



*We Make The Difference*

# HZ NDROO Series

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Polymeric end  
suction pump  
50 Hz

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**hydroo®**



HYDROO is present in all the European markets by means of a distribution network focused on the service and the valuation of the pumping business. HYDROO conceives, researches, develops, designs, industrializes, and manufactures a wide range of pumping solutions for the most demanding applications in industrial markets, irrigation, water supply and water treatment as well as in residential and commercial buildings. The values of operational excellence, experience, reliability, and passion for a well-done job guide the daily work of the Hydroo team together with our partners and distributors. The global challenges of water management require excellence in pumping technologies and a joint effort between designers, manufacturers, and pumping engineers. To meet the needs of the market in the more demanding installations Hydroo is firmly committed to manufacturing the best pumping equipment on the market following and sharing our values worldwide.

The Hydroo values are presented in 5 great concepts that we summarize in our motto Hy5, which are our principles and commitments:

# BE PUMPING PARTNERS



**Salt d'Espolla, Esponellà**  
(Pla de l'Estany county, Catalonia)

A spectacular waterfall, highly recommended to visit, but take into account that almost the whole year is dry and only appears after the rainy seasons. This is a fantastic place, very shady, with leafy vegetation and mossy rocks.

**Coordinates:**  
Longitude: 2.78415  
Latitude: 42.17378



## hymotion

Value proposal based on the reliability of products enhancing the quality, the development of efficient supply chains, the productivity with the love of craftsmen at every step of the manufacturing and production lines. We move with the commitment to improve pumping systems, make them more efficient, more reliable, more digitized, more at the service of the human development.



## hylite

Contribution to preservation of the environment and to sustainability. We reduce the environmental impact and footprint of carbon. We contribute to the development of the circular economy. Our team stand out for the highest standards of energy efficiency.



## hyficient

The use of the most advanced analytical, development and simulation tools allows us to optimize our R&D teamwork results. We maximize the study of materials, efficient hydraulics, mechanical improvements and the optimization of our motors up to 200 kW. The results are robust, reliable, flexible, adjustable, multipurpose, and user-friendly pumping equipment.



## hynovative

Commitment to implementation of the innovation process as strategic pillar of the company. Transfer new ideas to realities that evolve pumping industry and internalize the process in each job position to offer market improvements.



## hyliance

We are the factory of our customers. Without solution of continuity between the value chain starting in the components production plants and ending with amortization of the pumping equipment operating at full performance for years and giving satisfaction to distributors, project engineers and pumping systems managers. We make real our catchphrase **Be Pumping Partners**.

# HZ

## Polymeric end suction pump

### Description

HZ pump has one impeller, axial suction and radical discharge.

Simple structure, shaft is directly connected with impeller.

Easy for pipe works, inlet and outlet are connected by standard flanges.

Wet parts are made in polymeric fluorine, accessories are made of cast iron (GG20).

### Performance range

Flow range: 2.2 ~ 60 m<sup>3</sup>/h

Head: 16 ~ 52 m

Temperature: -20 °C ~ +120 °C

Speed: 2900 rpm

Power: up to 18,5 kW

### Standard material

PVDF = Polyvinylidene fluoride

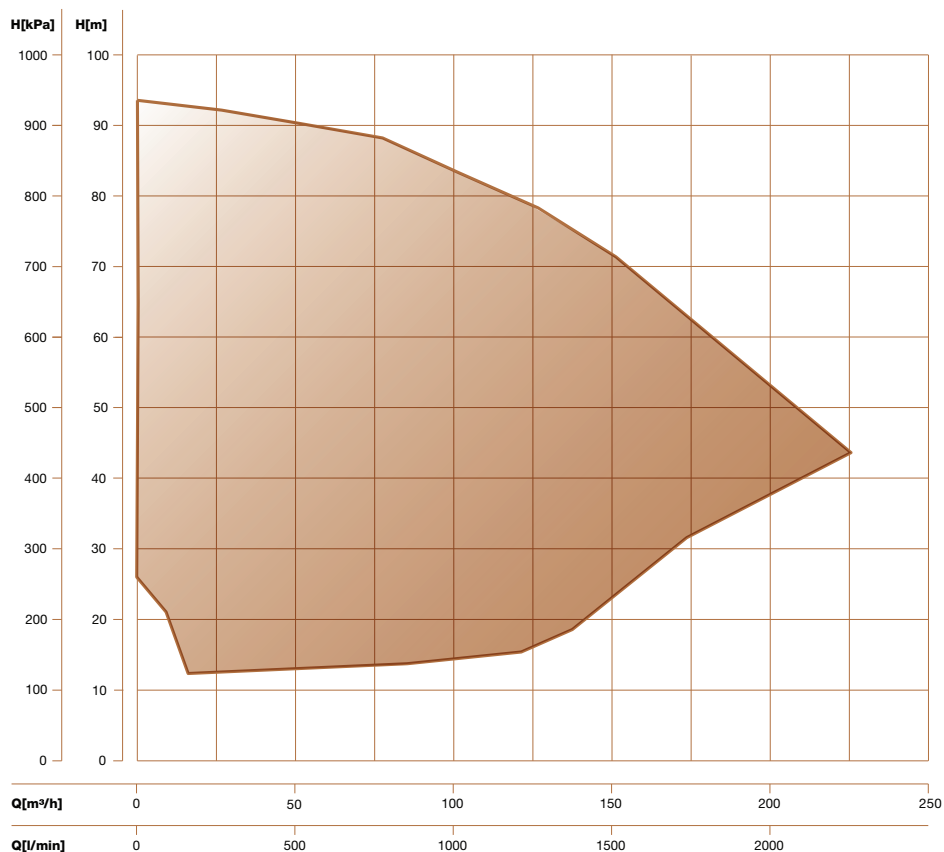
FEP= Fluorinated ethylene propylene GG20.

