FLOFAB
SINCE 1981
PUMP SOLUTIONS MANUFACTURER

NEW!

PROFESSIONAL CIRCULATION PUMP

INTELLIGENT CIRCULATOR FOR COMMERCIAL MARKET

GEM·GEB

CIRCULATION PUMP

CIRCULATION PUMP

PRODUCT SERIES

COMMERCIAL
AIR CONDITIONNING

COMMERCIAL
HEATING

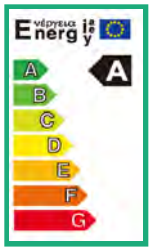
DOMESTIC
HEATING

FLOFAB
SINCE 1981

INTELLIGENT CIRCULATOR FOR COMMERCIAL MARKET

INTELLIGENT CIRCULATOR FOR COMMERICAL MARKET

GEM serial are intelligent efficiency circulation pumps equipped with permanent magnet motor and intelligent pressure control system. It adopts canned structure, the motor stator is completely canned, the rotating parts are immersed in the conveying liquid, the liquid plays the role of cooling the motor and lubricating the bearings. The product has features such as no leakage, super quiet, energy saving, high efficiency, etc.



EEI ≤0.23

MODEL INSTRUCTION

GEM 50 – 120 280 F

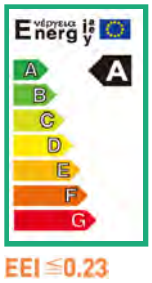
- F — Flange connection
- 280 — Distance between inlet and outlet
- 120 — Max.head(m)
- 50 — Size of inlet/outlet(mm)
- GEM — Product model

TECHNICAL SPECIFICATIONS

Max. Power	Max. Flow	Max. Head	System pressure	Liquid temperature
Up to 1523W **2.042 HP**	68 m^3/h **299.4 US GPM**	18m **59.1 ft.**	10 Bar **145.04 PSI**	UP to +110°C **UP to +230°F**

INTELLIGENT CIRCULATOR FOR COMMERICAL MARKET

GEB25/32 shielded pump, used in single pipe system, double pipe system, cooling/heating water circulation system, etc, with PWM control optional, with the advantages of high comfort, low noise, low energy consumption.



EEI ≤0.23

MODEL INSTRUCTION

GEB 25— 4 —180 N

- N — Connection N = Npt
- 180 — Distance between in let and outlet
- 4 — Max.head(m)
- 25 — Size of inlet/outlet(mm)
- GEB — Product model

TECHNICAL SPECIFICATIONS

Max. Power	Max. Flow	Max. Head	System pressure	Liquid temperature
Up to 220W **0.295 HP**	10.5 m^3/h **46.2 US GPM**	12m **39.4 ft.**	10 Bar **145.04 PSI**	UP to +95°C **UP to +203°F**

INTRODUCTION:
PRECISION COMPUTING, MULTIPLE PROTECTION

High accuracy of the algorithm
THD (Total Harmonics Distortion) 8%, power factor > 98%, power detection accuracy ± 3%

PUMP CONFIGURATION

- Motor: **High efficency permanent magnet motor**;
- Pump shaft: **Stainless steel** shaft + **Tungsten carbide** spray treatment or brown **ceramic** shaft;
- Bearing: **Ceramic**;
- Thrust bearing: **Graphite carbon**;
- Impeller: PES + 30GF%/brass insert.

PUMP FEATURES

- Class A energy efficiency, **EEI≤0.23**;
- Permanent magnet motor intelligent frequency control;
- Proportional pressure mode;
  Constant pressure mode;
  Constant speed mode;
- Low noise, No leakage.

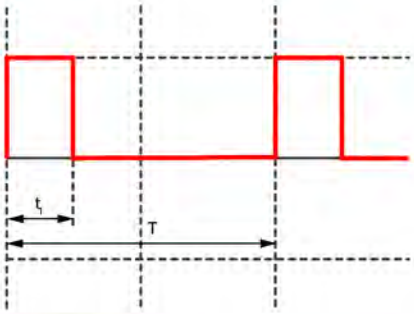
APPLICATION LIMITS

- Installed in the heating circulation system;
- Operating conditions:
  Ambient temperature: **0~40**℃; **0~104°F**
  Ambient humidity: <**95**%; Liquid temperature: **2**℃~**110**℃; **35.6 °F - 230°F**
  The ambient temperature is lower than the liquid temperature to prevent condensate liquid inside the motor;
- Liquid material: non-corrosive, non-explosive liquid, no solid particles, fiber and mineral oil;
- Use requirements: Do not run more than 10s without water;

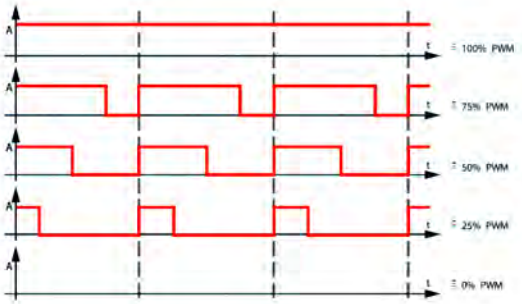
PWM CONTROL

EXTERNAL CONTROL VIA A PWM SIGNAL

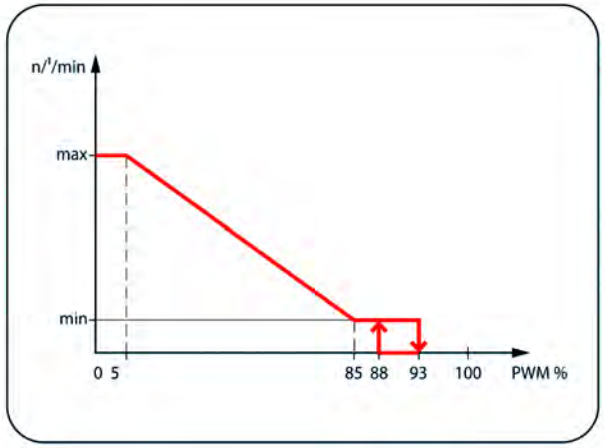
The actual/setpoint level assessment required for control is referred to a remote controller. The remote controller sends a PWM signal as an actuating variable to the GEB pump. The PWM signal generator gives a periodic order of pulses to the pump (the duty cycle), according to DIN IEC 60469-1. The actuating variable is determined by the ratio between pulse duration and the pulse period. The duty cycle is defined as a ratio without dimension, with a value of0 ... 1 or 0 ... 100%. This is explained in the following with ideal pulses which form a rectangular wave.



t / T = 0,25 = 25 %



PWM GT SIGNAL LOGIC 1 (HEATING):



PWM INPUT SIGNAL [%]

< 5 Pump runs at maximum speed

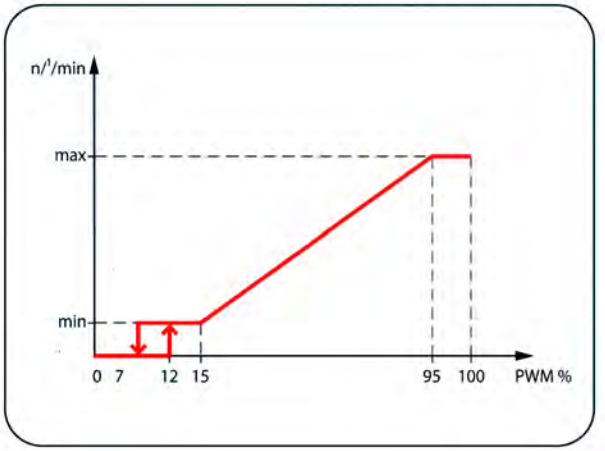
5-85 to Pump minimum speed decreases linearly from maximum

85-93 Pump runs at minimum speed (operation)

85-88 Pump runs at minimum speed (start-up)

93-100 Pump stops (Standby)

PWM SRSIGNAL LOGIC 2 (SOLAR):



PWM INPUT SIGNAL [%]

< 7 Pump stops (Standby)

7-15 Pump runs at minimum speed (operation)

12-15 Pump runs at minimum speed (start-up)

15-95 Pump speed increases linearly from minimum to maximum

> 95 Pump runs at maximum speed
Signal frequency: 150 Hz-5000 Hz
Signal amplitude: 2.8V-24V
Signal polarity: none

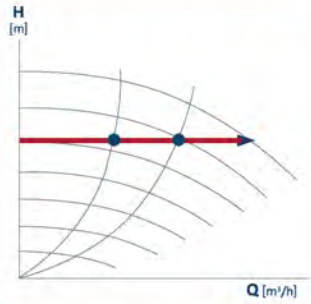
INTRODUCTION:
YOUR PERFECT CONTROL MODE

6 Modes

Intelligent control saves time and energy

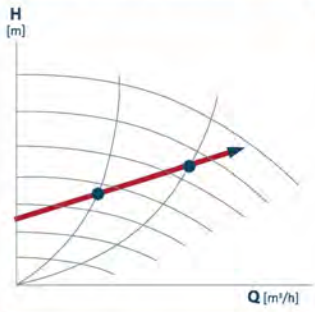
- Constant pressure mode
- Proportional pressure mode
- Constant speed mode
- AUTOADAPT mode
- FLOWADAPT control mode
- Temperature control mode

Constant pressure mode



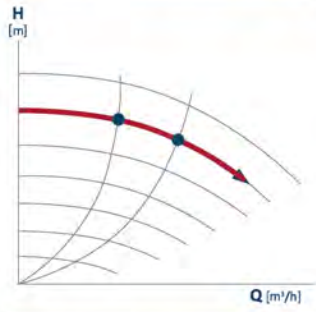
Constant pressure control is used to adjust pump performance based on actual system heat demand, but the pump performance curve will depend on the desired pump curve.

