DEL. DN 40
IM 120 PVDF	PN 16 in PVC	PVDF	DEL. DN 40
IM 130 PVDF	PN 16 in PVC	PVDF	DEL. DN 40
IM 140 PVDF	PN 16 in PVC	PVDF	DEL. DN 40
IM 150 PVDF	PN 16 in PVC	PVDF	DEL. DN 50
IM 155 PVDF	PN 16 in PVC	PVDF	DEL. DN 50
IM 160 PVDF	PN 16 in PVC	PVDF	DEL. DN 50
IM 180 PVDF	PN 16 in PVC	PVDF	DEL. DN 50

IM 80



construction materials: PP - PVDF

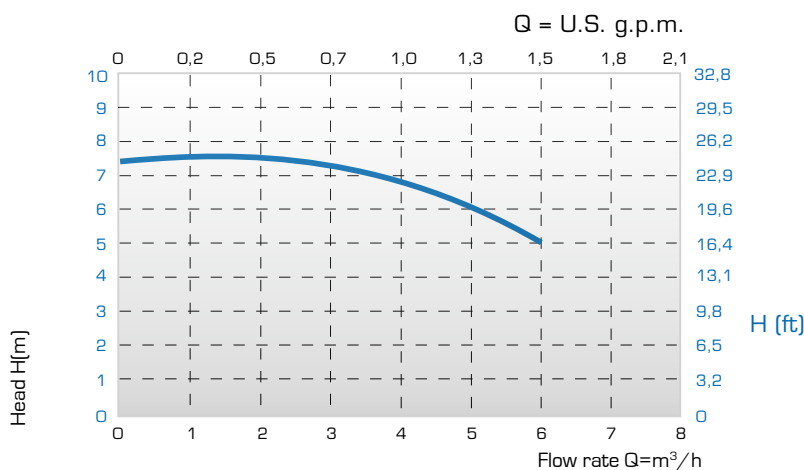
TECHNICAL DATA

Intake	G 1" 1/2 f
Delivery connections	G 1" m
Max. flow rate*	6 m ³ /h
Max. head*	7.5 m
Motor power	0.37 kW - 0.5 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60° - PVDF 95°
Diam. of passing solids	7 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
250	14.5 Kg	15 Kg
500	15.5 Kg	16 Kg
800	18.5 Kg	19 Kg

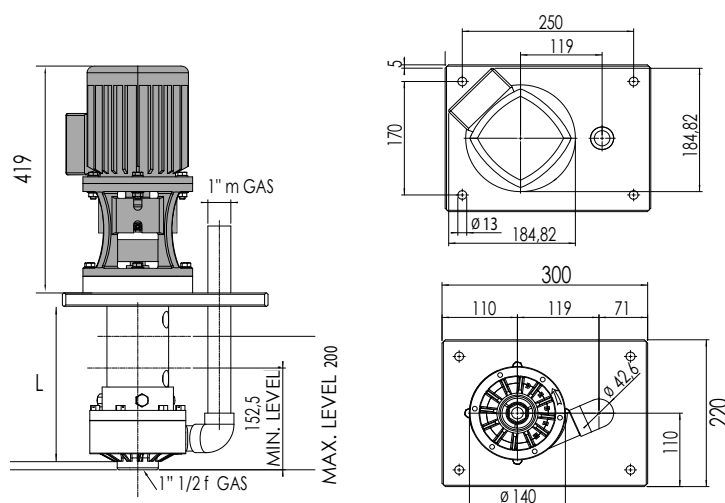
* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