### Applications

- Alkali & acid production
- Metal smelting industry
- Chemical synthesis
- Paper-making industry
- Textile dyeing and finishing systems
- Pickling processes in electroplating
- Other corrosive liquids transferring



### Performance ranges



## Definition of model

**HZ** **L** **50** - **32** - **160** - **F46** **5,5** **T** **4069** **5** **2** **IE3**

- | Motor efficiency
- | Number of poles
- | 5: 50 Hz  
6: 60 Hz
- | Rated voltage (x10) (V)
- | T: Three phases  
S: Single phase
- | Power P2 (kW)
- | F26: Hydraulic part in PVDF  
F46: Hydraulic part in FEP
- | Impeller nominal diameter (mm)
- | Impeller diameter (mm)
- | Suction diameter (mm)
- | Ø: Monobloc  
L: Extended shaft
- | Single-stage centrifugal pump in Flourin

### Structure features

- HZ pump has one impeller, axial suction and radical discharge.
- Simple structure, shaft is directly connected with impeller.
- Easy for pipe works, inlet and outlet are connected by standard flanges.
- Wet parts are made of PVDF, FEP, accessories are made of cast iron (GG20).

### Typical application

- Any concentration of acid alkali, salty solution, strong oxidants, organic solvent etc. Strongly corrosive medium.
- Petrol, chemical, pesticide, acid cleaning, dying, paper making, galvanization, etc.

### Operation conditions

- Thin medium not containing grain or fiber.
- Medium temperature: -20 °C - 120 °C
- Medium density: Max 1.35 x 103 kg/m<sup>3</sup>
- Ambient temperature: Max +40°C
- Altitude: Max 1000 m
- Pressure: Max 10 bar

### Motor

- TEFC motor, 2 pole
- Protection class: IP 55
- Insulation level: CLASS F
- Standard voltage: 3x380V

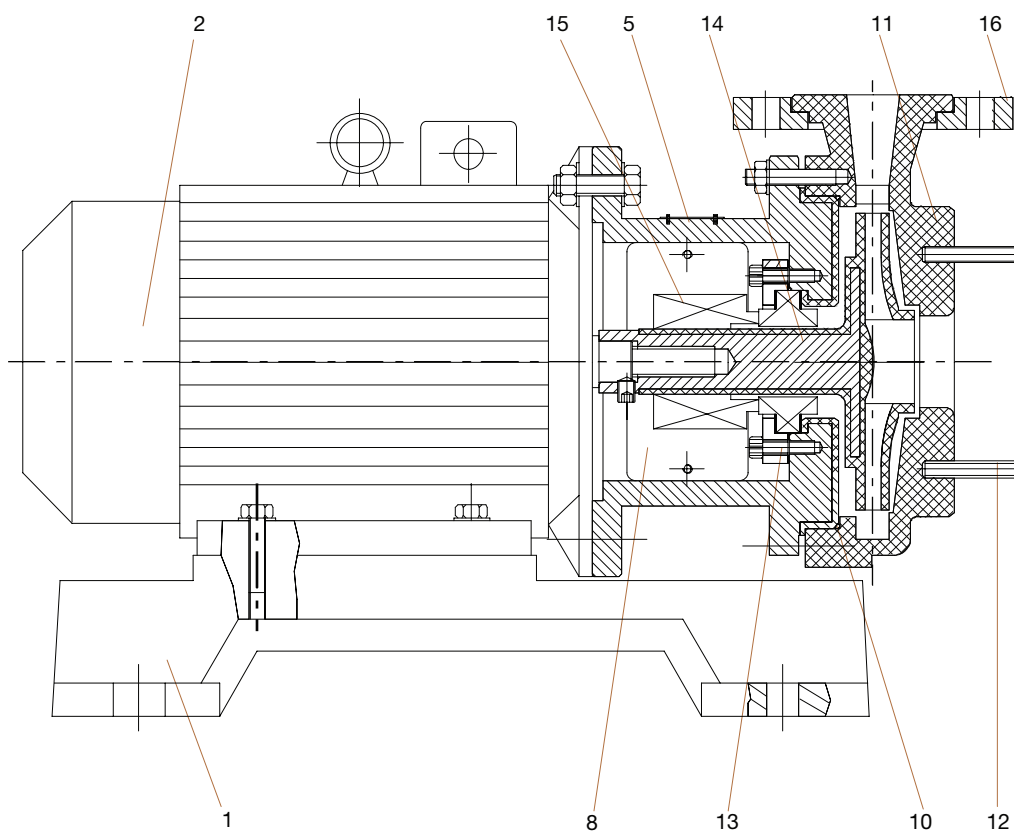
### Installation requirements

- Curves tolerance is according to 1509906, Annex A;
- All curves are based on the measured value of constant motor speed 2900 rpm, 3 x 380V.
- The measurements were made with airless water at temperature of 20 °C. The curves apply to a kinematic viscosity of 1mm<sup>2</sup>/s (1 cst)
- It is suggested to operate the pump in the scope of the bold curve, to prevent motor from overload.
- When pumping liquids with a density higher than that of the operation conditions, use motors with correspondingly higher outputs.

### Performance curve

- Q/H: means the curve of the flow and head at the nominal rotating speed.
- Power curve: P2 means the pump input power, if the medium density is 1 x 103kg/m<sup>3</sup>.
- Efficient curve: Eta means the pump efficiency.
- Installation conditions
- When installation, please make sure the pump would not be effected by the pipeline force when pump operation.
- The pump should be strongly fixed on the horizontal base.
- In order to make motor work well, pump should be installed on the frozen free and ventilate place.
- The electric protection devices should protect pump from being damaged by phase lack, unstable voltage, electric leakage, overload.

