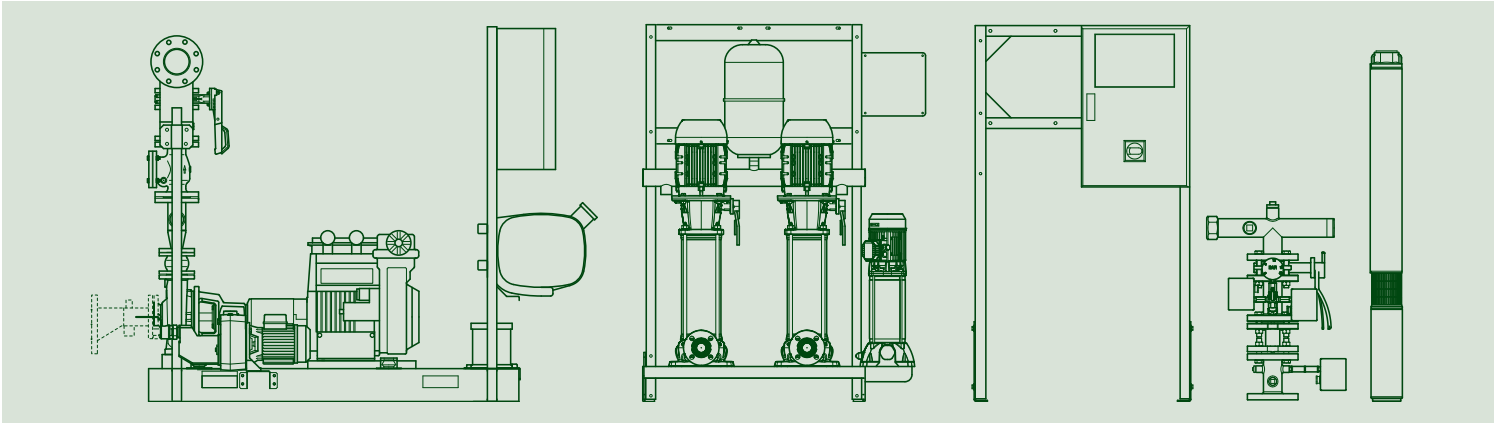


FIRE FIGHTING



**TECHNICAL
CATALOGUE**



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and its partner
CISQ/IMQ-CSQ
hereby certify that the organization

DWT HOLDING SPA
VIA MARCO POLO 14 - 35035 MESTRINO (PD)
BRENDOLA (VI) - CASTELLO DI GODEGO (TV) - BIENTINA (PI) -
SAN GERMANO DEI BERICI (VI) - GESSATE (MI) -
PRC CHINA

for the following field of activities
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
Refer to quality manual for details of applications to ISO 9001:2008 requirements

has implemented and maintains a
Quality Management System
which fulfills the requirements of the following standard

ISO 9001:2008

Issued on: 2013 - 09 - 23 Expiry date: 2015 - 06 - 15

Registration Number: **IT - 824**



Michael Drechsel
Michael Drechsel
President of IQNET



Ing. Claudio Provetti
Ing. Claudio Provetti
President of CISQ

IQNet Partners*:

AENOR Spain AFNOR Certification France AIB-Vincotte International Belgium ANCE-SIGE Mexico APCER Portugal CCC Cyprus
CISQ Italy CQC China CQM China CQS Czech Republic Cnc Cert Croatia DQS Holding GmbH Germany DS Denmark
FCV Brazil IFNDOINORMA Venezuela ICONTEC Colombia IMNC Mexico INNORPI Tunisia
Inspects Certification Finland IRAM Argentina IQA Japan KIQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway
NSAI Ireland PCBC Poland Quality Austria Austria RR Rinsia SII Israel SIQ Slovenia SIRIM QAS International Malaysia
SQS Switzerland SRAC Romania TUST St Petersburg Russia TSE Turkey YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

* The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

All. 1 di 1
Ann. 1 of 1



www.imq.it

ALLEGATO CERTIFICATO n. **9101.COGE**
ANNEX CERTIFICATE

(* Unità Operative:
(* Operative Units:

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

TESLA SRL
VIA DEL LAVORO 3 - 36040 SAN GERMANO DEI BERICI (VI)

TESLA SRL
VIA BERGAMO 2 - 20060 GESSATE (MI)

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

DATE	PRIMA CERTIFICAZIONE FIRST CERTIFICATION	EMISSIONE CORRENTE CURRENT ISSUE	SCADENZA EXPIRY
	1995-07-17	2013-09-23	2015-06-15

Spavetti
IMQ S.p.A. - VIA GUNTILIANO, 43 - 20138 MILANO



EA 18, 19

SOCCORSO VIA MARCO
POLO 14 - 35035 MESTRINO
(PD) - ITALIA

La validità del certificato è subordinata a sorveglianza annuale e richieste controllo dal Sistema di Gestione con periodicità trimestrale.
The validity of the certificate is subjected to annual audit and a request of the Management System control every three years.



www.iqnet-certification.com

IQNet, the association of the world's first class certification bodies, is the largest provider of management system certification in the world. IQNet is composed of more than 30 bodies and covers over 150 subsidiaries all over the globe.

CISQ è la Federazione Italiana di Organismi di Certificazione del sistema di gestione aziendale.
CISQ is the Italian Federation of management system Certification Bodies.



www.cisq.com



www.imq.it

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

SI CERTIFICA CHE IL SISTEMA QUALITÀ DI
WE HEREBY CERTIFY THAT THE QUALITY SYSTEM OPERATED BY
DWT HOLDING SPA
VIA MARCO POLO 14 - 35035 MESTRINO (PD)

UNITÀ OPERATIVE
OPERATIVE UNITS
DAB PUMPS
VIA MARCO POLO 14 - 35035 MESTRINO (PD)
DAB PUMPS
VIA EINAUDI 2 - 36040 BRENDOLA (VI)
DAB PUMPS
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 9001:2008

PER LE SEGUENTI ATTIVITÀ
FOR THE FOLLOWING ACTIVITIES

Progettazione, produzione, vendita 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

Riferirsi al manuale della qualità per l'applicabilità dei requisiti della norma ISO 9001:2008
Refer to quality manual for details of applications to ISO 9001:2008 requirements

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	EMISSIONE CORRENTE CURRENT ISSUE	SCADENZA EXPIRY
	1995-07-17	2013-09-23	2015-06-15

Spavetti
IMQ S.p.A. - VIA GUNTILIANO, 43 - 20138 MILANO



EA 18, 19

SOCCORSO VIA MARCO
POLO 14 - 35035 MESTRINO
(PD) - ITALIA

La validità del certificato è subordinata a sorveglianza annuale e richieste controllo dal Sistema di Gestione con periodicità trimestrale.
The validity of the certificate is subjected to annual audit and a request of the Management System control every three years.



www.iqnet-certification.com

IQNet, the association of the world's first class certification bodies, is the largest provider of management system certification in the world. IQNet is composed of more than 30 bodies and covers over 150 subsidiaries all over the globe.

CISQ è la Federazione Italiana di Organismi di Certificazione del sistema di gestione aziendale.
CISQ is the Italian Federation of management system Certification Bodies.



www.cisq.com

CONTENTS

FIRE-FIGHTING PUMP SETS



1 KDN

PAGE 3



S4 - S6 - SM8

PAGE 78



1/2 NKV

PAGE 110

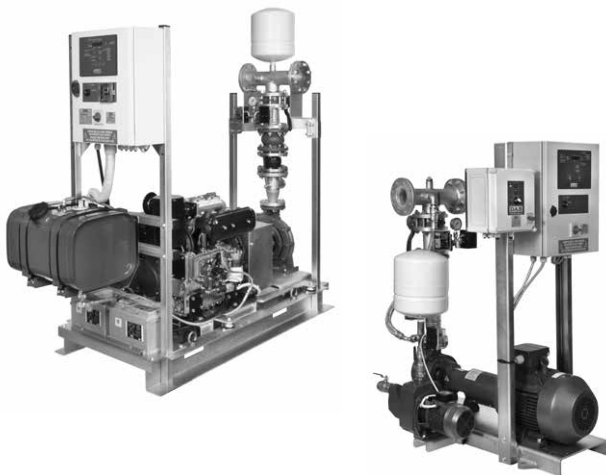
ACCESSORIES

TECHNICAL APPENDIX



PAGE 123

PAGE 129



TECHNICAL DATA

Operating range: from 10 to 400 m³/h

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water.

Pumped liquid temperature range: from -15 to 70 °C.

Maximum ambient temperature: + 40°C

Maximum operating pressure: 16 bar (1600kPa) PN16

Special executions on request:

Diesel version with water/water heat exchanger.

Electric 230 three-phase 50 or 60 Hz, bronze impeller.

APPLICATIONS

The **UNI EN 12845** sets have been designed and built to meet the needs of automatic fixed sprinkler or hydrant fire-fighting systems, in order to detect the presence of a fire, and extinguish it with water during the initial stages, or to control the flames, so that the fire may be extinguished with other means.

CONSTRUCTION FEATURES OF THE UNI EN 12845 FIRE-FIGHTING PUMP SET

Pre-assembled set on galvanised steel base, supporting the pump, the motor, and the electric control panel. The pump is coupled, by means of a spacer elastic coupling, to an electric (**efficiency level IE3**) or Diesel motor capable of providing the power absorbed by the pump at any pump load condition, from no-load, to a load corresponding to **NPSH16m (as requested by section 10.1 of the UNI EN 12845 standard)**.

The UNI EN 12845 DAB fire-fighting sets are supplied in modular version. This type of solution facilitates the transport, as well as the installation of DAB fire-fighting sets in pump rooms, even in case of narrow entrance doors. Thanks to a coupling kit (supplied as accessory), it is possible to complete all the compositions contemplated by the standard (one, two, three pumps, electric or Diesel, with or without compensation pump).

Each module has a serial number with its own declaration of conformity, and its own installation and maintenance manual.

Specific characteristics of the Diesel engine-driven pump

Diesel engine-driven pump sets have a vibration dampening system that reduces the amount of the vibrations produced by the Diesel engine reaching the system. This consists of rubber anti-vibration feet and couplings. Each Diesel engine-driven pump includes two start-up batteries and a Diesel tank providing 6 hours of continuous operation. The Diesel engine has an air/air cooling system for low powers (up to 26 kW), and air/water cooling system for higher powers (37 kW and over). The Diesel engine can operate continuously at full load in accordance with ISO 3046 standards, curve NA (section 10.9.1 of UNI EN 12845).

CONSTRUCTION FEATURES OF THE PUMP

KDN range pump with cast iron single stage spiral body in accordance with DIN-EN 733 (formerly DIN 24255); cast iron seal cover and support. Flanges in accordance to DIN 2533 (DIN 2532 for DN 200). Cast iron impeller, closed and dynamically balanced, with compensation of the axial thrust through balancing holes, operation on interchangeable wear rings (on request). Stainless steel pump shaft supported by two permanently lubricated oversized ball bearings, housed inside an appropriate chamber in the support.

Standard seal device: standardised mechanical seal according to DIN 24960 in carbon/silicon carbide with EPDM OR rings.

COMPENSATION PUMP

All the DAB fire-fighting pump sets are available with or without compensation pump. The compensation pump (JET, KV, or KVC models) intervenes automatically in case of small pressure drops in the fire-fighting system, reinstating the pressure to the required level, and therefore avoiding pointless starts of the main pumps. Installed on the main pump base side, it is connected to the delivery manifold of the main pump, and includes: ball valves on the suction and delivery, check valve on the delivery, pressure switch, 18 litre expansion vessel, protection and control panel.

HYDRAULIC STRUCTURE

The suction of the KDN pump is supplied with flange for the connection to the suction kit (supplied as accessory). The suction kit consists of an eccentric diverter adaptor with opening angle of less than 20 °. The kit can keep the water speed lower than 1,5 m/s, as required by section 10.6.2.3 of the UNI EN 12845 standard. On the delivery side are a concentric diverter adaptor ready for the connection of a 2" union for the connection of the priming tank (positive suction installation), vibration coupling (in the Diesel version), check valve and circuit with no. 2 start-up pressure switches with test valve for the same, shut-off valve (with manual reducer from DN125) and galvanised steel delivery manifold ready for the connection of the compensation pump and expansion vessel* (**expansion vessels are guaranteed for 5 years**).

(*Supplied as standard only in the versions with compensation pump).

ELECTRIC CONTROL BOX

Fire-fighting pump sets include an electric control panel for each pump, connected to the main components (motor, pressure switches, sensors, batteries, etc.).

ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS



TECHNICAL DATA

Nominal power input voltage: 400 V +/- 5%

Phases: 3

Frequency: 50-60 Hz

Number of pumps that can be connected: 1

Maximum nominal power of use:
from 3 to 110 kW (depending on model).

Maximum nominal current of use: from 10 Amp to 250 Amp.

Ambient temperature operation limits: from +4 °C to +40 °C.

Relative humidity (without condensation):

50% at 40 °C MAX (90% a 20 °C)

Max. altitude: 3000 m (a.s.l.).

Protection class: IP55

Control panel construction:

According to EN60204, EN 60439-1, and UNI EN 12845/10779.

COMPONENTS

The control and protection panel includes the following components

INTERIOR OF CABINET

Connector for the powering of a GSM Modem (230 V, protected by fuse).

Motor protection fuses (aM type); current surge relay-motor protectors are not permitted by the standard.

Auxiliary circuit protection fuses (Gg type).

Direct pump starters (up to 7,5 kW).

Star/triangle starters (11 kW and over).

24 V auxiliary circuit transformers.

Alarm relay with terminal box for remote status control (as required by the UNI EN 12845 standard).

System start-up input connection terminal box.

ON FRONT PANEL

Electric pump control unit with:

Multifunction instrument with display (voltmeter, ammeter, cosfi metre, wattmeter, alarms and status).

Start and stop pushbuttons.

Status and alarm notification lamps.

Alarm/notification lamp test pushbutton.

0 - 1 selector (0 = automatic disabled; 1 = automatic on), key removable only for position one (AUTOMATIC ON).

REMOTELY CONTROLLED ALARMS:

Voltage present.

Phase sequence.

Pump start request from the pressure switches.

Pump start request from priming tank.

Pump in operation.

Start failed.

The above alarms can be remotely controlled in the following ways:

With relay wiring to the CSR-1 control panel (optional).

With RS-485 wiring to the CSR-1 control panel (optional).

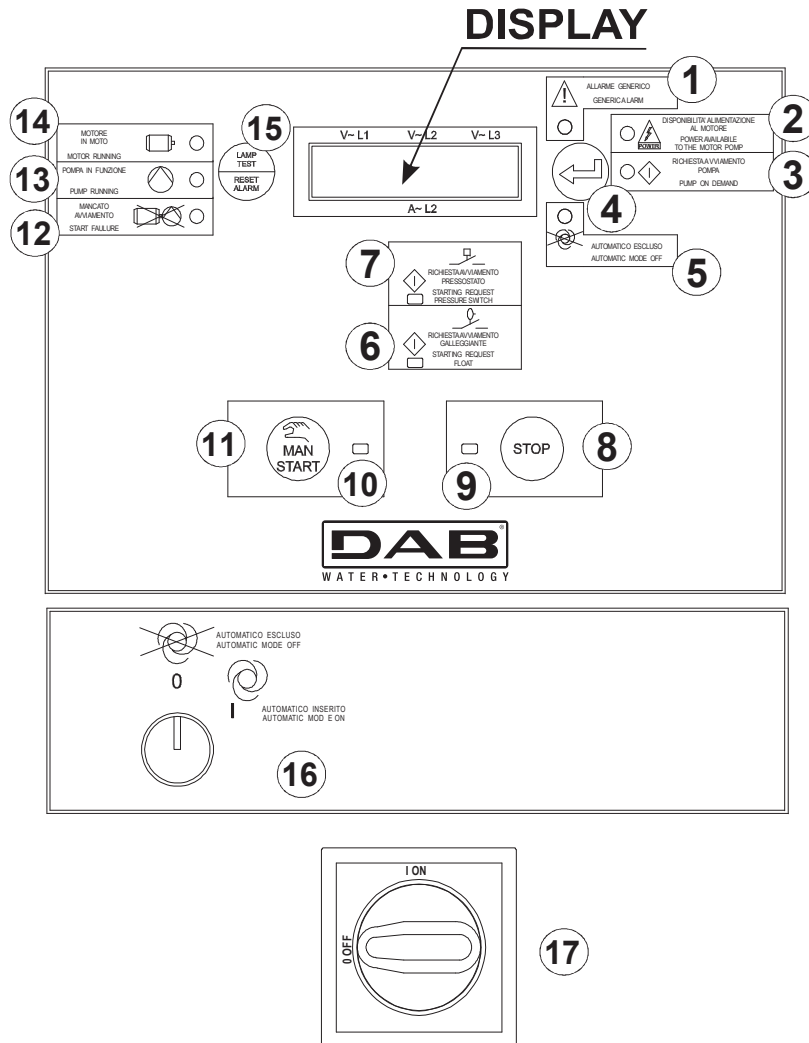
With GSM Modem inside the cabinet, for forwarding status and/or alarm signals (optional).

ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP CONTROL UNIT

The A1 electronic control unit supplied with the control panel offers the following features: automatic start from the pressure switches or the priming float switch, manual start, automatic monitoring of pump set faults and incorrect or unavailable power input voltage.



ALIMENTAZIONE DELLA POMPA SPRINKLER
NON SPEGNERE IN CASO DI INCENDIO

! SPRINKLER PUMP MOTOR SUPPLY !
NOT TO BE SWITCHED OF IN THE EVENT OF FIRE

REF.	FUNCTION
1	LAMP - Generic alarm
2	LAMP - Power input to the motor detected
3	LAMP - Pump START request
4	Press to display the instruments
5	LAMP - Automatic start disabled
6	LAMP - START request from the priming tank float switch
7	LAMP - START request (call) from the pressure switches
8	MANUAL STOP pushbutton
9	LAMP - MANUAL STOP with STOP pushbutton notification

REF.	FUNCTION
10	LAMP - MANUAL START with MAN START pushbutton notification
11	MANUAL START pushbutton
12	LAMP - Start failed
13	LAMP - ELECTRIC PUMP RUNNING with motor running; detected by the electric pump running pressure switch
14	LAMP - MOTOR RUNNING; controlled by the ammeter detection
15	Reset lamp test pushbutton
16	Automatic mode disabling selector
17	Power input disconnection switch

DIESEL PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS



TECHNICAL DATA

Nominal power input voltage: 230V +/- 5%

Phases: 1+N

Frequency: 50-60 Hz

Number of pumps that can be connected: 1

Maximum nominal power of use:

from 7,5 to 197 kW (Diesel motor power)

Nominal power absorbed by the users:

approximately 790 W (3 Amp) at full load, 16 Amp power input line

Ambient temperature operation limits: from +4 °C to +40 °C

Relative humidity (without condensation):

50% at 40 °C MAX (90% a 20 °C)

Max. altitude: 3000 m (a.s.l.).

Protection class: IP55

Control panel construction:

According to EN60204, EN 60439-1, and UNI EN 12845/10779.

DIESEL PUMP CONTROL PANEL

COMPONENTS

The control and protection panel includes the following components

INTERIOR OF CABINET

Connector for the powering of a GSM Modem (12V, protected by fuse).

Auxiliary circuit protection fuses (Gg type).

2 x 12 V Diesel engine start relays (for 12 V starter motors with powers up to 145 kW).

2 x 24 V Diesel engine start relays (for 24 V starter motors with powers over 145 kW).

2 automatic battery chargers.

Alarm relay with terminal box for remote status control (as required by the UNI EN 12845 standard).

System start-up input connection terminal box.

ON FRONT PANEL

Diesel pump control unit with:

Multifunction instrument with display (voltmeter, ammeter, revolution counter, hours of operation counter, Diesel percentage level, oil pressure).

Start and Stop pushbuttons (one for each battery).

Status and alarm notification lamps.

Lamp test pushbutton.

First start-up TEST pushbutton (*).

Breakable glass protected rocker switch for pump start, bypassing the control unit in case of fault.

0 - 1 selector (0 = automatic disabled; 1 = automatic on), key removable only for position one (AUTOMATIC ON).

REMOTELY CONTROLLED ALARMS

Voltage present.

Phase sequence.

Pump start request from the pressure switches.

Pump start request from priming tank.

Pump in operation.

Start failed.

The above alarms can be remotely controlled in the following ways:

With relay wiring to the CSR-1 control panel (optional).

With RS-485 wiring to the CSR-1 control panel (optional).

With GSM Modem inside the cabinet, for forwarding status and/or alarm signals (optional).

The control panel receives the signal from the pressure switches and starts the engine-driven pump also when no power network voltage is detected.

The pump running status is detected through the speed/revolution sensor signal (as required by section 10.9.8 of UNI EN 12845). The panel is equipped

with a start-up system with two 12V batteries (as required by section 10.9.8. of UNI EN 12845). If one of the batteries is faulty, the panel automatically starts the pump up using the other battery (6 alternated starts).

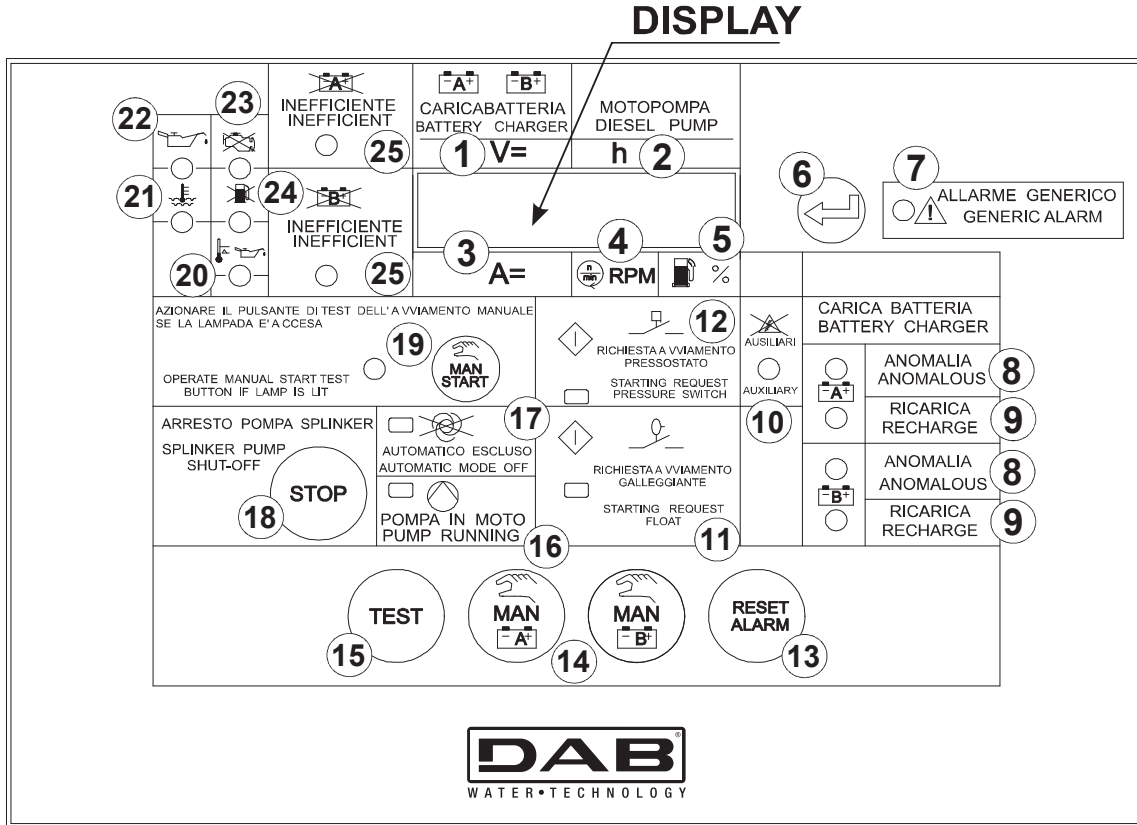
(* When the engine-driven pump is put into operation on site for the first time, it will be necessary to check the start failure alarm (in accordance with section 10.9.12.2 of UNI EN 12845). For this purpose, on the front of the control panel is a TEST pushbutton that simulates no. 6 alternate start attempts on the two batteries, if there is no fuel. At the end of the TEST, the start failure alarm activates (lamp + N.O. contact)

DIESEL PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS

DIESEL ENGINE-DRIVEN PUMP CONTROL UNIT

The A1 electronic pump control unit supplied with the control panel offers the following features: automatic start with 6 alternate pulses on the 2 batteries, with starter gear engaged check, manual start, battery efficiency check, particularly during start-up, automatic monitoring of pump set faults and display of battery charge signals.

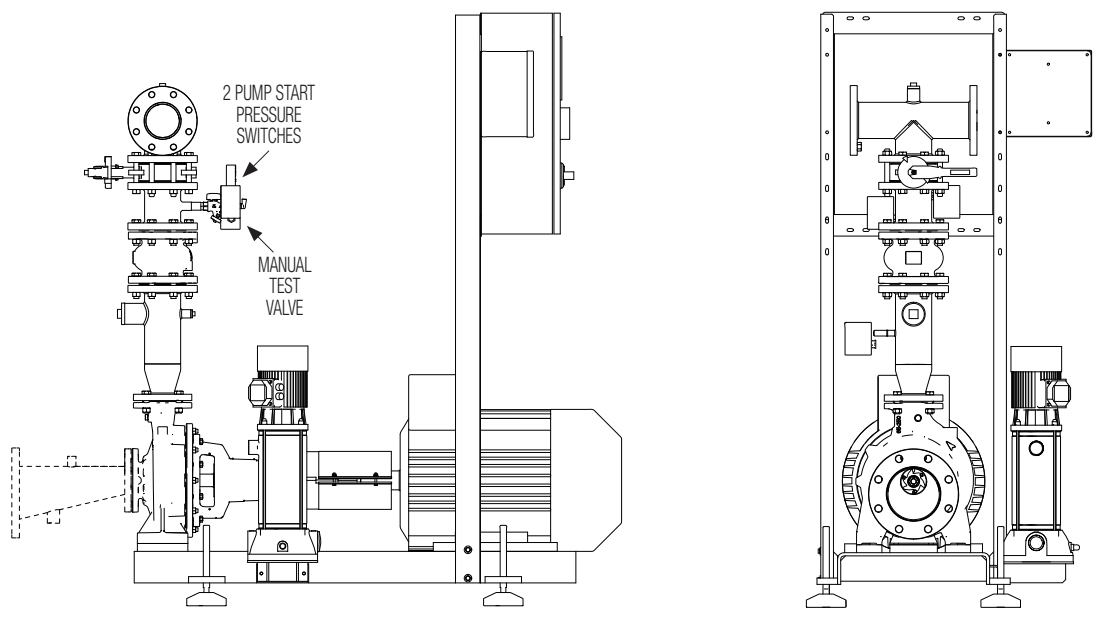
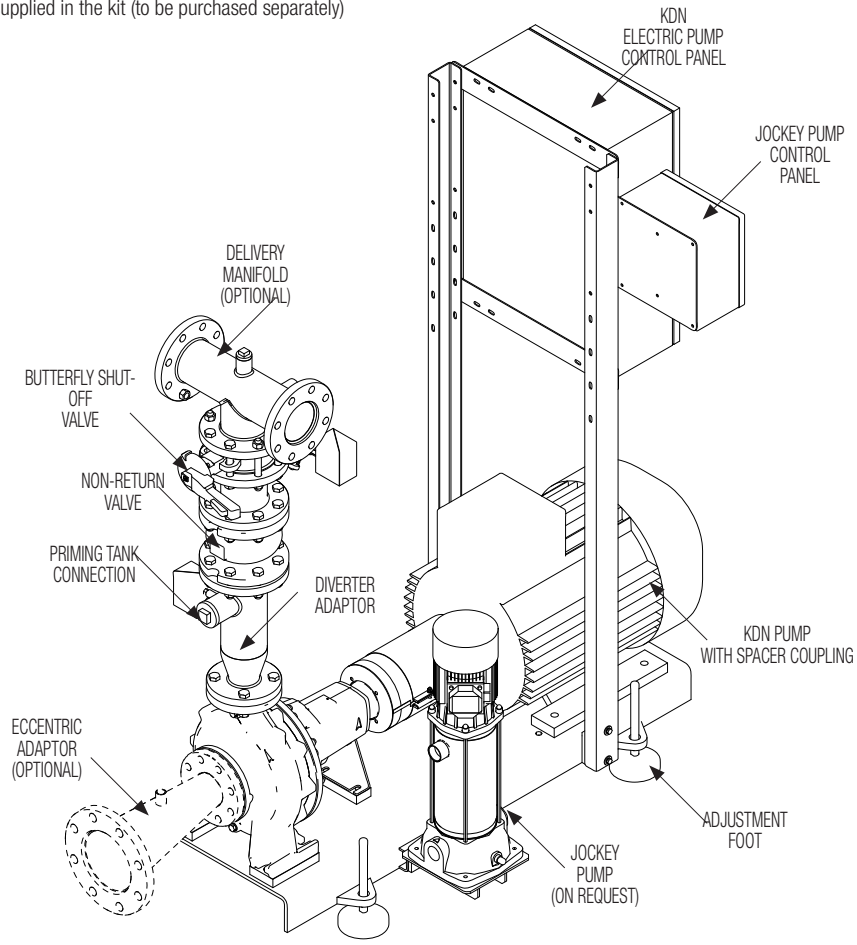


REF.	FUNCTION
1	A and B battery charger voltmeters
2	Hour meter
3	A and B battery charger ammeters
4	Hour meter
5	Fuel level gauge
6	- Press briefly to show instruments - Press and hold down for LED test
7	Generic alarm
8	Fault detected by the battery charger during battery charging
9	Battery charger ON
10	No power input to the battery charger detected alarm
11	Start request from the pump priming tank flow switch
12	START request (call) from the pressure switches
13	Fault reset

REF.	FUNCTION
14	Manual engine-driven pump start using batteries A and B (always active)
15	Start-up test
16	Engine-driven pump running
17	Automatic mode disabled
18	Engine-driven pump set stop pushbutton
19	Manual start test pushbutton and lamp
20	Oil or water heater not heating
21	Overtemperature alarm
22	Insufficient oil pressure alarm
23	Start failed alarm
24	Low fuel alarm
25	Faulty A and B battery alarm
26	Automatic mode disabling selector
27	Breakable glass protected pushbutton for emergency start of battery A or B

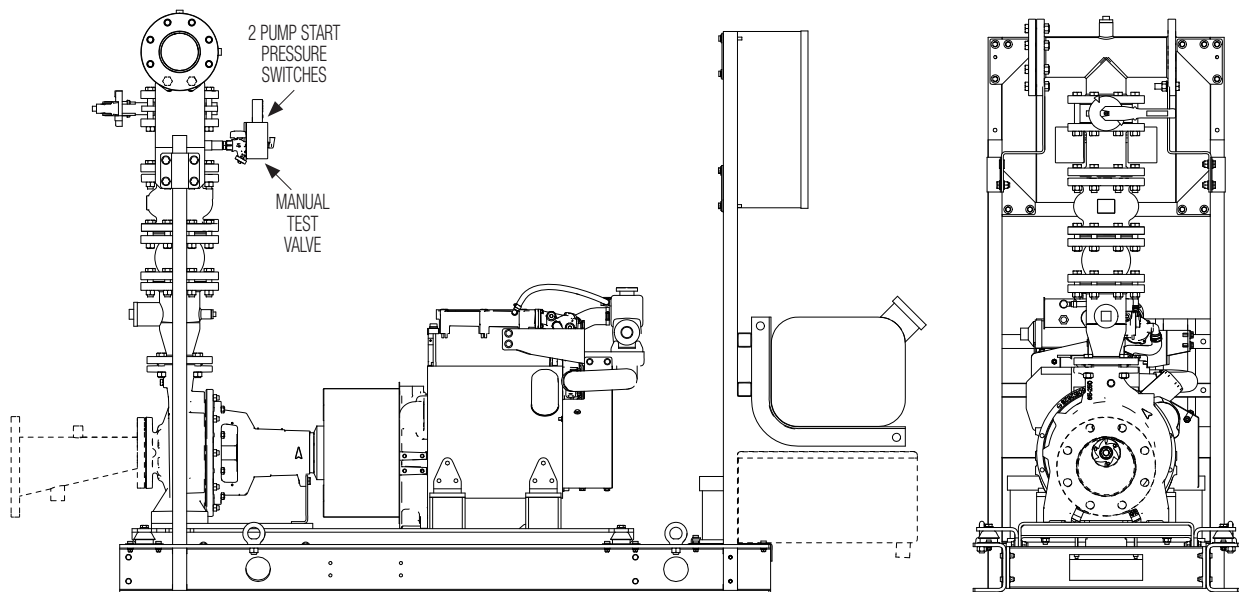
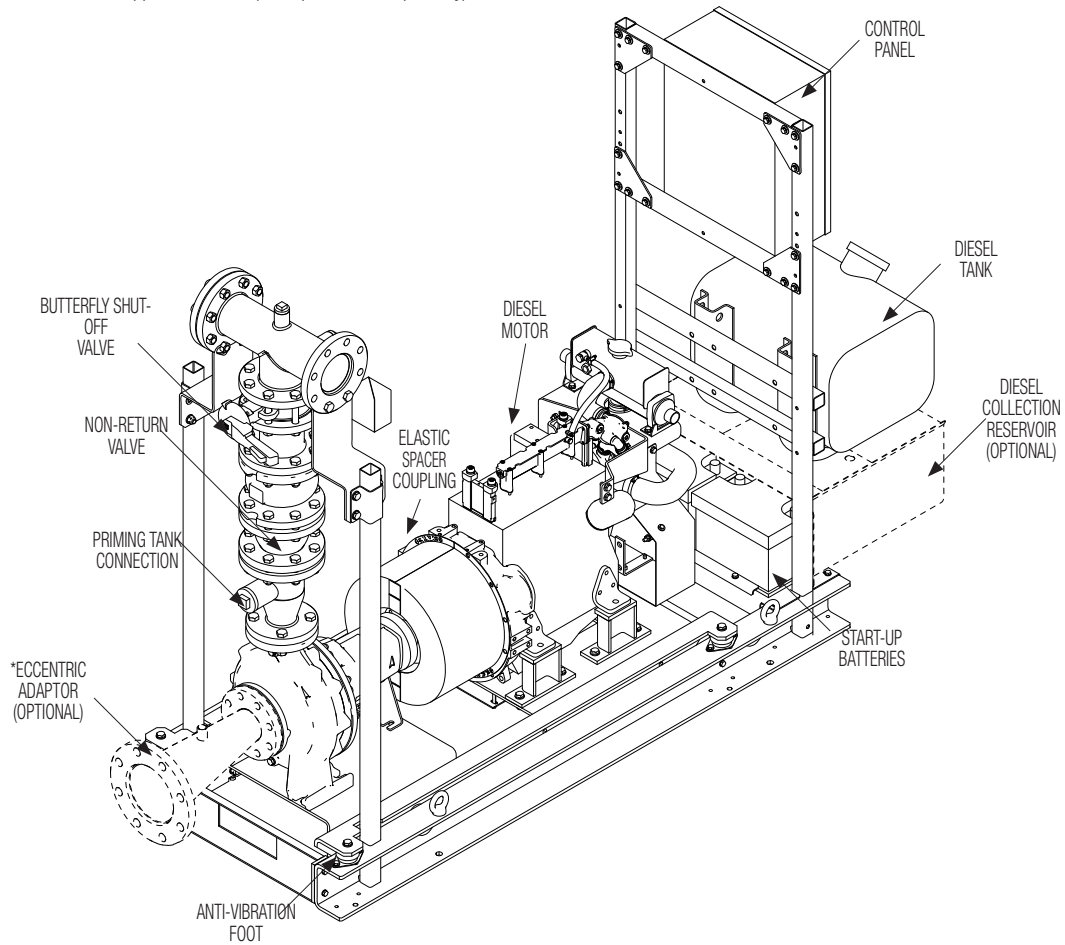
UNI EN 12845 SET COMPONENTS - ELECTRIC PUMP + JOCKEY PUMP

----- element not supplied in the kit (to be purchased separately)



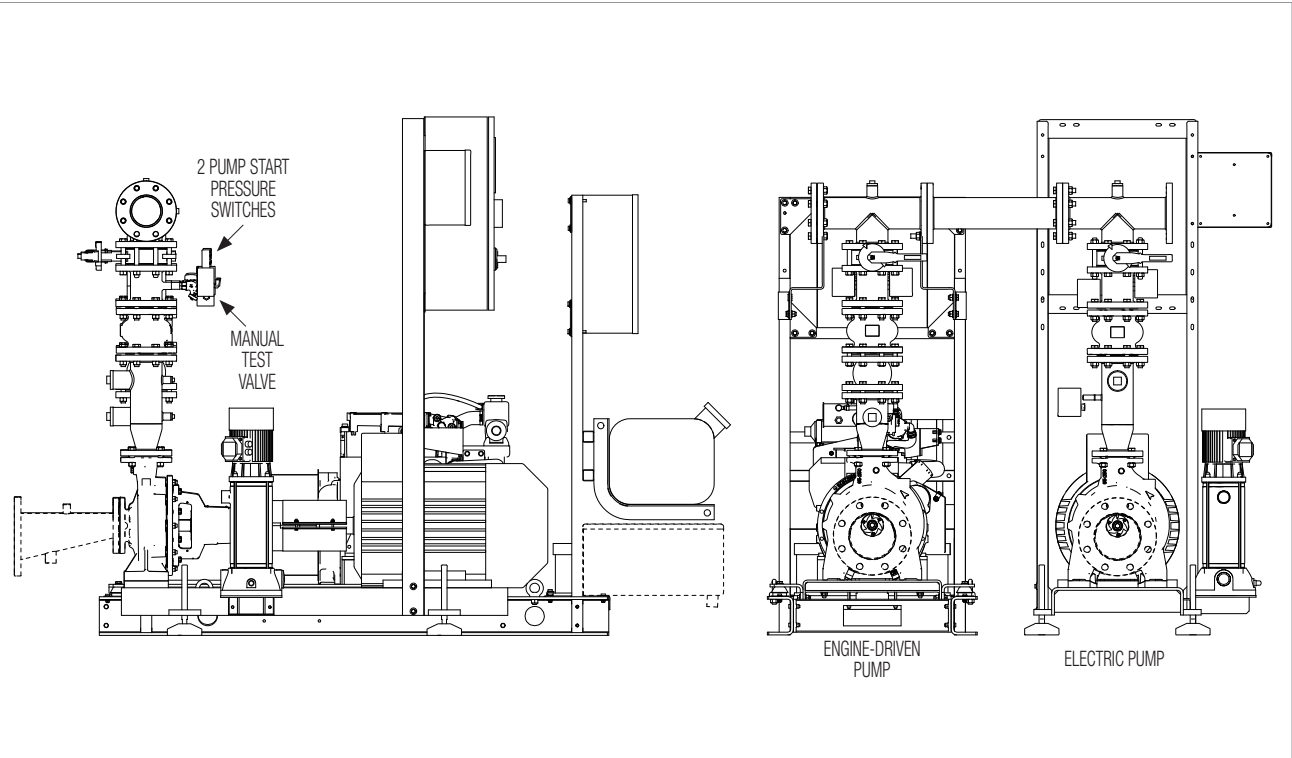
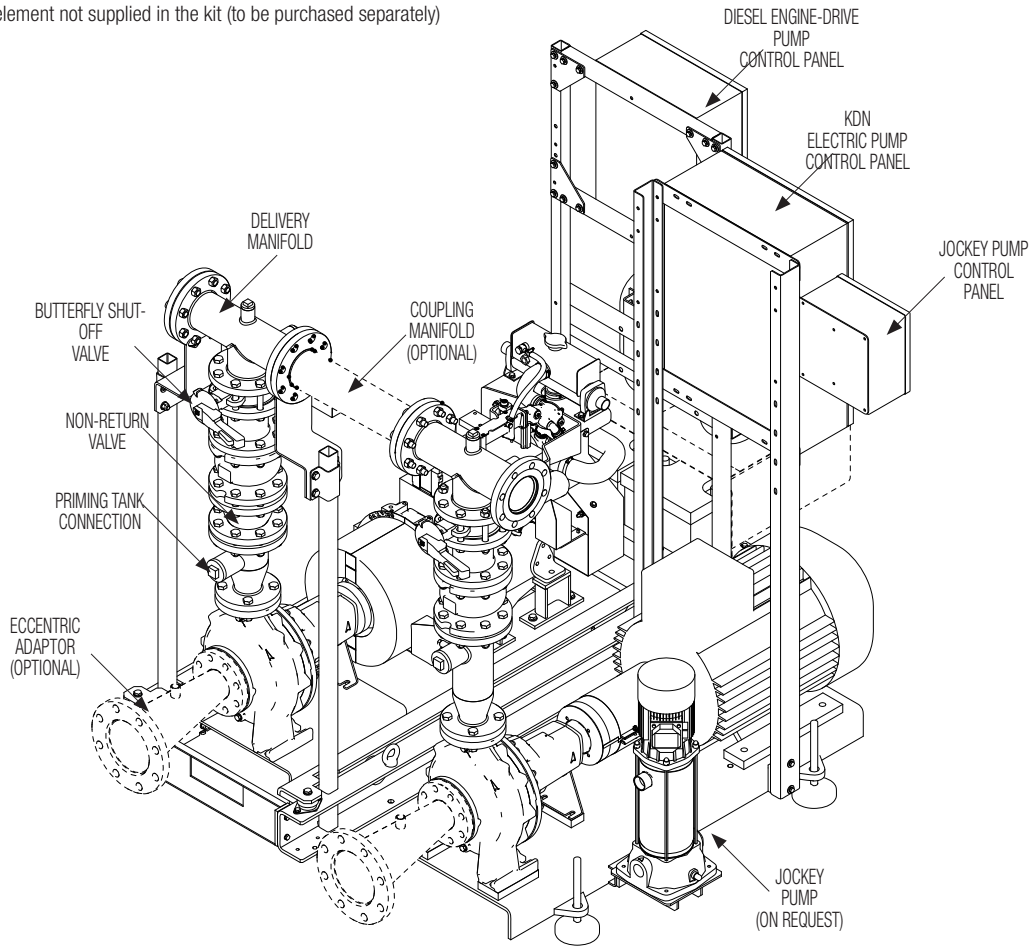
UNI EN 12845 SET COMPONENTS - ENGINE-DRIVEN PUMP SET

----- element not supplied in the kit (to be purchased separately)



UNI EN 12845 SET COMPONENTS - ELECTRIC PUMP SET + ENGINE-DRIVEN PUMP SET

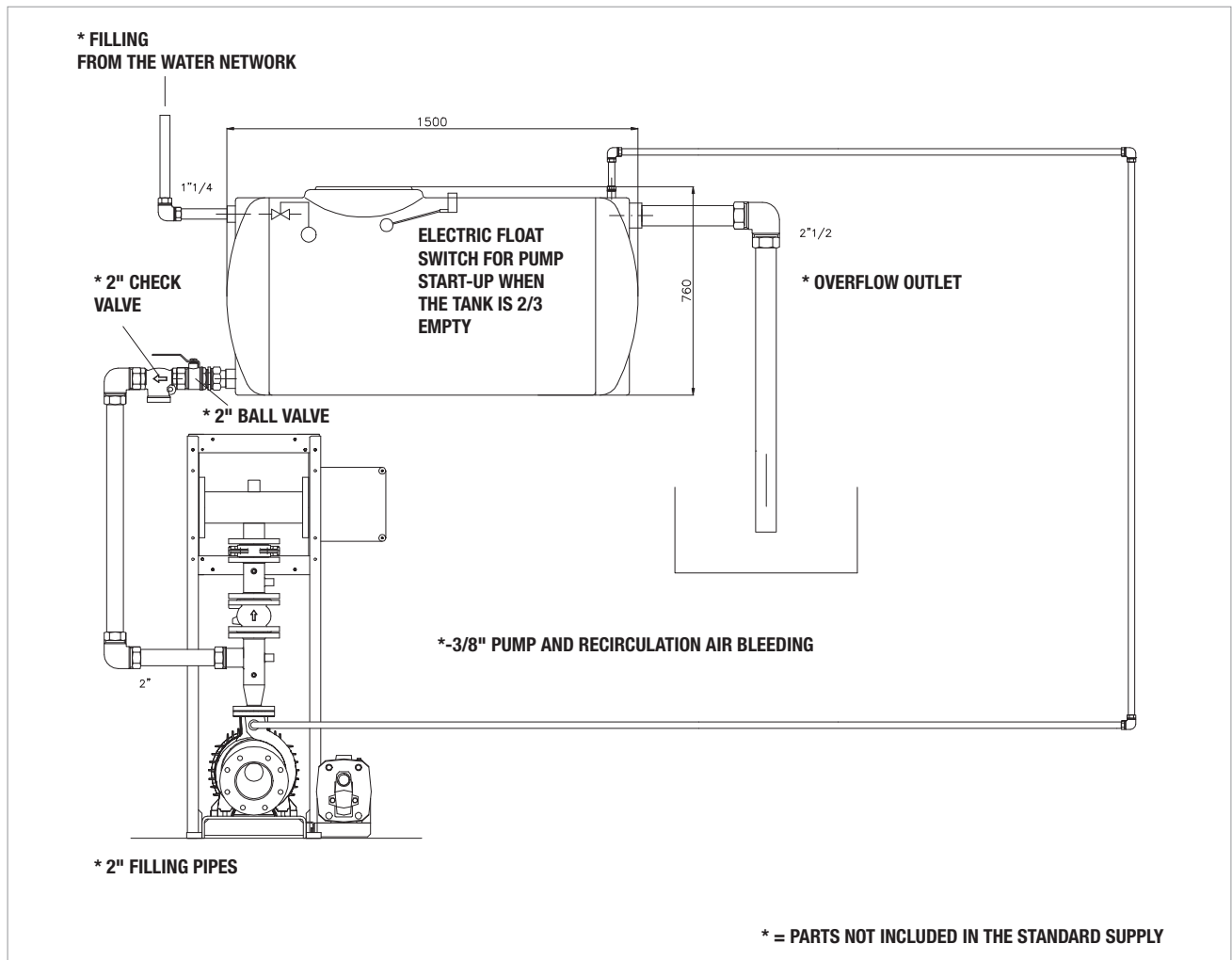
----- element not supplied in the kit (to be purchased separately)



ACCESSORIES

PRIMING TANK FOR POSITIVE SUCTION INSTALLATION

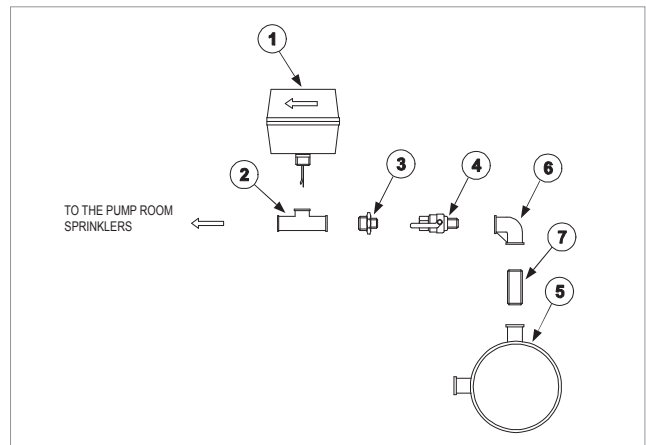
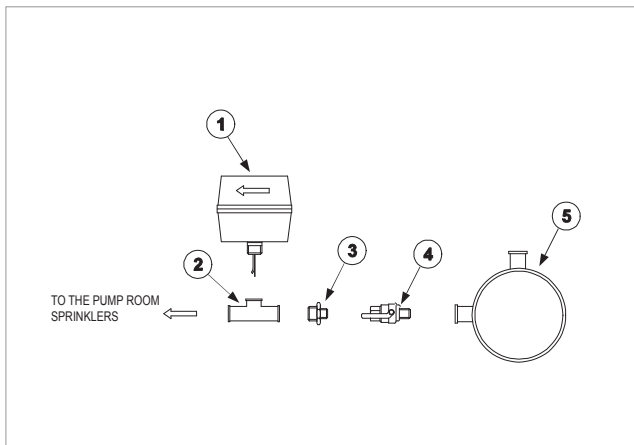
One 500 l priming tank must be installed for each main pump.



FLOW SWITCH KIT

The flow switch detects the activation of the sprinklers of the pump house (UNI EN 12845 10.3.2).