PERFORMANCE



DIMENSIONS

m = male - f = female - Available L 250-500-800



The dimensions shown are in mm



All the values shown are approximate and not binding



IM 90

construction materials: PP - PVDF

TECHNICAL DATA

PERFORMANCE

DIMENSIONS

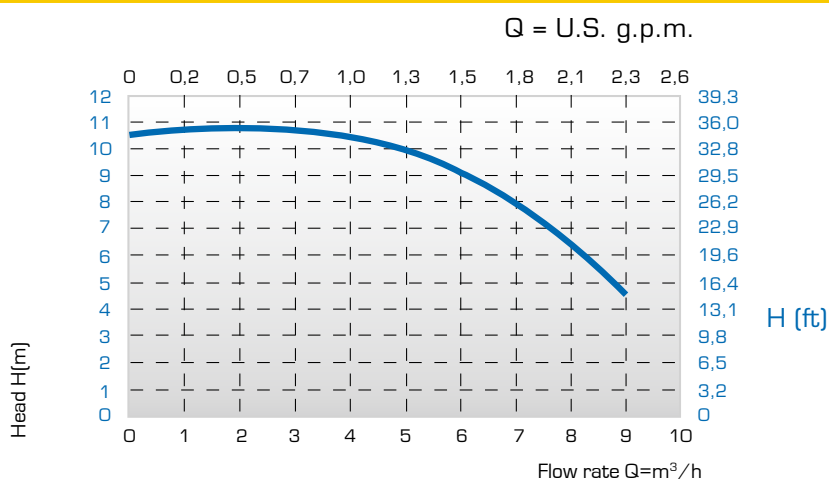
Intake	G 1" 1/2 f
Delivery connections	G 1" m
Max. flow rate *	9 m ³ /h
Max. head *	10,5 m
Motor power	0.55 kW - 0.75 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60° - PVDF 95°
Diam. of passing solids	10 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
250	14.5 Kg	15 Kg
500	15.5 Kg	16 Kg
800	18.5 Kg	19 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

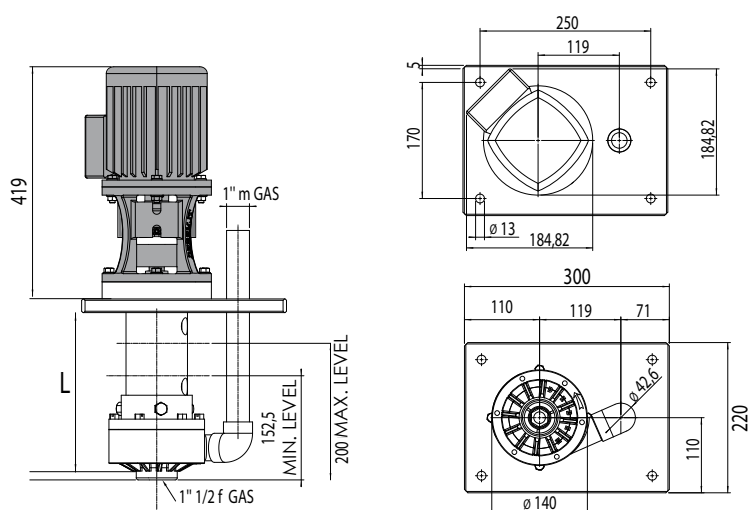


PP



PVDF

m = male - f = female - Available L 250-500-800



The dimensions shown are in mm

All the values shown are approximate and not binding

TECHNICAL DATA

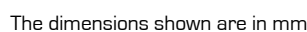


PERFORMANCE

DIMENSIONS

Technical drawing of a vertical pump assembly. The drawing shows a motor at the top, connected to a pump body. Key dimensions and labels include:

- Overall height: 419
- Motor height: 210
- Motor base height: 25
- Motor base width: 124.5
- Motor base offset: 25
- Motor base label: 1" 1/2 GAS
- MAX. LEVEL
- MIN. LEVEL
- 2" m GAS
- 26
- 310
- 50
- 0
- 0
- L



Lenght	Weight	Weight
column	column (PP)	column (PVDF)
	+ Motor	+ Motor
500	27 Kg	28 Kg
800	31 Kg	32 Kg
1000	34 Kg	35 Kg
1250	36 Kg	37 Kg