Proportional pressure mode



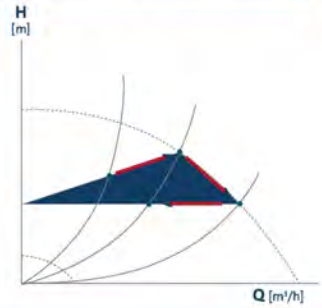
Proportional pressure control is used to adjust the pump performance according to the actual system heat demand, but the pump performance depends on the desired pump curve PP1, PP2 or PP3. Three gears are adjustable, namely small, medium and large.

Constant speed mode



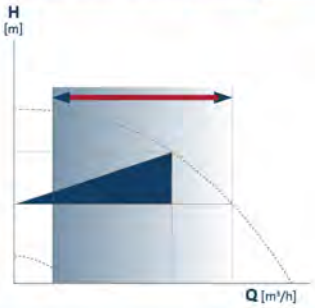
At constant speed, the pump runs at a constant speed, independent of the actual flow demand of the system, and the performance of the pump is determined according to the required power curve.

AUTOADAPT mode



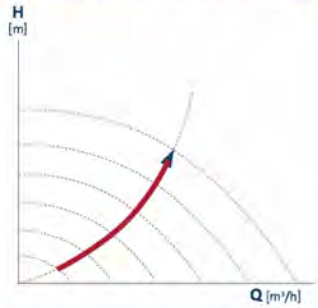
During operation, the system will regulate the performance of the pump according to the flow rate required by the user. The water pump is under proportional-pressure control. The system adaptively adjusts the pump performance within a certain area so that the pump works at a high efficiency.

FLOWADAPT control mode



When the FLOWADAPT control mode is selected, the pump will run AUTOADAPT and ensure that the flow rate does not exceed the limited flow rate value. This control mode is suitable for systems that need to limit the maximum flow. Pumps in boiler applications where a steady flow through the boiler is required, no extra energy is used for pumping too much liquid into the system.

Temperature control mode



This control mode is suitable for systems with fixed system characteristic curves, and the pump can be controlled according to the temperature sensor feedback of the system to make it work under the working conditions required by the user.

