DAB®
WATER•TECHNOLOGY

SWIMMING POOL AND SALT WATER PUMPS
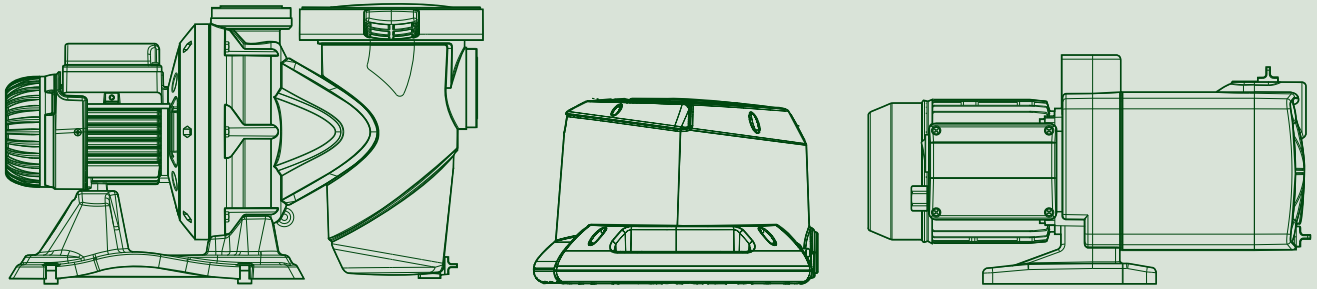
TECHNICAL CATALOGUE

IQNet CERTIFICATE

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

CISQ/IMQ has issued an IQNet recognized certificate that the organization:

DWT HOLDING SPA

VIA MARCO POLO 14 - 35035 MESTRINO (PD)
BRENDOLA (VI) - CASTELLO DI GODEGO (TV) - BIENTINA (PI) -
VAL LIONA (VI) - PRC CHINA - HUNGARY

has implemented and maintains a

Quality Management System

for the following scope:

Design, production, sale and assistance of components and electronic controls for pumps, electropumps and pump sets for cold and hot water for civil, industrial and agricultural use

Further clarifications regarding the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization

which fulfills the requirements of the following standard:

ISO 9001:2015

Issued on: 2018 - 05 - 21
Expires on: 2021 - 05 - 27

This attestation is directly linked to the IQNet Partner's original certificate
and shall not be used as a stand-alone document

Registration Number: IT - 824

Alex Stoichitoiu
President of IQNET

Ing. Claudio Provetti
President of CISQ

IQNet Partners*:
AENOR *Spain* AFNOR Certification *France* APCER *Portugal* CCC *Cyprus* CISQ *Italy*
CQC *China* CQM *China* CQS *Czech Republic* Cro Cert *Croatia* DQS Holding GmbH *Germany* FCAV *Brazil*
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IRAM *Argentina* JQA *Japan* KFQ *Korea* MIRTEC *Greece* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland*
NYCE-SIGE *México* PCBC *Poland* Quality Austria *Austria* RR *Russia* SII *Israel* SIQ *Slovenia*
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* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

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All. 1 di 1
Ann. 1 of 1

CISQ is a member of **IQNet**

ALLEGATO CERTIFICATO n.   **9101.COGE**

ANNEX CERTIFICATE

(*) Unità Operative:
(*) Operative Units:

DAB PUMPS SPA
VIA BONANNO PISANO 1 - 56031 BIENTINA (PI)

DAB PUMPS SPA
VIA DEL LAVORO 3 - 36040 VAL LIONA (VI)

DAB PUMPS QINGDAO CO. LTD
40 KAITUO ROAD, QINGDAO DEVELOPMENT ZONE - SHANGDONG PROVINCE, PRC CHINA

DAB PUMPS HUNGARY KFT
BUDA ERNO H - 8800 NAGYKANISZA HUNGARY

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION* 1995-07-17	EMISSIONE CORRENTE *CURRENT ISSUE* 2018-05-21	SCADENZA *EXPIRY* 2021-05-27

IMQ S.p.A. - VIA QUINTILIANO, 43 - 20138 MILANO ITALY
Management Systems Division - Flavio Ornago

IAF: 18, 19, 29

CISQ is a member of **IQNet**

CERTIFICATO N.
CERTIFICATE N.   **9101.COGE**

SI CERTIFICA CHE IL SISTEMA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY SYSTEM OPERATED BY

DWT HOLDING SPA
VIA MARCO POLO 14 - 35035 MESTRINO (PD)

UNITA' OPERATIVE / *OPERATIVE UNITS*
DAB PUMPS SPA
VIA MARCO POLO 14 - 35035 MESTRINO (PD)
DAB PUMPS SPA
VIA EINAUDI 2 - 36040 BRENDOLA (VI)
DAB PUMPS SPA
VIA E. FERMI 6-8-10 - 31030 CASTELLO DI GODEGO (TV)

Vedere gli Allegati per le altre Unità Operative (n° 1 pagina)
View the Annexes for the other Operative Units (n° 1 page)

E' CONFORME ALLA NORMA / *IS IN COMPLIANCE WITH THE STANDARD*
ISO 9001:2015

PER LE SEGUENTI ATTIVITA' / *FOR THE FOLLOWING ACTIVITIES*

Progettazione, produzione, commercializzazione e assistenza di componenti e controlli
elettronici per pompe, elettropompe e gruppi di pompaggio per acqua fredda e calda
ad uso civile, industriale ed agricolo
*Design, production, sale and assistance of components and electronic controls for pumps,
electropumps and pump sets for cold and hot water for civil, industrial and agricultural use*

IL PRESENTE CERTIFICATO E' SOGGETTO AL RISPETTO DEL
REGOLAMENTO PER LA CERTIFICAZIONE DEI SISTEMI DI GESTIONE
*THE USE AND THE VALIDITY OF THE CERTIFICATE SHALL SATISFY THE
REQUIREMENTS OF THE RULES FOR CERTIFICATION OF MANAGEMENT SYSTEMS*

DATE:	PRIMA CERTIFICAZIONE *FIRST CERTIFICATION* 1995-07-17	EMISSIONE CORRENTE *CURRENT ISSUE* 2018-05-21	SCADENZA *EXPIRY* 2021-05-27

IMQ S.p.A. - VIA QUINTILIANO, 43 - 20138 MILANO ITALY
Management Systems Division - Flavio Ornago

IAF: 18, 19, 29

CONTENTS

DAB PUMPS reserves the right to make modifications without notice.

DAB
WATER•TECHNOLOGY

1

ESWIM
SWIMMING POOL PUMPS

DISCOVER THE
SVRS MODEL WITH
ANTI-TRAPPING SYSTEM

SVRS ✓

SUITABLE FOR
SALT WATER

TECHNICAL DATA

Operating range: up to 30 m³/h with head of up to 15,4 metres
Pumped liquid: clean water, or slightly contaminated water with suspended solid debris, or long fibres; highly aggressive water with high percentage of chlorine/bromine and PHMB (Polyhexamethylene biguanide), or chlorine electrolysis treated water
PH Range: 6,5-8,4
Pumped liquid temperature range: up to 40 °C
Maximum ambient temperature: 50 °C
Maximum operating pressure: 2.5 bar
Installation: fixed, horizontal position
Connectors on request: 2"/50 - 63
(two connectors+O-ring - see "Accessories") kit
Standard of reference: IEC - 60364
Protection class of the motor : IP X5
Protection class at the terminal board: IP X5
Insulation class: F
Standard voltage: single-phase 230 V - 50/60 Hz

APPLICATIONS

Eswim is the most silent and energy-efficient electronic swimming pool pump with built-in high capacity strainer basket.
Eswim combine advanced engineering hydraulics parts, frequency converter technology, and high efficiency permanent magnet motor (with its innovative water cooled motor) to runs whatever the speed of the motor is (high or low) in a super silent way.
Extremely quiet and highly reliable, developed for water circulation and filtration in domestic and residential swimming pools.

CONSTRUCTION FEATURES

The **impeller and volute** are designed to achieve high efficency, improoving hydraulics performances.
Transparent antioxidant polycarbonate basket cover ensuring constant visibility over the long period. Fibreglass reinforced technopolymer hydraulics designed to ensure total cover and insulation of the motor shaft from the pumped liquid. Carbon / alumina / NBR / AISI 316 mechanical seal. Butterfly filling and drain plugs that can be removed and refitted without tools.

Eswim is provided with syncronous brushless electric **motor** with incapsulated magnetic rotor, driven by frequency converter. Motor water cooled (no motor fan), extremely quiet running. Die cast aluminium motor casing with special coating to avoid oxidation. Support base supplied with rubber feet to reduce vibrations.

Eswim pump is controlled by an **electronic device** based on Trench IGBT technology of the latest generation for higher efficiency and robustness. Two dedicated 32-bit processors (one for motor control and one for the user interface), intuitive user interfaces, and external input (a digital input and a analogic input 0-10V or 4-20mA) ensure ease of setting for all users.
Its onboard computer and intelligent software can operate at adjustable **CONSTANT SPEED** or **CONSTANT FLOW** (totally sensorless) to optimize performance and minimize energy use.

Panel is provided of preset function mode button (adjustable), led of status and alarm, week and season scheduling menu to have the complete control on the pump.
A wide LCD display inform you about run time, mode and current status

MATERIALS

N.	PARTS*	MATERIALS
1	PUMP BODY	REINFORCED TECHNOPOLYMER
4	IMPELLER	REINFORCED TECHNOPOLYMER
6	VOLUTE	REINFORCED TECHNOPOLYMER
8	STRAINER COVER	POLYCARBONATE
10	STRAINER	TECHNOPOLYMER
16	MECHANICAL SEAL	CARBON/ALUMINA/NBR/AISI316
28	O-RING	NBR
29	O-RING	NBR
36	SEAL HOLDING DISC	EPDM

* In contact with the liquid

DAB PUMPS reserves the right to make modifications without notice.

DAB WATER•TECHNOLOGY

3

ESWIM 150 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - **Maximum ambient temperature:** +50 °C

FACTORY PRESET SPEEDS
SPEED 4: 100% - 4500 rpm
SPEED 3: 85% - 3825 rpm
SPEED 2: 70% - 3150 rpm
SPEED 1: 50% - 2250 rpm
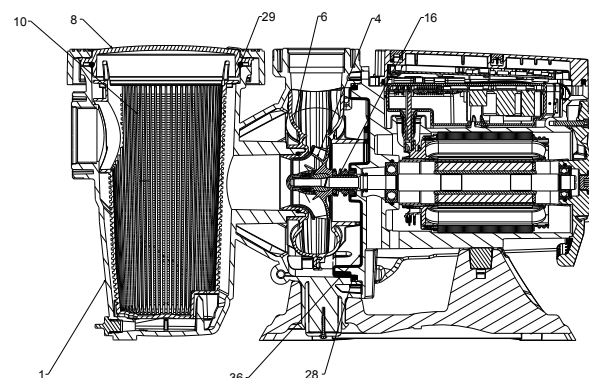
The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according ISO 9906.

MODEL	Q= m³/h	0	6	9	12	15	18	21	24	27	30
	Q=l/min	0	100	150	200	250	300	350	400	450	500
ESWIM 150	H (m)	15,9	15,7	15,2	14,4	13,4	12,2	10,9	9,4	7,9	6,3
ESWIM 150 SVRS		15,9	15,7	15,2	14,4	13,4	12,2	10,9	9,4	7,9	6,3

MODEL	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	NOISE LEVEL-MEDIUM WORKING POSITION DB (A)
			kW	HP		
ESWIM 150	230 V	1,25	1,1	1,5	5,6	50 dB(A)
ESWIM 150 SVRS	230 V	1,25	1,1	1,5	5,6	50 dB(A)

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	DNA	DNM	PACKING DIMENSIONS			WEIGHT Kg	Q.TY X PALLET
														L/A	L/B	H		
ESWIM 150	550	300	245	259	266	220	150	316	217	309	11	2" F	2" F	720	350	430	19	8
ESWIM 150 SVRS	550	300	245	259	266	220	150	316	217	309	11	2" F	2" F	720	350	430	19	8

DAB PUMPS reserves the right to make modifications without notice.

4

ESWIM 300 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +50 °C

FACTORY PRESET SPEEDS
SPEED 4: 100%- 4770 rpm
SPEED 3: 85%- 4050 rpm
SPEED 2: 70%- 3330 rpm
SPEED 1: 50%- 2385 rpm

The performance curves are based on kinematic viscosity values =
1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according ISO 9906.
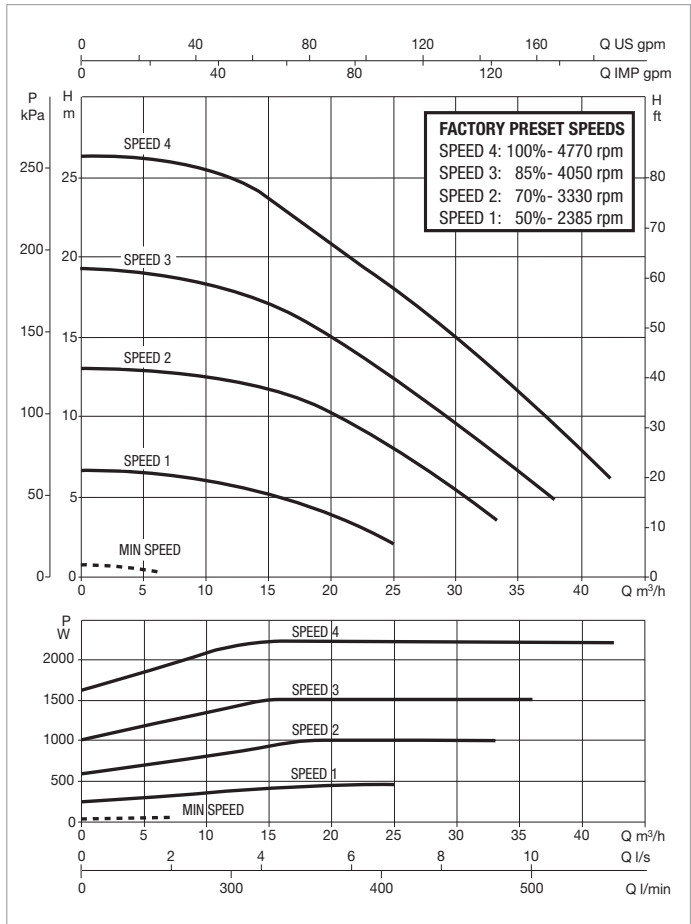
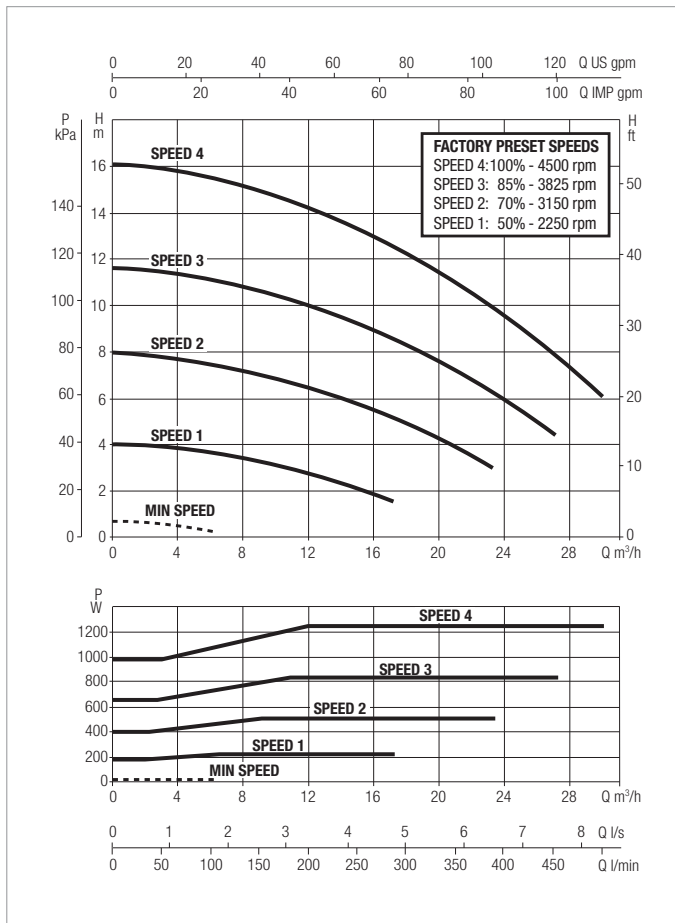| MODEL	Q= m³/h	0	5	10	15	20	25	30	35	40	42,6
	Q=l/min	0	83	166	250	333	416	500	583	666	710
ESWIM 300	H (m)	26	25,4	24,8	23,2	20,6	17,4	14,4	11,5	7,8	6

MODEL	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	NOISE LEVEL - MEDIUM WORKING POSITION db (A)
			kW	HP		
ESWIM 300	230 V	2,25	1,9	2,6	10	44 dB(A)

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	DNA	DNM	PACKING DIMENSIONS			GROSS WEIGHT kg	Q.TY X PALLET
														L/A	L/B	H		
ESWIM 300	574	304	290	269	276	220	150	354	252	344	11	2" F	2" F	720	350	430	21,3	6

DAB
WATER•TECHNOLOGY

EPRO
SWIMMING POOL PUMPS

TECHNICAL DATA

Operating range: up to 30 m³/h with head of up to 15,4 metres.
Pumped liquid: clean water, or slightly contaminated water with suspended solid debris, or long fibres; highly aggressive water with high percentage of chlorine/bromine and PHMB (Polyhexamethylene biguanide), or chlorine electrolysis treated water
PH Range: 6,5-8,4
Pumped liquid temperature range: up to 40 °C
Maximum ambient temperature: 50 °C
Maximum operating pressure: 2.5 bar
Installation: fixed, horizontal position
Connectors on request: 2"/50 - 63
(two connectors+O-ring - see "Accessories") kit
Standard of reference: IEC - 60364
Protection class of the motor : IP X5
Protection class at the terminal board: IP X5
Insulation class: F
Standard voltage: single-phase 230 V - 50/60 Hz

SUITABLE FOR
SALT WATER

Epro is the most silent and energy-efficient electronic swimming pool pump with built-in high capacity strainer basket.
Epro combine advanced engineering hydraulics parts, frequency converter technology, and high efficiency permanent magnet motor (with its innovative water cooled motor) to run whatever the speed of the motor is (high or low) in a super silent way.
Extremely quiet and highly reliable, developed for water circulation and filtration in domestic and residential swimming pools.

CONSTRUCTION FEATURES

The **impeller and volute** are designed to achieve high efficency, improoving hydraulics performances.
Transparent antioxidant polycarbonate basket cover ensuring constant visibility over the long period. Fibreglass reinforced technopolymer hydraulics designed to ensure total cover and insulation of the motor shaft from the pumped liquid. Carbon / alumina / NBR / AISI 316 mechanical seal. Butterfly filling and drain plugs that can be removed and refitted without tools.

Epro is provided with syncronous brushless electric **motor** with incapsulated magnetic rotor, driven by frequency converter. Motor water cooled (no motor fan), extremely quiet running. Die cast aluminium motor casing with special coating to avoid oxidation. Support base supplied with rubber feet to reduce vibrations.

Epro pump is controlled by an **electronic device** based on Trench IGBT technology of the latest generation for higher efficiency and robustness. Two dedicated 32-bit processors (one for motor control and one for the user interface), intuitive user interfaces, and external input (a digital input and a analogic input 0-10V or 4-20mA) ensure ease of setting for all users.
Its onboard computer and intelligent software can operate at adjustable **CONSTANT SPEED** or **CONSTANT FLOW** (totally sensorless) to optimize performance and minimize energy use.

MATERIALS

N.	PARTS*	MATERIALS
1	PUMP BODY	REINFORCED TECHNOPOLYMER
4	IMPELLER	REINFORCED TECHNOPOLYMER
6	VOLUTE	REINFORCED TECHNOPOLYMER
8	STRAINER COVER	POLYCARBONATE
10	STRAINER	TECHNOPOLYMER
16	MECHANICAL SEAL	CARBON/ALUMINA/NBR/AISI316
28	O-RING	NBR
29	O-RING	NBR
36	SEAL HOLDING DISC	EPDM

* In contact with the liquid

DAB PUMPS reserves the right to make modifications without notice.

6

DAB®
WATER•TECHNOLOGY
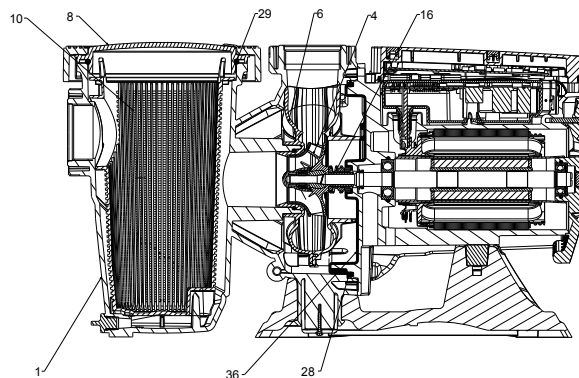
EPRO 150 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +50 °C

The performance curves are based on kinematic viscosity values =
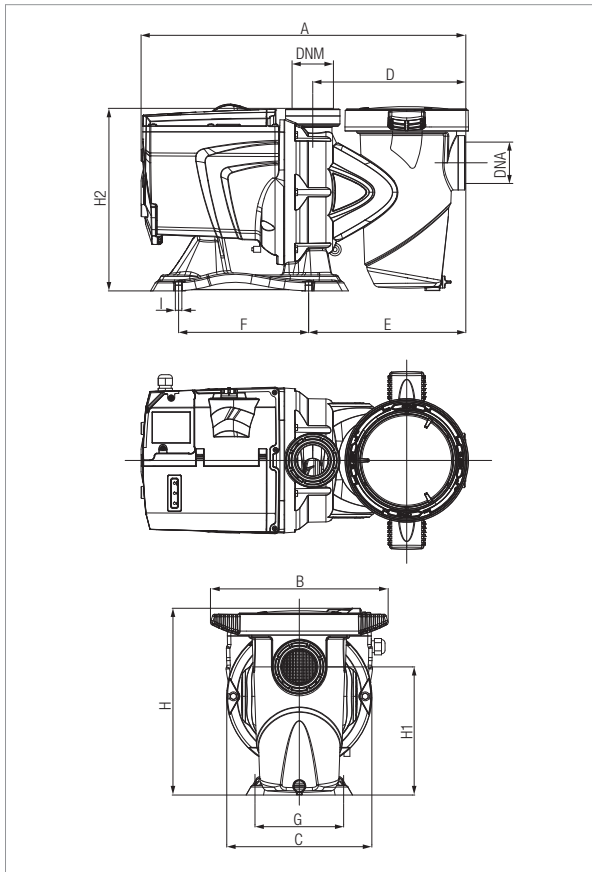1 mm²/s e and density equal to 1000 kg/m³. Curve tolerance according ISO 9906.

MODEL	Q= m³/h	0	6	9	12	15	18	21	24	27	30
	Q=l/min	0	100	150	200	250	300	350	400	450	500
EPRO 150	H (m)	15,9	15,7	15,2	14,4	13,4	12,2	10,9	9,4	7,9	6,3

MODEL	POWER INPUT 50/60 Hz	P1 MAX kW	P2 NOMINAL		In A	NOISE LEVEL-MEDIUM WORKING POSITION dB (A)
			kW	HP		
EPRO 150	230 V	1,25	1,1	1,5	5,6	50 dB(A)

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
														L/A	L/B	H		
EPRO 150	550	241	245	259	266	220	150	346	217	309	11	2" F	2" F	720	350	430	19	8

EPRO 300 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +50 °C

FACTORY PRESET SPEEDS
SPEED 4: 100% - 4770 rpm
SPEED 3: 85% - 4050 rpm
SPEED 2: 70% - 3330 rpm
SPEED 1: 50% - 2385 rpm

The performance curves are based on kinematic viscosity values =
1 mm²/s e and density equal to 1000 kg/m³. Curve tolerance according ISO 9906.
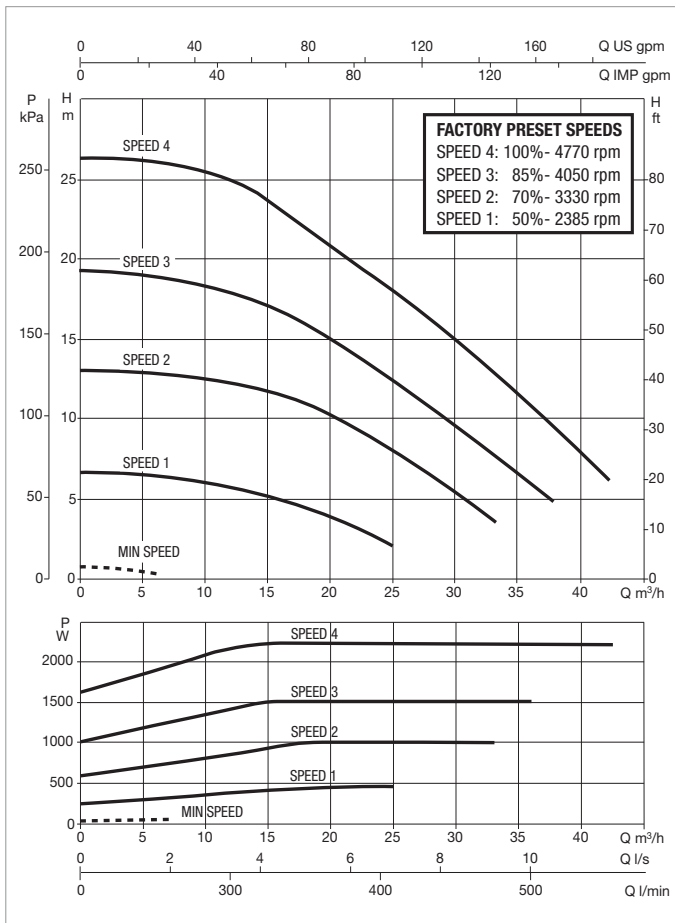
MODEL	Q= m³/h	0	5	10	15	20	25	30	35	40	42,6
	Q=l/min	0	83	166	250	333	416	500	583	666	710
EPRO 300	H (m)	26	25,4	24,8	23,2	20,6	17,4	14,4	11,5	7,8	6

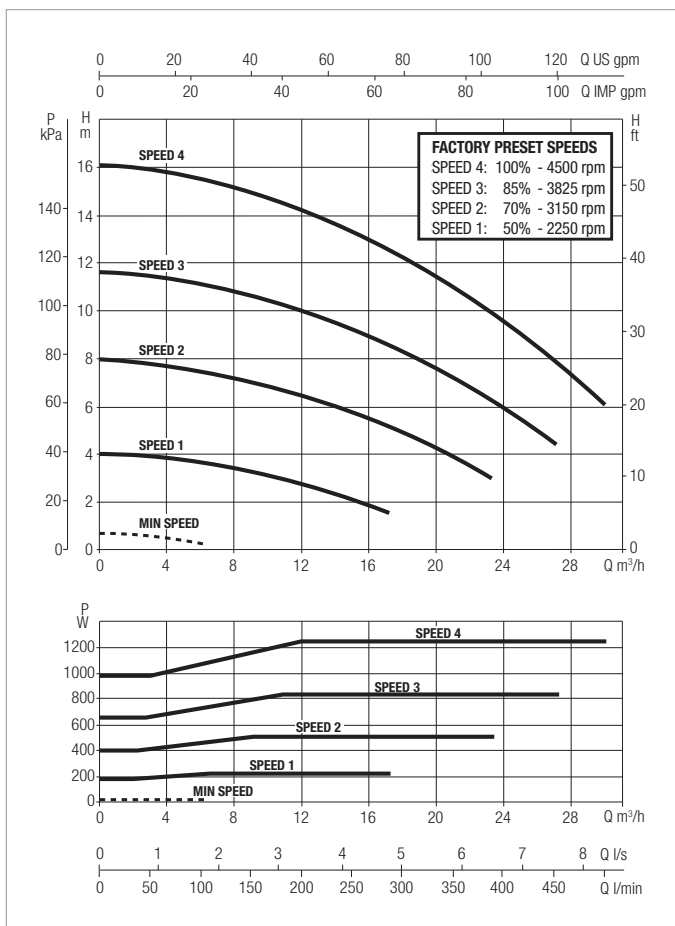| MODEL	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	NOISE LEVEL - MEDIUM WORKING POSITION db (A)
			kW	HP		
EPRO 300	230 V	2,25	1,9	2,6	10	44 dB(A)

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	DNA	DNM	PACKING DIMENSIONS			GROSS WEIGHT kg	Q.TY X PALLET
														L/A	L/B	H		
EPRO 300	574	251	290	269	276	220	150	390	252	344	11	2" F	2" F	720	350	430	21,3	6

DAB PUMPS reserves the right to make modifications without notice.

DAB WATER•TECHNOLOGY

8

EUROSWIM
SWIMMING POOL PUMPS

TECHNICAL DATA

Operating range: up to 42 m³/h with head of up to 22 metres
Pumped liquid: clean water, or slightly contaminated water with suspended solid debris, or long fibres; highly aggressive water with high percentage of chlorine/bromine and PHMB (Polyhexamethylene biguanide), or chlorine electrolysis treated water
PH Range: 6,5-8,4
Pumped liquid temperature range: up to 60 °C
Maximum ambient temperature: 50 °C
Maximum operating pressure: 2.5 bar
Nominal working pressure: 0,8 - 1,2 Bar (ideally 1 Bar)
Installation: fixed or portable, horizontal position
Special executions on requests: alternative frequencies and voltages
Connectors on request: 2"/50 - 63 (two connectors+O-ring - see "Accessories") kit
Standard of reference: IEC - 60364
Protection class of the motor : IP55
Protection class at the terminal board: IP 55
Insulation class: F
Standard voltage: single-phase   220/240 V - 50 Hz
                     three-phase   230/400 V - 50 Hz

SUITABLE FOR SALT WATER

APPLICATIONS

High performance self-priming centrifugal electric pumps with built-in high capacity prefilter. Motor completely watertight. Extremely quiet and highly reliable, developed for water circulation and filtration in domestic and residential swimming pools. Also suitable for specific applications requiring handling of aggressive liquids in the fishing, agricultural, and industrial sectors.

CONSTRUCTION FEATURES OF THE PUMP

Fibreglass reinforced technopolymer pump body. Transparent antioxidant polycarbonate prefilter cover ensuring constant visibility over the long period. Nylon strainer. Fibreglass reinforced technopolymer impeller designed to ensure total cover and insulation of the motor shaft from the pumped liquid. Reinforced technopolymer diffuser. Carbon / alumina / NBR / AISI 316 mechanical seal. NBR pump body O-ring, AISI 316 stainless steel reinforcement ring nuts and screws. Butterfly filling and drain plugs that can be removed and refitted without tools.

CONSTRUCTION FEATURES OF THE MOTOR

Continuous service 2-pole asynchronous motor (S1) with a wide power range, from 0,5 HP to 3 HP, both single and three phase (see technical specifications). Die cast aluminium motor casing with cataphoresis paint coating to avoid oxidation also in aggressive environments. Support base supplied with rubber feet to reduce vibrations. Single phase version with built-in thermal and current protection, and permanent split capacitor (PSC) inside the terminal box for all versions.

MATERIALS

N.	PARTS*	MATERIALS
1	PUMP BODY	REINFORCED TECHNOPOLYMER
4	IMPELLER	REINFORCED TECHNOPOLYMER
6	DIFFUSER	REINFORCED TECHNOPOLYMER
8	STRAINER COVER	POLYCARBONATE
10	STRAINER	TECHNOPOLYMER
16	MECHANICAL SEAL	CARBON/ALUMINA/NBR/AISI316
28	O-RING	NBR
29	O-RING	NBR
36	SEAL HOLDING DISC	REINFORCED, STABILISED TECHNOPOLYMER

* In contact with the liquid

DAB PUMPS reserves the right to make modifications without notice.