PP



PVDF



IM 110

construction materials: PP - PVDF

TECHNICAL DATA

PERFORMANCE

DIMENSIONS

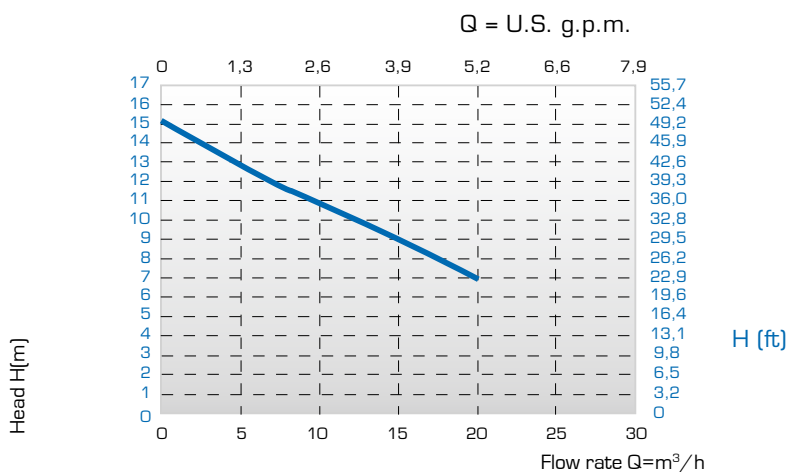
Intake	G 2" m
Delivery connections	G 1" 1/2 m
Max. flow rate*	20 m ³ /h
Max. head*	15 m
Motor power	1.1 kW - 1.5 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 95°
Diam. of passing solids	6 mm
Max. viscosity	500 cps

Lenght	Weight	Weight
column	column (PP)	column (PVDF)
	+ Motor	+ Motor
500	28 Kg	29 Kg
800	32 Kg	33 Kg
1000	35 Kg	36 Kg
1250	37 Kg	38 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

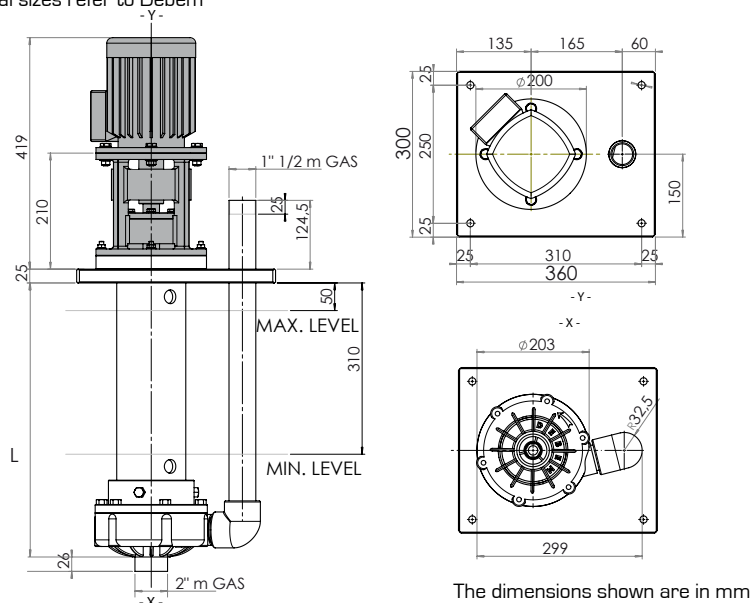


PP



PVDF

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debern



All the values shown are approximate and not binding

IM 120



construction materials: PP - PVDF

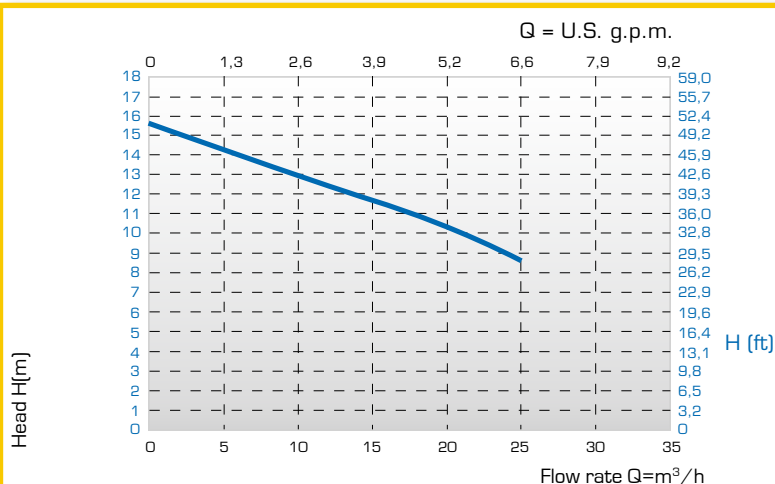
TECHNICAL DATA

Intake	G 2" m
Delivery connections	G 1" 1/2 m
Max. flow rate *	25 m ³ /h
Max. head *	16 m
Motor power	1.5 kW - 2 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 95°C
Diam. of passing solids	6 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	32 Kg	33 Kg
800	36 Kg	37 Kg
1000	39 Kg	40 Kg
1250	41 Kg	42 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