LCD DISPLAY

Convenient and clear interactive function

HD display

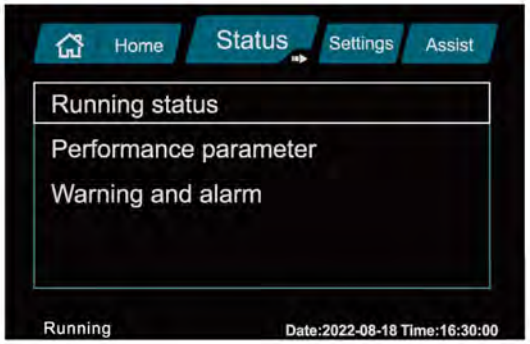
LCD display interface interaction

Convenient and clear interactive display

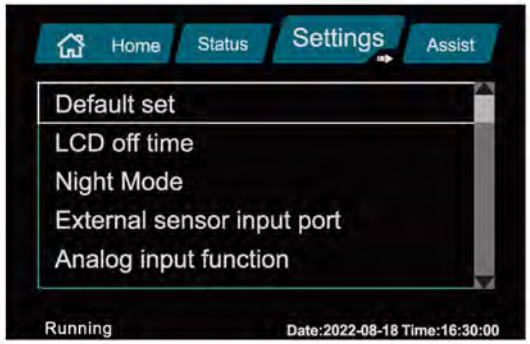
INTRODUCTION:
LCD DISPLAY INTERFACE INTERACTION

Home menu

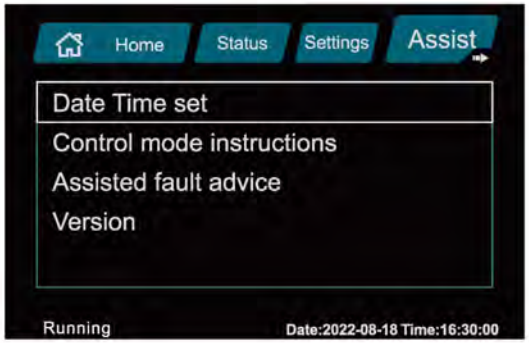
Status menu



Setting menu

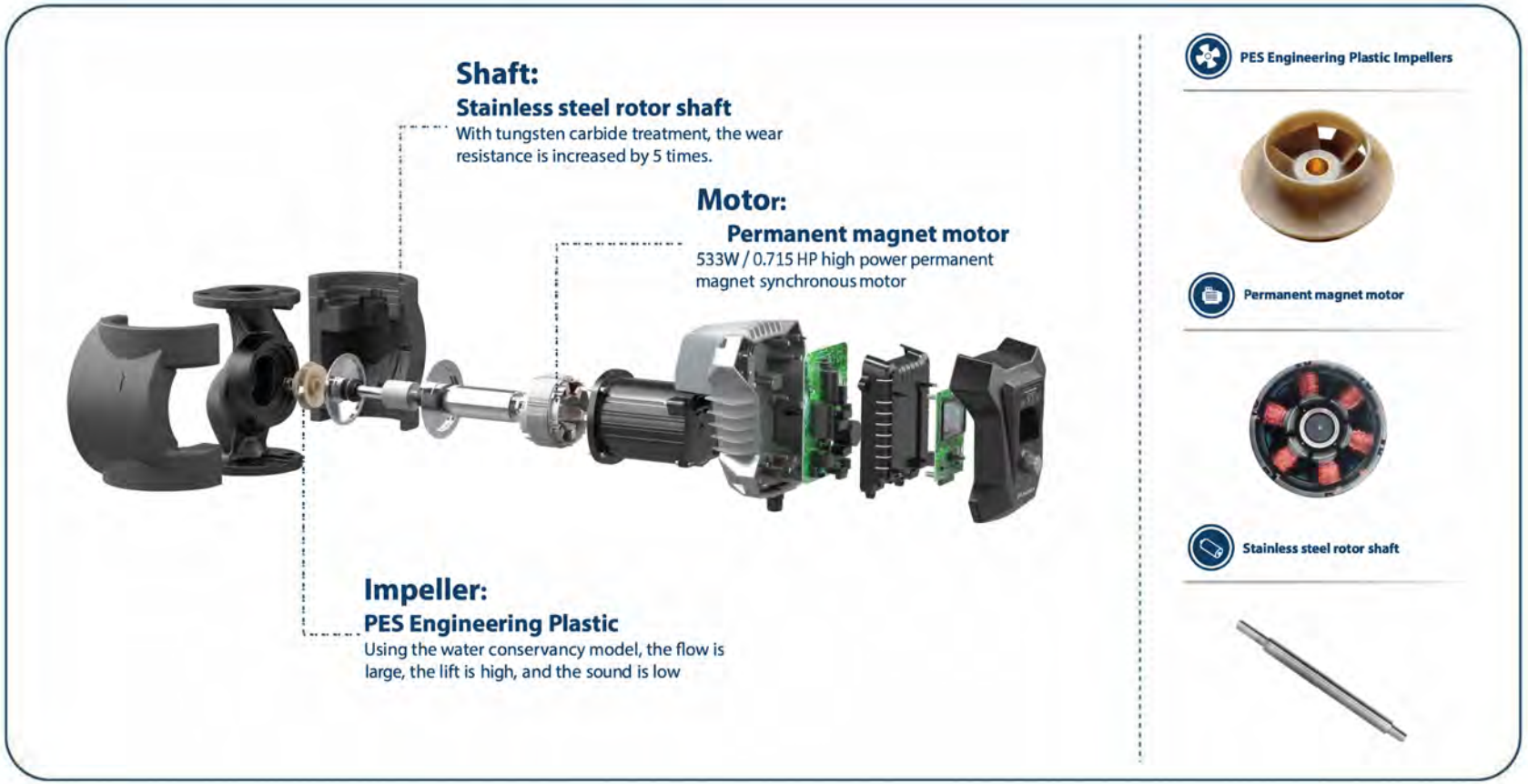


Assist menu

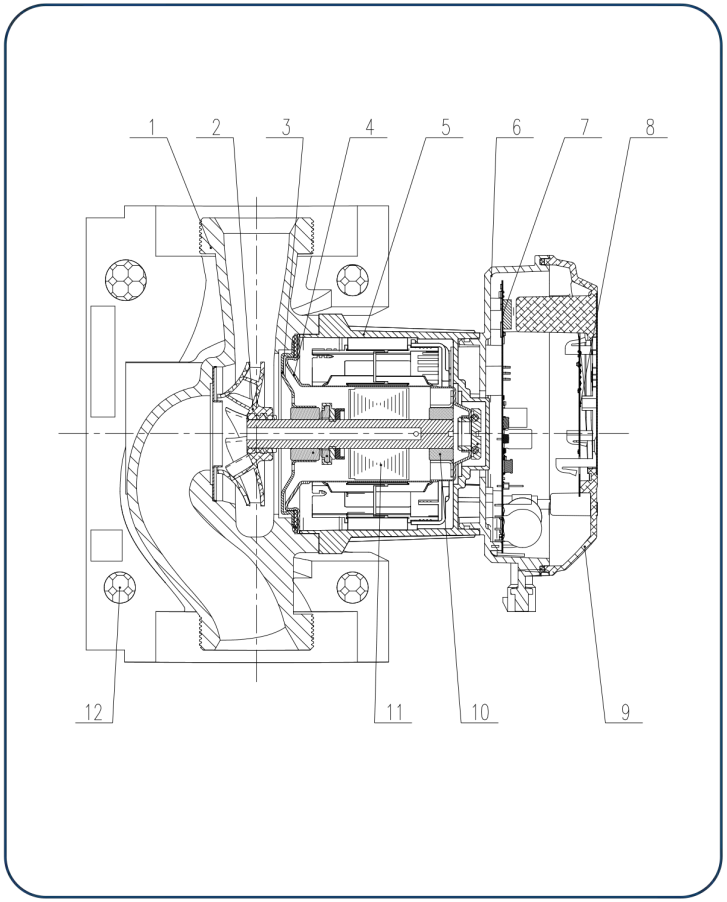


INTRODUCTION:
PUMP CONFIGURATION

This product has three advantages: PES engineering plastic impeller, tungsten carbide treated stainless steel rotor shaft, and high power permanent magnet synchronous motor.

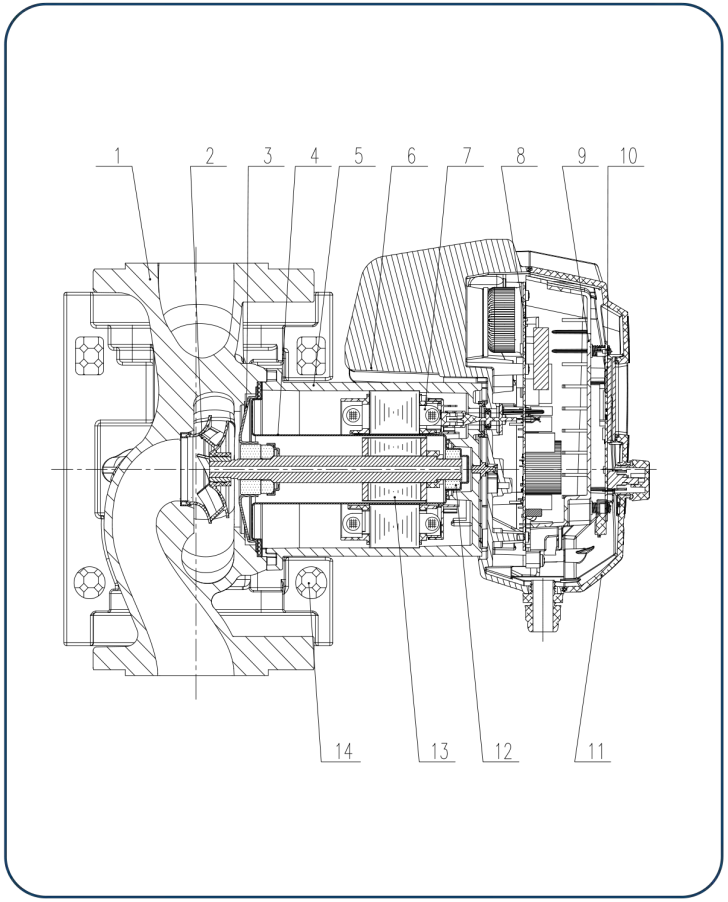


INTRODUCTION:
25/32 CALIBRE SERIES PRODUCT PARAMETERS



POS.	COMPONENT	CONSTRUCTION CHARACTERISTICS
1	PUMP HEAD	Cast iron surface electrophoresis treatment, exterior painting treatment
2	IMPELLER	Hydraulic model, equipped with PES engineering plastic impeller
3	STAINLESS STEEL COVER	Stainless steel material
4	SHIELDING SLEEVE	Stainless steel material, the inner wall is mirror-finished
5	BARREL	Aluminum alloy barrel, the surface is treated with black electrophoresis.
6	CASING	Plastic spray outside
7	DRIVER	Electronic device
8	CONTROL BOARD	Electronic device
9	Cover	Using high-strength plastic, soft touch texture, secondary vulcanization treatment of sealant, beautiful and fashionable appearance
10	BEARING	Brown ceramic
11	ROTOR	Brown ceramic
12	FOAM	Black EPP material, with the characteristics of heat preservation and safety protection.

INTRODUCTION:
32/40/50/60/80/100 CALIBRE SERIES PRODUCT PARAMETERS

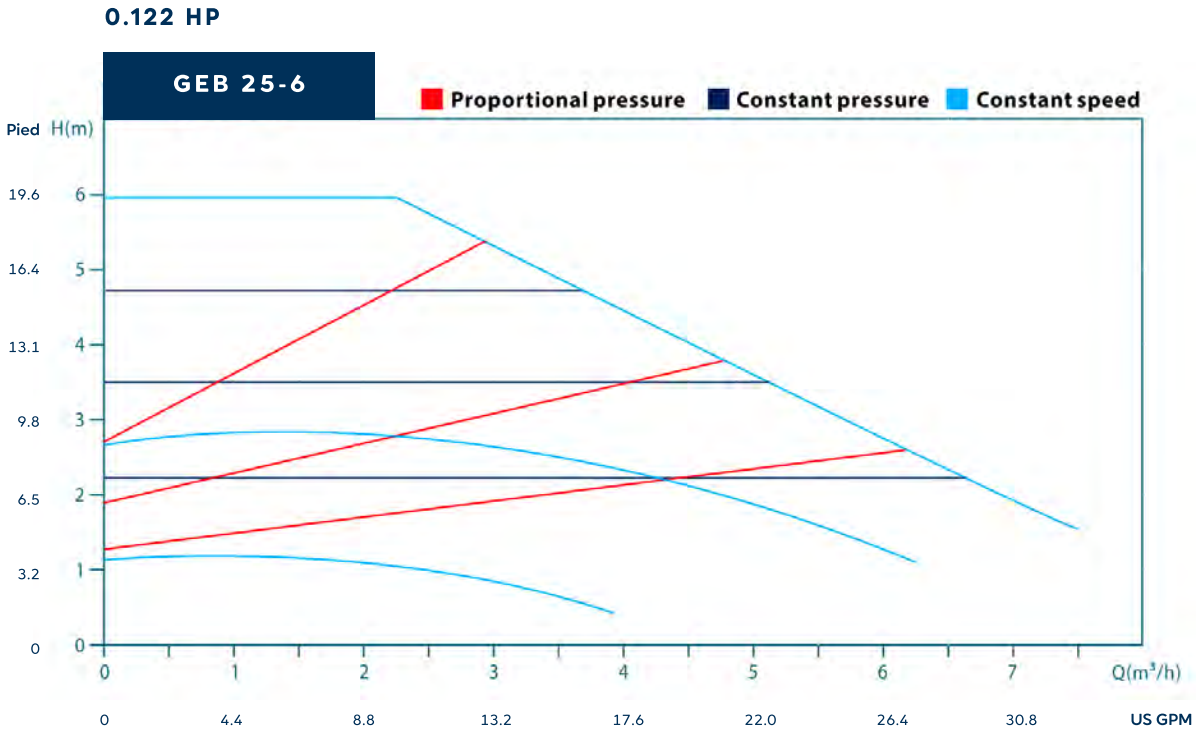


POS.	COMPONENT	CONSTRUCTION CHARACTERISTICS
1	PUMP HEAD	Cast iron surface electrophoresis treatment, exterior painting treatment
2	IMPELLER	Hydraulic model, equipped with PES engineering plastic impeller
3	STAINLESS STEEL COVER	Stainless steel material
4	SHIELDING SLEEVE	Stainless steel material, the inner wall is mirror-finished
5	BARREL	Aluminum alloy barrel, the surface is treated with black electrophoresis.
6	CASING	Plastic spray outside
7	STATOR	Full copper wire
8	DRIVER	Electronic device
9	CONTROL BOARD	Electronic device
10	ISOLATION SHIELD	Black plastic
11	Cover	Using high-strength plastic, soft touch texture, secondary vulcanization treatment of sealant, beautiful and fashionable appearance
12	BEARING	Brown ceramic
13	ROTOR	Stainless steel shaft + tungsten carbide spray treatment
14	FOAM	Black EPP material, with the characteristics of heat preservation and safety protection.