9
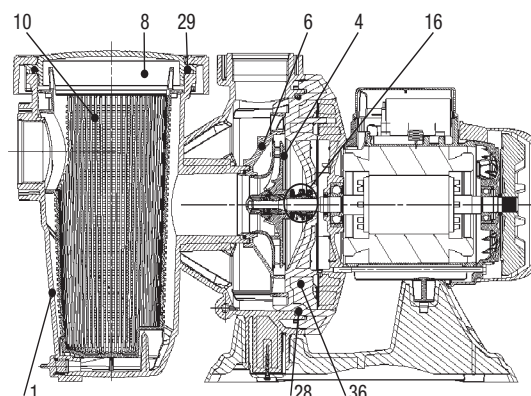
EUROSWIM 50 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - **Maximum ambient temperature:** +50 °C
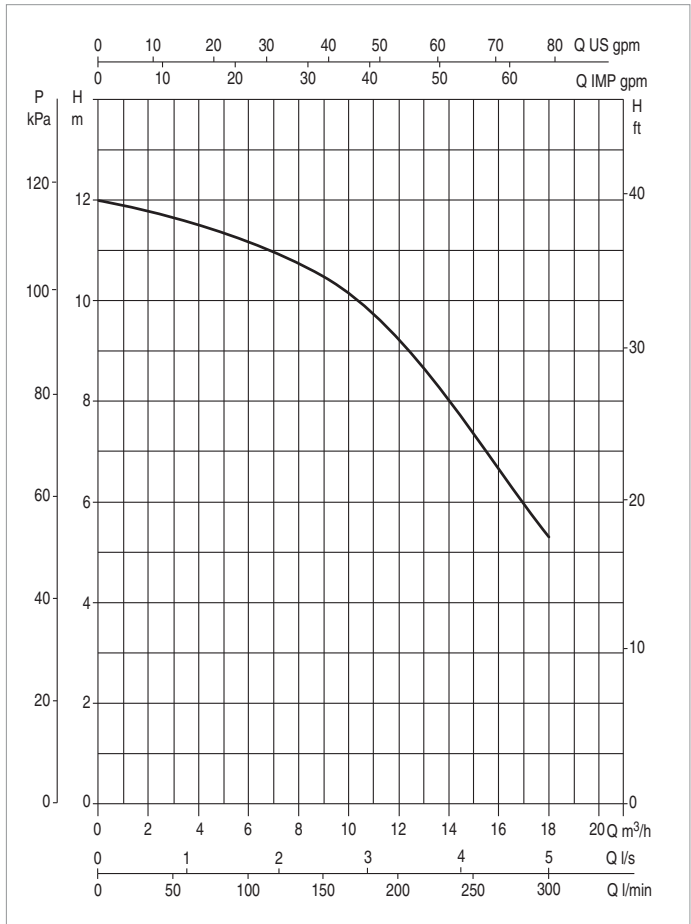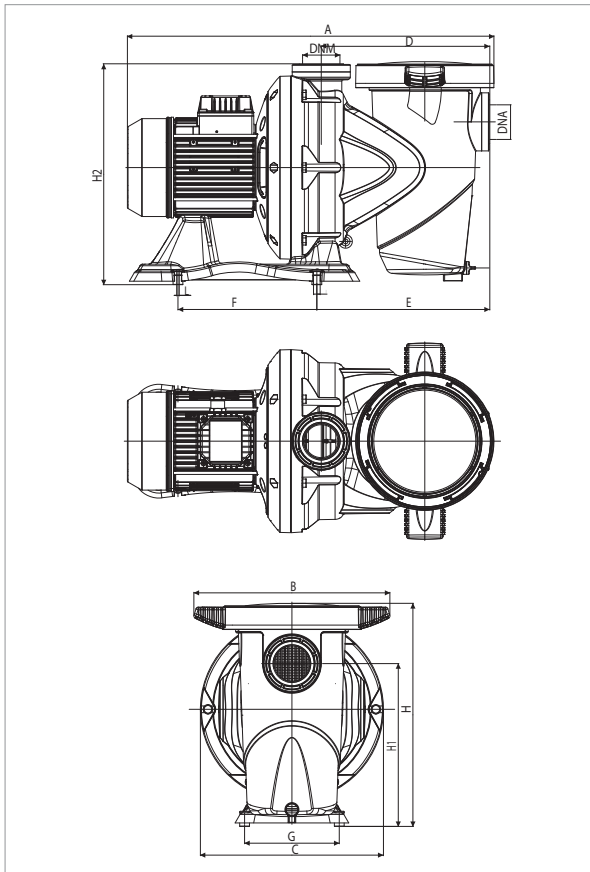
The performance curves are based on kinematic viscosity values =
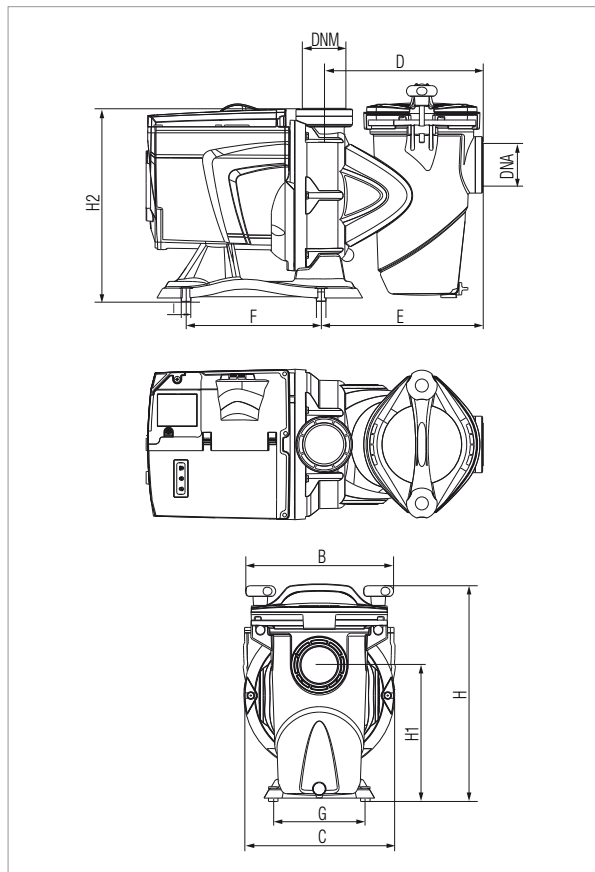1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

MODEL	Q= m³/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 50 M	H (m)	12,0	11,7	11,2	10,5	9,3	5,3					

MODEL	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
			kW	HP		µF	Vc	
EUROSWIM 50 M	1 x 220 - 240 V ~	0,9	0,33	0,5	4,2	16	450	53

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 50 M	536	302	242	257	265	220	150	312	222	314	11	6,5	2" F	2" F	600	360	400	16	8

DAB PUMPS reserves the right to make modifications without notice.

10

DAB
WATER•TECHNOLOGY

EUROSWIM 75 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - **Maximum ambient temperature:** +50 °C

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
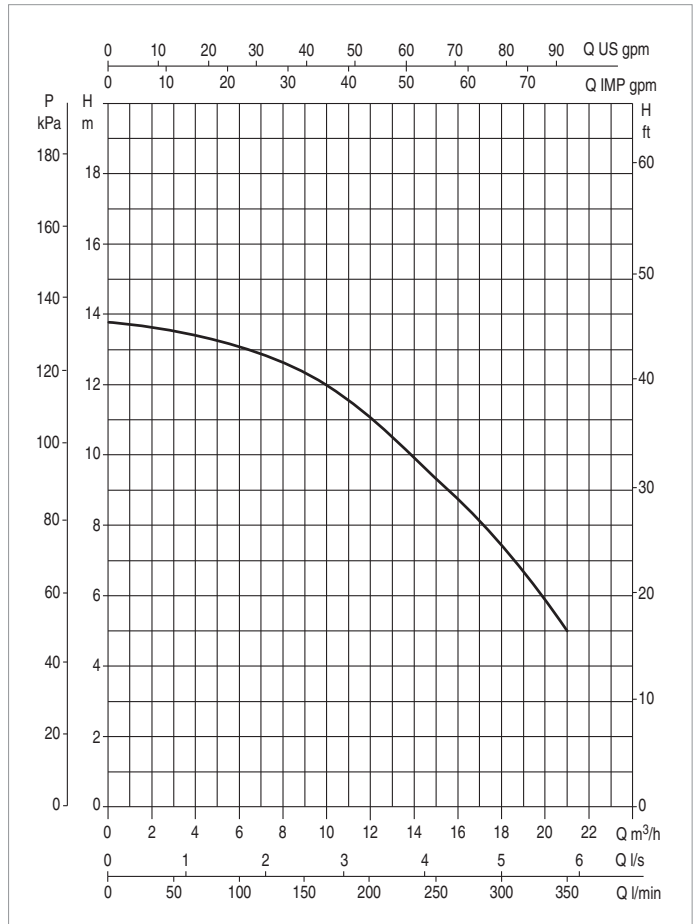
MODEL	Q= m³/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 75 M-T	H (m)	13,8	13,5	13,1	12,4	11,1	7,5	5				

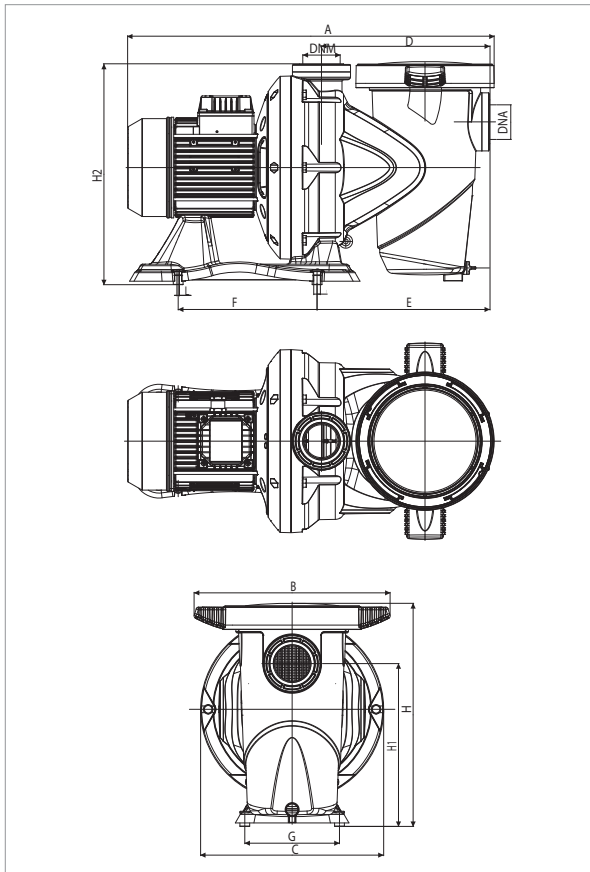| MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
				kW	HP		µF	Vc	
EUROSWIM 75 M	1 x 220 - 240 V ~		1	0,5	0,75	5	20	450	56
EUROSWIM 75 T	3 x 230-400 V ~	IE3	0,87	0,5	0,75	3,1/1,8	–	–	56
EUROSWIM 75 T	3 x 230-400 V ~	IE2	0,95	0,5	0,75	3,5/2	-	-	56

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 75 M	552	302	245	257	265	220	150	312	222	314	11	6,5	2" F	2" F	600	360	400	16,5	8
EUROSWIM 75 T	552	302	245	257	265	220	150	312	222	314	11	6,5	2" F	2" F	600	360	400	16,5	8

EUROSWIM 100 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - **Maximum ambient temperature:** +50 °C

The performance curves are based on kinematic viscosity values =
1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

MODEL	Q= m^3/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 100 M-T	H (m)	15,4	15,4	15	14,2	13,1	10,0	7,8	5,6			

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
				kW	HP		µF	Vc	
EUROSWIM 100 M	1 x 220-240 V ~		1,3	0,75	1	6,3	25	450	57
EUROSWIM 100 T	3 x 230-400 V ~	IE3	1,1	0,75	1	3,8/2,2	–	–	57
EUROSWIM 100 T	3 x 230-400 V ~	IE2	1,2	0,75	1	4/2,4	-	-	57

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 100 M	552	302	245	257	265	220	150	312	222	314	11	6,5	2" F	2" F	600	360	400	17	8
EUROSWIM 100 T	552	302	245	257	265	220	150	312	222	314	11	6,5	2" F	2" F	600	360	400	17	8

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12

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EUROSWIM 150 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - **Maximum ambient temperature:** +50 °C

The performance curves are based on kinematic viscosity values =
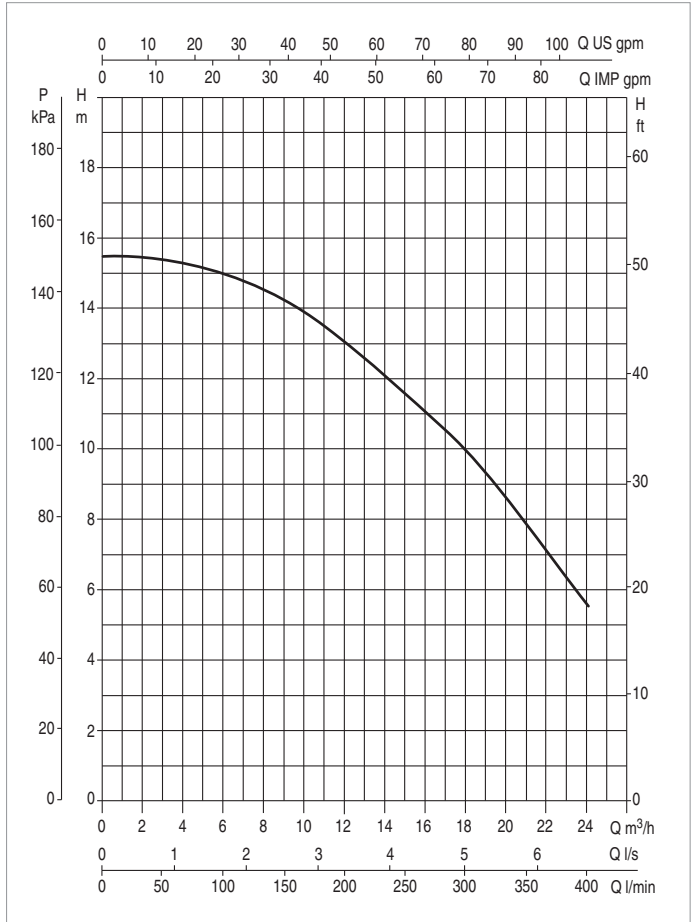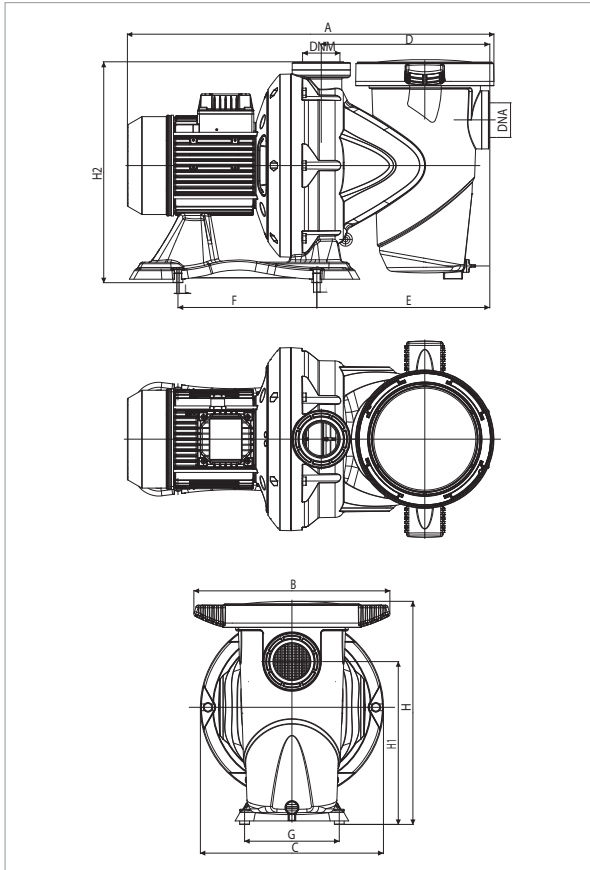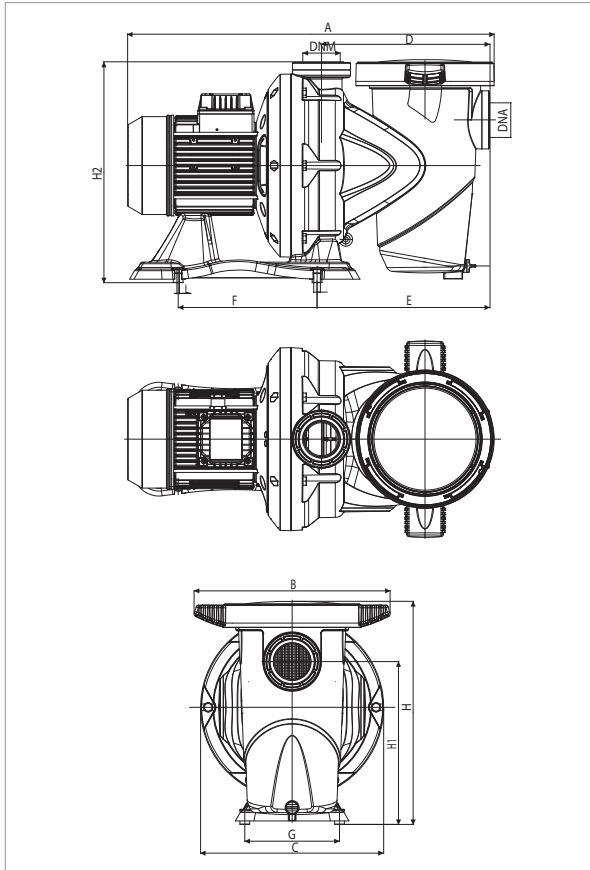1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
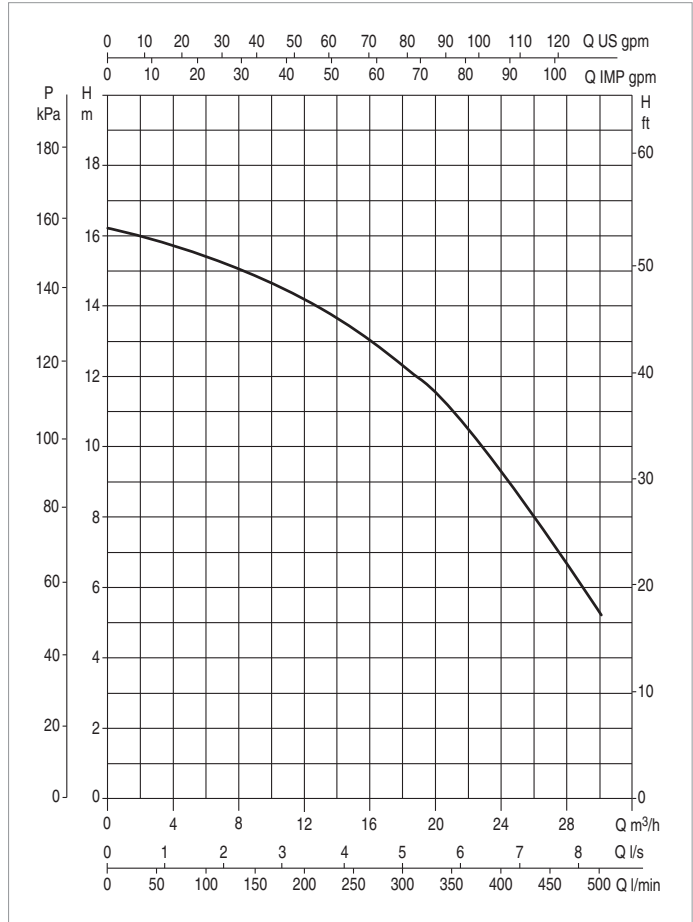
MODEL	Q= m³/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 150 M-T	H (m)	16,2	15,9	15,4	14,9	14,2	12,4	11,1	9,3	5,3		

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
				kW	HP		µF	Vc	
EUROSWIM 150 M	1 x 220-240 V ~		1,6	1,5	0,75	7	31,5	450	59
EUROSWIM 150 T	3 x 230-400 V ~	IE3	1,5	1,5	0,75	5,4/3,1	–	–	59
EUROSWIM 150 T	3 x 230-400 V ~	IE2	1,5	1,1	1,5	6,5/3,7	-	-	59

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 150 M	574	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	22	6
EUROSWIM 150 T	574	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	22	6

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13

EUROSWIM 200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - **Maximum ambient temperature:** +50 °C

The performance curves are based on kinematic viscosity values =
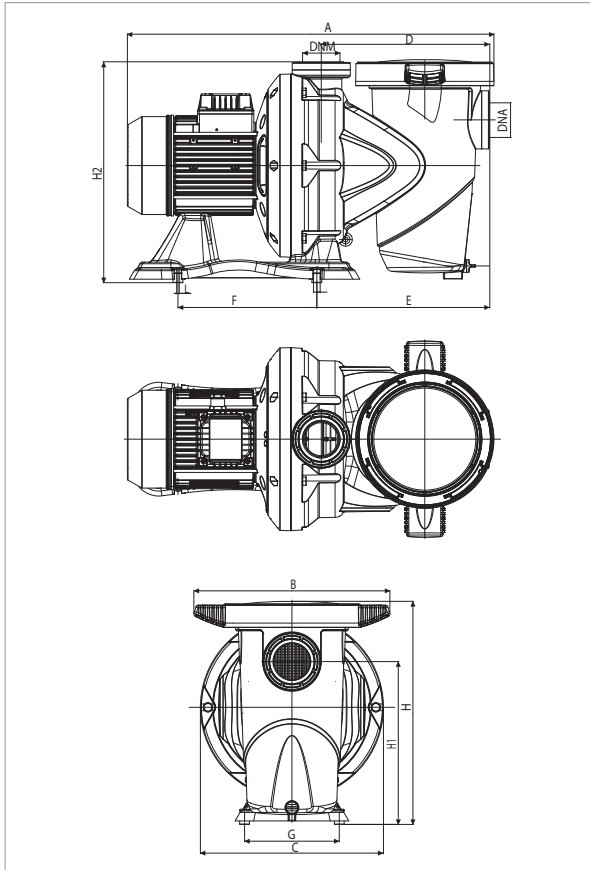1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
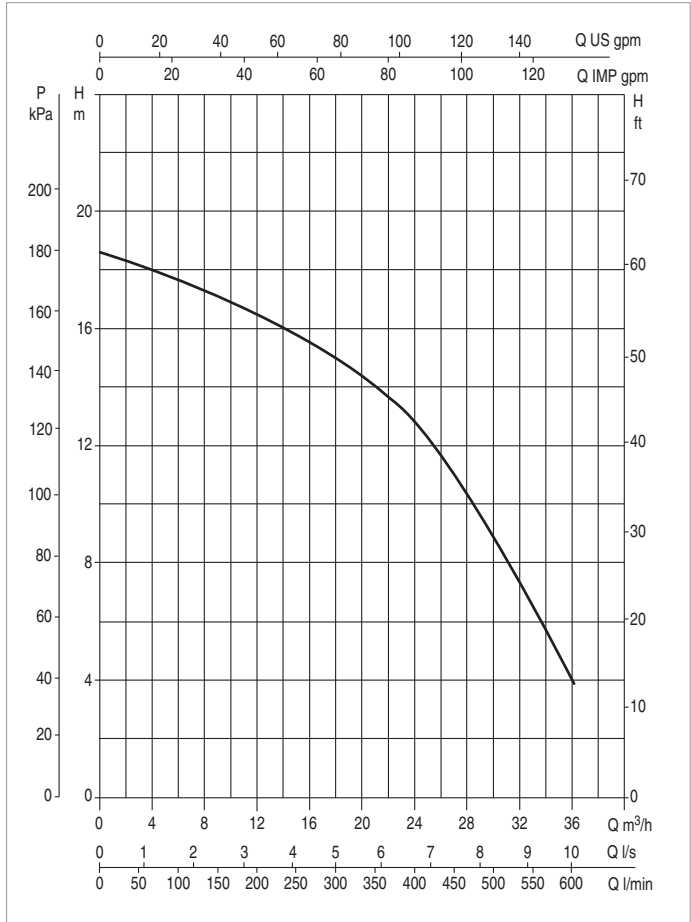
MODEL	Q= m³/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 200 M-T	H (m)	18,6	18,2	17,7	17,1	16,5	15	14,1	12,8	9	4	

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
				kW	HP		µF	Vc	
EUROSWIM 200 M	1 x 220-240 V ~		1,9	1,5	2	8,6	40	450	62
EUROSWIM 200 T	3 x 230-400 V ~	IE3	1,8	1,5	2	5,9/3,4	–	–	62
EUROSWIM 200 T	3 x 230-400 V ~	IE2	1,9	1,5	2	7,2/4	–		62

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 200 M	648	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	24	6
EUROSWIM 200 T	574	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	22	6

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14

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EUROSWIM 300 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 60 °C - Maximum ambient temperature: +50 °C

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
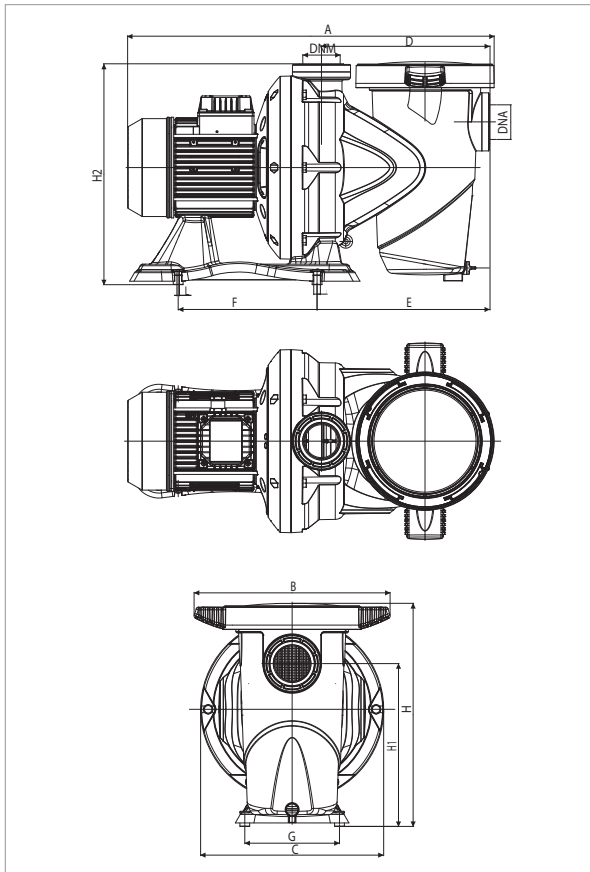
MODEL	Q= m³/h	0	3	6	9	12	18	21	24	30	36	42
	Q=l/min	0	50	100	150	200	300	350	400	500	600	700
EUROSWIM 300 M-T	H (m)	22,0	21,9	21,7	21,3	20,8	19,6	18,9	18,1	15,9	12,5	8,6

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR		MAX NOISE LEVEL db (A)
				kW	HP		µF	Vc	
EUROSWIM 300 M	1 x 220-240 V ~		2,7	2,2	3	12	40	450	64
EUROSWIM 300 T	3 x 230-400 V ~	IE3	2,5	2,2	3	7,8/4,5	–	–	64
EUROSWIM 300 T	3 x 230-400 V ~	IE2	2,8	2,2	3	8,7/5	–		64

MODEL	A	B	C	D	E	F	G	H	H1	H2	I	L	DNA	DNM	PACKING DIMENSIONS			WEIGHT kg	Q.TY X PALLET
															L/A	L/B	H		
EUROSWIM 300 M	648	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	24,5	6
EUROSWIM 300 T	648	312	290	267	274	220	150	347	258	350	11	6,5	2" F	2" F	720	350	430	24,5	6

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15

EUROPRO HIGH FLOW
SWIMMING POOL PUMPS

TECHNICAL DATA

Operating range: up to 190 m³/h with head of up to 22 metres
Pumped liquid temperature range: up to 40 °C
Pumped liquid: clean water, slightly dirty water, slightly aggressive water (Polyhexamethylene biguanide), or chlorine electrolysis treated water
Maximum ambient temperature: 40 °C
Installation: horizontal position
Special executions on requests: alternative frequencies and voltages
Protection class of the terminal board: IP55
Insulation class: F
Standard voltage: 3 x 230-400V 50 Hz up to 4 kW
                 3 x 400-690 V 50 Hz over 4 kW

IE2 motors as standard, from 0,75 kW to 5,5 kW - IE3 ≥ 7,5 kW

SUITABLE FOR
SALT WATER

APPLICATIONS

High performance self-priming centrifugal electric pumps with built-in high capacity prefilter. 2 or 4 pole motor completely isolated from the water. Extremely quiet and highly reliable, developed for water circulation and filtration in large swimming pool filtration systems. Thanks to the AISI 316 mechanical seal, they are also suitable for specific applications for the circulation of **salt water**.

CONSTRUCTION FEATURES OF THE PUMP:

Prefilter body, pump body, volute, counter volute, and pump body cover in fibre glass reinforced technopolymer resistant to swimming pool chemical agents. Polyethylene prefilter canister. Transparent polycarbonate prefilter cover with four-knob closing system.

CONSTRUCTION FEATURES

External ventilation closed asynchronous motor, 2 or 4 poles, depending on the model, with a wide power range from 3 to 15 HP.

MATERIALS

| N.	PARTS	MATERIALS
5	PREFILTER BODY	FIBREGLASS REINFORCED POLYPROPYLENE
27	PUMP BODY	FIBREGLASS REINFORCED POLYPROPYLENE
18	VOLUTE	FIBREGLASS REINFORCED POLYPROPYLENE
13	BASE	FIBREGLASS REINFORCED POLYPROPYLENE
24	PUMP BODY COVER	FIBREGLASS REINFORCED POLYPROPYLENE
4	PREFILTER CANISTER	POLYETHYLENE
2	PREFILTER COVER	POLYCARBONATE
21	IMPELLER	NORYL/BRONZE*
22	MECHANICAL SEAL	CERAMIC, CARBON, AND AISI 316
-	SCREWS	AISI 314
35	SHAFT	AISI 316
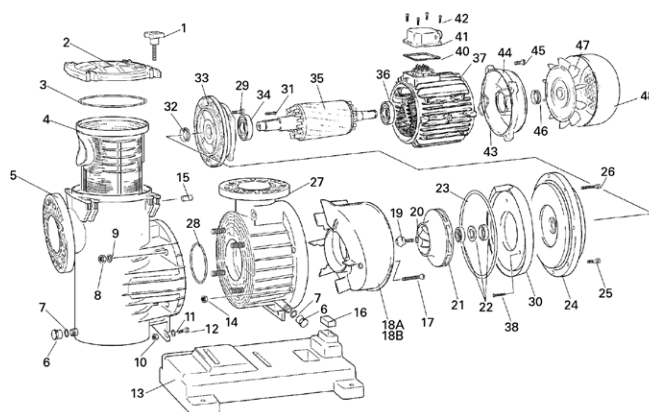
* Bronze impeller available on request for Europro 550 T, 750 T and 1000 T models.
* Bronze impeller supplied as standard for Europro 1250 T and 1500 T models.