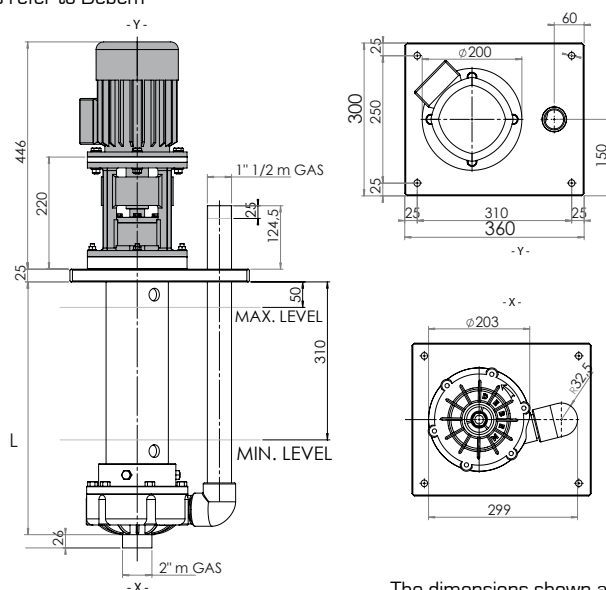
PERFORMANCE



PP

DIMENSIONS

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



PVDF

All the values shown are approximate and not binding



IM 130

construction materials: PP - PVDF

TECHNICAL DATA

PERFORMANCE

DIMENSIONS

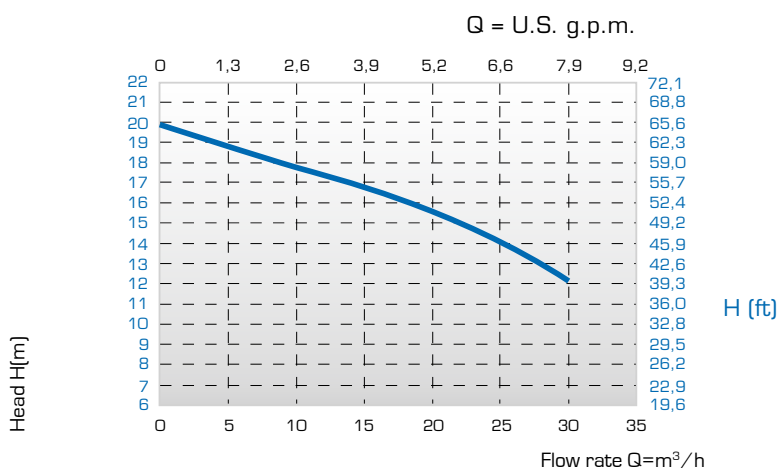
Intake	G 2" m
Delivery connections	G 1" 1/2 m
Max. flow rate *	30 m ³ /h
Max. head *	20 m
Motor power	2.2 kW - 3 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 90°C
Diam. of passing solids	6 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	35 Kg	36 Kg
800	39 Kg	40 Kg
1000	42 Kg	43 Kg
1250	44 Kg	45 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