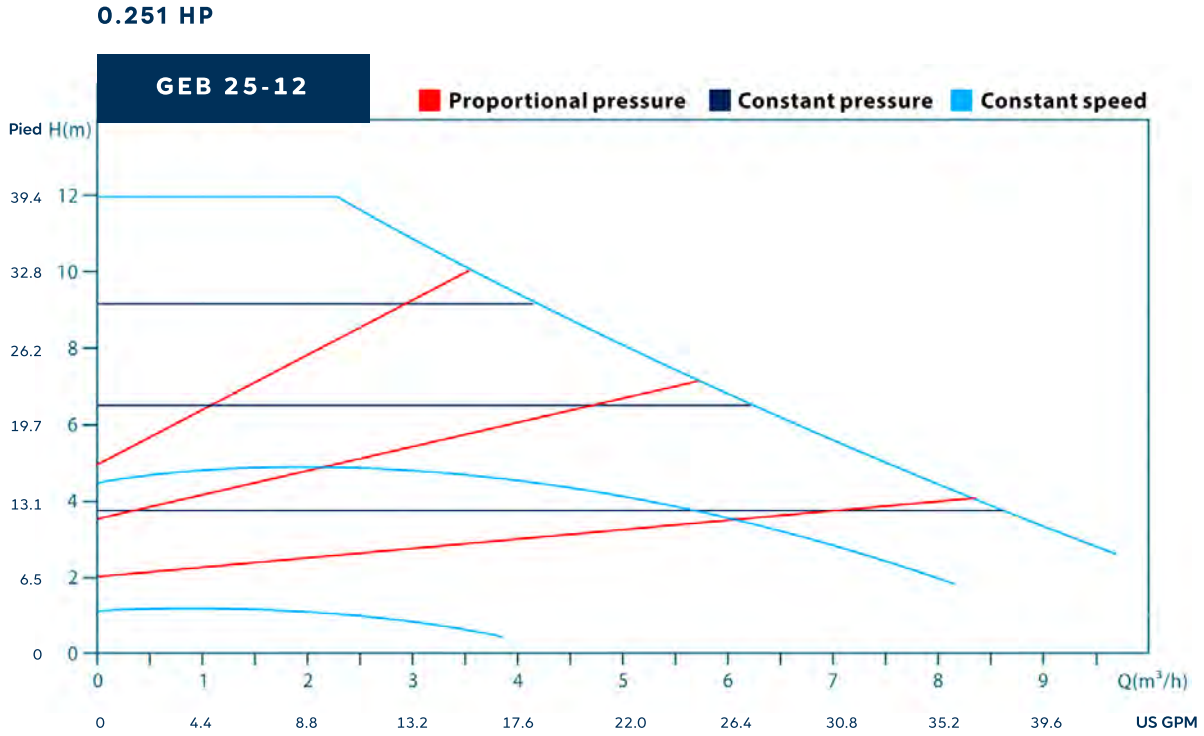
INTRODUCTION:
PERFORMANCE CHART

MODEL	RATED VOLTAGE (V)	POWER FREQUENCY	INPUT POWER	MAX CURRENT	MAX FLOW	MAX HEAD (M/FT)	MAX PRESSURE (BAR/PSI)	PORT-TO -PORT I.	G.W (KG/ LBS)	N.W (KG/ LBS)	OUTER BOX L X W X H (MM/IN)	CONSTRUCTION	
												SS	CI
GEB25-6-180 (N)	1 x 230V 1 x 110V	50 / 60 HZ	9.. 105 W 0,012.. 0,140 HP	0,09.. 0,41 A	7,5 m^3/h 33,0 us gpm	6 19.69	10 BAR 145.04 PSI	180 mm / 7,09 in	4 8.82	3,2 7.05	260 x 190 x 140 10.24 x 7.48 x 5.51	✓	
GEB25-12-180 (N)	1 x 230V 1 x 115V	50 / 60 HZ	9.. 220 W 0,012.. 0,295 HP	0,09.. 0,86 A 2.77 A	9,7 m^3/h 42,7 us gpm	12 39.37	10 BAR 145.04 PSI	180 mm / 7,09 in	4 8.82	3,2 7.05	260 x 190 x 140 10.24 x 7.48 x 5.51	✓	
GEM40-120F 250 (N)	1 x 230V 1 x 110V	50 / 60 HZ	15.. 463 W 0,020.. 0,621 HP	0,18.. 2,05 A	24 m^3/h 105,7 us gpm	12 39.37	10 BAR 145.04 PSI	281 mm / 11,06 in	17,2 37.92	15,9 35.05	310 x 249 x 423 12.20x9.80x16.65	✓	✓
GEM40-180F 250 (N)	1 x 230V 1 x 110V	50 / 60 HZ	16.. 615 W 0,021.. 0,825 HP	0,22.. 2,71 A	26,2 m^3/h 115,4 us gpm	18 59.06	10 BAR 145.04 PSI	281 mm / 11,06 in	17,2 37.92	15,9 35.05	310 x 249 x 423 12.20x9.80x16.65	✓	✓
GEM50-120F 280 (N)	1 x 230V 1 x 110V	50 / 60 HZ	20.. 533 W 0,027.. 0,715 HP	0,22.. 2,37 A	33 m^3/h 145,2 us gpm	12 39.37	10 BAR 145.04 PSI	281 mm / 11,06 in	19 41.89	17,5 37.47	325 x 285 x 430 12.20x9.80x16.65	✓	✓
GEM50-180F 280 (N)	1 x 230V 1 x 110V	50 / 60 HZ	22.. 769 W 0,030.. 1,031 HP	0,24.. 3,4 A	37,5 m^3/h 165,1 us gpm	18 59.06	10 BAR 145.04 PSI	296 mm / 11.65 in	19,7 43.43	18,2 40.12	325 x 285 x 430 12.80x11.22x16.93	✓	✓
GEM65-80F 340 (N)	1 x 230V 1 x 110V	50 / 60 HZ	24.. 476 W 0,032.. 0,638 HP	0,26.. 2,11 A	40 m^3/h 176,1 us gpm	8 26.25	10 BAR 145.04 PSI	281 mm / 11,06 in	23,1 50.93	21,3 46.96	355 x 303 x 440 13.98x11.93x17.32	✓	✓
GEM65-150F 340 (N)	1 x 230V 1 x 110V	50 / 60 HZ	31.. 1263 W 0,0416.. 1,694 HP	0,31.. 5,53 A	56 m^3/h 246,6 us gpm	15 49.21	10 BAR 145.04 PSI	296 mm / 11.06 in	25,8 56.88	24 52.91	355 x 303 x 440 13.98x11.93x17.32	✓	✓
GEM80-120F 360	1 x 230V 1 x 110V	50 / 60 HZ	31.. 1277 W 0,0416.. 1,712 HP	0,28.. 3,16 A	60 m^3/h 264,2 us gpm	12 39.37	10 BAR 145.04 PSI	281 mm / 11,06 in	30 66.14	28,2 62.17	365 x 363 x 467 14.37x14.29x18.39	✓	✓
GEM100-120F 450 (N)	1 x 230V 1 x 110V	50 / 60 HZ	31.. 1523 W 0,0416.. 2,042 HP	0,28.. 3,21 A	68 m^3/h 299,4 us gpm	12 39.37	10 BAR 145.04 PSI	296 mm / 11.65 in	36,3 80.03	34,5 76.06	410 x 393 x 487 16.14x15.47x19.17	✓	✓