## Section drawing

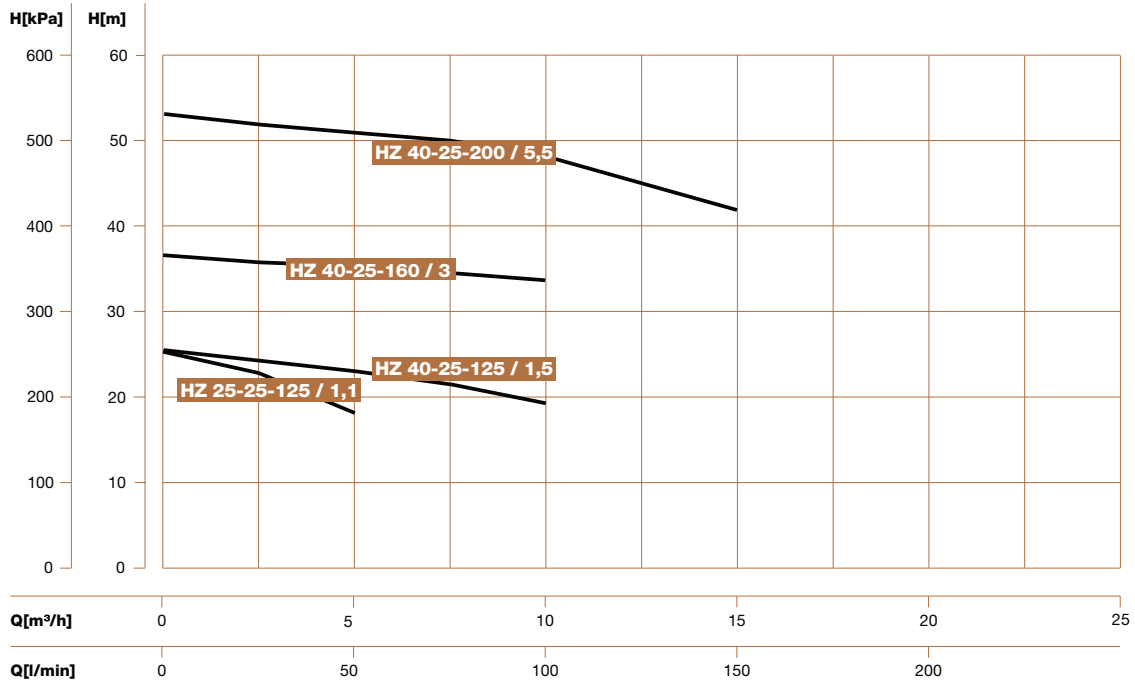


## Part list

N°	Name	Material	Code/AISI/ASTII
1	Base	GG20	ASTM25B
2	Motor		
5	Injection moulding pump head	GG20+PVDF/FEP	ASTM25B+PVDF/FEP
8	Guard	Stainless Steel OCr18Ni9	AISI 304
10	O ring	FPM	
11	Casing	PVDF/FEP	
12	Double end studs	Stainless Steel OCr18Ni9	AISI 304
13	Seal cover	HT200	ASTM25B
14	Impeller	Steel+PVDF/FEP	ASTMA570+PVDF/FEP
15	Mechanical seal	Silicon Carbide/Silicon Carbide	
16	Outlet flange	GG20	ASTM25B