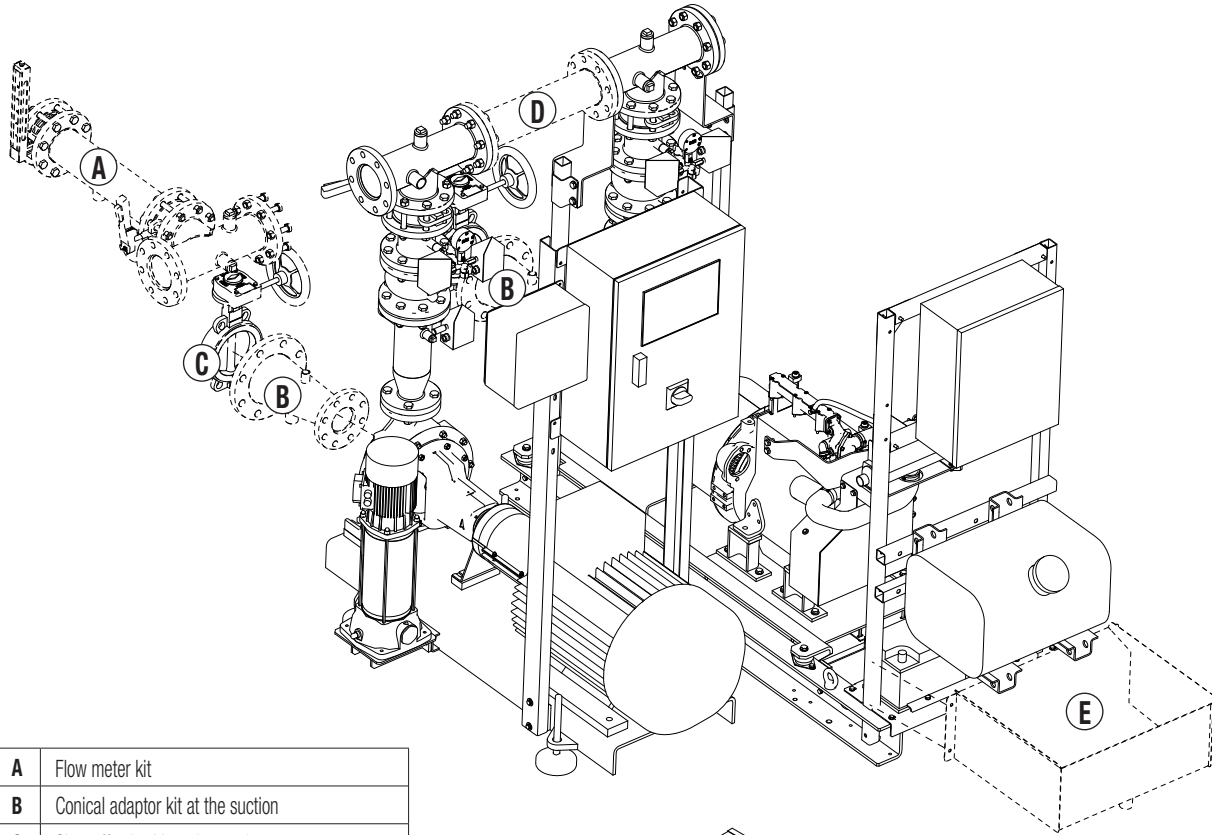
The flow switch kit must be installed on the 1" pipe of the delivery manifold of the DAB fire-fighting pump, and then connected to the CSR-1 alarm control panel.



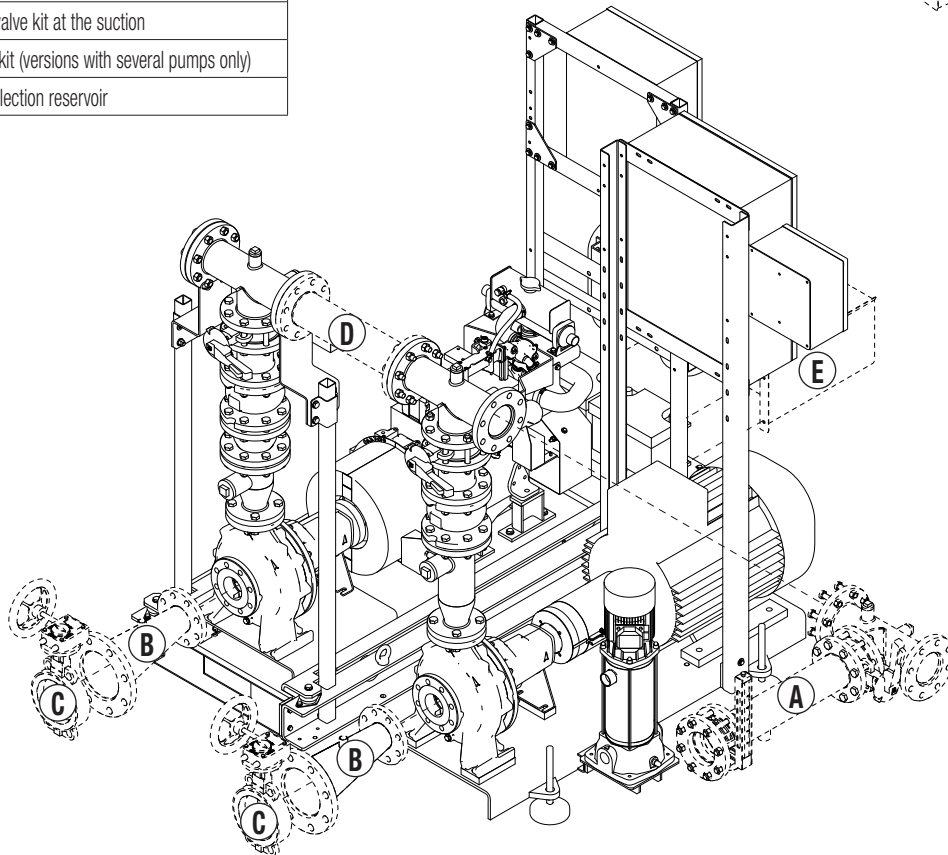
- The flow switch kit must be installed on the 1" pipe of the delivery manifold of the DAB fire-fighting pump. Seal the threads of the various components with Teflon, plumber's hemp, or anaerobic sealing paste.
- The flow switch detects activation of the sprinklers of the pump house as per section 10.3.2 of UNI EN 12845.
- The Normally Open contact of the 1" flow switch must be connected to an alarm device installed in a manned location (e.g. DAB alarm control panel – CSR-1 model, UNI EN 12845).

EXAMPLE OF ASSEMBLY OF UNI EN 12845 SETS - ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP SET

----- element not supplied in the kit (to be purchased separately)



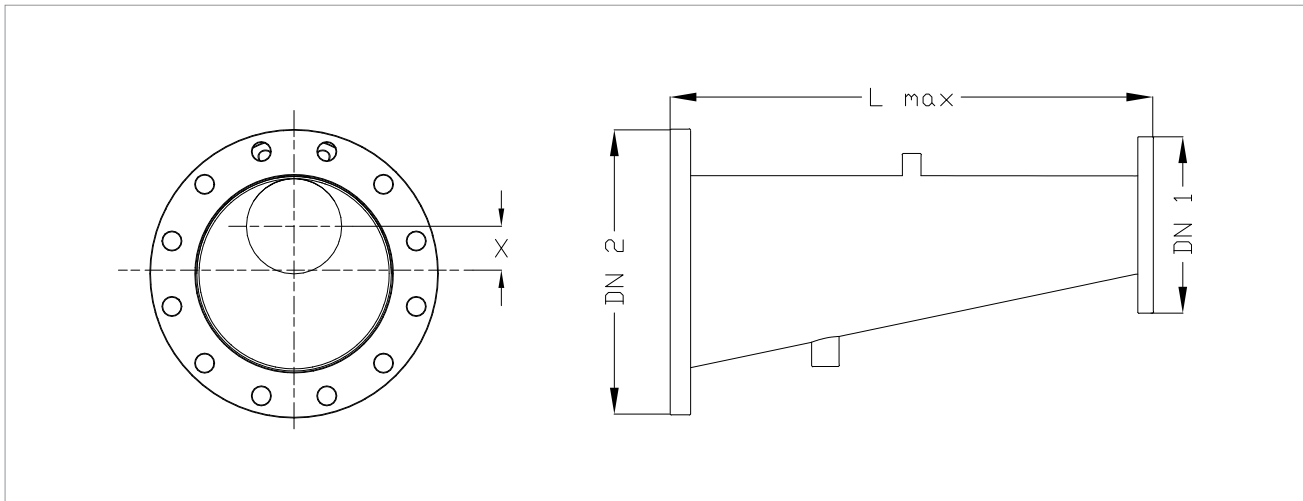
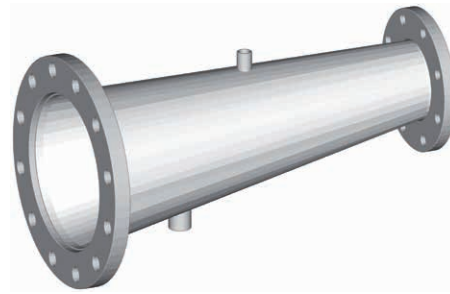
A	Flow meter kit
B	Conical adaptor kit at the suction
C	Shut-off valve kit at the suction
D	Coupling kit (versions with several pumps only)
E	Diesel collection reservoir



ACCESSORIES

SUCTION KIT

The kit consists of a conical eccentric adaptor, screws and washers. It is required in order to avoid air pockets at the suction, and to keep the water speed below 1,5 m/s, as required by section 10.6.2.3 of UNI EN 12845. No. 1 kit must be installed at the suction of each main pump.



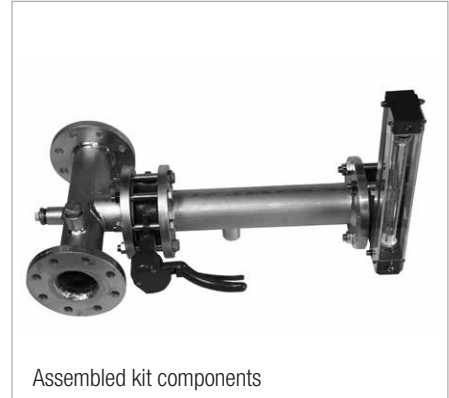
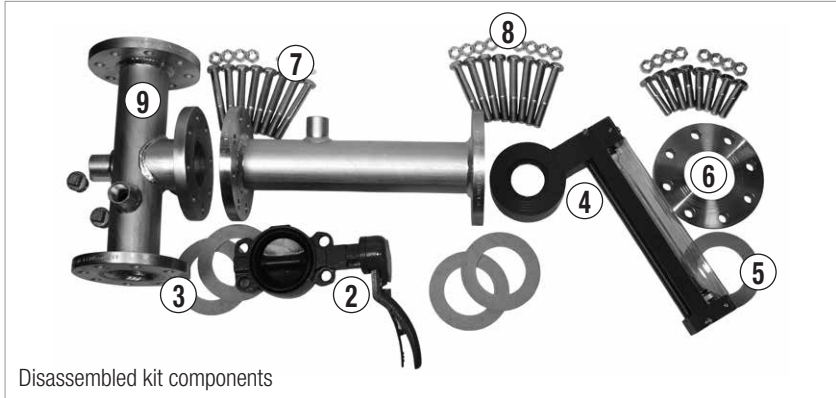
UNI EN 12845 ECCENTRIC SUCTION ADAPTORS					
PUMP MODEL	ADAPTOR MODEL	DN1 –PN 16 PUMP SIDE	DN2 – PN16 SYSTEM SIDE	L (mm)	X (mm)
NKV 10	KIT ASP.NKV10 EN12845 (DN65 - 19°)	DN 40	DN 65*	145	14
NKV 15 – NKV 20 KDN 32	KIT ASP.KDN32/NKV15-20 EN12845(DN80-19°)	DN 50	DN 80	200	14
KDN 40	KIT ASP.KDN40 EN12845 (DN100 - 19°)	DN 65	DN 100	235	19
KDN 50	KIT ASP.KDN50 EN12845 (DN125 - 19°)	DN 65	DN 125	320	32
KDN 65	KIT ASP.KDN65 EN12845 (DN150 - 19°)	DN 80	DN 150	380	40
KDN 80	KIT ASP.KDN80 EN12845 (DN200 - 19°)	DN 100	DN 200	570	52
KDN 100	KIT ASP.KDN100 EN12845 (DN250 - 19°)	DN 125	DN 250	685	67

*The standard requires DN 80 minimum for positive suction installations. In this case contact our sales network.

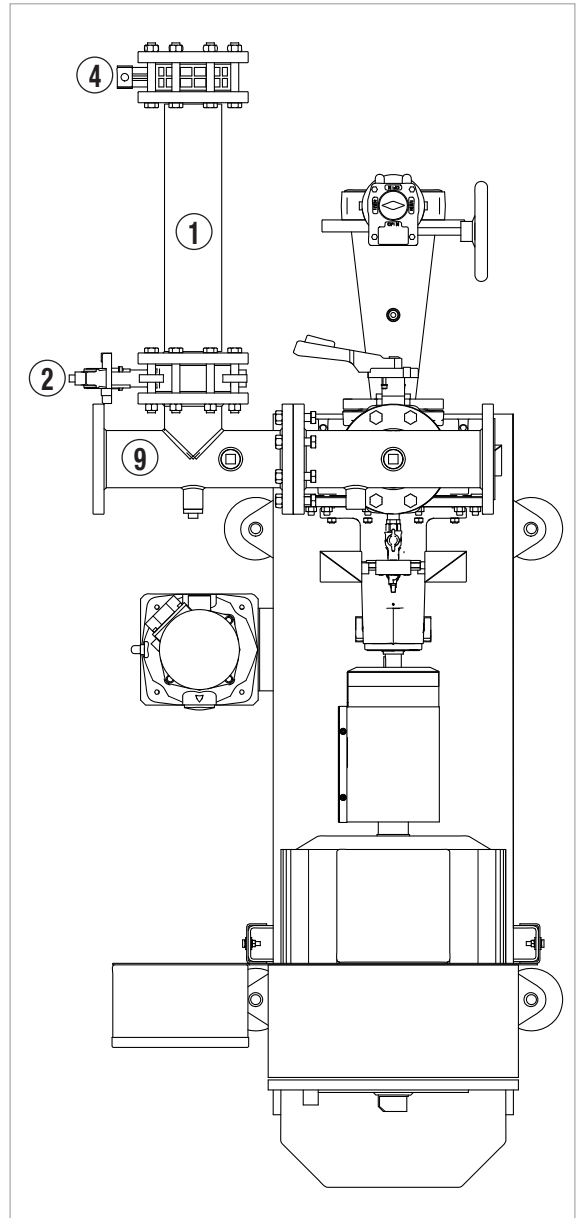
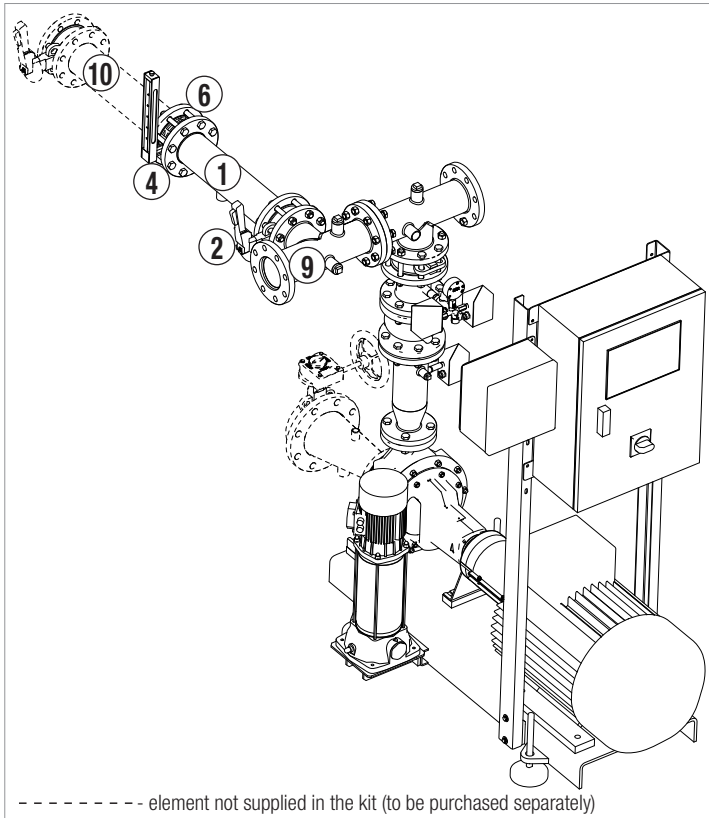
ACCESSORIES

FLOW METER

To be installed on a branch on the delivery manifold. The kits are suitable for both 1-pump and 2-pump sets, and are supplied unassembled.



ASSEMBLY INDICATIONS FOR UNI EN 12845 1 AND 2 PUMP SETS (EXAMPLE)



1	Flow meter extension
2	Butterfly valve
3	Butterfly valve seal
4	Flow meter - flow rate meter
5	Flow meter seals
6	Counter flanges
7	Fixing screws
8	Nuts
9	Meter adaptor

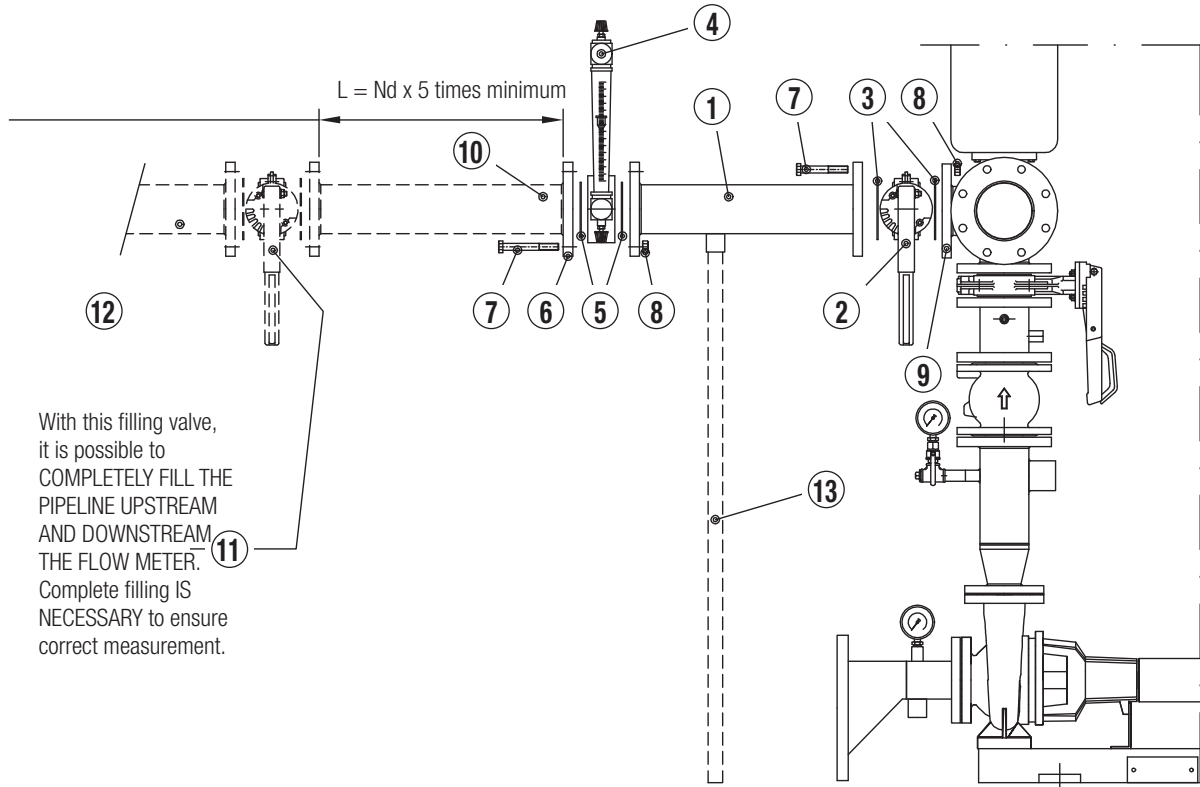
1 KDN

UNI EN 12845 FIRE-FIGHTING PUMP SETS

- 1 KDN 32 ———> DN 50 L = 250 min.
- 1 KDN 40 ———> DN 65 L = 325 min.
- 1 KDN 50 ———> DN 80 L = 400 min.
- 1 KDN 65 ———> DN 100 L = 500 min.
- 1 KDN 80 ———> DN 125 L = 625 min.
- 1 KDN 100 ———> DN 150 L = 750 min.

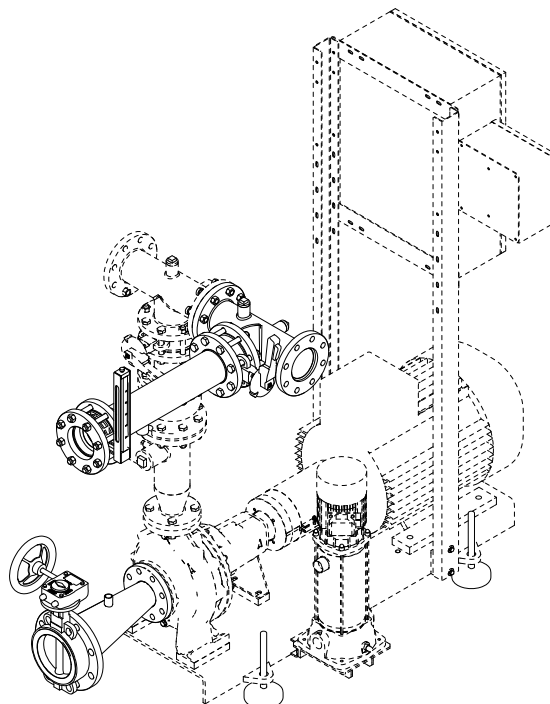
----- element not supplied in the kit (to be purchased separately)

Fit the meter with the scaled pipe in the VERTICAL position



With this filling valve, it is possible to COMPLETELY FILL THE PIPELINE UPSTREAM AND DOWNSTREAM THE FLOW METER. Complete filling IS NECESSARY to ensure correct measurement.

----- : fire-fighting set



**TECHNICAL DATA****Nominal power input voltage:** 230 AC +/- 10%**Phases:** 1**Frequency:** 50-60 Hz**Sound power level:** 75 dB A**Absorption:** 0,1 Amp**Battery type:** 12 V; 2,3 Ah lead battery (Faston output)**Acoustic alarm autonomy in case of power cut:** 20 hours**Characteristic features of the serial communication cable:**

2 twisted wire shielded cable plus shield, 600 V, class 1, 15-18 AWG.

Maximum impedance 120 ohm, maximum capacity 50 pF/m.

Ambient temperature operation limits: -10 °C + 40 °C**Relative humidity:** 50 % at 40 °C MAX (90 % at 20 °C) without condensation**Max. altitude:** 2500 m (a.s.l.).**Protection class:** IP55**Construction:** According to UNI EN 12845**ACCESSORY - CSR-1 ALARM CONTROL PANEL**

The UNI EN 12845 standard requires that a range of alarms are forwarded to a permanently manned location, inside or outside the building, or to a plant manager.

In order to fulfil this requirement of the UNI EN 12845 standard, it is possible to use the CSR-1 alarm control panel, which notifies the operating conditions of the fire-fighting pump stations by means of an acoustic signal.

The CSR-1 alarm control unit can be connected to the fire-fighting pump station using multi-conductor cables (contact connection), or using a telephone pair (485 serial type connection), to the electric or Diesel engine-driven pump control panels.

One single CSR-1 can control one or both pumps, electric or Diesel, in the various required configurations.

FUNCTIONS

The control unit controls and notifies, using a 2x16 character display - visually by means of LEDs, and acoustically by means of a buzzer -, the operating conditions of the pump sets in the different installation solutions:

- system for one electric pump,
- system for two electric pumps,
- system for electric pump and Diesel pump,
- system for Diesel pump,
- system for two Diesel pumps.

The CSR-1 is a necessary accessory for the supervision of remote alarms, and guarantees autonomy of at least 20 hours as far as the operation of the alarms in case of power cuts from the electricity network. It is also possible to connect a GSM Modem (optional) in order to display alarms on a mobile phone, receiving system status SMS messages.

It is possible to remotely forward a cumulative signal of all the alarms using one output (XC9) with clean contact (without voltage) with remote silencing.

DIAGRAM FOR SERIAL CONNECTION OF THE CSR-1 TO THE ELECTRIC AND DIESEL PUMP CONTROL PANELS

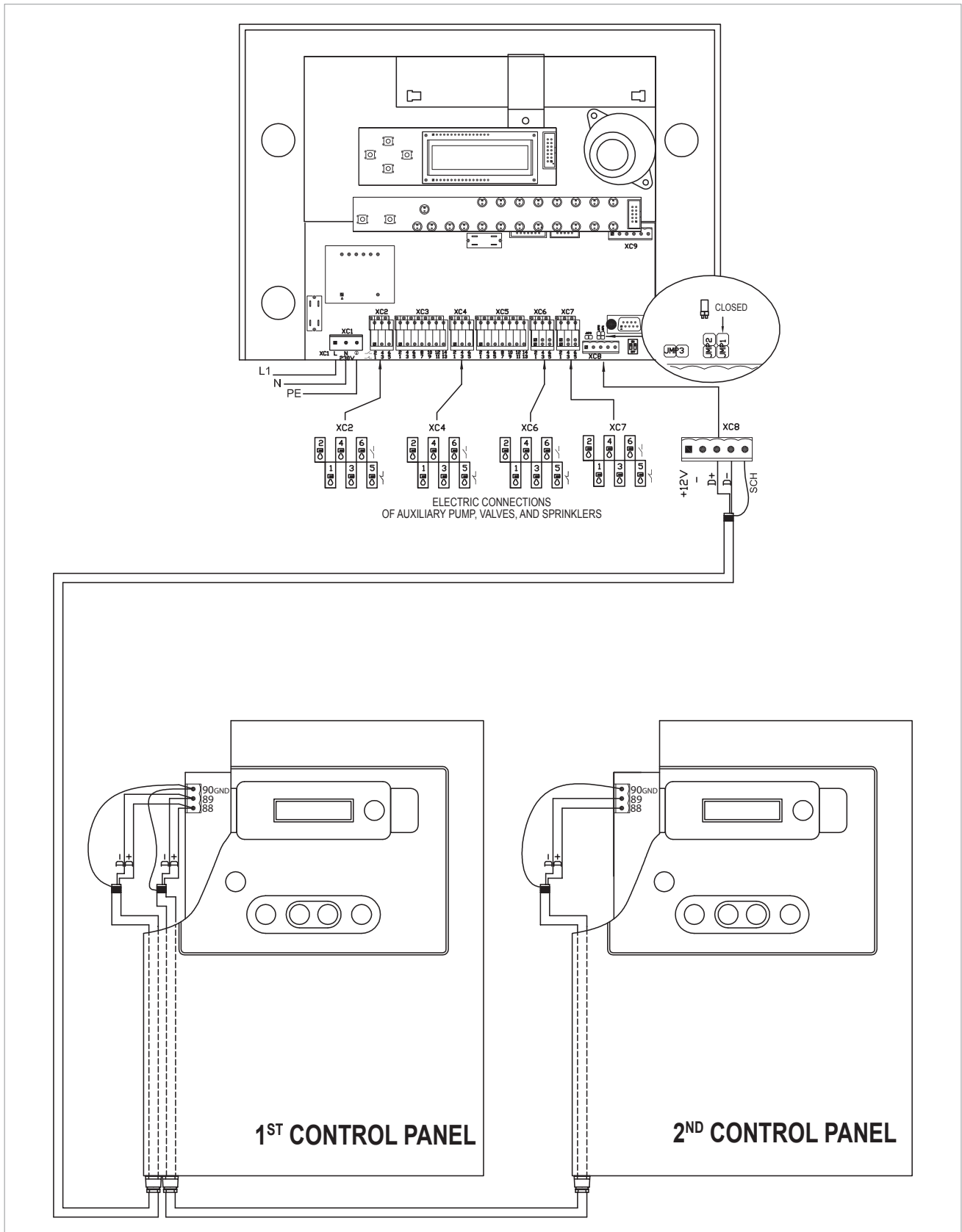
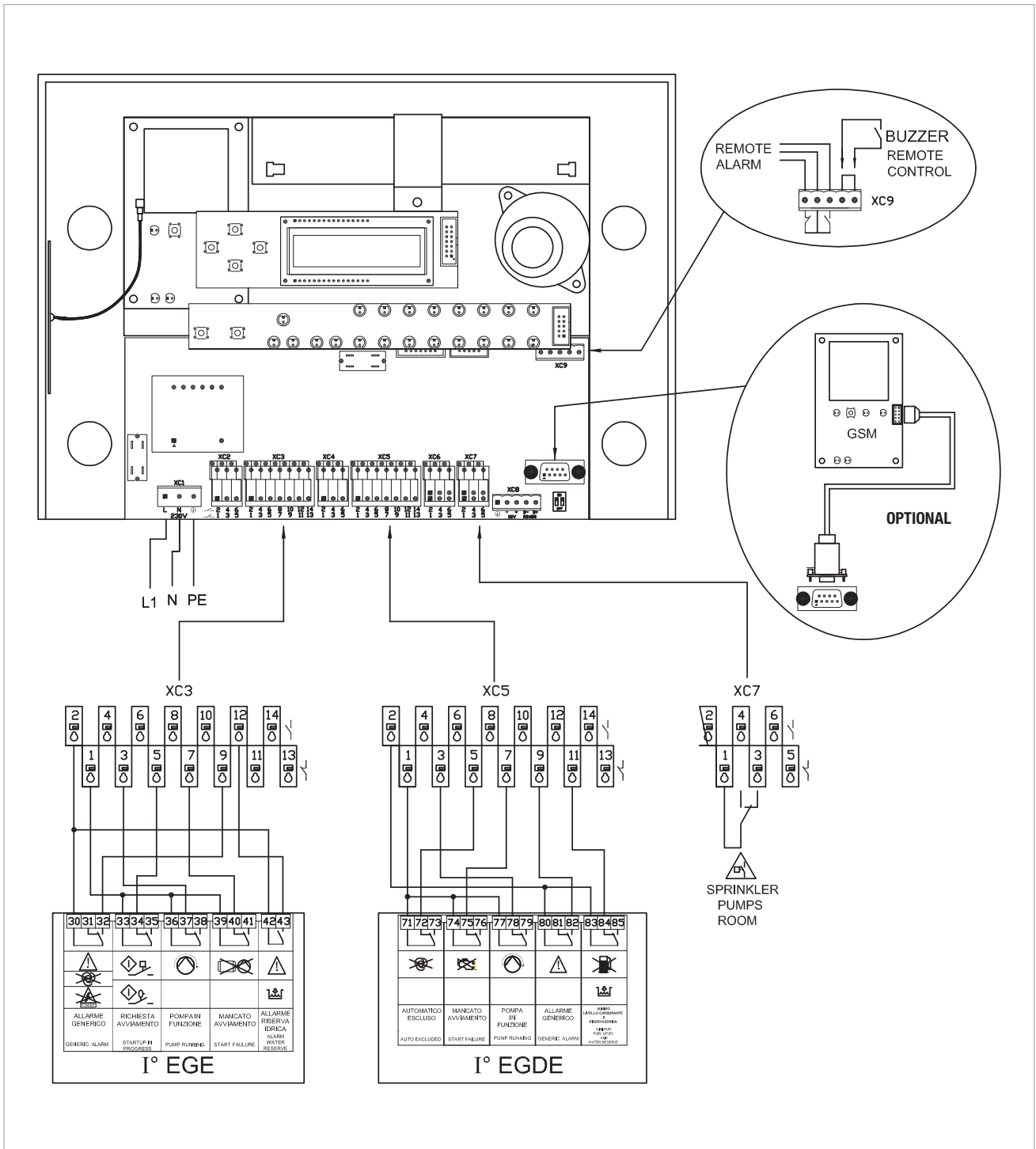


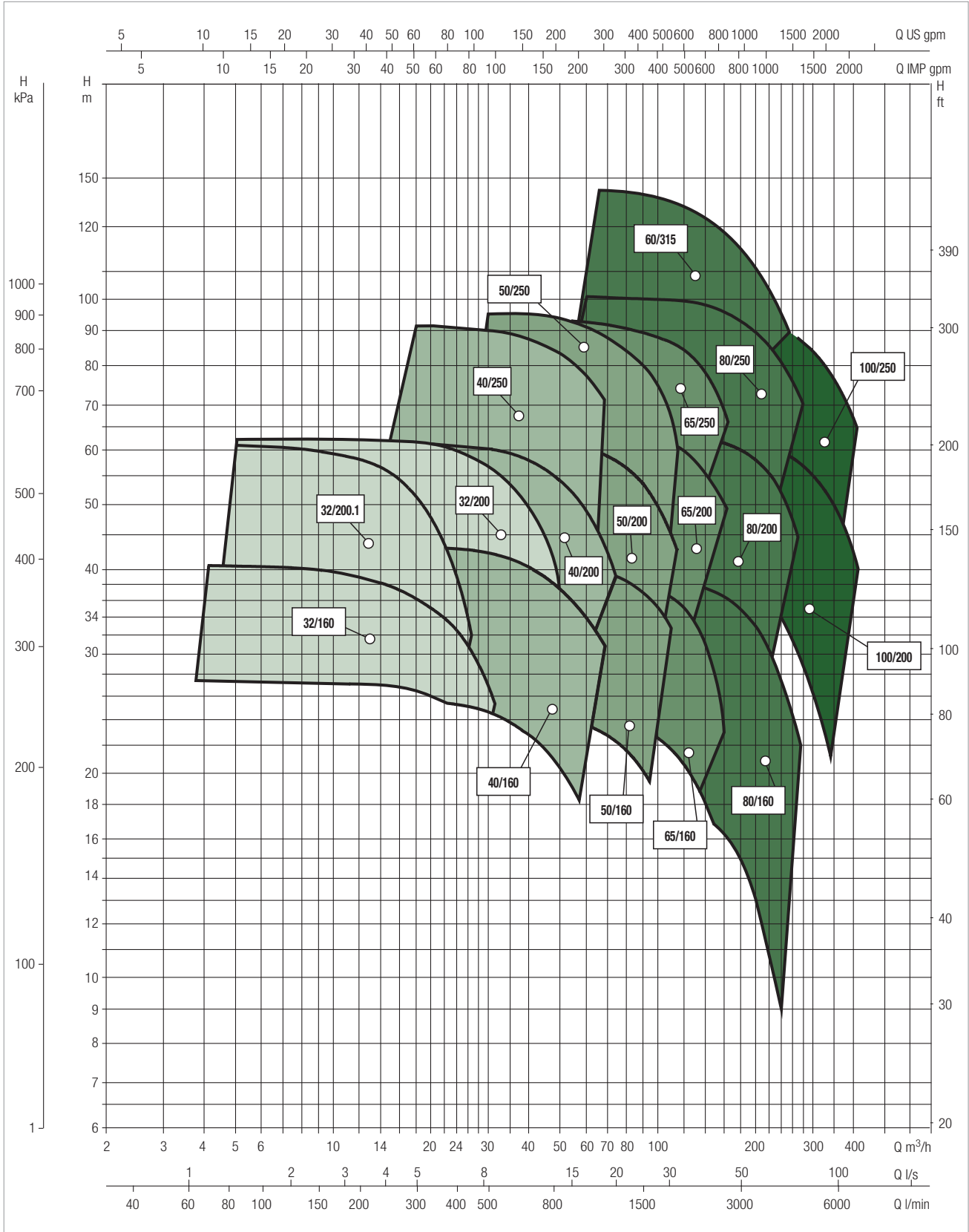
DIAGRAM FOR CONTACT CONNECTION OF THE CSR-1 TO THE ELECTRIC AND DIESEL PUMP CONTROL PANELS



PERFORMANCE RANGE

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.

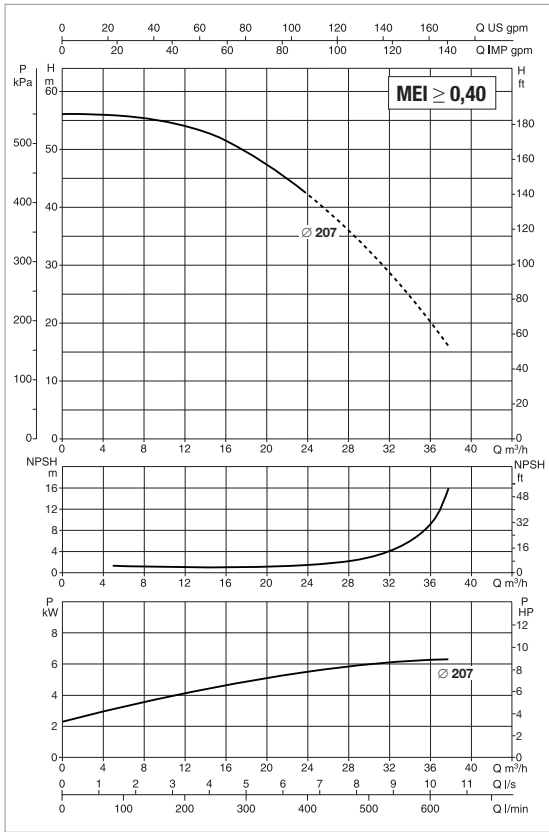
GRAPHIC SELECTION TABLE



For higher performances contact our sales team

1 KDN 32-200.1/207- UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 26 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 32-200.1/207 7,5	3x400 V ~	JET 251 T	7,5	10	1,85	2,5	KDN 32 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

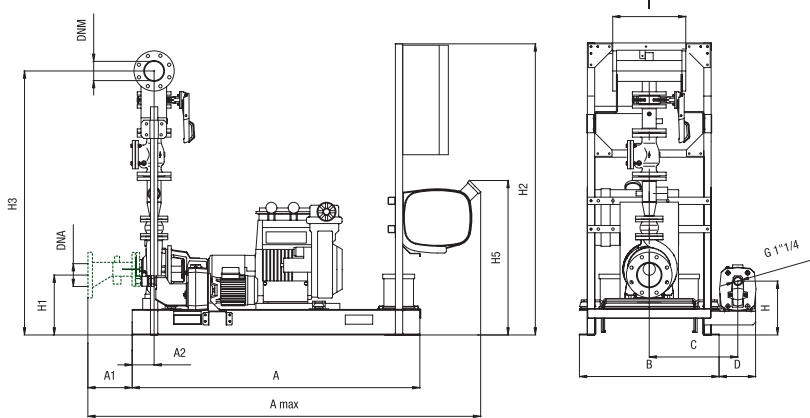
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 32-200.1/207 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 32 EN 12845	0,22 m ²

* Jockey pump on request.

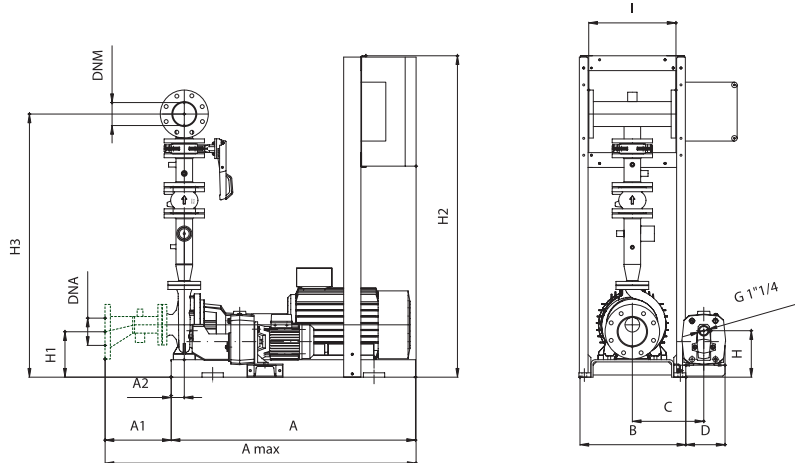
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



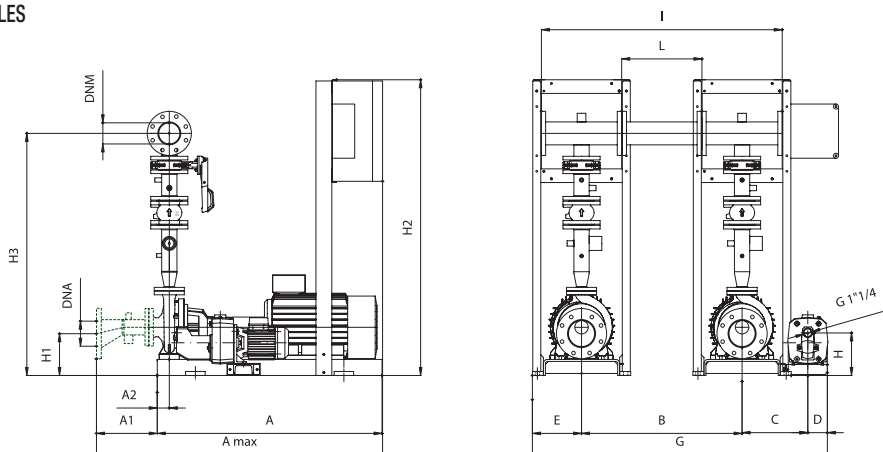
ELECTRIC PUMP MODULE



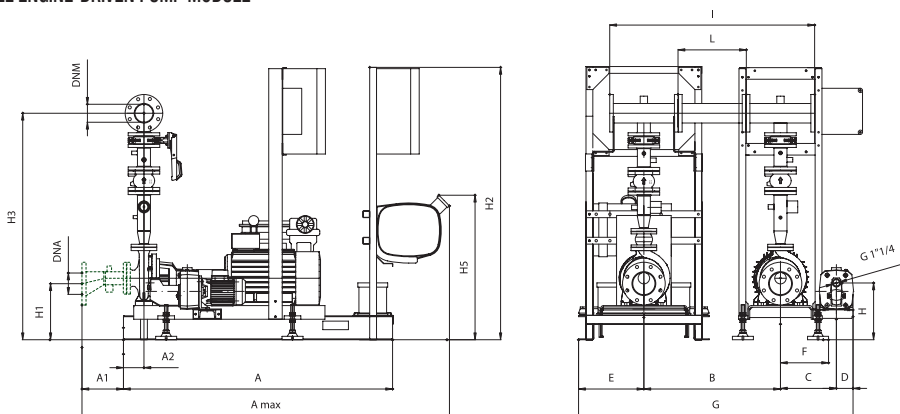
The dashed components are not included in the standard supply.

1 KDN 32-200.1/207 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

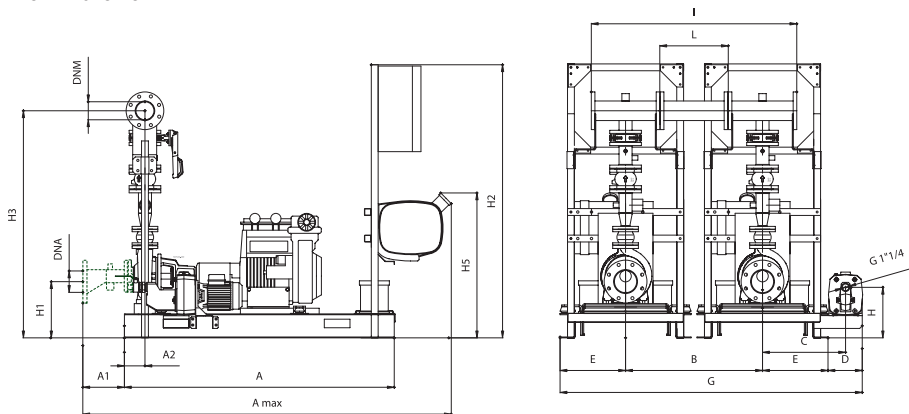
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

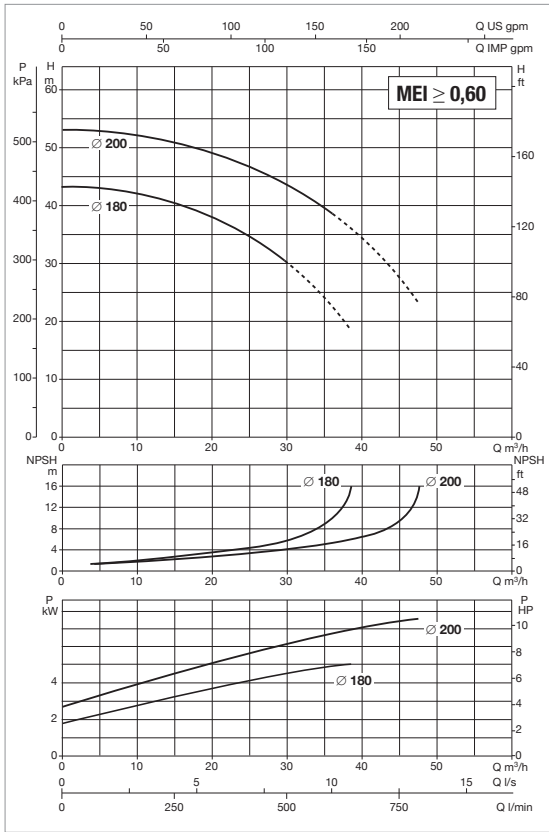


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 32-200.1/207 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2110	200	120	795	485	200	-	-	-	295	323	1600	1232	846	400	-	80	2"	520	550
1 KDN 32-200.1/207 - ELECTRIC PUMP MODULE	1000	1280	257	60	450	307	180	-	-	-	223	195	1475	1132	-	400	-	80	2"	320	350
1 KDN 32-200.1/207 - 2 ELECTRIC PUMP MODULES	1000	1280	257	60	800	307	100	225	-	1432	220	223	1475	1132	-	1200	400	80	2"	320	350
1 KDN 32-200.1/207 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2110	200	120	800	307	100	383	262	1590	320	323	1600	1232	846	1200	400	80	2"	520	350
1 KDN 32-200.1/207 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2110	200	120	800	485	200	383	-	1766	295	323	1600	1232	846	1200	400	80	2"	520	550

1 KDN 32-200/180-200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 48 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 32-200/180 5,5	3x400 V ~	JET 251 T	5,5	7,5	1,85	2,5	KDN 32 EN 12845
1 KDN 32-200/200 7,5	3x400 V ~	JET 251 T	7,5	10	1,85	2,5	KDN 32 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

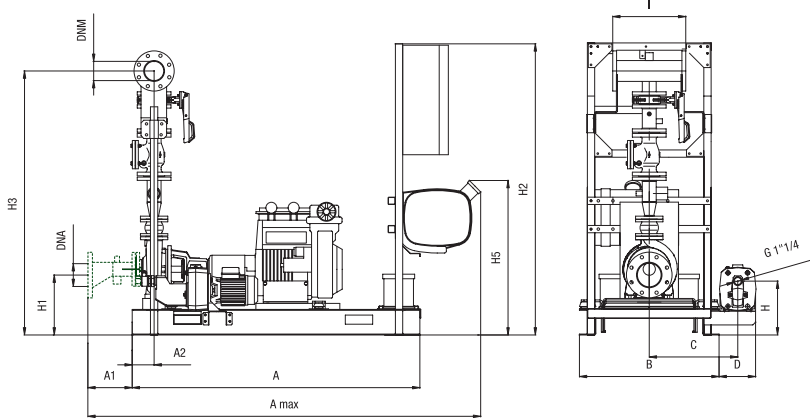
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 32-200/180 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 32 EN 12845	0,22 m ²
1 KDN 32-200/200 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 32 EN 12845	0,22 m ²

* Jockey pump on request.

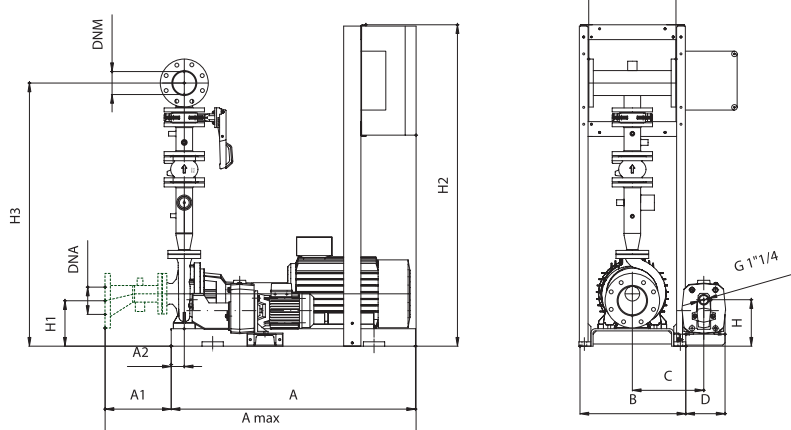
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



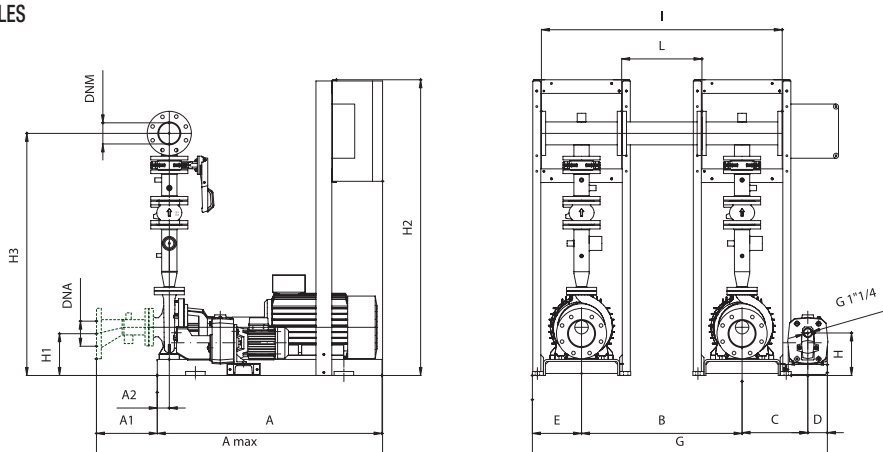
ELECTRIC PUMP MODULE



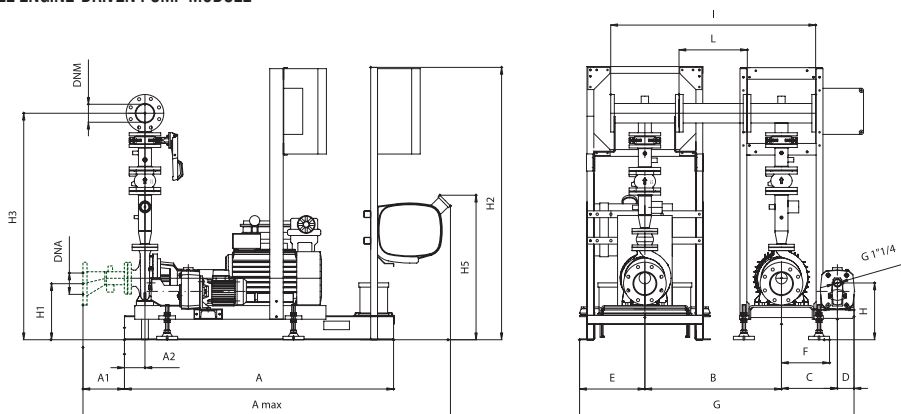
The dashed components are not included in the standard supply.