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16

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EUROPRO HIGH FLOW 350 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - **Maximum ambient temperature:** +40 °C
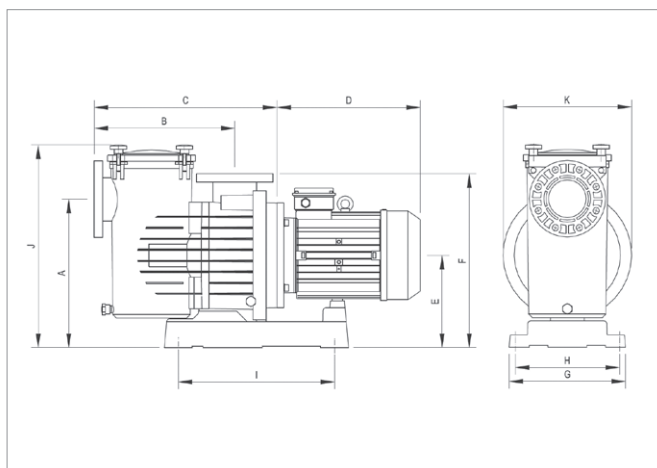
The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
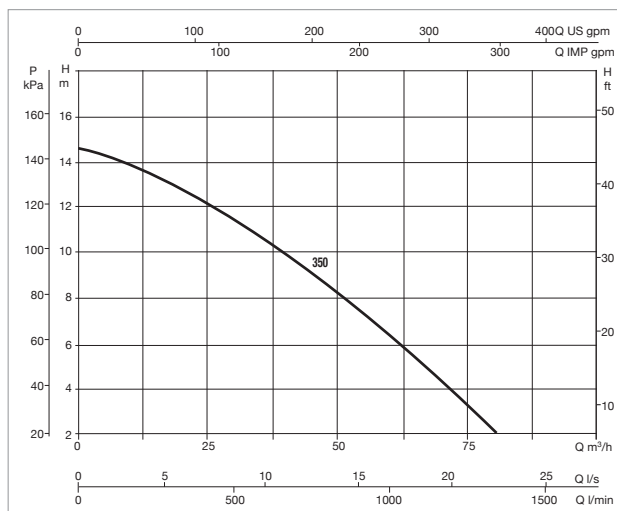
MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 350 T	H (m)	14,7	13	10	6,3	2,1									

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 350 T	3 x 230-400 V	IE3	2,97	2,2	3	9,4	5,3	-	1450

MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 350 T	428	405	574	310	267	500	335	300	450	600	370	110	110	125	840	385	595	42,5

EUROPRO HIGH FLOW 400 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - **Maximum ambient temperature:** +40 °C

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
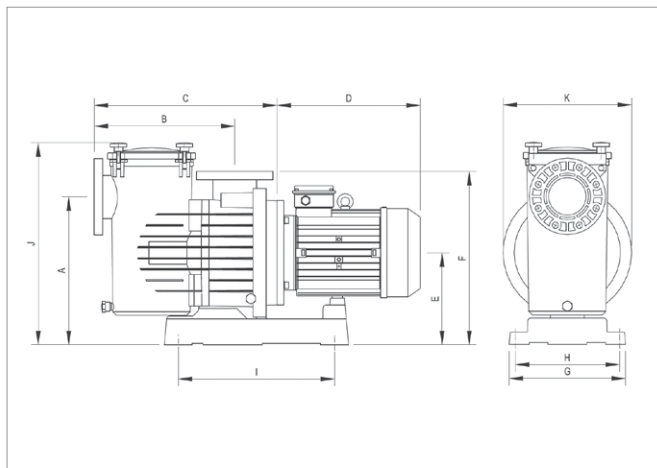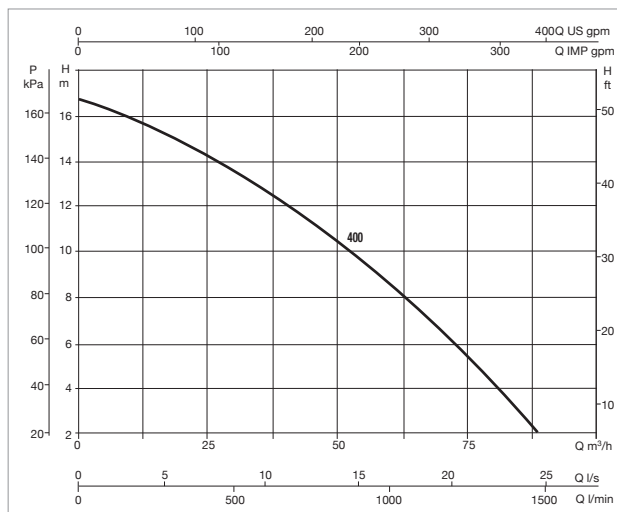
MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 400 T	H (m)	16,5	14,9	12,3	8,5	4	1,6								

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 400 T	3 x 230-400 V	IE3	3,83	3	4	12,5	6,9	-	1450

MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMESNIONS			WEIGHT Kg
															L	B	H	
EUROPRO 400 T	428	405	574	310	267	500	335	300	450	600	370	110	110	140	840	385	595	44,5

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17

EUROPRO HIGH FLOW 550 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +40 °C

The performance curves are based on kinematic viscosity values =
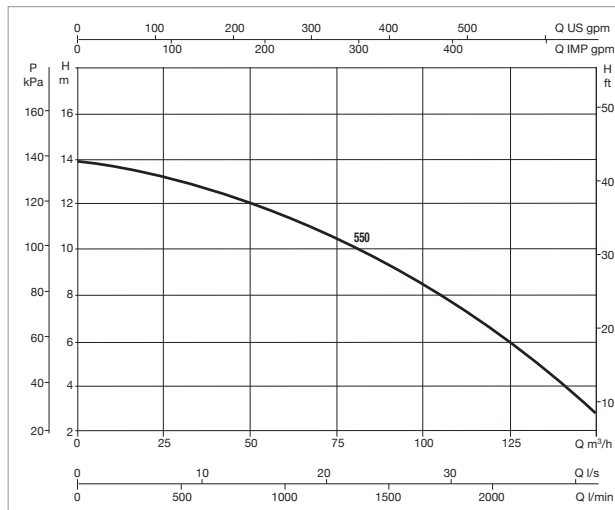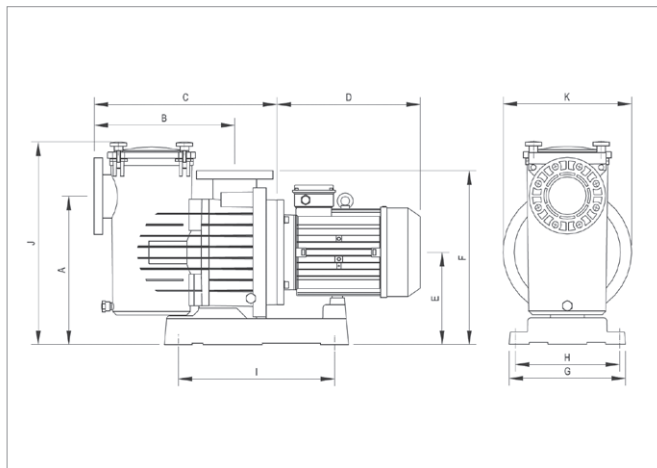1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 550 T - BR*	H (m)	14	13,5	12,8	11,8	10,4	9,5	8,5	6,3	4,1					

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 550 T - BR*	3 x 230-400 V	IE3	5,54	4	5,5	15,3	8,8	-	1450

MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 550 T - BR*	428	405	574	335	267	500	335	300	450	600	370	110	110	160	1170	385	715	53,5

* Available with bronze impeller.

EUROPRO HIGH FLOW 750 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +40 °C
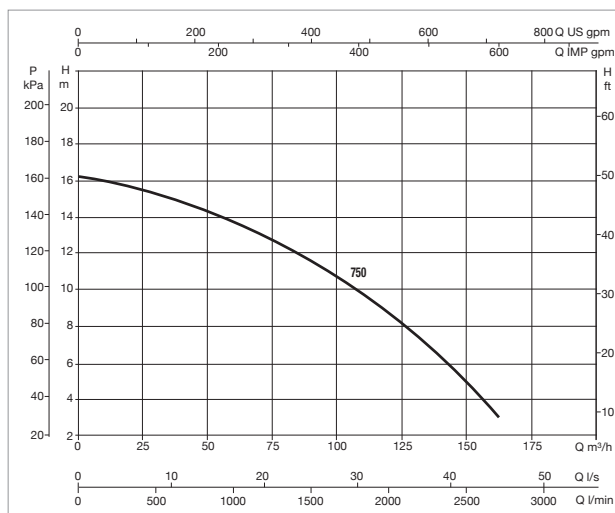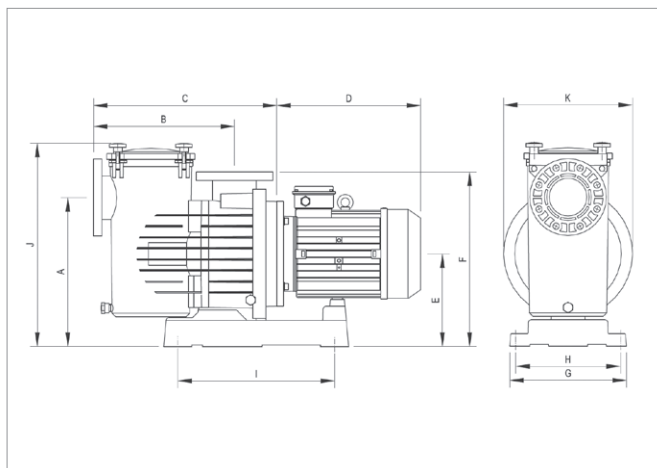
The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 750 T - BR*	H (m)	16,2	15,6	14,9	13,8	12,4	11,5	10,6	8,65	6,47	3,5				

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 750 T - BR*	3 x 400-690 V	IE3	6,85	5,5	7,5	-	12	7	1450

MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 750 T - BR*	428	405	574	380	267	500	335	300	450	600	370	110	110	180	1170	385	715	66

* Available with bronze impeller.

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18

EUROPRO HIGH FLOW 1000 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +40 °C
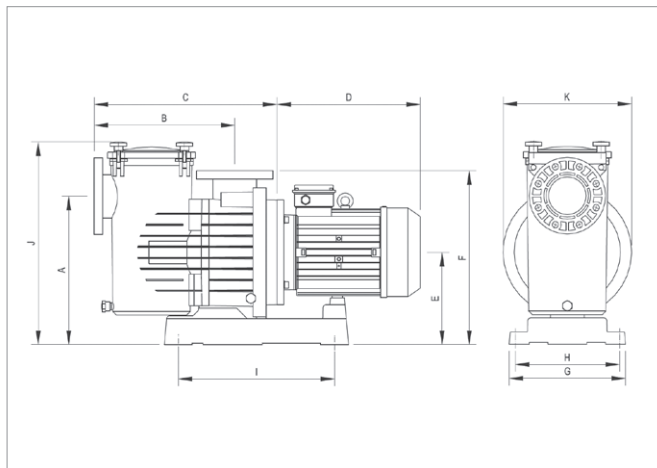
The performance curves are based on kinematic viscosity values =
1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 1000 T - BR*	H (m)	17,6	17	16,3	15,4	14,2	13,5	12,7	10,8	8,6	6,1	4,7			

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 1000 T - BR*	3 x 400-690 V	IE3	8,26	7,5	10	-	16,2	9,6	1450

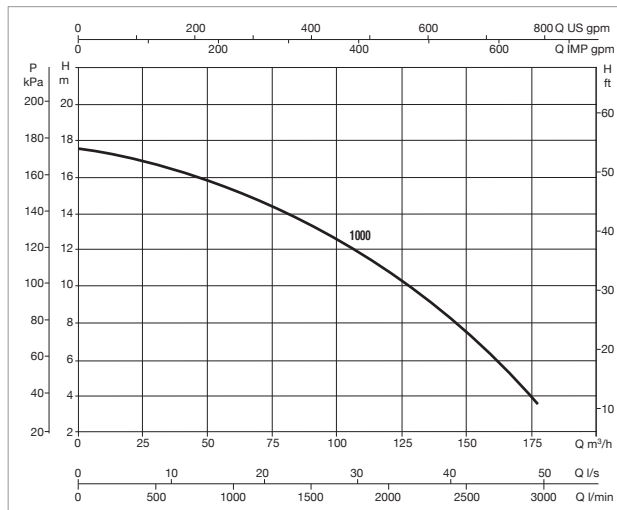| MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 1000 T - BR*	428	405	574	380	267	500	335	300	450	600	370	110	110	180	1170	385	715	76

* Available with bronze impeller.

EUROPRO HIGH FLOW 1250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +40 °C
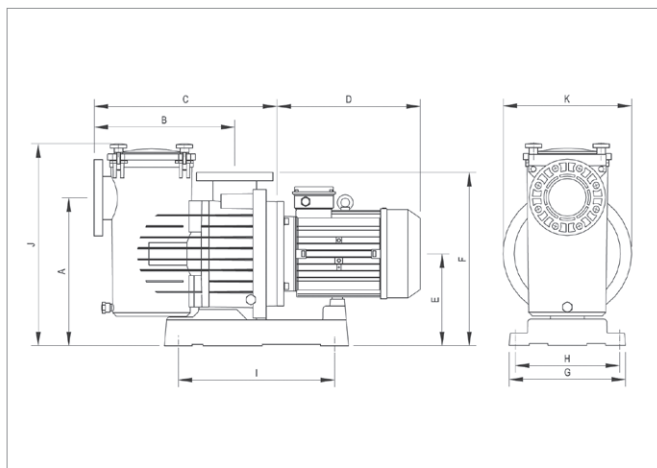
The performance curves are based on kinematic viscosity values =
1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

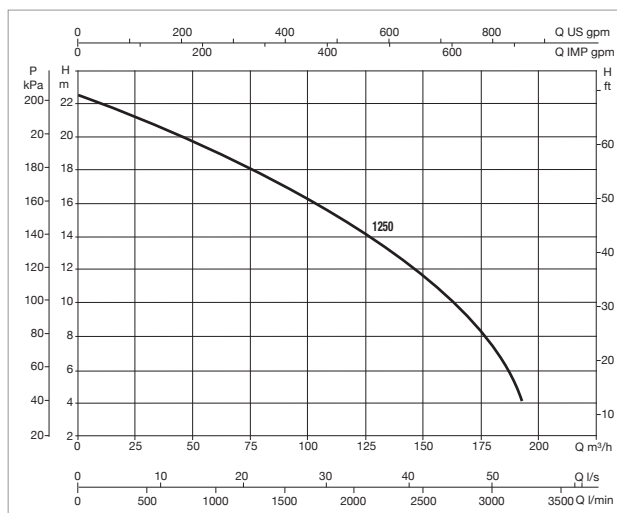| MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 1250 T	H (m)	22,4	21,5	20,5	19,4	18,1	17,4	16,5	14,7	12,6	10,3	9	7,6	5,5	

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 1250 T	3 x 400-690 V	IE3	13,74	9,2	12,5	-	17,9	10,1	2850

MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 1250 T	428	405	574	380	267	500	335	300	450	600	370	110	110	180	1170	385	715	84,5

Bronze impeller as standard.

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19

EUROPRO HIGH FLOW 1500 - SWIMMING POOL PUMPS

Pumped liquid temperature range: up to 40 °C - Maximum ambient temperature: +40 °C
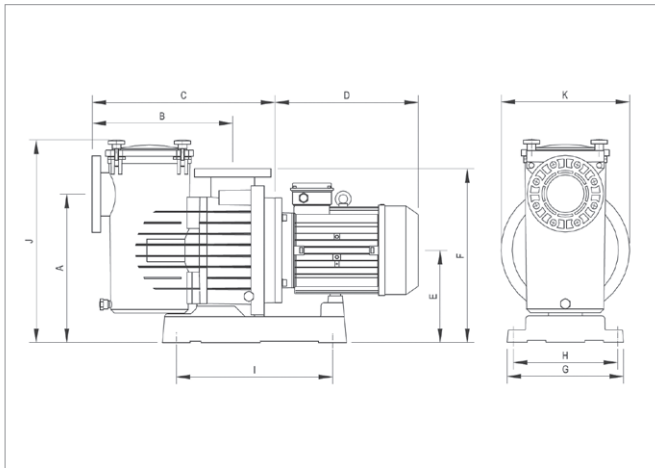
The performance curves are based on kinematic viscosity values =
1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

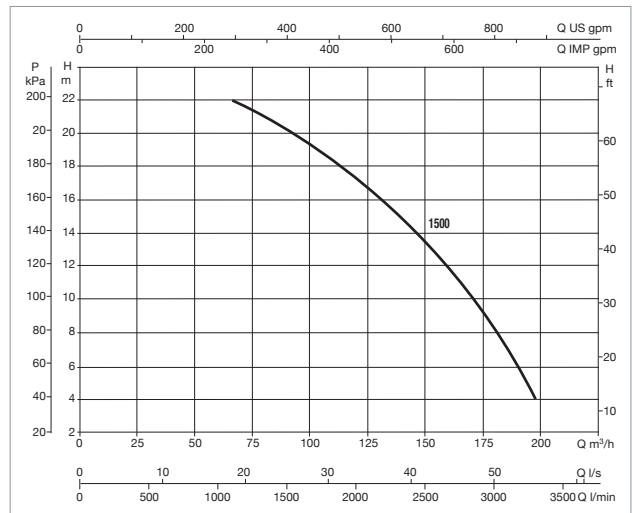| MODEL	Q=m³/h	0	20	40	60	80	90	100	120	140	160	170	180	190	195
	Q=l/min	0	333	667	1000	1333	1500	1667	2000	2333	2667	2833	3000	3167	3250
EUROPRO 1500 T	H (m)	25,5	24,5	23,5	22,4	21,3	20,6	19,7	17,4	14,8	12,1	10,6	9,1	7,4	6

MODEL	POWER INPUT 50 Hz	MOTOR TYPE	P1 MAX kW	P2 NOMINAL		In A			N. Rpm
				kW	HP	230	400	690	
EUROPRO 1500 T	3 x 400-690 V	IE3	15,73	11	15	-	19,9	11	2850

| MODEL	A	B	C	D	E	F	G	H	I	J	K	DNA	DNM	SUCTION TUBE MINIMUM DIAMETER	PACKING DIMENSIONS			WEIGHT Kg
															L	B	H	
EUROPRO 1500 T	428	405	574	380	267	500	335	300	450	600	370	110	110	200	1170	385	715	85,5

Bronze impeller as standard.

CAST-IRON PREFILTERS

New range of DIN 2501 compliant cast-iron prefilters with connections from DN 65 to DN 200. They have 3 or 4 closing knobs, depending on the model, to ensure perfect plug seal. Cast iron prefilter vase and plug, AISI 316 stainless steel canister.

The new range of prefilters gives the possibility of using the standardised monobloc centrifugal pumps of the NKM-G/NKP-G ranges, starting from DN 40 up to DN 150, for the circulation of water in large filtration systems. The same filters may also be combined with MCE inverter or with base coupling (KDN) standardised pumps.
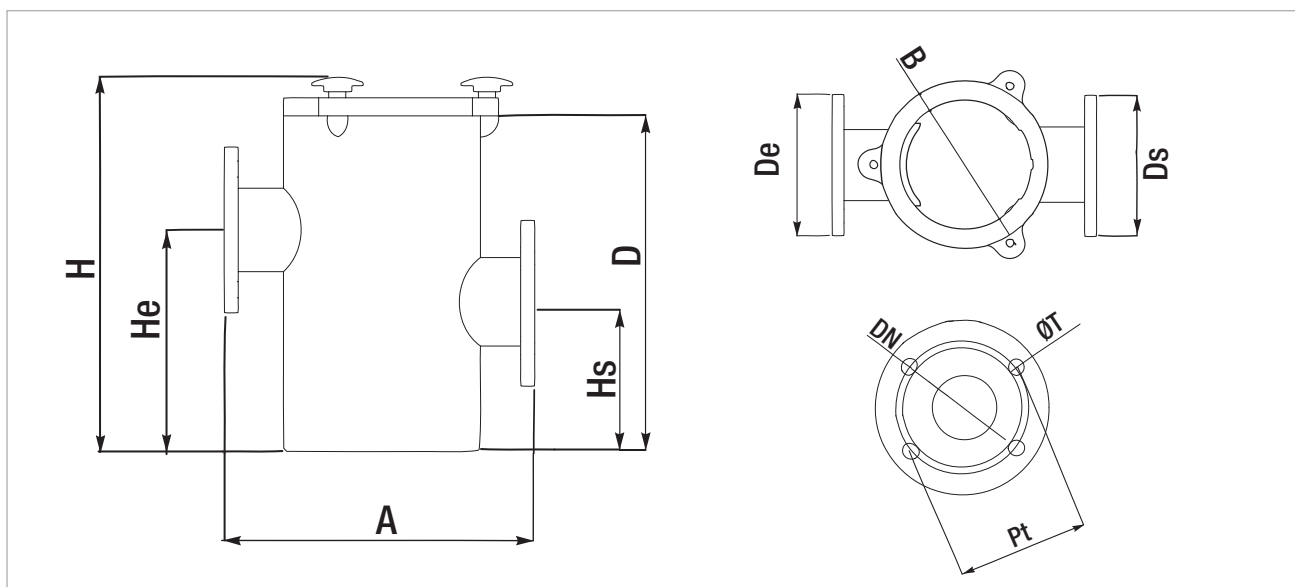
TYPE	DN	Pt	A	B	H	D	De	He	Ds	Hs	øT	No. T	kg	Volume, l
PREFILTER 65/65	65	145	380	260	415	360	185	250	185	120	18	4	38,5	18
PREFILTER 80/80	80	160	380	260	415	360	200	250	200	120	18	4-8	39	18
PREFILTER 100/100	100	180	380	260	415	360	200	270	220	155	18	8	40,5	18
PREFILTER 125/125	125	210	380	260	415	360	250	270	250	155	18	8	41	18
PREFILTER 150/150	150	240	460	340	555	500	285	380	285	190	22	8	71	42
PREFILTER 200/200	200	295	460	340	555	500	340	380	340	190	22	8	72	42

NOTE: PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

DAB PUMPS reserves the right to make modifications without notice.

21

NKM-G / NKP-G

SWIMMING POOL PUMPS

TECHNICAL DATA

Rotation speed: 1450-2900 1/min
Operating range:
from 1 to 440 m^3/h with head up to 24 metres
Pumped liquid: clean water, slightly dirty water, or slightly aggressive water, provided that the compatibility of the pump materials is ascertained, as well as that the power of the motor installed is compatible with the specific weight and the viscosity of the pumped liquid
Pumped liquid temperature range: from -10 °C to +140 °C.
Maximum ambient temperature: +40 °C
Installation: in the horizontal position
Top VERSION: Bronze impeller and cataphoresis paint coating

APPLICATIONS

Monobloc centrifugal electric pumps with coupling with a suction prefilter, for the circulation of water in large filtration systems. **Pump and prefilter are sold separately.**

CONSTRUCTION FEATURES OF THE PUMP:

Cast iron single stage spiral body complying with DIN-EN 733 (formerly DIN 24255), cast iron support, flanges complying with DIN 2533. Cast iron impeller, closed and dynamically balanced, with compensation of the axial thrust through balancing holes. AISI 304 stainless steel pump shaft, **carbon/silicon carbide mechanical seal, Viton Or rings.** Closed asynchronous type motor with external ventilation, B3/B5 construction, two poles for NKP and four poles for NKM.

PREFILTER CONSTRUCTION CHARACTERISTICS

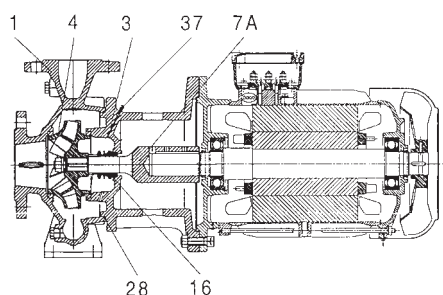Cast iron prefilter vase and plug, AISI 316 stainless steel canister.

MATERIALS

N.	PARTS*	MATERIALS (BASIC version)
1	PUMP BODY	CAST IRON 250 UNI ISO 185
3	SUPPORT	CAST IRON 250 UNI ISO 185
4	IMPELLER	CAST IRON 250 UNI ISO 185
7A	PUMP SHAFT	AISI 304 STAINLESS STEEL UNI 6900/71
16	MECHANICAL SEAL	CARBON/SILICON CARBIDE/VITON
28	OR RING	EDPM
31	SEAL SPACER	AISI 304 STAINLESS STEEL - UNI 6900/71
36	SEAL HOLDING DISC	CAST IRON 250 UNI ISO 185
37	BLEED COCK	AISI 304 STAINLESS STEEL - UNI 6900/71

N.	PARTS*	MATERIALS (TOP version)
1	PUMP BODY	CATAPHORESIS PAINT COATING
4	IMPELLER	BRONZE GCuSn5Zn5Pb5 UNI 7013/8a-72

* In contact with the liquid

VERSION WITH MOTOR OVER 7,5 KW
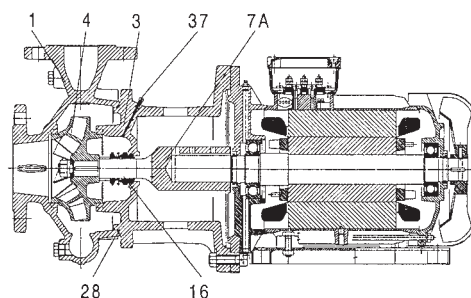
VERSION FOR MODELS:
NKM-G 80-200/200/ 4/4, NKM-G 80-250/270/11/4, NKM-G100-250/250/11/4, NKM-G150-200/218/11/4

VERSION WITH MOTOR UP TO 7,5 KW INCLUDED

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22

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WATER•TECHNOLOGY

NKM-G / NKP-G
SWIMMING POOL PUMPS

Legend:

NKM - G   100 - 200 / 200/ A W / BAQV / 5,5 /4

NKM = 4 poles
NKP = 2 poles

G = with coupling

Nominal diameter of the delivery port:

Nominal diameter of the impeller:

Actual diameter of the impeller:

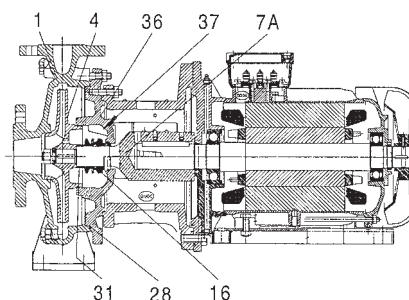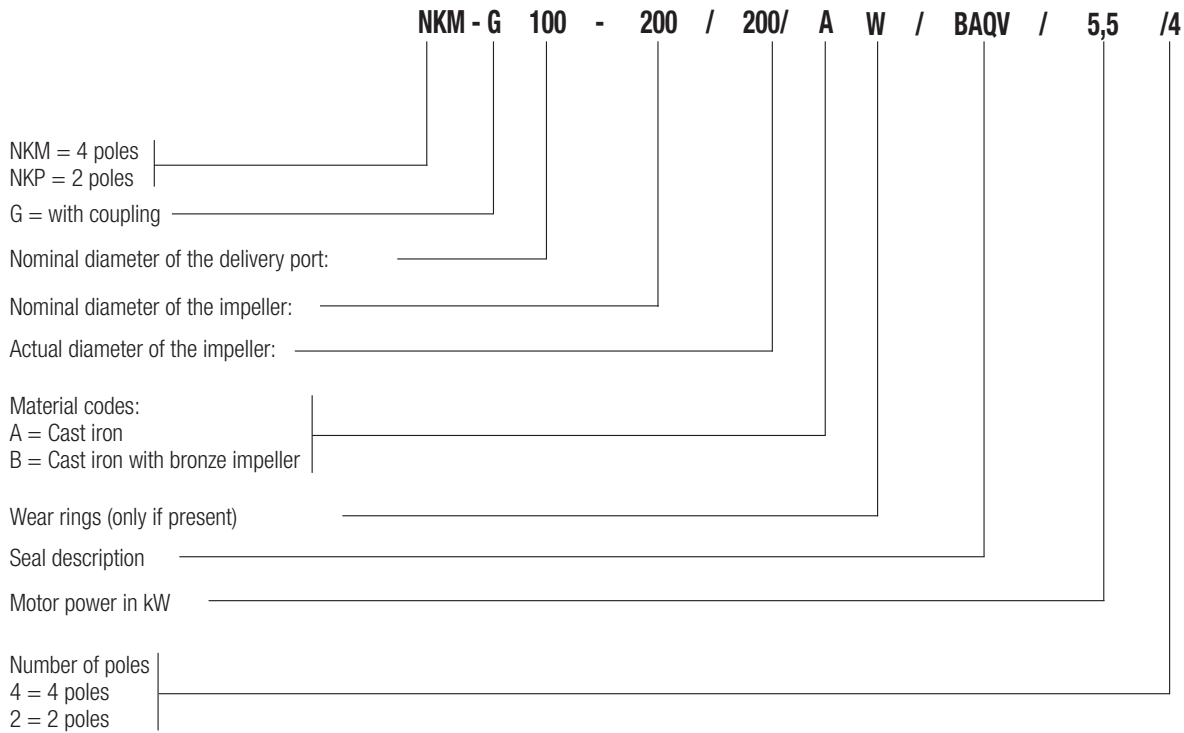Material codes:
A = Cast iron
B = Cast iron with bronze impeller

Wear rings (only if present)

Seal description

Motor power in kW

Number of poles
4 = 4 poles
2 = 2 poles

DESCRIPTION OF THE MECHANICAL SEAL

POSITION	CODE	DESCRIPTION OF THE SEAL
1	A	O-RING SEAL WITH FIXED GUIDE
	B	RUBBER BELLOWS SEAL
	C	O-RING SEAL WITH SPRING GUIDE
	D	O-RING SEAL BALANCED
	M	RUBBER BELLOWS SEAL
	X	METAL BELLOWS SEAL

POSITION	CODE	MATERIALS
2 & 3	A	IMPREGNATED CARBON/METAL
	B	IMPREGNATED CARBON/RESIN
	C	OTHER CARBON TYPES
	S	CHROMIUM STEEL
	U	TUNGSTEN CARBIDE
	Q	SILICON CARBIDE
	V	ALUMINIUM OXIDE (CERAMIC)
	X	OTHER CERAMIC TYPES

POSITION	CODE	MATERIALS
4	P	NITRILE RUBBER (NBR)
	S	SILICON RUBBER
	T	TEFLON (PTFE)
	E	EPDM
	V	VITON
	M	PTFE COATED O-RING

POSITION	CODE	MATERIALS
5	V	REINFORCED

DAB
WATER•TECHNOLOGY

NKM-G 40-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ **1450 1/min**
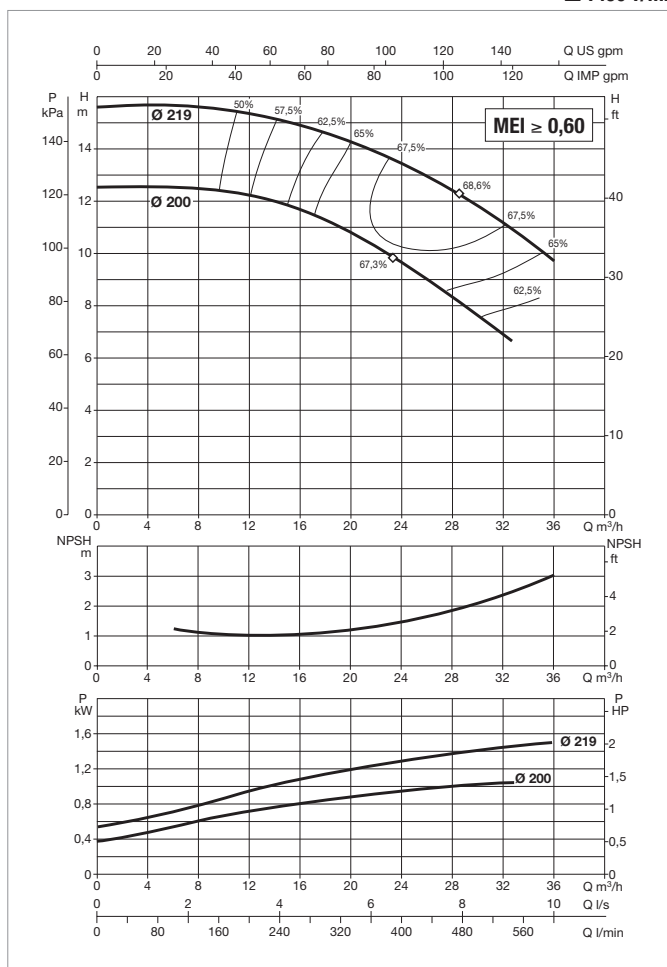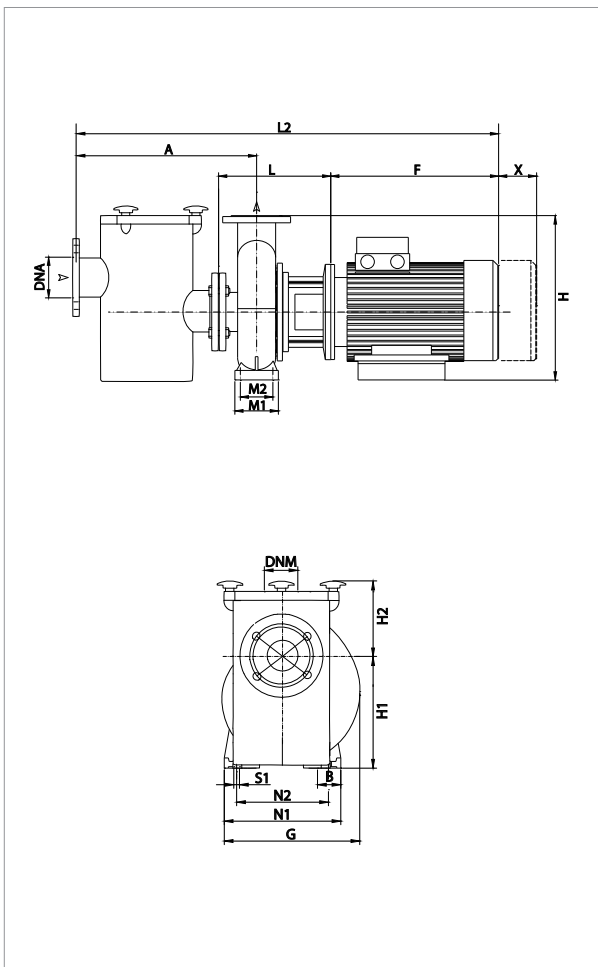
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	6	12	18	24	30	36
	Q=l/min	0	100	200	300	400	500	600
NKM-G 40-200/200	H (m)	12,5	12,5	12,3	11,2	9,7	7,7	
NKM-G 40-200/219		15,6	15,6	15,3	14,7	13,4	11,8	9,8

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 40-200/200	MEC 90 S	3 x 230 - 400 V ~	1,1	1,5	4,33	2,5	IE3
NKM-G 40-200/219	MEC 90 L	3 x 230 - 400 V ~	1,5	2	6,24	3,6	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 40-200/200	480	50	287,5	296	340	290	165	246	913,5	100	70	265	212	M10	100	28	65	40	620	370	480	0,11	59,7
NKM-G 40-200/219	480	50	287,5	296	340	290	165	246	913,5	100	70	265	212	M10	100	28	65	40	620	370	480	0,11	63,6

DAB PUMPS reserves the right to make modifications without notice.