PERFORMANCE CHART
GEB 25-6

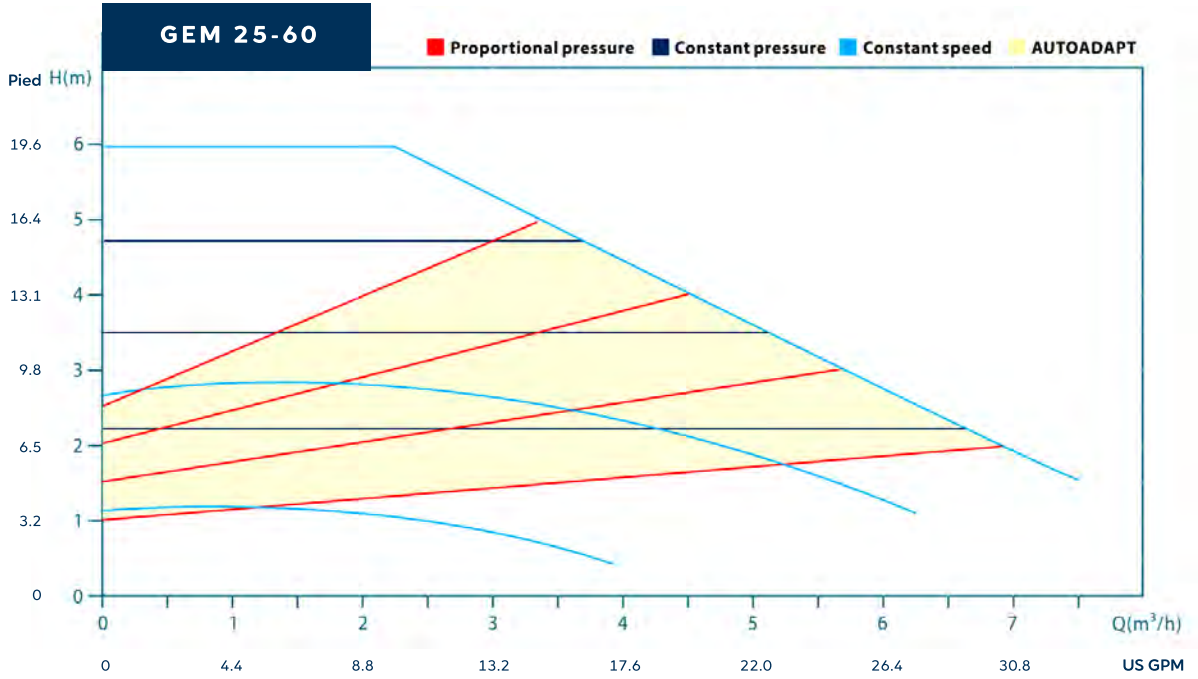


PERFORMANCE CHART
GEB 25-12



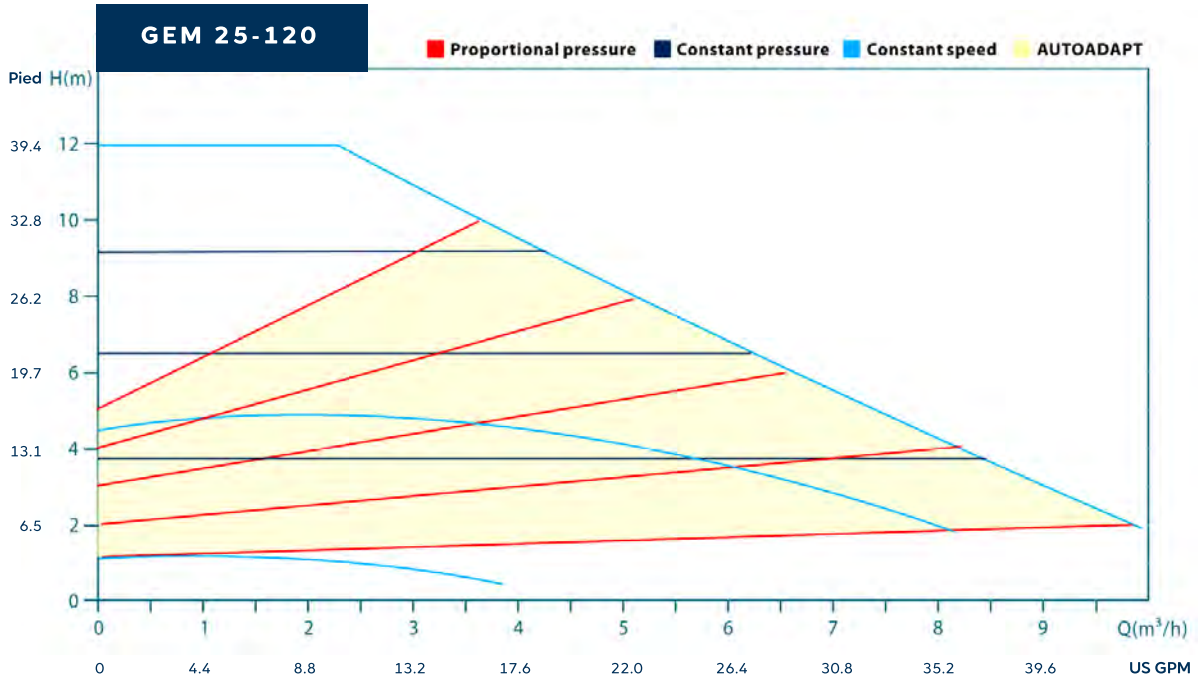
PERFORMANCE CHART
GEM 25-60

0.122 HP

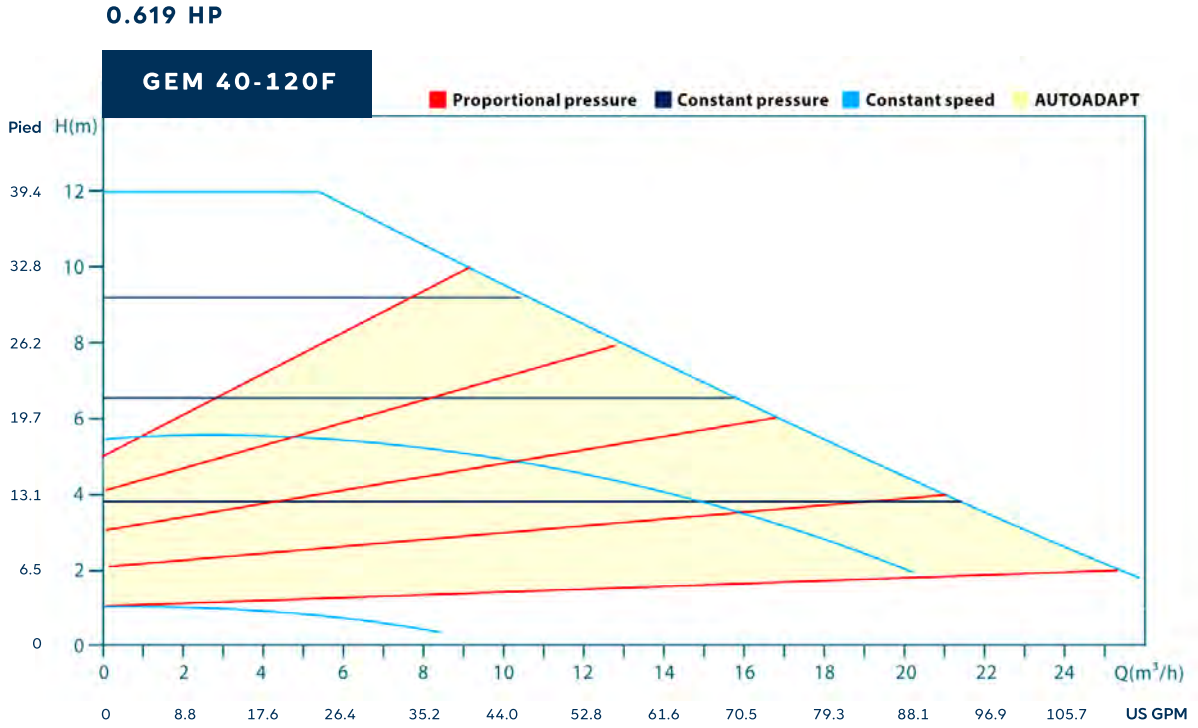


PERFORMANCE CHART
GEM 25-120

0.251 HP

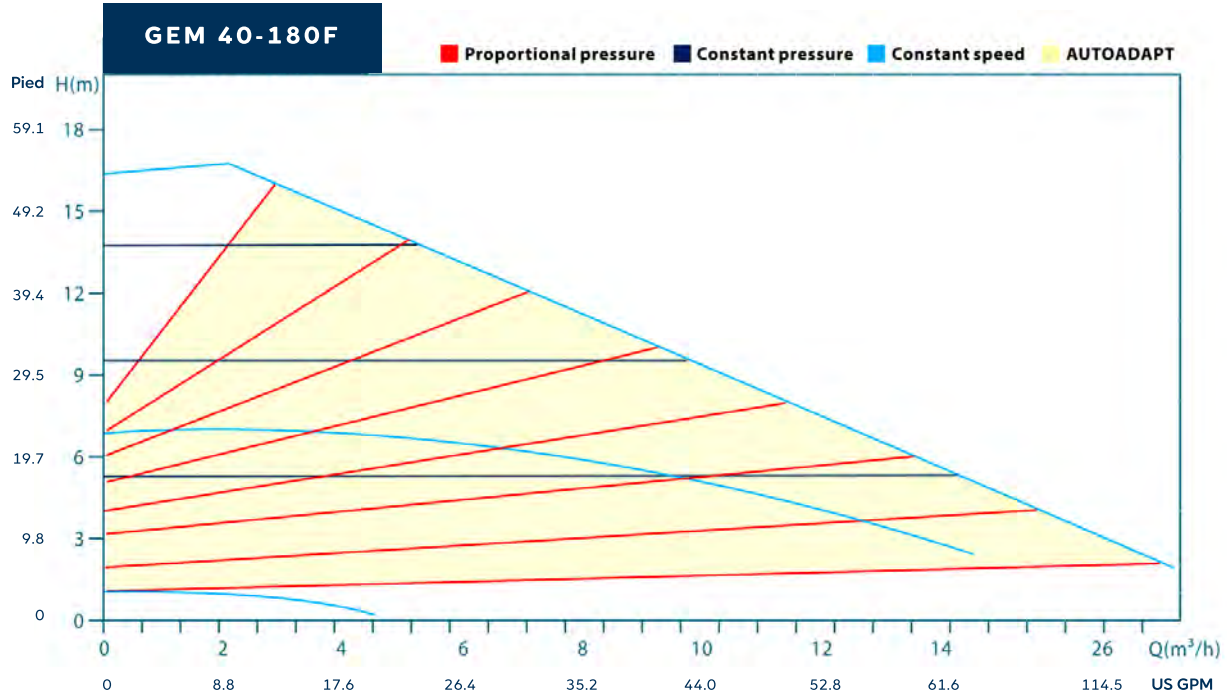


PERFORMANCE CHART
GEM 40-120F

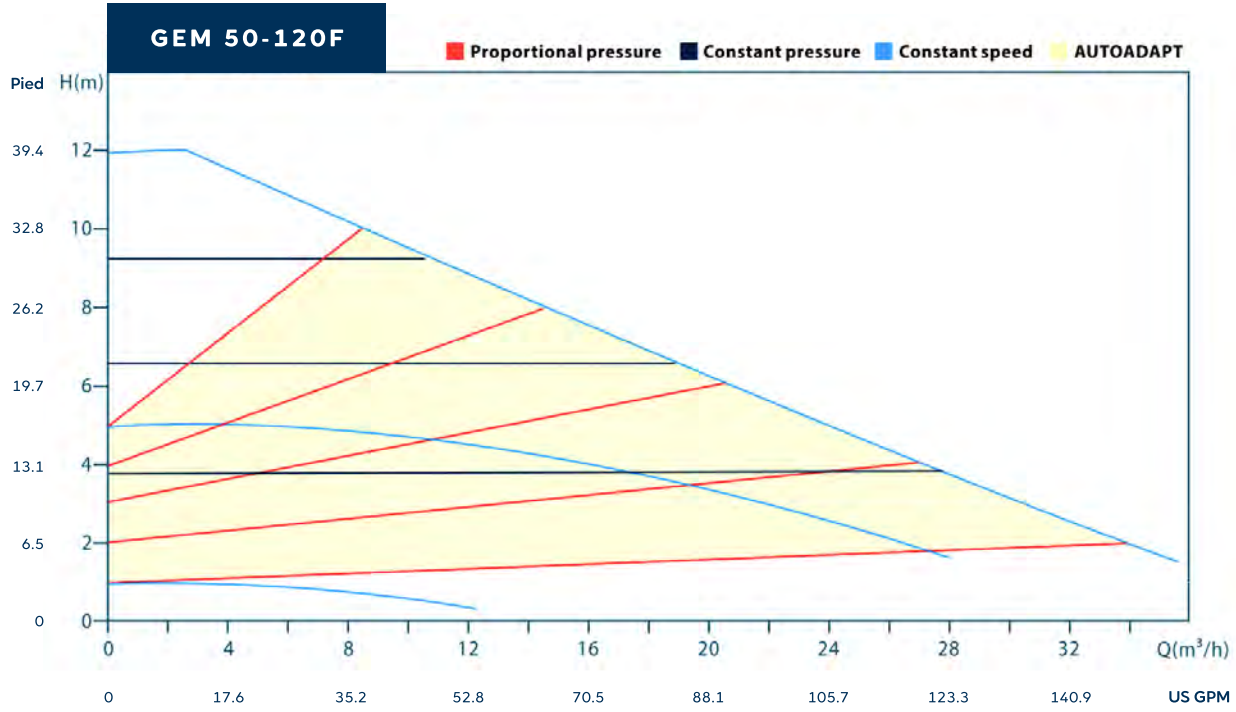


PERFORMANCE CHART
GEM 40-180F

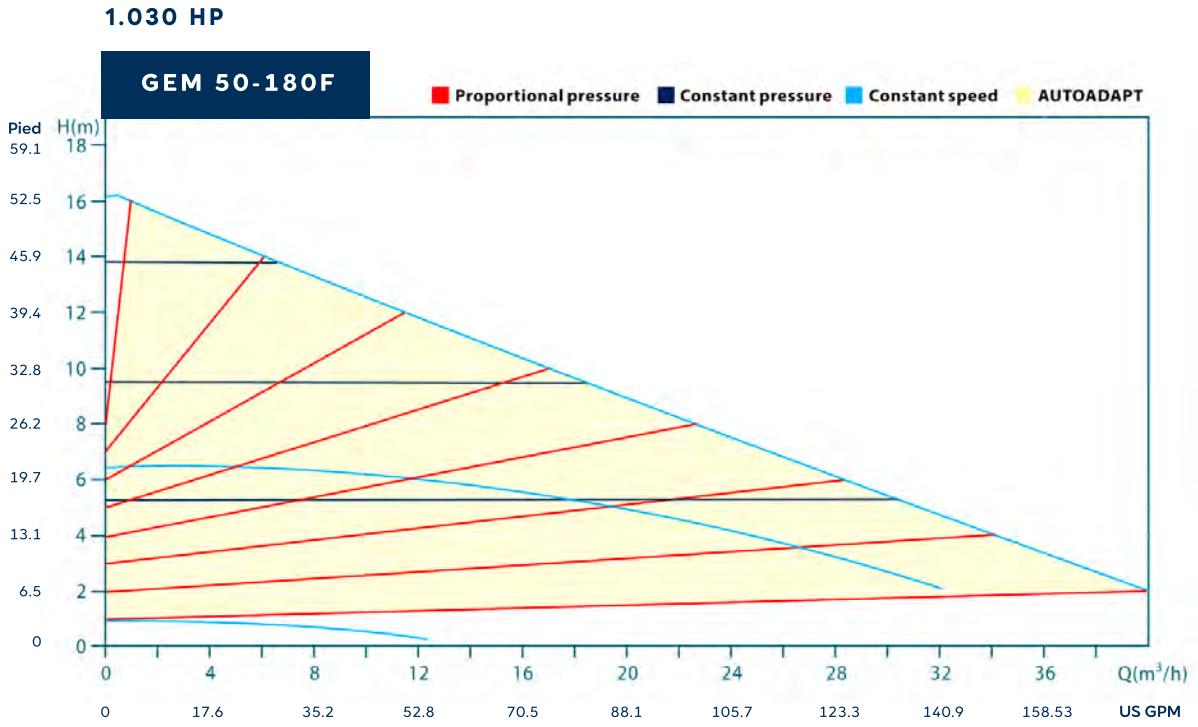
0.823 HP



PERFORMANCE CHART
GEM 50-120F

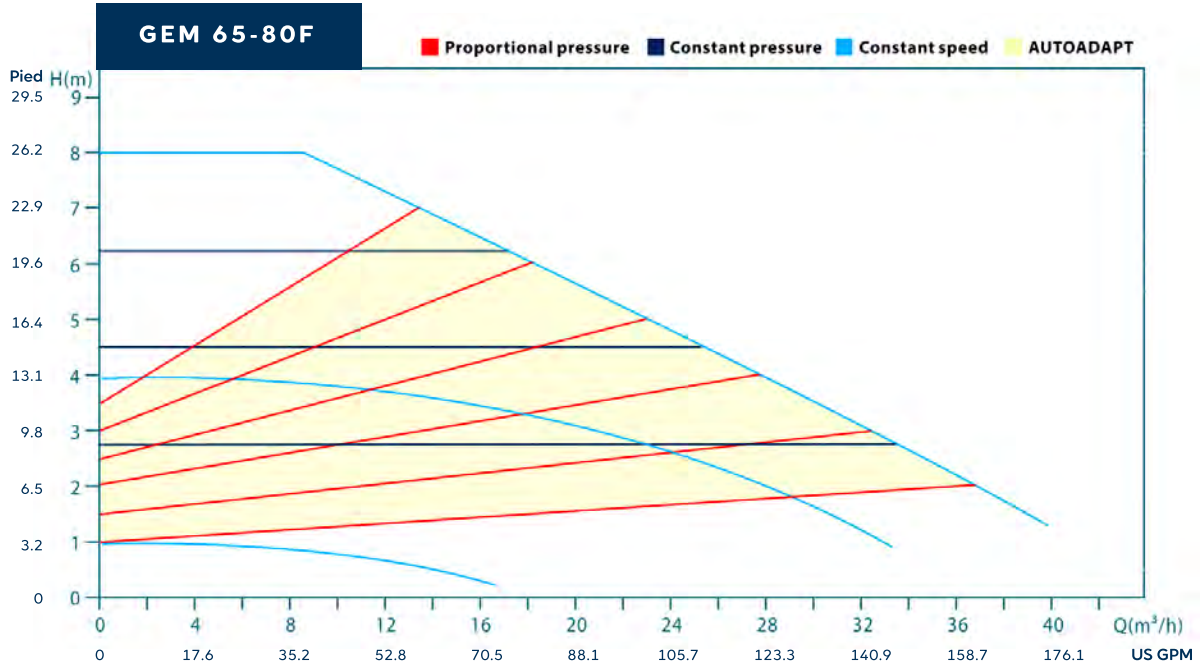


PERFORMANCE CHART
GEM 50-180F

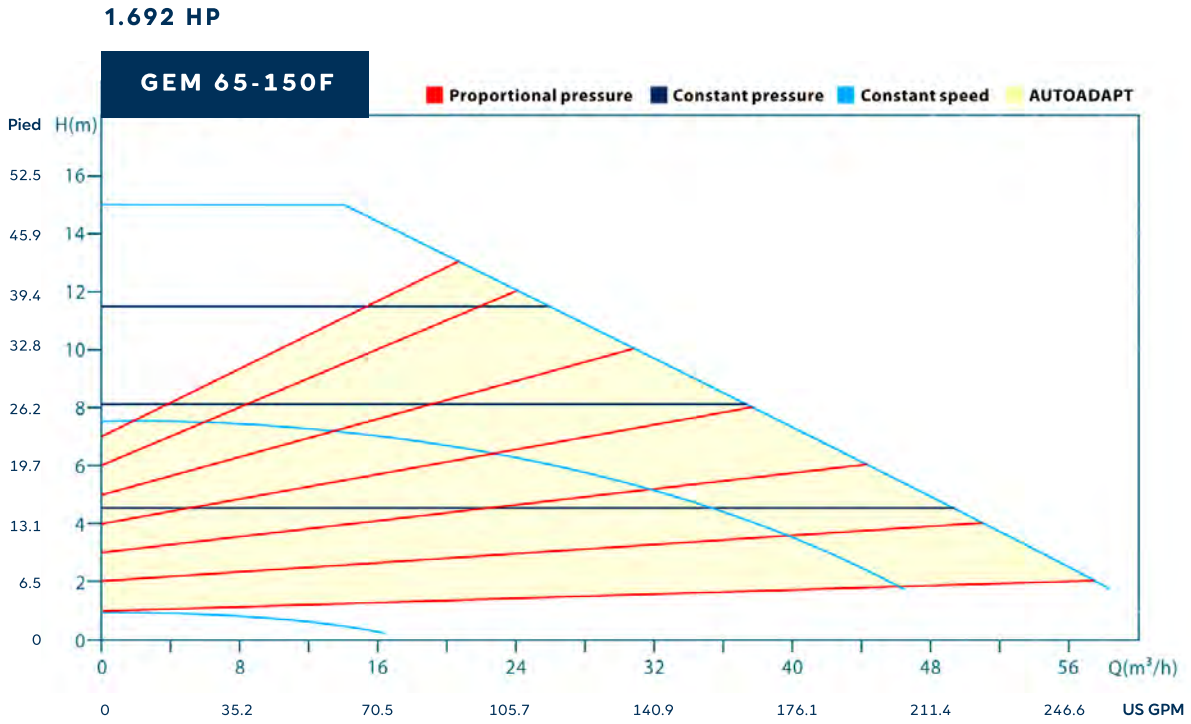


PERFORMANCE CHART
GEM 65-80F

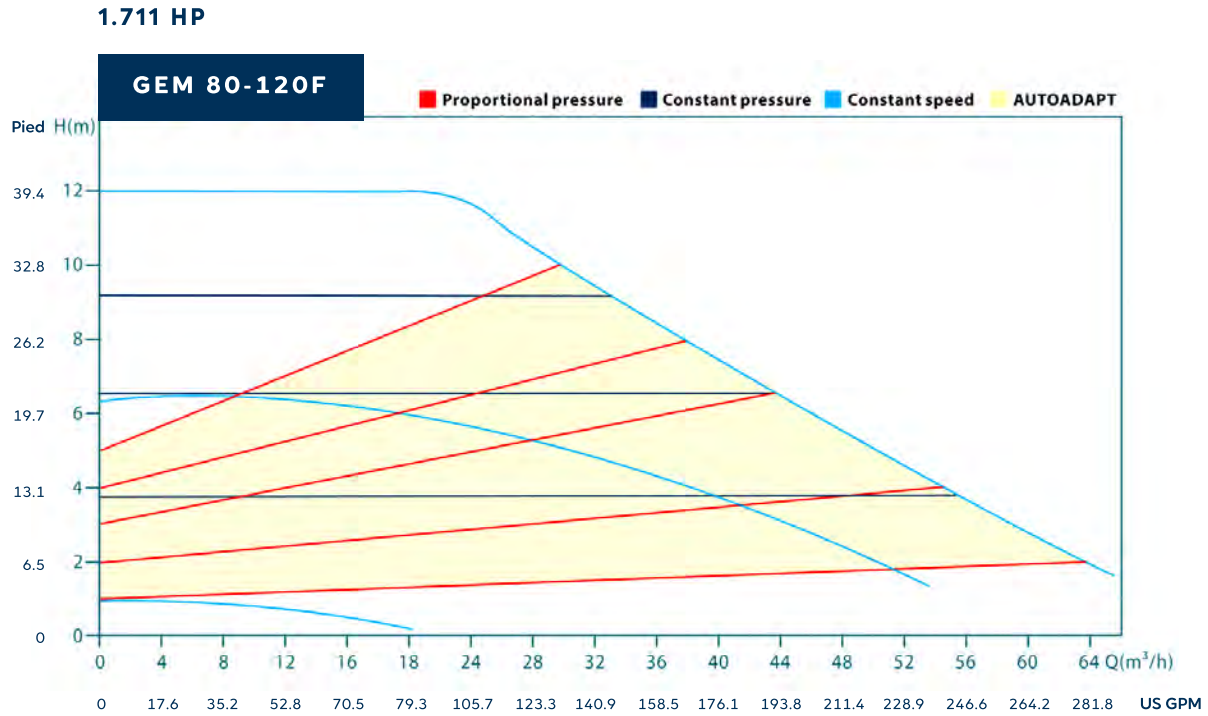
0.637 HP



PERFORMANCE CHART
GEM 65-150F

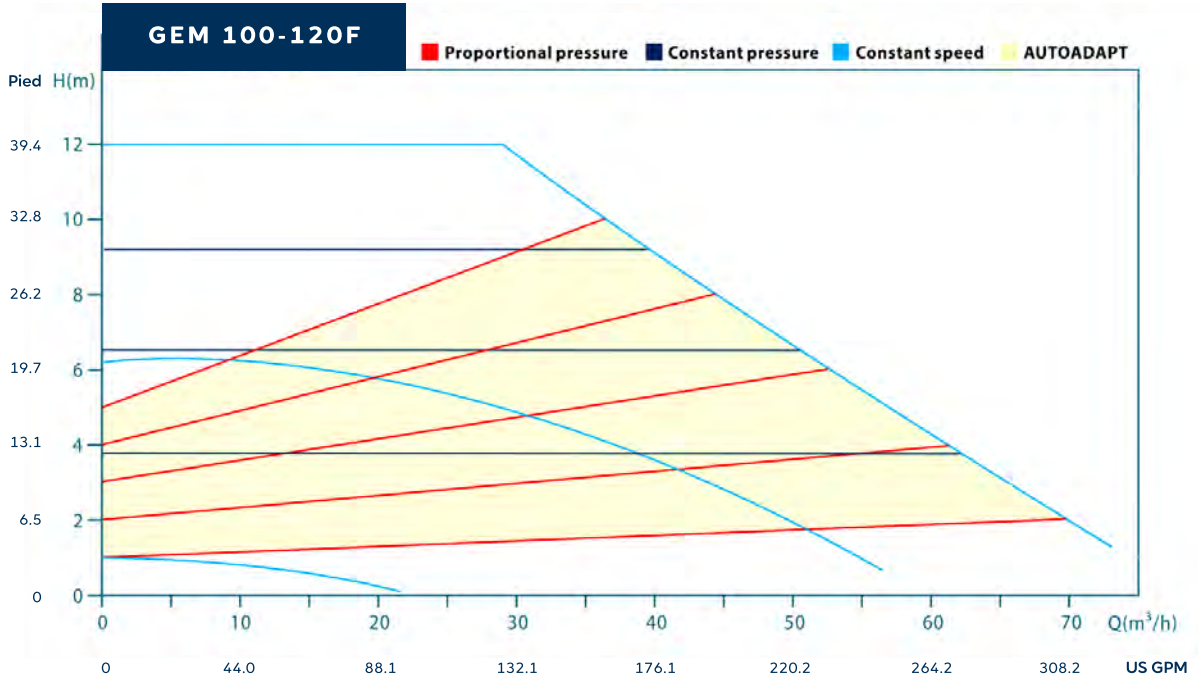


PERFORMANCE CHART
GEM 80-120F

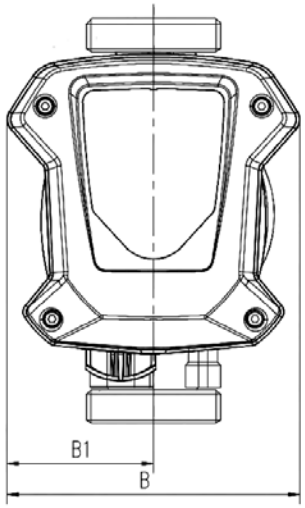


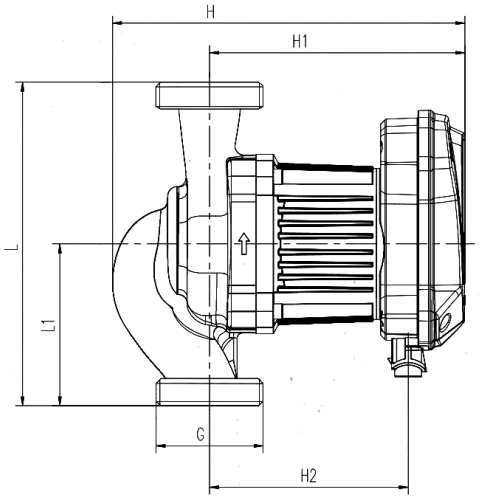
PERFORMANCE CHART
GEM 100-120F

2.041 HP



INTRODUCTION:
INSTALLATION DIMENSIONS **GEB25-6-180 | GEB25-12-180**