1 KDN 32-200/180-200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

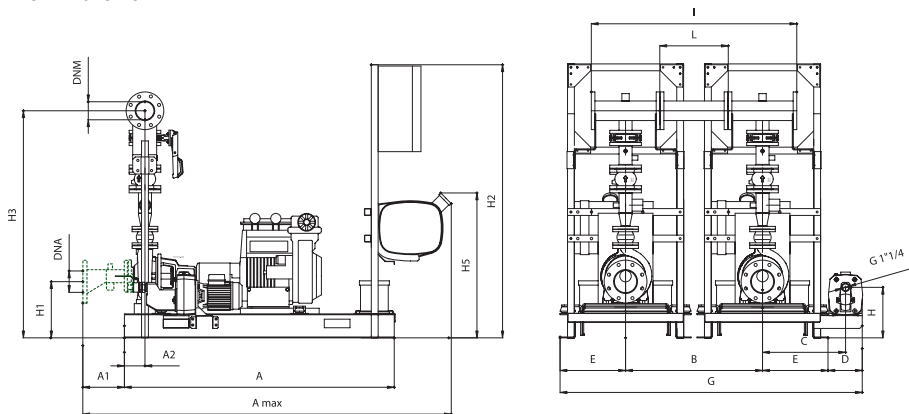
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

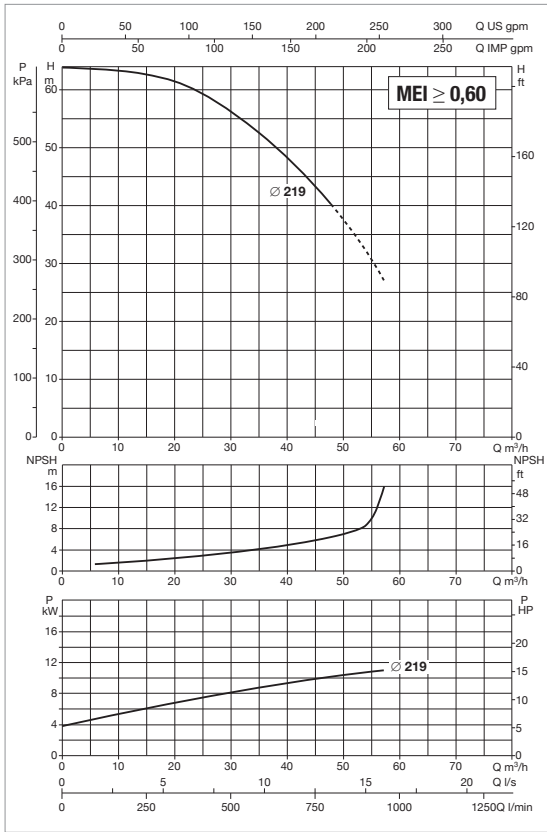


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 32-200/180-200 - DIESEL ENGINE-DRIVEN PUMP MODULE	1576	2110	200	120	795	485	200	-	-	-	295	323	1600	1232	846	400	-	80	2"	520	550
1 KDN 32-200/180-200 - ELECTRIC PUMP MODULE	1000	1280	257	60	450	307	180	-	-	-	223	195	1475	1132	-	400	-	80	2"	320	350
1 KDN 32-200/180-200 - 2 ELECTRIC PUMP MODULES	1000	1280	257	60	800	307	100	225	-	1432	220	223	1475	1132	-	1200	400	80	2"	320	350
1 KDN 32-200/180-200 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2110	200	120	800	307	100	383	262	1590	320	323	1600	1232	846	1200	400	80	2"	520	350
1 KDN 32-200/180-200 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2110	200	120	800	485	200	383	-	1766	295	323	1600	1232	846	1200	400	80	2"	520	550

1 KDN 32-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 48 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 32-200/219 11	3x400 V ~	JET 251 T	11	15	1,85	2,5	KDN 32 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

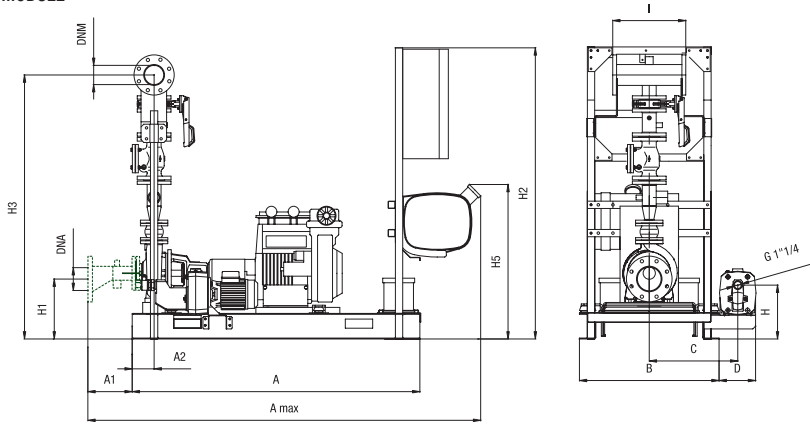
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 32-200/219 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 32 EN 12845	0,22 m ²

* Jockey pump on request.

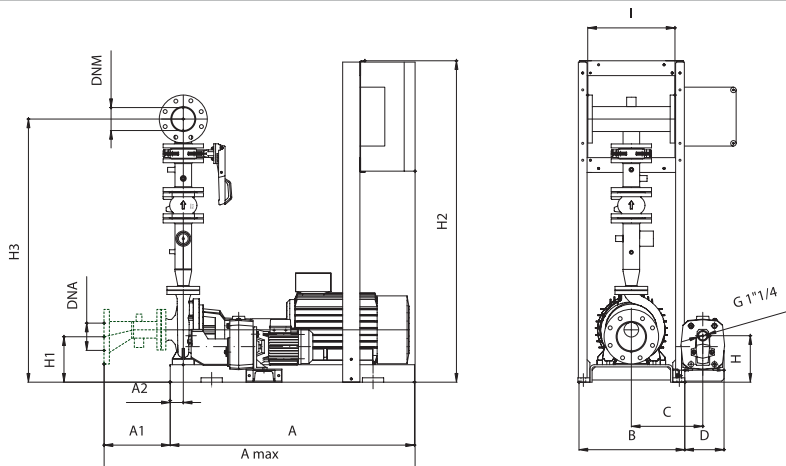
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



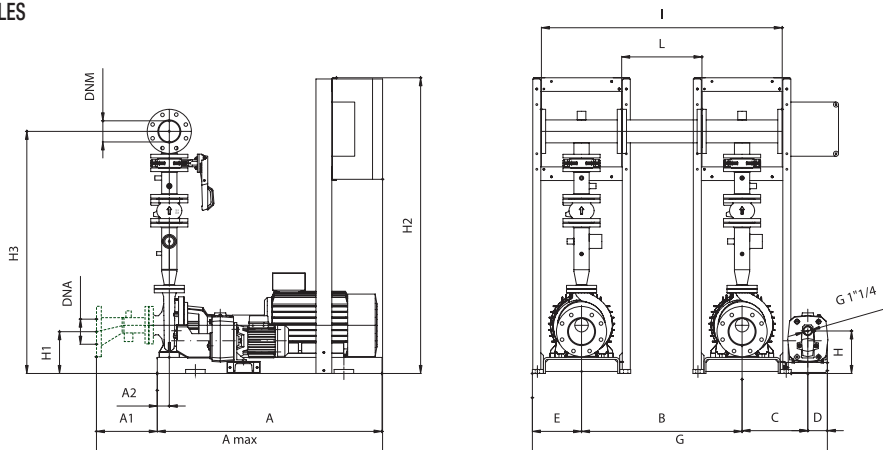
ELECTRIC PUMP MODULE



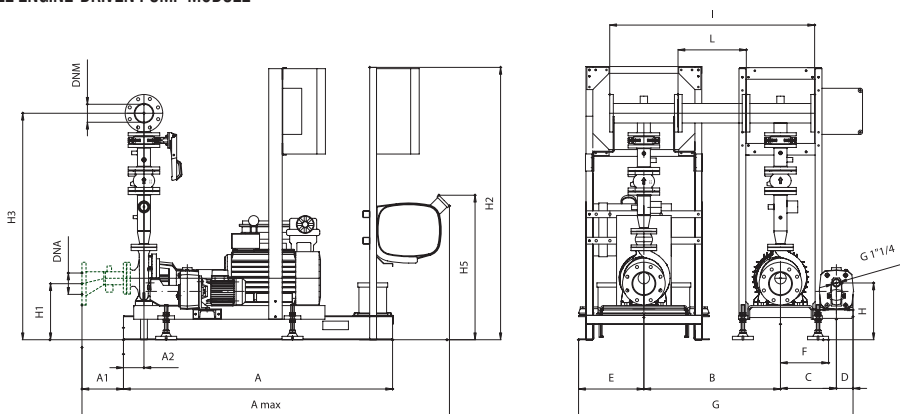
The dashed components are not included in the standard supply.

1 KDN 32-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

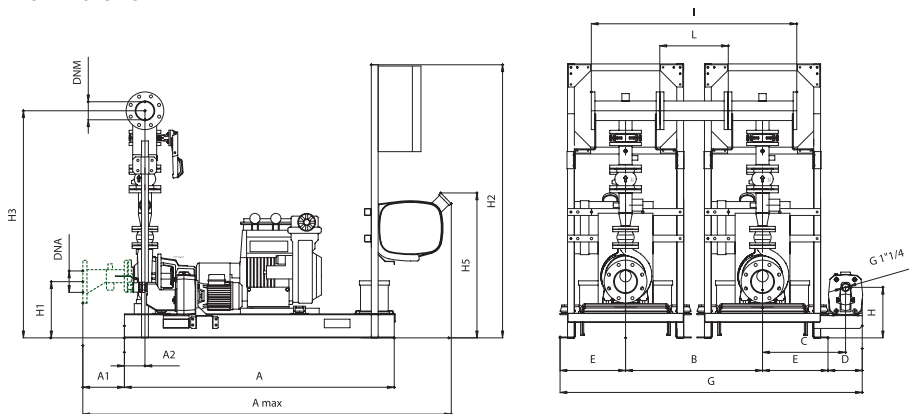
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

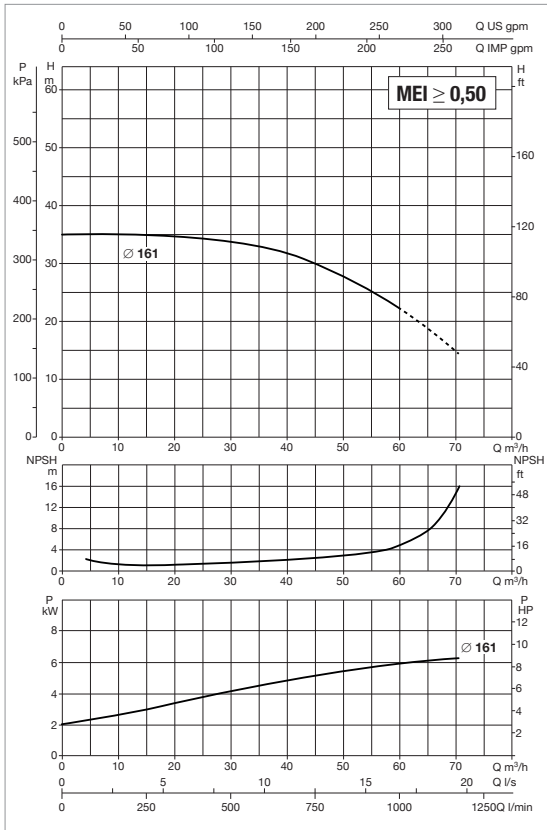


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DN	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 32-200/219 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2110	200	120	795	485	200	-	-	295	323	1600	1232	846	400	-	80	2"	520	550	
1 KDN 32-200/219 - ELECTRIC PUMP MODULE	1120	1380	257	60	490	327	180	-	-	220	223	1475	1132	-	400	-	80	2"	350	380	
1 KDN 32-200/219 - 2 ELECTRIC PUMP MODULES	1120	1380	257	60	800	327	100	245	-	1472	220	223	1475	1132	-	1200	400	80	2"	350	380
1 KDN 32-200/219 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2110	200	120	800	307	100	383	262	1590	320	323	1600	1232	846	1200	400	80	2"	520	350
1 KDN 32-200/219 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2110	200	120	800	485	200	383	-	1766	295	323	1600	1232	846	1200	400	80	2"	520	550

1 KDN 40-160/161 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-160/161 7,5	3x400 V ~	JET 251 T	7,5	10	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

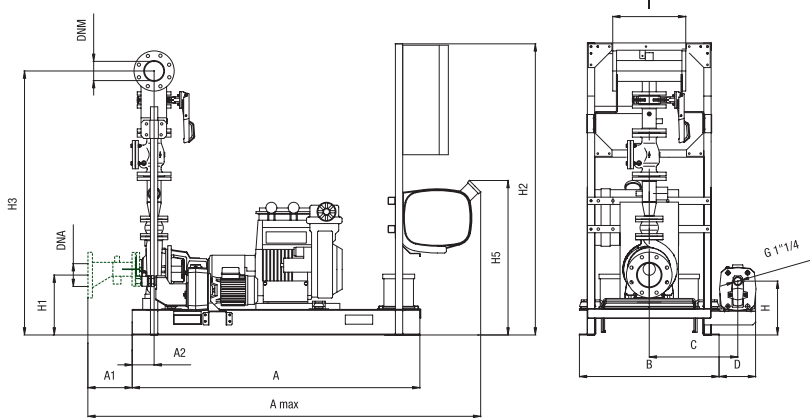
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-160/161 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

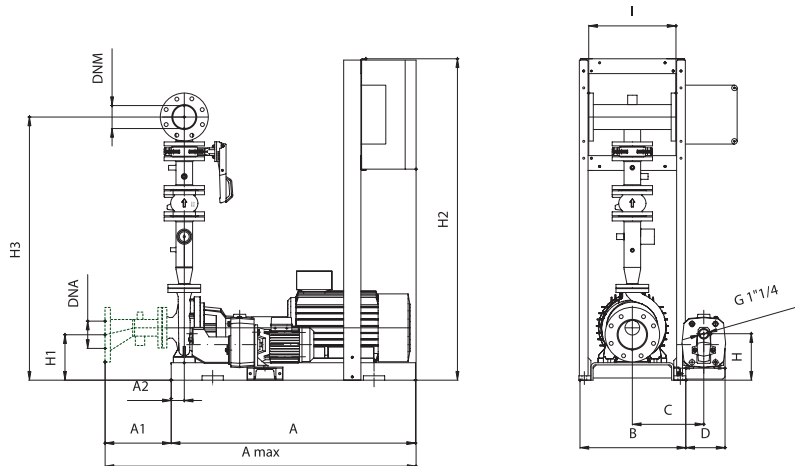
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



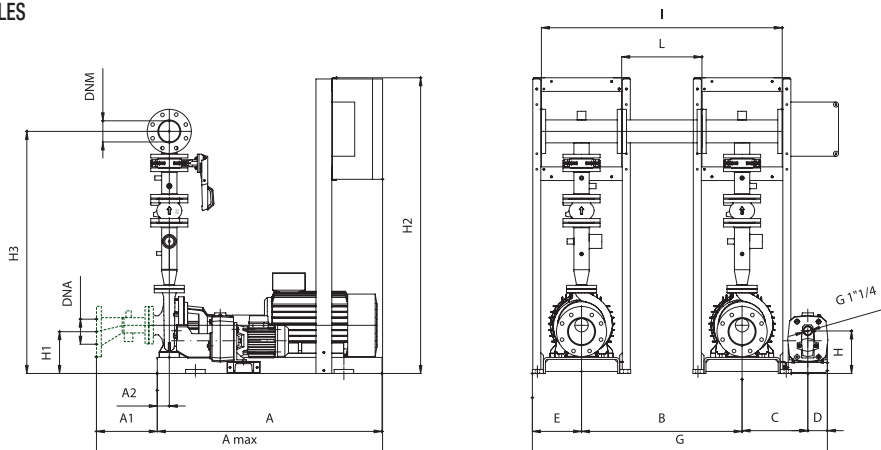
ELECTRIC PUMP MODULE



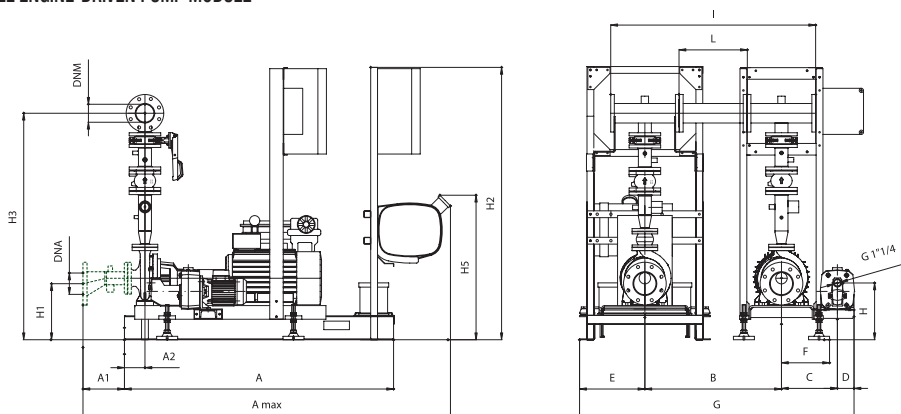
The dashed components are not included in the standard supply.

1 KDN 40-160/161 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

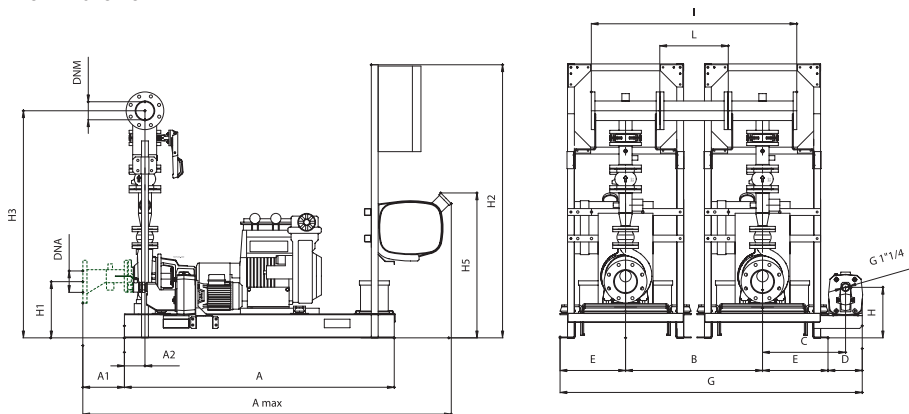
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

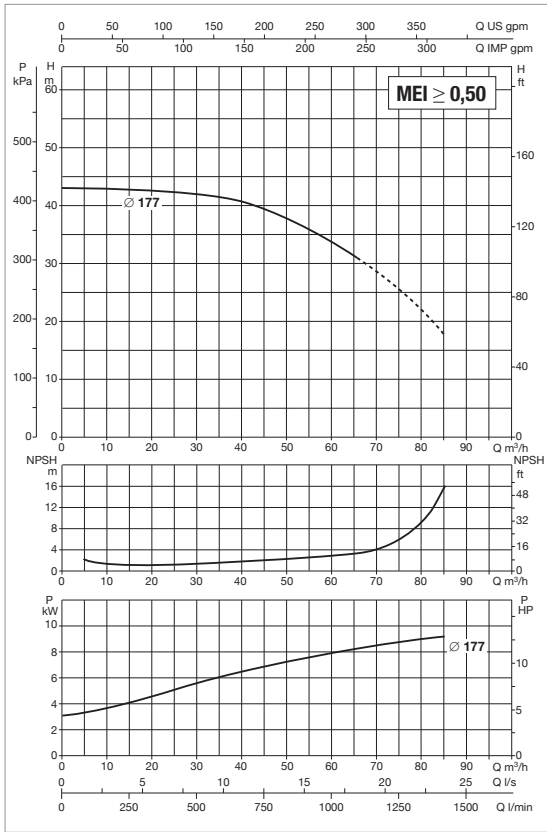


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-160/161 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2135	225	120	795	485	200	-	-	-	295	315	1600	1142	846	400	-	100	2" 1/2	570	600
1 KDN 40-160/161 - ELECTRIC PUMP MODULE	1000	1306	283	60	450	307	180	-	-	-	220	195	1475	1142	-	400	-	100	2" 1/2	310	340
1 KDN 40-160/161 - 2 ELECTRIC PUMP MODULES	1000	1306	283	60	800	307	100	225	-	1432	220	195	1475	1142	-	1200	400	100	2" 1/2	310	340
1 KDN 40-160/161 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2135	225	120	800	307	100	383	262	1590	340	315	1600	1262	846	1200	400	100	2" 1/2	570	340
1 KDN 40-160/161 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2135	225	120	800	485	200	383	-	1766	295	315	1600	1262	846	1200	400	100	2" 1/2	570	600

1 KDN 40-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-160/177 11	3x400 V ~	JET 251 T	11	15	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

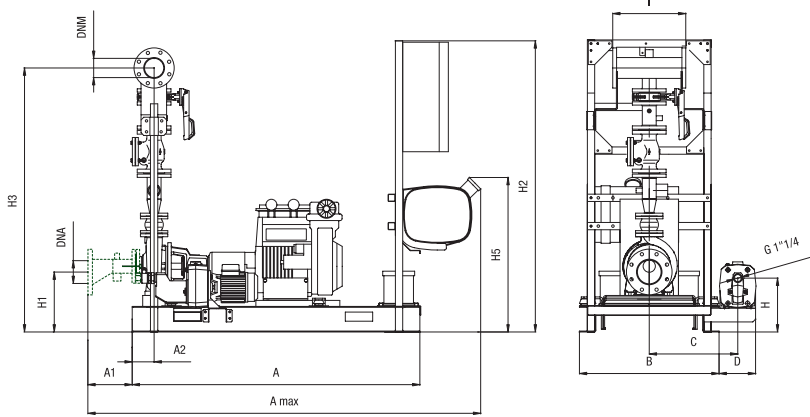
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-160/177 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

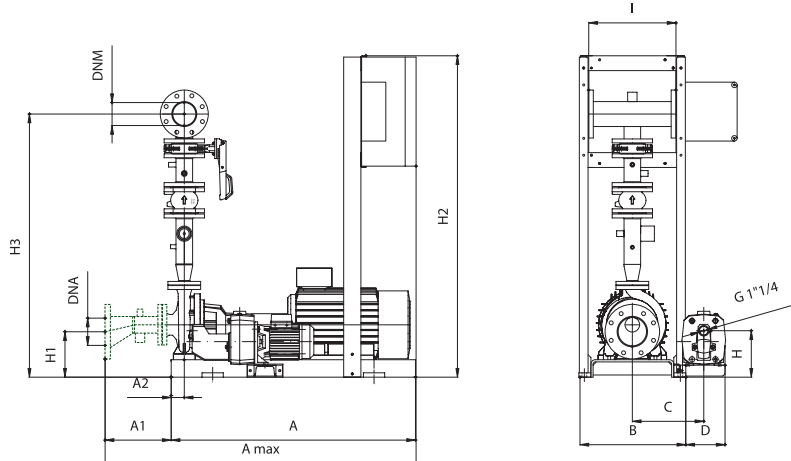
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



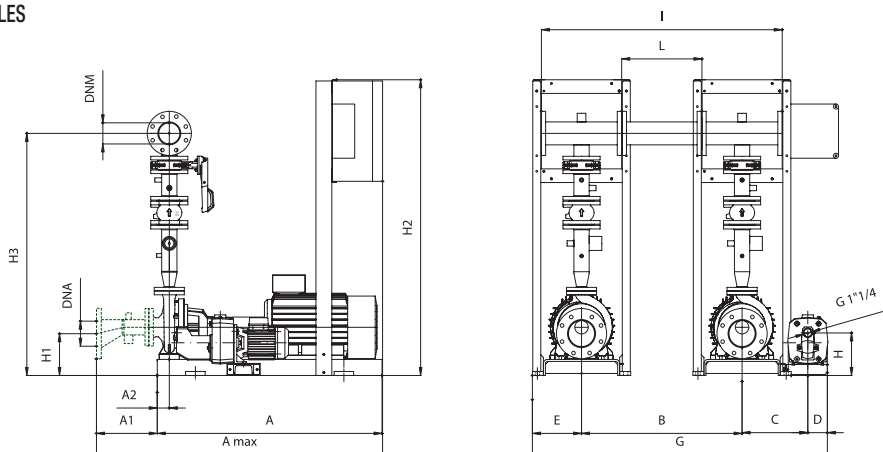
ELECTRIC PUMP MODULE



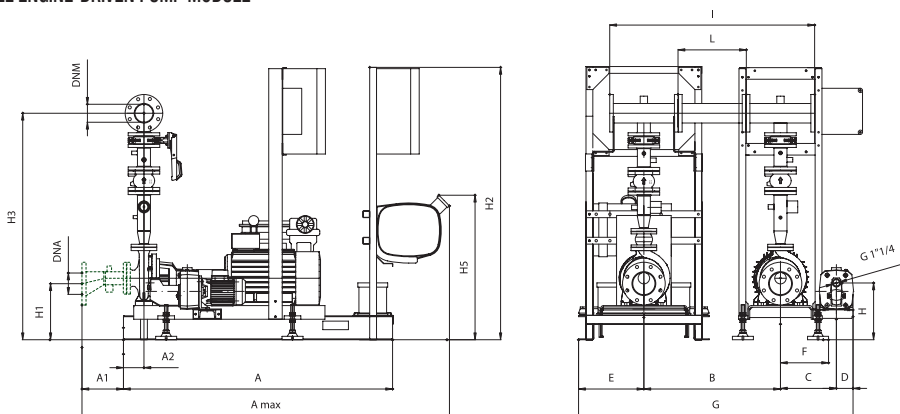
The dashed components are not included in the standard supply.

1 KDN 40-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

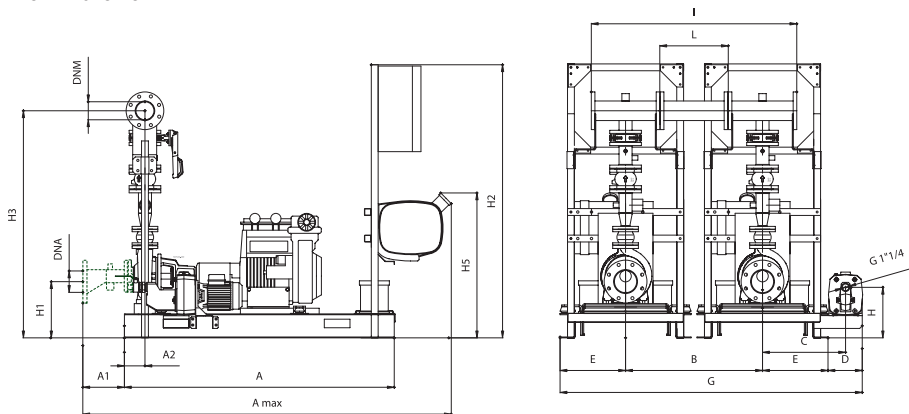
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

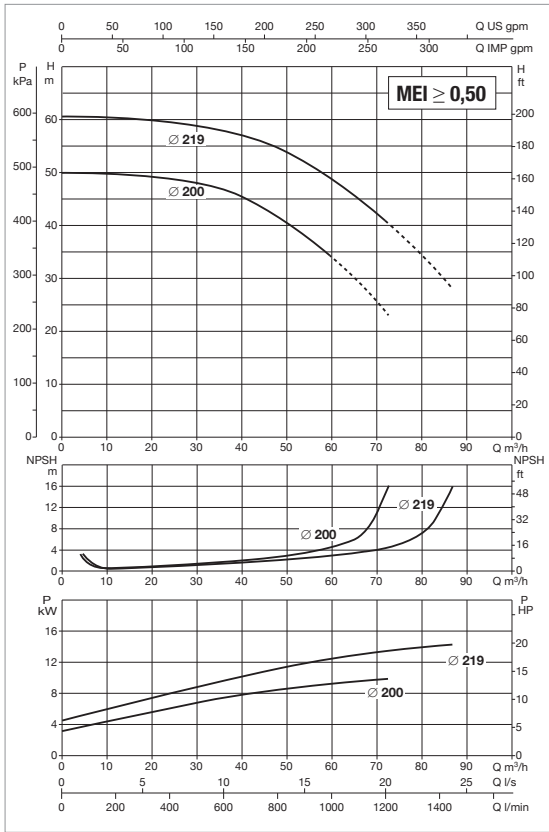


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-160/177 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2135	225	120	795	485	200	-	-	-	295	315	1600	1142	846	400	-	100	2" 1/2	570	600
1 KDN 40-160/177 - ELECTRIC PUMP MODULE	1120	1406	283	60	490	327	180	-	-	-	220	223	1475	1167	-	400	-	100	2" 1/2	320	350
1 KDN 40-160/177 - 2 ELECTRIC PUMP MODULES	1120	1406	283	60	800	327	100	245	-	1472	220	223	1475	1167	-	1200	400	100	2" 1/2	320	350
1 KDN 40-160/177 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2135	225	120	800	307	100	383	262	1590	340	315	1600	1262	846	1200	400	100	2" 1/2	570	340
1 KDN 40-160/177 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2135	225	120	800	485	200	383	-	1766	295	315	1600	1262	846	1200	400	100	2" 1/2	570	600

1 KDN 40-200/200-219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-200/200 11	3x400 V ~	JET 251 T	11	15	1,85	2,5	KDN 40 EN 12845
1 KDN 40-200/219 15	3x400 V ~	JET 251 T	15	20	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

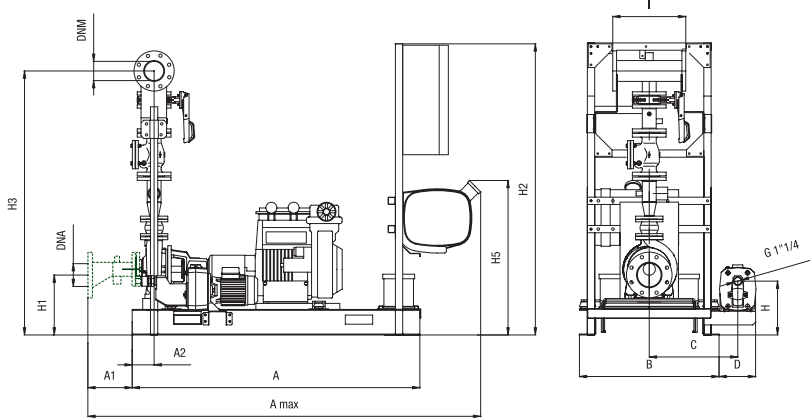
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-200/200 MD	1x220-240 V ~	JET 251 T	15	20	1,85	2,5	KDN 40 EN 12845	0,22 m ²
1 KDN 40-200/219 MD	1x220-240 V ~	JET 251 T	15	20	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

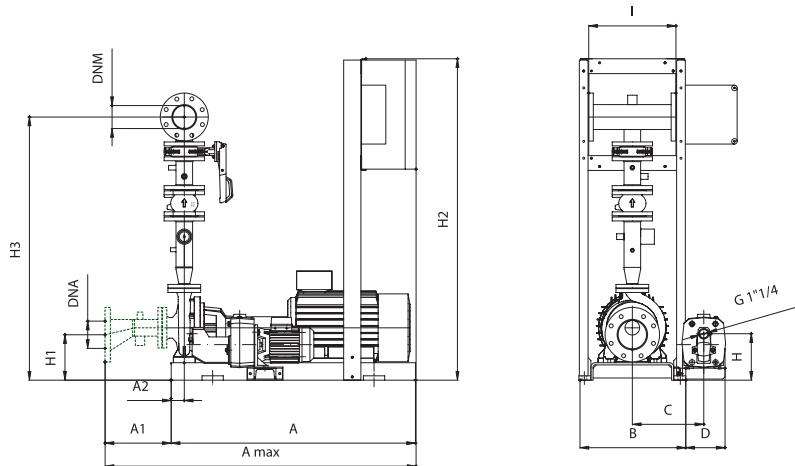
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



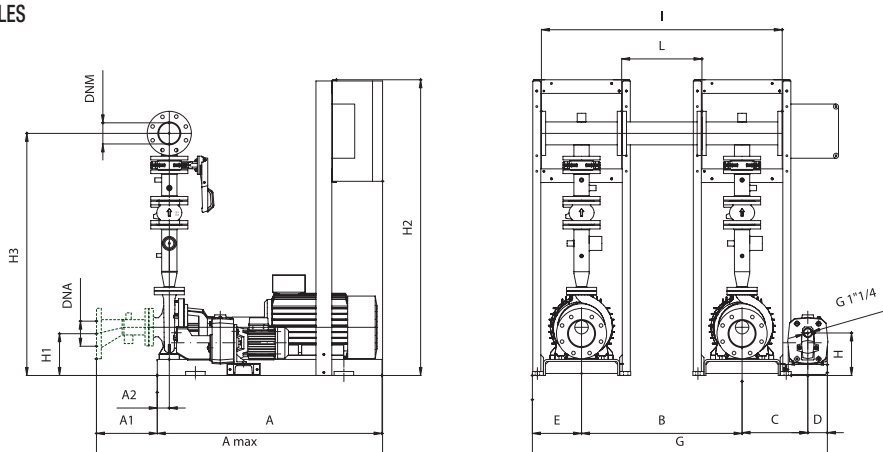
ELECTRIC PUMP MODULE



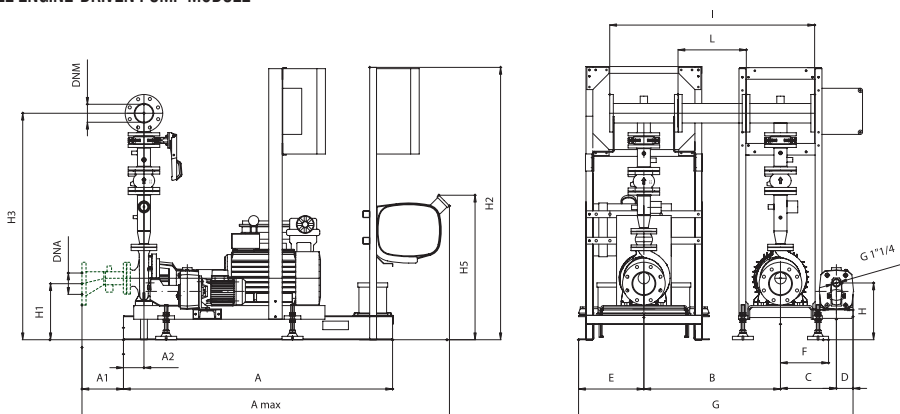
The dashed components are not included in the standard supply.

1 KDN 40-200/200-219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

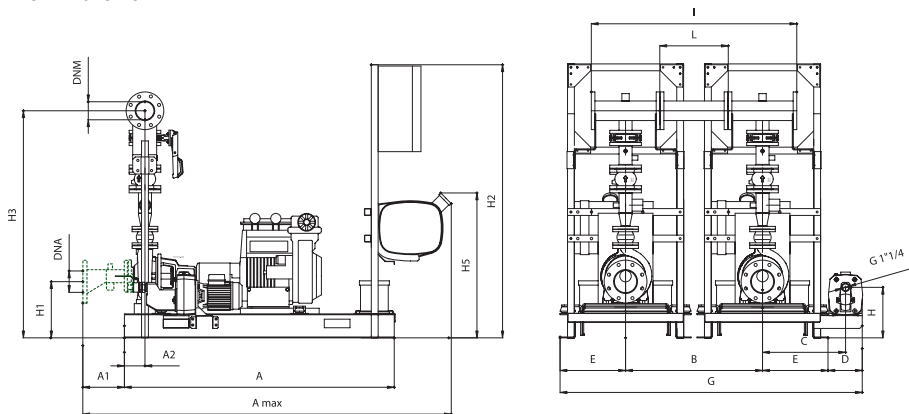
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

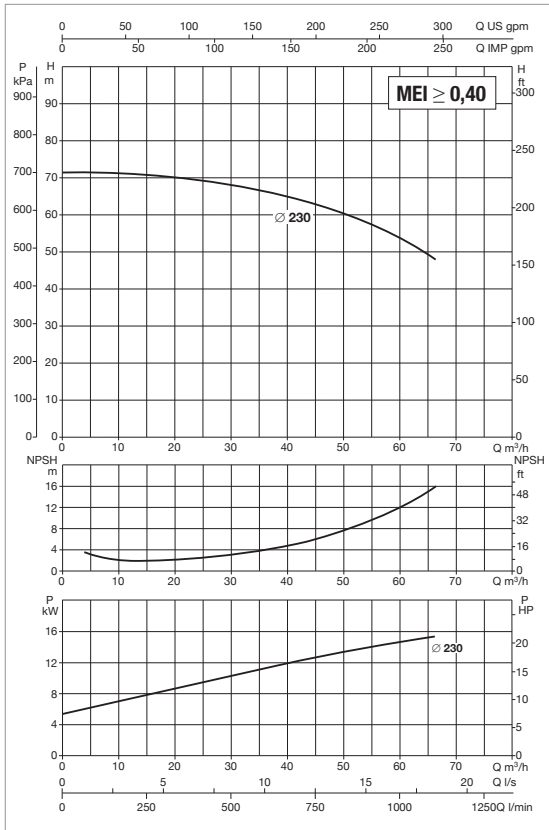


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DN	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-200/200-219 - DIESEL ENGINE-DRIVEN PUMP MODULE	1576	2155	245	120	795	485	200	-	-	-	295	343	1600	1307	846	400	-	100	2" 1/2	590	620
1 KDN 40-200/200-219 - ELECTRIC PUMP MODULE	1120	1426	303	60	490	327	180	-	-	-	220	223	1475	1187	-	400	-	100	2" 1/2	430	450
1 KDN 40-200/200-219 - 2 ELECTRIC PUMP MODULES	1120	1406	303	60	800	327	100	245	-	1472	220	223	1475	1187	-	1200	400	100	2" 1/2	430	450
1 KDN 40-200/200-219 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	800	327	100	383	282	1610	340	343	1600	1307	846	1200	400	100	2" 1/2	590	350
1 KDN 40-200/200-219 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2155	245	120	800	485	200	383	-	1766	295	343	1600	1307	846	1200	400	100	2" 1/2	590	620

1 KDN 40-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-250/230 15	3x400 V ~	JET 251 T	15	20	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

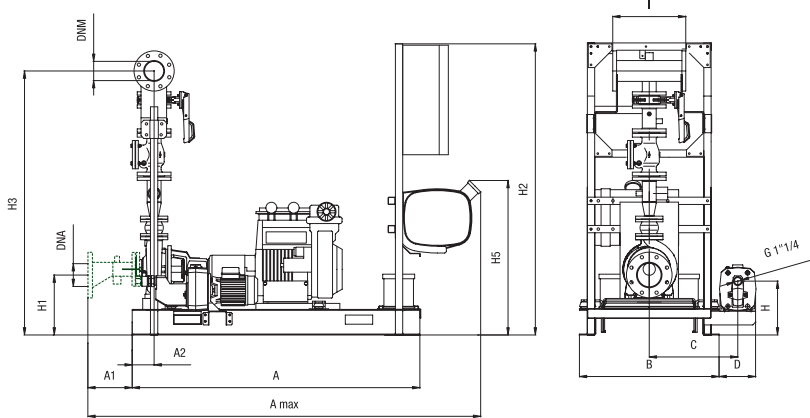
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-250/230 MD	1x220-240 V ~	JET 251 T	19	25	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

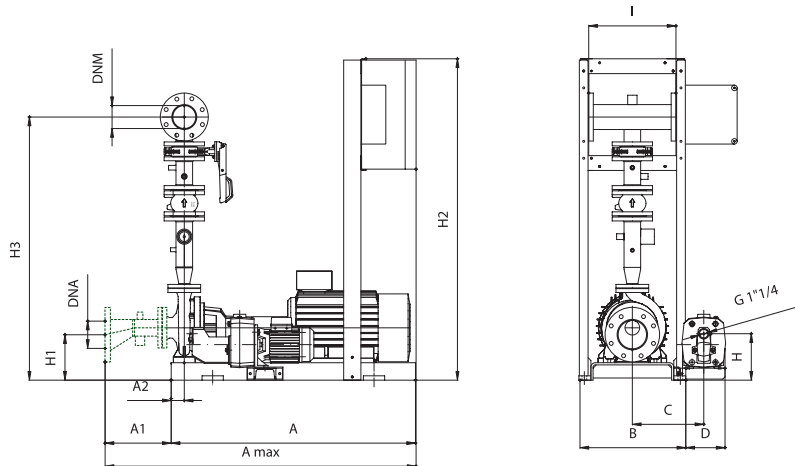
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



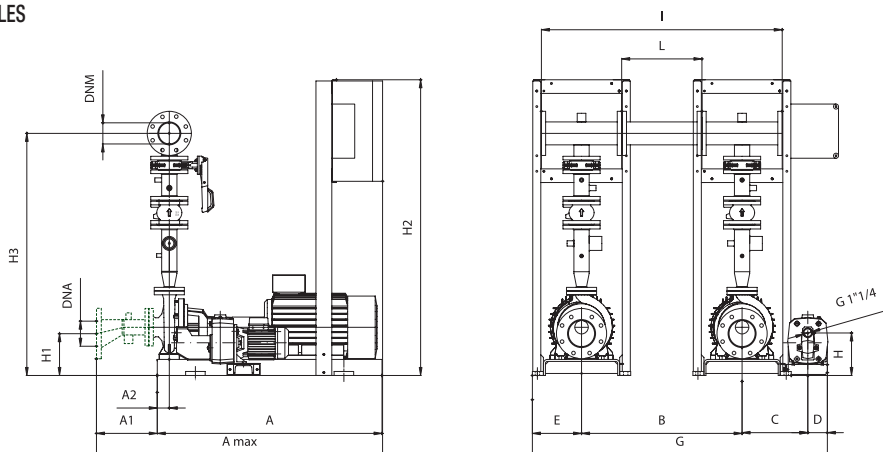
ELECTRIC PUMP MODULE



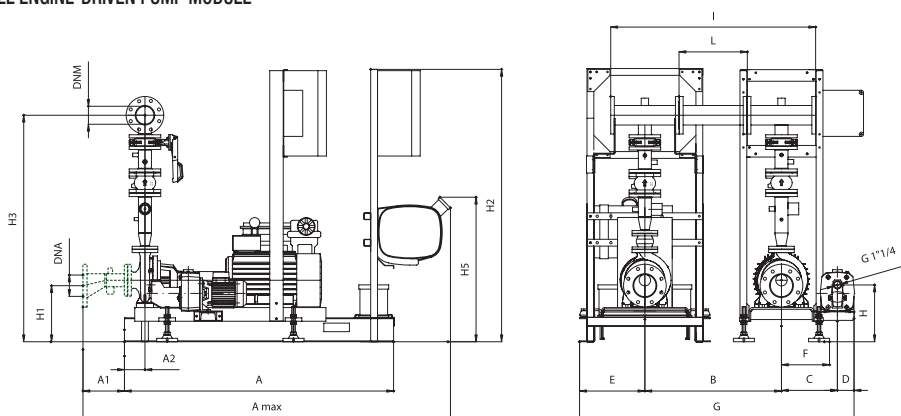
The dashed components are not included in the standard supply.

1 KDN 40-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

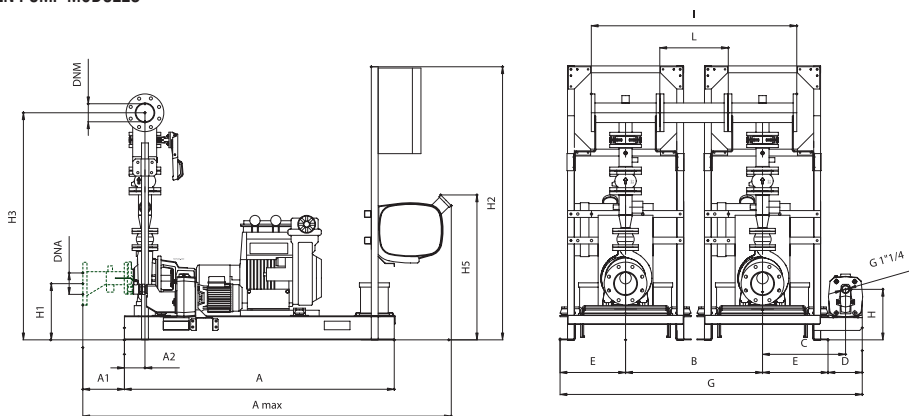
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

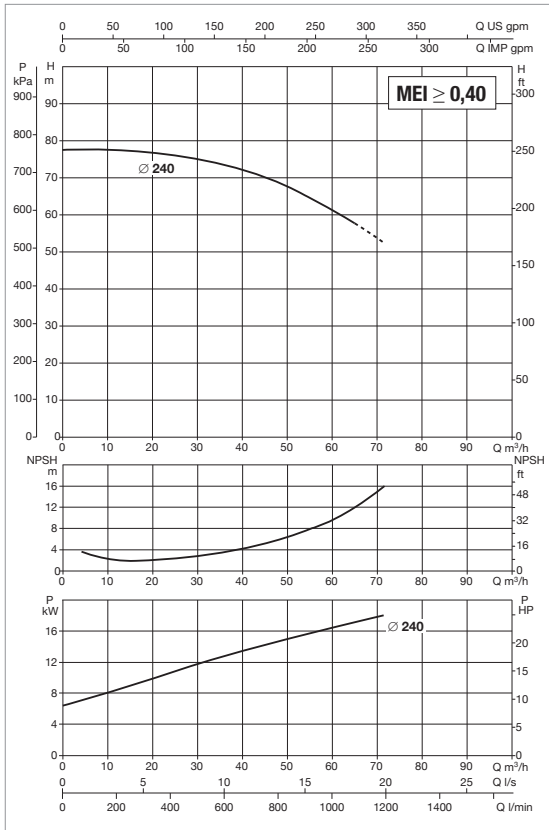


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-250/230 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	795	485	200	-	-	-	295	343	1600	1352	846	400	-	100	2" 1/2	600	630
1 KDN 40-250/230 - ELECTRIC PUMP MODULE	1250	1538	288	75	540	325	180	-	-	-	220	243	1475	1252	-	400	-	100	2" 1/2	450	480
1 KDN 40-250/230 - 2 ELECTRIC PUMP MODULES	1250	1538	288	75	800	352	100	270	-	1522	220	243	1475	1252	-	1200	400	100	2" 1/2	450	480
1 KDN 40-250/230 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	800	352	100	383	307	1635	320	343	1600	1352	846	1200	400	100	2" 1/2	600	480
1 KDN 40-250/230 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2155	245	120	800	485	200	383	-	1766	295	343	1600	1352	846	1200	400	100	2" 1/2	600	630

1 KDN 40-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-250/240 18,5	3x400 V ~	JET 251 T	18,5	25	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

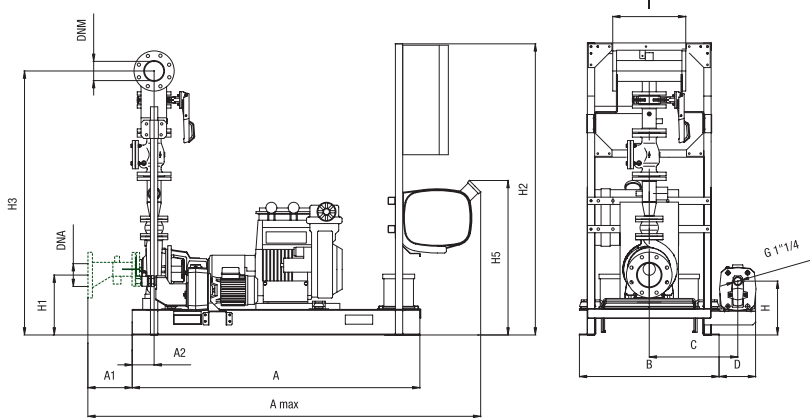
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-250/240 MD	1x220-240 V ~	JET 251 T	19	25	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

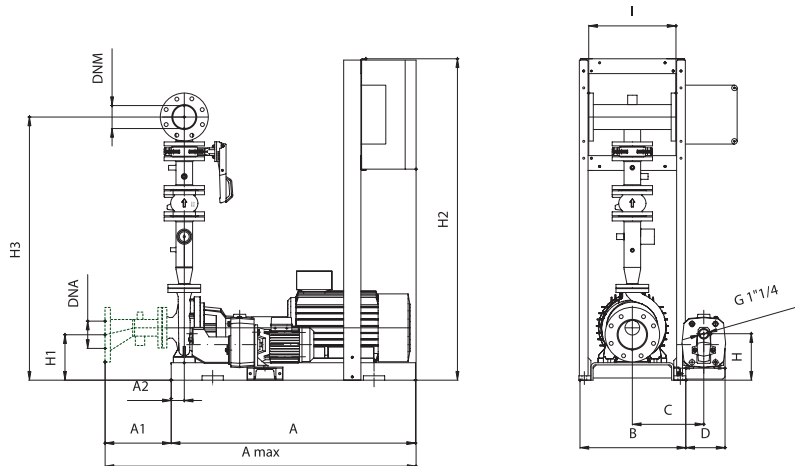
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



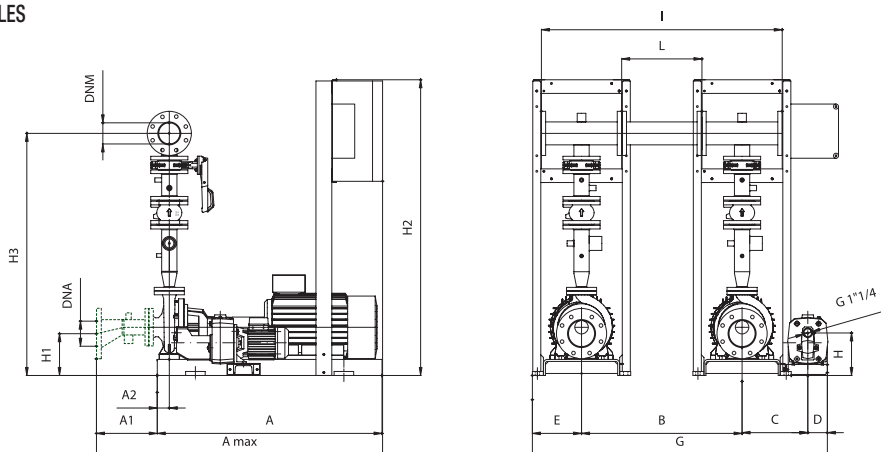
ELECTRIC PUMP MODULE



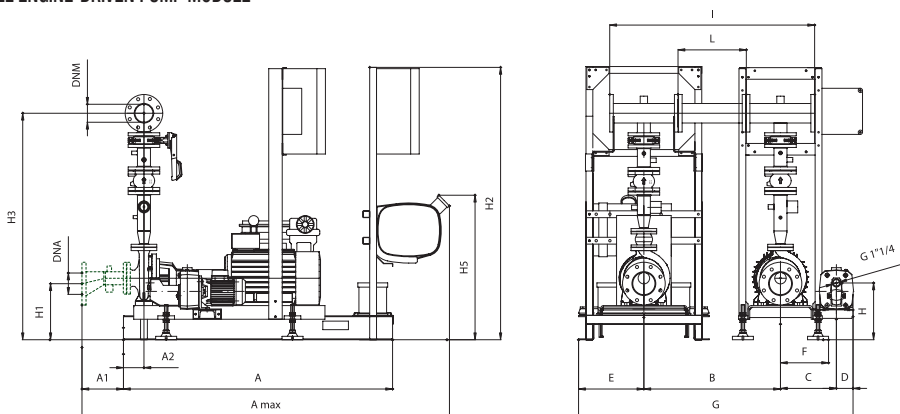
The dashed components are not included in the standard supply.