24

NKM-G 40-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ **1450 1/min**
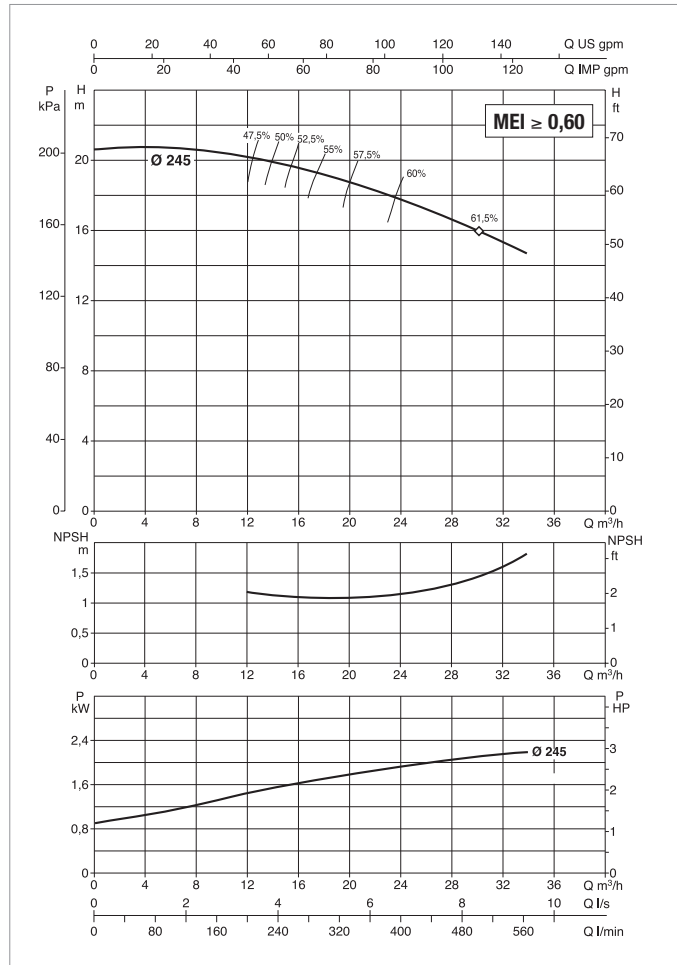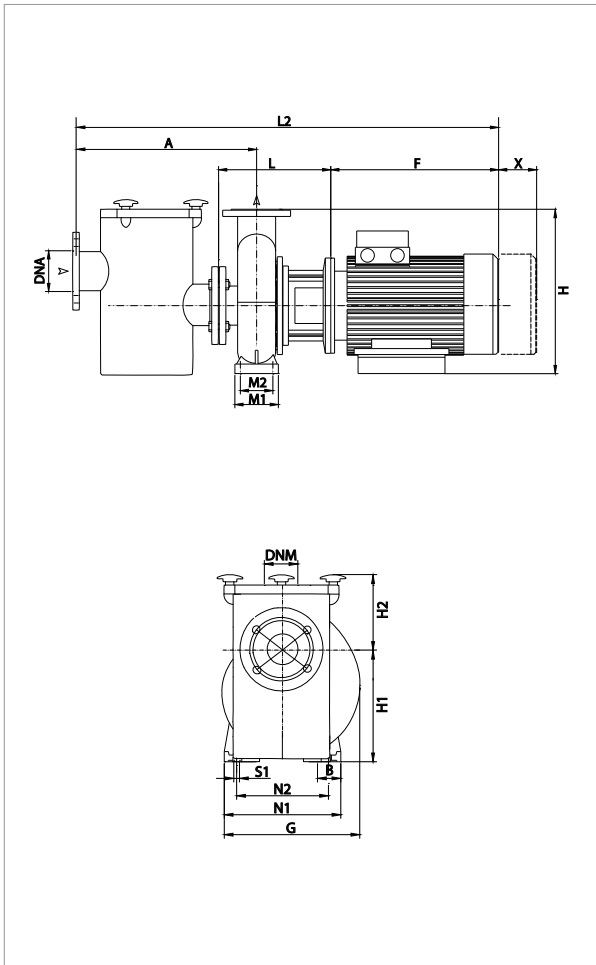
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	6	12	18	24	30
	Q=l/min	0	100	200	300	400	500
NKM-G 40-250/245	H (m)	20,6	20,5	20,1	19,2	17,8	16

MODEL	MOTOR SIZE	POWER INPUT 50 Hz	ELECTRICAL DATA				MOTOR TYPE
			P2 NOMINAL		In A		
			kW	HP	230V	400V	
NKM-G 40-250/245	MEC 100 L	3 x 230 - 400 V ~	2,2	3	10,2	5,9	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 40-250/245	480	65	319	336	405	310	165	274	973	125	95	320	250	M10	100	28	65	40	670	420	540	0,152	77,5

DAB PUMPS reserves the right to make modifications without notice.

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25

NKM-G 50-160 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 1450 1/min
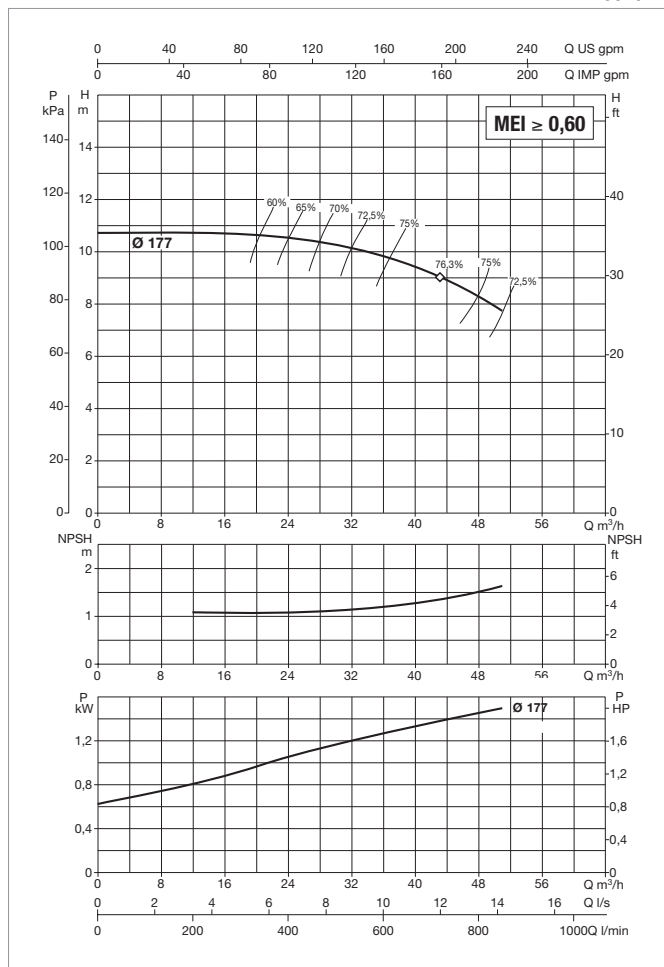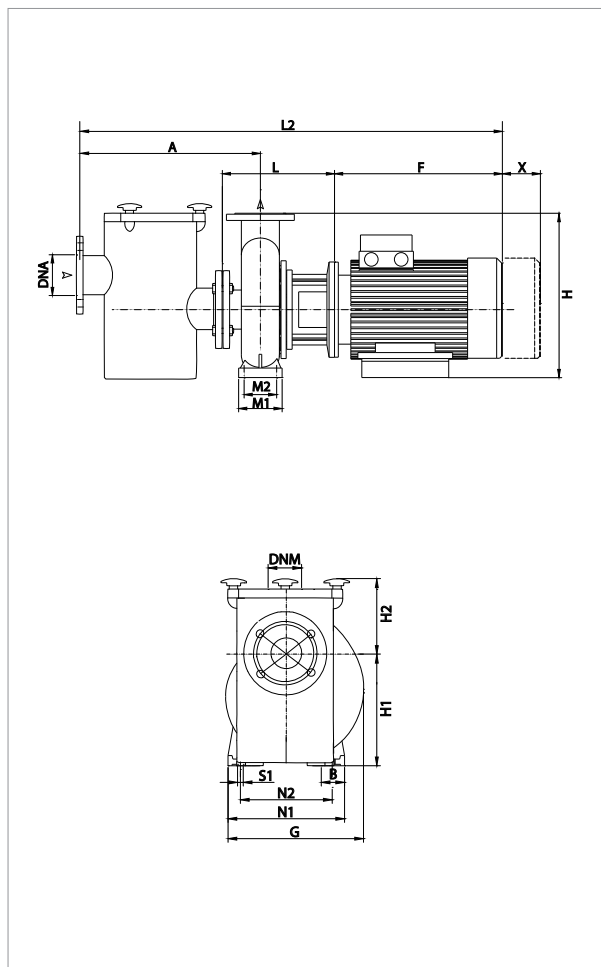
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	12	18	24	30	36	42	48
	Q=l/min	0	200	300	400	500	600	700	800
NKM-G 50-160/177	H (m)	10.7	10.7	10.7	10.5	10.2	9.8	9.2	8.3

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 50-160/177	MEC 90 L	3 x 230 - 400 V ~	1,5	2	6,24	3,6	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 50-160/177	480	50	287,5	282	340	290	165	274	941,5	100	70	265	212	M10	100	28	65	50	620	370	480	0,11	58,3

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26

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WATER•TECHNOLOGY

NKM-G 50-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ 1450 1/min
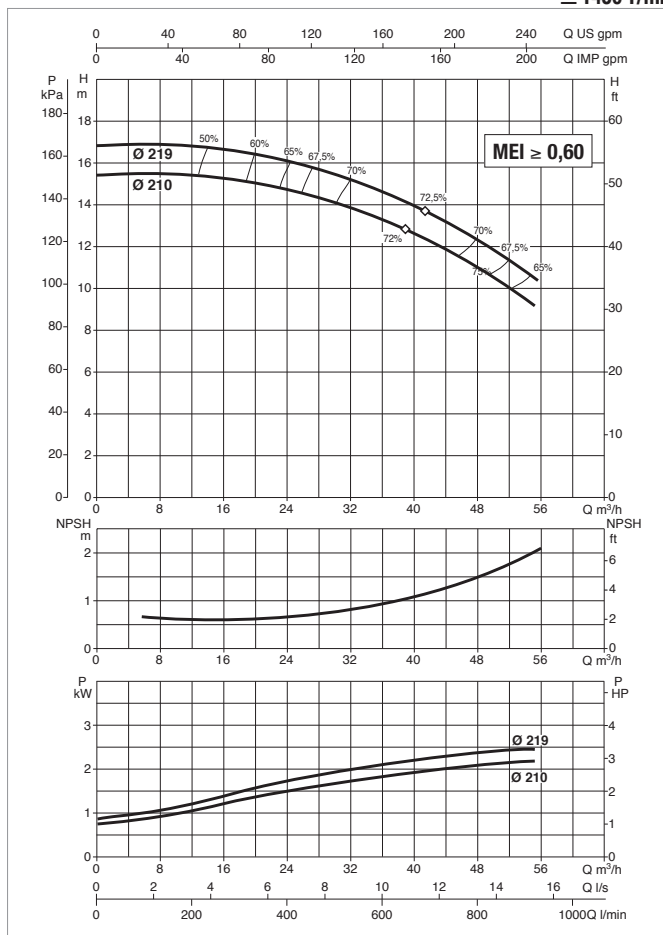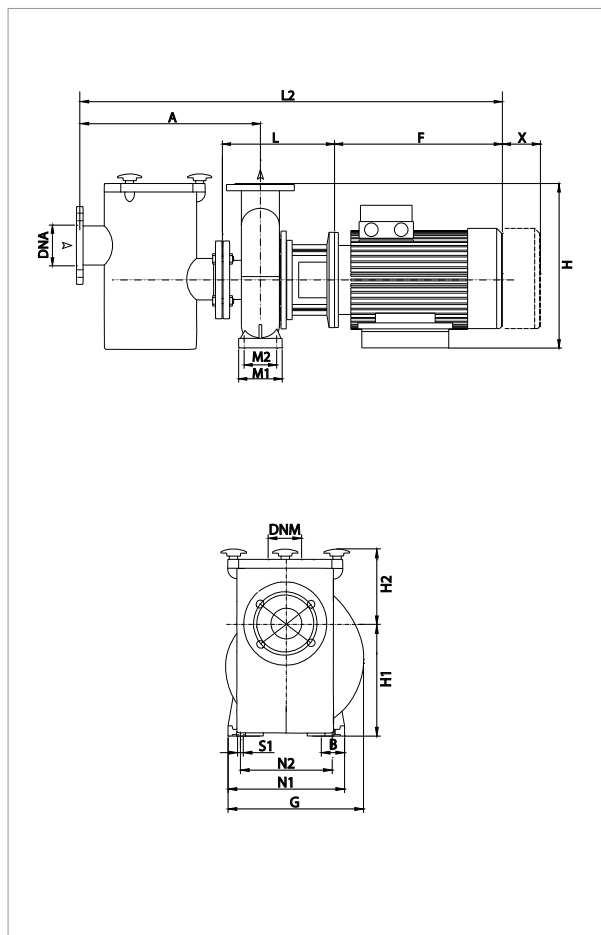
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	12	18	24	30	36	42	48	54
	Q=l/min	0	200	300	400	500	600	700	800	900
NKM-G 50-200/210	H (m)	15.3	15.3	15.2	14.8	14	13.3	12.1	10.8	9.4
NKM-G 50-200/219		16.8	16.8	16.5	16.1	15.5	14.6	13.6	12.4	10.9

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 50-200/210	MEC 100 L	3 x 230 - 400 V ~	2,2	3	10,2	5,9	IE3
NKM-G 50-200/219	MEC 100 L	3 x 400 V ~	3	4	-	6,8	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 50-200/210	480	50	319	302	360	290	165	274	973	100	70	265	212	M10	100	28	65	50	670	420	540	0,152	72,3
NKM-G 50-200/219	480	50	321	302	360	290	165	274	975	100	70	265	212	M10	100	28	65	50	670	420	540	0,152	74,3

DAB PUMPS reserves the right to make modifications without notice.

27

NKM-G 50-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ **1450 1/min**

MEI ≥ 0,60
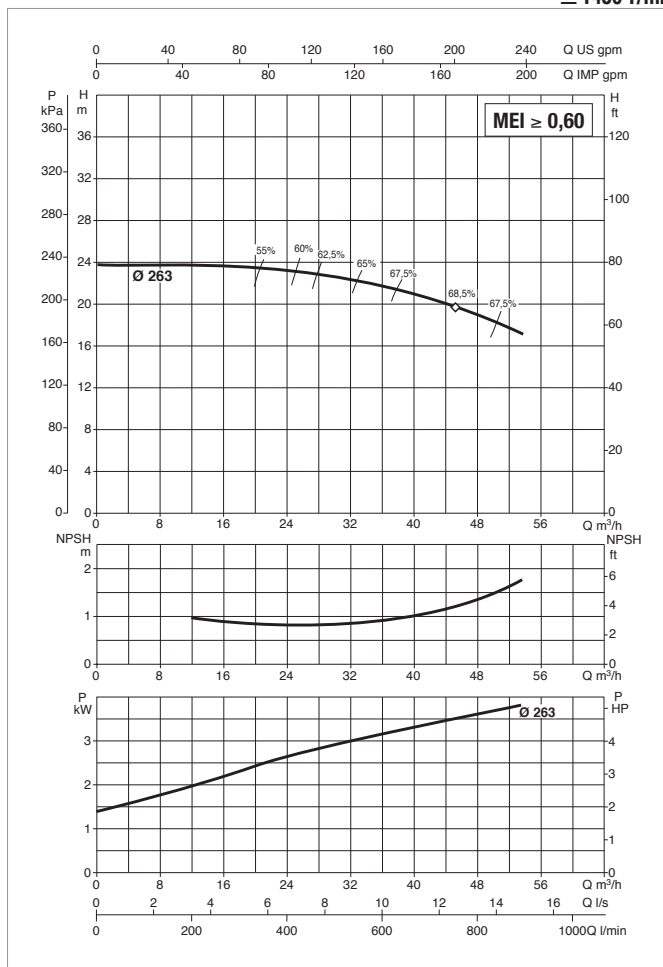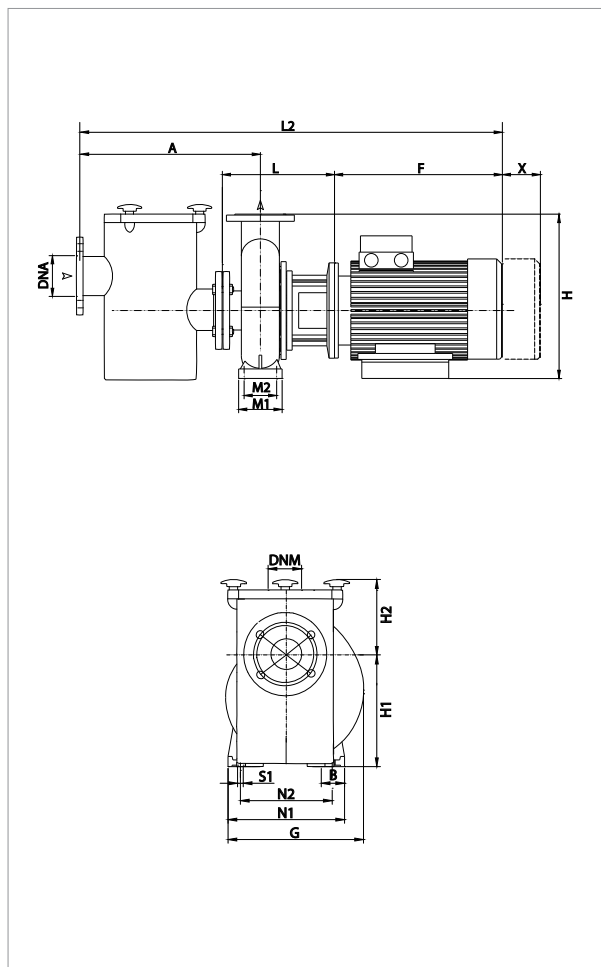
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	12	18	24	30	36	42	48	54
	Q=l/min	0	200	300	400	500	600	700	800	900
NKM-G 50-250/263	H (m)	23.8	23.8	23.8	23.4	22.7	21.6	20.4	19	17.1

MODEL	ELECTRICAL DATA						
	MOTOR TYPE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 50-250/263	MEC 112 M	3 x 400 V ~	4	5,5	-	8,2	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 50-250/263	480	65	328	343	405	310	165	274	982	125	95	320	250	M10	100	28	65	50	670	420	540	0,152	90,8

DAB PUMPS reserves the right to make modifications without notice.

28

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WATER•TECHNOLOGY

NKM-G 65-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ **1450 1/min**
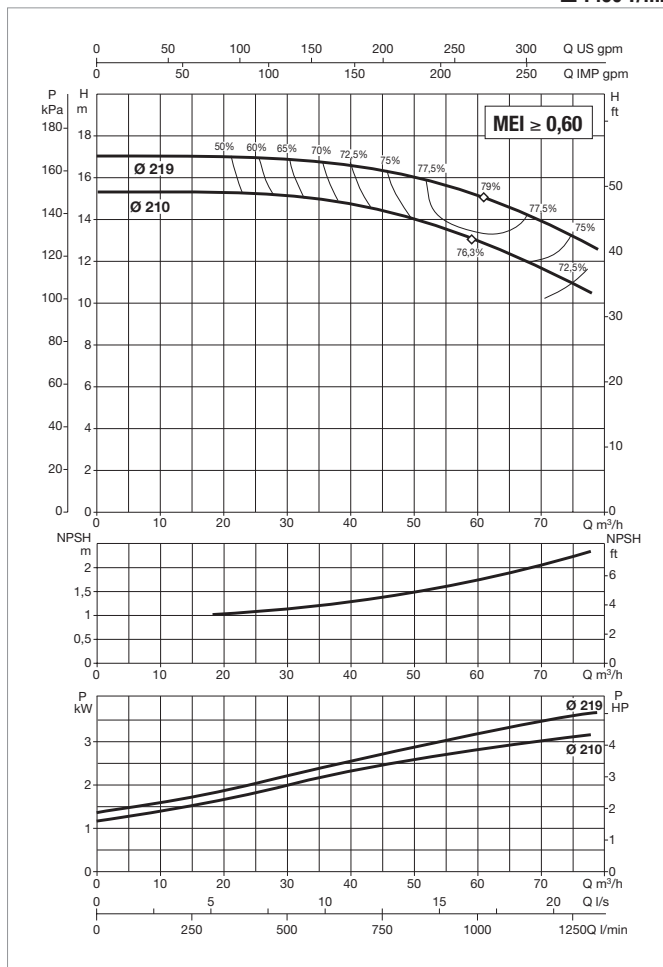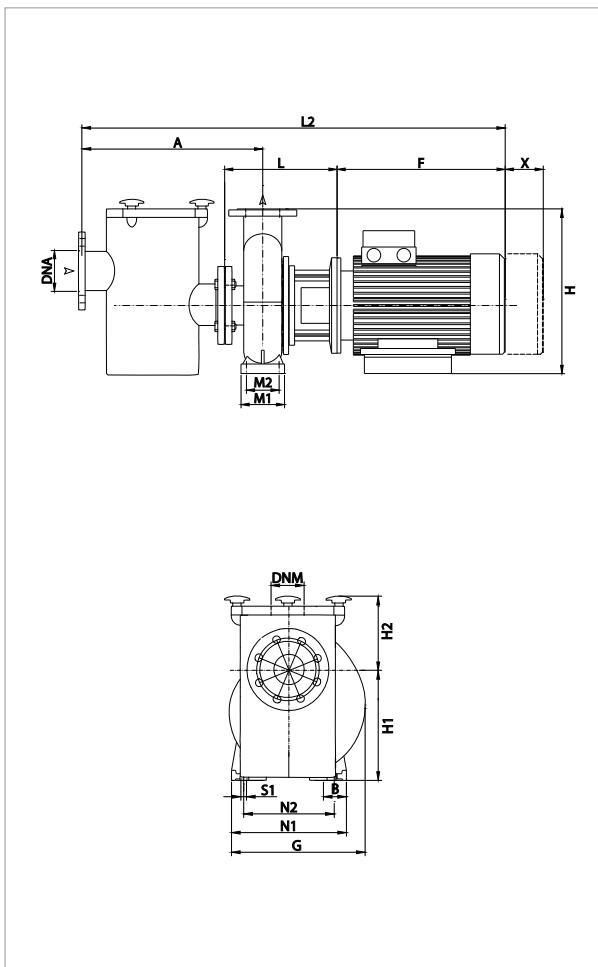
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	24	30	36	42	48	54	60	66	72	78
	Q=l/min	0	400	500	600	700	800	900	1000	1100	1200	1300
NKM-G 65-200/210	H (m)	15.3	15.2	15.2	15.1	14.6	14.1	13.5	12.9	12.2	11.3	
NKM-G 65-200/219		17	17	16.9	16.8	16.4	16.2	15.8	15.2	14.3	13.8	12.6

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 65-200/210	MEC 100 L	3 x 400 V ~	3	4	-	6,8	IE3
NKM-G 65-200/219	MEC 112 M	3 x 400 V ~	4	5,5	-	8,2	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 65-200/210	480	65	321	333	405	310	165	274	975	125	95	320	250	M10	140	28	80	65	670	420	540	0,152	80
NKM-G 65-200/219	480	65	328	333	405	310	165	274	982	125	95	320	250	M10	140	28	80	65	670	420	540	0,152	89,6

DAB PUMPS reserves the right to make modifications without notice.

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29

NKM-G 65-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 1450 1/min
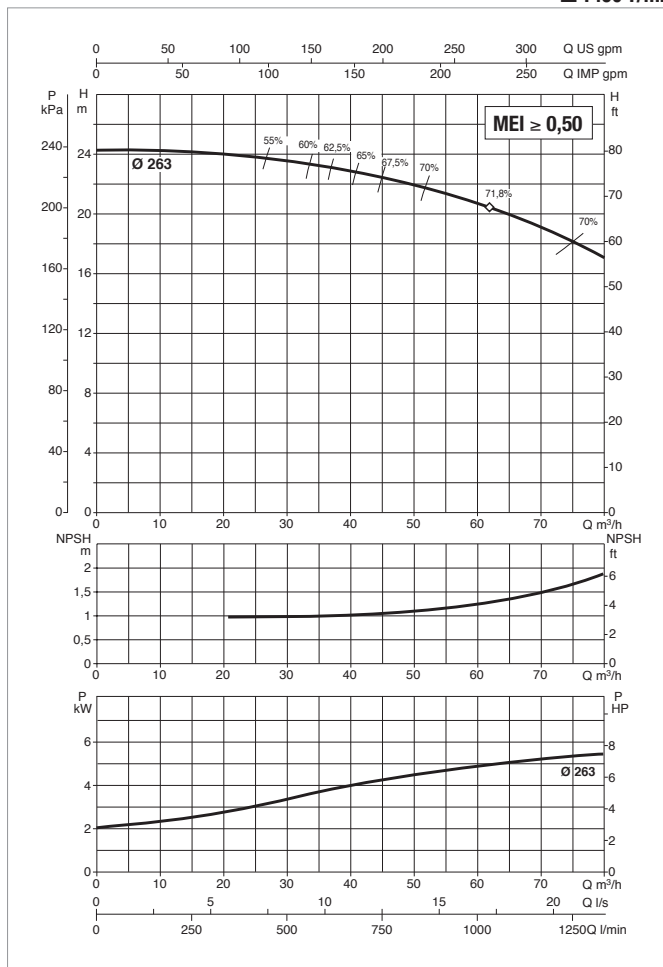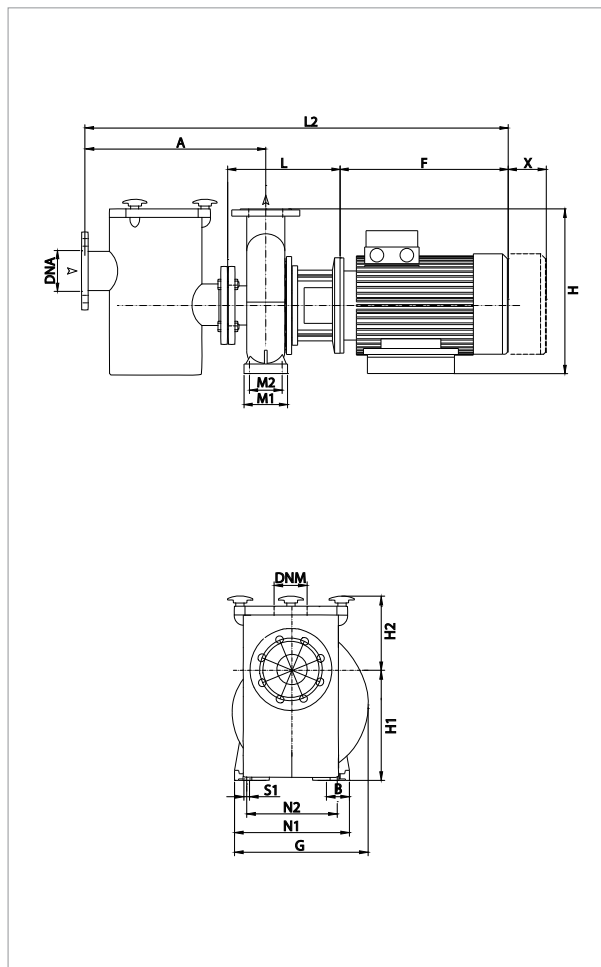
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	24	30	36	42	48	54	60	66	72	78
	Q=l/min	0	400	500	600	700	800	900	1000	1100	1200	1300
NKM-G 65-250/263	H (m)	24.1	23.8	23.6	23.3	22.8	22.3	21.5	20.8	19.7	18.6	17.3

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 65-250/263	MEC132 S	3 x 400 V ~	5,5	7,5	-	10,6	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 65-250/263	480	80	365	370	450	330	165	343	1088	160	120	360	280	M10	140	38	80	65	1030	530	640	0,349	144

DAB PUMPS reserves the right to make modifications without notice.

30

NKM-G 80-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ **1450 1/min**

MEI ≥ 0,40
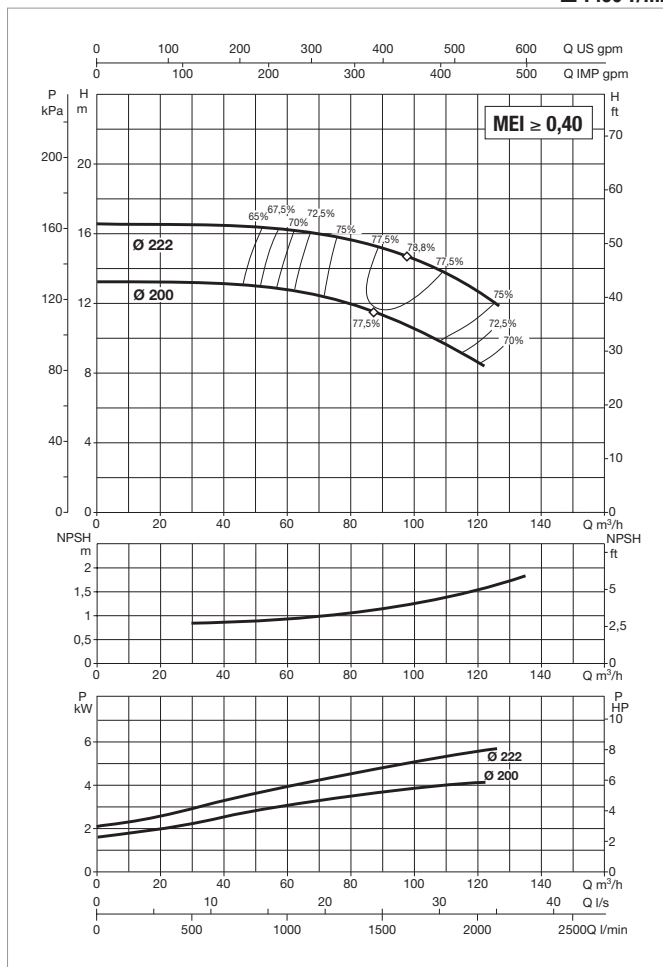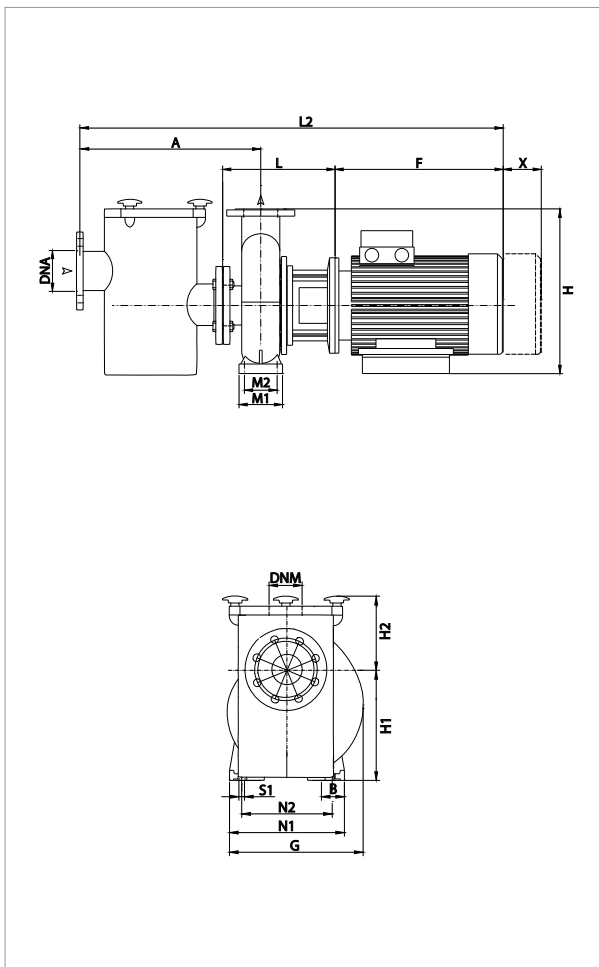
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	42	48	54	60	66	72	78	84	90	102	114	120
	Q=l/min	0	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000
NKM-G 80-200/200	H (m)	13.2	13.1	13	12.9	12.8	12.7	12.4	12	11.7	11.3	10.4	9.3	8.7
NKM-G 80-200/222		16.6	16.5	16.5	16.4	16.2	16.1	16	15.7	15.4	15	14.3	13.3	12.7

MODEL		ELECTRICAL DATA					
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 80-200/200	MEC 112 M	3 x 400 V ~	4	5,5	-	8,2	IE3
NKM-G 80-200/222	MEC 132 S	3 x 400 V ~	5,5	7,5	-	10,6	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 80-200/200	505	65	328	365	430	295	145	368	1076	125	95	345	280	M10	140	38	100	80	1030	530	640	0,349	118
NKM-G 80-200/222	505	65	365	365	430	295	145	368	1113	125	95	345	280	M10	140	38	100	80	1030	530	640	0,349	144,6