# HZ 25, 40

## Performance curve 2900rpm

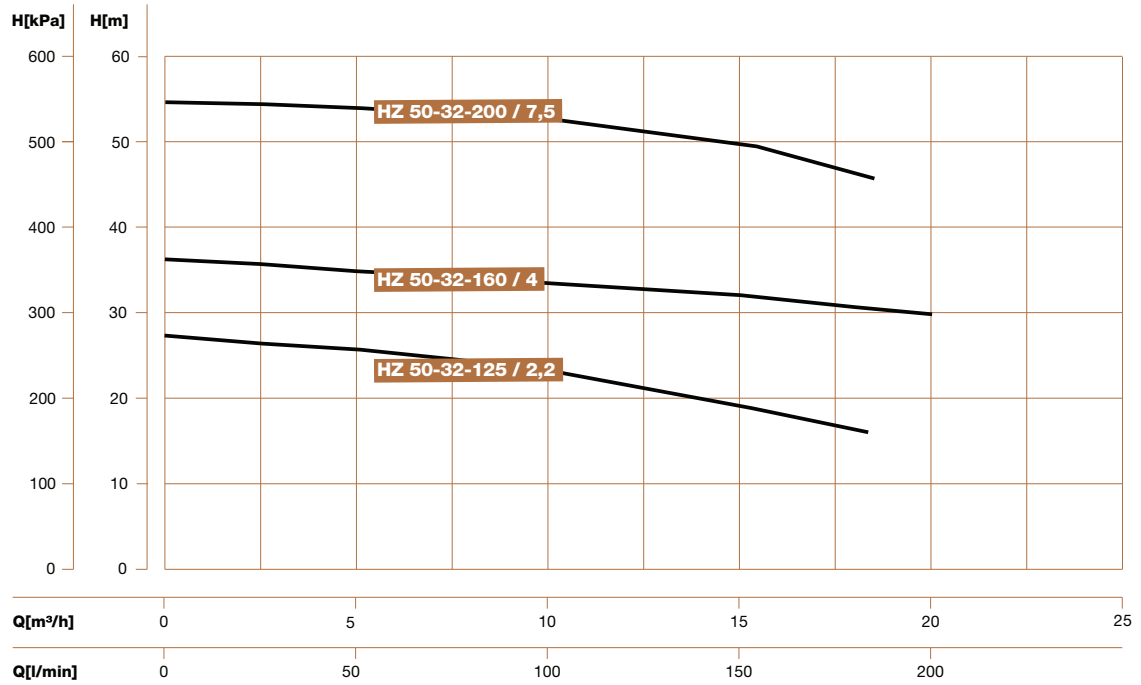


## Performance table

Model	P2		Max. perf.	Q	0	2,5	5	7,5	10	15	18	20	25
	kW	HP	$\rho$	m³/h									
<b>HZ 25-25-125 - FEP F46</b>	1,1	1,5	39	H (m)	25	23	18	—	—	—	—	—	—
<b>HZ 40-25-125 - FEP F46</b>	1,5	2	43		25	24	22	21	19	—	—	—	—
<b>HZ 40-25-160 - FEP F46</b>	3	4	47		36	35	35	35	34	—	—	—	—
<b>HZL 40-25-200 - FEP F46</b>	5,5	7,5	36		52	51	50	49	48	41	23	—	—

# HZ 50

## Scope of performance



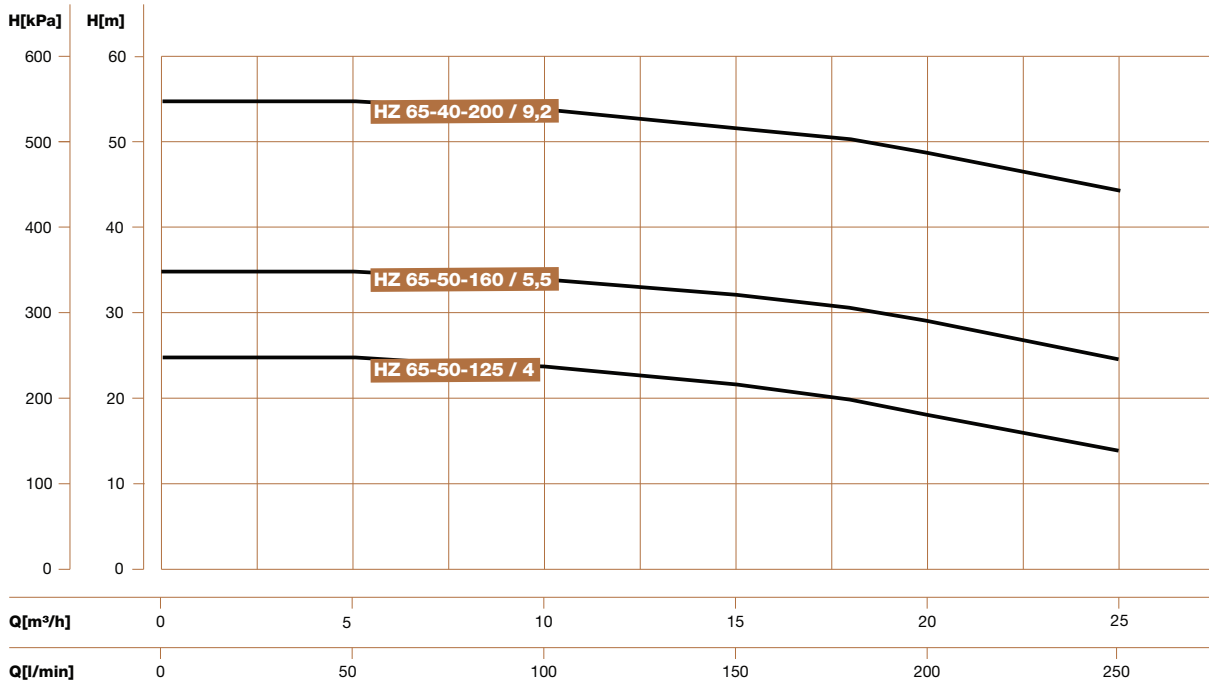
## Performance table

Model	P2		Max. perf.	Q	0	2,5	5	7,5	10	15	18	20	25
	kW	HP	η										
<b>HZ 50-32-125 - FEP F46</b>	2,2	3	45	H (m)	28	27	26	24	23	17	13	—	—
<b>HZ 50-32-160 - FEP F46</b>	4	5,5	54		37	36	35	35	35	33	31	30	—
<b>HZ 50-32-200 - FEP F46</b>	7,5	10	39		55	54	54	53	52	49	43	—	—