1 KDN 40-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

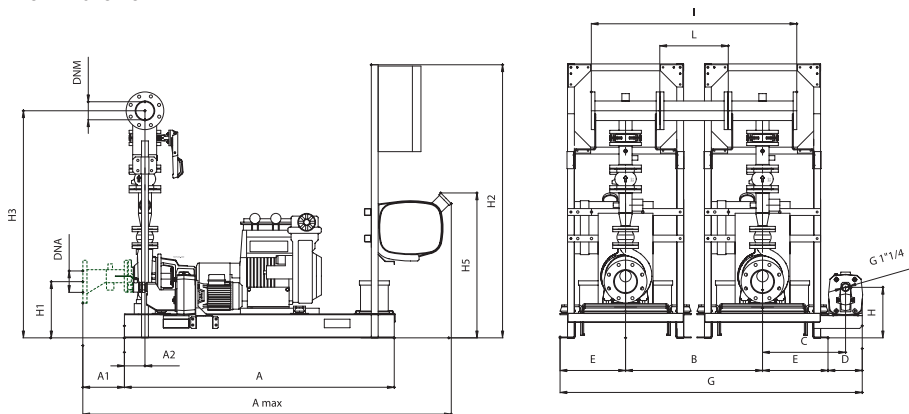
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

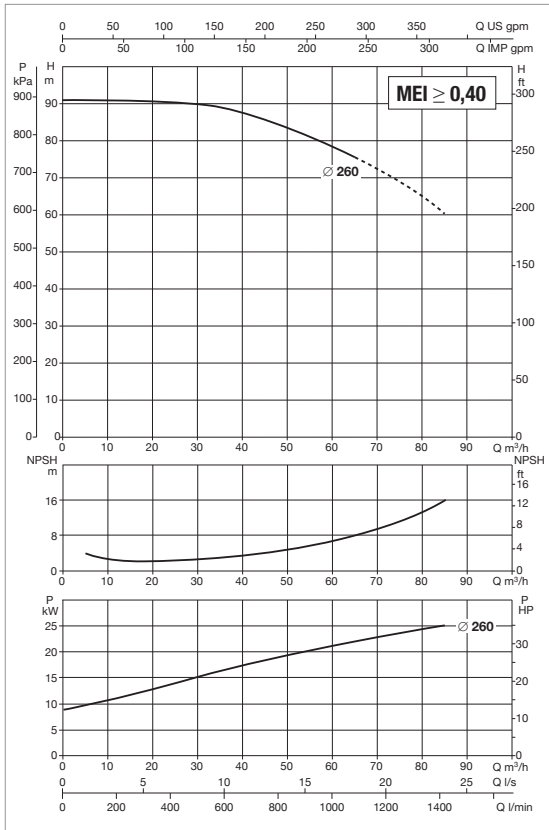


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-250/240 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	795	485	200	-	-	-	295	343	1600	1352	846	400	-	100	2" 1/2	600	630
1 KDN 40-250/240 - ELECTRIC PUMP MODULE	1250	1538	288	75	540	325	180	-	-	-	220	243	1475	1252	-	400	-	100	2" 1/2	450	480
1 KDN 40-250/240 - 2 ELECTRIC PUMP MODULES	1250	1538	288	75	800	352	100	270	-	1522	220	243	1475	1252	-	1200	400	100	2" 1/2	450	480
1 KDN 40-250/240 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	800	352	100	383	307	1635	320	363	1600	1372	846	1200	400	100	2" 1/2	650	480
1 KDN 40-250/240 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2155	245	120	800	485	200	383	-	1766	295	343	1600	1352	846	1200	400	100	2" 1/2	600	630

1 KDN 40-250/260 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 70 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 40-250/260 30	3x400 V ~	JET 251 T	30	40	1,85	2,5	KDN 40 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

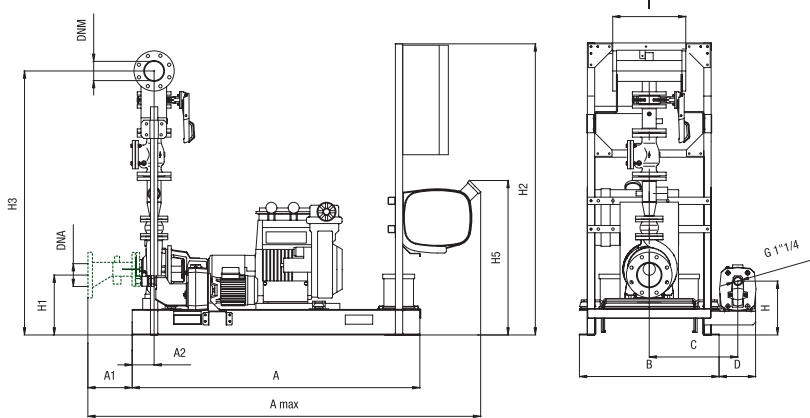
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 40-250/260 MD	1x220-240 V ~	JET 251 T	26	35	1,85	2,5	KDN 40 EN 12845	0,22 m ²

* Jockey pump on request.

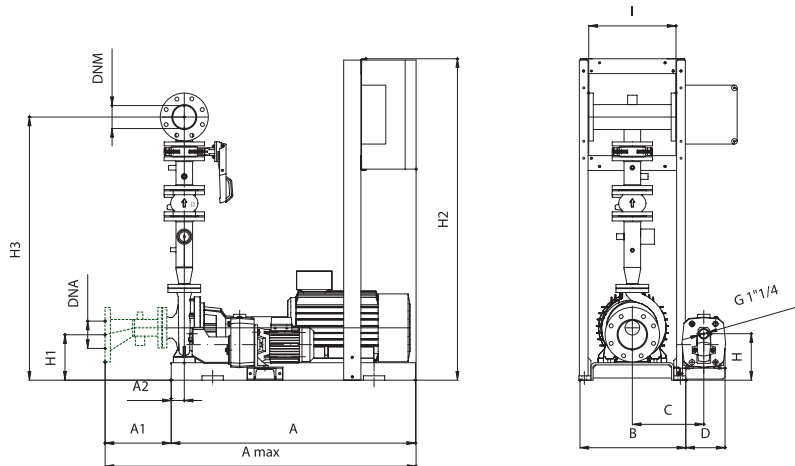
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



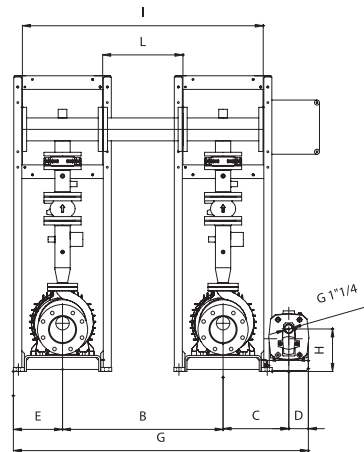
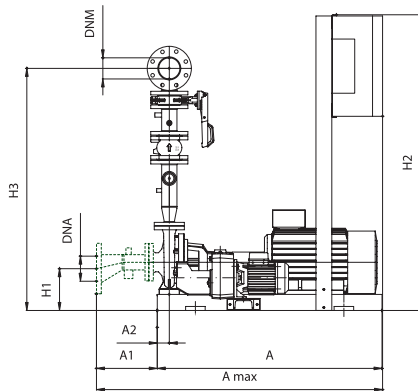
ELECTRIC PUMP MODULE



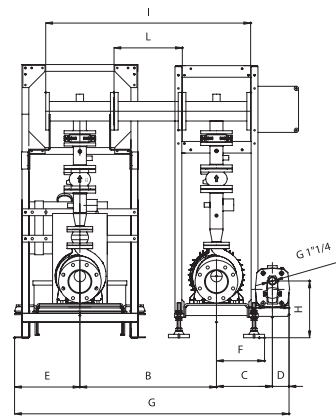
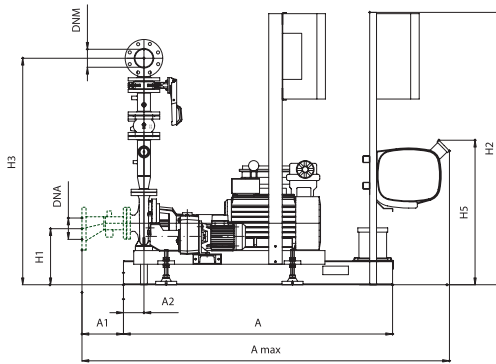
The dashed components are not included in the standard supply.

1 KDN 40-250/260 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

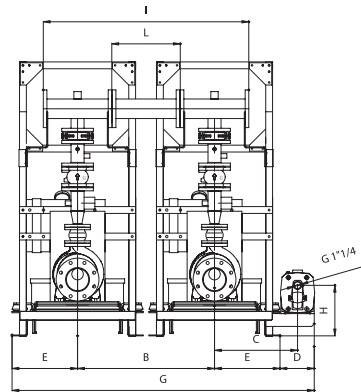
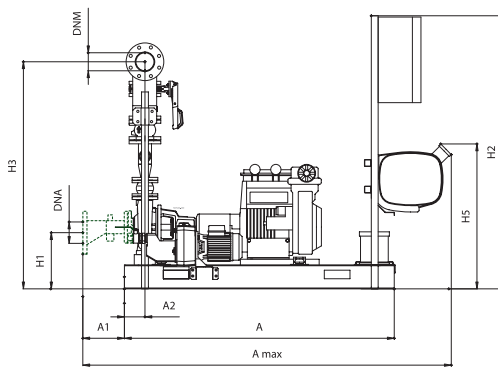
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

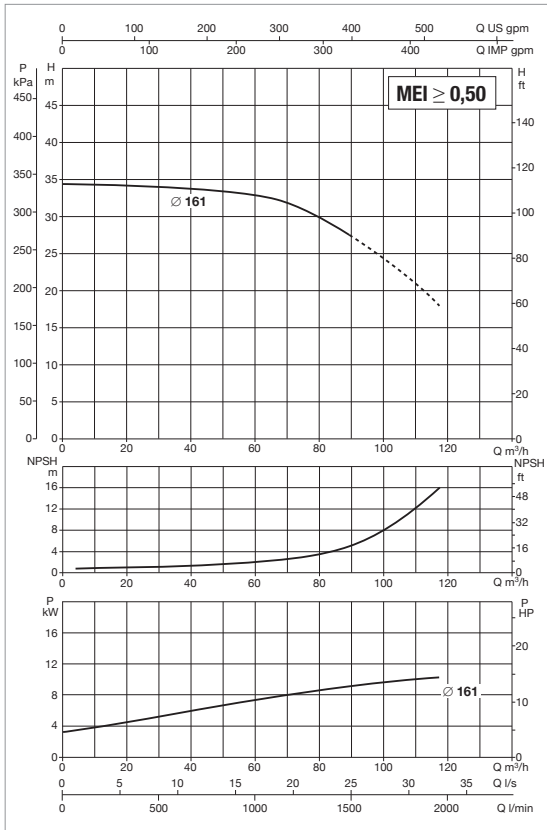


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 40-250/260 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	795	485	200	-	-	-	295	363	1600	1372	846	400	-	100	2" 1/2	650	680
1 KDN 40-250/260 - ELECTRIC PUMP MODULE	1250	1538	288	75	540	325	180	-	-	-	220	243	1475	1252	-	400	-	100	2" 1/2	450	480
1 KDN 40-250/260 - 2 ELECTRIC PUMP MODULES	1250	1538	288	75	800	352	100	270	-	1522	220	243	1475	1252	-	1200	400	100	2" 1/2	450	480
1 KDN 40-250/260 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2155	245	120	800	352	100	383	307	1635	320	363	1600	1372	846	1200	400	100	2" 1/2	650	480
1 KDN 40-250/260 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2155	245	120	800	485	200	383	-	1766	295	363	1600	1372	846	1200	400	100	2" 1/2	650	680

1 KDN 50-160/161 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 100 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-160/161 11	3x400 V ~	JET 251 T	11	15	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

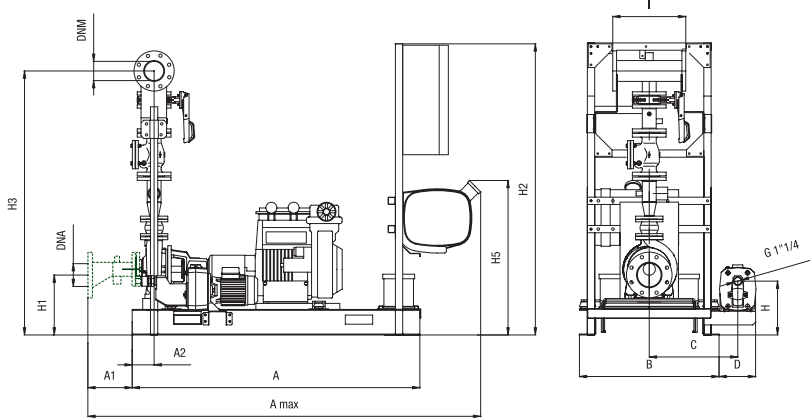
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-160/161 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

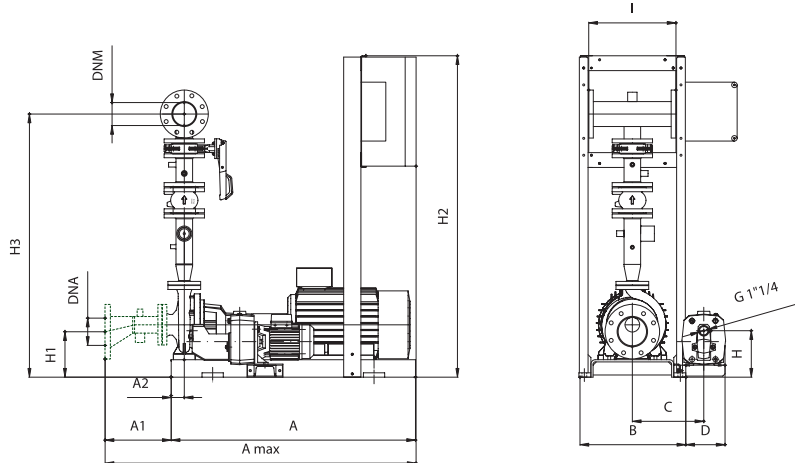
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



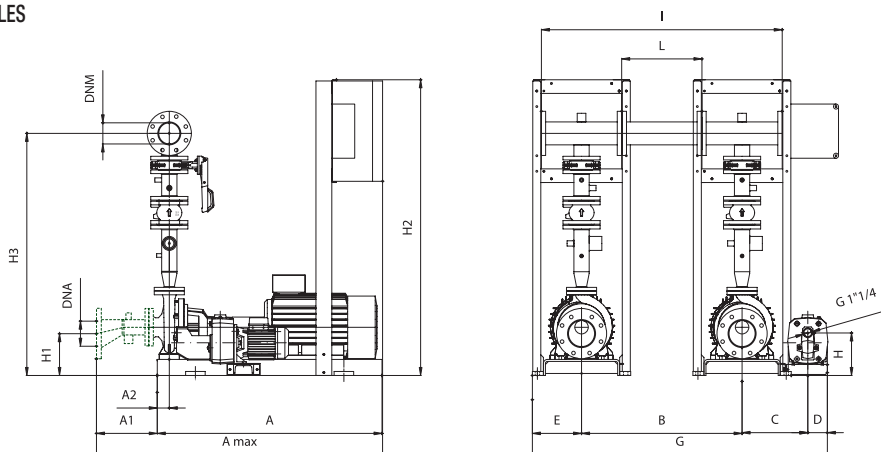
ELECTRIC PUMP MODULE



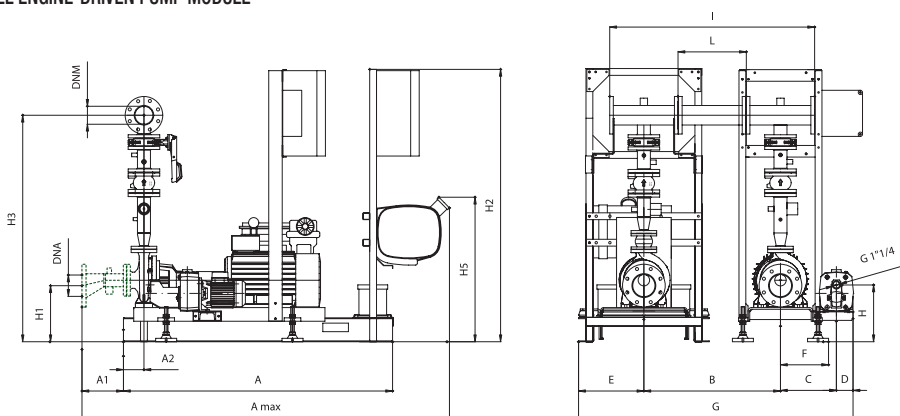
The dashed components are not included in the standard supply.

1 KDN 50-160/161 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

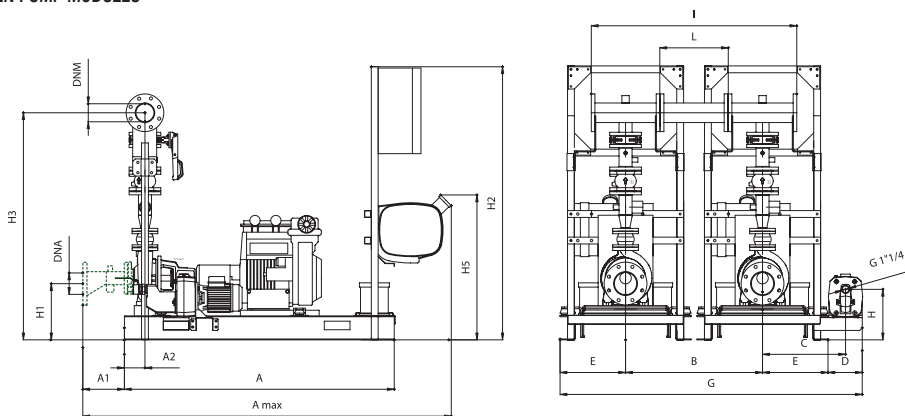
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

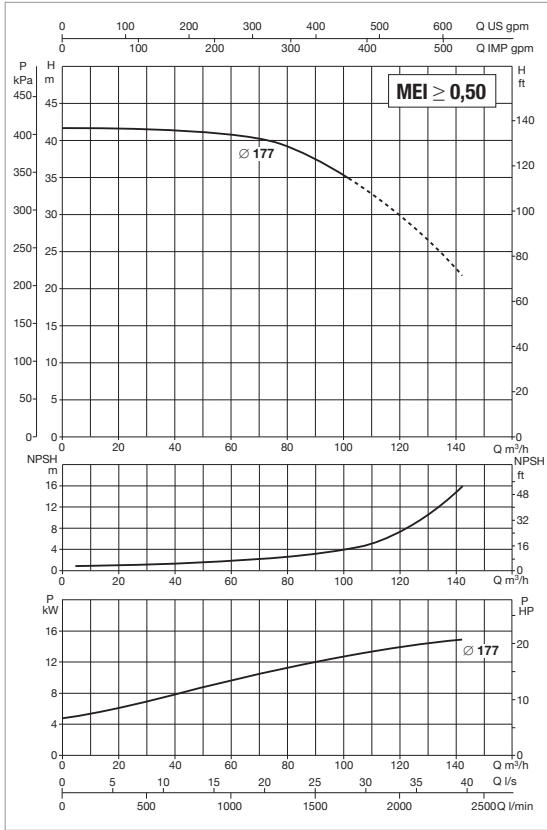


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-160/161 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	312	1600	1330	846	400	-	125	80	610	640
1 KDN 50-160/161 - ELECTRIC PUMP MODULE	1120	1440	316	60	490	327	180	-	-	-	220	212	1475	1230	-	400	-	125	80	350	380
1 KDN 50-160/161 - 2 ELECTRIC PUMP MODULES	1120	1440	316	60	800	327	100	245	-	1472	220	212	1475	1230	-	1200	400	125	80	350	380
1 KDN 50-160/161 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	327	100	383	287	1610	320	312	1600	1330	846	1200	400	125	80	610	380
1 KDN 50-160/161 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	312	1600	1330	846	1200	400	125	80	610	640

1 KDN 50-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 100 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-160/177 15	3x400 V ~	JET 251 T	15	20	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

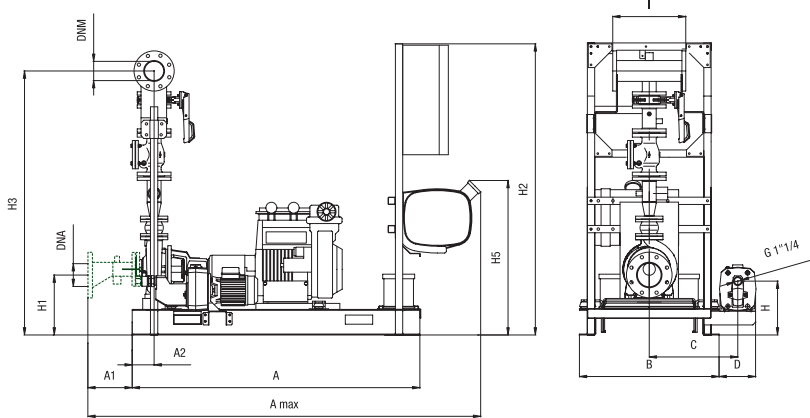
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-160/177 MD	1x220-240 V ~	JET 251 T	15	20	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

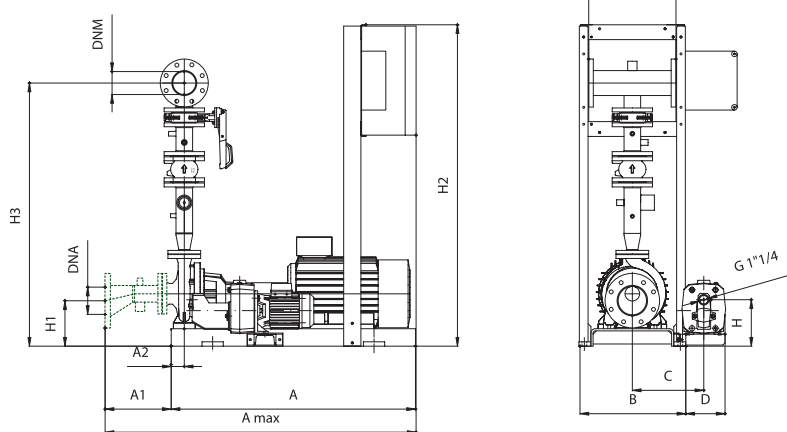
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



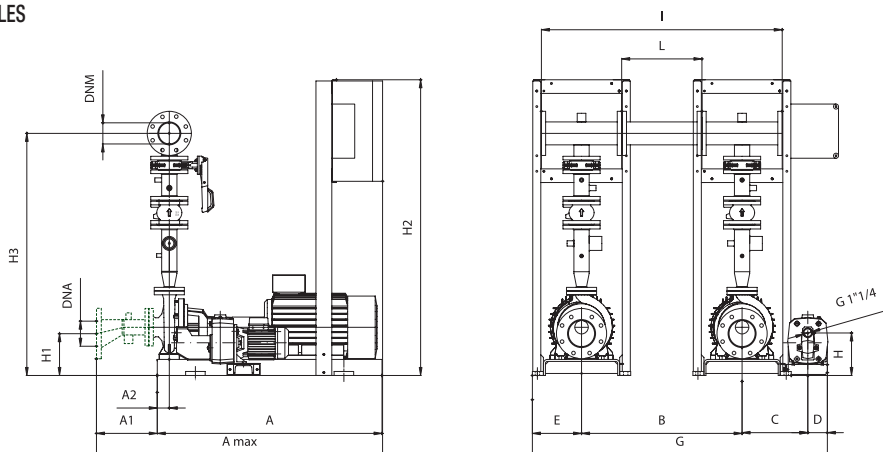
ELECTRIC PUMP MODULE



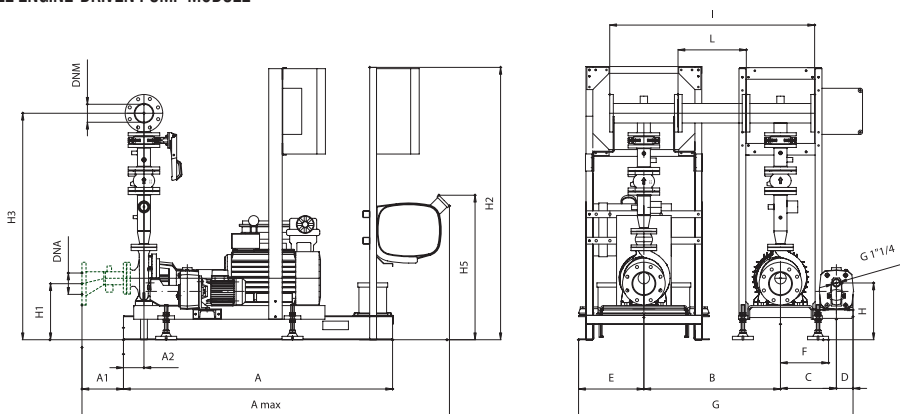
The dashed components are not included in the standard supply.

1 KDN 50-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

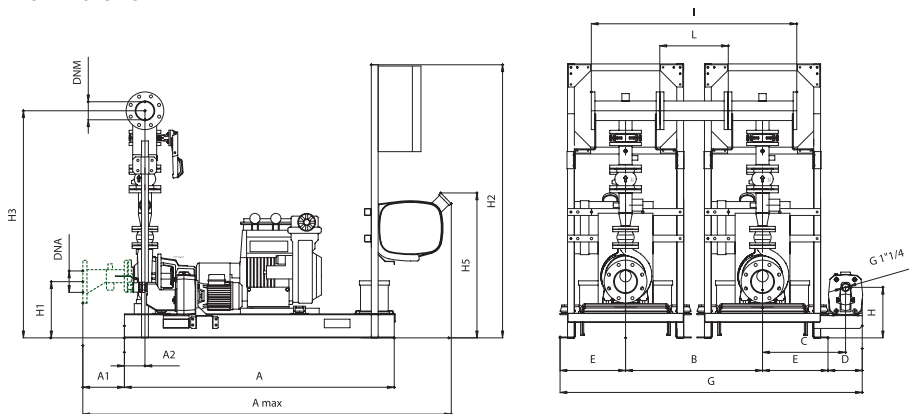
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

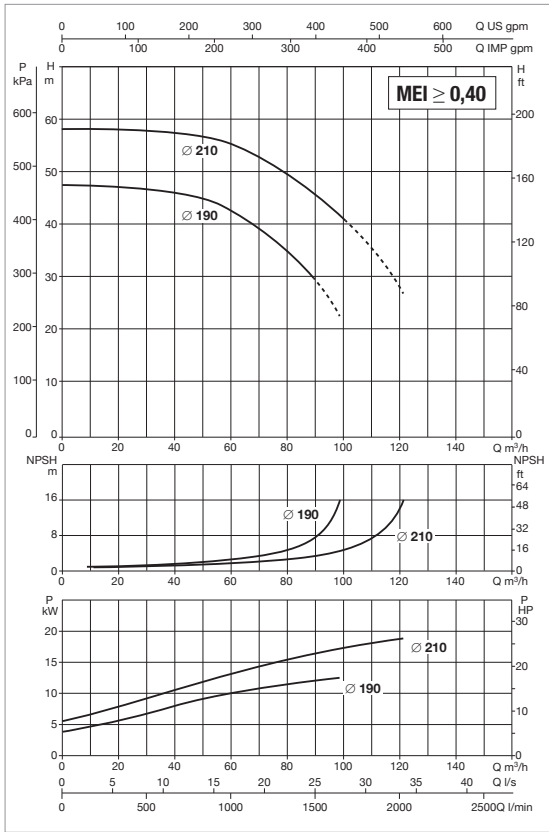


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-160/177 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	332	1600	1350	846	400	-	125	80	620	650
1 KDN 50-160/177 - ELECTRIC PUMP MODULE	1120	1440	316	60	490	327	180	-	-	-	220	212	1475	1230	-	400	-	125	80	350	380
1 KDN 50-160/177 - 2 ELECTRIC PUMP MODULES	1120	1440	316	60	800	327	100	245	-	1472	220	212	1475	1230	-	1200	400	125	80	350	380
1 KDN 50-160/177 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	327	100	383	287	1610	340	332	1600	1350	846	1200	400	125	80	620	380
1 KDN 50-160/177 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	332	1600	1350	846	1200	400	125	80	620	650

1 KDN 50-200/190-210 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 110 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-200/190 15	3x400 V ~	JET 251 T	15	20	1,85	2,5	KDN 50 EN 12845
1 KDN 50-200/210 18,5	3x400 V ~	JET 251 T	18,5	25	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

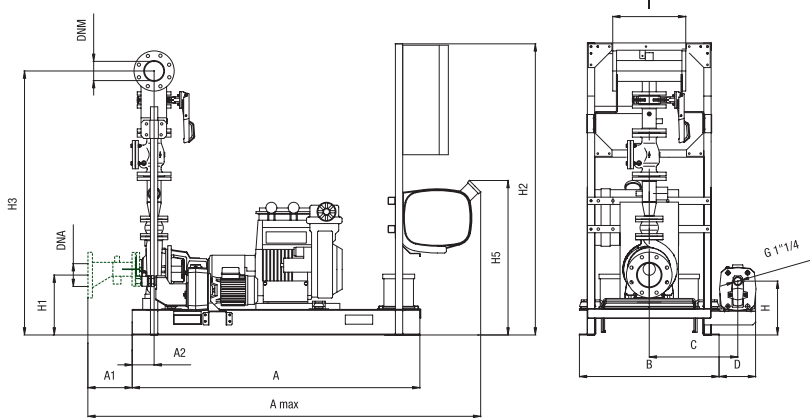
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-200/190 MD	1x220-240 V ~	JET 251 T	15	20	1,85	2,5	KDN 50 EN 12845	0,22 m ²
1 KDN 50-200/210 MD	1x220-240 V ~	JET 251 T	19	25	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

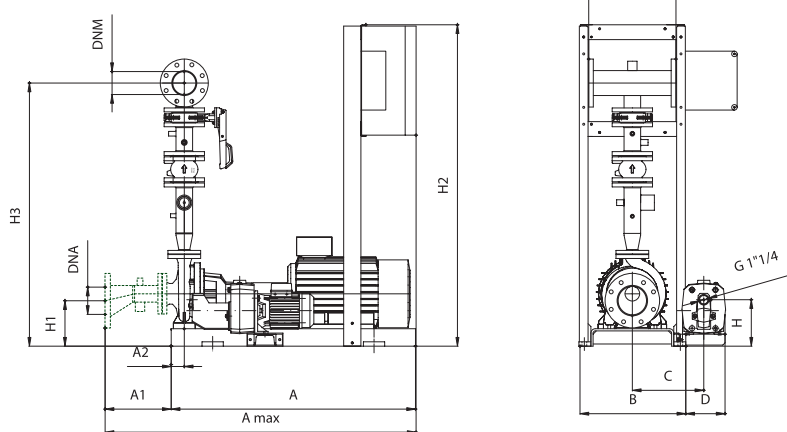
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



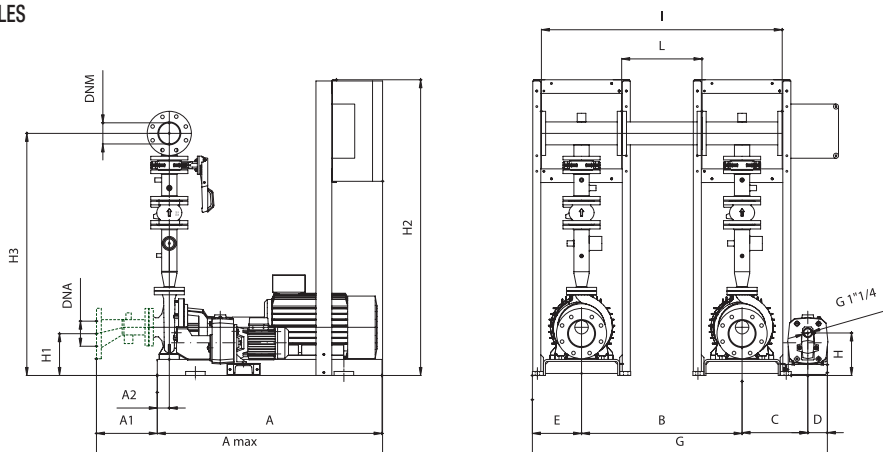
ELECTRIC PUMP MODULE



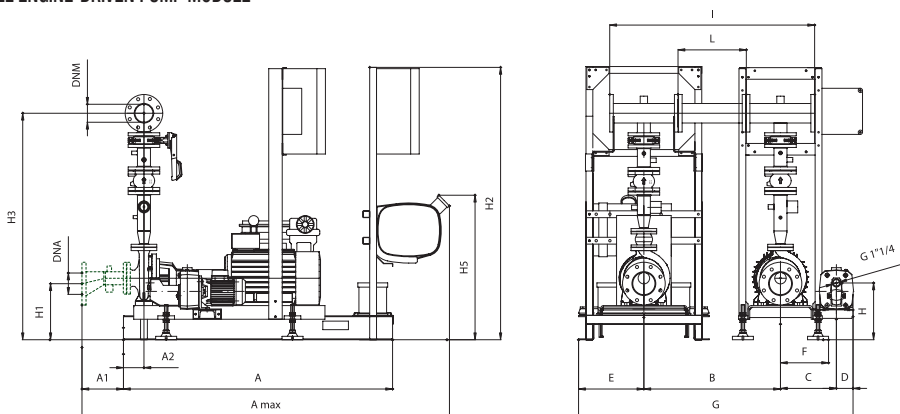
The dashed components are not included in the standard supply.

1 KDN 50-200/190-210 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

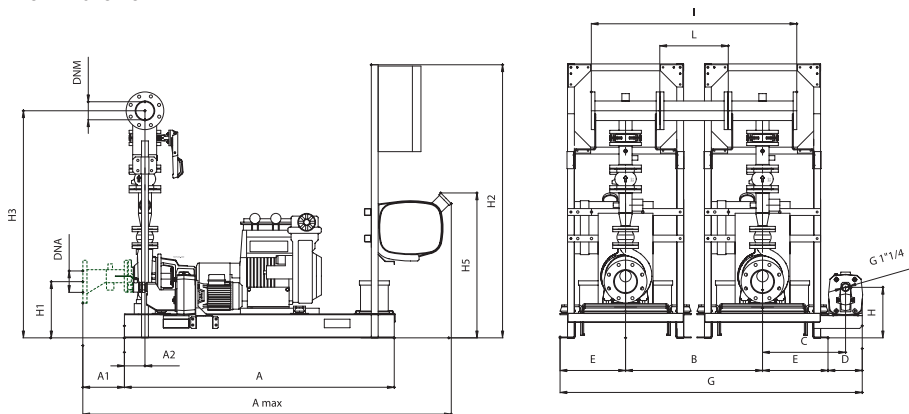
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

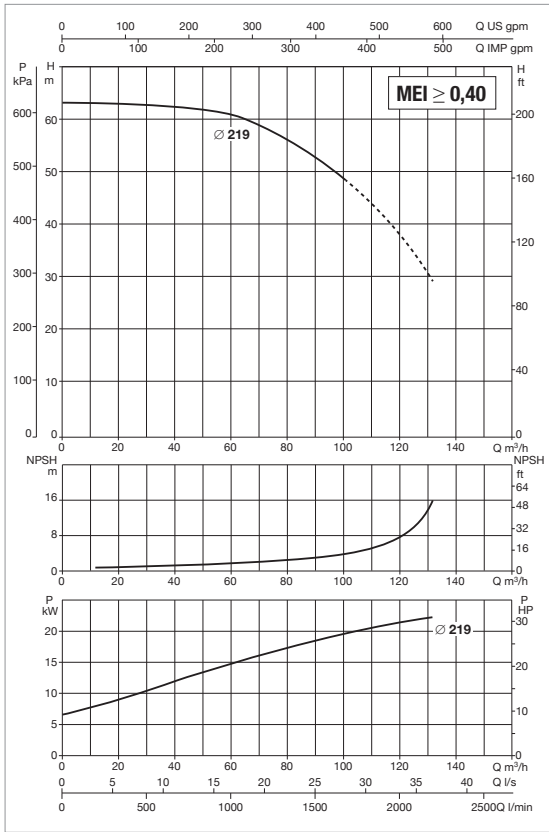


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNMM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-200/190-210 - DIESEL ENGINE-DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	332	1600	1370	846	400	-	125	80	630	660
1 KDN 50-200/190-210 - ELECTRIC PUMP MODULE	1120	1440	316	60	490	327	180	-	-	-	220	212	1475	1250	-	400	-	125	80	420	450
1 KDN 50-200/190-210 - 2 ELECTRIC PUMP MODULES	1120	1440	316	60	800	327	100	245	-	1472	220	212	1475	1250	-	1200	400	125	80	420	450
1 KDN 50-200/190-210 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	327	100	383	282	1610	340	332	1600	1370	846	1200	400	125	80	630	510
1 KDN 50-200/190-210 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	332	1600	1370	846	1200	400	125	80	630	660

1 KDN 50-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 110 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-200/219 22	3x400 V ~	JET 251 T	22	30	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

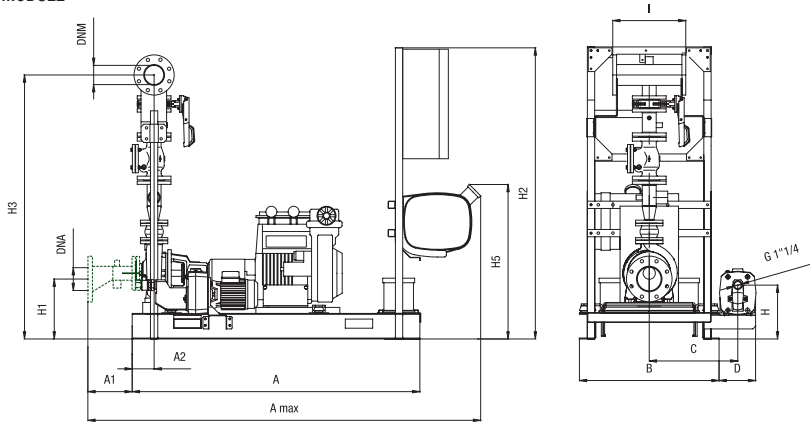
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-200/219 MD	1x220-240 V ~	JET 251 T	26	35	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

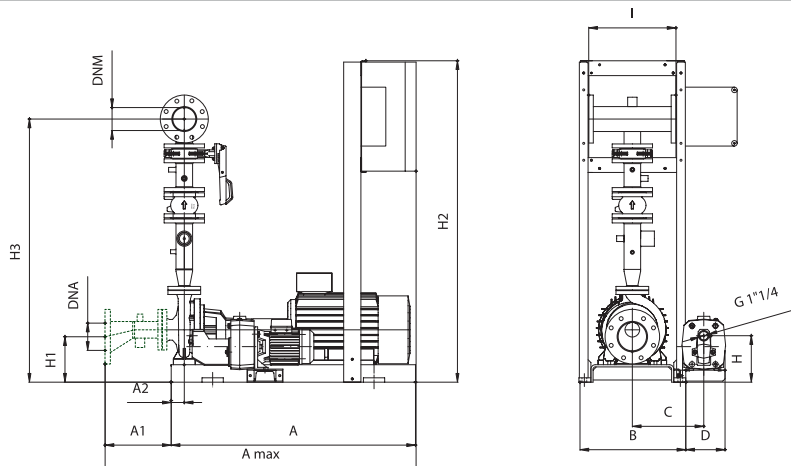
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



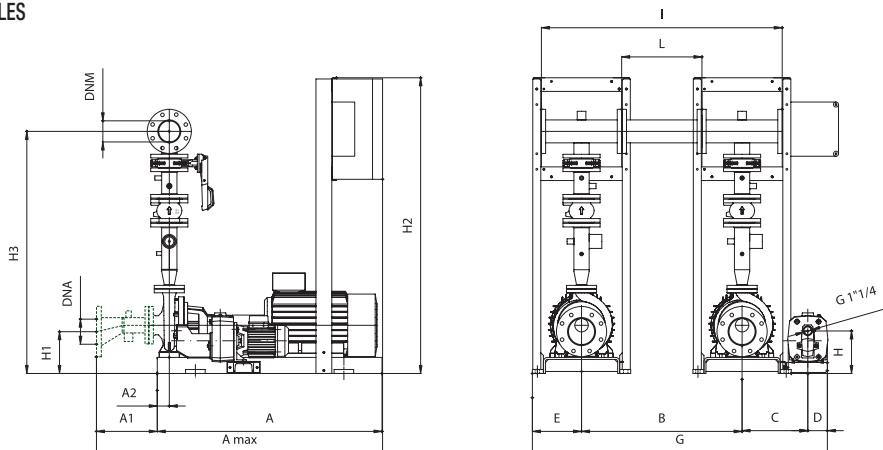
ELECTRIC PUMP MODULE



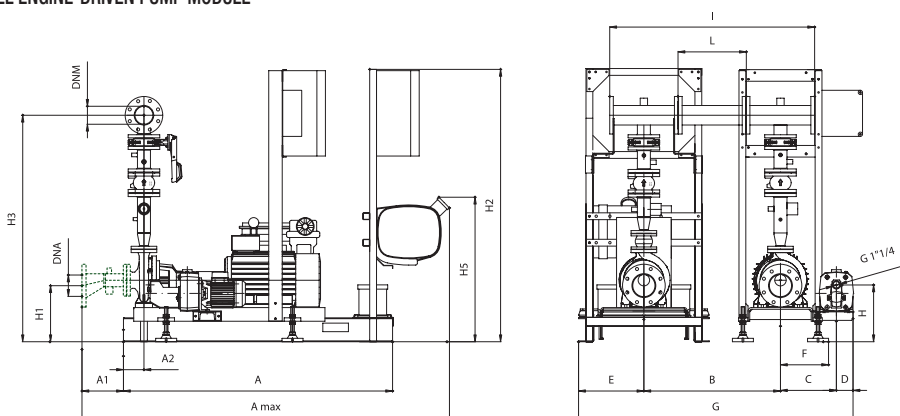
The dashed components are not included in the standard supply.

1 KDN 50-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

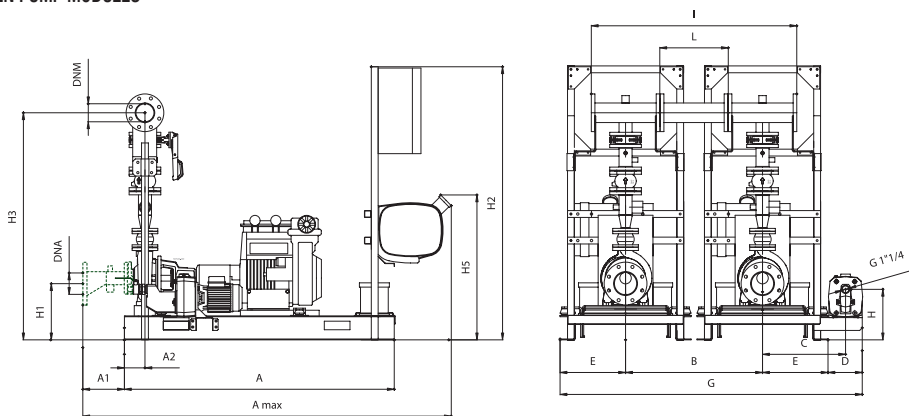
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

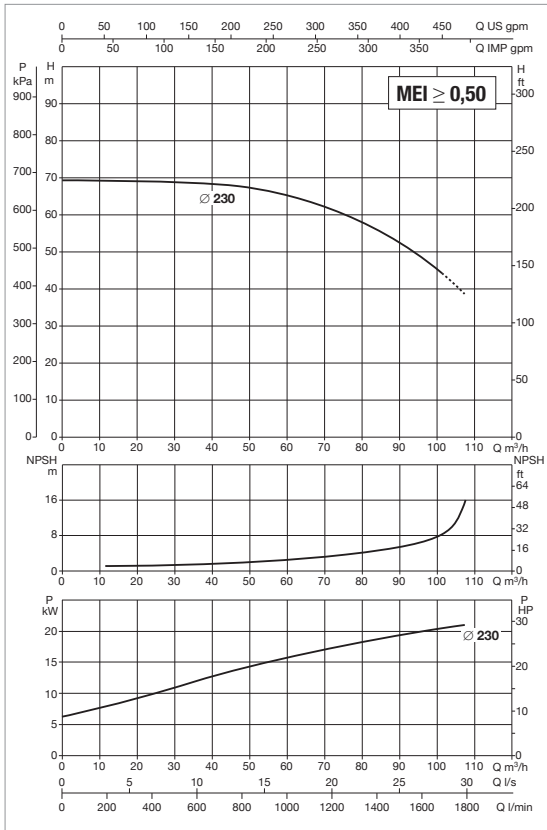


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-200/219 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	332	1600	1370	846	400	-	125	80	630	660
1 KDN 50-200/219 - ELECTRIC PUMP MODULE	1120	1440	316	60	490	327	180	-	-	-	220	232	1475	1270	-	400	-	125	80	480	510
1 KDN 50-200/219 - 2 ELECTRIC PUMP MODULES	1120	1440	316	60	800	327	100	245	-	1472	220	232	1475	1270	-	1200	400	125	80	480	510
1 KDN 50-200/219 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	327	100	383	282	1610	340	332	1600	1370	846	1200	400	125	80	630	510
1 KDN 50-200/219 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	332	1600	1370	846	1200	400	125	80	630	660

1 KDN 50-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 110 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-250/230 22	3x400 V ~	JET 251 T	22	30	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

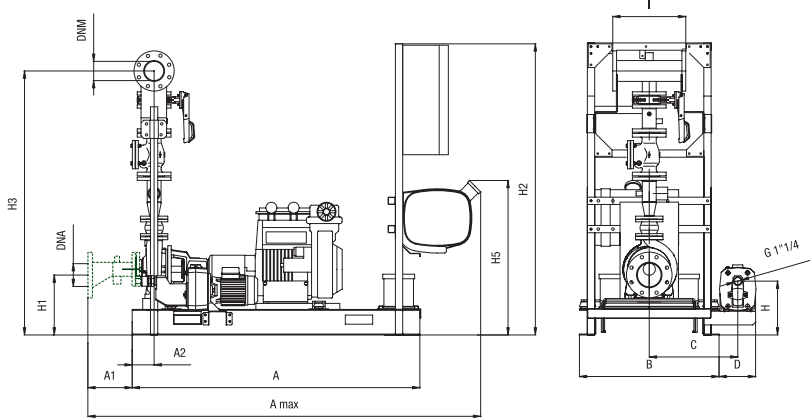
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-250/230 MD	1x220-240 V ~	JET 251 T	26	35	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

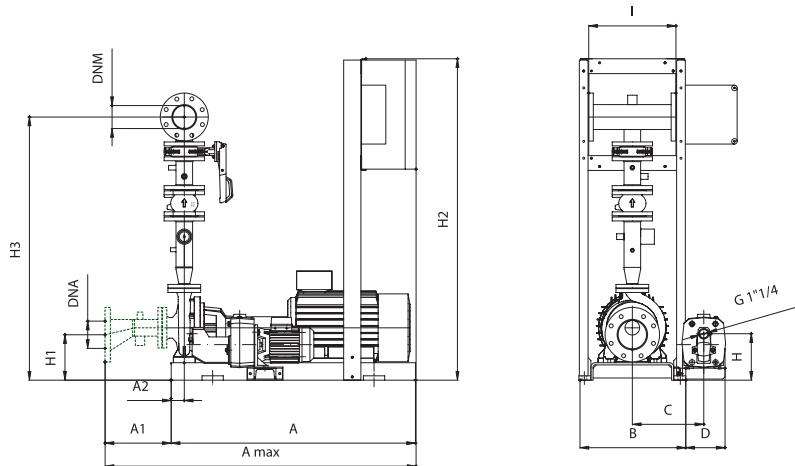
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



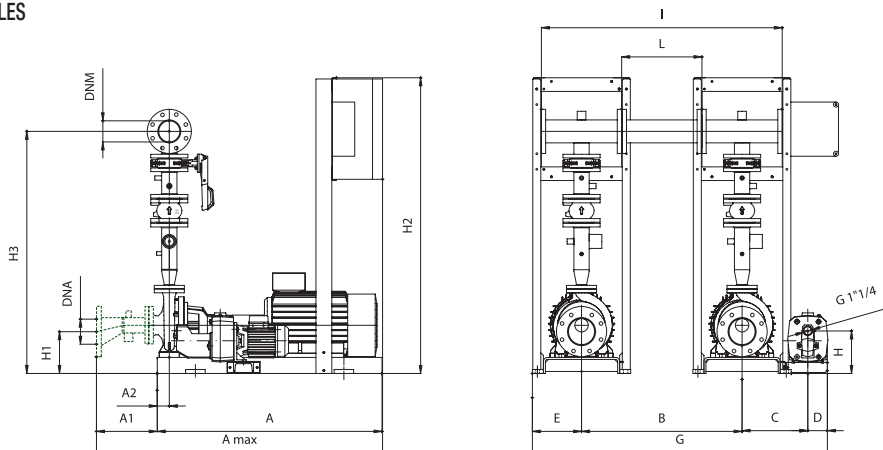
ELECTRIC PUMP MODULE



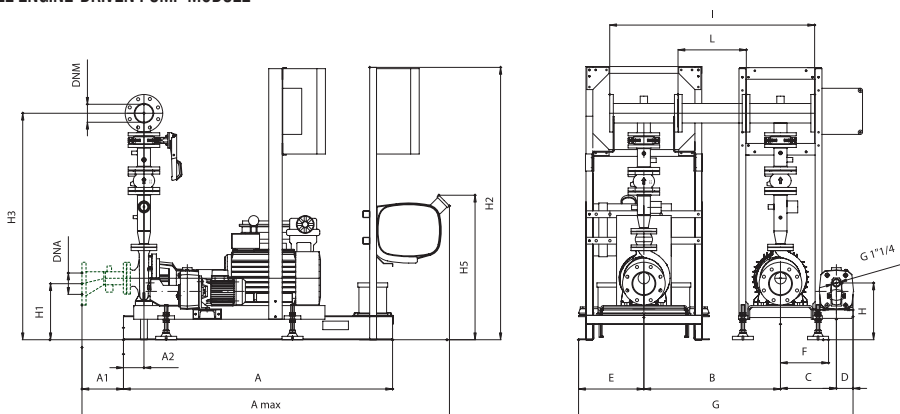
The dashed components are not included in the standard supply.