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31

NKM-G 80-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ **1450 1/min**
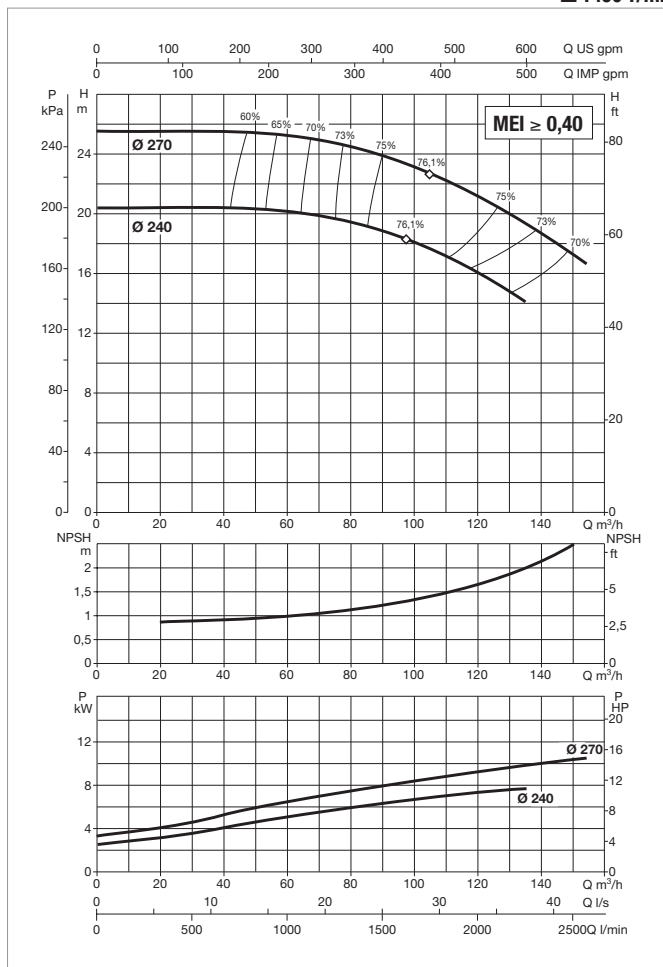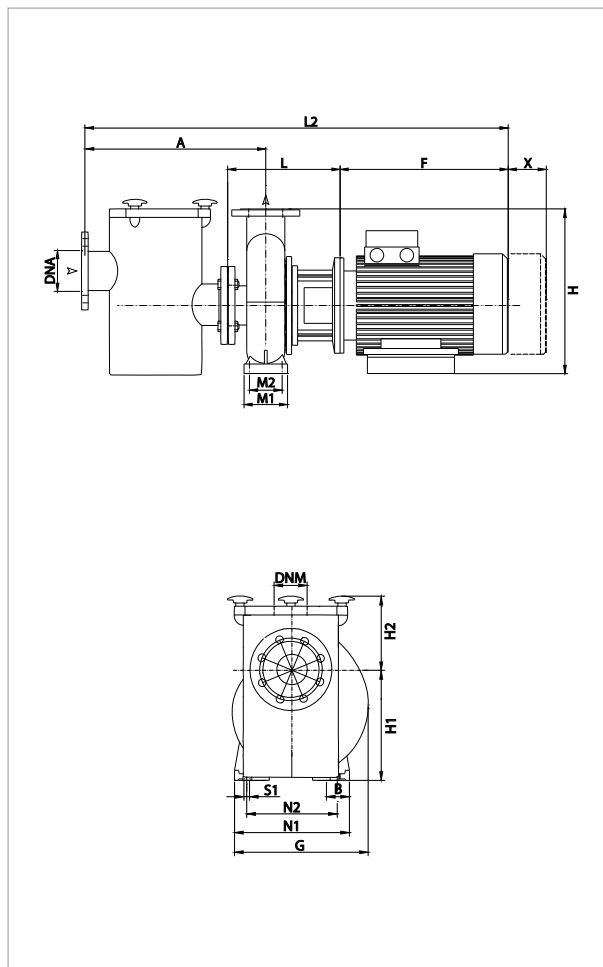
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm^2/s and density equal to 1000 kg/m^3. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	42	48	54	60	66	72	78	84	90	102	114	120
	Q=l/min	0	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000
NKM-G 80-250/240	H (m)	20.4	20.3	20.3	20.2	20.1	20	19.9	19.8	19.5	19	18	16.7	16
NKM-G 80-250/270		25.6	25.5	25.5	25.4	25.1	25	24.8	24.6	24.2	24	23	21.5	21

MODEL	ELECTRICAL DATA						
	MOTOR TYPE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G 80-250/240	MEC 132 M	3 x 400 V ~	7,5	10	-	14,4	IE3
NKM-G 80-250/270	MEC 160 M	3 x 400 V ~	11	15	-	22,4	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G 80-250/240	505	80	350	410	480	315	145	368	1098	160	120	400	315	M14	140	38	100	80	1030	530	640	0,349	171
NKM-G 80-250/270	505	80	498	410	480	315	145	398	1276	160	120	400	315	M14	140	38	100	80	1030	530	640	0,349	210

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32

NKM-G 100-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 1450 1/min
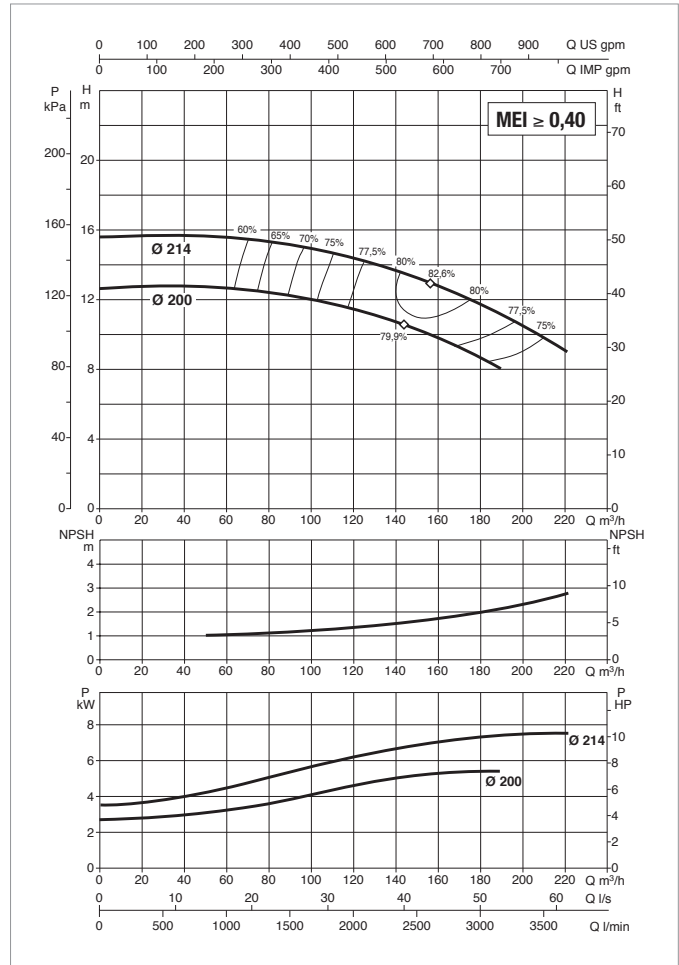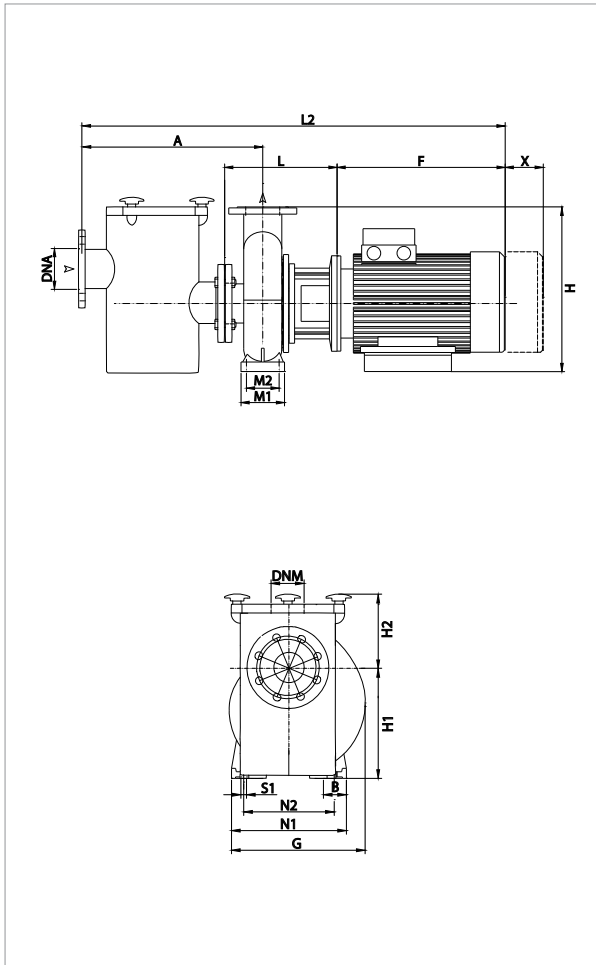
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	60	66	72	78	84	90	102	114	120	150	180	210
	Q=l/min	0	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000	3500
NKM-G100-200/200	H (m)	12.7	12.6	12.6	12.5	12.5	12.4	12.3	12	11.5	11.4	10.1	8.5	
NKM-G100-200/214		15.6	15.4	15.4	15.3	15.2	15.1	15	14.7	14.5	14.3	13.3	11.6	9.8

MODEL	MOTOR SIZE	POWER INPUT 50 Hz	ELECTRICAL DATA				MOTOR TYPE
			P2 NOMINAL		In A		
			kW	HP	230V	400V	
NKM-G100-200/200	MEC 132 S	3 x 400 V ~	5,5	7,5	-	10,6	IE3
NKM-G100-200/214	MEC 132 M	3 x 400 V ~	7,5	10	-	14,4	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G100-200/200	505	80	365	392	480	315	145	368	1113	160	120	360	280	M14	140	38	125	100	1030	530	640	0,349	157,5
NKM-G100-200/214	505	80	350	392	480	315	145	368	1098	160	120	360	280	M14	140	38	125	100	1030	530	640	0,349	164

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NKM-G 100-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 1450 1/min
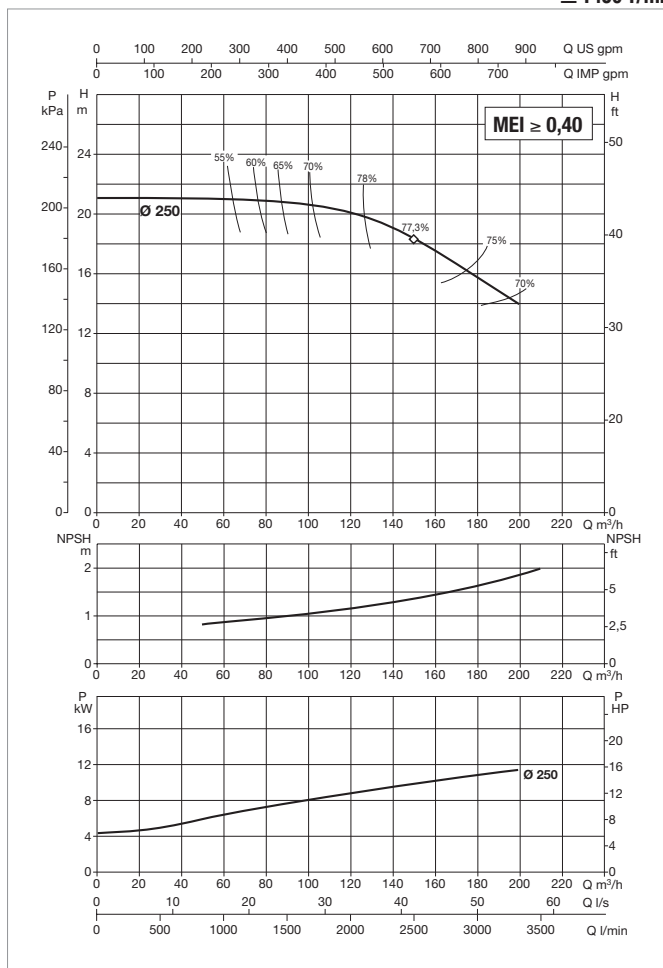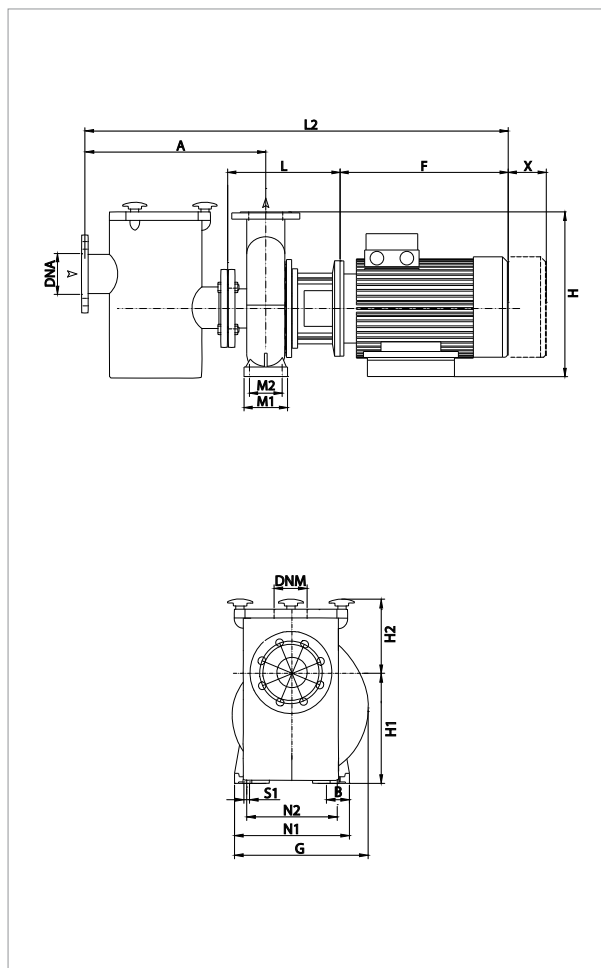
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	60	66	72	78	84	90	102	114	120	150	180
	Q=l/min	0	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500	3000
NKM-G100-250/250	H (m)	21.1	21	21	21	21	21	21	20.9	20	19.8	18	16

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G100-250/250	MEC 160 M	3 x 400 V ~	11	15	-	22,4	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G100-250/250	520	80	498	424	505	340	145	413	1291	160	120	400	315	M14	140	38	125	100	1030	530	640	0,349	208

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NKM-G 125-250 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 1450 1/min
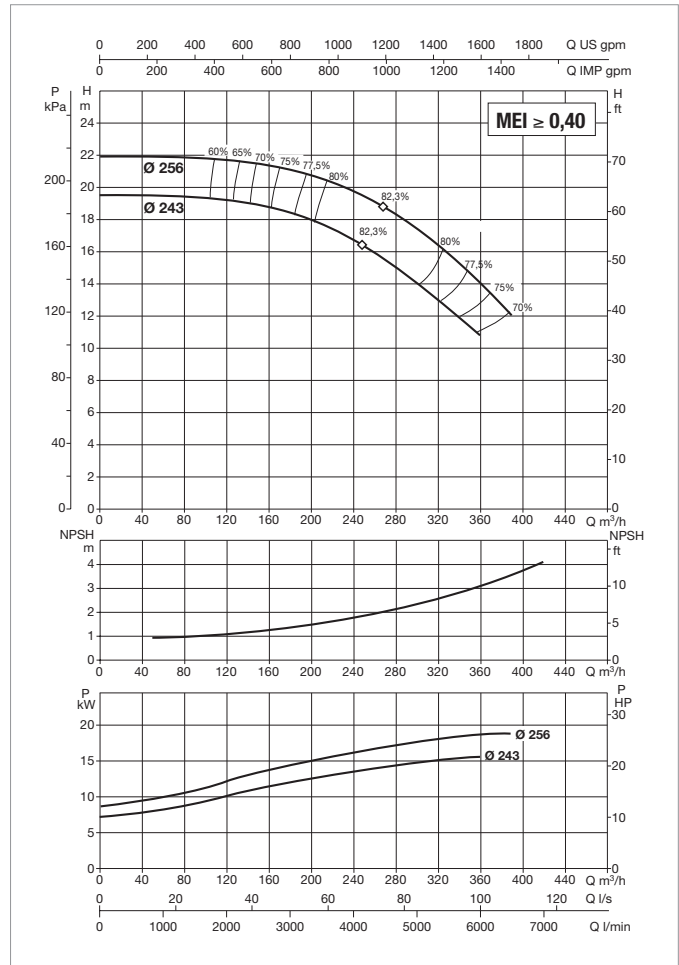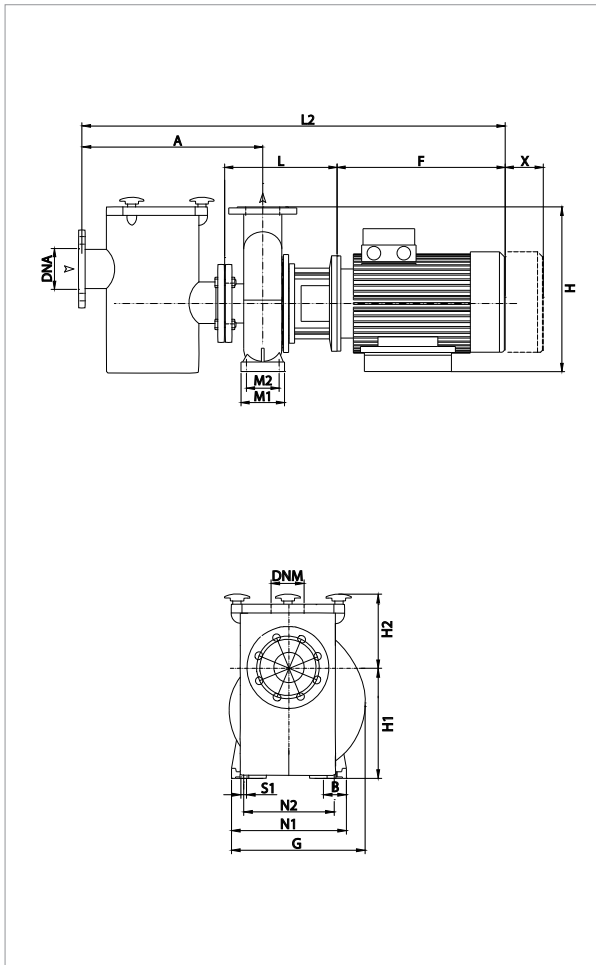
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	102	114	120	150	180	210	240	270	300	330	360	390
	Q=l/min	0	1700	1900	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500
NKM-G125-250/243	H (m)	19.5	19.3	19.3	19.2	19.2	18.7	17.8	16.8	15.5	14.1	12.5	10.9	
NKM-G125-250/256		21.9	21.8	21.8	21.7	21.6	21.3	20.5	19.5	18.5	17.2	15.6	14	12

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKM-G125-250/243	MEC 160 L	3 x 400 V ~	15	20	-	30,5	IE3
NKM-G125-250/256	MEC 180 M	3 x 400 V ~	18,5	25	-	34,3	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKM-G125-250/243	600	80	542	472	605	440	175	413	1415	160	120	400	315	M14	140	38	150	125	1130	580	740	0,485	274
NKM-G125-250/256	600	80	577	472	605	440	175	413	1450	160	120	400	315	M14	140	38	150	125	1130	580	740	0,485	317,8

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35

NKM-G 150-200 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

$\cong$ **1450 1/min**
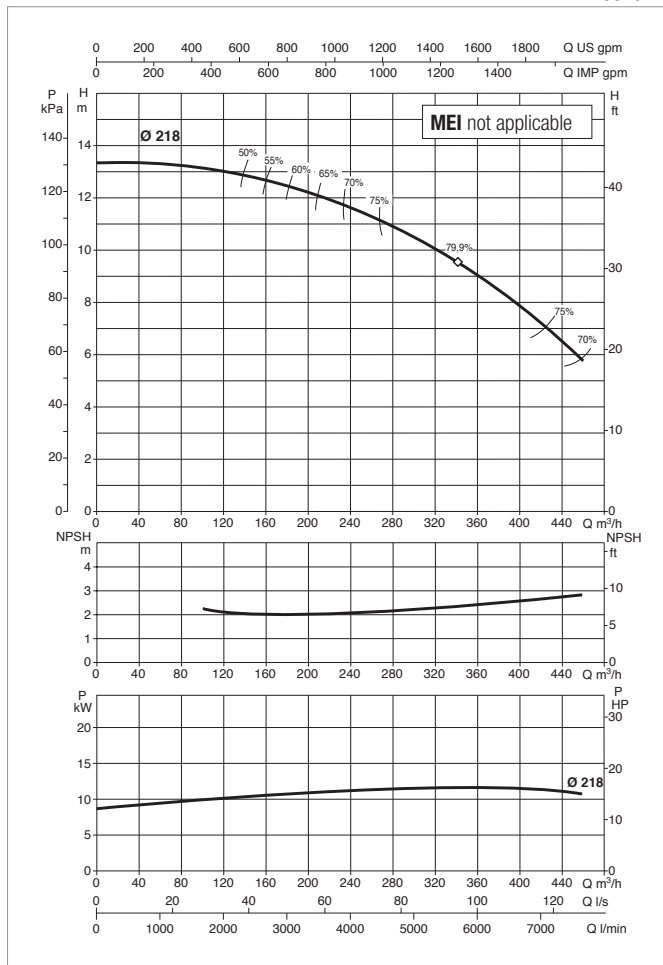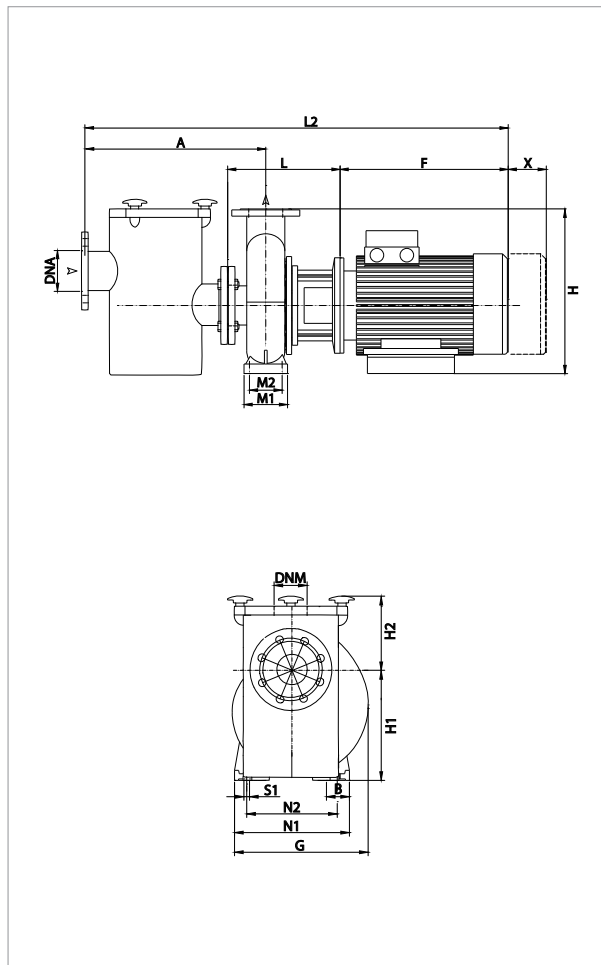
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	102	114	120	150	180	210	240	270	300	330	360	390	420
	Q=l/min	0	1700	1900	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000
NKM-G150-200/218	H (m)	13.2	13.1	13	13	12.8	12.5	12.1	11.5	11	10.4	9.7	9	8	7

MODEL	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL kW	P2 NOMINAL HP	In A 230V	In A 400V	MOTOR TYPE
NKM-G150-200/218	MEC 160 M	3 x 400 V ~	11	15	-	22,4	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	L/A	L/B	H	VOLUME (mc)	WEIGHT Kg
NKM-G150-200/218	620	100	498	593	680	470	175	433	1391	200	150	550	450	M20	140	38	150	125	1130	650	900	0,661	287

NKP-G 40-125 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 2900 1/min
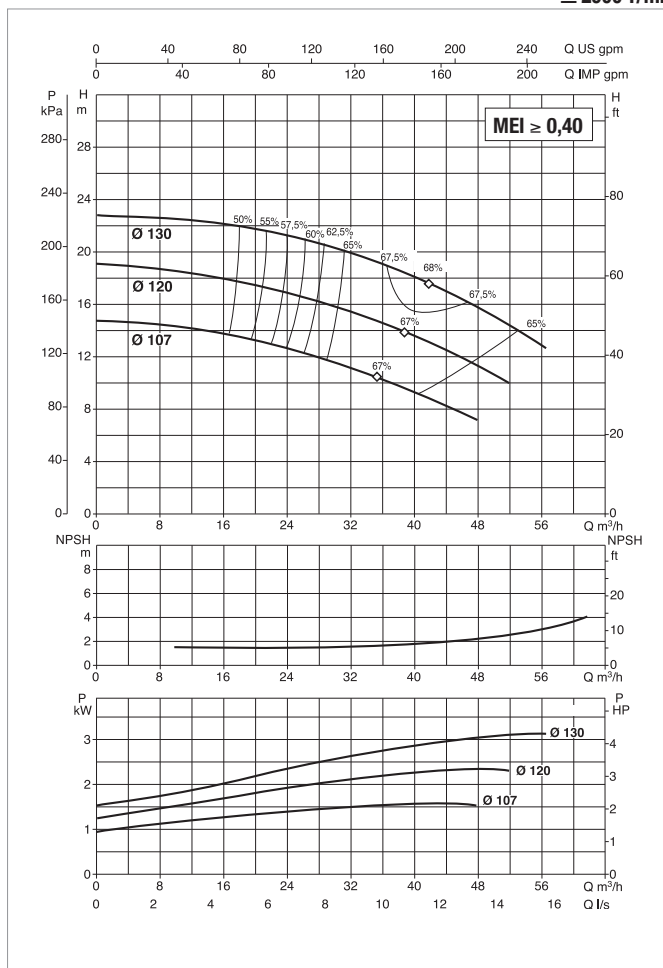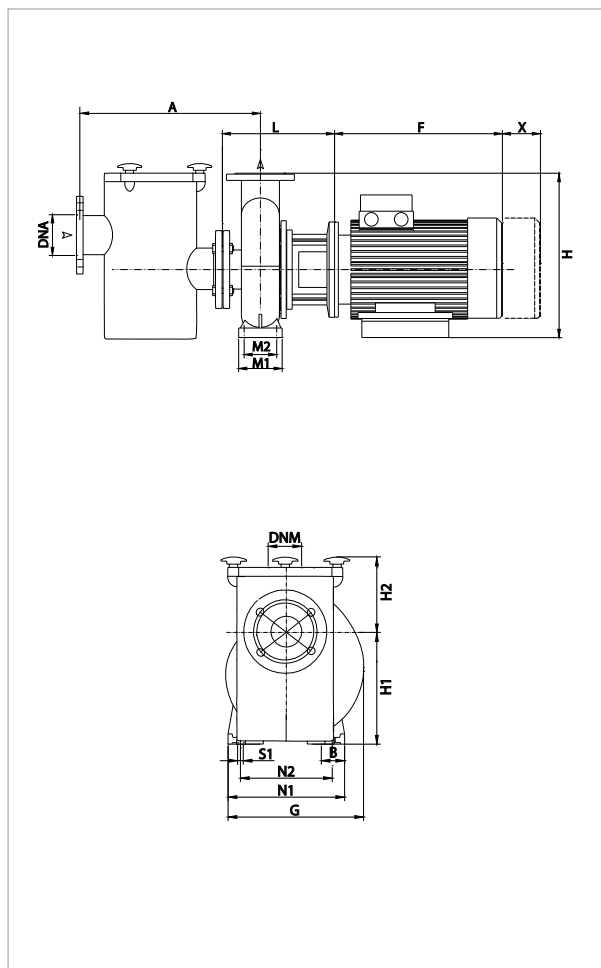
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	6	12	18	24	30	36	42	48	54
	Q=l/min	0	100	200	300	400	500	600	700	800	900
NKP-G 40-125/107	H (m)	14.7	14.5	14.3	13.8	13	11.8	10.5	8.6	7	
NKP-G 40-125/120		19	18.7	18.4	17.8	17	15.9	14.6	13	11	
NKP-G 40-125/130		22.8	22.5	22.3	22	21.2	20.2	19	17.4	15.5	13.5

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKP-G 40-125/107	MEC 90 S	3 x 230 - 400 V ~	1,5	2	5,2	3	IE3
NKP-G 40-125/120	MEC 90 L	3 x 230 - 400 V ~	2,2	3	7,97	4,6	IE3
NKP-G 40-125/130	MEC 100 L	3 x 400 V ~	3	4		5,6	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKP-G 40-125/107	460	50	287,5	234	252	262	165	226	893,5	100	70	210	160	M10	100	28	65	40	620	370	480	0,11	50
NKP-G 40-125/120	460	50	287,5	234	252	262	165	226	893,5	100	70	210	160	M10	100	28	65	40	620	370	480	0,11	60
NKP-G 40-125/130	460	50	319	300	272	262	165	254	953	100	70	210	160	M10	100	28	65	40	670	420	540	0,152	67

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37

NKP-G 50-125 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ **2900 1/min**

MEI ≥ 0,40
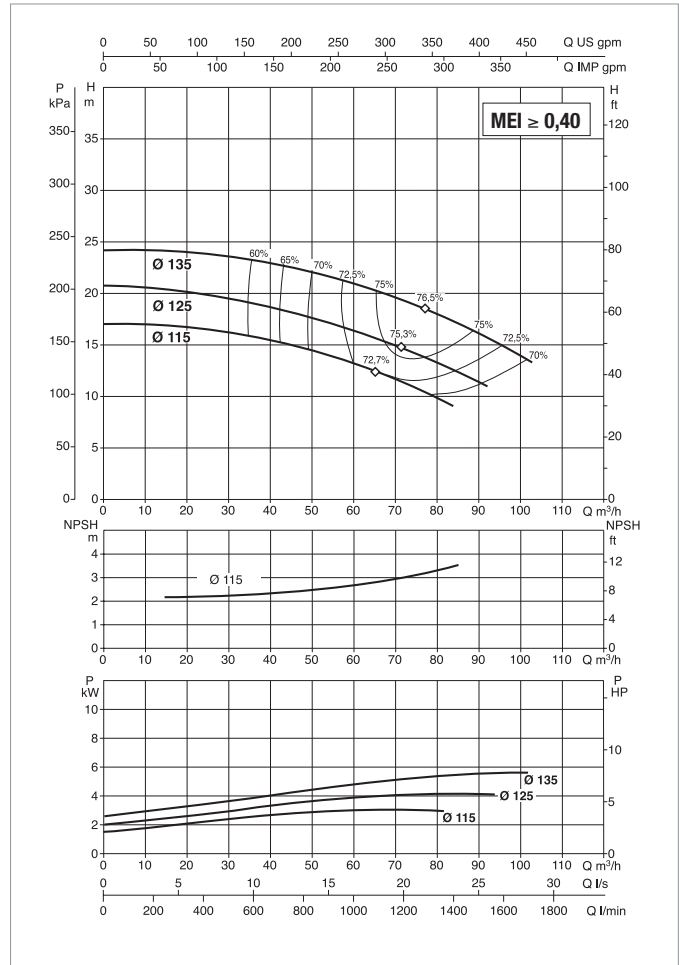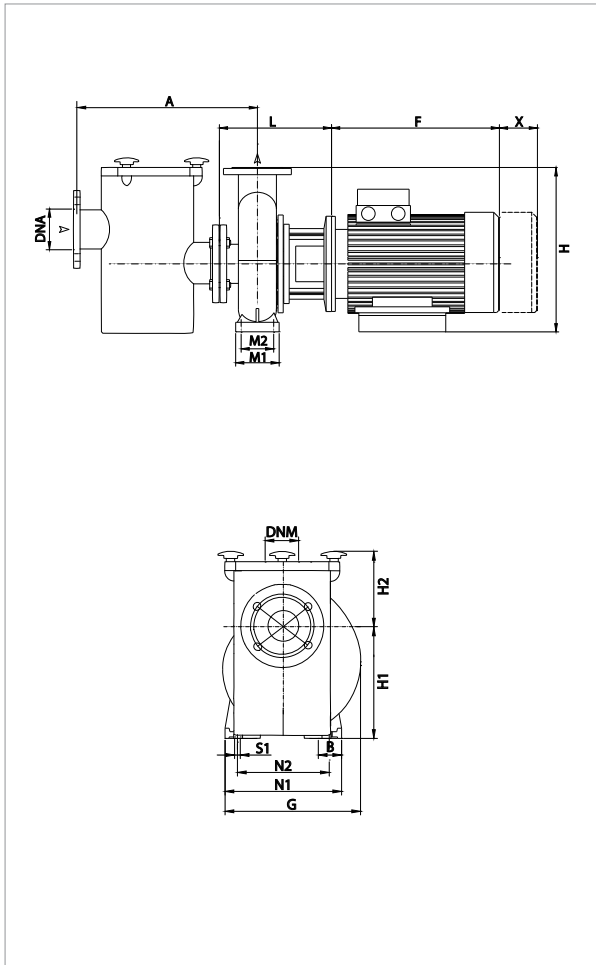
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	24	30	36	42	48	54	60	66	72	78	84	90	102
	Q=l/min	0	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700
NKP-G 50-125/115	H (m)	17	16.5	16	15.5	15	14.5	13.7	13	12	11	10	9		
NKP-G 50-125/125		20.5	20	19.5	19.1	18.5	18	17.5	16.5	15.8	14.8	14	12.5	11.5	
NKP-G 50-125/135		24	23.6	23.5	23.2	22.8	22.2	21.5	21	20	19.1	18.5	17.5	16.5	13.4

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKP-G 50-125/115	MEC 100 L	3 x 400 V ~	3	4	-	5,6	IE3
NKP-G 50-125/125	MEC 112 M	3 x 400 V ~	4	5,5	-	8,2	IE3
NKP-G 50-125/135	MEC 132 S	3 x 400 V ~	5,5	7,5	-	10,2	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKP-G 50-125/115	480	50	319	251	292	262	165	274	973	100	70	240	190	M10	100	28	65	50	670	420	540	0,152	65,8
NKP-G 50-125/125	480	50	306	251	292	262	165	274	960	100	70	240	190	M10	100	28	65	50	670	420	540	0,152	89
NKP-G 50-125/135	480	50	328	300	312	262	165	313	1021	100	70	240	190	M10	100	28	65	50	830	430	520	0,186	86

DAB PUMPS reserves the right to make modifications without notice.