# HZ 65

## Scope of performance

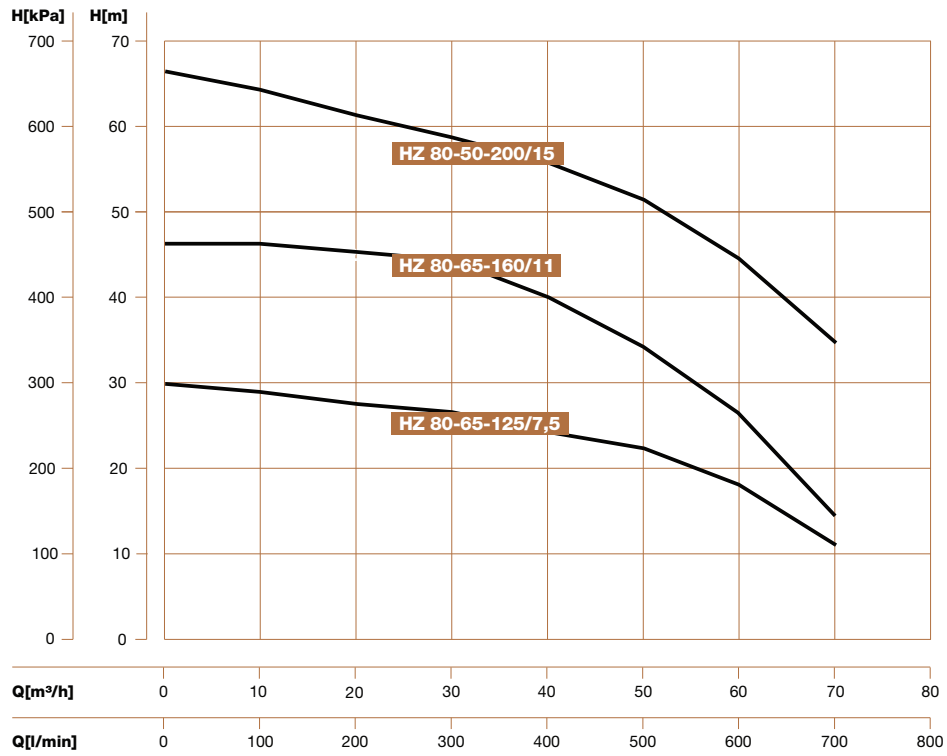


## Performance table

Model	P2		Max. perf.	Q	0	2,5	5	7,5	10	15	18	20	25
	kW	HP	$\eta$	m³/h									
<b>HZ 65-50-125 - FEP F46</b>	4	5,5	67	H (m)	24	24	24	23	23	22	19	17	15
<b>HZ 65-50-160 - FEP F46</b>	5,5	7,5	60		35	35	35	35	34	33	31	27	26
<b>HZ 65-40-200 - FEP F46</b>	9,2	12,5	57		55	55	55	55	54	53	51	48	46

# HZ 80

## Scope of performance

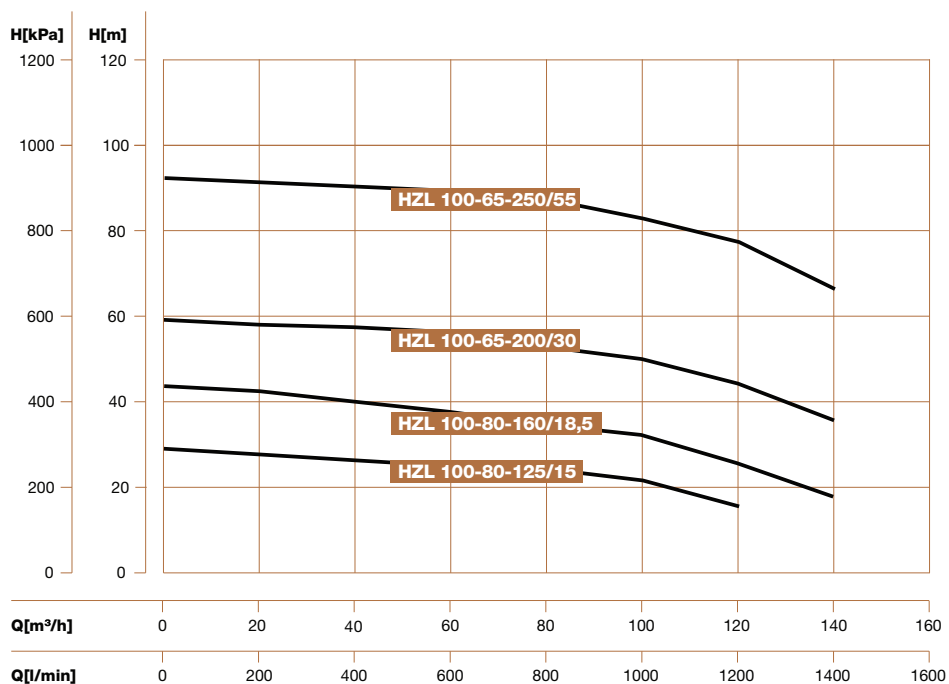


## Performance table

Model	P2		Max. perf. η	Q m³/h	0	2,5	5	7,5	10	15	18	20	25
	kW	HP											
<b>HZ 80-65-125- FEP F46</b>	7,5	10	68	H (m)	29	28	27	26	24	22	19	16	15
<b>HZ 80-65-160 - FEP F46</b>	11	15	60		43	43	42	41	37	32	25	11	8
<b>HZ 80-50-200 - FEP F46</b>	15	20	61		67	64	63	59	56	54	45	35	—

# HZL 100

## Scope of performance

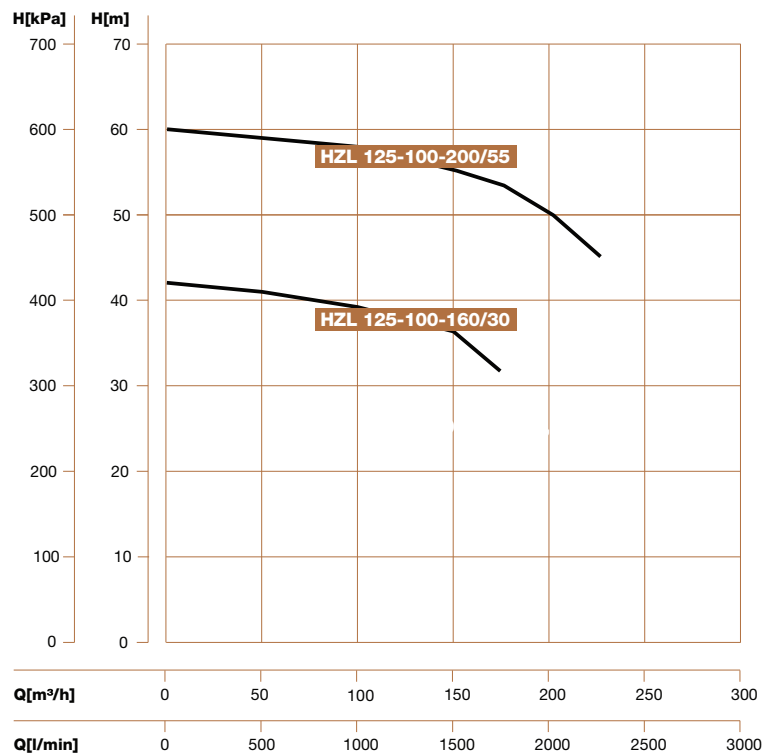


## Performance table

Model	P2		Max. perf.	Q	0	20	40	60	80	100	120	140
	kW	HP	$\rho$	m³/h								
<b>HZL 100-80-125 - FEP F46</b>	15	20	53	H (m)	27	26	25	24	23	21	16	—
<b>HZL 100-80-160 - FEP F46</b>	18,5	25	59		42	41	39	37	34	32	26	19
<b>HZL 100-65-200 - FEP F46</b>	30	40	61		59	58	57	56	53	50	45	37
<b>HZL 100-65-250 - FEP F46</b>	55	75	55		93	92	91	90	88	83	77	65