1 KDN 50-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

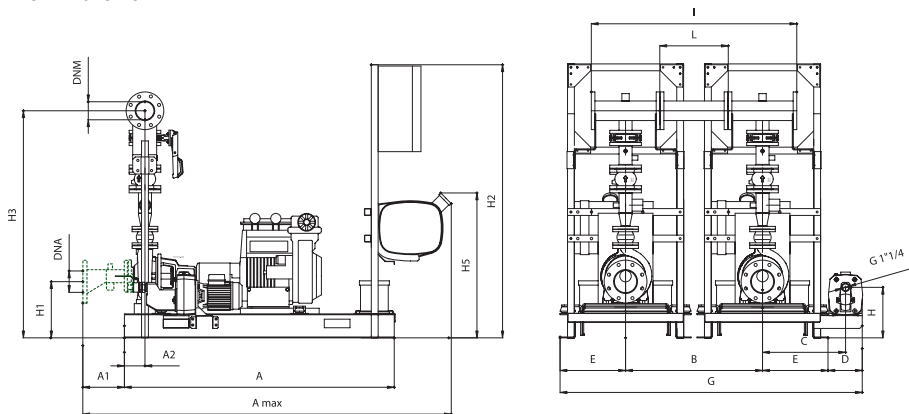
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

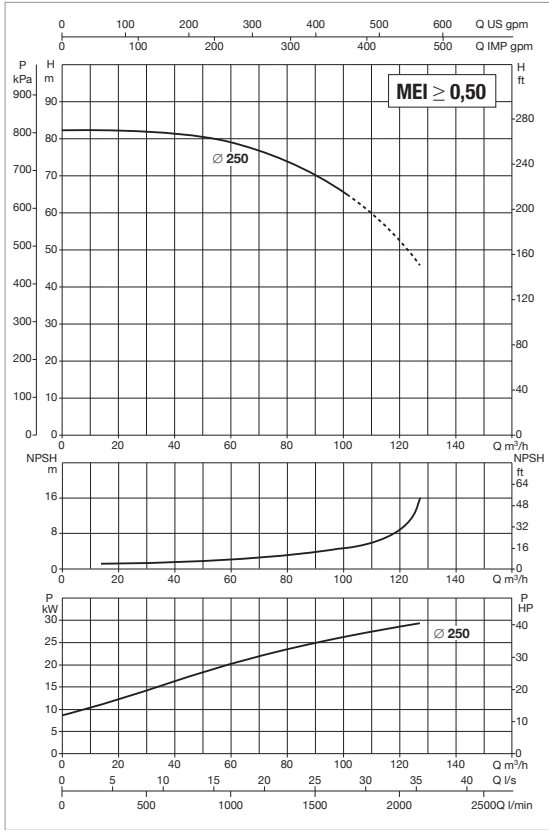


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-250/230 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	352	1600	1415	846	400	-	125	80	690	720
1 KDN 50-250/230 - ELECTRIC PUMP MODULE	1250	1550	300	75	540	352	180	-	-	-	220	232	1475	1295	-	400	-	125	80	500	530
1 KDN 50-250/230 - 2 ELECTRIC PUMP MODULES	1250	1550	300	75	800	352	100	270	-	1522	220	232	1475	1295	-	1200	400	125	80	500	530
1 KDN 50-250/230 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	352	100	383	307	1635	340	352	1600	1415	846	1200	400	125	80	690	580
1 KDN 50-250/230 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	352	1600	1415	846	1200	400	125	80	690	720

1 KDN 50-250/250 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 110 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 50-250/250 30	3x400 V ~	JET 251 T	30	40	1,85	2,5	KDN 50 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

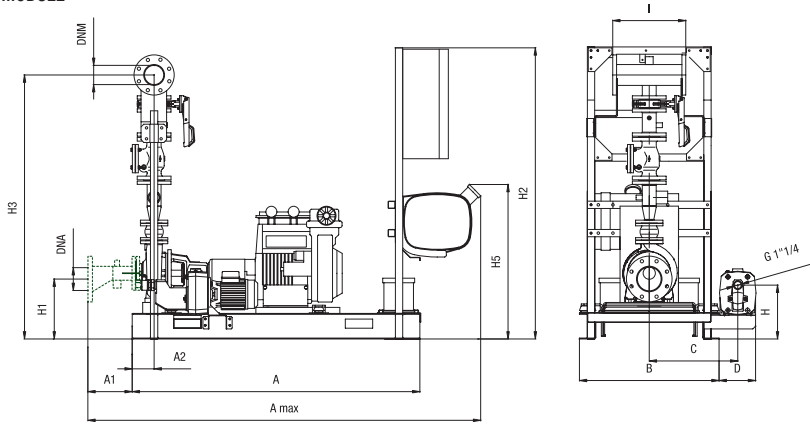
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 50-250/250 MD	1x220-240 V ~	JET 251 T	37	50	1,85	2,5	KDN 50 EN 12845	0,22 m ²

* Jockey pump on request.

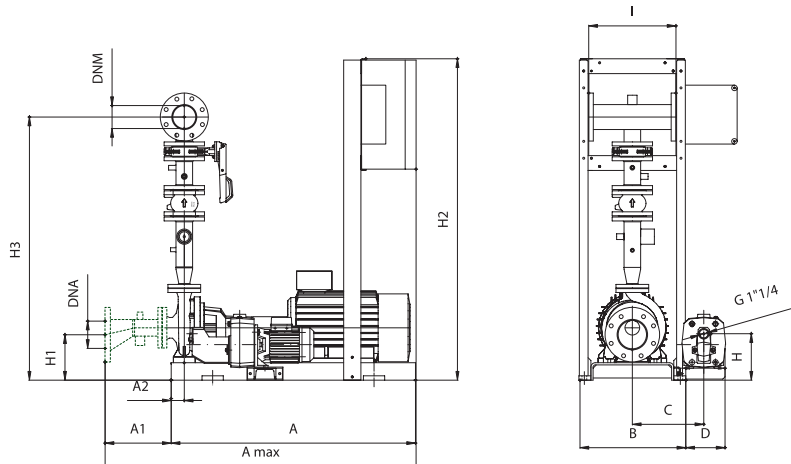
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



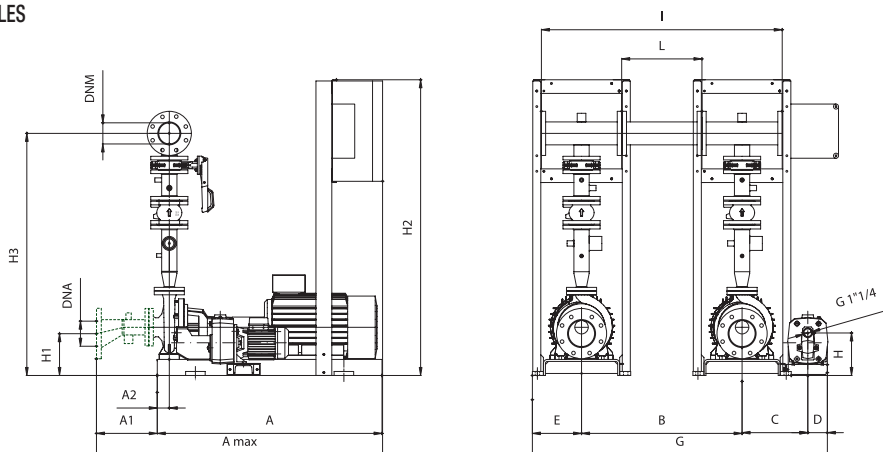
ELECTRIC PUMP MODULE



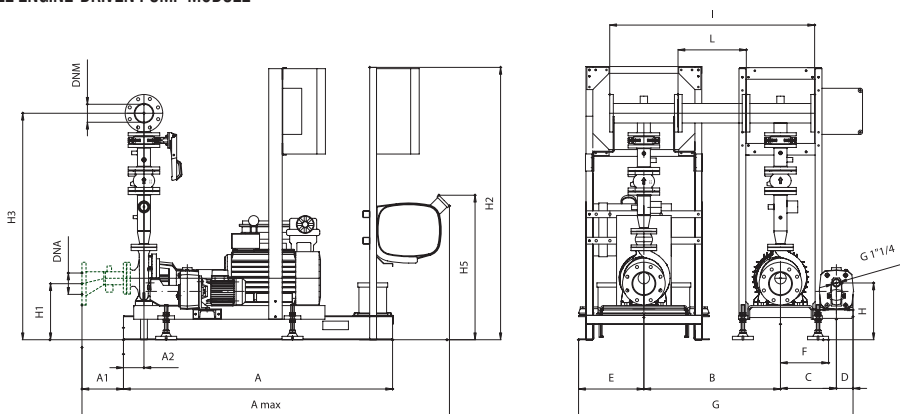
The dashed components are not included in the standard supply.

1 KDN 50-250/250 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

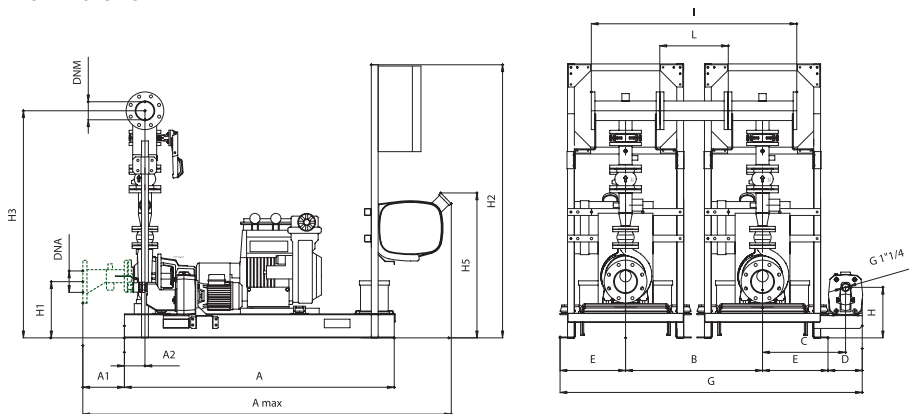
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

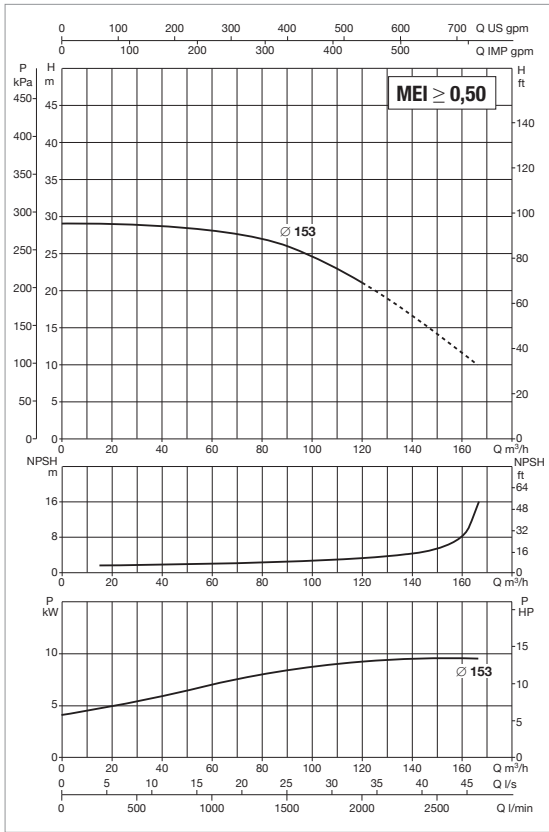


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 50-250/250 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	795	485	200	-	-	-	295	352	1600	1415	846	400	-	125	80	690	720
1 KDN 50-250/250 - ELECTRIC PUMP MODULE	1400	1700	300	75	590	377	180	-	-	-	220	272	1475	1335	-	400	-	125	80	550	580
1 KDN 50-250/250 - 2 ELECTRIC PUMP MODULES	1400	1700	300	75	800	377	100	270	-	1572	220	272	1475	1335	-	1200	400	125	80	550	580
1 KDN 50-250/250 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2170	260	120	800	352	100	383	307	1635	340	352	1600	1415	846	1200	400	125	80	690	580
1 KDN 50-250/250 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2170	260	120	800	485	200	383	-	1766	295	352	1600	1415	846	1200	400	125	80	690	720

1 KDN 65-160/153- UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 150 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-160/153 11	3x400 V ~	JET 251 T	11	15	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

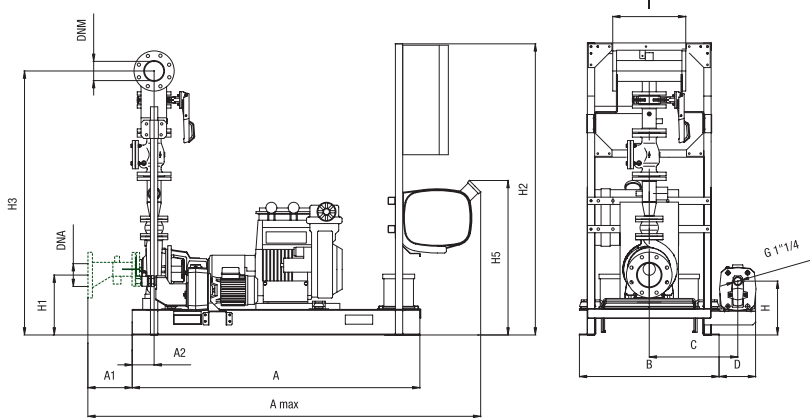
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-160/153 MD	1x220-240 V ~	JET 251 T	11	15	1,85	2,5	KDN 65 EN 12845	0,22 m ²

* Jockey pump on request.

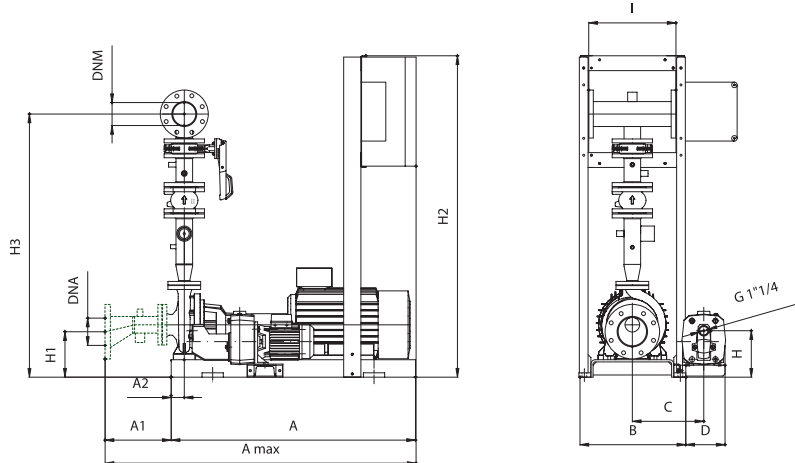
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



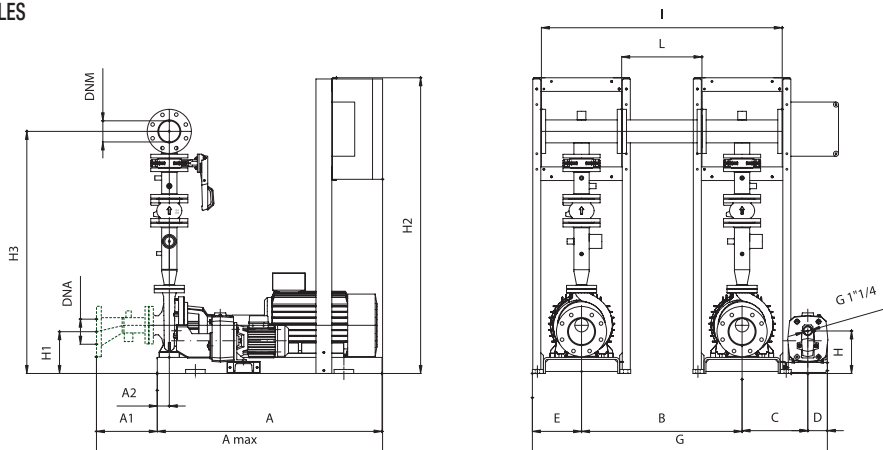
ELECTRIC PUMP MODULE



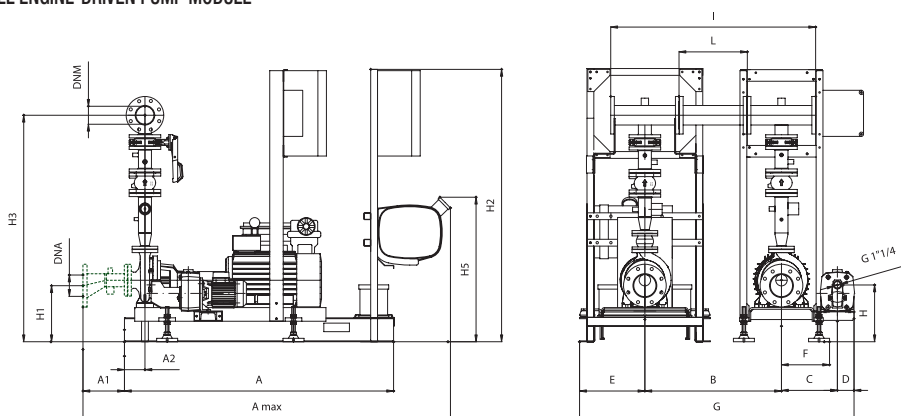
The dashed components are not included in the standard supply.

1 KDN 65-160/153 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

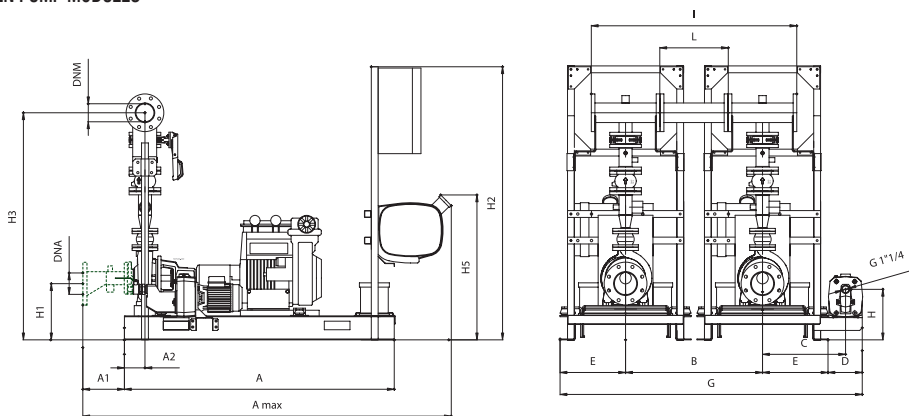
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

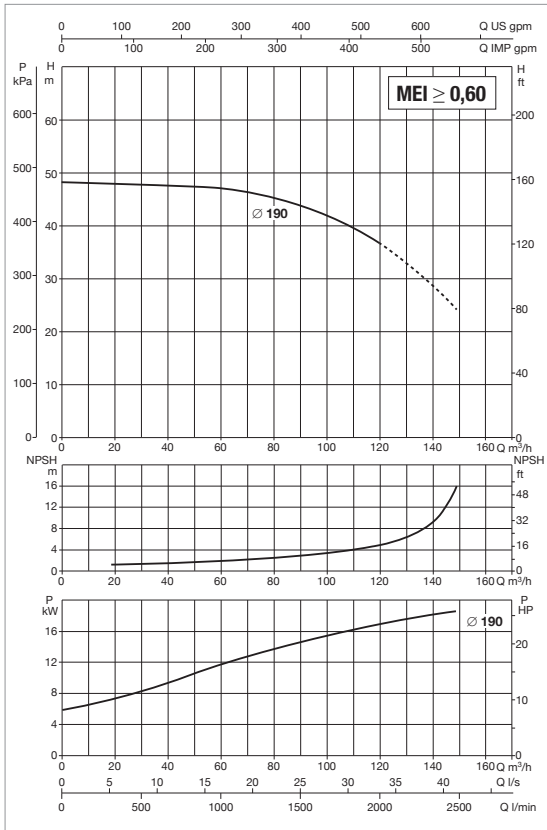


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-160/153 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	795	485	200	-	-	-	295	303	1600	1420	846	400	-	150	100	650	680
1 KDN 65-160/153 - ELECTRIC PUMP MODULE	1120	1145	330	60	490	327	180	-	-	-	220	203	1475	1325	-	400	-	150	100	440	470
1 KDN 65-160/153 - 2 ELECTRIC PUMP MODULES	1120	1145	330	60	800	327	100	245	-	1472	220	203	1475	1325	-	1200	400	150	100	440	470
1 KDN 65-160/153 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	800	327	100	383	282	1610	320	303	1600	1420	846	1200	400	150	100	650	470
1 KDN 65-160/153 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2185	275	120	800	485	200	383	-	1766	295	303	1600	1420	846	1200	400	150	100	650	680

1 KDN 65-200/190 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 150 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-200/190 18,5	3x400 V ~	JET 251 T	18,5	25	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

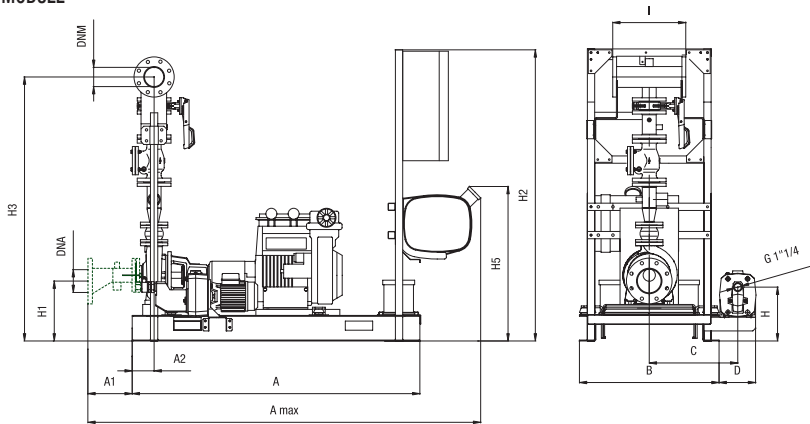
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-200/190 MD	1x220-240 V ~	JET 251 T	19	25	1,85	2,5	KDN 65 EN 12845	0,22 m ²

* Jockey pump on request.

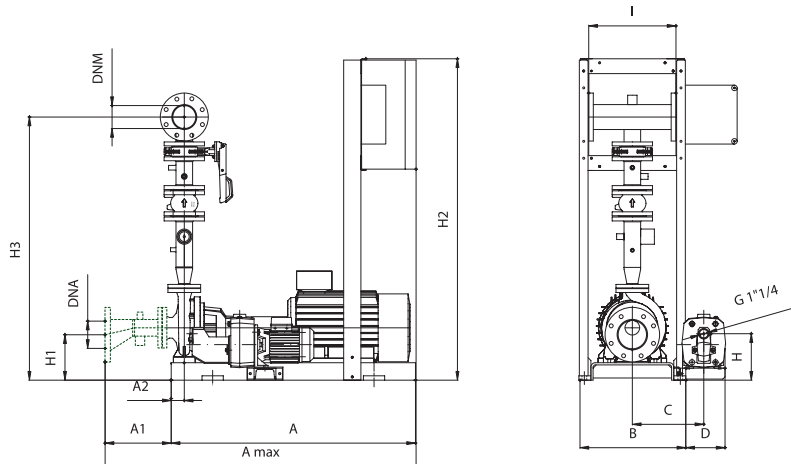
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



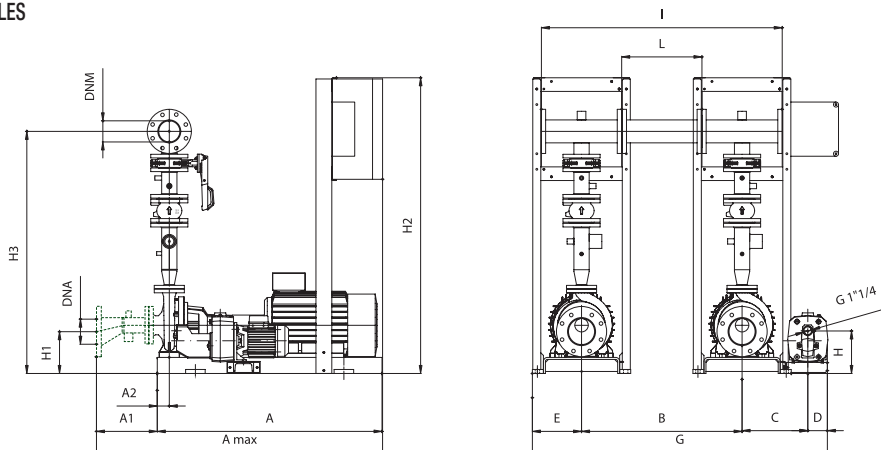
ELECTRIC PUMP MODULE



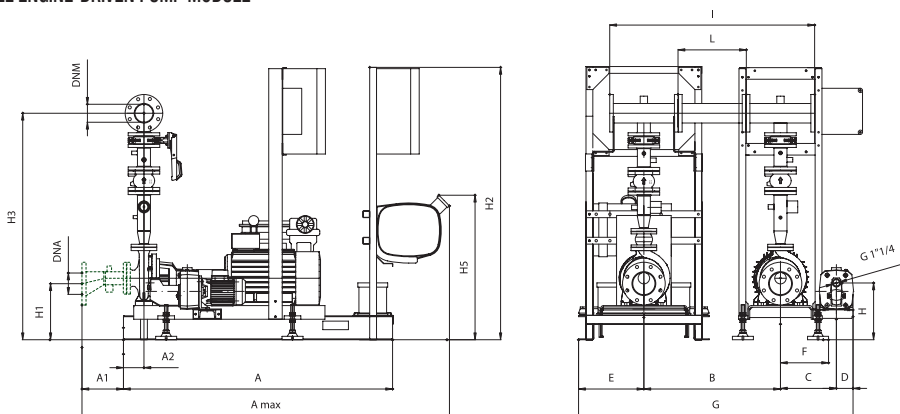
The dashed components are not included in the standard supply.

1 KDN 65-200/190 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

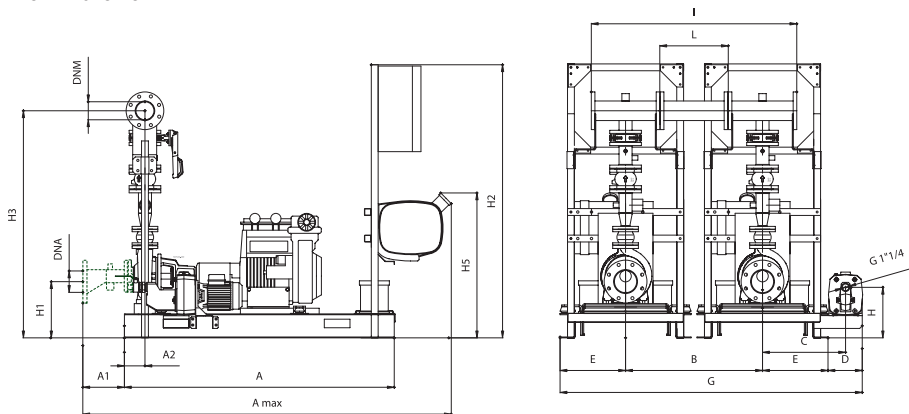
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

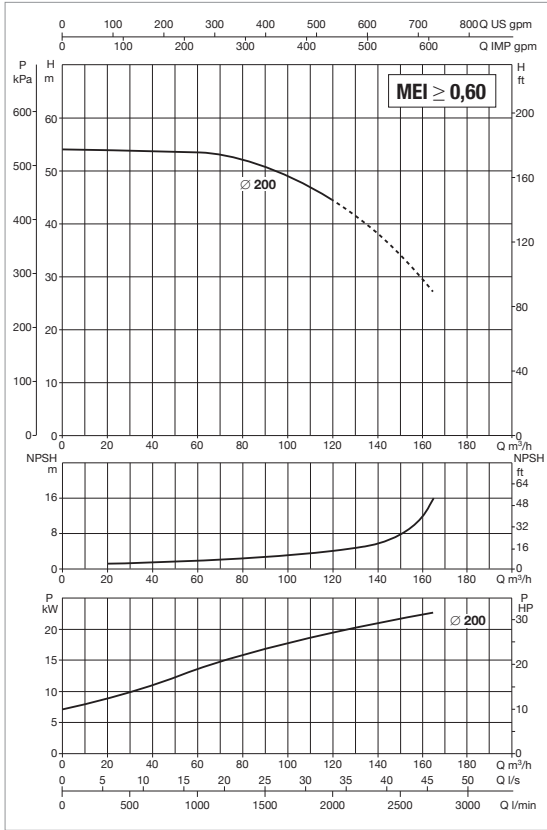


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-200/190 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	795	485	200	-	-	-	295	323	1600	1465	846	400	-	150	100	690	720
1 KDN 65-200/190 - ELECTRIC PUMP MODULE	1250	1565	315	75	540	352	180	-	-	-	220	223	1475	1365	-	400	-	150	100	520	550
1 KDN 65-200/190 - 2 ELECTRIC PUMP MODULES	1250	1565	315	75	800	352	100	270	-	1522	220	223	1475	1365	-	1200	400	150	100	520	550
1 KDN 65-200/190 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	800	352	100	383	307	1635	320	323	1600	1465	846	1200	400	150	100	690	550
1 KDN 65-200/190 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2185	275	120	800	485	200	383	-	1766	295	323	1600	1465	846	1200	400	150	100	690	720

1 KDN 65-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 150 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-200/200 22	3x400 V ~	JET 251 T	22	30	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

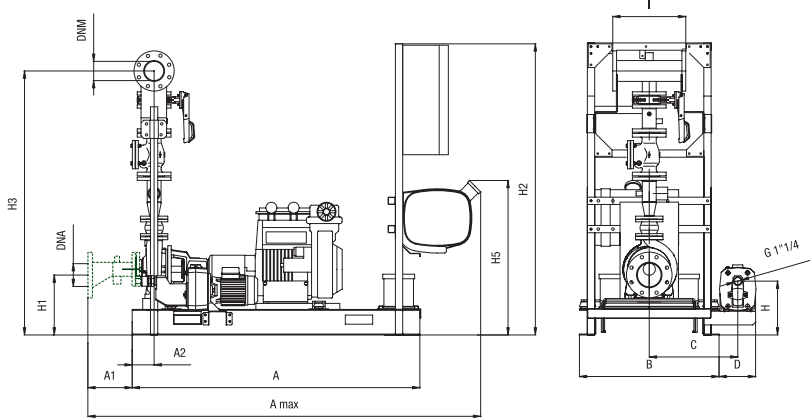
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-200/200 MD	1x220-240 V ~	JET 251 T	26	35	1,85	2,5	KDN 65 EN 12845	0,22 m ²

* Jockey pump on request.

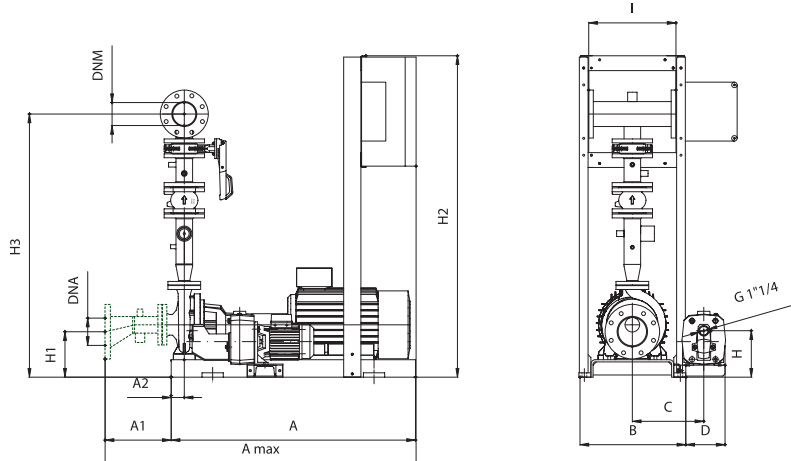
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



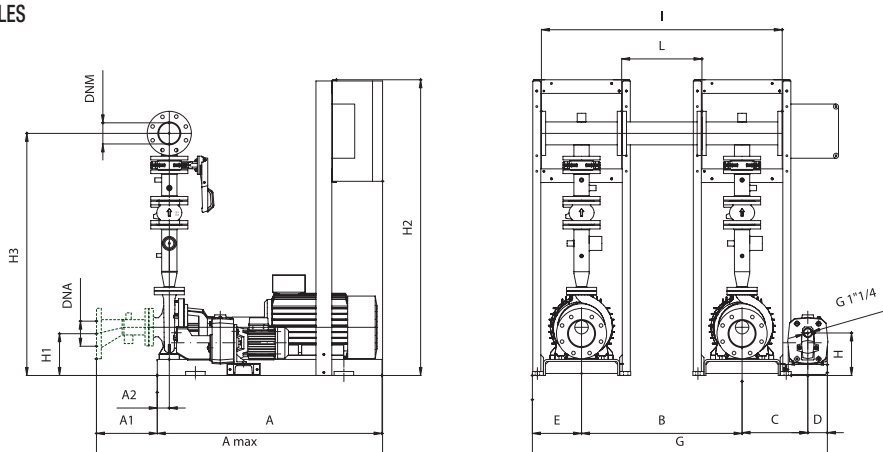
ELECTRIC PUMP MODULE



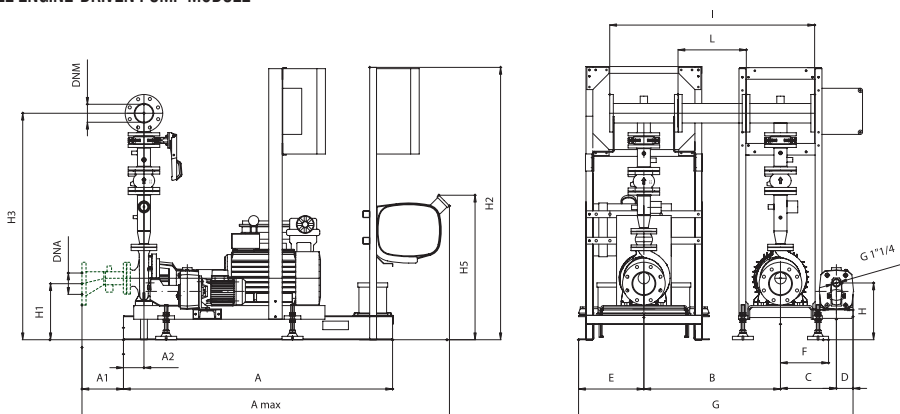
The dashed components are not included in the standard supply.

1 KDN 65-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

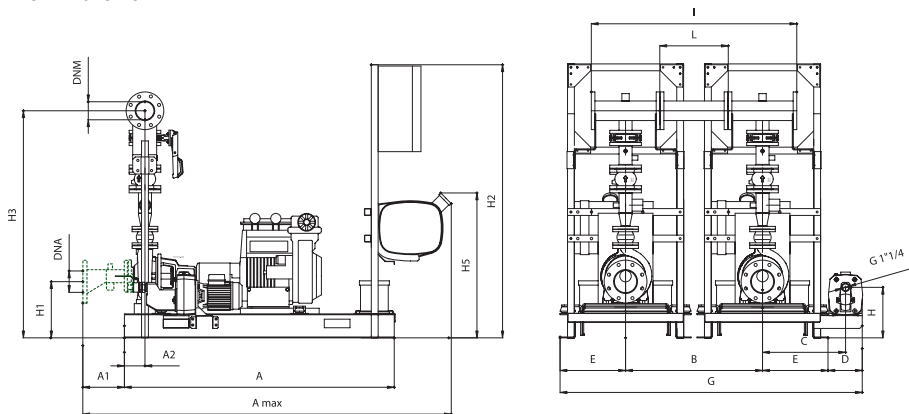
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

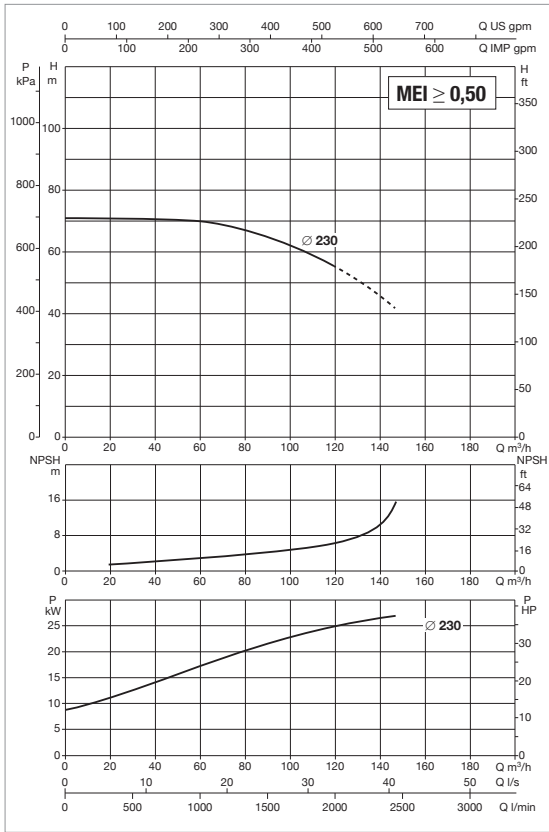


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	H5	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-200/200 - DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	795	485	200	-	-	-	295	343	1600	1485	846	400	-	150	100	700	730
1 KDN 65-200/200 - ELECTRIC PUMP MODULE	1250	1565	315	75	540	352	180	-	-	-	220	223	1475	1365	-	400	-	150	100	520	550
1 KDN 65-200/200 - 2 ELECTRIC PUMP MODULES	1250	1565	315	75	800	352	100	270	-	1522	220	223	1475	1365	-	1200	400	150	100	520	550
1 KDN 65-200/200 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1576	2185	275	120	800	377	100	383	307	1660	340	343	1600	1485	846	1200	400	150	100	700	650
1 KDN 65-200/200 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1576	2185	275	120	800	485	200	383	-	1766	295	343	1600	1485	846	1200	400	150	100	700	730

1 KDN 65-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 160 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-250/230 30	3x400 V ~	JET 251 T	30	40	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

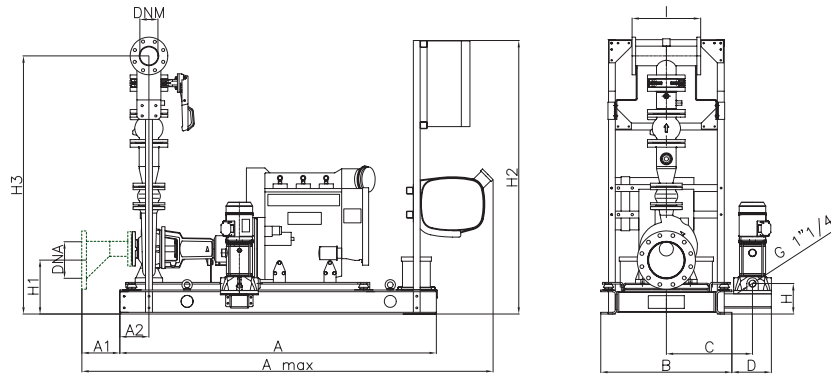
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-250/230 MD	1x220-240 V ~	JET 251 T	26	35	1,85	2,5	KDN 65 EN 12845	0,22 m ²

* Jockey pump on request.

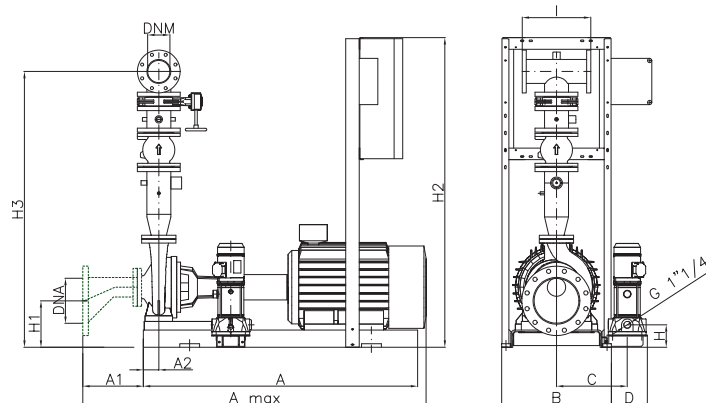
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



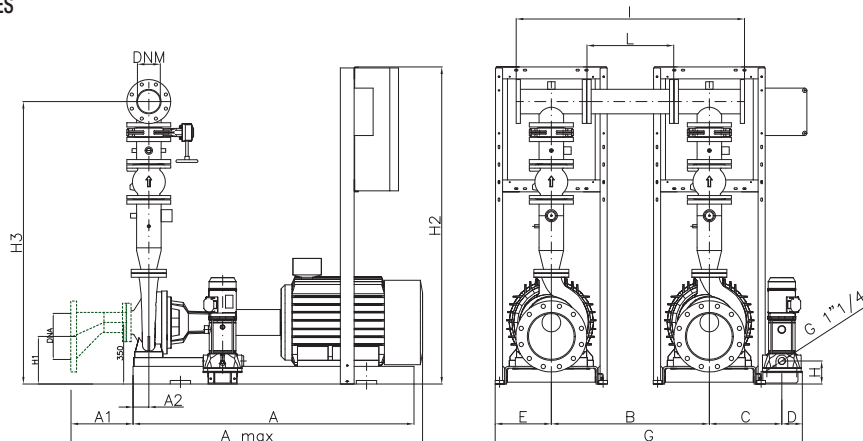
ELECTRIC PUMP MODULE



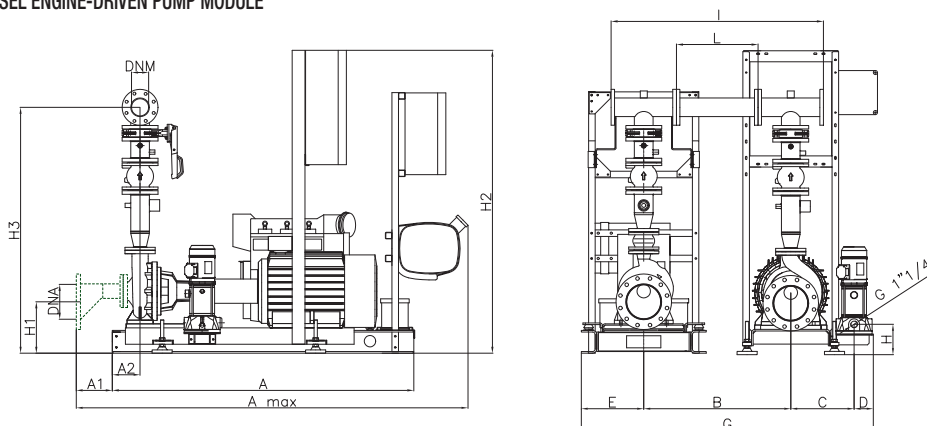
The dashed components are not included in the standard supply.

1 KDN 65-250/230 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

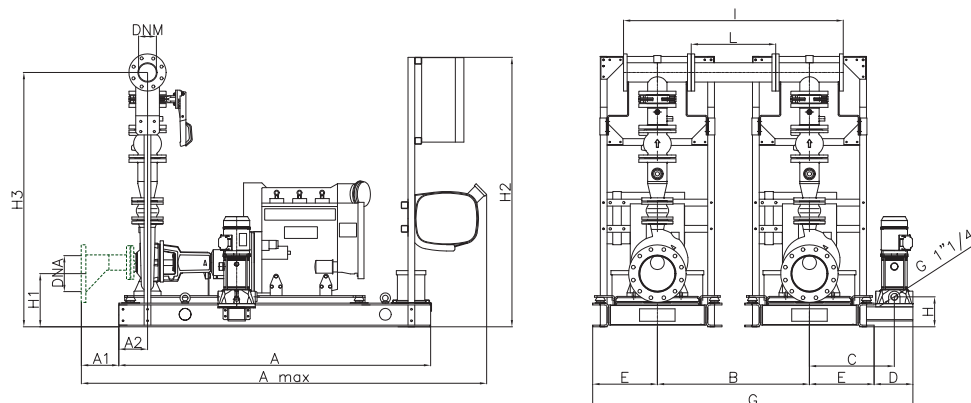
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

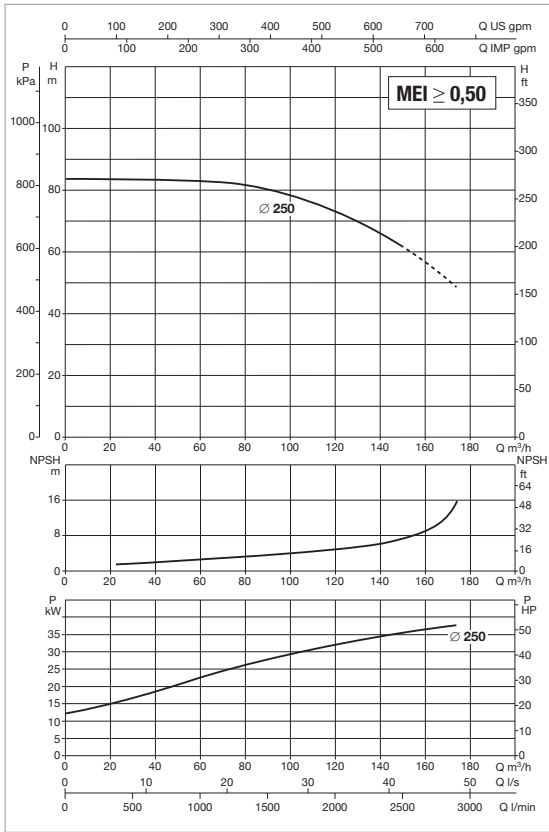


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-250/230 - DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	765	505	242	-	-	-	178	340	1595	1505	400	-	150	100	730	760
1 KDN 65-250/230 - ELECTRIC PUMP MODULE	1400	1773	289	90	590	388	215	-	-	-	131	260	1800	1434	400	-	150	100	680	710
1 KDN 65-250/230 - 2 ELECTRIC PUMP MODULES	1400	1733	289	90	900	388	122	295	-	1705	131	260	1800	1434	1300	500	150	100	680	710
1 KDN 65-250/230 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	900	388	122	383	1793	-	211	340	1985	1505	1300	500	150	100	730	710
1 KDN 65-250/230 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1846	2400	209	170	900	505	242	383	383	-	178	340	1595	1505	1300	500	150	100	730	760

1 KDN 65-250/250 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 160 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-250/250 37	3x400 V ~	JET 251 T	37	50	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

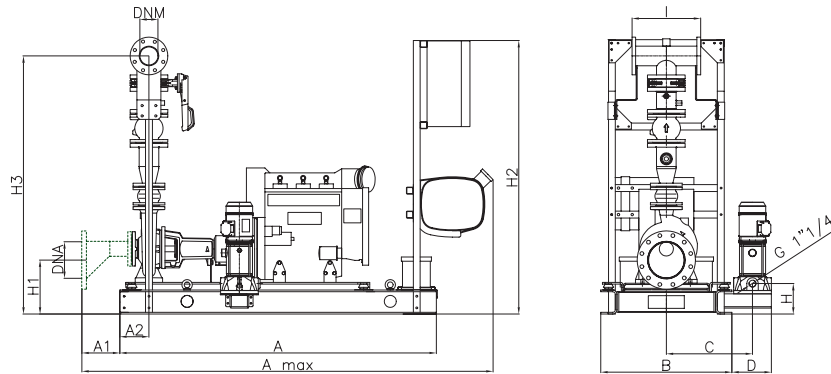
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-250/250 MD	1x220-240 V ~	JET 251 T	37	50	1,85	2,5	KDN 65 EN 12845	0,40 m ²

* Jockey pump on request.