38

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NKP-G 65-125 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ 2900 1/min

MEI ≥ 0,40
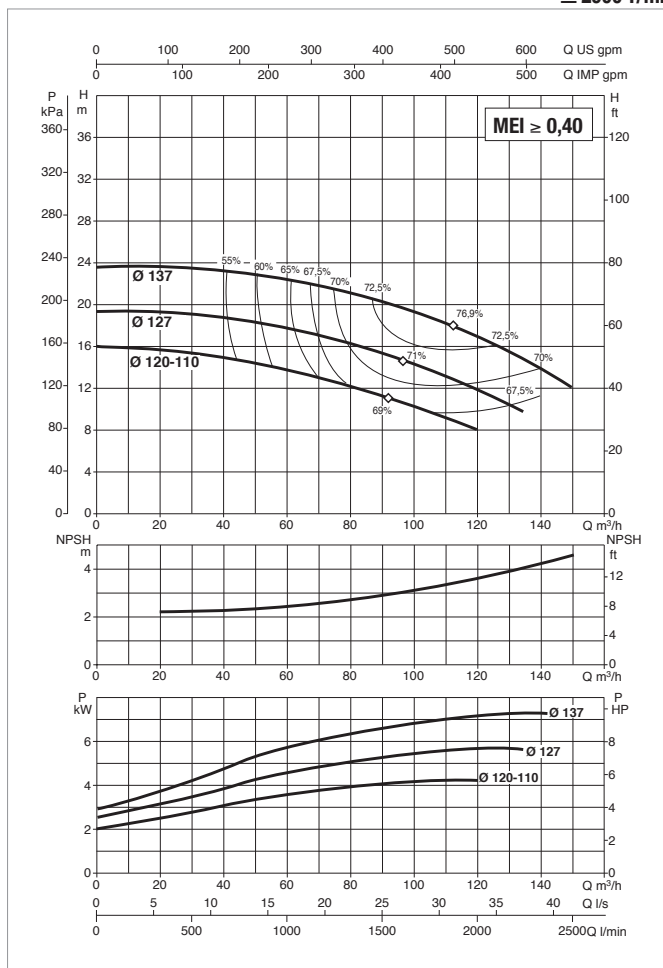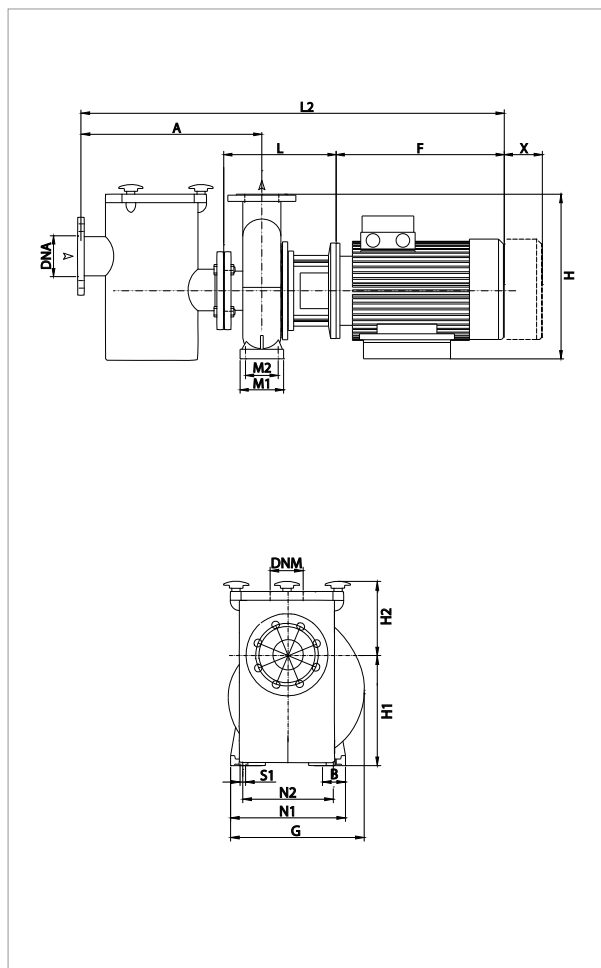
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
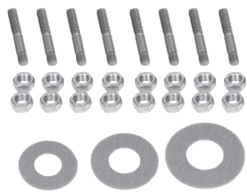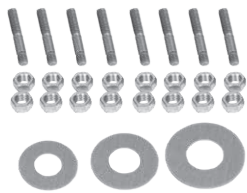
MODEL	Q=m³/h	0	36	42	48	54	60	66	72	78	84	90	102	114	120	150
	Q=l/min	0	600	700	800	900	1000	1100	1200	1300	1400	1500	1700	1900	2000	2500
NKP-G 65-125/120-110		16	15	14.6	14.2	13.7	13.3	12.8	12.3	12	11.4	10	8.5	8		
NKP-G 65-125/127	H (m)	19.5	19	18.9	18.7	18.4	18.1	17.5	17.2	16.9	16.5	15.8	14.5	13	12	
NKP-G 65-125/137		23.5	23.1	23	22.8	22.6	22.5	22	21.6	21.1	20.7	20.2	19	17.5	14.8	12

MODEL	ELECTRIC DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKP-G 65-125/120-110	MEC 112	3 x 400 V ~	4	5,5	-	8,2	IE3
NKP-G 65-125/127	MEC 132 S	3 x 400 V ~	5,5	7,5	-	10,2	IE3
NKP-G 65-125/137	MEC 132 S	3 x 400 V ~	7,5	10	-	14,4	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKP-G 65-125/120-110	480	65	306	286	340	290	165	274	960	125	95	280	212	M10	100	28	80	65	670	420	540	0,152	79
NKP-G 65-125/127	480	65	328	300	340	290	165	313	1021	125	125	280	212	M10	100	28	80	65	830	430	520	0,186	82
NKP-G 65-125/137	480	65	350	300	340	290	165	313	1043	125	125	280	212	M10	100	28	80	65	830	430	520	0,186	105

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39

NKP-G 80-160 - SWIMMING POOL PUMPS

Pumped liquid temperature range: from -10 °C to +140 °C - Maximum ambient temperature: +40 °C

≅ **2900 1/min**
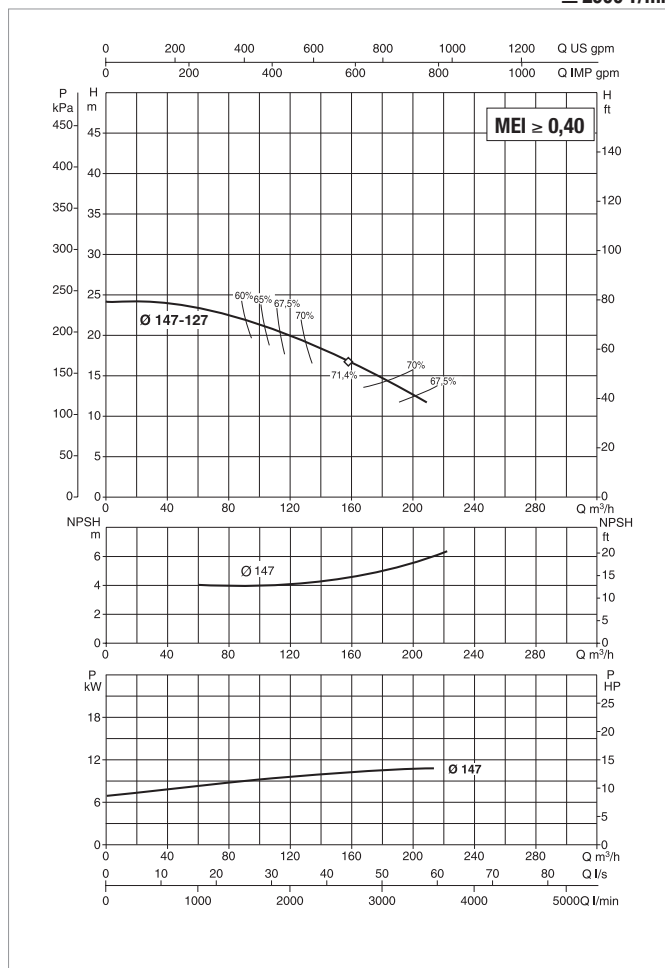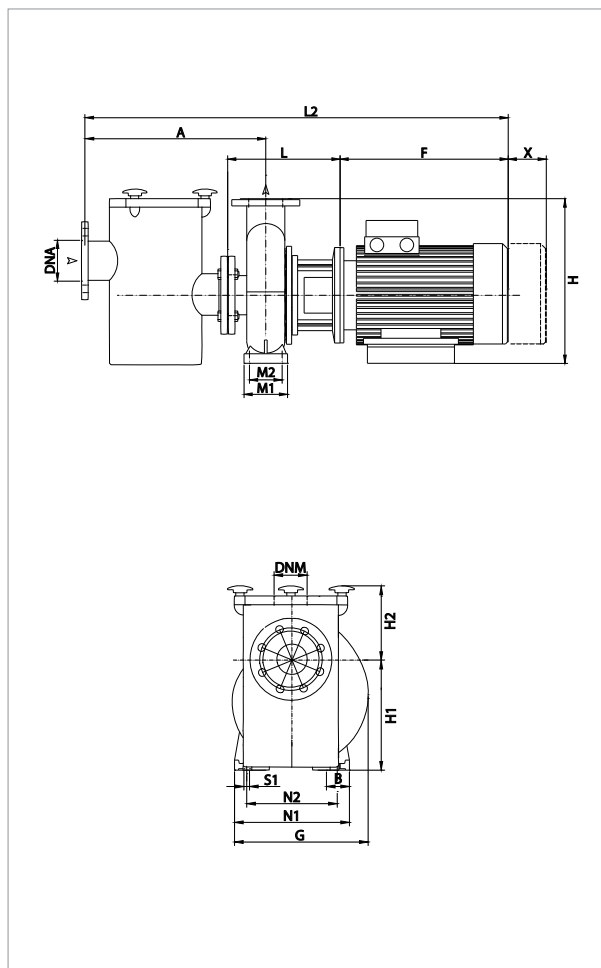
PUMP AND PREFILTER ARE SOLD SEPARATELY
For further information contact our sales network.

The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	90	102	114	120	150	180	210
	Q=l/min	0	1500	1700	1900	2000	2500	3000	3500
NKP-G 80-160/147-127	H (m)	24	22	21.4	20.4	20	17.4	16.8	12

MODEL	ELECTRICAL DATA						
	MOTOR SIZE	POWER INPUT 50 Hz	P2 NOMINAL		In A		MOTOR TYPE
			kW	HP	230V	400V	
NKP-G 80-160/147-127	MEC 160 M	3 x 400 V ~	11	15	-	19,7	IE3

MODEL	A	B	F	G	H	H1	H2	L	L2	M1	M2	N1	N2	S1	X	Ø (mm) Mech. seal	DNA	DNM	PACKING DIMENSIONS			VOLUME (mc)	WEIGHT Kg
																			L/A	L/B	H		
NKP-G 80-160/147-127	480	74	498	350	385	275	145	368	1246	-	-	314	254	M12	140	28	100	80	1030	530	640	0,349	169

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40
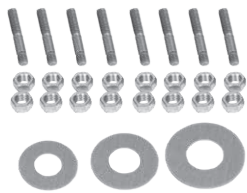
PUMP/FILTER/FASTENING KIT SELECTION DIAGRAM

BASIC VERSION

POLES 2	POLES 4	PUMP TYPE MODEL	PREFILTER PHOTO	PREFILTER MODEL	FILTER-PUMP FASTENING KIT PHOTO	FILTER-PUMP FASTENING KIT MODEL
	•	NKM-G40-200/200/A/BAQV/1,1/4				
	•	NKM-G40-200/219/A/BAQV/1,5/4				
	•	NKM-G40-250/245/A/BAQV/2,2/4				
	•	NKM-G50-160/177/A/BAQV/1,5 /4				
	•	NKM-G50-200/210/A/BAQV/2,2/4		PREFILTER 65/65		DN 65 PREFILTER FASTENING KIT
	•	NKM-G50-200/219/A/BAQV/3/4				
	•	NKM-G50-250/263/A/BAQV/4/4				
•		NKP-G 40-125/107/A/BAQV/1,5/2				
•		NKP-G 40-125/120/A/BAQV/2,2/2				
•		NKP-G 40-125/130/A/BAQV/3/2				
•		NKP-G 50-125/115/A/BAQV/3/2				
•		NKP-G 50-125/125/A/BAQV/4/2				
•		NKP-G 50-125/135/A/BAQV/5,5/2				
	•	NKM-G65-200/210/A/BAQV/3/4				
	•	NKM-G65-200/219/A/BAQV/4/4				
	•	NKM-G65-250/263/A/BAQV/5,5/4		PREFILTER 80/80		
•		NKP-G 65-125/120-110/A/BAQV/4/2				
•		NKP-G 65-125/127/A/BAQV/5,5/2				
•		NKP-G 65-125/137/A/BAQV/7,5/2				
	•	NKM-G80-200/200/A/BAQV/4/4				DN 80-100-125 PREFILTER FASTENING KIT
	•	NKM-G80-200/222/A/BAQV/5,5/4				
	•	NKM-G80-250/240/A/BAQV/7,5/4		PREFILTER 100/100		
	•	NKM-G80-250/270/A/BAQV/11/4				
•		NKP-G 80-160/147-127/A/BAQV/11/2				
	•	NKM-G100-200/200/A/BAQV/ 5.5/4				
	•	NKM-G100-200/214/A/BAQV/ 7.5/4		PREFILTER 125/125		
	•	NKM-G100-250/250/A/BAQV/11 /4				
	•	NKM-G125-250/243/A/BAQV/15/4		PREFILTER 150/150		
	•	NKM-G125-250/256/A/BAQV/18,5/4				DN 150-200 PREFILTER FASTENING KIT
	•	NKM-G150-200/218/A/BAQV/11/4		PREFILTER 200/200		

PUMP/FILTER/FASTENING KIT SELECTION DIAGRAM

TOP VERSION

POLES		PUMP TYPE	PREFILTER		FILTER-PUMP FASTENING KIT	
2	4	MODEL	PHOTO	MODEL	PHOTO	MODEL
	•	NKM-G 40-200/200/B/BAQV/1,1/4				
	•	NKM-G 40-200/219/B/BAQV/1,5/4				
	•	NKM-G 40-250/245/B/BAQV/2,2/4				
	•	NKM-G 50-160/177/B/BAQV/1,5/4				
	•	NKM-G 50-200/210/B/BAQV/2,2/4				DN 65 PREFILTER FASTENING KIT
	•	NKM-G 50-200/219/B/BAQV/3/4		PREFILTER 65/65		
	•	NKM-G 50-250/263/B/BAQV/4/4				
•		NKP-G 40-125/107/B/BAQV/1,5/2				
•		NKP-G 40-125/120/B/BAQV/2,2/2				
•		NKP-G 40-125/130/B/BAQV/3/2				
•		NKP-G 50-125/115/B/BAQV/3/2				
•		NKP-G 50-125/125/B/BAQV/4/2				
•		NKP-G 50-125/135/B/BAQV/5,5/2				
	•	NKM-G 65-200/210/B/BAQV/3/4				
	•	NKM-G 65-200/219/B/BAQV/4/4				
	•	NKM-G 65-250/263/B/BAQV/5,5/4		PREFILTER 80/80		
•		NKP-G 65-125/120-110/B/BAQV/4/2				
•		NKP-G 65-125/127/B/BAQV/5,5/2				
•		NKP-G 65-125/137/B/BAQV/7,5/2				DN 80-100-125 PREFILTER FASTENING KIT
	•	NKM-G 80-200/200/B/BAQV/4/4				
	•	NKM-G 80-200/222/B/BAQV/5,5/4				
	•	NKM-G 80-250/240/B/BAQV/7,5/4		PREFILTER 100/100		
	•	NKM-G 80-250/270/B/BAQV/11/4				
•		NKP-G 80-160/147-127/B/BAQV/11/2				
	•	NKM-G 100-200/200/B/BAQV/5,5/4				
	•	NKM-G 100-200/214/B/BAQV/7,5/4		PREFILTER 125/125		
	•	NKM-G 100-250/250/B/BAQV/11/4				
	•	NKM-G 125-250/243/B/BAQV/15/4		PREFILTER 150/150		DN 150-200 PREFILTER FASTENING KIT
	•	NKM-G 125-250/256/B/BAQV/18,5/4				
	•	NKM-G 150-200/218/B/BAQV/11/4		PREFILTER 200/200		

DAB
WATER•TECHNOLOGY

EUROCOVER

SWIMMING POOL SUBMERSIBLE PUMPS

TECHNICAL DATA

Operating range:
from 0.5 to 6 m³/h with head up to 6.5 metres
Liquid temperature range:
from 0 °C to 35 °C (EN 60335-2-41)
Installation: fixed or portable, vertical position (max. inclination 10 °)
Free passage of solids: 5 mm
Automatic start / stop: start 55mm - stop 35mm
Motor protection class: IP68
Insulation class: F
Power input voltage: 230V - 50 Hz single-phase

APPLICATIONS

Fully automatic submersible electric pump, large support base design to increase stability and the possibility of operation in positions not perfectly perpendicular to the soil.
Built-in float for automatic operation; efficient and maintenance-free pump.
Suitable for winter use on top of swimming pool covers, to remove rain water and prevent the cover itself from breaking due to the heavy weight of the accumulated water.
In case of need, it can become an emptying and draining submersible pump, or a portable pump in emergency cases.

CONSTRUCTION FEATURES OF THE PUMP

Electric pump in resistant thermoplastic material.
Stainless steel motor, shaft, and bolts and screws.
Threefold seal with interposed rings with oil pre-chamber.
Built-in float for automatic operation in inspectionable housing.
Dedicated to seasonal cleaning.

CONSTRUCTION FEATURES OF THE MOTOR

Submersible, asynchronous, continuous service.
Stator inside a stainless steel enclosure, covered by wiring cap and capacitor.
Supplied with 10 m cable and Shuko plug / 10 m cord for positioning on tarpaulin.
Multi rubber connector with clapet valve.

MATERIALS

N.	PARTS*		MATERIALS
1	MOTOR	SHAFT	AISI 416 stainless steel
		LINER	AISI 304 stainless steel
3	WASHER		AISI 304 stainless steel
4	IMPELLER		TECHNOPOLYMER
5	NUT		AISI 304 stainless steel
6	O-RING		NBR
7	BASE		TECHNOPOLYMER
8	PUMP BODY		TECHNOPOLYMER
25	O-RING		NBR
26	PUMP COVER		TECHNOPOLYMER
28	FLOAT		TECHNOPOLYMER
29	CLOSING SPHERE		EPDM
33	UPPER BODY		TECHNOPOLYMER
34	HANDLE		TECHNOPOLYMER
35	LOWER BODY		TECHNOPOLYMER
36	SCREW		AISI 304
37	FLOAT INSPECTION COVER		TECHNOPOLYMER

* In contact with the liquid
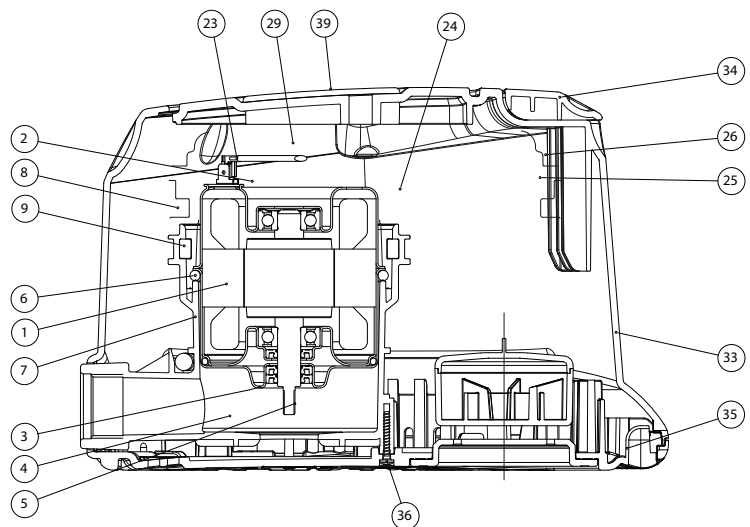
EUROCOVER - SWIMMING POOL PUMPS

Liquid temperature range: from 0 °C to +35 °C - Maximum ambient temperature: +40 °C
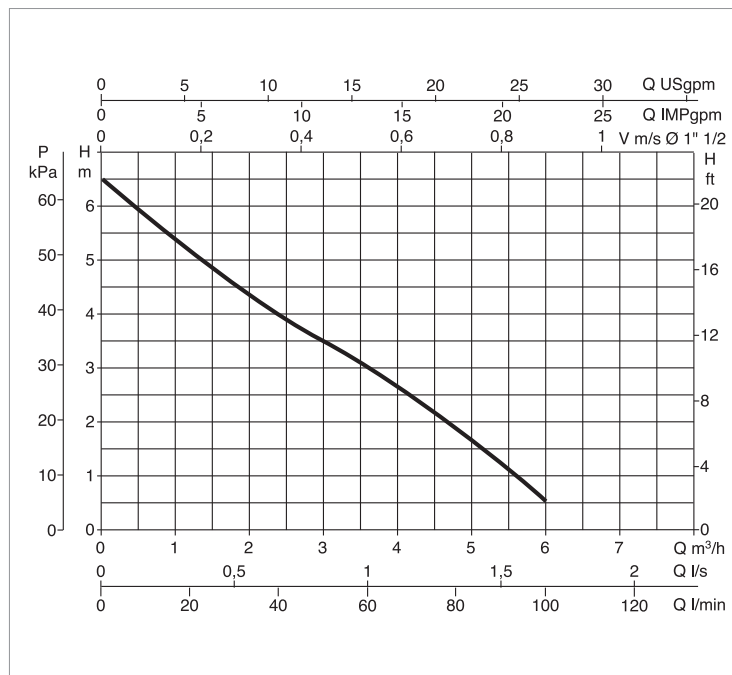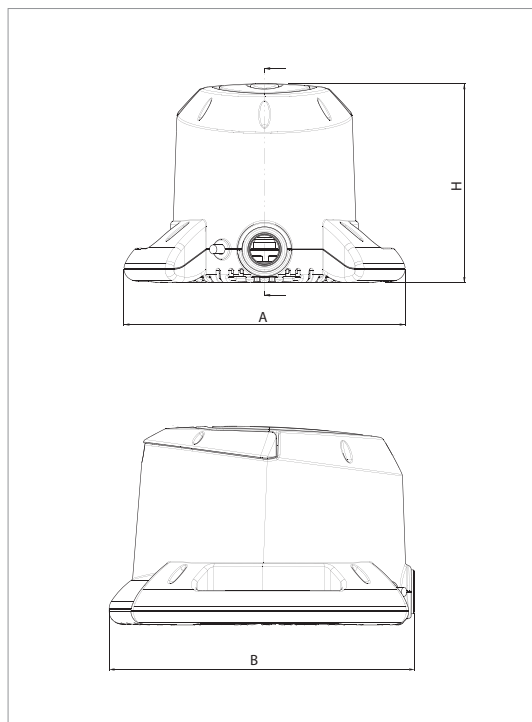
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	1,2	2,4	3,6	4,8	6
	Q=l/min	0	20	40	60	80	100
EUROCOVER	H (m)	6,5	5,1	4	3	1,9	0,5

MODEL	POWER INPUT 50 Hz	P1 MAX kW	In A	P2 NOMINAL		CAPACITOR	
				kW	HP	µF	Vc
EUROCOVER	230 V ~	0,25	1,1	0,22	0,3	8	–

MODEL	A	B	H	PACKING DIMENSIONS			WEIGHT Kg
				L/A	L/B	H	
EUROCOVER	280,2	304,4	198,1	290	230	320	4,6

DAB PUMPS reserves the right to make modifications without notice.

44

JETCOM SP - EUROCOM SP

SWIMMING POOL CENTRIFUGAL PUMPS

TECHNICAL DATA

Operating range:
from 10 to 80 l/min. with head up to 58 metres.
Pumped liquid: clean, free from solids or abrasives, swimming pool water (containing chlorine)
Liquid temperature range:
from 0 °C to +35 °C for domestic use (EN 60335-2-41)
from 0 °C to +40 °C for other uses
Maximum ambient temperature: +40°C
Maximum operating pressure: 6 bar (600 kPa)
Installation: fixed or portable, horizontal position
Motor protection class: IP 44
Protection class at the terminal board: IP 55
Insulation class: F
Standard voltage: Single-phase   220/240 V - 50 Hz - 2 poles
　　　　　　　　　　 Three-phase   230/400 V - 50 Hz - 2 poles

APPLICATIONS

Centrifugal self-priming pump with high suction capacity also when air bubbles are present. Suitable for use with water with small sandy impurities. Particularly suited for water supply in domestic systems: circulation of aggressive water in general, containing chlorine (swimming pool water).

CONSTRUCTION FEATURES OF THE PUMP

Technopolymer pump body. AISI 316 STAINLESS STEEL seal holder, support. Carbon/ceramic mechanical seal. Pump shaft in AISI 316 STAINLESS STEEL. Technopolymer impeller, diffuser, venturi tubes, and sand guard. Stainless steel adjustment rings.

CONSTRUCTION FEATURES OF THE MOTOR

Continuous service asynchronous motor.
The single-phase version has built-in thermal-amperometric protection and permanently connected capacitor.
Overload protection to be provided by the user for the three-phase version.

MATERIALS - JETCOM SP

| N.	PARTS*	MATERIALS
1	PUMP BODY	TECHNOPOLYMER A
4	IMPELLER	TECHNOPOLYMER A
7	SHAFT WITH ROTOR	AISI 316 STAINLESS STEEL
16	MECHANICAL SEAL	CARBON / CERAMIC
28	OR RING	NBR
36	SEAL COVER	AISI 316 STAINLESS STEEL
160	VENTURI DIFFUSER NOZZLE ASSEMBLY	TECHNOPOLYMER A

* In contact with the liquid
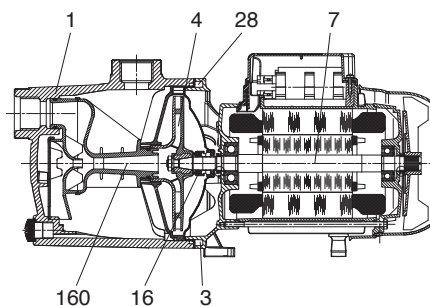
MATERIALS - EUROCOM SP

N.	PARTS	MATERIALS
1	PUMP BODY	TECHNOPOLYMER
4	IMPELLER	TECHNOPOLYMER
6	DIFFUSER	TECHNOPOLYMER
7	SHAFT WITH ROTOR	AISI 316 STAINLESS STEEL
16	MECHANICAL SEAL	CARBON / CERAMIC
28	OR RING	NBR
36	SEAL COVER	AISI 316 STAINLESS STEEL
98	DIFFUSER BODY	TECHNOPOLYMER
304	REAR DISC	TECHNOPOLYMER

DAB PUMPS reserves the right to make modifications without notice.
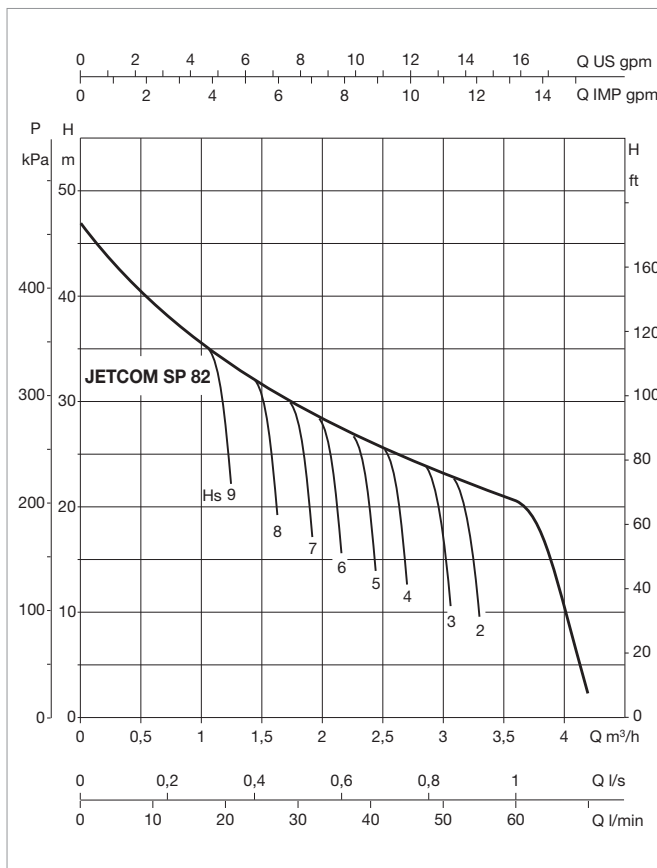
45
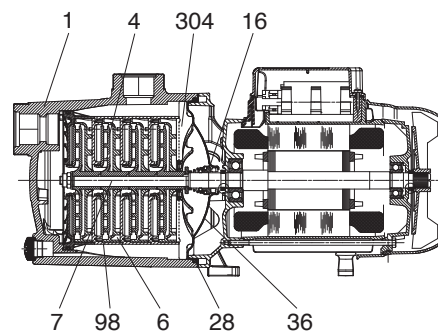
JETCOM SP 82 - SWIMMING POOL CENTRIFUGAL PUMPS

Liquid temperature range: from 0 °C to +35 °C - Maximum ambient temperature: +40 °C
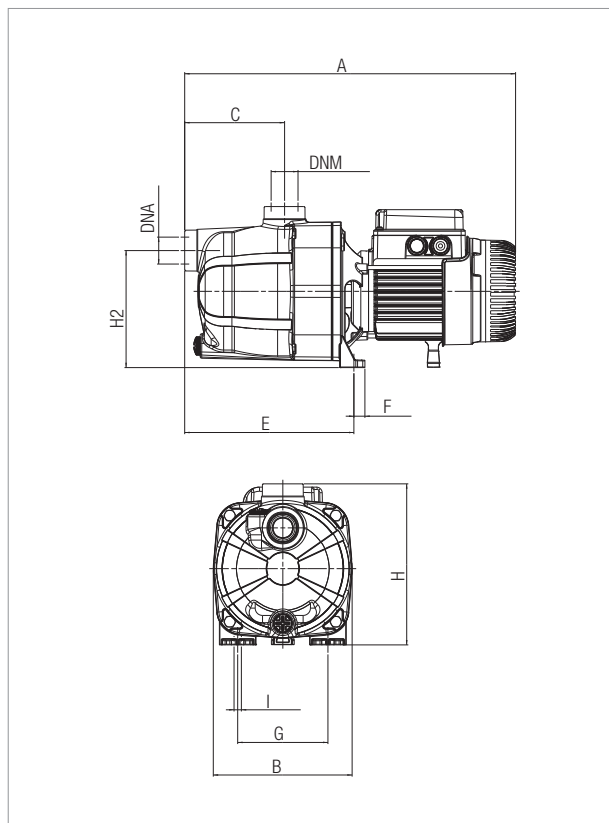
The performance curves are based on kinematic viscosity values =
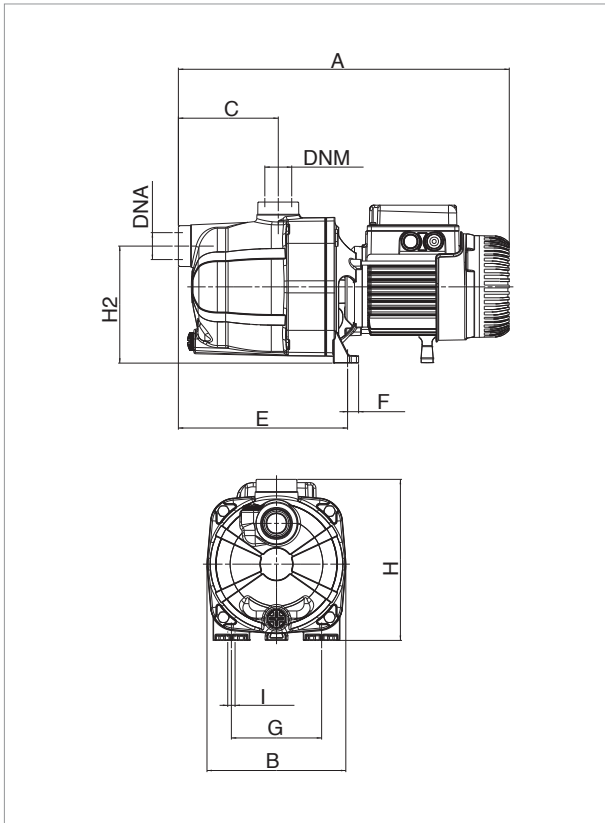1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3,0	3,3	3,6	4,2	4,8
	Q=l/min	0	10	20	30	40	50	55	60	70	80
JETCOM 82 SP M	H (m)	47	40	34	30	26,2	23,5		20		

MODEL	ELECTRICAL DATA						
	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR	
			kW	HP		µF	Vc
JETCOM 82 SP M	1X220-240 V~	0,85	0,6	0,8	3,8	12,5	450

MODEL	A	B	C	E	F	G	I Ø	H	H1	DNA	DNM	PACKING DIMENSION			WEIGHT Kg	Q.TY X PALLET
												L/A	L/B	H		
JETCOM 82 SP M	406	170	122	208	14	111	9	198	144	1"	1"	470	240	240	7,7	28

DAB PUMPS reserves the right to make modifications without notice.