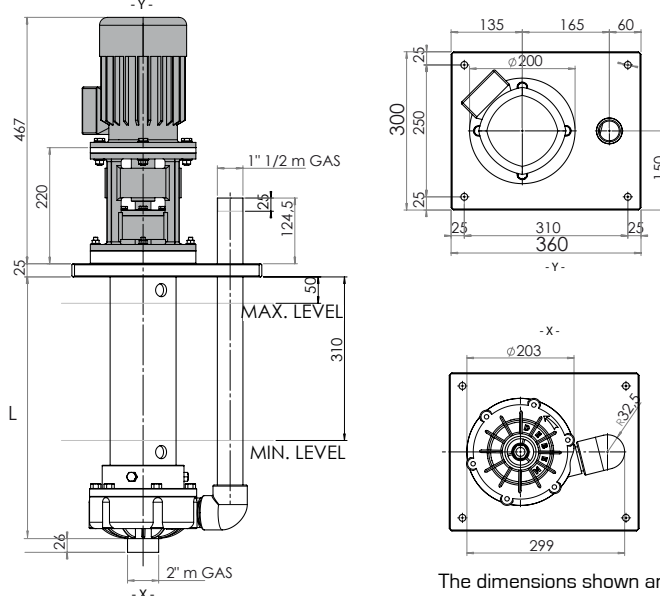


PP



PVDF

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



All the values shown are approximate and not binding

IM 140



construction materials: PP - PVDF

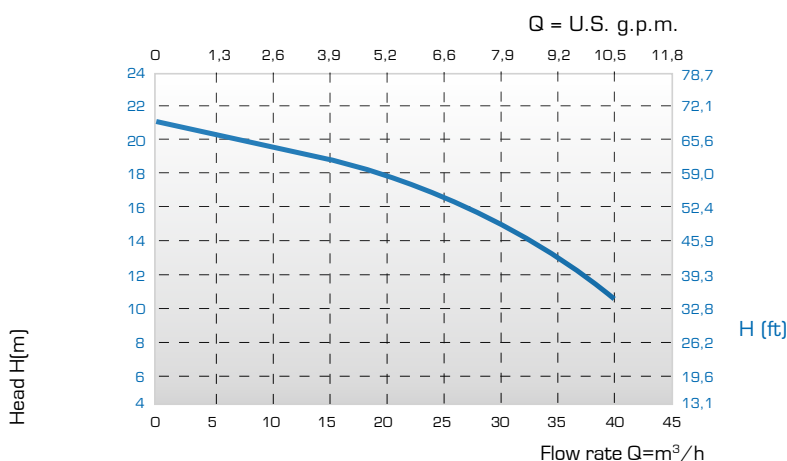
TECHNICAL DATA

Intake	G 2" m
Delivery connections	G 1" 1/2 m
Max. flow rate*	40 m ³ /h
Max. head*	21 m
Motor power	3 kW - 4 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 95°C
Diam. of passing solids	12 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	49 Kg	50 Kg
800	53 Kg	54 Kg
1000	56 Kg	57 Kg
1250	58 Kg	59 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