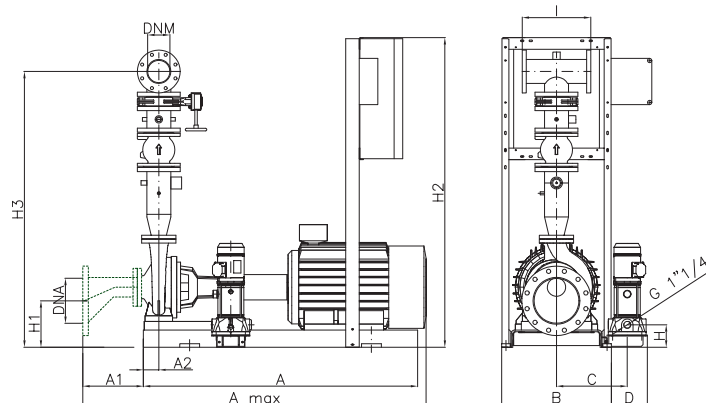
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



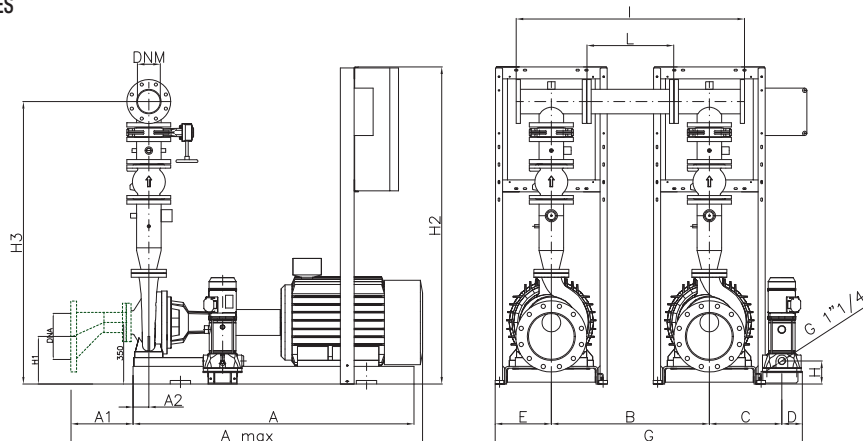
ELECTRIC PUMP MODULE



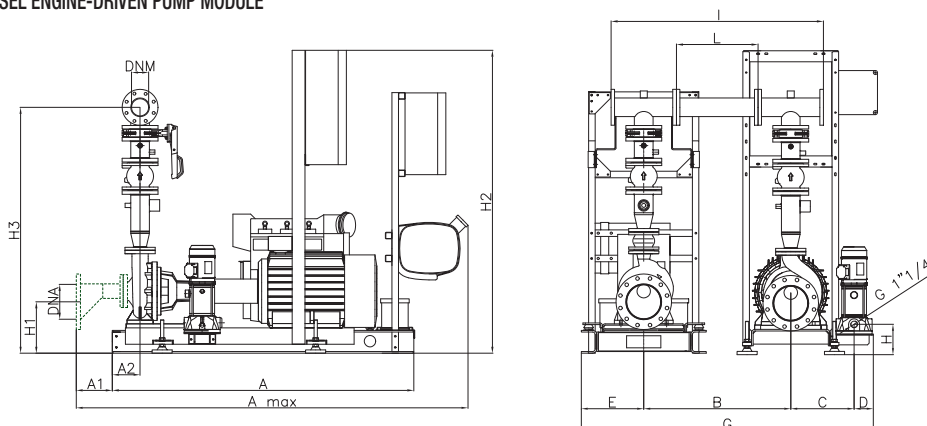
The dashed components are not included in the standard supply.

1 KDN 65-250/250 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

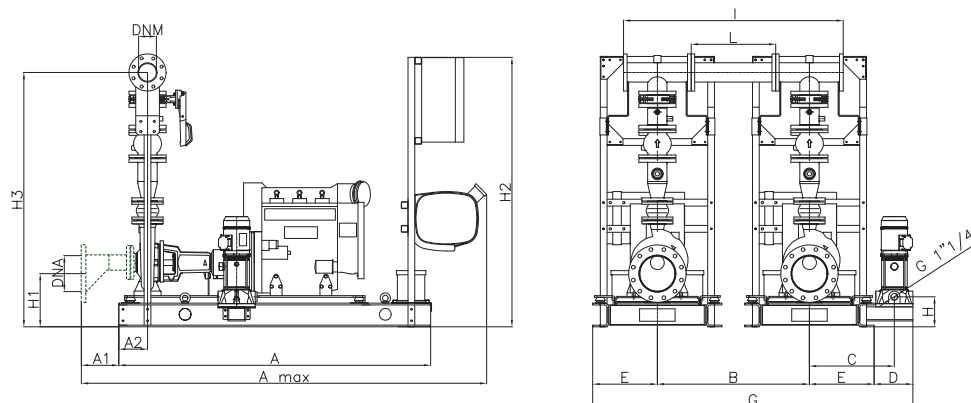
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

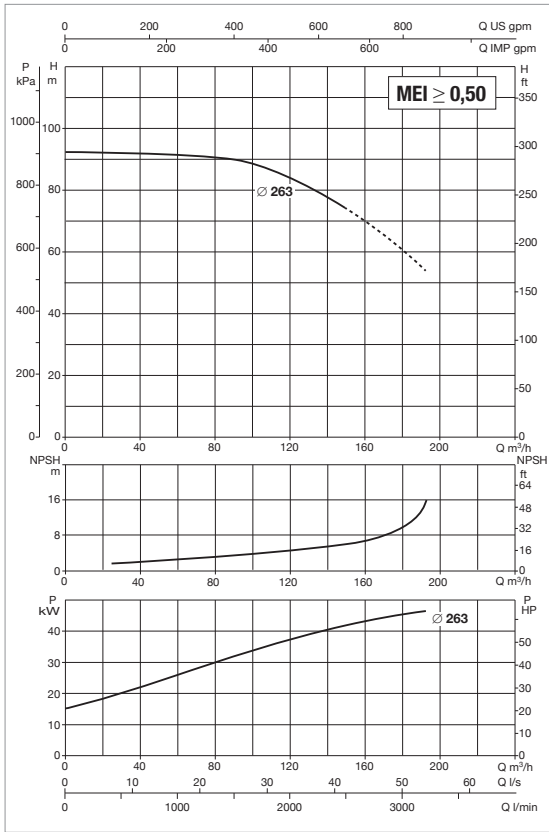


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-250/250 - DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	765	505	242	-	-	-	178	340	1595	1505	400	-	150	100	800	830
1 KDN 65-250/250 - ELECTRIC PUMP MODULE	1400	1773	289	90	590	388	215	-	-	-	131	260	1800	1434	400	-	150	100	680	710
1 KDN 65-250/250 - 2 ELECTRIC PUMP MODULES	1400	1733	289	90	900	388	122	295	-	1705	131	260	1800	1434	1300	500	150	100	680	710
1 KDN 65-250/250 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	900	388	122	383	1793	-	186	340	1855	1505	1300	500	150	100	800	790
1 KDN 65-250/250 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1846	2400	209	170	900	505	242	383	383	-	178	340	1595	1505	1300	500	150	100	800	830

1 KDN 65-250/263 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 160 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 65-250/263 45	3x400 V ~	JET 251 T	45	60	1,85	2,5	KDN 65 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

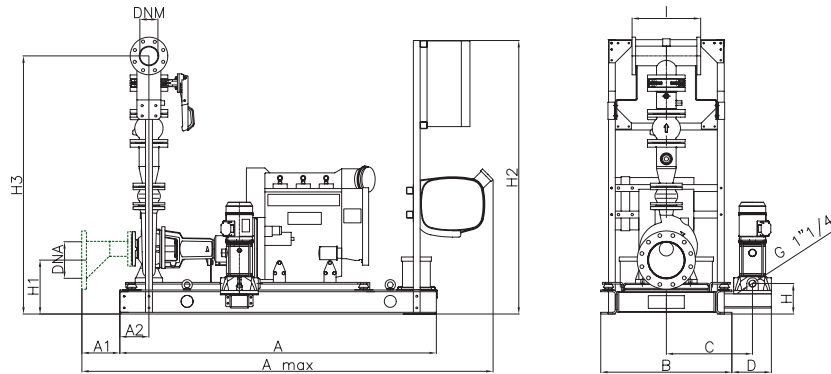
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 65-250/263 MD	1x220-240 V ~	JET 251 T	53	64	1,85	2,5	KDN 65 EN 12845	0,40 m ²

* Jockey pump on request.

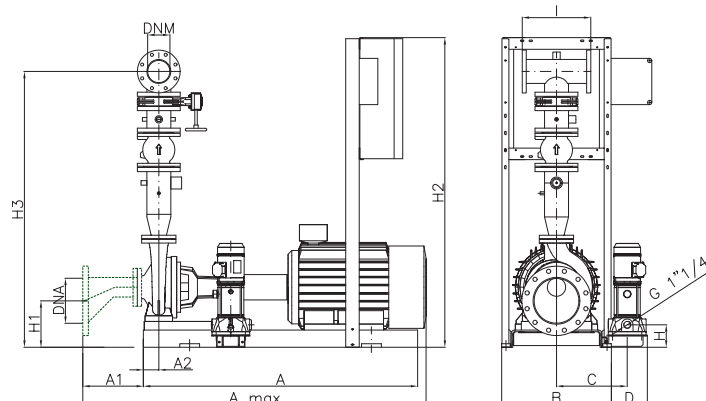
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



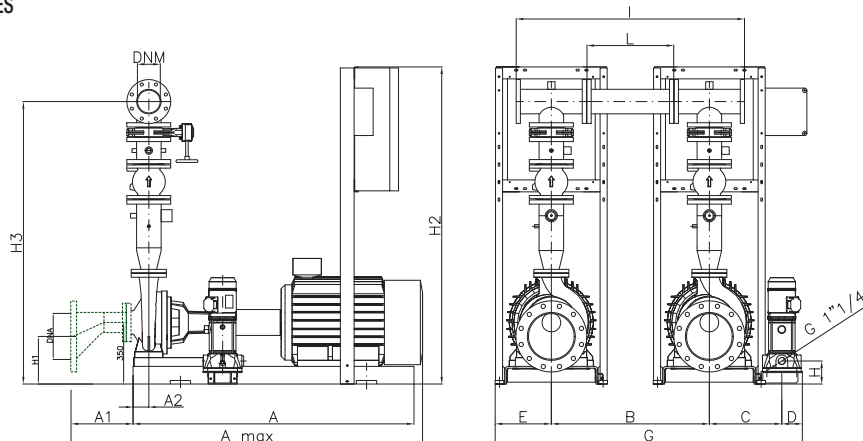
ELECTRIC PUMP MODULE



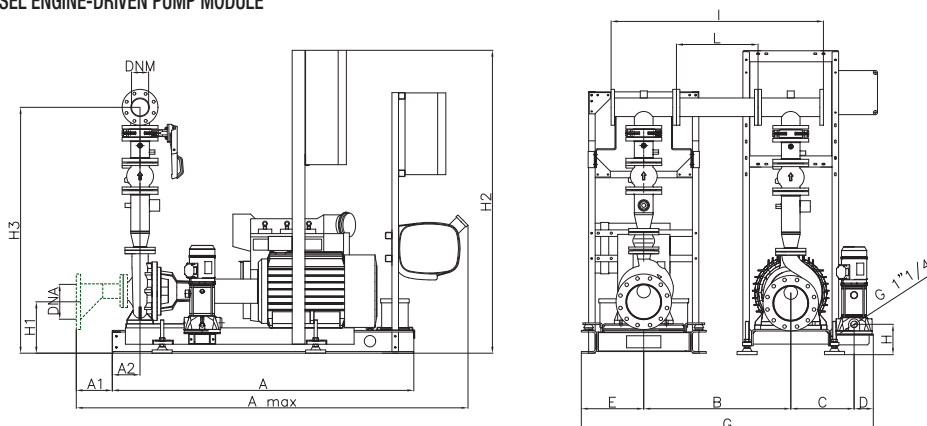
The dashed components are not included in the standard supply.

1 KDN 65-250/263 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

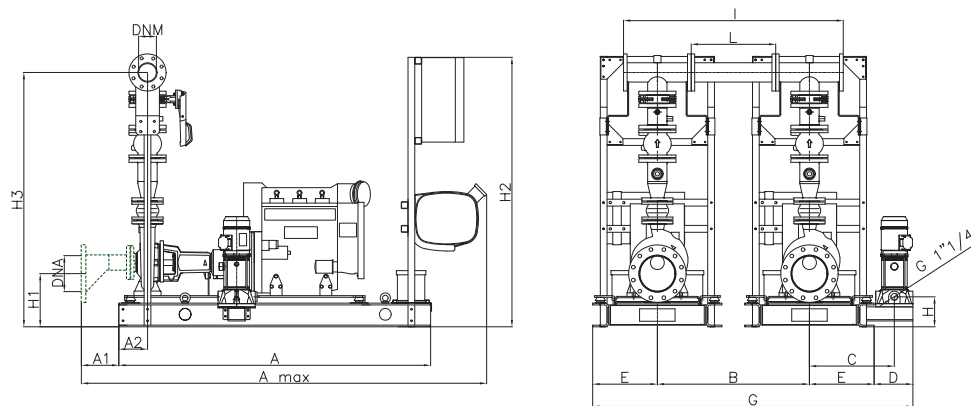
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

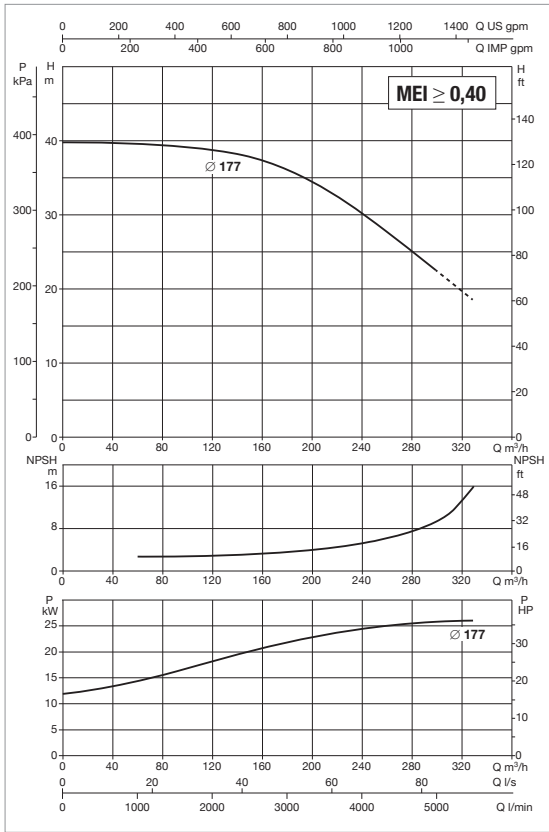


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 65-250/263 - DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	765	505	242	-	-	-	178	340	1595	1505	400	-	150	100	800	830
1 KDN 65-250/263 - ELECTRIC PUMP MODULE	1400	1828	289	90	590	388	215	-	-	-	131	285	1800	1460	400	-	150	100	760	790
1 KDN 65-250/263 - 2 ELECTRIC PUMP MODULES	1400	1828	289	90	900	388	122	295	-	1705	131	285	1800	1460	1300	500	150	100	760	790
1 KDN 65-250/263 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1846	2400	209	170	900	388	122	383	1793	-	186	340	1855	1505	1300	500	150	100	800	790
1 KDN 65-250/263 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1846	2400	209	170	900	505	242	383	383	-	178	340	1595	1505	1300	500	150	100	800	830

1 KDN 80-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 250 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 80-160/177 30	3x400 V ~	KVCX 65/80 T	30	40	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

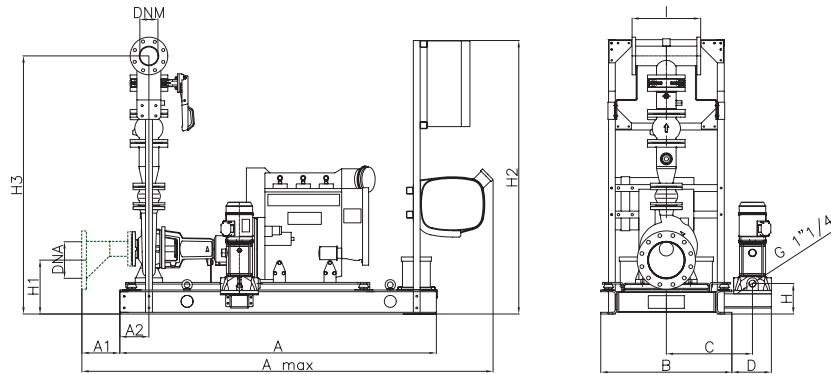
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 80-160/177 MD	1x220-240 V ~	KVCX 65/80 T	26	35	2,2	3	KDN 80 EN 12845	0,22 m ²

* Jockey pump on request.

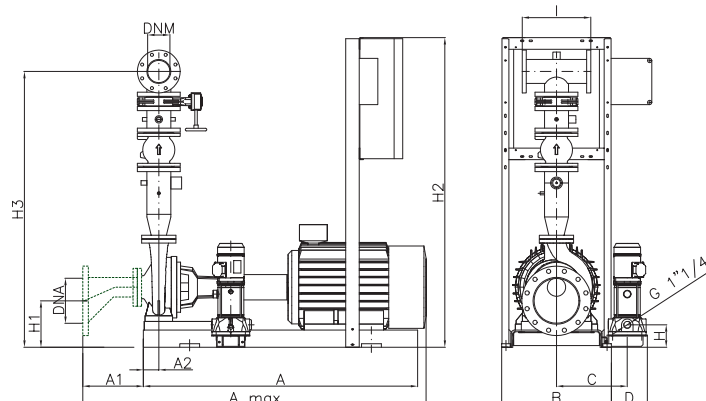
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



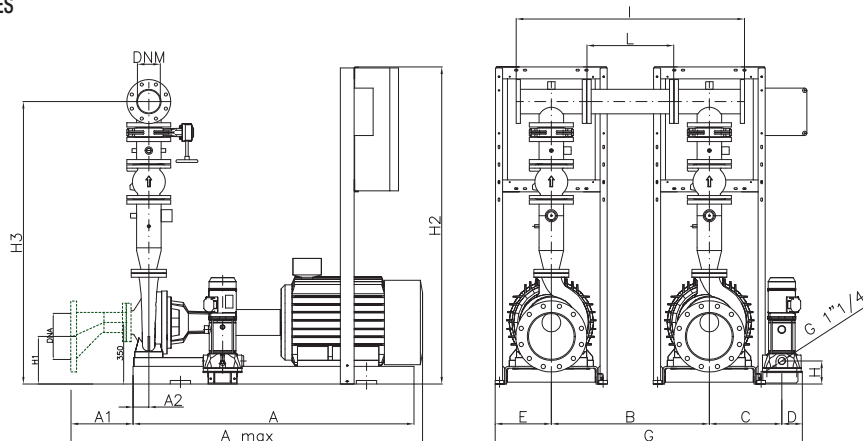
ELECTRIC PUMP MODULE



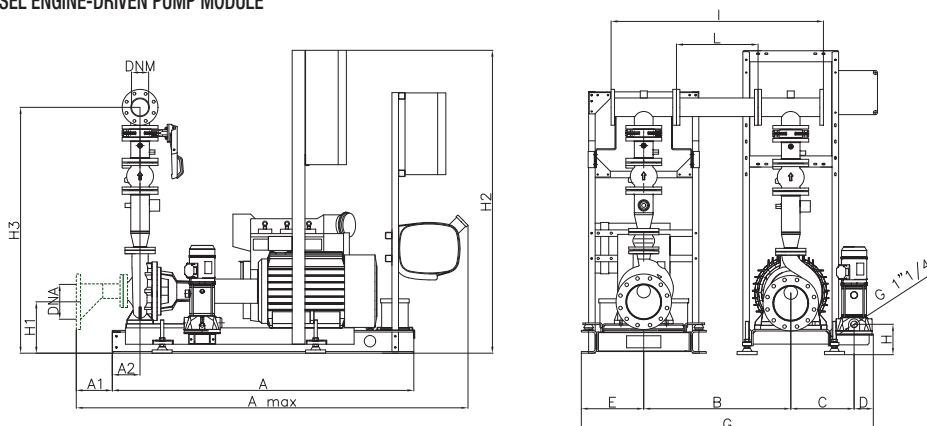
The dashed components are not included in the standard supply.

1 KDN 80-160/177 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

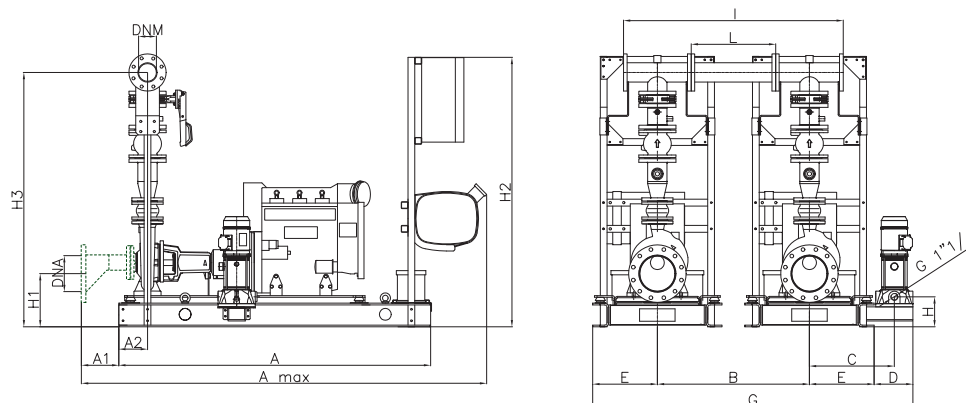
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

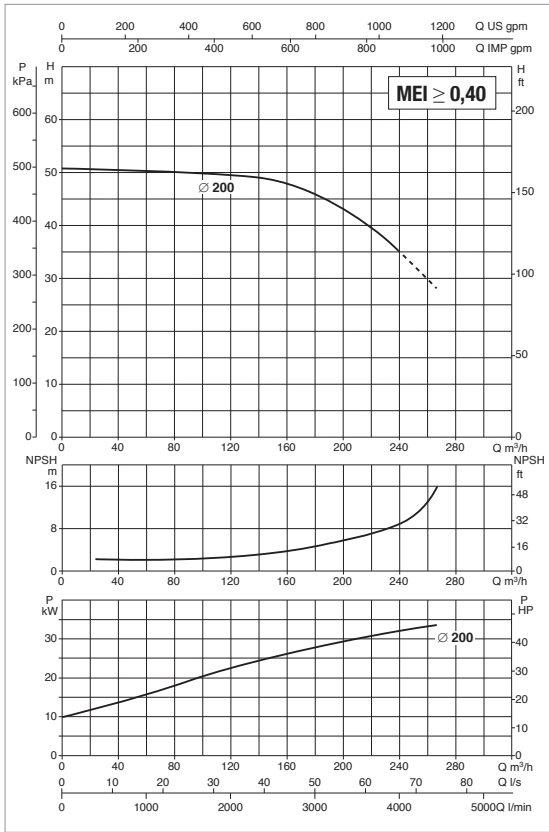


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 80-160/177 - DIESEL ENGINE DRIVEN PUMP MODULE	1846	2370	167	250	765	505	242	-	-	-	178	328	1595	1575	400	-	200	125	800	830
1 KDN 80-160/177 - ELECTRIC PUMP MODULE	1400	1743	342	75	590	388	215	-	-	-	131	248	1800	1504	400	-	200	125	720	750
1 KDN 80-160/177 - 2 ELECTRIC PUMP MODULES	1400	1743	342	75	900	388	122	295	-	1705	131	248	1800	1504	1300	500	200	125	720	750
1 KDN 80-160/177 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1846	2370	167	250	900	388	122	383	1793	-	211	328	1880	1575	1300	500	200	125	800	750
1 KDN 80-160/177 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1846	2370	167	250	900	505	242	383	383	-	178	328	1595	1575	1300	500	200	125	800	830

1 KDN 80-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 250 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 80-200/200 37	3x400 V ~	KVCX 65/80 T	37	50	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

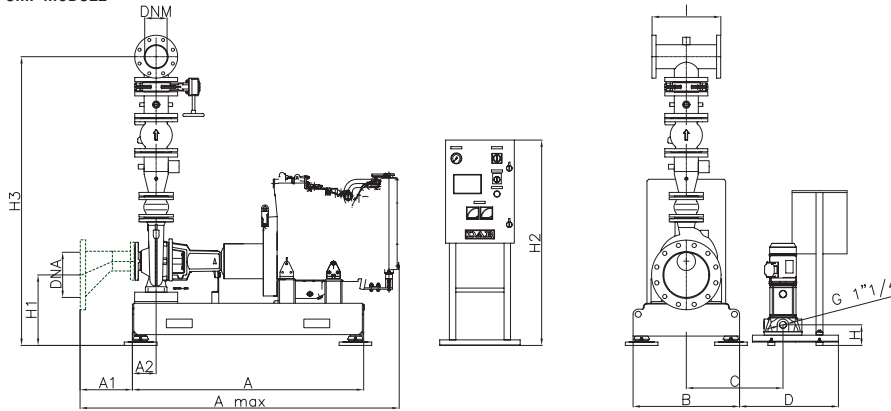
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 80-200/200 MD	1x220-240 V ~	KVCX 65/80 T	37	50	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

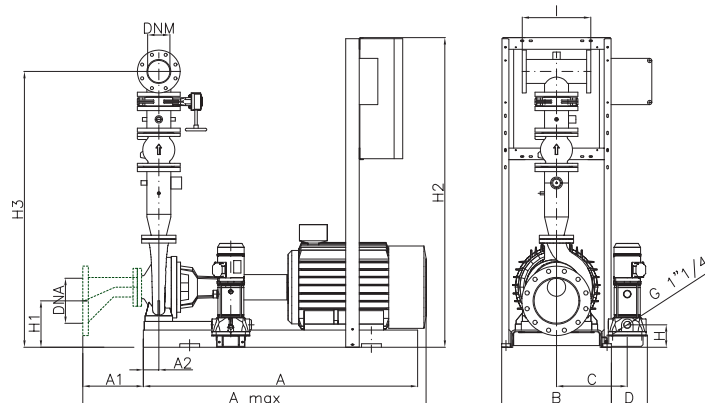
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



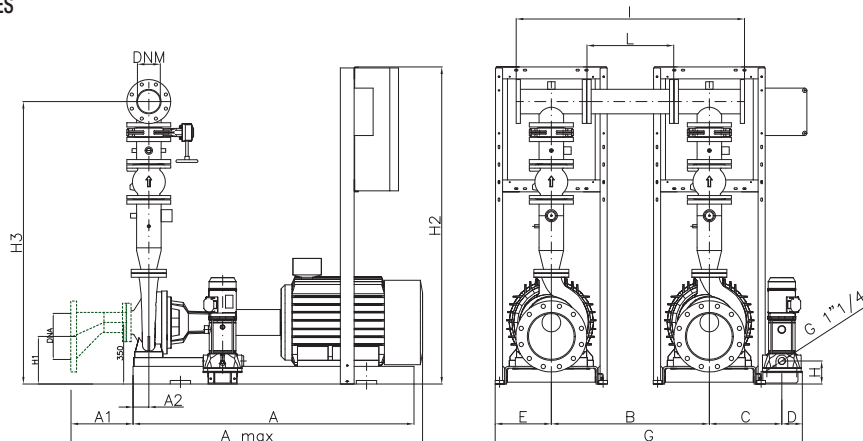
ELECTRIC PUMP MODULE



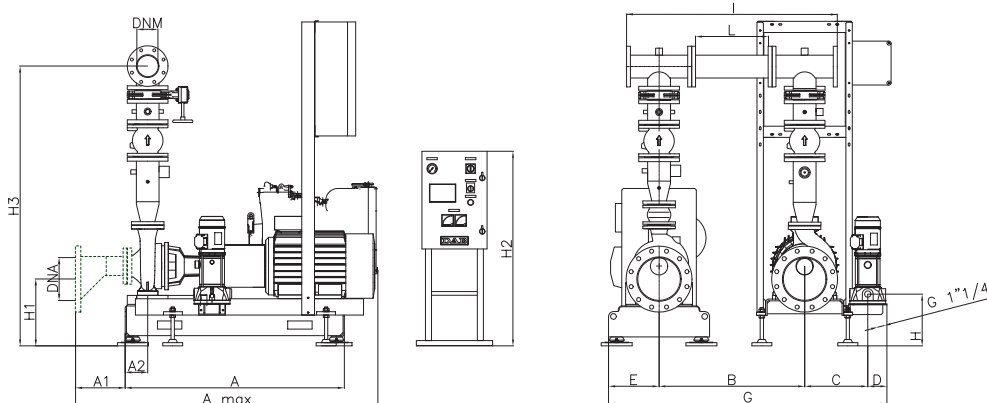
The dashed components are not included in the standard supply.

1 KDN 80-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

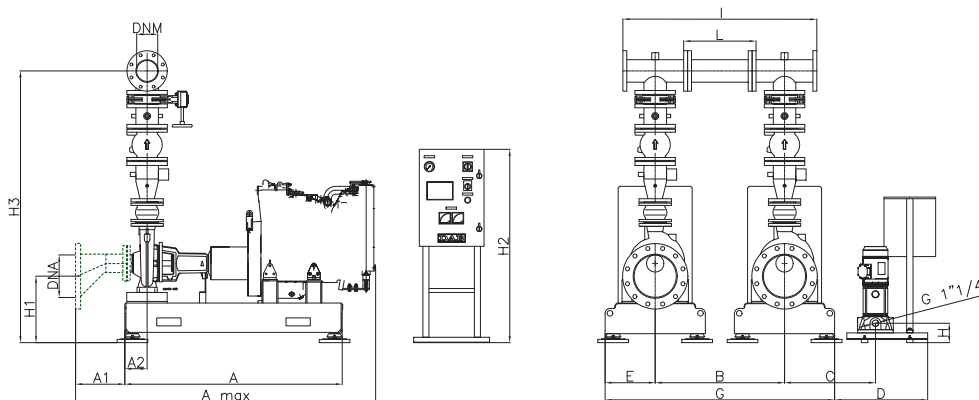
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

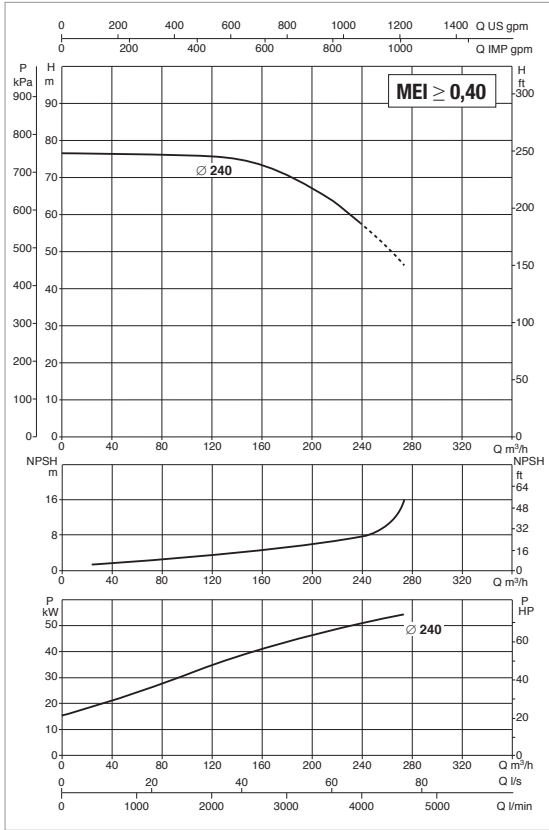


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 80-200/200 - DIESEL ENGINE DRIVEN PUMP MODULE	1346	1834	278	139	620	562	575	-	-	-	120	438	1200	1680	400	-	200	125	930	960
1 KDN 80-200/200 - ELECTRIC PUMP MODULE	1400	1811	342	75	590	388	215	-	-	-	131	248	1800	1528	400	-	200	125	750	780
1 KDN 80-200/200 - 2 ELECTRIC PUMP MODULES	1400	1811	342	75	900	388	122	295	-	1705	131	248	1800	1528	1300	500	200	125	750	780
1 KDN 80-200/200 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1346	1860	304	139	900	388	122	310	-	1720	321	438	1200	1680	1300	500	200	125	930	780
1 KDN 80-200/200 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1346	1843	278	139	900	562	575	310	-	1520	120	438	1200	1680	1300	500	200	125	930	960

1 KDN 80-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 280 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 80-250/240 55	3x400 V ~	KVCX 65/80 T	55	75	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

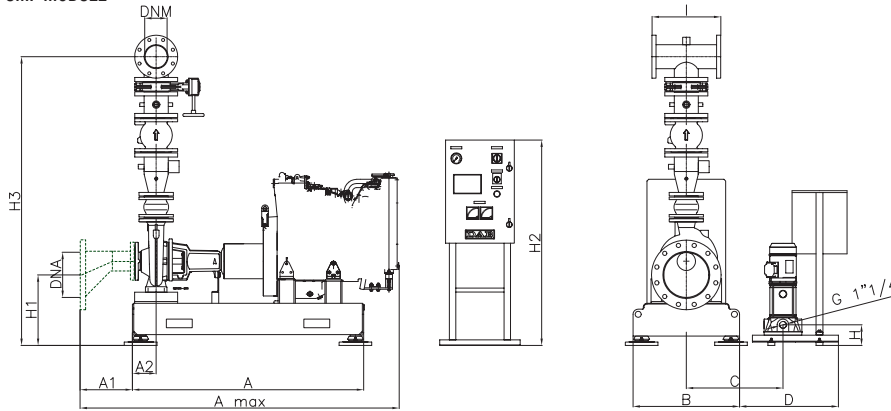
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 80-250/240 MD	1x220-240 V ~	KVCX 65/80 T	73,5	91	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

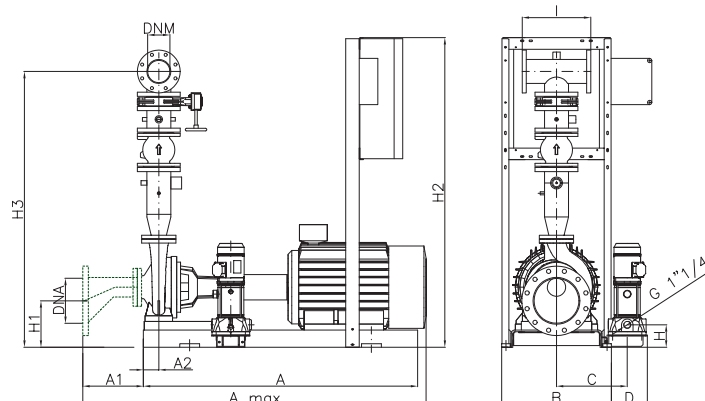
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



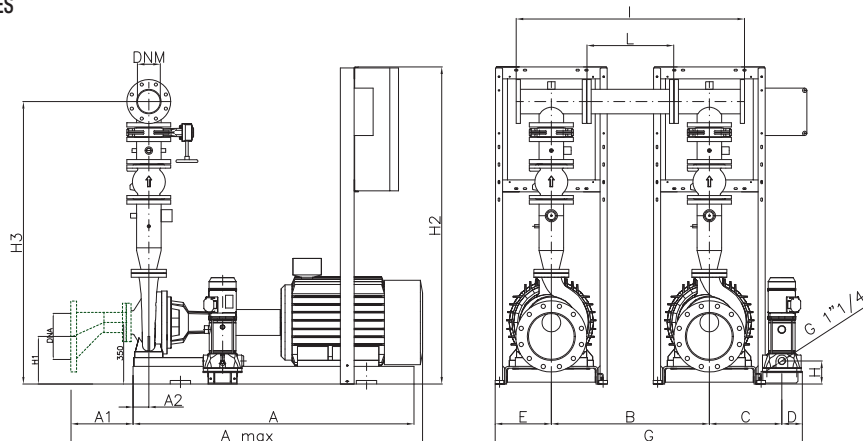
ELECTRIC PUMP MODULE



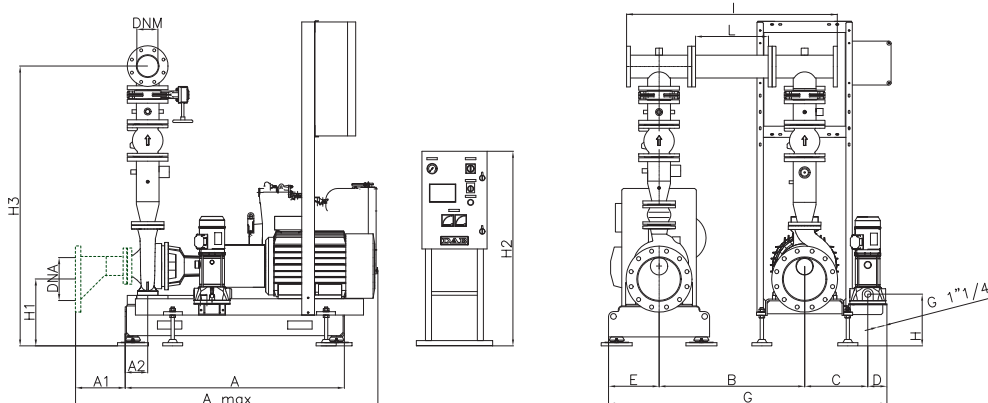
The dashed components are not included in the standard supply.

1 KDN 80-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

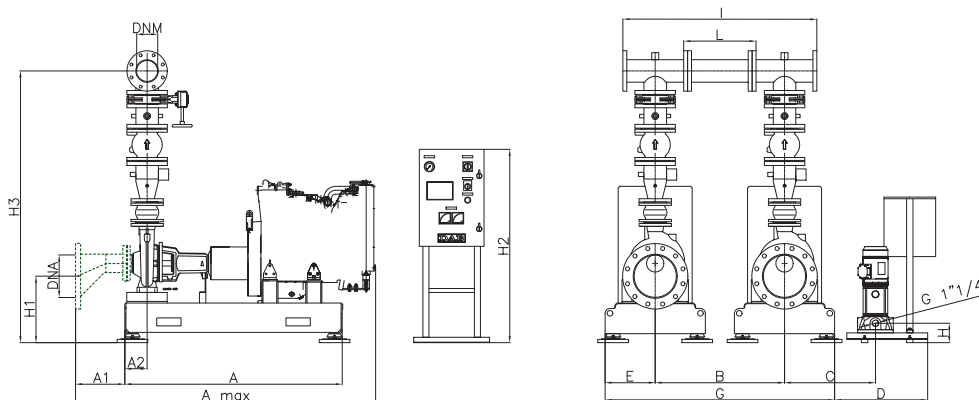
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

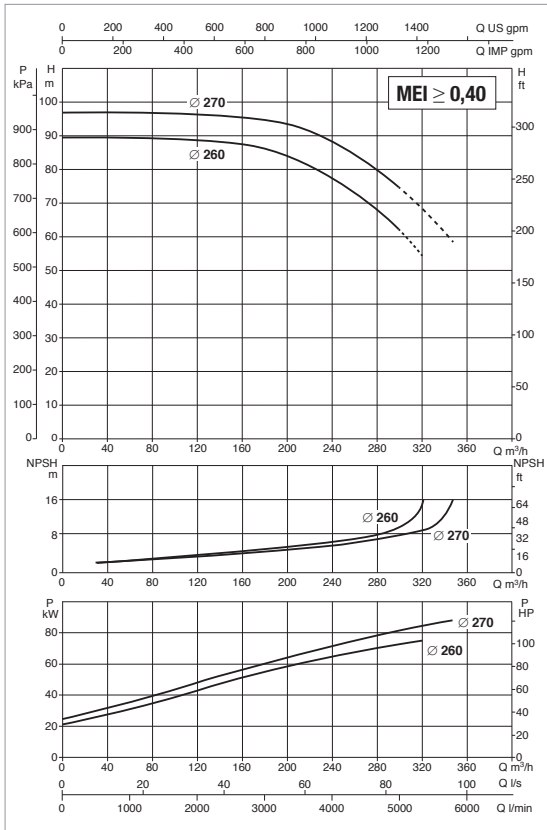


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 80-250/240 - DIESEL ENGINE DRIVEN PUMP MODULE	1459	1939	278	139	722	613	575	-	-	-	120	453	1200	1725	400	-	200	125	1000	1030
1 KDN 80-250/240 - ELECTRIC PUMP MODULE	1600	1976	327	90	640	413	210	-	-	-	131	298	1800	1608	400	-	200	125	920	950
1 KDN 80-250/240 - 2 ELECTRIC PUMP MODULES	1600	1976	327	90	900	413	122	320	-	1755	131	298	1800	1608	1300	500	200	125	920	950
1 KDN 80-250/240 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1459	1965	304	139	900	448	122	361	-	1831	256	453	1200	1725	1300	500	200	125	1000	950
1 KDN 80-250/240 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1459	1939	278	139	900	613	575	361	-	1622	120	453	1200	1725	1300	500	200	125	1000	1030

1 KDN 80-250/260-270 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: = 280 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 80-250/260 75	3x400 V ~	KVCX 65/80 T	75	100	2,2	3	KDN 80 EN 12845
1 KDN 80-250/270 90	3x400 V ~	KVCX 65/80 T	90	120	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

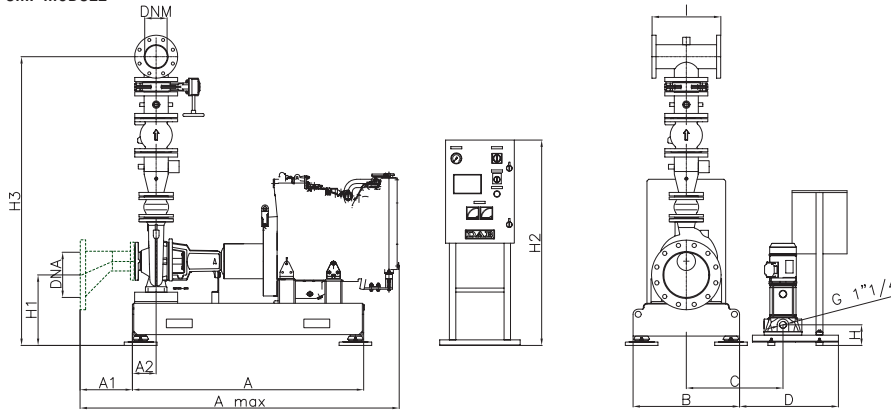
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 80-250/260 MD	1x220-240 V ~	KVCX 65/80 T	110,3	138	2,2	3	KDN 80 EN 12845	0,40 m ²
1 KDN 80-250/270 MD	1x220-240 V ~	KVCX 65/80 T	110,3	138	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

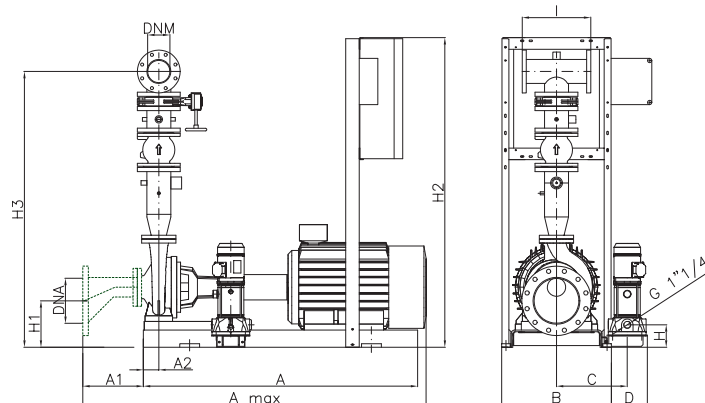
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



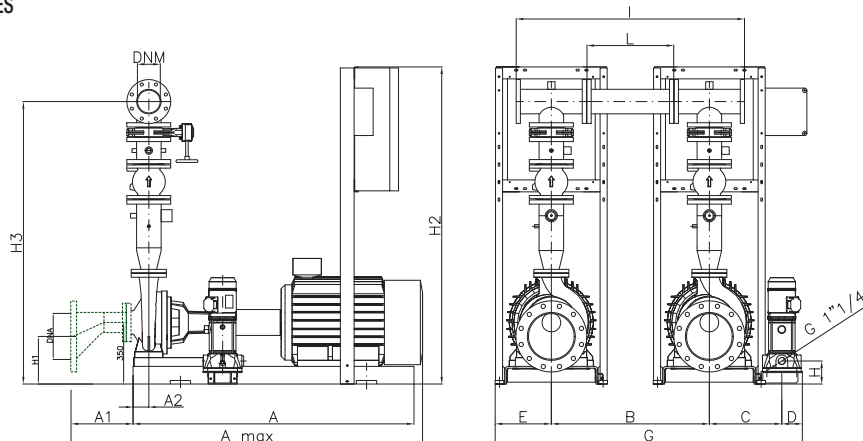
ELECTRIC PUMP MODULE



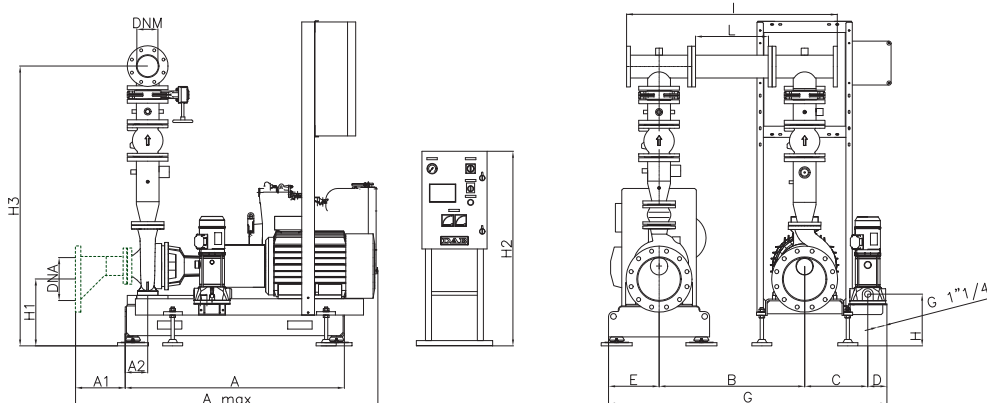
The dashed components are not included in the standard supply.