46

DAB
WATER•TECHNOLOGY

JETCOM SP 102 - SWIMMING POOL CENTRIFUGAL PUMPS

Liquid temperature range: from 0 °C to +35 °C - **Maximum ambient temperature:** +40 °C

The performance curves are based on kinematic viscosity values =
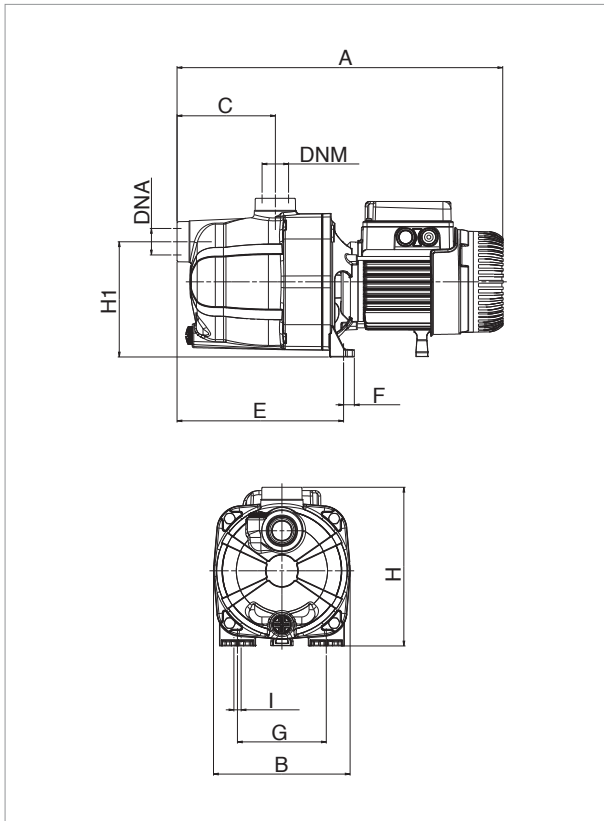1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
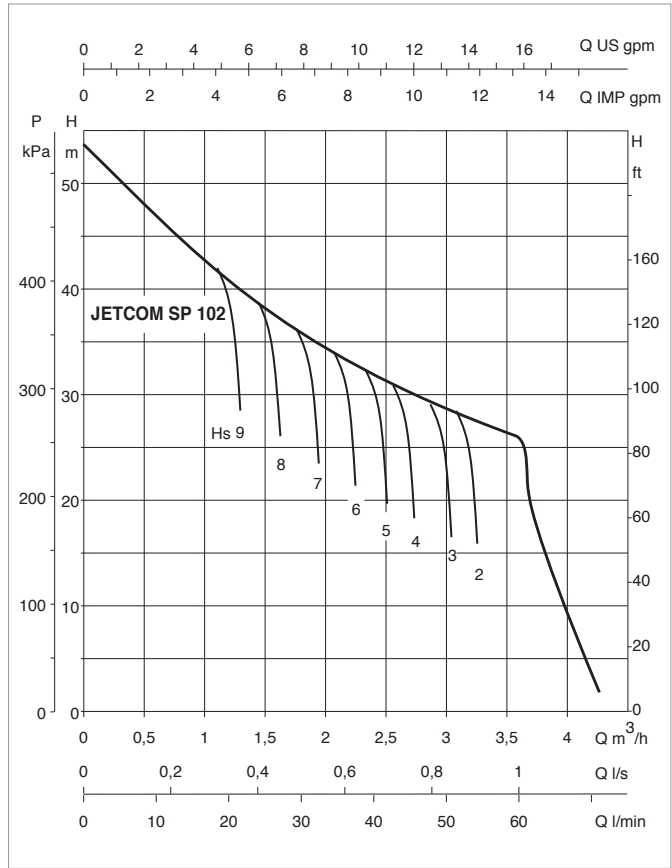
MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3,0	3,3	3,6	4,2	4,8
	Q=l/min	0	10	20	30	40	50	55	60	70	80
JETCOM 102 SP M-T	H (m)	53,8	47	41	36,3	32,4	28,8		25,8		

MODEL	ELECTRIC DATA						
	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR	
			kW	HP		µF	Vc
JETCOM 102 SP M	1x220-240 V ~	1,13	0,75	1	5,1	16	450
JETCOM 102 SP T	3X230-400 V~	1,04	0,75	1	3,4 -2	-	-

MODEL	A	B	C	E	F	G	I Ø	H	H1	DNA	DNM	PACKING DIMENSION			WEIGHT Kg	Q.TY X PALLET
												L/A	L/B	H		
JETCOM 102 SP M-T	425	170	122	208	14	111	9	203	144	1 "	1 "	470	240	240	9,5	28

DAB PUMPS reserves the right to make modifications without notice.

47

EUROCOM SP 50 - SWIMMING POOL CENTRIFUGAL PUMPS

Liquid temperature range: from 0 °C to +35 °C - Maximum ambient temperature: +40 °C

The performance curves are based on kinematic viscosity values =
1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.
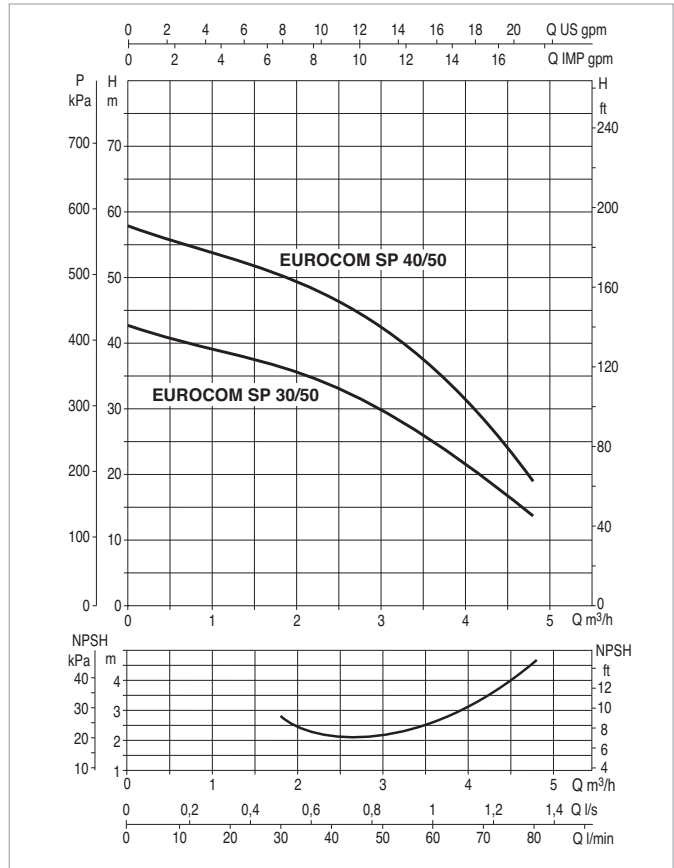
MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3,0	3,3	3,6	4,2	4,8
	Q=l/min	0	10	20	30	40	50	55	60	70	80
EUROCOM SP 30/50 M-T	H (m)	42,2	40,2	38,2	36,2	33,8	30	27,5	24,8	19,5	14
EUROCOM SP 40/50 M-T		57,7	55,3	52,8	50,1	47,1	42,7	39,5	35,8	28	19,2

MODEL	ELECTRICAL DATA						
	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A	CAPACITOR	
			kW	HP		µF	Vc
EUROCOM SP 30/50 M	1x220-240 V ~	0,88	0,55	0,75	3,9	12,5	450
EUROCOM SP 30/50 T	3x230-400 V ~	0,87	0,55	0,75	2,8-1,6	-	-
EUROCOM SP 40/50 M	1x220-240 V ~	1,2	0,75	1	5,3	20	450
EUROCOM SP 40/50 T	3x230-400 V ~	1,07	0,75	1	3,6 -2,1	-	-

MODEL	A	B	C	E	F	G	I Ø	H	H1	DNA	DNM	PACKING DIMENSIONS			WEIGHT Kg	Q.TY X PALLET
												L/A	L/B	H		
EUROCOM SP 30/50 M-T	406	170	122	208	14	111	9	198	144	1 "	1 "	470	240	240	8,8	28
EUROCOM SP 40/50 M	425	170	122	208	14	111	9	203	144	1 "	1 "	470	240	240	11	28
EUROCOM SP 40/50 T	425	170	122	208	14	111	9	203	144	1 "	1 "	470	240	240	11,3	28

DAB PUMPS reserves the right to make modifications without notice.

48

DAB
WATER•TECHNOLOGY

MULTI 4 SW
SALT WATER PUMPS

TECHNICAL DATA

Operating range:
capacity up to 90 l/min; head up to 46 m
Liquid temperature range:
from 0 °C to +35 °C for domestic use
from 0 °C to +40 °C for other uses
Pumped liquid:
Designed to specifically pump salt water
Maximum suction capacity: 8 metres
Maximum ambient temperature: +40 °C
Protection class: IPX4
Insulation class: F
Installation: fixed or portable, horizontal position
Special versions on requests: alternative voltages and/or frequencies

APPLICATIONS

Horizontal axis multistage centrifugal pump, self-priming, with great suction capacity also in case of air bubbles, characterised by extremely quiet operation, specifically designed for the circulation of salt water.

CONSTRUCTION FEATURES

Technopolymer pump body, motor support, impellers, diffusers and diffuser body. All the metal parts in contact with water are made of AISI 316 stainless steel. Rotor shaft, impeller fastening nut. Silicon carbid and Alox ceramic mechanical seal and AISI 316 stainless steel mechanical parts. Continuous service asynchronous single phase motor. Built-in thermal-amperometric protection and permanently connected capacitor.

MATERIALS

N.	PARTS*	MATERIALS
1	SUCTION FLANGE	TECHNOPOLYMER
2	INSERT	NICKEL PLATED BRASS
3	NUT	A4 UNI 7474 STAINLESS STEEL
4	WASHER	AISI316 UNI6592 STAINLESS STEEL
5	OR RING	NBR
6	COUNTER FLANGE	TECHNOPOLYMER
7	OR RING	EPDM
8	DIFFUSER	TECHNOPOLYMER
9	IMPELLER	TECHNOPOLYMER
10	ROTOR SHAFT	AISI 316 STAINLESS STEEL UNI EN 10088-1 X5CrNiMo1712-2
11	WASHER	AISI316 UNI6592 STAINLESS STEEL
12	SEEGER RING	AISI 316 STAINLESS STEEL
13	MECHANICAL SEAL	SIC/ALOX/NBR/316/316
14	COUNTER FACE	ALOX/NBR
15	BODY	TECHNOPOLYMER
16	INSERT	NICKEL PLATED BRASS

* In contact with the liquid

DAB PUMPS reserves the right to make modifications without notice.

49
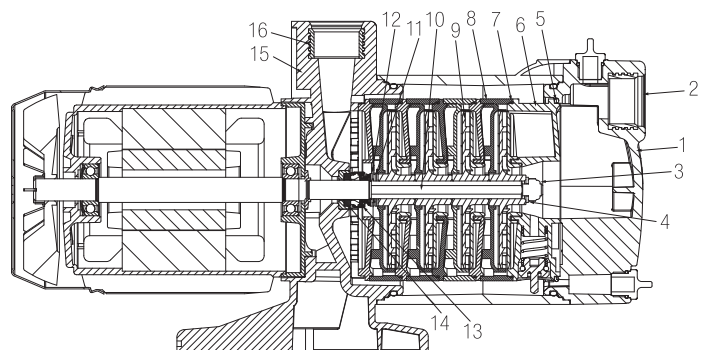
MULTI 4 SW - SALT WATER PUMPS

Pumped liquid temperature range: from 0 °C to +35 °C - Maximum ambient temperature: +40 °C
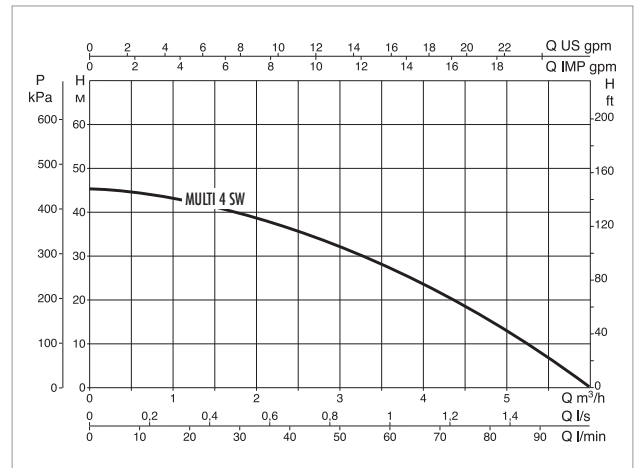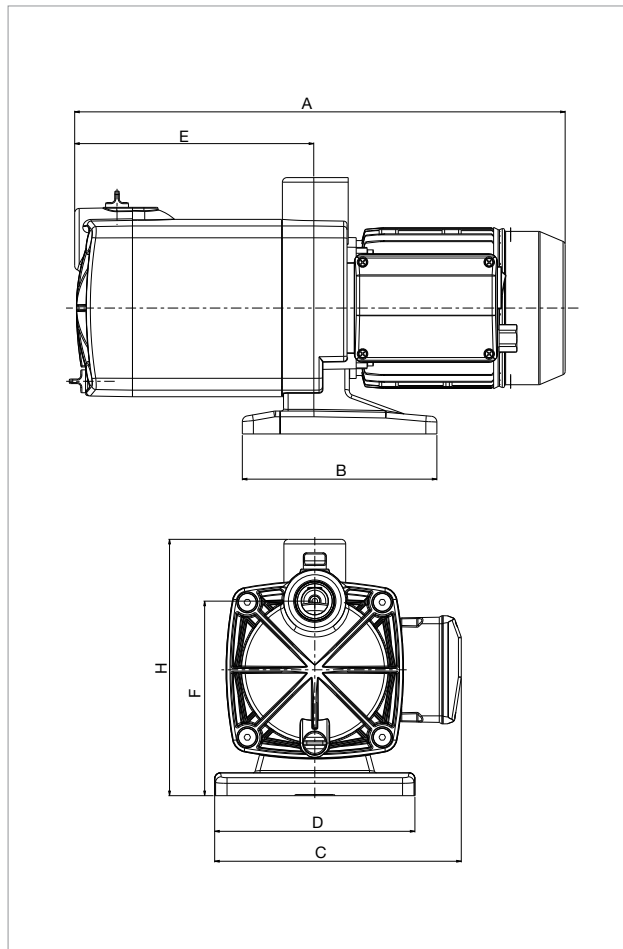
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³/h	0	0,6	1,2	1,8	2,4	3,0	3,6	4,2	4,8	5,4
	Q=l/min	0	10	20	30	40	50	60	70	80	90
MULTI 4 SW M	H (m)	46	45	43	40	38	33	28	22	16	9

MODEL	ELECTRICAL DATA							
	N. OF IMPELLER	POWER INPUT 50 Hz	P1 MAX KW	P2 NOMINAL		In A	CAPACITOR	
				kW	HP		µF	Vc
MULTI 4 SW M	4	1x220-240 V ~	1	0,75	1	4,5	16	450

MODEL	A	B	C	D	E	F	H	DNA GAS	DNM GAS	PACKING DIMENSIONS			WEIGHT Kg
										L/A	L/B	H	
MULTI 4 SW M	430	170	215	175	209	170	224	1 "	1 "	460	230	270	10,6

DAB PUMPS reserves the right to make modifications without notice.

50

NOVA SALT W

SALT WATER PUMPS

TECHNICAL DATA

Operating range:
from 1 to 7.5 m³/h with head up to 6 metres
Liquid temperature range:
from 0 °C to +35 °C for domestic use
Pumped liquid: dirty water, without fibre, including salt water
Max. immersion depth: 7 metres

APPLICATIONS

The vertical delivery draining submersible pump has been specifically built for draining applications in salt water installations. It may also be used as a portable pump in emergency situations. The built-in float level switch, in the automatic version, allows fixed installation, ensuring automatic operation.

CONSTRUCTION FEATURES OF THE PUMP

Hydro resistant technopolymer pump body, cover, and suction grid.
AISI 316 stainless steel motor, rotor shaft, and bolts and screws.
Cable with tin plated conductors.

CONSTRUCTION FEATURES OF THE MOTOR

Submersible type continuous duty asynchronous motor.
Thermal overheating protection.

MATERIALS

N.	PARTS		MATERIALS
1	FILTER BASE		TECHNOPOLYMER
2	SUCTION STRAINER		TECHNOPOLYMER
3	OR RING		NBR
4	IMPELLER		TECHNOPOLYMER
5	V. RING		NBR
6	NUT		AISI 316 STAINLESS STEEL DIN 982
7	WASHER		A2 STAINLESS STEEL
8	MOTOR	CASE	ALUMINIUM
		ROTOR SHAFT	AISI 316 STAINLESS STEEL UNI EN 10088-1 X5CRNIMO1712-2
9	BODY		TECHNOPOLYMER
10	OR RING		NBR
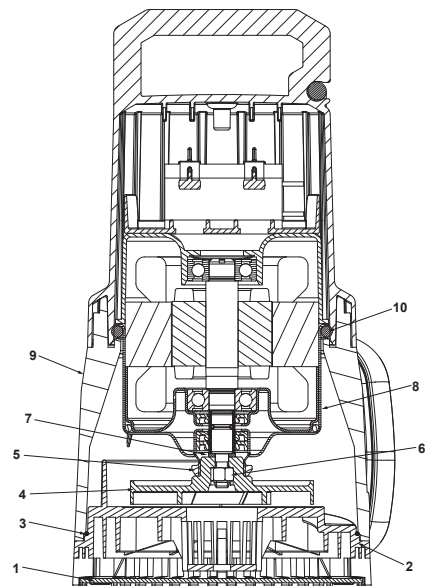
NOVA SALT W - SALT WATER PUMPS

Liquid temperature range: from 0 °C to +35 °C for domestic use
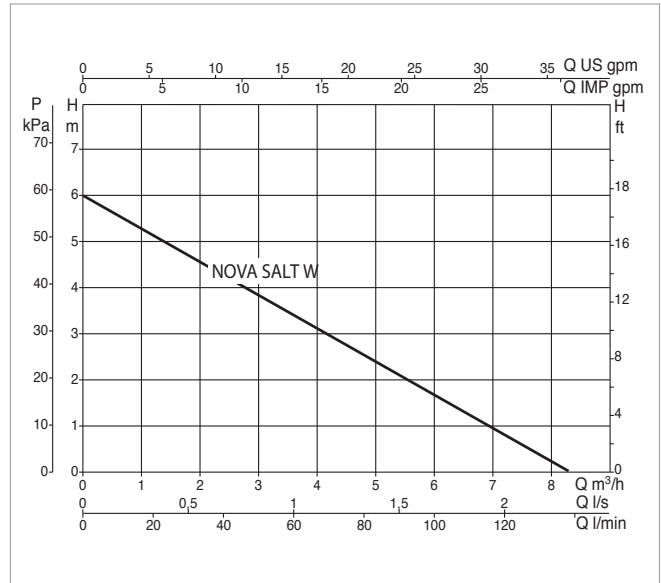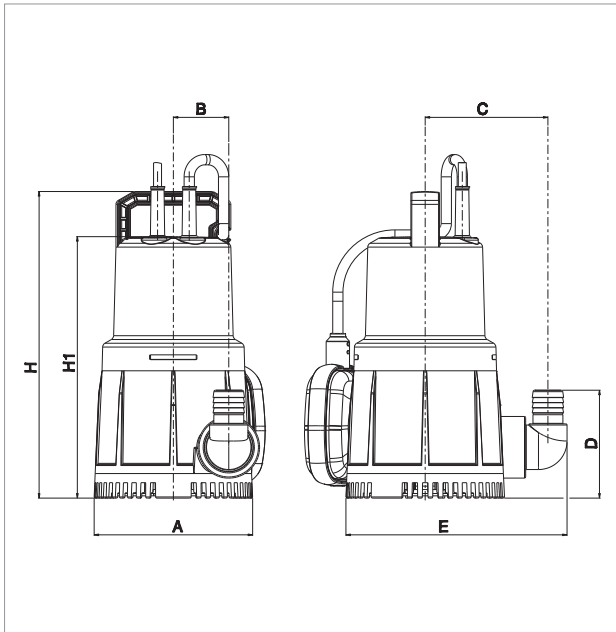
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equal to 1000 kg/m³. Curve tolerance according to ISO 9906.

MODEL	Q=m³h	0	1	2	3	4,5	5,0	6	7	7,5
	Q=l/min	0	16,6	33,3	50	75	83,3	100	116,6	125
NOVA SALT W M-A	H (m)	6	5,4	4,7	3,9	2,8	2,5	1,7	1	0,5

MODEL	ELECTRICAL DATA				
	POWER INPUT 50 Hz	P1 MAX kW	P2 NOMINAL		In A
			kW	HP	
NOVA SALT W M-A	1X230 V~	0,28	0,2	0,28	1,3

MODEL	A	B	C	D	E	H	H1	DNM GAS	PACKING DIMENSIONS			CABLE	VOLUME (m³)	WEIGHT Kg
									L/A	L/B	H			
NOVA SALT W M-A	140	48	107	95	195	270	230	1" ¼	193	193	330	10 mt.	0,012	3,9

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52

DAB
WATER•TECHNOLOGY

ACCESSORIES

CONNECTION CABLE KIT	DESCRIPTION
	KIT CONNECTION CABLE ESWIM
	KIT CONNECTION CABLE ESWIM + KIT DIGITAL INPUT (E.ADAPT)

UNION KITS	DESCRIPTION
	2" UNIONS KIT / DN 50-63 FOR EUROSWIM, ESWIM AND EPRO

SUC + DEL COUNTER FLANGE KIT	DESCRIPTION
	COUNTER FLANGE KIT SUCTION + DELIVERY FOR EUROPRO HIGH FLOW

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54

TECHNICAL APPENDIX

DAB
W A T E R • T E C H N O L O G Y

GENERAL INFORMATION

FUNDAMENTAL TERMS USED IN PUMPS

The following is a list of fundamental terms used in pumps and an explanation of their meanings. Their knowledge is necessary in order to discuss hydraulic pumps. All measurements are given in Technical units. Reference should be made to the chart for their international and Anglo-Saxon equivalents.

HEAD

Head means height, difference in level, gradient. For example if a pump has a flow of Q litres per second and a head of 30 metres, it means that it is capable of raising Q litres of liquid by 30 metres every second (therefore achieving a 30 metre gradient). For each given pump, the head is determined by its construction, such as the external diameter of the impeller and the speed of rotation, but it is not affected by the pumped liquid. This means that the pump as such can raise by 30 metres Q litres per second of water, petrol, mercury, etc.; the only difference in the three cases will be the power of the motor required.

SPECIFIC WEIGHT OF A LIQUID OR FLUID

The specific weight of a liquid or fluid is the weight per unit volume of the liquid/fluid. Specific weight is usually measured in kg/dm^3 or kg/l, remembering that $1 dm^3$ equals 1 litre.

PRESSURE

Pressure means weight per unit of area (e.g. kg/cm^2), and it should not be confused with head. In the case of liquids, the pressure that the liquid exerts on a surface is given by the product of the head (or height) of the liquid, multiplied by its specific weight. For this reason, the column of several km of air on the earth's surface produces at sea level a pressure of about $1 kg/cm^2$ (equal to approx. 1 atmosphere). If the same column were of water rather than air, the pressure would be some 700 to 800 times greater, due to the fact that water has a specific weight approximately 700-800 times greater than that of air.

Bearing in mind that a column of water 10 m high is equivalent to approx. $1 kg/cm^2$, if we placed a manometer on the delivery of the pump, the following pressure increases would be measured:

a) with petrol (specific weight 0,7 kg/dm^3) $= 00{,}7 \times 0{,}001 \times 30 \times 100 = 2{,}1\ kg/cm^2$
b) with water (specific weight 1,0 kg/dm^3) $= 00{,}1 \times 0{,}001 \times 30 \times 100 = 3{,}0\ kg/cm^2$
c) with mercury (specific weight 13,6 kg/dm^3) $= 13{,}6 \times 0{,}001 \times 30 \times 100 = 40{,}8\ kg/cm^2$

FLOW

Flow means the quantity of liquid or fluid that passes through a point, such as the delivery outlet of a pump, or a cross section of a pipe, in the set unit of time.

This can be measured in litres per minute (l/min), litres per second (l/s), cubic metres per hour (m^3/h) etc.

It should be noted that there is a perfect analogy between the flow of water through a pipe and the flow of electricity through a wire. It is sufficient to remember that hydraulic head is equivalent to electrical potential or voltage, and hydraulic flow is equivalent to electric current or amperes in electrotechnics. Even their behaviour is the same. Just as a thin wire restricts the flow of electricity more than one with a larger section, in the same way, a pipe of a smaller diameter offers a greater resistance to the flow of a liquid than one of a larger one. Just as the passage of electric current through the wire to a cable needs a voltage difference, in the same way, the flow of a liquid or fluid through a pipe needs a certain head.

There will never be a movement of liquid between two points of a perfectly horizontal pipe, and with the liquid at the same head in both points. This is due to the fact that, in the same way as the cable exerts a certain resistance to the passage of the electric current (electric resistance), the pipe also exerts a certain resistance to the passage of the fluid, the extent of which depends on the quality of the pipe (material, shape, presence of scale) and its section, and therefore the speed at which the fluid runs through the pipe. This resistance is called head loss.

HEAD LOSS

Head loss is that part of the head, possessed by the liquid, which is lost when passing through a pipe, a valve, a filter, etc. This loss cannot be recovered, as it is lost due to friction. Going back to the analogy between electrical and hydraulic phenomena, just as the losses in a cable increase in proportion with the current, so head losses are proportionally greater as the speed of the liquid increases. This means that the more the flow is restricted by scaled pipes, clogged filters, partially closed valves etc. the greater the head loss will be.

PUMP

A pump is a machine used to give a certain head to a liquid that passes through it. The head can be used to raise the liquid to a higher level, or to make it flow inside a pipe, or even in the open air, so that it covers a certain distance. The characteristics of a pump are:

a) **Flow** (the quantity of liquid that is moved through the pump in a unit of time)
b) **Head** (that is the height at which the pump is capable lifting the flow)

Based on the existing relationship between the flow and the head, it is possible to have:

a) Pumps with small flow and large head (piston pumps, rotary pumps, small centrifugal pumps).
b) Pumps with medium flow and medium head (centrifugal pumps in general).
c) Pumps with large flow and small head (helico-centrifugal pumps, propeller pumps).
Centrifugal pumps, helico-centrifugal pumps and propeller pumps have a rotary motion and their speed is universally measured in revolutions per minute

TECHNICAL APPENDIX

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56

DAB
WATER•TECHNOLOGY

(rpm). With these machines operating at a given speed, for each given value of flow, there is only one value of head. This means that in order to increase or decrease the performance of these types of pumps, the operating speed must be varied accordingly. Basically, the liquid passing through the pump is supplied with energy that is related to the head and the speed of the liquid itself. This energy supplied within the unit of time is known as delivered power.

DELIVERED POWER

The delivered power is the power delivered by the pump to the liquid. The value of this delivered power depends on three factors: flow, head, and specific weight of the pumped liquid. The higher these three factors, the higher is the power delivered by the pump. For example, a pump delivering petrol does less work than when delivering sulphuric acid, because the specific weights of the two liquids are different.

In order to pump a liquid, a pump must be driven by a motor. In the vast majority of cases, this is either an electric, or an internal combustion motor. Electric motors use electric power, while internal combustion motors (engines) use oil or oil derivative fuels. The power that the pump needs in order to operate is called absorbed power.

DELIVERED POWER CALCULATION

Delivered power is normally expressed in kW or HP, indicating with:

Q = the flow
H = the head in metres of the column of liquid (m.c.l.)
γ = the specific weight of the liquid

The delivered power (P3) is calculated using one of the following equations:

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{75} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{270} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/s)} \times H \text{ (m.c.l.)}}{102} \text{ in kW}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{4500} \text{ in HP}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (m}^3\text{/h)} \times H \text{ (m.c.l.)}}{367} \text{ in kW}$$

$$P3 = \frac{\gamma \text{ (kg/dm}^3\text{)} \times Q \text{ (l/min)} \times H \text{ (m.c.l.)}}{6120} \text{ in kW}$$

ABSORBED POWER

Absorbed power is the power that the pump absorbs from the motor, to give to the liquid the delivered power discussed above.

Not all the absorbed power becomes delivered power, as some power is lost through friction, and even more within the pump itself, due to hydraulic losses. It is therefore clear that the delivered power is always less than the absorbed power, and the relation between the two is a number always lower than 1. This number is known as the efficiency.

YIELD

The efficiency is obtained by dividing the delivered power by the absorbed power, and is normally expressed as a percentage. For example, an efficiency of 75 % of a pump indicates that only 75 % of the absorbed power is converted into delivered power, with the remaining 25 % being lost due to friction. Therefore, the higher the efficiency of a pump, the smaller the portion of absorbed power being lost. If one then considers that the cost of energy relates to the absorbed power, it immediately becomes apparent just how important efficiency is. If we compare two pumps with the same 1 HP delivered power, but with an efficiency of 50 % for the first, and 60 % for the second, we can assume that the first one will need 2 HP to supply 1, while the second will only need 1,67 HP to achieve the same result. This means that the efficiency of a pump expresses, better than any other parameter, the quality of the pump and the related savings in terms of operating costs.

CALCULATION OF POWER OUTPUTS

P1: is the power absorbed by the motor in kW (generally indicated by the wattmeter).
P2: the power delivered by the motor in kW. This is measured at the brake (it basically is the power absorbed by the pump).
P3: the power delivered by the pump in kW.

Power output of the motor $\eta = \dfrac{P_2}{P_1}$

Power output of the motor $\eta = \dfrac{P_3}{P_2}$

Power output of the motor $\eta = \dfrac{P_3}{P_1}$

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57

THE HEAD OF A PUMP AND ITS MEASUREMENT

The head of a pump is always the differential head, or that given by the pump itself. This is generally expressed in metres. In order to ascertain the head of a surface pump, during its operation it is necessary to measure the value of the head both at the suction and at the delivery of the pump itself, making sure that the readings are taken at the same level, which is called the reference plane. Two cases are possible, depending on installation:

1) the value of the head at the suction is negative (i.e. below zero shown on the manometer): in this case, the level of the liquid collected is lower than the level of the suction inlet.

2) the value of the head at the suction is positive (i.e. above zero shown on the manometer) in this case, the level of the liquid collected is higher than the level of the suction inlet (flooded suction).

In the first case the head of the pump is given by the sum of the two readings, while in the second it is given by subtracting the value of the head at the suction inlet from the value at the delivery outlet.

Finally, it is necessary to make sure that the readings at the suction and the delivery have been taken from apertures of the same diameter, so that they are not distorted by a difference in the speed of the liquid at the point of measurement. Any correction is made by calculating the dynamic head, or that part of the head linked with the speed of the liquid, which means that part of the head that the liquid possesses at the measuring section, due to the fact that it is moving. The dynamic head Hd, expressed in metres, is calculated using the following formula:

$$Hd = \frac{v^2}{2g}$$

where: v = speed of the fluid at the measuring point, given in m/s
g = acceleration of gravity (9,81), expressed in m/s^2
2g = 2 x 9,81 = 19,62 m/s^2

The correction of the head is given by the difference between the dynamic head at the delivery, and the dynamic head at the suction. It is therefore clear that if the readings upstream and downstream the pump have been taken on pipes of the same diameter, and therefore with the liquid flowing at the same speed, the correction is zero.