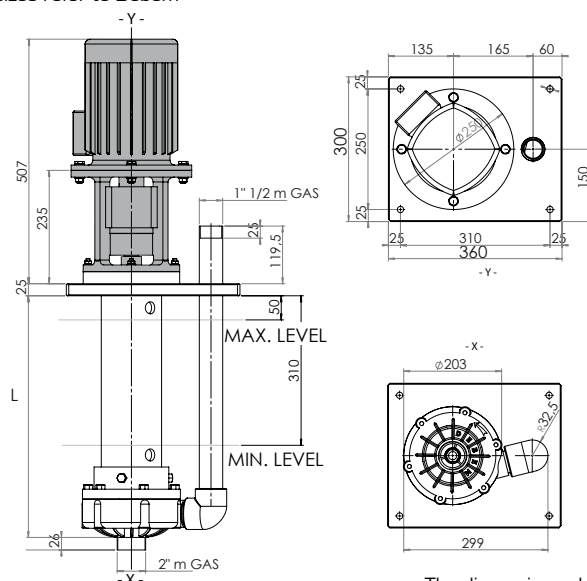
PERFORMANCE



PP

DIMENSIONS

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



PVDF

All the values shown are approximate and not binding



IM 150

construction materials: PP - PVDF

TECHNICAL DATA

PERFORMANCE

DIMENSIONS

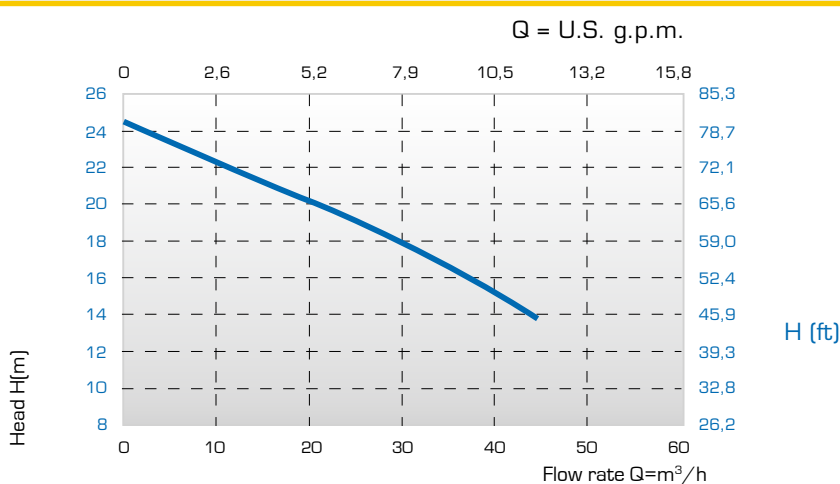
Intake	G 2" 1/2 f
Delivery connections	G 2" m
Max. flow rate *	42 m ³ /h
Max. head *	25 m
Motor power	4 kW - 5.5 HP
Motor	IP55 - F Class - 2-pole - 230/400 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 90°C
Diam. of passing solids	2 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	64 Kg	66 Kg
800	67 Kg	69 Kg
1000	69 Kg	71 Kg
1250	72 Kg	73 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

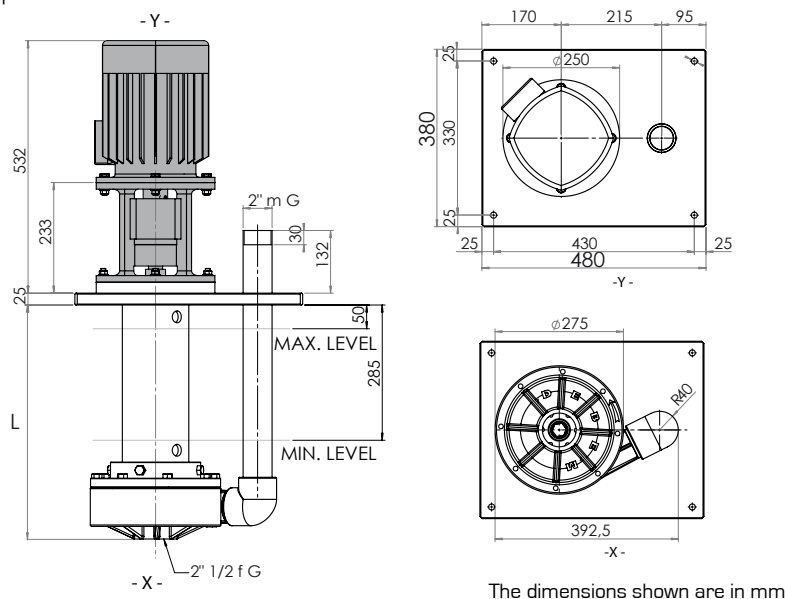


PP



PVDF

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



All the values shown are approximate and not binding

IM 155

construction materials: PP - PVDF



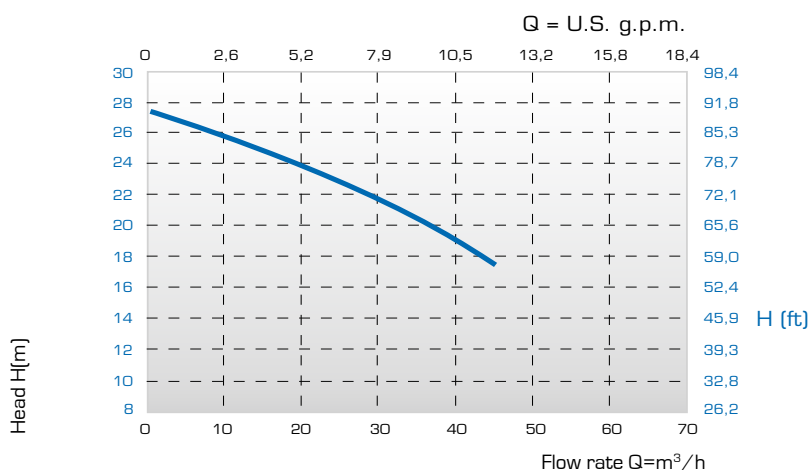
TECHNICAL DATA

Intake	G 2" 1/2 f
Delivery connections	G 2" m
Max. flow rate*	45 m ³ /h
Max. head*	28 m
Motor power	5.5 kW - 7.5 HP
Motor	IP55 - F Class - 2-pole - 400/690 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 95° C
Diam. of passing solids	2 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	82 Kg	84 Kg
800	85 Kg	87 Kg
1000	87 Kg	89 Kg
1250	90 Kg	92 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