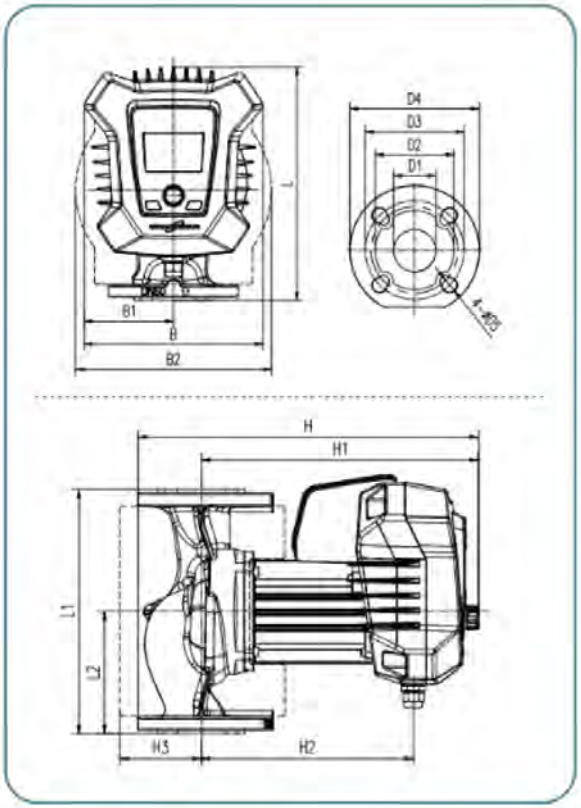




MODEL	PUMP BODY MATERIAL		DIMENSIONS							
	CAST IRON	STAINLESS STEEL	L1	L2	B	B1	H	H1	H2	G
GEB25-6-180 (N)	•	•	180 mm 7,09 in	90 mm 3,54 in	130 mm 5,12 in	65 mm 2,56 in	196 mm 7,71 in	142 mm 5,59 in	110,5 mm 0,43 in	1,5”
GEB25-12-180 (N)	•	•	180 mm 7,09 in	90 mm 3,54 in	130 mm 5,12 in	65 mm 2,56 in	196 mm 7,71 in	142 mm 5,59 in	110,5 mm 0,43 in	1,5”

INTRODUCTION:

INSTALLATION DIMENSIONS **GEM40-120F | GEM40-180F | GEM50-120F | GEM50-180F | GEM65-80F | GEM65-150F | GEM80-120F | GEM100-120F**



MODEL	PUMP BODY MATERIAL		DIMENSIONS (MM / IN)														
	CAST IRON	STAINLESS STEEL	L	L1	L2	B	B1	B2	H	H1	H2	H3	D1	D2	D3	D4	D5
GEM40-120F 250 (N)	•	•	281 11,06	250 9,84	125 4,92	226 8,90	113 4,45	212 8,35	382 15,04	312 12,28	242 9,53	79 3,11	40 1,57	84 3,31	100 110	150 5,91	14 19
GEM40-180F 250 (N)	•	•	281 11,06	250 9,84	125 4,92	226 8,90	113 4,45	212 8,35	382 15,04	312 12,28	242 9,53	79 3,11	40 1,57	84 3,31	100 110	150 5,91	14 19