# HZL 125

## Scope of performance

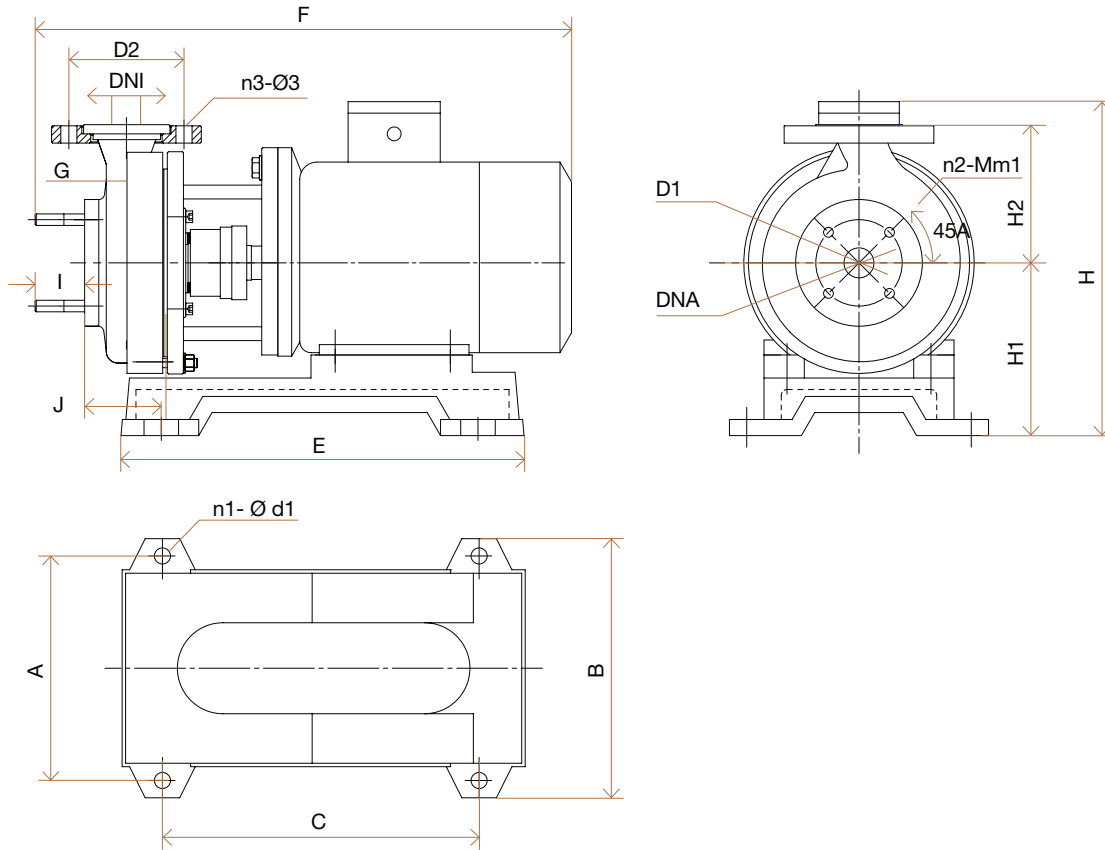


## Performance table

Model	P2		Max. perf.	Q	0	50	100	150	175	200	225	250
	kW	HP	$\eta$	m³/h								
<b>HZL 125-100-160 - FEP F46</b>	15	20	53	H (m)	42	41	39	36	31	—	—	—
<b>HZL 125-100-200 - FEP F46</b>	15	20	53		60	59	58	55	53	49	44	20