1 KDN 80-250/260-270 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

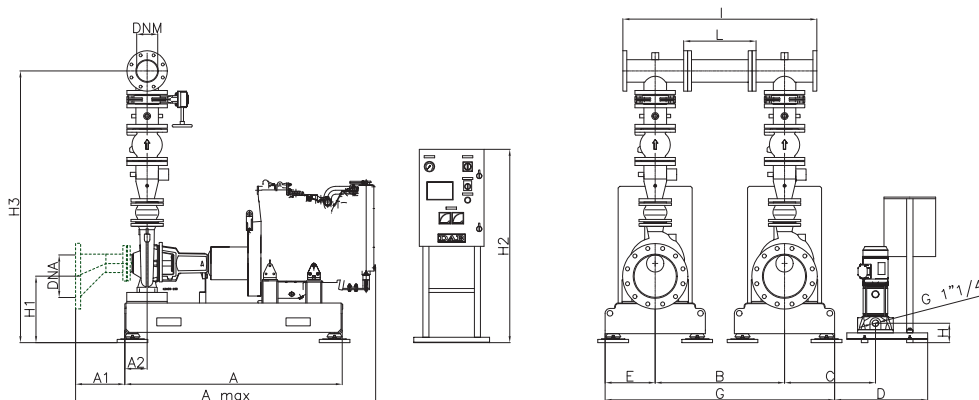
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

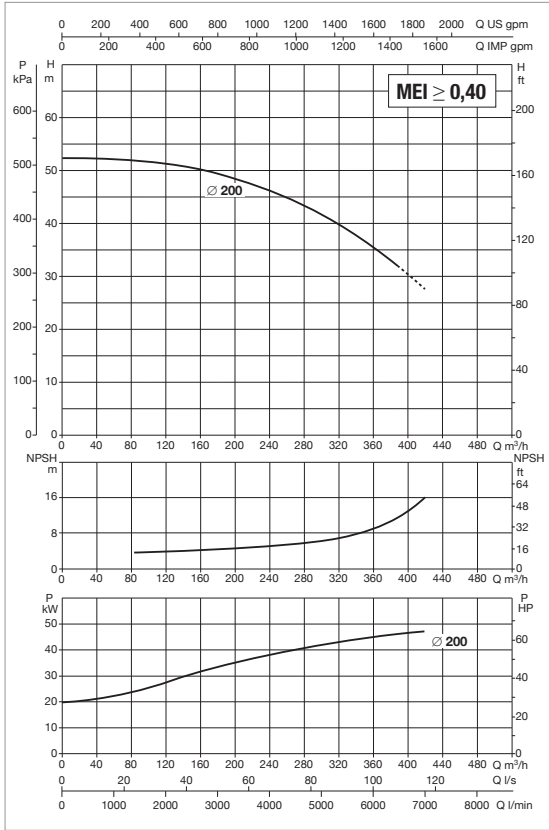


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 80-250/260 - DIESEL ENGINE DRIVEN PUMP MODULE	1682	2202	278	139	722	613	575	-	-	-	120	453	1200	1725	400	-	200	125	1200	1230
1 KDN 80-250/260 - ELECTRIC PUMP MODULE	1800	2127	327	95	710	448	210	-	-	-	131	298	1800	1639	400	-	200	125	1170	1200
1 KDN 80-250/260 - 2 ELECTRIC PUMP MODULES	1800	2127	327	95	900	448	122	355	-	1825	131	328	1800	1639	1300	500	200	125	1170	1200
1 KDN 80-250/260 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1682	2228	304	139	900	448	122	361	-	1831	256	453	1200	1725	1300	500	200	125	1200	1200
1 KDN 80-250/260 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1682	2202	278	139	900	613	575	361	-	1622	120	453	1200	1725	1300	500	200	125	1200	1230

1 KDN 100-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 400 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 100-200/200 55	3x400 V ~	KVCX 65/80 T	55	70	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

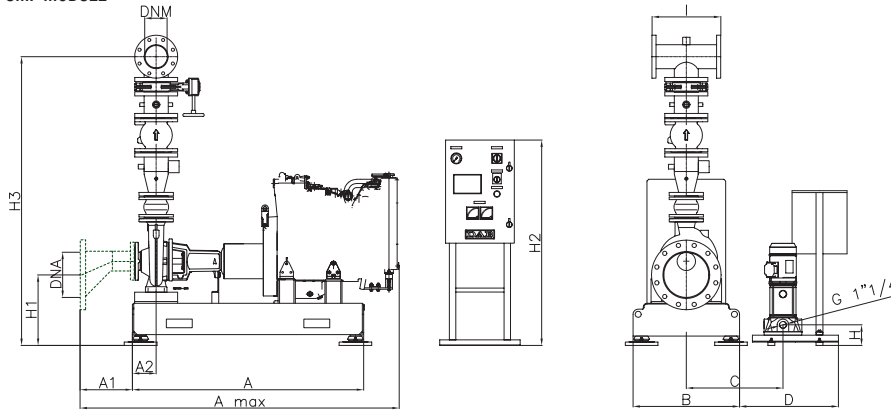
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 100-200/200 MD	1x220-240 V ~	KVCX 65/80 T	53	71	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

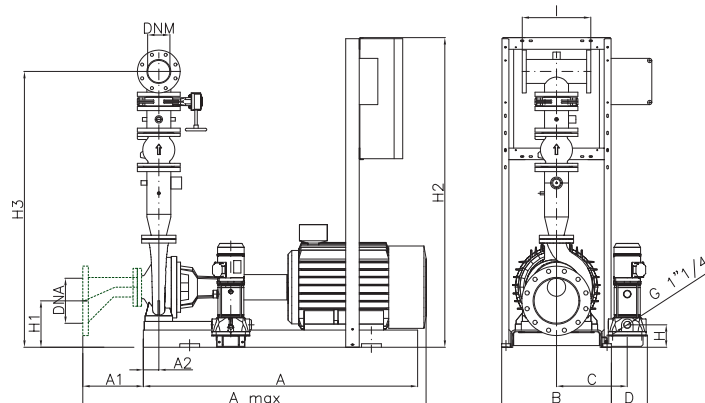
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



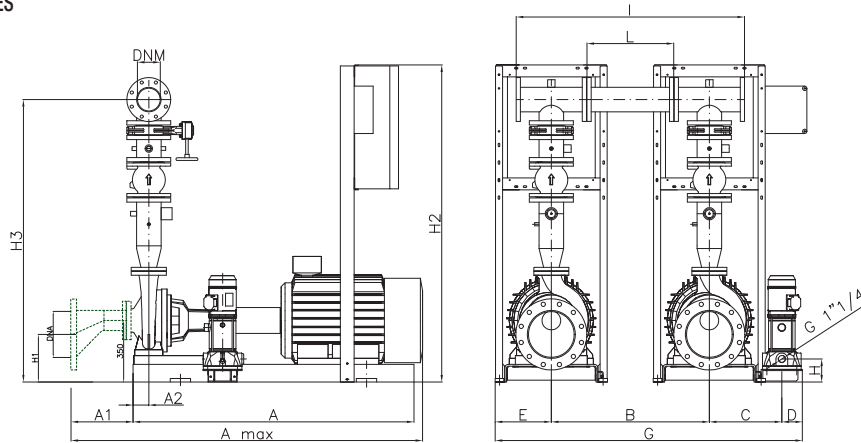
ELECTRIC PUMP MODULE



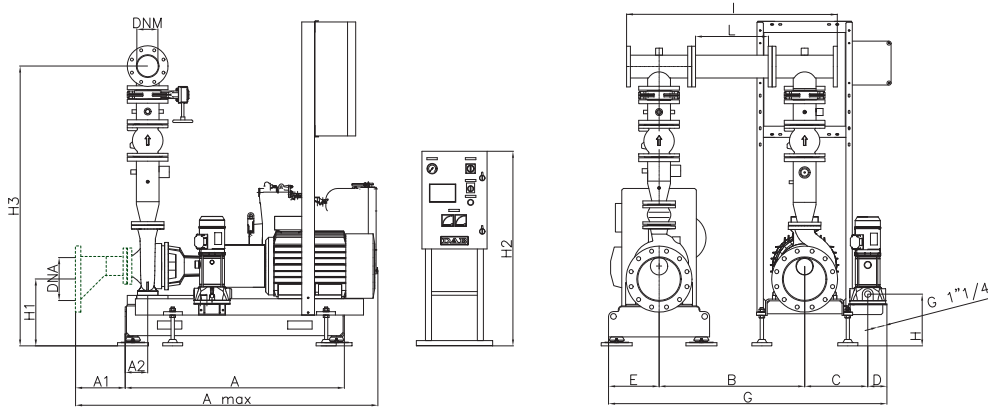
The dashed components are not included in the standard supply.

1 KDN 100-200/200 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

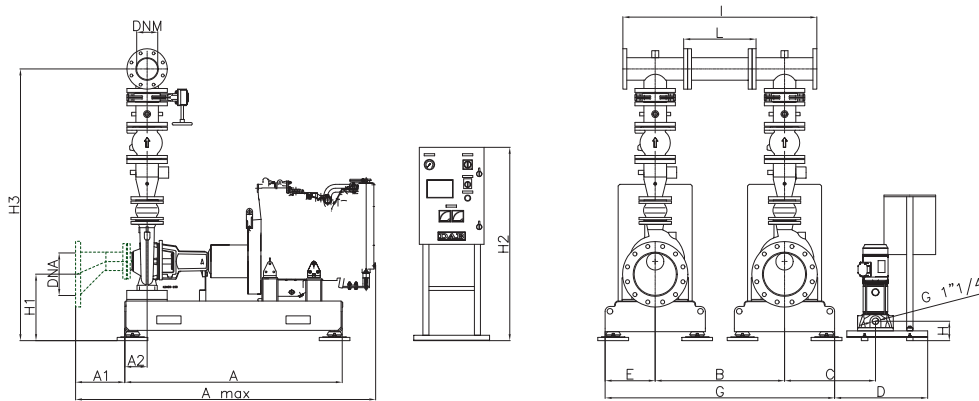
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

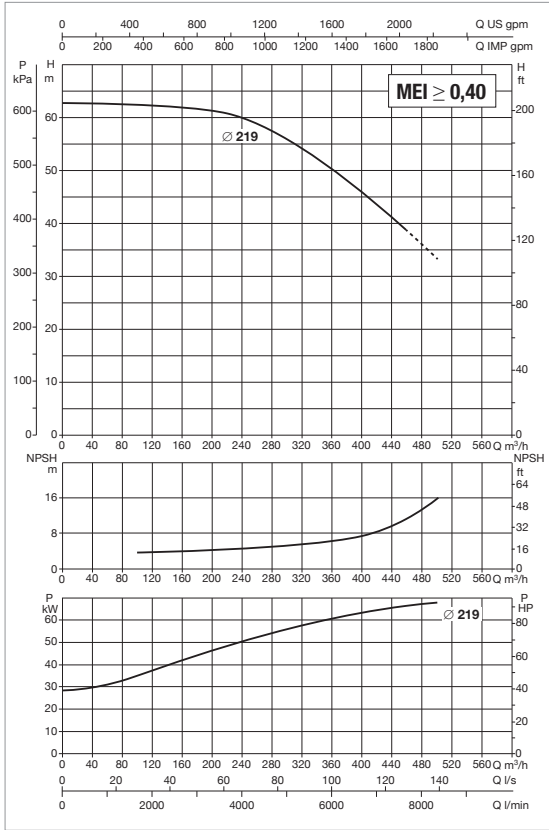


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 100-200/200 - DIESEL ENGINE DRIVEN PUMP MODULE	1346	1887	335	139	620	562	575	-	-	-	120	423	1200	1803	600	-	250	150	1100	1130
1 KDN 100-200/200 - ELECTRIC PUMP MODULE	1400	1922	398	90	590	388	215	-	-	-	131	258	1800	1645	600	-	250	150	1120	1150
1 KDN 100-200/200 - 2 ELECTRIC PUMP MODULES	1400	1922	398	90	1100	388	122	295	-	1905	131	258	1800	1645	1700	500	250	150	1120	1150
1 KDN 100-200/200 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1346	2057	360	139	1100	413	122	310	-	1945	271	423	1200	1803	1700	500	250	150	1100	1150
1 KDN 100-200/200 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1346	1887	335	139	1100	562	575	310	-	1720	120	423	1200	1803	1700	500	250	150	1100	1130

1 KDN 100-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 400 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 100-200/219 75	3x400 V ~	KVCX 65/80 T	75	100	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

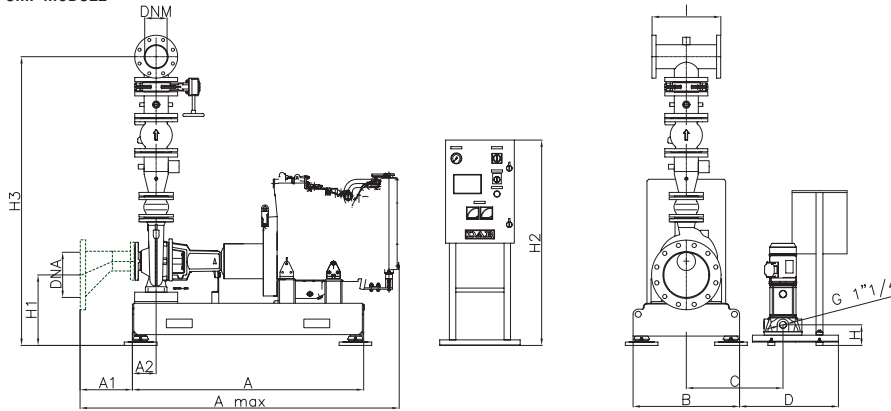
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 100-200/219 MD	1x220-240 V ~	KVCX 65/80 T	73,5	100	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

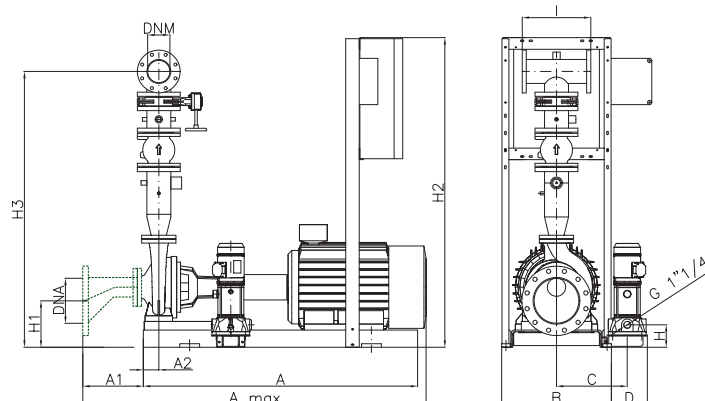
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



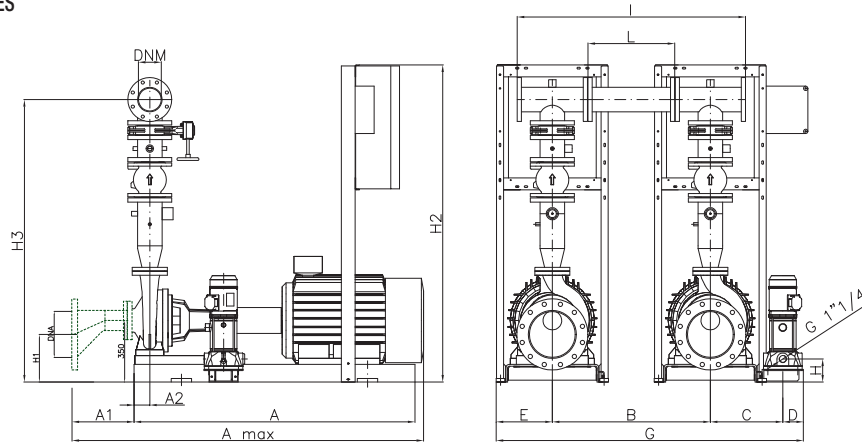
ELECTRIC PUMP MODULE



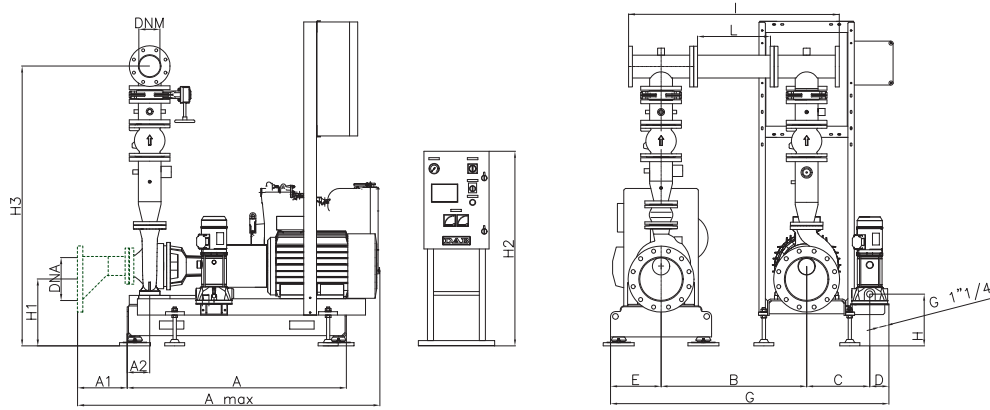
The dashed components are not included in the standard supply.

1 KDN 100-200/219 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

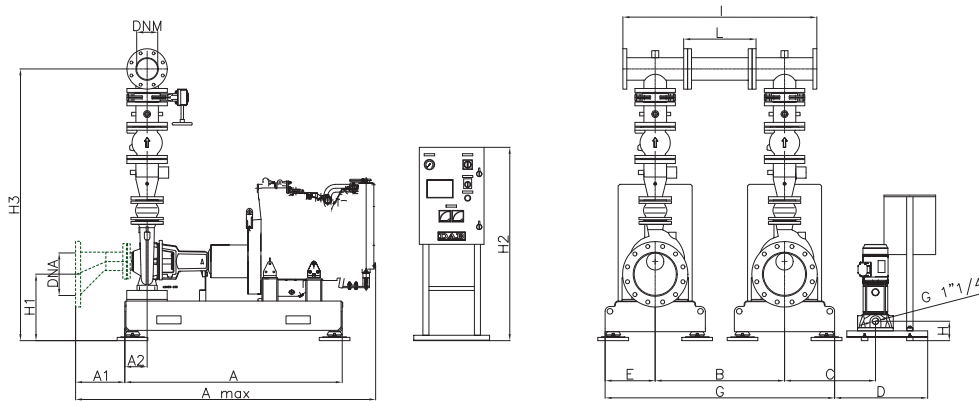
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

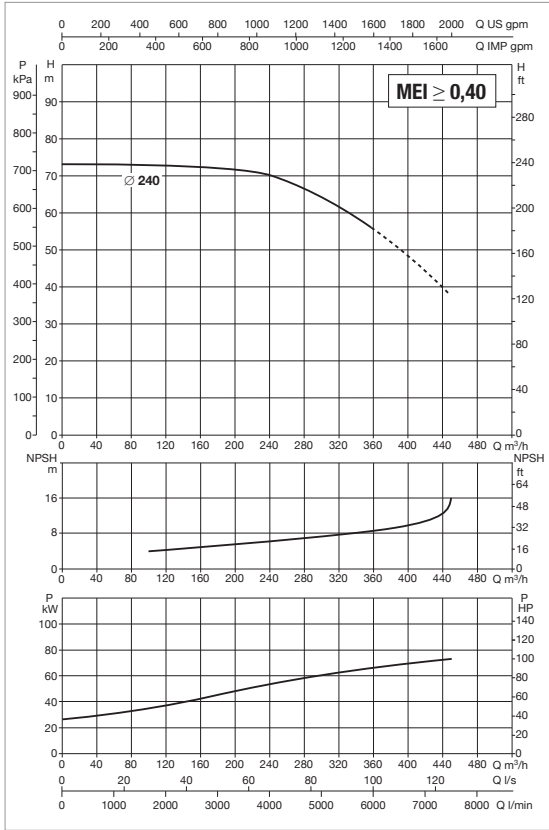


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 100-200/219 - DIESEL ENGINE DRIVEN PUMP MODULE	1682	2258	335	139	722	613	575	-	-	-	120	438	1200	1818	600	-	250	150	1265	1295
1 KDN 100-200/219 - ELECTRIC PUMP MODULE	1800	2183	383	90	710	448	210	-	-	-	131	313	1800	1700	600	-	250	150	1280	1310
1 KDN 100-200/219 - 2 ELECTRIC PUMP MODULES	1800	2183	383	90	1100	448	122	355	-	2025	131	313	1800	1700	1700	500	250	150	1280	1310
1 KDN 100-200/219 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1682	2283	360	139	1100	448	122	361	-	2031	256	438	1200	1818	1700	500	250	150	1265	1310
1 KDN 100-200/219 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1682	2258	335	139	1100	613	575	361	-	1822	120	438	1200	1818	1700	500	250	150	1265	1295

1 KDN 100-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 400 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 100-250/240 75	3x400 V ~	KVCX 65/80 T	90	125	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

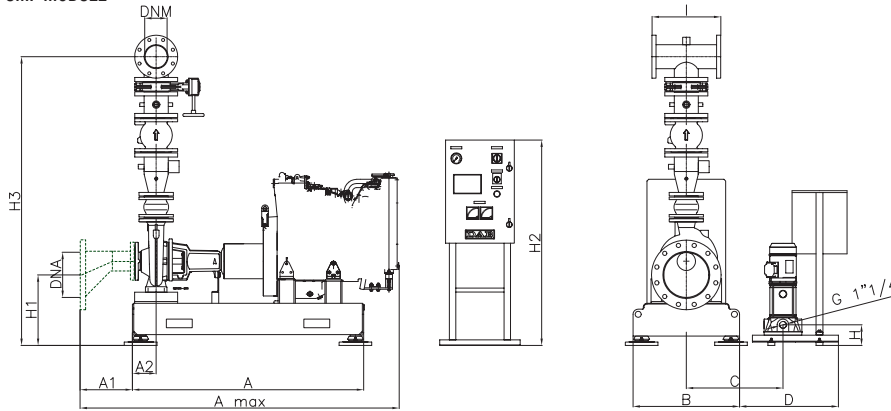
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 100-250/240 MD	1x220-240 V ~	KVCX 65/80 T	110,3	138	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

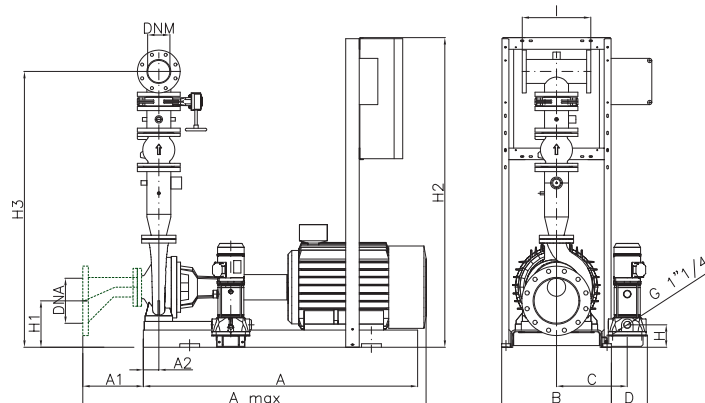
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



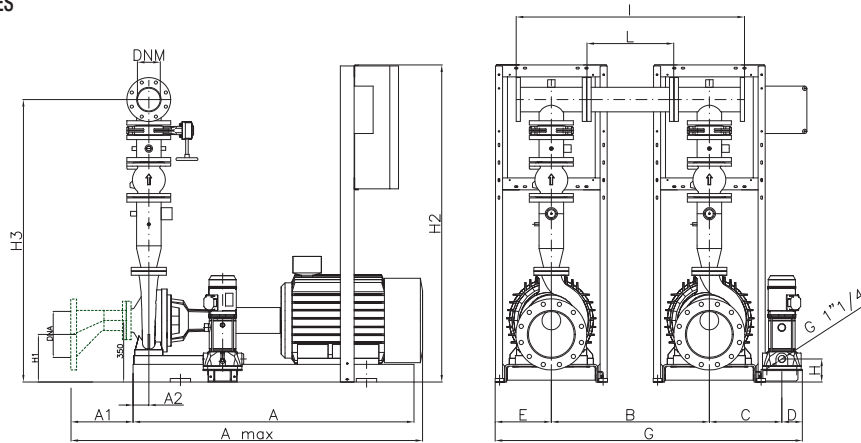
ELECTRIC PUMP MODULE



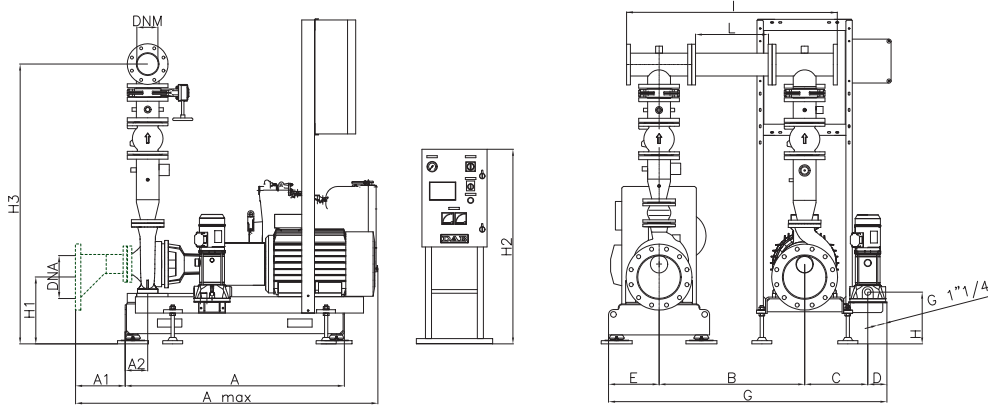
The dashed components are not included in the standard supply.

1 KDN 100-250/240 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

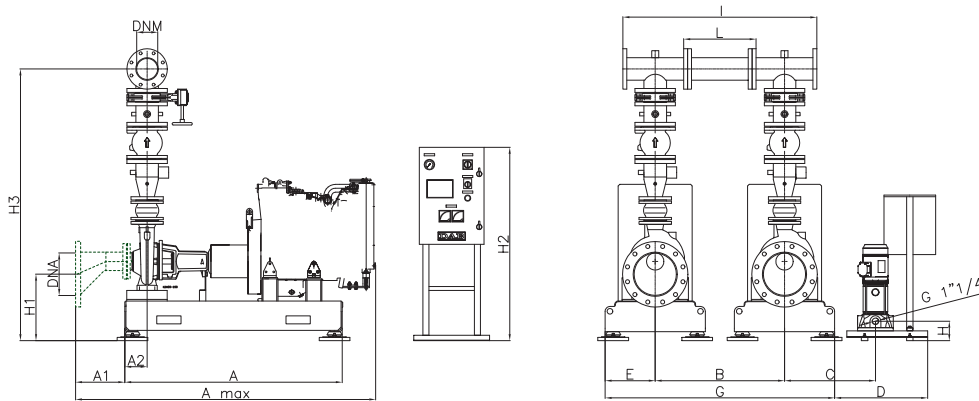
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES

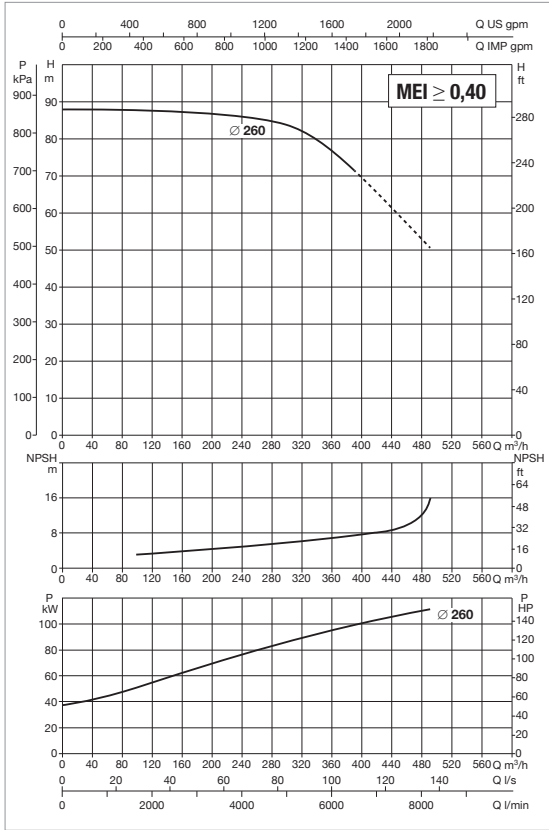


The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 100-250/240 - DIESEL ENGINE DRIVEN PUMP MODULE	1682	2273	349	139	722	613	575	-	-	-	120	438	1200	1818	600	-	250	150	1280	1310
1 KDN 100-250/240 - ELECTRIC PUMP MODULE	1800	2198	398	90	710	448	210	-	-	-	131	313	1800	1700	600	-	250	150	1320	1350
1 KDN 100-250/240 - 2 ELECTRIC PUMP MODULES	1800	2198	398	90	1100	448	122	355	-	2025	131	313	1800	1700	1700	500	250	150	1320	1350
1 KDN 100-250/240 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1682	2298	374	139	1100	448	122	361	-	2031	256	438	1200	1818	1700	500	250	150	1280	1350
1 KDN 100-250/240 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1682	2273	349	139	1100	613	575	361	-	1822	120	438	1200	1818	1700	500	250	150	1280	1310

1 KDN 100-250/260 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 400 m³/h



KDN UNI EN 12845 ELECTRIC PUMP

MODEL	POWER INPUT	JOCKEY PUMP*	P2 MAIN PUMP		P2 JOCKEY PUMP		METER KIT
			KW	HP	KW	HP	
1 KDN 100-250/260 110	3x400 V ~	KVCX 65/80 T	110	150	2,2	3	KDN 80 EN 12845

KDN UNI EN 12845 DIESEL ENGINE-DRIVEN PUMP

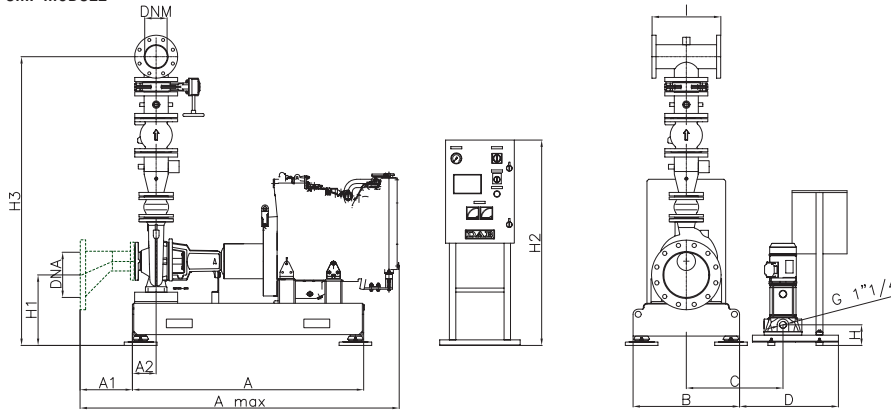
MODEL	BATTERY CHARGER POWER INPUT	JOCKEY PUMP*	** P2 DIESEL ENGINE-DRIVEN PUMP		P2 JOCKEY PUMP		METER KIT	FAN SURFACE
			KW	HP	KW	HP		
1 KDN 100-250/260 MD	1x220-240 V ~	KVCX 65/80 T	110,3	150	2,2	3	KDN 80 EN 12845	0,40 m ²

* Jockey pump on request.

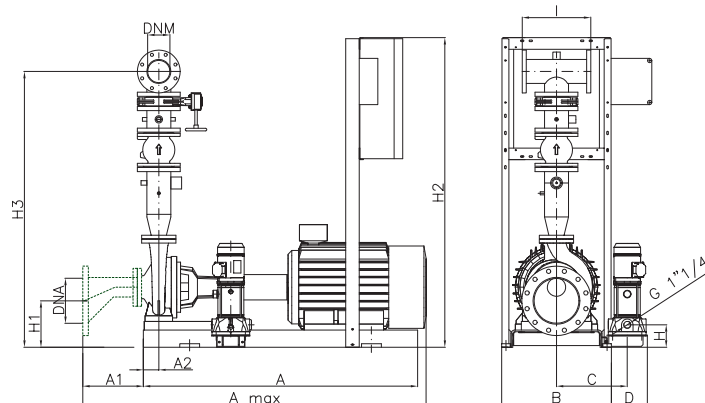
** ISO 3046 continuous power The motor is capable of delivering 10 % more of the power requested by the pump.

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.

DIESEL ENGINE-DRIVEN PUMP MODULE



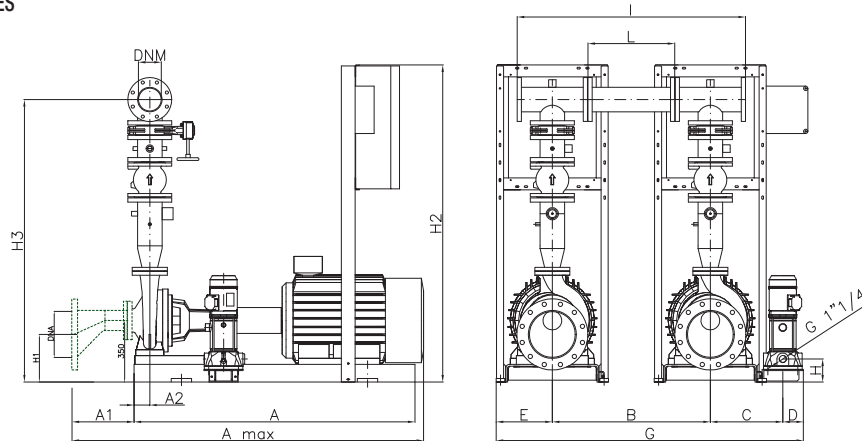
ELECTRIC PUMP MODULE



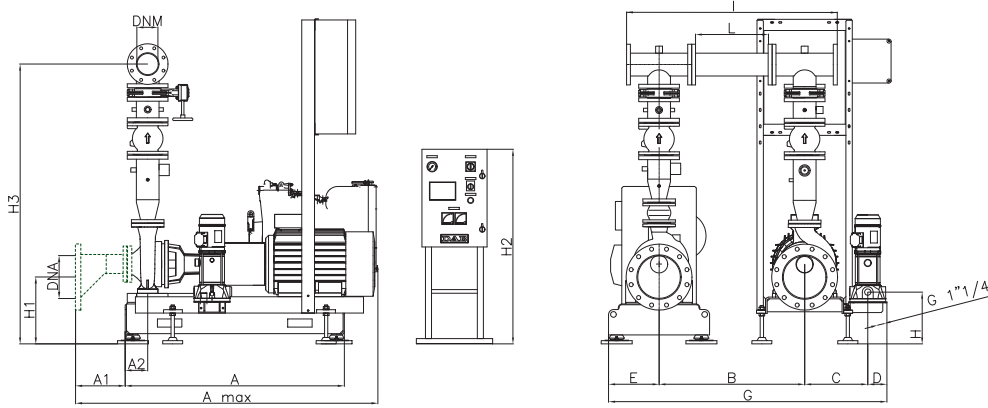
The dashed components are not included in the standard supply.

1 KDN 100-250/260 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

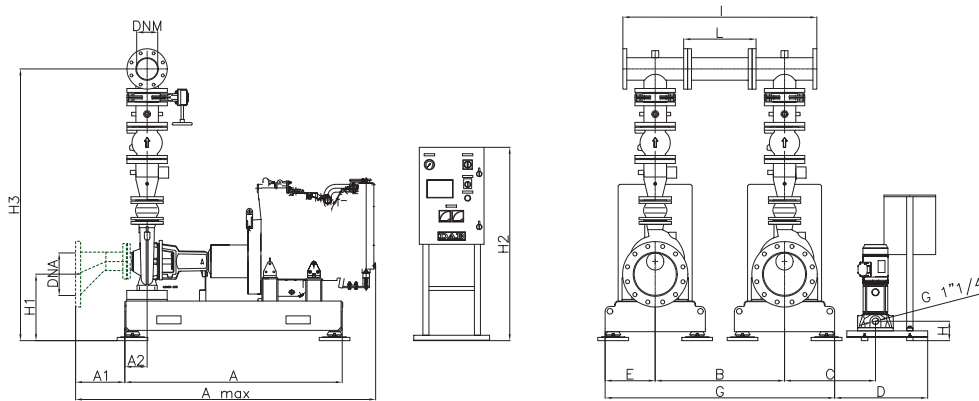
2 ELECTRIC PUMP MODULES



ELECTRIC PUMP + DIESEL ENGINE-DRIVEN PUMP MODULE



2 DIESEL ENGINE-DRIVEN PUMP MODULES



The dashed components are not included in the standard supply.

MODEL	A	A max	A1	A2	B	C	D	E	F	G	H	H1	H2	H3	I	L	DNA	DNM	WEIGHT without jockey pump kg	WEIGHT with jockey pump kg
1 KDN 100-250/260 - DIESEL ENGINE DRIVEN PUMP MODULE	1750	2218	368	120	800	652	575	-	-	-	120	450	1200	1861	600	-	250	150	1300	1330
1 KDN 100-250/260 - ELECTRIC PUMP MODULE	2000	2447	398	90	860	523	210	-	-	-	131	368	1800	1755	600	-	250	150	1430	1460
1 KDN 100-250/260 - 2 ELECTRIC PUMP MODULES	2000	2447	398	90	1100	523	122	430	-	2175	131	368	1800	1755	1700	-	250	150	1430	1460
1 KDN 100-250/260 - ELECTRIC PUMP + DIESEL ENGINE DRIVEN PUMP MODULE	1750	2472	374	120	1100	523	122	400	-	2145	213	450	1200	1861	1700	500	250	150	1300	1460
1 KDN 100-250/260 - 2 DIESEL ENGINE DRIVEN PUMP MODULES	1750	2218	368	120	1100	652	575	400	-	2404	120	450	1200	1861	1700	500	250	150	1300	1330

S4 - S6 - SM8

UNI EN 12845 FIRE-FIGHTING SETS WITH SUBMERGED PUMPS



TECHNICAL DATA

Operating range: from 4 to 160 m³/h

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water.

Pumped liquid temperature range: from -15 to 70 °C.

Maximum ambient temperature: + 25 °C

Maximum operating pressure: 16 bar (1600kPa) PN16

Special executions on request:

execution with joined cable available on request.

The control panels of the sets with submerged pumps are already fitted on base for quicker installation.

GENERAL DATA

NOTES ON UNI EN 12845

UNI EN 12845, the Italian version of European Standard EN 12845, sets the design, installation and maintenance criteria for sprinkler systems. It replaces the earlier Italian standards UNI 9489 and UNI 9490. An automatic sprinkler system is designed to detect the presence of fire and extinguish it during the initial stages, or to keep flames under control until they can be extinguished fully using other means. The classic sprinkler system is composed of: a water source, a fire-fighting pump unit, a series of control valves, and a sprinkler circuit. In its basic execution, it consists of: one or more 4", 6", or 8" submerged electric pumps, plus the 4" compensation pump (jockey), if required.

COMPOSITION OF THE PUMP SETS

The pumps of UNI EN 12845 sets will have the same characteristics; in addition:

- if TWO pumps are installed, each pump must deliver the total system load (100 %),
- if THREE pumps are installed, each pump must deliver 50 % of the load required by the design.

NOTE:

In case of single water supply, there are no limitations on the number of electric pumps that can be installed. DAB provides "modular" type sets, so that all the versions contemplated by the UNI EN 12845 standard - OPERATION OF UNI EN 12845 FIRE-FIGHTING PUMP SETS - can be completed.

In normal conditions, (zero water request), the system is under static pressure. The first time there is a water request, the compensation pump activates (if present), reinstating the system pressure. In case of significant water request (or if no compensation pump is installed, or the sprinklers activate), the pressure drops until the two pressure switches connected in series activate the main pump. If the pressure continues to drop, further pumps activate in the same way.

Pressure switch calibration and operation example.

	Maximum pump pressure x 0,8	
Two-pump sets	Pump 1 Max pressure x 0,8	Pump 2 Max pressure x 0,6

E.g. Max pump pressure 10 bar - pump 1 starts at 8 bar, pump 2 starts at 6 bar

Once activated, the main pump continues to operate until it is manually stopped using the STOP pushbutton on the electric control panel.

No protections for stops due to lack of water are permitted. In case of hydrant systems, refer to UNI 10779 - July 07. In addition to prescribing feed pumps in compliance with UNI EN 12845, UNI 10779 allows automatic stopping of the pumps 20 minutes after the closing of the hydrants, in case of non-permanently supervised operation. DAB pump sets are suitable for sprinkler systems with manual stop, and for hydrant systems with automatic stop.

PRESSURE COMPENSATION PUMP - "JOCKEY"

The compensation pump (jockey) is a pump that intervenes when the collection of a small amount of water is required. This avoids pointless starts of the main pumps in case of small system leaks. DAB fire-fighting sets are available with and without jockey pump.

The compensation pump must be installed at the delivery manifold, and includes:

- ball valve on the suction,
- check ball valve on the delivery,
- control pressure switch,
- 20 litre expansion vessel.
- control and protection panels

CONSTRUCTION FEATURES

In the standard versions, the configurations are with multistage centrifugal submerged electric pumps for 4", 6", or 8" wells.

CONSTRUCTION FEATURES OF THE 4" PUMPS

Multistage centrifugal type with radial or semi-axial impellers. Pump and motor directly coupled with rigid coupling. Technopolymer impellers with stainless steel wearing parts, fitted on floating clearance rings made of synthetic low abrasion material, and technopolymer diffusers that impart significant wear resistance to the pump. Pump liner, shaft and coupling, strainer and cable sheath in stainless steel. Base support and upper head in microcast AISI 304 stainless steel; steel check valve incorporated in the head (to be removed for horizontal installation).

CONSTRUCTION FEATURES OF THE 6" PUMPS

Motor and delivery body support in rust-proof spheroidal cast iron (Niresist D2B). Bottom support sized according to NEMA 6" standard. Check valve incorporated in the delivery support (to be removed for horizontal installation) Bushing bearings: bronze - rubber. Completely protected splined shaft (AISI 420). Wear rings, stage box, cable sheath, suction grid in stainless steel (AISI 304). Noryl impellers and diffusers.

CONSTRUCTION FEATURES OF THE 8" PUMPS

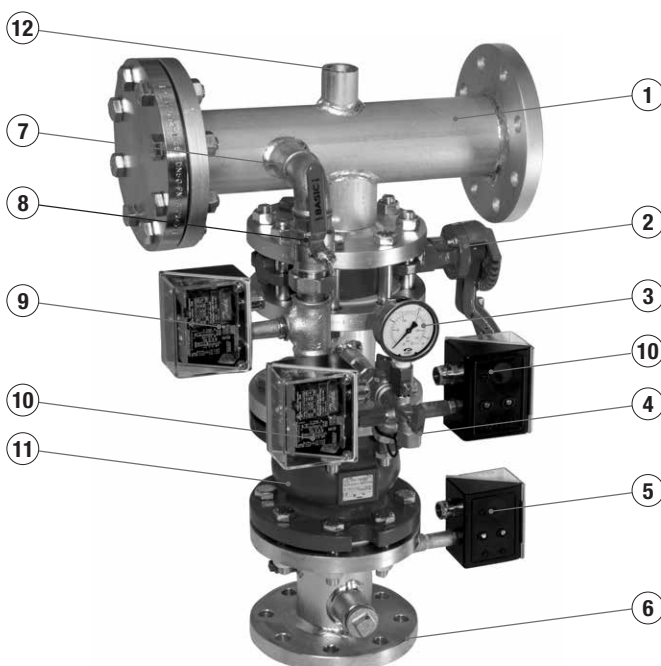
Multistage semiaxial submersible electric pumps for wells measuring 8" or above, able to generate a broad range of flow rates and heads. Pump body in cast iron with paint coating, impellers in cast iron. Dynamically balanced impellers coupled on the shaft with pull tab. Shaft guided with coaxial bush bearings and fully protected with bushes. Pump with low pressure loss check valve (to be removed for horizontal installations). Threaded delivery port with reduced flange. Possible horizontal installation.

HYDRAULIC SECTION

Pre-assembled manifold with:

flanged connection for each pump, pressure gauge, pump running notification pressure switch, check valve, butterfly shut-off valve, galvanised steel delivery manifold with pressure gauges and two pump start pressure switches, pressure switch test circuit, expansion vessel (in case of jockey pump).

NOTE:. electric and hydraulic connections not supplied by DAB Pumps



REF.	DESCRIPTION	S4"	S6"	SM8"
1	Delivery manifold	DN 50	DN 80	DN 100
2	Butterfly shut-off valve	DN50 PN16	DN80 PN16	DN100 PN16
3	Radial pressure gauge	0-16 bar D=63		
4	Pressure switch manual test valve	-		
5	Running pump pressure switch	KPI36 2-12bar ¼"M		
6	DNA adaptor	DN 50	DN 80	DN 100
7	Jockey pump connection manifold	1"		
8	Jockey pump shut-off valve (version with jockey pump only)	1"		
9	Jockey pump pressure switch (version with jockey pump only)	KPI36 2-12bar ¼"M		
10	Main pump start pressure switches	KPI36 2-12bar ¼"M (x2)		
11	Non-return valve	DN50 PN16	DN80 PN16	DN100 PN16
12	Expansion vessel manifold (version with jockey pump only)	1"		

S4 - S6 - SM8

UNI EN 12845 FIRE-FIGHTING SETS WITH SUBMERGED PUMPS

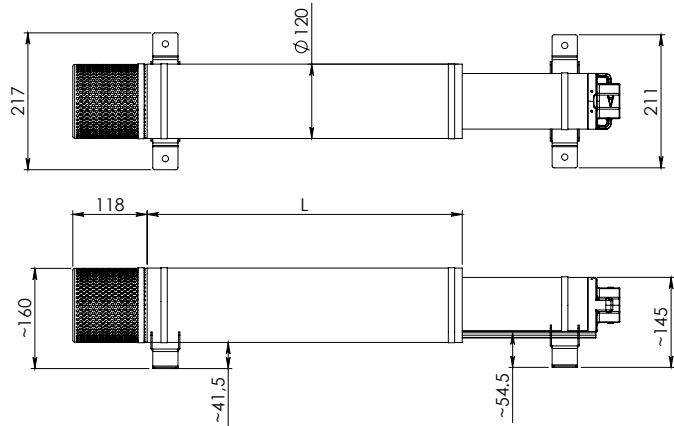
COOLING LINERS FOR 4" SUBMERSIBLE PUMP

For horizontal installation and/or inside tanks, a cooling liner must be used to safeguard the motor.

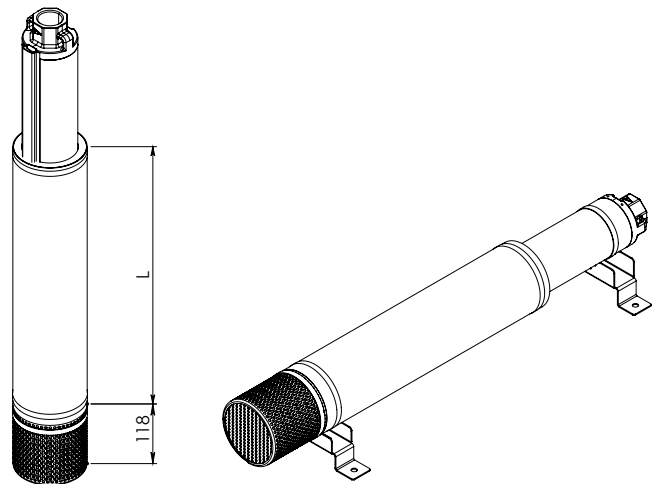
Kit of cooling liners of different lengths, used to ensure perfect cooling of the 4" motor in case of installation inside tanks or containers, or in any location where a minimum cooling flow on the motor cannot be guaranteed.

The length of the pipe must be selected based on the type of motor and its power, as indicated in the following table.

POWER INPUT 50 Hz	MOTOR POWER		MOTOR TYPE		
	HP	kW	4GG - 4GX	40L	4TW
SINGLE-PHASE	0,5	0,37	L400 PIPE KIT	L400 PIPE KIT	L525 PIPE KIT
	0,75	0,55			
	1	0,75			
	1,5	1,1	L525 PIPE KIT	L525 PIPE KIT	L885 PIPE KIT
	2	1,5			
	3	2,2	L885 PIPE KIT	L885 PIPE KIT	
	5	3,7			



THREE-PHASE	0,5	0,37	L400 PIPE KIT	L400 PIPE KIT
	0,75	0,55		
	1	0,75		
	1,5	1,1	L525 PIPE KIT	L525 PIPE KIT
	2	1,5		
	3	2,2	L885 PIPE KIT	L885 PIPE KIT
	4	3		
	5,5	4		
	7,5	5,5		
	10	7,5		



COOLING LINERS FOR 6" SUBMERGED PUMP

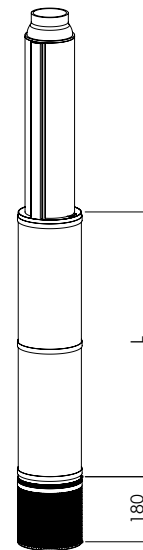
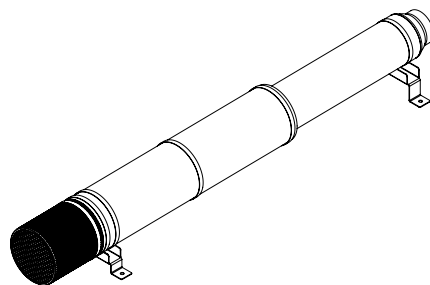
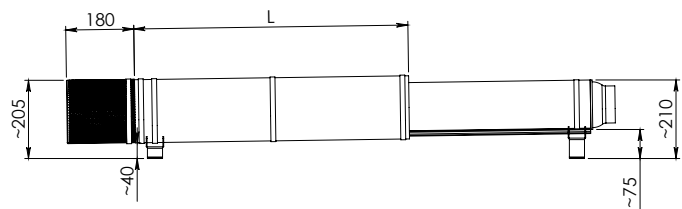
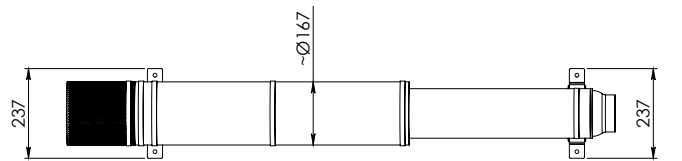
For horizontal installation and/or inside tanks, a cooling liner must be used to safeguard the motor.

Kit of cooling liners of different lengths, used to ensure perfect cooling of the 6" motor in case of installation inside tanks or containers, or in any location where a minimum cooling flow on the motor cannot be guaranteed.

The length of the pipe must be selected based on the type of motor and its power, as indicated in the following table.