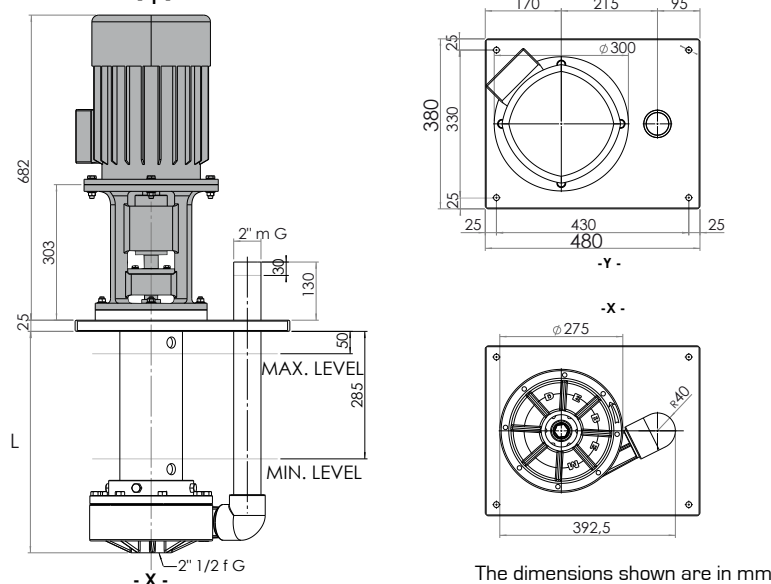
PERFORMANCE



PP

DIMENSIONS

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem
- Y -



PVDF

All the values shown are approximate and not binding



IM 160

construction materials: PP - PVDF

TECHNICAL DATA

PERFORMANCE

DIMENSIONS

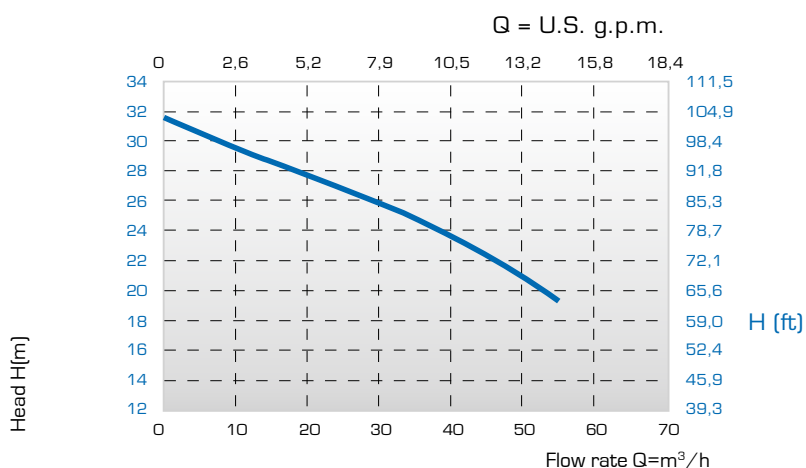
Intake	G 2" 1/2 f
Delivery connections	G 2" m
Max. flow rate *	55 m ³ /h
Max. head *	32 m
Motor power	7.5 kW - 10 HP
Motor	IP55 - F Class - 2-pole - 400/690 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 95°C
Diam. of passing solids	9 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	92 Kg	94 Kg
800	95 Kg	97 Kg
1000	97 Kg	99 Kg
1250	100 Kg	102 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