# HZ pump dimensions

## Installation sketch

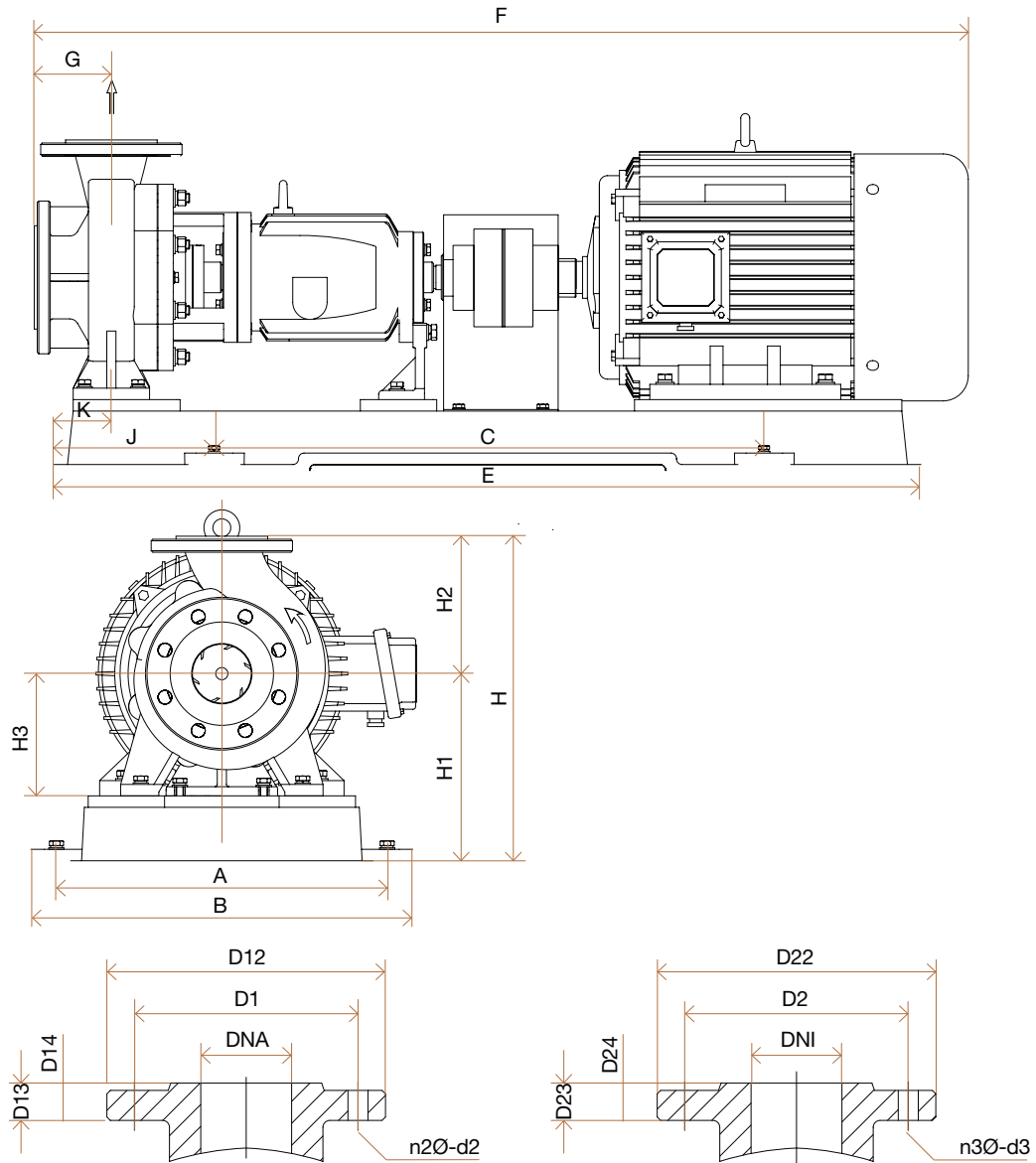


## Size and weight

Model	A	B	C	DNA	D1	DNI	D2	E	F	G	H	H1	H2	I	J	n1-Ød1	n2-Mm1	n3-Ød3
<b>HZ 25-25-125 - FEP F46</b>	195	225	275	DN25	75	DN25	100	350	466	37	290	150	120	43	67	4-Ø14	4-M10	4-Ø14
<b>HZ 40-25-125 - FEP F46</b>	232	265	306	DN40	100	DN25	100	400	482	38	320	160	120	43	71,5	4-Ø14	4-M10	4-Ø14
<b>HZ 40-25-160 - FEP F46</b>	240	280	365	DN40	100	DN25	100	470	565	48	365	185	160	43	84,5	4-Ø14	4-M10	4-Ø14
<b>HZ 50-32-125 - FEP F46</b>	230	260	320	DN50	125	DN32	100	420	522	43,5	330	170	140	43	92	4-Ø14	4-M14	4-Ø14
<b>HZ 50-32-160 - FEP F46</b>	255	340	310	DN50	125	DN32	100	—	585	53	375	185	160	44	126	4-Ø14	4-M14	4-Ø14
<b>HZ 50-32-200 - FEP F46</b>	294	380	330	DN50	145	DN32	110	—	639	55	446	236	180	43	110	4-Ø18	4-M14	4-Ø18
<b>HZ 65-50-125 - FEP F46</b>	255	340	325	DN65	145	DN50	125	520	572	50	365	175	147	50	97,5	4-Ø14	4-M10	4-Ø18
<b>HZ 65-50-160 - FEP F46</b>	294	380	330	DN65	145	DN50	125	—	628	50	426	216	165	40	102	4-Ø14	4-M14	4-Ø18
<b>HZ 65-40-200 - FEP F46</b>	280	395	450	DN65	145	DN40	110	—	756	55	513	248	180	43	127	4-Ø18	4-M14	4-Ø18
<b>HZ 80-65-125- FEP F46</b>	294	380	330	DN80	160	DN65	145	—	623	52	426	216	165	40	96,5	4-Ø18	4-M14	4-Ø18
<b>HZ 80-65-160 - FEP F46</b>	260	395	450	DN80	160	DN65	145	185	513	57	248	248	185	41	124	4-Ø18	4-M14	4-Ø18
<b>HZ 80-50-200 - FEP F46</b>	280	395	450	DN80	160	DN50	125	—	759	57	513	248	195	39	134	4-Ø18	4-M14	4-Ø18