GEM50-120F 280 (N)	•	•	296 11,65	280 11,2	140 5,51	226 8,90	113 4,45	248 9,76	389 15,32	312 12,28	242 9,53	93 3,66	50 1,97	102 4,02	110 125	164 6,46	14 19
GEM50-180F 280 (N)	•	•	296 11,65	280 11,2	140 5,51	226 8,90	113 4,45	248 9,76	389 15,32	312 12,28	242 9,53	93 3,66	50 1,97	102 4,02	110 125	164 6,46	14 19
GEM65-80F 340 (N)	•	•	281 11,06	250 9,84	125 4,92	226 8,90	113 4,45	212 8,35	382 15,04	312 12,28	242 9,53	79 3,11	40 1,57	84 3,31	100 110	150 5,91	14 19
GEM65-150F 340 (N)	•	•	296 11,65	280 11,2	140 5,51	226 8,90	113 4,45	248 9,76	389 15,32	312 12,28	242 9,53	93 3,66	50 1,97	102 4,02	110 125	164 6,46	14 19
GEM80-120F 360 (N)	•	•	281 11,06	250 9,84	125 4,92	226 8,90	113 4,45	212 8,35	382 15,04	312 12,28	242 9,53	79 3,11	40 1,57	84 3,31	100 110	150 5,91	14 19
GEM100-120F 450 (N)	•	•	296 11,65	280 11,2	140 5,51	226 8,90	113 4,45	248 9,76	389 15,32	312 12,28	242 9,53	93 3,66	50 1,97	102 4,02	110 125	164 6,46	14 19

COMPARISON CHART