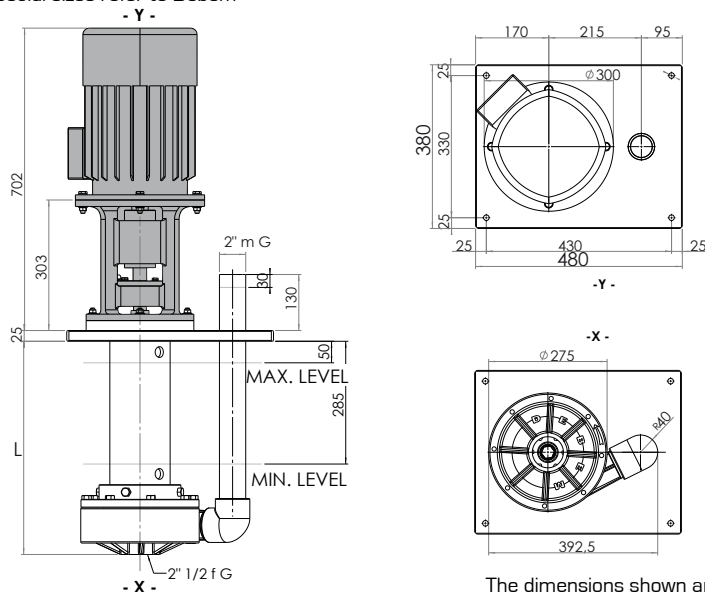


PP



PVDF

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



The dimensions shown are in mm

All the values shown are approximate and not binding

IM 180

construction materials: PP - PVDF



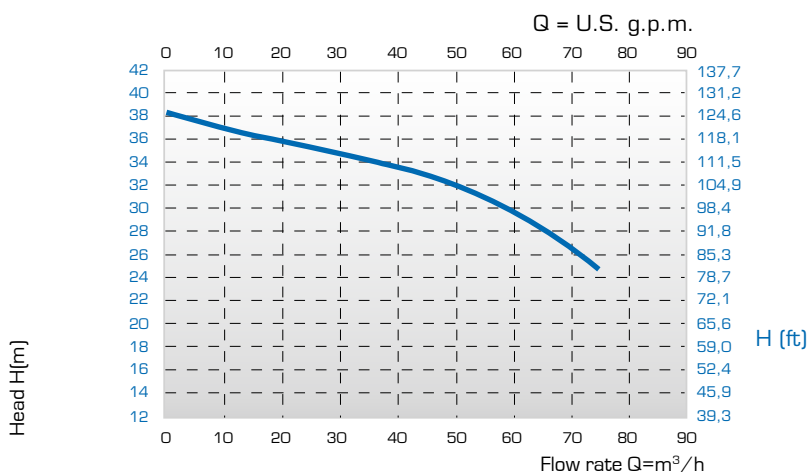
TECHNICAL DATA

Intake	G 2" 1/2 f
Delivery connections	G 2" m
Max. flow rate*	75 m ³ /h
Max. head*	38 m
Motor power	11 kW - 15 HP
Motor	IP55 - F Class - 2-pole - 400/690 V 50 Hz - three-phase - 2900 RPM
Max. temperature	PP 60°C - PVDF 90°C
Diam. of passing solids	11 mm
Max. viscosity	500 cps

Lenght column	Weight column (PP) + Motor	Weight column (PVDF) + Motor
500	92 Kg	94 Kg
800	95 Kg	97 Kg
1000	97 Kg	99 Kg
1250	100 Kg	102 Kg

* The curves and performance values refer to pumps spare delivery outlet and water at 20°C.

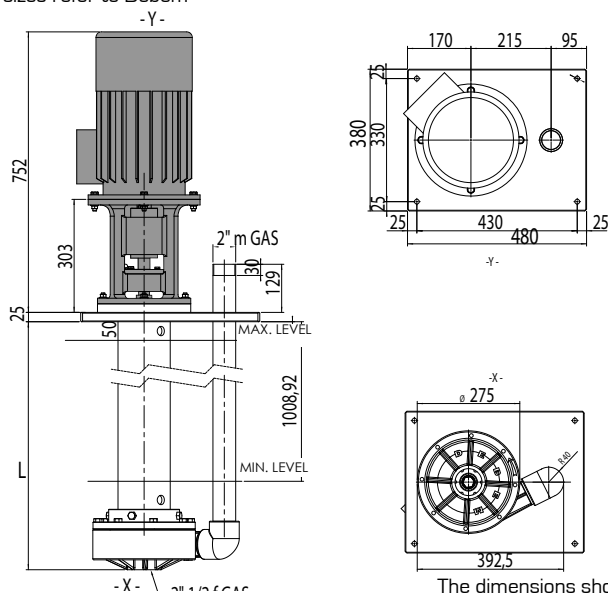
PERFORMANCE



PP

DIMENSIONS

m = male - f = female - Available L 500-800-1000-1250, for special sizes refer to Debem



PVDF

All the values shown are approximate and not binding