In order to ascertain the head of a submerged impeller pump, it is sufficient, during operation, to measure the head at the delivery port. In this case, the head of the pump is given by adding the value read to the dynamic head (always at the delivery port), and to the difference of level between the free surface of the liquid collected and the manometer.

VARIATION IN PUMP HEAD IN RELATION TO SPEED VARIATION

The performance of a pump is directly connected to its speed in rpm (**n**). Providing that there is no cavitation, the law of similarity may be used, which is expressed as follows:

$$Q_x = Q \times \frac{n_x}{n} \qquad H_x = H \times \left(\frac{n_x}{n}\right)^2 \qquad P_{2\text{-}x} = P_2 \times \left(\frac{n_x}{n}\right)^3$$

For example, when doubling the number of revolutions (**n**$_x$) one obtains:
Q_x = the value of the flow doubles
H_x = the value of the head is 4 times higher
$P_{2\text{-}X}$ = the value of the absorbed power is 8 times higher

Q - H - P2   are the values at speed **n**
Q_x - H_x - $P_{2\text{-}x}$ are the values at speed **n$_x$**.

TECHNICAL APPENDIX

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58

NOTES ON THE MOTORS OF ELECTRIC PUMPS

INDEX OF SYMBOLS USED	
P_1	: POWER ABSORBED BY THE MOTOR IN kW.
P_2	: POWER DELIVERED BY THE MOTOR IN kW OR HP.
V ~	= AC POWER INPUT VOLTAGE AT THE MAINS.
Hz	= FREQUENCY IN CYCLES PER SECOND OF THE POWER INPUT VOLTAGE.
I	= CURRENT ABSORBED BY THE MOTOR IN AMPERES.
$\cos\varphi$	= POWER FACTOR.
$n^{1/min}$	= SPEED OF ROTATION IN RPM.
η	= OUTPUT POWER (RELATION BETWEEN DEVELOPED POWER AND ABSORBED POWER P2/P1).
p	= NUMBER OF POLES OF THE MOTOR.
Cn	= NOMINAL TORQUE OF THE MOTOR.

NO-LOAD SPEED OF ROTATION
The no-load speed of single-phase and three-phase electric induction motors is given by the formula:

$$n^{1/min} = \frac{120 \times Hz}{p}$$

No-load speed of rotation $n^{1/min}$

FREQUENCY Hz	2 POLES	4 POLES
50	3000	1500
60	3600	1800

The full-load speed is 2 to 7 % lower than the no-load speed (2 to 7 % sliding).

CURRENT ABSORBED

Single-phase: $I = \dfrac{1000 \times P_2\,(kW)}{V \times \cos\varphi \times \eta}$ or: $I = \dfrac{736 \times P_2\,(HP)}{V \times \cos\varphi \times \eta}$

Three-phase: $I = \dfrac{1000 \times P_2\,(kW)}{1.73 \times V \times \cos\varphi \times \eta}$ or: $I = \dfrac{736 \times P_2\,(HP)}{1.73 \times V \times \cos\varphi \times \eta}$

ABSORBED POWER

Single-phase: $P_1\,(kW) = \dfrac{V \times I \times \cos\varphi}{1000}$

Three-phase: $P_1\,(kW) = \dfrac{1.73 \times V \times I \times \cos\varphi}{1000}$

POWER DELIVERED AT THE MOTOR AXIS

Single-phase: $P_2\,(kW) = \dfrac{V \times I \times \cos\varphi \times \eta}{1000}$ or: $P_2\,(HP) = \dfrac{V \times I \times \cos\varphi \times \eta}{736}$

Three-phase: $P_2\,(kW) = \dfrac{1,73 \times V \times I \times \cos\varphi \times \eta}{1000}$ or: $P_2\,(HP) = \dfrac{1,73 \times V \times I \times \cos\varphi \times \eta}{736}$

YIELD

$$\eta = \frac{P_2\,(kW)}{P_1\,(kW)}$$

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59

TECHNICAL APPENDIX

POWER FACTOR

Single-phase: $\cos\varphi = \dfrac{P_2 \text{ (kW)} \times 1000}{V \times I \times \eta}$ or: $\cos\varphi = \dfrac{P_1 \text{ (kW)} \times 1000}{V \times I}$

Three-phase: $\cos\varphi = \dfrac{P_2 \text{ (kW)} \times 1000}{1{,}73 \times V \times I \times \eta}$ or: $\cos\varphi = \dfrac{P_1 \text{ (kW)} \times 1000}{1{,}73 \times V \times I}$

TORQUE FACTOR

$Cn = \dfrac{P_2 \text{ (kW)} \times 1000}{1.027 \times n^{1/min}}$ in kgm

$Cn = \dfrac{P_2 \text{ (HP)} \times 736}{1.027 \times n^{1/min}}$ in kgm

$Cn = \dfrac{702 \times HP}{n^{1/min}}$ in decaNewtonmetres

RELATIONSHIP BETWEEN KW AND HP

1 HP = 0,736 kW   1 kW = 1,36 HP $\dfrac{HP}{1.36} = kW$ kW x 1,36 = HP

STARTING CURRENT (ISP)

The starting current (at switch on) of a motor is 4 to 8 times greater than the nominal current, depending on the power of the motor.
Isp = In x 4 ÷ 8

DETAILS ON CAPACITORS

The approximate current absorbed by a capacitor is:

$I = \dfrac{6{,}28 \times F \times C \times V}{1.000.000}$

Where:
I = current in Amps absorbed by the capacitor.
F = frequency in Hz of the applied voltage.
C = capacity of capacitor μF.
V = applied voltage.

Example:
The current absorbed by a 14 μF capacitor connected
to a 220 Volt - 50 Hz power input is:

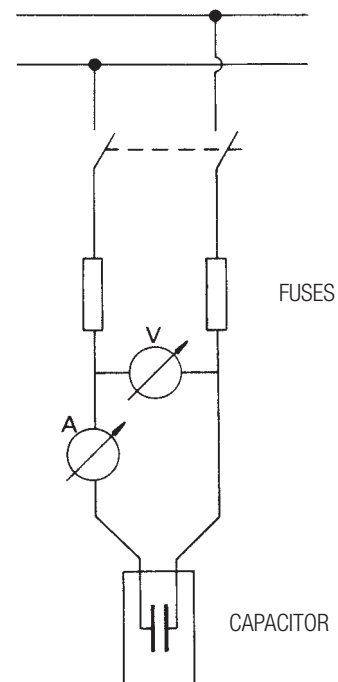$I = \dfrac{6{,}28 \times 50 \times 14 \times 220}{1.000.000} = 0{,}96 \text{ Amperes}$

The approximate capacity of a capacitor is determined by:

$C = \dfrac{I}{6{,}28 \times F \times V} \times 1{,}000{,}000$

Example:
The capacity of a capacitor absorbing 1,4 Amps
connected to a 220 Volt - 50 Hz power input is:

$C = \dfrac{1{,}4}{6{,}28 \times 50 \times 220} \times 1{,}000{,}000 = 20{,}2 \text{ μF}$

FUSES

CAPACITOR

STAR-DELTA START-UP

The normally delta Δ connected motor is connected to the network using a star type connection. The current and the starting torque are both reduced to 1/3 of the value they would be if delta Δ connected.

PROTECTION

It is recommended that motors are connected to the power input network using appropriate three-fuse thermal magnetic circuit breakers, or in any case circuit breakers complying with current local regulations.

DAB
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LOAD LOSS AND SPEED TABLE

In order to accurately calculate **load losses and speed**, the following table is used:

FLOW			NEW GALVANISED PIPING									
			NOMINAL DIAMETERS: INCHES AND MM									
l/s	l/min	m³/h	1/2"	3/4"	1"	1"1/4	1"1/2	2"	2"1/2	3"	3"1/2	4"
			15,75	21,25	27	35,75	41,25	52,5	68	80,25	92,5	105
0,17	10	0,6	0,856	0,47	0,291							
			9,01	20,9	0,65							
0,25	15	0,9	1,284	0,705	0,4387	0,249		HAZEN WILLIAMS CALCULATION FORMULA (UNI 9489 13.3.3.6)				
			19,07	4,43	1,38	0,35						
0,33	20	1,2	1,712	0,94	0,582	0,332	0,25					
			32,47	7,55	2,35	0,6	0,3					
0,42	25	1,5	2,14	1,175	0,728	0,415	0,31					
			49,06	11,41	3,55	0,91	0,45					
0,5	30	1,8	2,568	1,411	0,874	0,498	0,37	0,23				
			68,74	15,98	4,98	1,27	0,63	0,2				
0,58	35	2,1	2,996	1,646	1,019	0,581	0,44	0,27				
			91,42	21,26	6,62	1,69	0,84	0,26				
0,67	40	2,4		1,881	1,165	0,664	0,5	0,31				
				27,22	8,48	2,16	1,08	0,33				
0,83	50	3		2,351	1,456	0,831	0,62	0,39	0,23			
				41,13	12,81	3,27	1,63	0,5	0,14			
1	60	3,6		2,821	1,747	0,997	0,75	0,46	0,28			
				57,63	17,95	4,58	2,28	0,7	0,2			
1,17	70	4,2		3,291	2,039	1,163	0,87	0,54	0,32	0,23		
				76,64	23,88	6,08	3,03	0,94	0,27	0,12		
1,33	80	4,8			2,33	1,329	1	0,62	0,37	0,26		
					30,57	7,79	3,88	1,2	34	0,15		
1,5	90	5,4			2,621	1,495	1,12	0,69	0,41	0,3		
					38,01	9,69	4,83	1,49	0,42	0,19		
1,67	100	6			2,912	1,661	1,25	0,77	0,46	0,33	0,25	
					46,19	11,77	5,86	1,81	0,51	0,23	0,11	
2,08	125	7,5			3,641	2,077	1,56	0,96	0,57	0,41	0,31	0,24
					69,79	17,79	8,86	2,74	0,78	0,35	0,17	0,09
2,5	150	9				2,492	1,87	1,16	0,69	0,49	0,37	0,29
						24,92	12,41	3,84	1,09	0,49	0,24	0,13
2,92	175	10,5				2,907	2,18	1,35	0,8	0,58	0,43	0,34
						33,15	16,51	5,1	1,45	0,65	0,32	0,17

White numbers: Load losses in m. for every 100 m of pipework

Green numbers: Water speed in m/sec

The table refers to galvanised pipework.

For other materials multiply as follows:
- 0,6 PVC pipes.
- 0,7 aluminium pipes.
- 0,8 laminated steel and stainless steel.

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DAB WATER•TECHNOLOGY

61

TECHNICAL APPENDIX

LOAD LOSS AND SPEED TABLE

In order to accurately calculate **load losses and speed**, the following table is used:

FLOW			NEW GALVANISED PIPING									
			NOMINAL DIAMETERS: INCHES AND MM									
l/s	l/min	m³/h	1"1/4	1"1/2	2"	2"1/2	3"	3"1/2	4"	5"	6"	8"
			35,75	41,25	52,5	68	80,25	92,5	105	130	155	206
3,33	200	12	3,322	2,5	1,54	0,92	0,66	0,5	0,39	0,25		
			42,43	21,14	6,53	1,85	0,83	0,41	0,22	0,08		
4,17	250	15	4,156	3,12	1,93	1,15	0,82	0,62	0,48	0,31		
			64,12	31,94	9,87	2,8	1,25	1,63	0,34	0,12		
5	300	18		3,74	2,31	1,38	0,99	0,74	0,58	0,38	0,27	
				44,75	13,83	3,92	1,75	0,88	0,47	0,17	0,07	
6,67	400	24		4,99	3,08	1,84	1,32	0,99	0,77	0,5	0,35	
				76,2	23,55	6,68	2,98	1,49	0,8	0,28	0,12	
8,33	500	30			3,85	2,3	1,65	1,24	0,96	0,63	0,44	
					35,58	10,09	4,51	2,26	1,22	0,43	0,18	
10	600	36			4,62	2,75	1,98	1,49	1,16	0,75	0,53	0,3
					49,85	14,14	6,31	3,16	1,7	0,6	0,26	0,06
11,67	700	42				3,21	2,31	1,74	1,35	0,88	0,62	0,35
						18,81	8,4	4,2	2,27	0,8	0,34	0,09
13,33	800	48				3,67	2,64	1,99	1,54	1,01	0,71	0,4
						24,08	10,75	5,38	2,9	1,03	0,44	0,11
15	900	54				4,13	2,97	2,23	1,73	1,13	0,8	0,45
						29,94	13,37	6,69	3,61	1,28	0,54	0,14
16,67	1000	60				4,59	3,3	2,48	1,93	1,26	0,88	0,5
						36,39	16,24	8,13	4,39	1,55	0,66	0,16
20,83	1250	75					4,12	3,1	2,41	1,57	1,1	0,63
							24,54	12,29	6,63	2,34	0,99	0,25
25	1500	90					4,95	3,72	2,89	1,88	1,33	0,75
							34,39	17,22	9,29	3,28	1,39	0,35
29,17	1750	105						4,34	3,37	2,2	1,55	0,88
								22,9	12,35	4,37	1,85	0,46
33,33	2000	120						4,96	3,85	2,5	1,77	1
								29,31	15,81	5,59	2,37	0,59
41,67	2500	150							4,81	3,14	2,21	1,25
									23,89	8,44	3,59	0,9
50	3000	180		HAZEN WILLIAMS CALCULATION FORMULA (UNI 9489 13.3.3.6)					3,77	2,65	1,5
										11,83	5,02	1,26
66,67	4000	240							5,03	3,53	2
										20,15	8,55	2,14
83,33	5000	300								4,42	2,5
											12,93	3,23

White numbers: Load losses in m. for every 100 m of pipework

Green numbers: Water speed in m/sec.

The table refers to galvanised pipework.
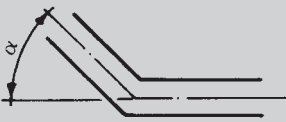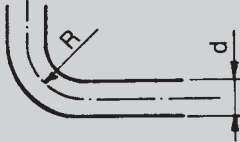
For other materials multiply as follows:
- 0,6 PVC pipes.
- 0,7 aluminium pipes.
- 0,8 laminated steel and stainless steel.

HEAD LOSS
in cm of column of water in bends, gate valves, and foot valves

VELOCITY OF WATER IN m/s	SHARP EDGED BENDS					NORMAL BENDS					GATE VALVE	FOOT VALVE	NON-RETURN VALVE	HEAD LOSS ON EXIT FROM PIPES $\frac{V^2}{2G}$
	$\alpha = 30°$	$\alpha = 40°$	$\alpha = 60°$	$\alpha = 80°$	$\alpha = 90°$	$\frac{d}{R} = 0,4$	$\frac{d}{R} = 0,6$	$\frac{d}{R} = 0,8$	$\frac{d}{R} = 1$	$\frac{d}{R} = 1,5$				
0,10	0,03	0,04	0,05	0,07	008	0,07	0,08	0,01	0,0155	0,027	0,03	30	30	0,05
0,15	0,06	0,73	0,1	0,14	0.17	0,016	0,019	0,024	0,033	0,06	0,033	31	31	0,12
0,2	0,11	0,13	0,18	0,26	0.31	0,028	0,033	0,04	0,059	0,11	0,058	31	31	0,21
0,25	0,17	0,21	0,28	0,4	0.48	0,044	0,052	0,063	0,091	0,17	0,09	31	31	0,32
0,3	0,25	0,3	0,41	0,6	0.7	0,063	0,074	0,09	0,13	0,25	0,13	31	31	0,46
0,35	0,33	0,4	0,54	0,8	0.93	0,085	0,10	0,12	0,18	0,33	0,18	31	31	0,62
0,14	0,43	0,52	0,71	1,0	1.2	0,11	0,13	0,16	0,23	0,43	0,23	32	31	0,82
0,5	0,67	0,81	1,1	1,6	1.9	0,18	0,21	0,26	0,37	0,67	0,37	33	32	1,27
0,6	0,97	1,2	1,6	2,3	2.8	0,25	0,29	0,36	0,52	0,97	0,52	34	32	1,84
0,7	1,35	1,65	2,2	3,2	3.9	0,34	0,40	0,48	0,70	1,35	0,7	35	32	2,5
0,8	1,7	2,1	2,8	4,0	4.8	0,45	0,53	0,64	0,93	1,7	0,95	36	33	3,3
0,9	2,2	2,7	6	5,2	6.2	0,57	0,67	0,82	1,18	2,2	1,2	37	34	4,2
1,0	2,7	3,3	4,5	6,4	7.6	0,7	0,82	1,0	1,45	2,7	1,45	38	35	5,1
1,5	6,0	7,3	10,0	14,0	17.0	1,6	1,9	2,3	3,3	6,0	3,3	47	40	11,5
2,0	11,0	14,0	18,0	26,0	31.0	2,8	3,3	4,0	5,8	11,0	5,8	61	48	20,4
2,5	17,0	21,0	28,0	40,0	48.0	4,4	5,2	6,3	9,1	17,0	9,1	78	58	32,0
3,0	25,0	30,0	41,0	60,0	70.0	6,3	7,4	9,0	13,0	25,0	13,0	100	71	46,0
3,5	33,0	40,0	55,0	78,0	93.0	8,5	10,0	12,0	18,0	33,0	18,0	123	85	62,0
4,0	43,0	52,0	70,0	100,0	120.0	11,0	13,0	16,0	23,0	42,0	23,0	150	100	82,0
4,5	55,0	67,0	90,0	130,0	160.0	14,0	21,0	26,0	37,0	55,0	37,0	190	120	103,0
5,0	67,0	82,0	110,0	160,0	190.0	18,0	29,0	36,0	52,0	67,0	52,0	220	140	127,0

v = velocity of water in metres per second
d = diameter of pipes in m metres
h = head loss in cm of water column for each metre of pipework, calculated according to the Lang formula:
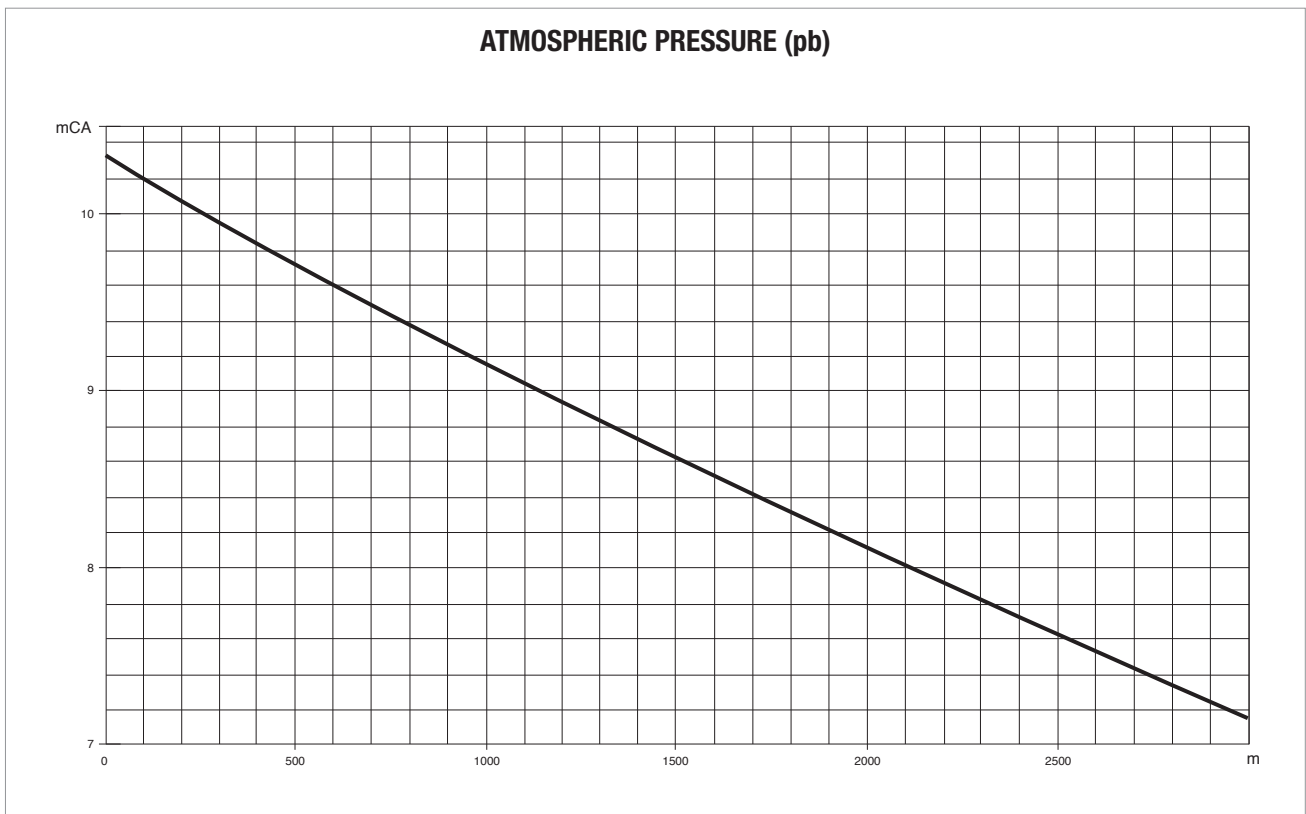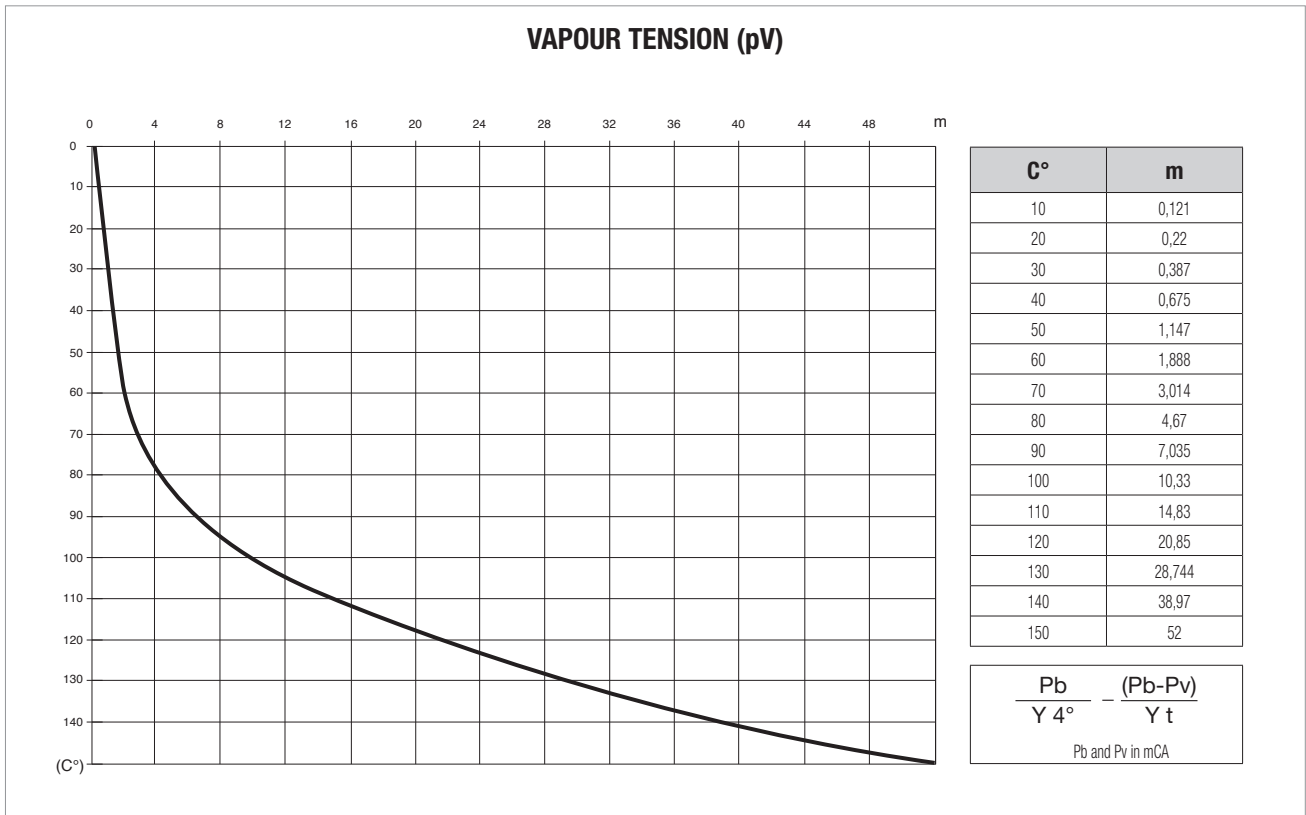
$$h = \lambda \times \frac{100}{d} \times \frac{v^2}{2g} \qquad\qquad \lambda = 0,02 + \frac{0,0018}{\sqrt{v \times d}}$$

The only loss in bends is that due to the contraction of the liquid stream when changing direction (the development of the curves must therefore be included in the length of the pipework); the head loss for gate valves has been determined through technical tests.
The head loss for gate valves and normal bends is equal to that of 5 m of straight pipework, while that of non-return valves is equal to 15 m.
The values given are for pipes with a completely smooth internal surface. In case of rough or scaled pipes, allowances must be made accordingly.

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WATER•TECHNOLOGY

VAPOUR TENSION AND SPECIFIC WEIGHT OF WATER AS A FUNCTION OF TEMPERATURE

VAPOUR TENSION (pV)

C°	m
10	0,121
20	0,22
30	0,387
40	0,675
50	1,147
60	1,888
70	3,014
80	4,67
90	7,035
100	10,33
110	14,83
120	20,85
130	28,744
140	38,97
150	52

$$\frac{Pb}{Y\,4°} - \frac{(Pb-Pv)}{Y\,t}$$

Pb and Pv in mCA

ATMOSPHERIC PRESSURE (pb)

DAB PUMPS reserves the right to make modifications without notice.

64

CONVERSION TABLE FOR UNITS OF MEASURE

CHARACTERISTIC	SYSTEM UNIT OF MEASURE	UNIT OF MEASURE	SYMBOL	CONVERSIONS		
				SYSTEM	INTERNATIONAL SYSTEM (SI)	IMPERIAL SYSTEM
LENGTH	Technical and International	metre decimetre centimetre millimetre	m dm cm mm	1 dm = 0,1 m 1 cm = 0,01 m 1 mm = 0,001 m		1 m = 3,28 ft 1 dm = 3,937 in 1 cm = 0,3937 in
	Imperial	inch foot yard	1", in 1", ft yd	1" = 25,4 mm 1" ft = 0,3048 m 1 yd = 0,9144 m		1 ft = 12" 1 yd = 3 ft = 26"
AREA	Technical and International	metres squared centimetres squared millimetres squared	m² cm² mm²	1cm2 = 0,0001 m² 1 mm2 = 0,01 cm²		1m² = 1,196 sq.yd 1m² = 10,764 sq.ft 1 cm² = 0,155 sq.in
	Imperial	square inch square foot square yard	sq.in sq.ft sq.yd	1 sq.in = 6,45 cm² 1 sq.ft = 0,0929 m² 1 sq.yd = 0,836 m²		1 sq.ft = 144 sq.in 1 sq.yd = 1,296 sq.in 1 sq.yd = 9 sq.ft
VOLUME	Technical and International	metre cubed decimetre cubed centimetre cubed litre cubed	m³ cm³ mm³ l	1 m³ = 1.000 dm³ 1 cm³ = 0.001 m = 1.000 cm³ 1 mm³ = 0.001 dm³ 1 l = dm³		1 dm³ = 0,22 Imp.gal 1 dm³ = 0,264 US.gal 1 dm³ = 61,0 cu.in
	Imperial	cubic inch cubic feet Imperial gallons U.S. gallons	cu.in cu.ft Imp.gal USA.gal	1 cu.in = 16,39 cm³ 1 cu.ft = 28,34 m³ 1 Imp.gal = 4,546 m³ 1 US.gal = 3,785 dm³		1 Imp.gal = 1,201 US.gal 1 US.gal = 0,833 Imp.gal
TEMPERATURE	Technical and International	degrees Centigrade degrees Kelvin	°C °K	°C = °K-273 °K = °C + 273		°C = 5/9 x (°F - 32) °K = 5/9 x (°F - 32) + 273
	Imperial	degrees Fahrenheit	°F	°F = 9/5 x °C + 32		–
	freezing point of water at atmospheric pressure: boiling point of water at atmospheric pressure:			000°C = 273 °K = 032 °F 100°C = 373 °K = 212 °F		
WEIGHT and FORCE	Technical	kilogram	kg	–	1 kg = 9,81 N	1 kg = 2,203 lb
	International	Newton	N	1 N = 0,102 kg	–	1 N = 0,22546 lb
	Imperial	pound	lb	1 IB = 0,454 kg	1 lb = 4,452 N	–
SPECIFIC WEIGHT	Technical	kilogram per decimetre cubed	kg/dm³	–	1 kg/dm³ = 9,807 N/dm³	1 kg/dm³ = 62,46 lb/cu.ft
	International	Newton per decimetre cubed	N/dm³	1 N/dm³ = 0,102 kg/dm³	–	1 N/dm³ = 6,36 lb/cu.ft
	Imperial	pound per cubic foot	lb/dm³	1 lb/cu.ft = 0,01600 kg/dm³	1 lb/cu.ft = 0,160 N/dm³	–
PRESSURE	Technical	atmospheres	kg/cm²	–	1 kg/cm² = 98,067 kPa 1 kg/cm² = 0,9807 bar	1 kg/cm² = 14,22 psi
	International	Pascal kiloPascal bar	Pa kPa bar	1 kPa = 0,0102 kg/cm² 1 bar = 1,02 kg/cm²	1 kPa = 1.000 Pa 1 bar = 100.000 Pa	1 kPa = 0,145 psi 1 bar = 14,50 psi
	Imperial	pound per square inch	psi	1 psi = 0,0703 kg/cm²	1 psi = 0,06895 bar 1 psi = 6,894 kPa	–
FLOW	Technical	litres per minute litres per second metres cubed per hour	l/min l/s m³/h	1 l/min = 0,0167 l/s 1 l/s = 3,6 m³/h 1 m³/h = 16,667 l/min	1 l/s = 0,001 m³/s	1 l/min = 0,22 imp.g.p.m. 1 l/min = 0,264 US.g.p.m. 1 m³/h = 3,666 imp.g.p.m. 1 m³/h = 4,403 US.g.p.m.
	International	metres cubed per second	m³/s	1 m³/s = 1.000 l/s 1 m³/s = 3.600 m³/h	–	1 m³/s = 13.198 imp.g.p.m. 1 m³/s = 15.852 US.g.p.m.
	Imperial	imperial gallons per minute U.S. gallons per minute	Imp.g.p.m. US.g.p.m.	1 Imp.g.p.m. = 4,546 l/min 1 Imp.g.p.m. = 0,273 m³/h 1 US.g.p.m. = 3,785 l/min 1 US.g.p.m. = 0,227 m³/h	–	1 Imp.g.p.m. = 1,201 US.g.p.m. 1 US.g.p.m. = 0,833 Imp.g.p.m.
TORQUE	Technical	kilogram metre	kgm	–	1 kgm = 9,807 Nm	1 kgm = 7,233 ft.lb
	International	Newton metre	Nm	1 Nm = 0,102 kgm	–	1 Nm = 0,7376 ft.lb
	Imperial	foot pound	ft.lb	1 ft.lb = 0,138 kgm	1 ft.lb = 1,358 Nm	–
WORK and ENERGY	Technical	kilogram metre vapour-horsepower hour	kgm CVh		1 kgm = 9,807 J 1 CVh = 0,736 kWh	1 kgm = 7,233 ft.lb 1 Nm = 0,986 HP.hr.
	International	Joule kiloWatt hour	J kWhq	1 J = 0,102 kgm kWh = 1,36 CVh	–	1 Nm = 0,7376 ft.lb 1 Nm = 0,7376 ft.lb
	Imperial	foot pound Horsepower hour	ft.lb HP.hr.	1 ft.lb = 0,138 kgm 1 HP.hr. = 1,014 CVh	1 ft.lb = 0,358 Nm 1 HP.hr. = 0,746 kWh	–
POWER	Technical	Horse power	HP	1 HP = 0,736 kW	1 HP = 736 W	–
	International	Watt kiloWatt	W kW	1 W = 0,00136 Hp 1 kW = 1,36 Hp	1 kW = 1.000 W	–
KINETIC VISCOSITY	Technical	stokes centistokes	1 St 1 cSt	1 St = 1 cm²/s 1 cSt = 0,01 St	1 St = 0.0001 m²/s	1 St = 0.00107 ft²/s
	International	m²/s	m²/s	1 m²/s = 10.000 St	1 m²/s = 10.000 cm²/s	1 m²/s = 10.764 ft²/s
	Imperial	square foot per second	ft²/s	1 ft²/s = 929 St	1 ft²/s = 0.0929 m²/s	–

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