FLO FAB	POWER	PORT-TO-PORT DISTANCE	FLANGE SIZE /CONNECTION TYPE	MAX HEAD (M/FT)	MAX FLOW	GRUNDFOS	ARMSTRONG	TACO
GEB40-120F 250 (N)	15.01... 463 W	250 mm	DN 40	120 m 393.7 ft	24 m^3/h 33,0 us gpm	MAGNA3 40-120 F (N)	R20-35	0026E-F2
GEB40-180 250 (N)	16.01... 615 W	250 mm	DN 40	180 m 590.55 ft	26,2 m^3/h 42,7 us gpm	MAGNA3 40-180 F (N)	R40-45	0034E-F2
GEM50-180F 280 (N)	22.13... 769 W	280 mm	DN 50	180 m 590.55 ft	37,5 m^3/h 105,7 us gpm	MAGNA3 50-180 F (N)	-	VR20H
GEM65-80 340 F (N)	24.17... 476 W	340 mm	DN 65	80 m 262.47 ft	40 m^3/h 115,4 us gpm	MAGNA3 65-80 F (N)	-	VR25L
GEM65-150F 340 (N)	30.7... 1263 W	340 mm	DN 65	150 m 492.13 ft	56 m^3/h 165,1 us gpm	MAGNA3 65-150 F (N)	-	VR25M
GEM80-120 F	30.5... 1277 W	360 mm	DN 80	120 m 393.7 ft	60 m^3/h 176,1 us gpm	MAGNA3 80-120 F	-	VR25H
GEM100-120 F	31.11... 1523 W	450 mm	DN 100	120 m 393.7 ft	68 m^3/h 246,6 us gpm	MAGNA3 100-120 F	-	VR30M

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PUMP SOLUTIONS MANUFACTURER

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