# HZL pump dimensions

## Installation sketch



## Size and weight

Model	A	B	C	DNA	D1	D12	D13	D14	DNI	D2	D22	D23	D24	E	F	G	H	H1	H2	H3	J	K	n2-Ød2	n3-Ød3
<b>HZL 40-25-200 - FEP F46</b>	345	395	585	DN40	110	150	18	2	DN25	85	115	16	2	895	1025	77	430	260	170	160	155	72	4-M12	4-Ø18
<b>HZL 100-80-125 - FEP F46</b>	450	500	720	DN100	180	220	20	3	DN80	160	200	20	3	1135	1350	100	340	260	180	160	210	83	4-Ø25	8-Ø18
<b>HZL 100-80-160 - FEP F46</b>	450	500	720	DN100	180	220	22	2	DN80	160	200	20	2	1135	1360	102	480	260	220	160	210	80	4-Ø14	8-Ø18
<b>HZL 100-65-200 - FEP F46</b>	550	600	930	DN100	180	220	22	2	DN65	145	185	20	2	1445	1600	100	540	315	225	180	260	88	4-Ø14	4-Ø18
<b>HZL 100-65-250 - FEP F46</b>	550	605	930	DN100	180	220	22	2	DN65	145	185	20	2	1400	1610	125	577	325	252	200	235	90	4-Ø14	4-Ø18
<b>HZL 125-100-160 - FEP F46</b>	550	600	930	DN125	210	250	22	2	DN100	180	220	22	2	1445	1610	132	575	315	260	200	260	95	4-Ø14	8-Ø18
<b>HZL 125-100-200 - FEP F46</b>	540	580	1100	DN125	210	250	22	2	DN100	180	220	22	2	1700	1850	130	650	370	280	200	270	90	4-Ø14	8-Ø18

## FEP compatibility list

Acetic acid; benzene	Sulfuric Acid +20% ( $\geq 80$ °C) Smoke sulfate	Titanium tetrathloride; zinc chloride
Arsenate; boric acid	Smoke sulfate	Ferric trichloride; carbon tetrachloride
Carbonate	Sulfurous acid	Salt solution; seawater
Fluoride acid	Ammonium hydroxide, potassium hydroxide	Blue alum; NaHSO <sub>3</sub>
Hypochlorite; wet chlorine	Sodium hydroxide <20%	Sodium bicarbonate; soda
Chromic acid	Sodium hydroxide <80%	Sodium hypochlorite
citric acid	Calcium hydroxide	Sodium chlorate; calcium chloride
Toluene acid	Acetic acid salt solution	Chromium sodium
Formic acid	Ammonium nitrate; barium nitrate	Al acetic
Hydrochloric acid ( $\geq 65$ °C)	Sodium nitrate; copper nitrate	Bromine
Hydrofluoric acid; fluorosilicic acid	Iron nitrate	Glycerol
Hydrogen peroxide; lactic acid	Nitrate lead; silver nitrate	Pyridine
Maleic acid; malic acid	Aluminium sulfate, ammonium sulfate	Acetic (acid) anhydride
Mixed acid	Ammonium sulfate + sulfuric acid	Aniline dye; hydrochloride aniline
Oleic acid	Barium sulfate; sodium sulfate	Methane, ethane, propane
Oxalate acid	Copper sulfate	Nitrobenzene
Picric acid, stearic acid	Copper sulfate +10% sulfuric acid	Tar and ammonia
Tartrate; Tannin	Ferrum sulfate +10% sulfuric Acid	Toluene; SO <sub>3</sub>
Nitrate 5% to 10%	Magnesium sulfate; zinc sulfate	Glycol; ethylene oxide
Nitric Acid <50%	Ammonium; sodium	Two-acetone; dichloro-ethanol
Concentrated nitric acid	Chloride; barium chloride	Ethylene dichloride; vinyl trichloride
Nitric Acid +3.5% hydrofluoric acid	Calcium chloride	Formaldehyde
Phosphoric acid	Aluminum trichloride	CS <sub>2</sub>
Phosphoric acid +2% sulfuric acid +1% Hydro- fluoric acid	Potassium chloride	Molten sulfur
Sulfuric acid <10%	Sodium chloride; tin chloride	Sulphur dichloride
Sulfuric acid 10% to 75%	Silver chloride, magnesium chloride	Molten sulfur
Sulfuric acid 75% to 98% ( $\geq 80$ °C)	Nickel chloride	

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[www.alphadynamic.eu](http://www.alphadynamic.eu)

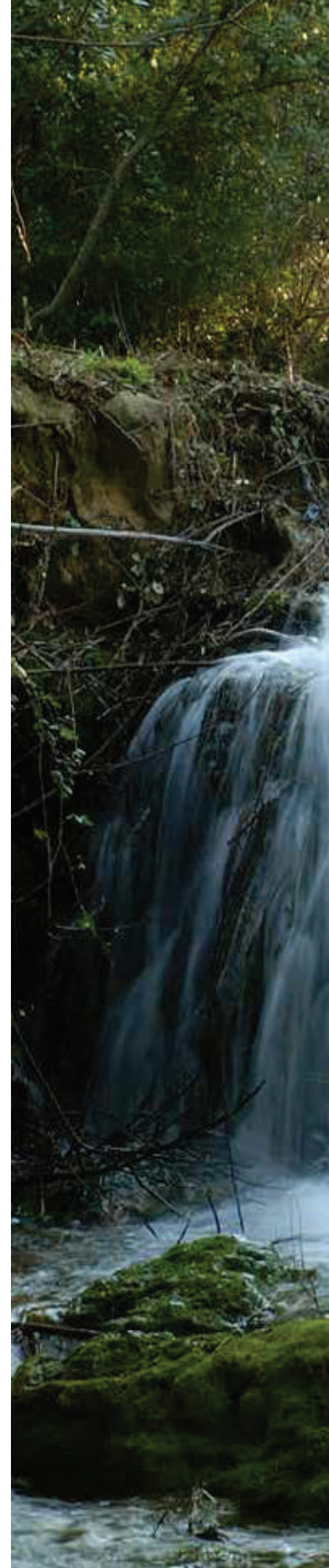
**AlphaDynamic Pumps SA**

Production Plant - Greece  
Inofita Industrial area  
59th km Nat.Road Athens - Lamia  
GR 320 11 Inofita Viotia, Greece

Tel +30 215 215 9520 , +30 215 215 9580  
Email: Sales@alphadynamic.eu



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