SUITABLE FOR USE ON S6, SR6 E SM6 ELECTRIC PUMPS COUPLED WITH 6" MOTOR.

POWER INPUT 50 Hz	MOTOR POWER		MOTOR TYPE	
	HP	kW	6GF-6GX	TR6
THREE-PHASE	5,5	4	725 PIPE KIT	960 PIPE KIT
	7,5	5,5		
	10	7,5		
	12,5	9,3		
	15	11	960 PIPE KIT	1220 PIPE KIT
	17,5	13		
	20	15		
	25	18,5		
	30	22	1220 PIPE KIT	1490 PIPE KIT
	35	26		
	40	30		
	50	37		



in order to determine the cooling flow speed v [m/s] along the motor liner, the following formula can be used:

$$v = \frac{\frac{Q}{2}}{\pi \cdot \left(\frac{D^2}{4} - \frac{d^2}{4} \right)}$$

On the other hand, in order to determine the correct diameter of the cooling liner, to ensure that the minimum required cooling flow condition is met at a certain pump flow level, the following formula can be used:

$$D = \sqrt{4 \cdot \left(\frac{Q}{v \cdot \pi} + \frac{d^2}{4} \right)}$$

Q [m³/s] = flow at the point of operation of the electric pump.
 D [m] = well diameter.
 d [m] = motor diameter.
 v [m/s] = cooling flow speed.

ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS



TECHNICAL DATA

Nominal power input voltage: 400 V +/- 5%

Phases: 3

Frequency: 50-60 Hz

Number of pumps that can be connected: 1

Maximum nominal power of use:
from 3 to 110 kW (depending on model).

Maximum nominal current of use: from 10 Amp to 250 Amp.

Ambient temperature operation limits: from +4 °C to +40 °C.

Relative humidity (without condensation):

50% at 40 °C MAX (90% a 20 °C)

Max. altitude: 3000 m (a.s.l.).

Protection class: IP55

Control panel construction:

According to EN60204, EN 60439-1, and UNI EN 12845/10779.

COMPONENTS

The control and protection panel includes the following components

INTERIOR OF CABINET

Connector for the powering of a GSM Modem (230 V, protected by fuse).

Motor protection fuses (aM type); current surge relay-motor protectors are not permitted by the standard.

Auxiliary circuit protection fuses (Gg type).

Direct pump starters (up to 7,5 kW).

Star/triangle starters (11 kW and over).

24 V auxiliary circuit transformers.

Alarm relay with terminal box for remote status control (as required by the UNI EN 12845 standard).

System start-up input connection terminal box.

ON FRONT PANEL

Electric pump control unit with:

Multifunction instrument with display (voltmeter, ammeter, cosfi metre, wattmeter, alarms and status).

Start and stop pushbuttons.

Status and alarm notification lamps.

Alarm/notification lamp test pushbutton.

0 - 1 selector (0 = automatic disabled; 1 = automatic on), key removable only for position one (AUTOMATIC ON).

REMOTELY CONTROLLED ALARMS:

Voltage present.

Phase sequence.

Pump start request from the pressure switches.

Pump start request from priming tank.

Pump in operation.

Start failed.

The above alarms can be remotely controlled in the following ways:

With relay wiring to the CSR-1 control panel (optional).

With RS-485 wiring to the CSR-1 control panel (optional).

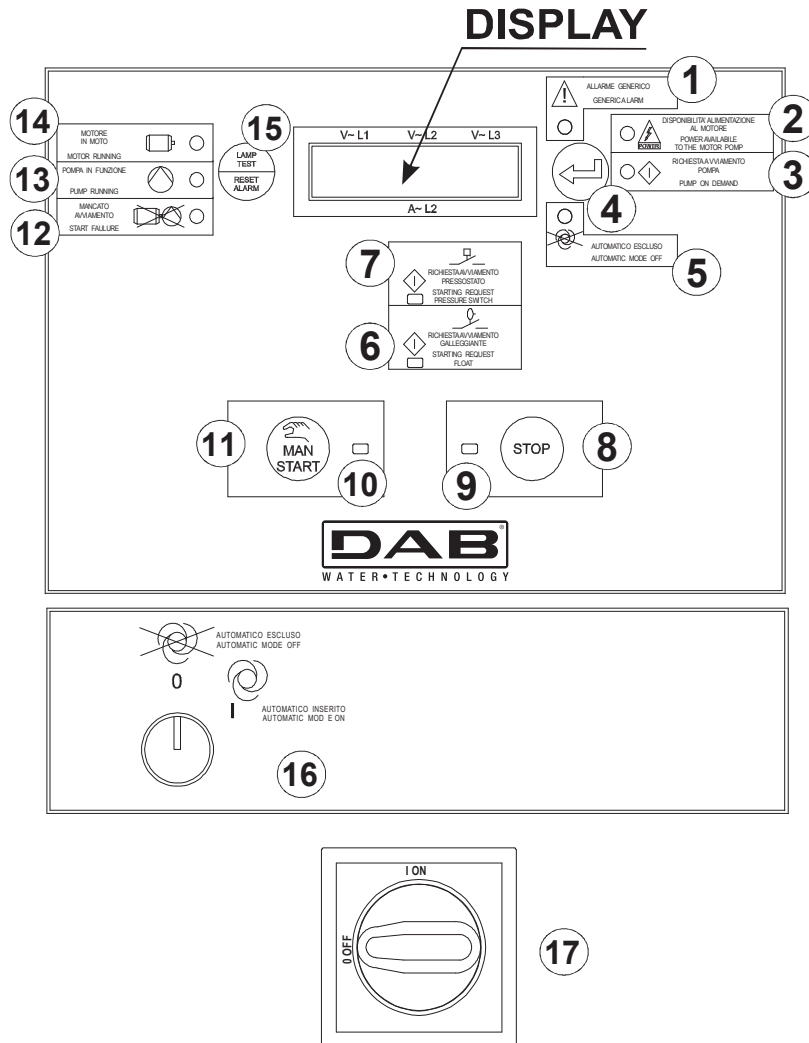
With GSM Modem inside the cabinet, for forwarding status and/or alarm signals (optional).

ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP CONTROL UNIT

The A1 electronic control unit supplied with the control panel offers the following features: automatic start from the pressure switches or the priming float switch, manual start, automatic monitoring of pump set faults and incorrect or unavailable power input voltage.



**ALIMENTAZIONE DELLA POMPA SPRINKLER
NON SPEGNERE IN CASO DI INCENDIO**

**SPRINKLER PUMP MOTOR SUPPLY
NOT TO BE SWITCHED OF IN THE EVENT OF FIRE**

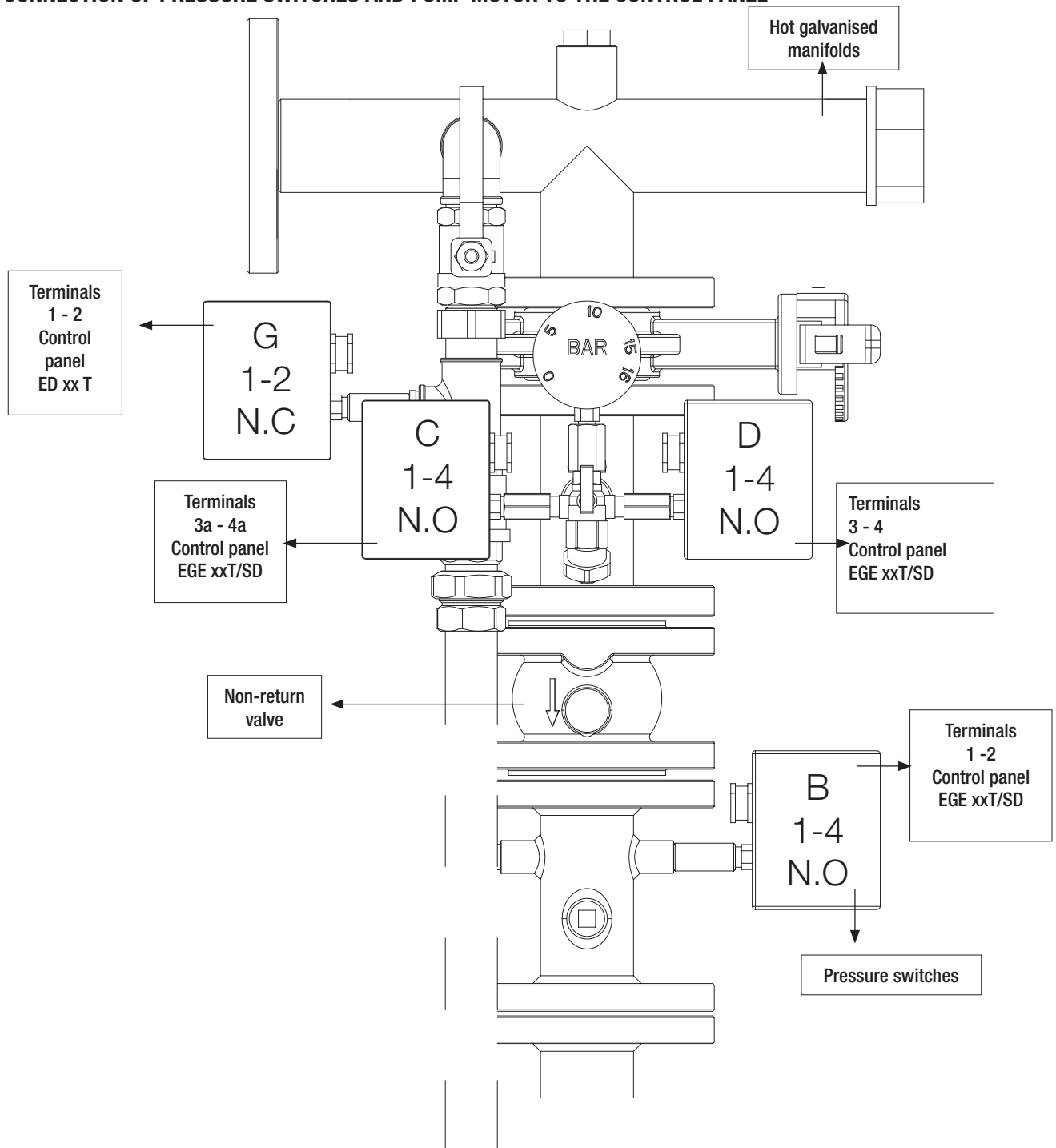
REF.	FUNCTION
1	LAMP - Generic alarm
2	LAMP - Power input to the motor detected
3	LAMP - Pump START request
4	Press to display the instruments
5	LAMP - Automatic start disabled
6	LAMP - START request from the priming tank float switch
7	LAMP - START request (call) from the pressure switches
8	MANUAL STOP pushbutton
9	LAMP - MANUAL STOP with STOP pushbutton notification

REF.	FUNCTION
10	LAMP - MANUAL START with MAN START pushbutton notification
11	MANUAL START pushbutton
12	LAMP - Start failed
13	LAMP - ELECTRIC PUMP RUNNING with motor running; detected by the electric pump running pressure switch
14	LAMP - MOTOR RUNNING; controlled by the ammeter detection
15	Reset lamp test pushbutton
16	Automatic mode disabling selector
17	Power input disconnection switch

S4 - S6 - SM8

UNI EN 12845 FIRE-FIGHTING SETS WITH SUBMERGED PUMPS

CONNECTION OF PRESSURE SWITCHES AND PUMP MOTOR TO THE CONTROL PANEL



CABLE CONNECTION SEQUENCE FOR SUBMERGED PUMPS WITH START:

MOTOR POWER UP TO 7,5 KW	DIRECT (DOL)	
	EGEXX T CONTROL PANEL TERMINAL BOX	SUBMERGED ELECTRIC PUMP CABLE COLOUR
	U1	BLACK
	V1	BLUE or GREY
	W1	BROWN

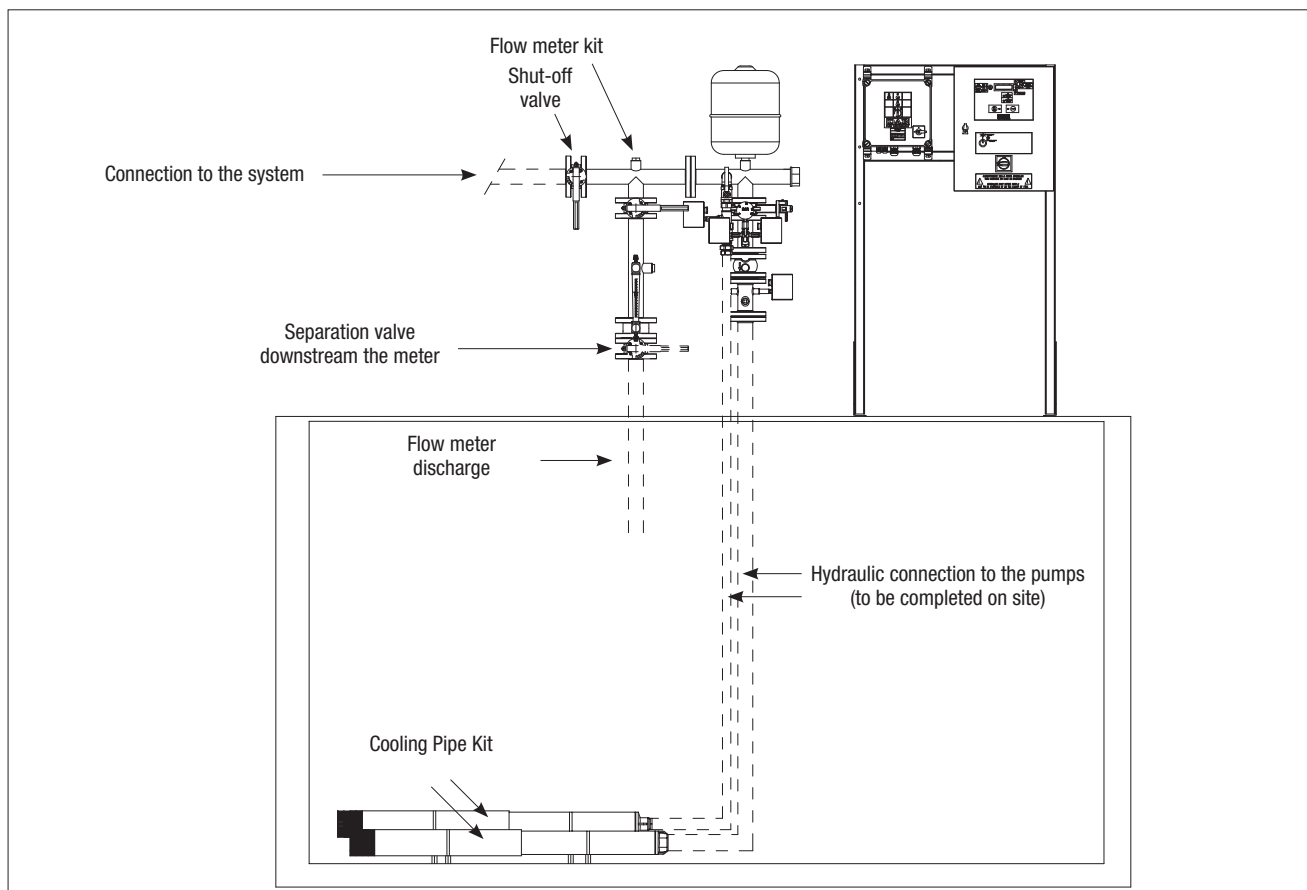
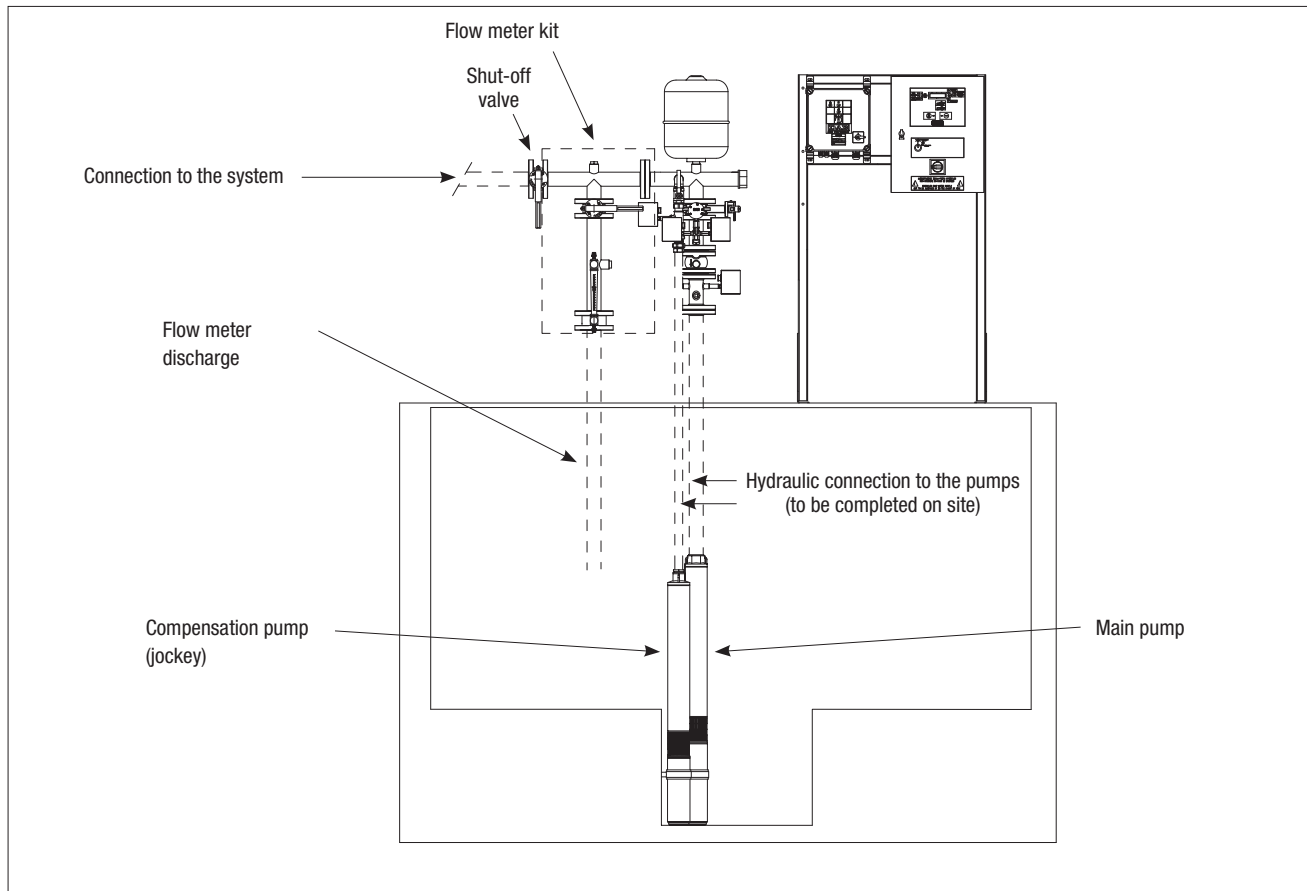
MOTOR POWER OVER TO 7,5 KW	STAR/TRIANGLE	
	EGEXX T SD CONTROL PANEL TERMINAL BOX	SUBMERGED ELECTRIC PUMP CABLE COLOUR
	U1	BLACK
	V1	BLUE or GREY
	W1	BROWN
	U2	BROWN
	V2	BLACK
	W2	BLUE or GREY

S4 - S6 - SM8

UNI EN 12845 FIRE-FIGHTING SETS WITH SUBMERGED PUMPS

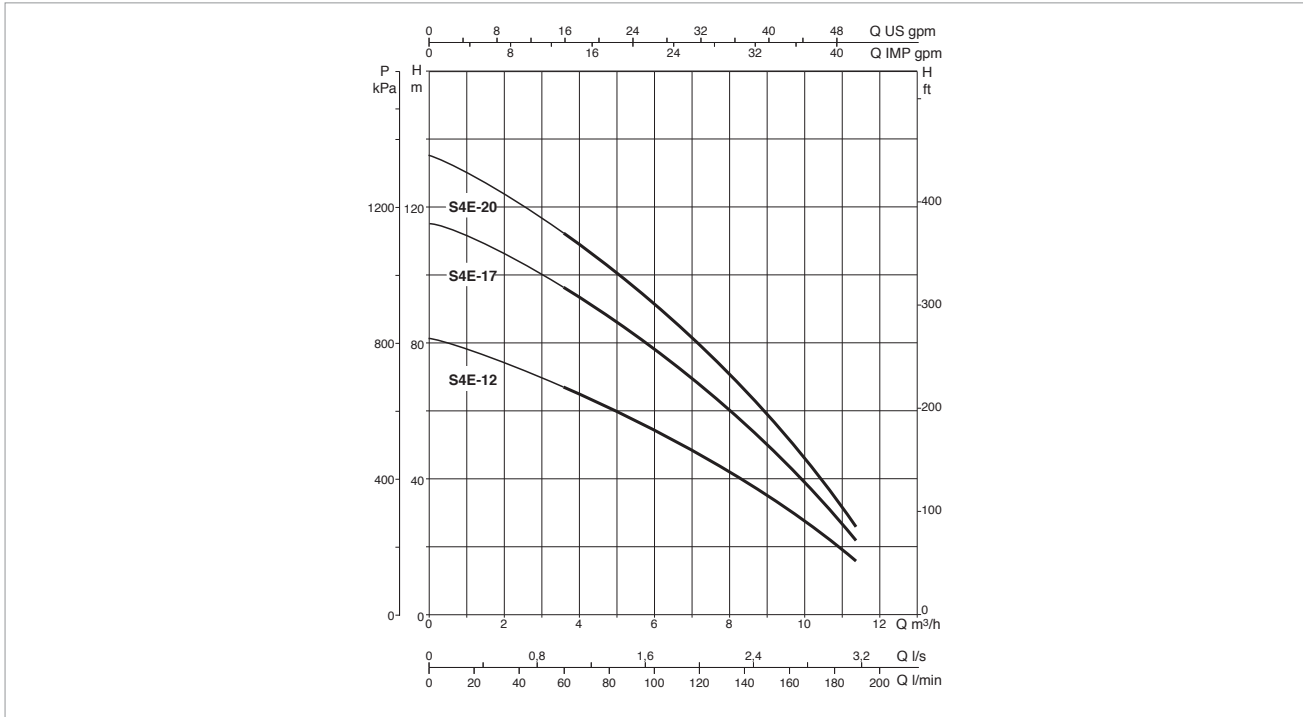
EXAMPLES OF CONFIGURATION OF A TWO-PUMP SET WITH JOCKEY PUMP AND FLOW RATE METER

Although not strictly necessary, for installation inside tanks or similar, we still recommend the use of cooling liners.



S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 11 m³/h



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.

SETS WITH 1 S4E SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4E 12 T 400/50 EN 12845	3 x 400 50 Hz	1.5	2	4.4	EGE 3T 400/50-60	11	8	6.5
1 S4E 17 T 400/50 EN 12845	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	11	11.4	9
1 S4E 20 T 400/50 EN 12845	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	11	13.5	11

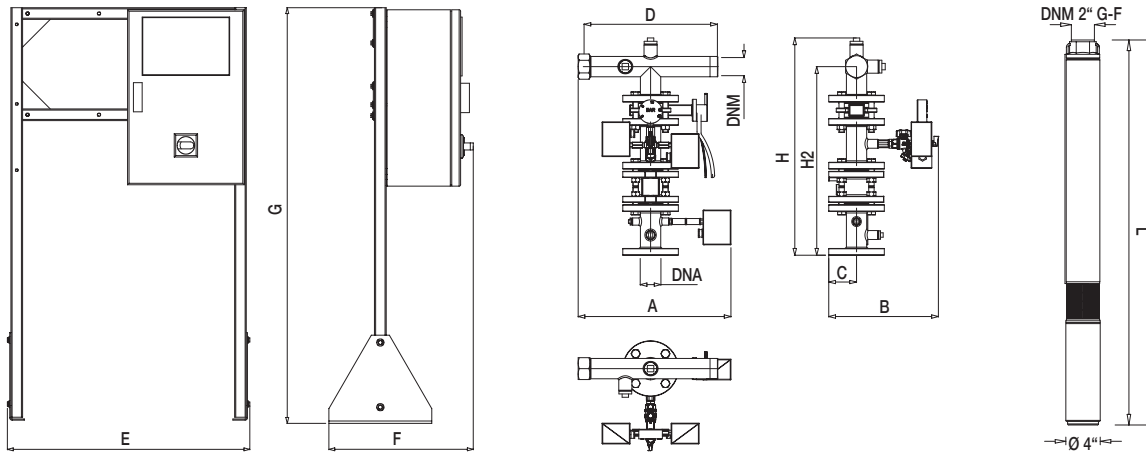
SETS WITH 1 S4E SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4E 12 T 400/50 EN 12845 - S4C 19T	3 x 400 50 Hz	1.5	2	4.4	EGE 3T 400/50-60	11	8	6.5
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1 S4E 17 T 400/50 EN 12845 - S4C 25T	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	11	11.4	9
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *
1 S4E 20 T 400/50 EN 12845 - S4C 25T	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	11	13.5	11
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

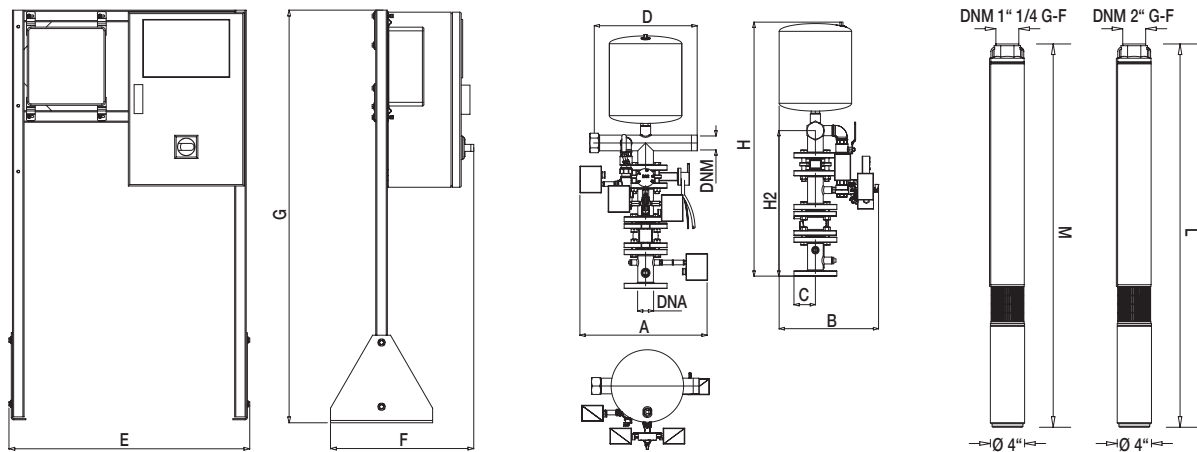
* Jockey pump

S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



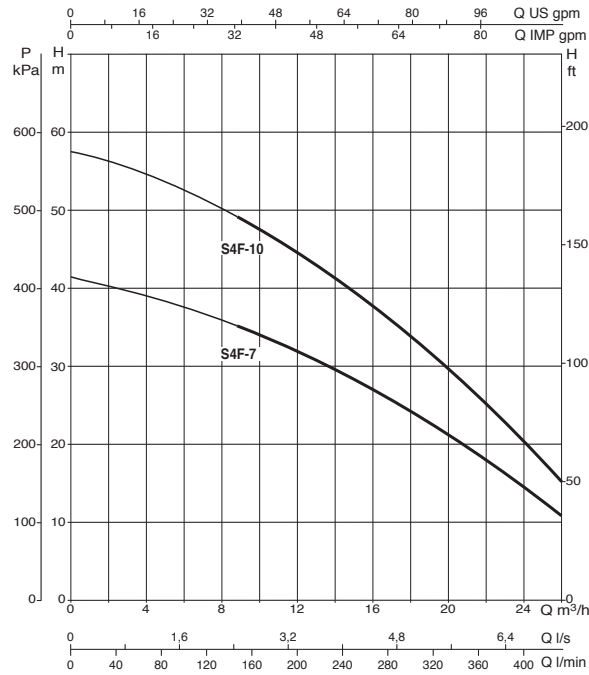
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (b x p x h)	WEIGHT kg
1 S4E 12 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1163	-	50	50	1000x1400x2200	137
1 S4E 17 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1502	-	50	50	1000x1400x2200	142
1 S4E 20 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1894	-	50	50	1000x1400x2200	145
1 S4E 12 T 400/50 EN 12845 - S4C 19T	490	385	83	395	830	490	1415	980	560	1163	1086	50	50	1000x1400x2200	172
1 S4E 17 T 400/50 EN 12845 - S4C 25T	490	385	83	395	830	490	1415	980	560	1502	1343	50	50	1000x1400x2200	180
1 S4E 20 T 400/50 EN 12845 - S4C 25T	490	385	83	395	830	490	1415	980	560	1894	1343	50	50	1000x1400x2200	185

S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 27 m³/h



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.

SETS WITH 1 S4F SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4F 7 T 400/50 EN 12845	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	27	4	3
1 S4F 10 T 400/50 EN 12845	3 x 400 50 Hz	3	4	8.3	EGE 3T 400/50-60	27	5.8	4.5

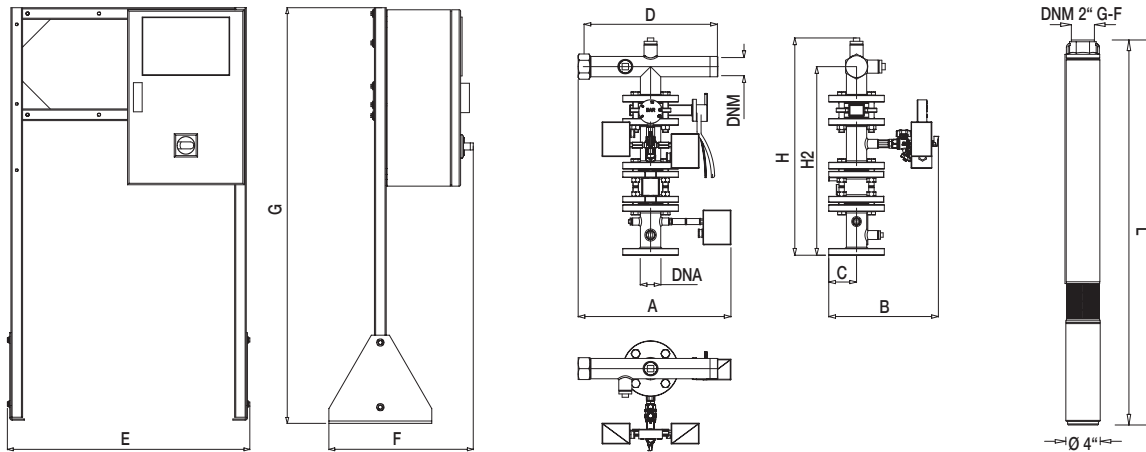
SETS WITH 1 S4F SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4F 7 T 400/50 EN 12845 - S4C 13T	3 x 400 50 Hz	2.2	3	5.9	EGE 3T 400/50-60	27	4	3
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S4F 10 T 400/50 EN 12845 - S4C 13T	3 x 400 50 Hz	3	4	8.3	EGE 3T 400/50-60	27	5.8	4.5
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *

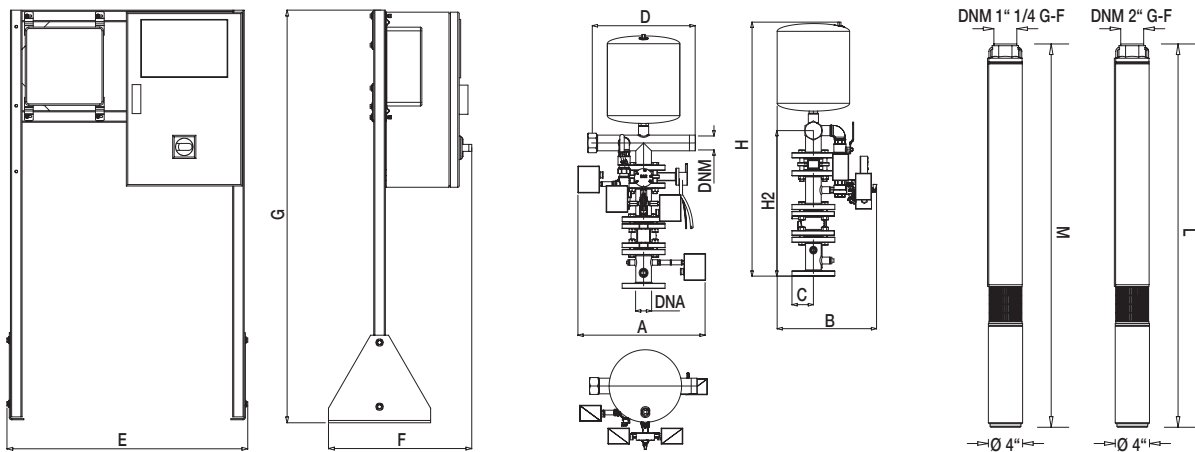
* Jockey pump

S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



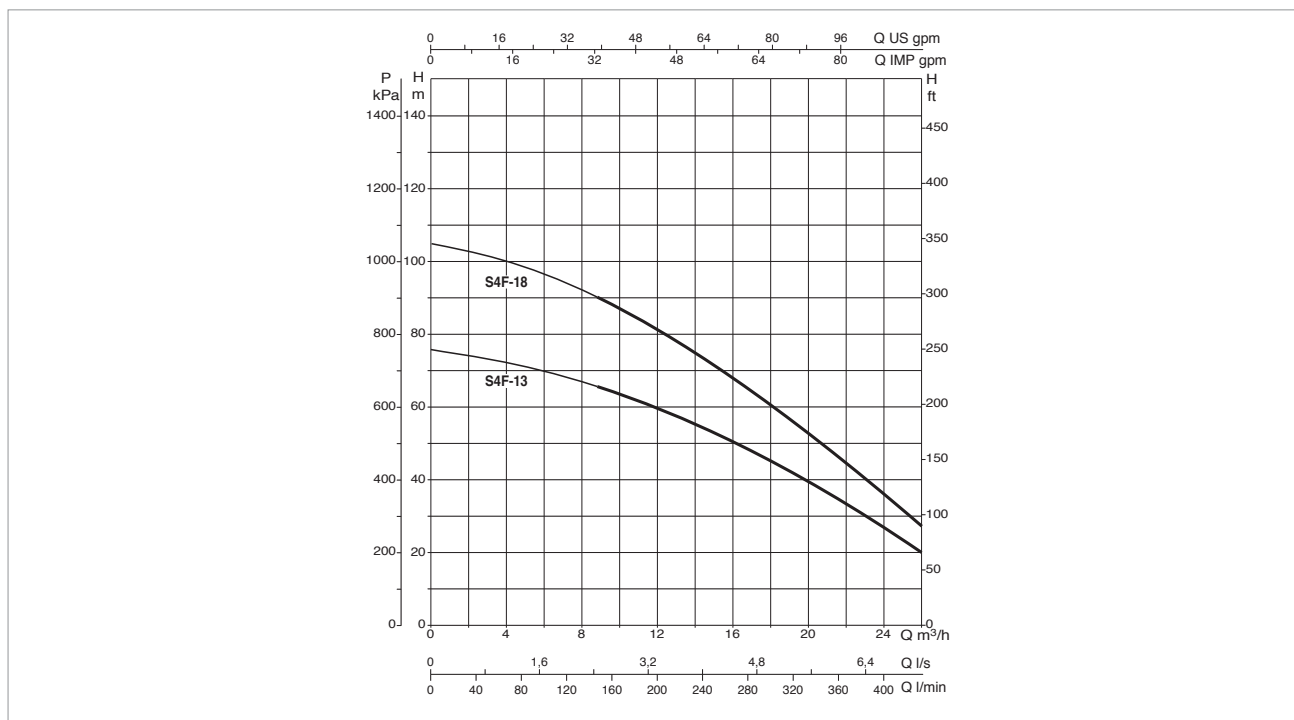
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S4F 7 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1079	-	50	50	1000x1400x2200	125
1 S4F 10 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1491	-	50	50	1000x1400x2200	129
1 S4F 7 T 400/50 EN 12845 - S4C 13T	490	385	83	395	830	490	1415	980	560	1079	871	50	50	1000x1400x2200	185
1 S4F 10 T 400/50 EN 12845 - S4C 13T	490	385	83	395	830	490	1415	980	560	1491	871	50	50	1000x1400x2200	190

S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 27 m³/h



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.

SETS WITH 1 S4F SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4F 13 T 400/50 EN 12845	3 x 400 50 Hz	4	5.5	10	EGE 5.5T 400/50-60	27	7.6	6
1 S4F 18 T 400/50 EN 12845	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	27	10.4	8

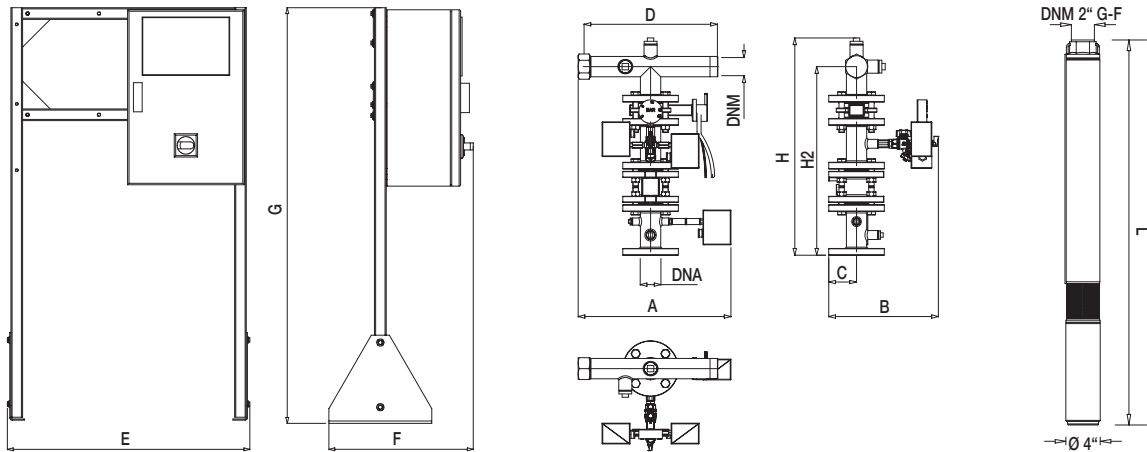
SETS WITH 1 S4F SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S4F 13 T 400/50 EN 12845 - S4C 19T	3 x 400 50 Hz	4	5.5	10	EGE 5.5T 400/50-60	27	7.6	6
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1 S4F 18 T 400/50 EN 12845 - S4C 25T	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	27	10.4	8
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

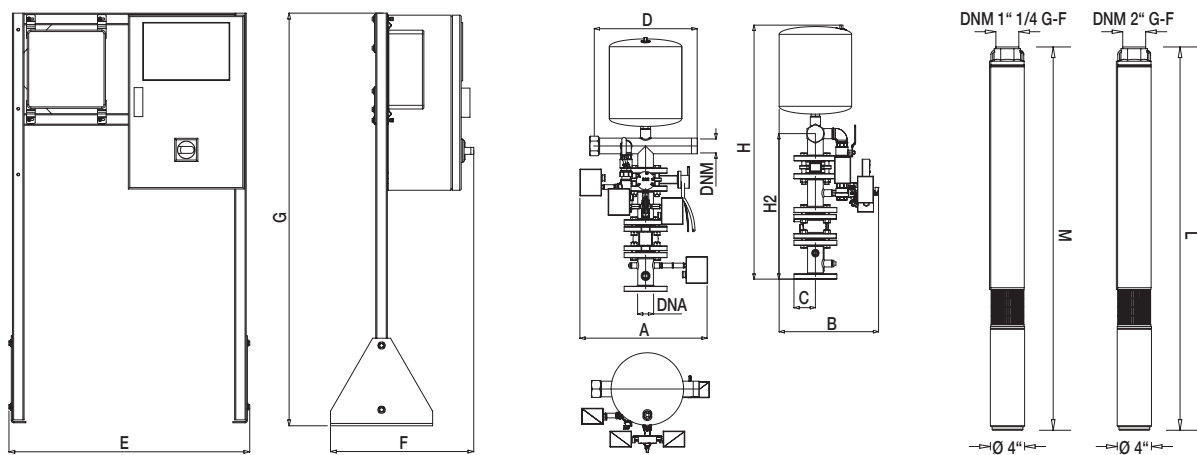
* Jockey pump

S4 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



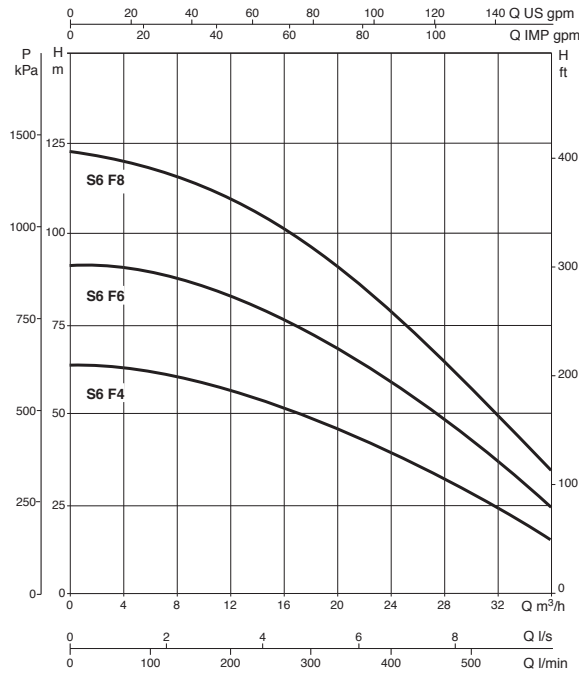
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S4F 13 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	1715	-	50	50	1000x1400x2200	153
1 S4F 18 T 400/50 EN 12845	455	325	83	395	830	490	1415	645	560	2156	-	50	50	1000x1400x2200	175
1 S4F 13 T 400/50 EN 12845 - S4C 19T	490	385	83	395	830	490	1415	980	560	1715	1086	50	50	1000x1400x2200	182
1 S4F 18 T 400/50 EN 12845 - S4C 25T	490	385	83	395	830	490	1415	980	560	2156	1343	50	50	1000x1400x2200	213

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 36 m³/h



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.

SETS WITH 1 S6F SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6F 4 T 400/50 EN 12845	3 x 400 50 Hz	4	5.5	10.6	EGE 5.5T 400/50-60	36	6.1	4.5
1 S6F 6 T 400/50 EN 12845	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	36	9.1	7
1 S6F 8 T 400/50 EN 12845	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	36	12.2	9.5

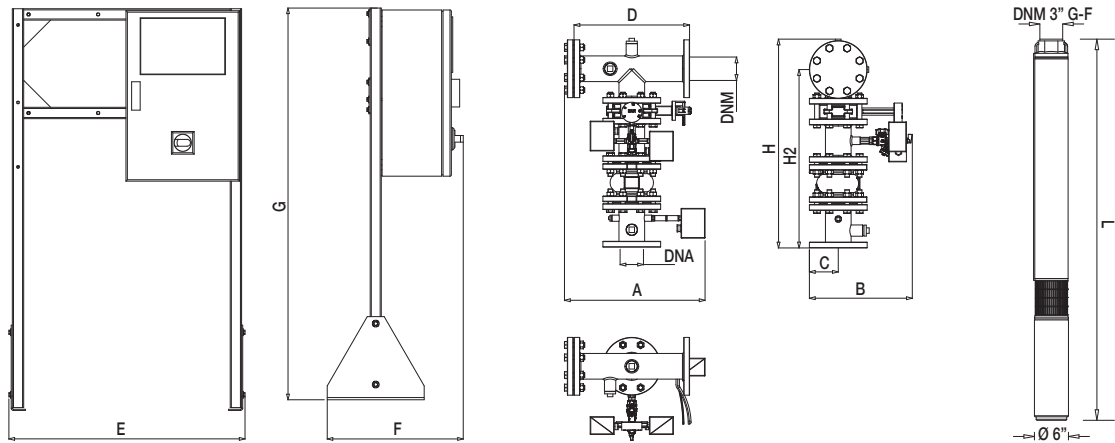
SETS WITH 1 S6F SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6F 4 T 400/50 EN 12845 - S4C 13T	3 x 400 50 Hz	4	5.5	10.6	EGE 5.5T 400/50-60	36	6.1	4.5
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S6F 6 T 400/50 EN 12845 - S4C 19T	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	36	9.1	7
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1 S6F 8 T 400/50 EN 12845 - S4C 25T	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	36	12.2	9.5
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

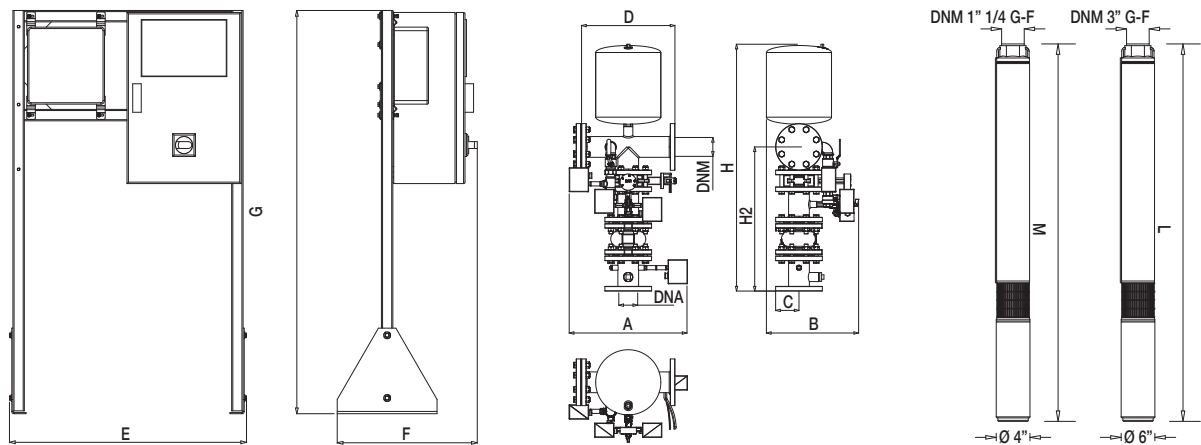
* Jockey pump

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



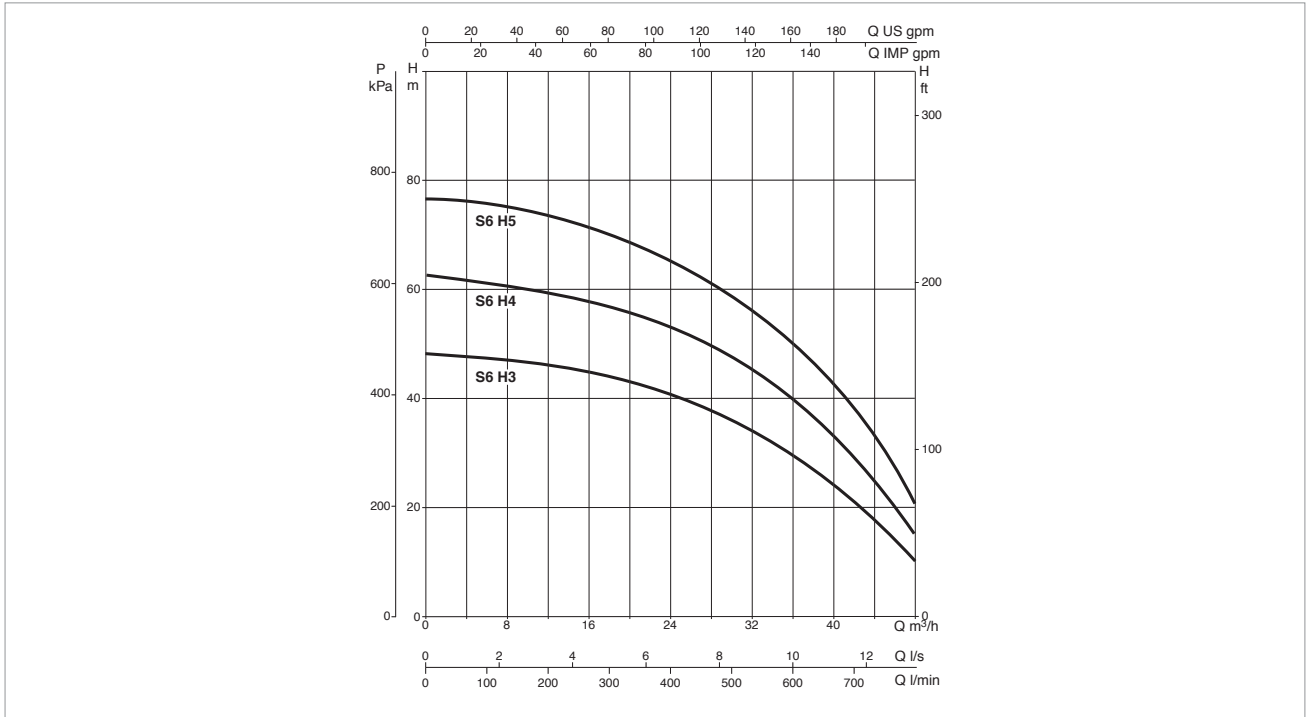
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S6F 4 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1111	-	80	80	1000x1400x2200	193
1 S6F 6 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1256	-	80	80	1000x1400x2200	202
1 S6F 8 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1398	-	80	80	1000x1400x2200	190
1 S6F 4 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1111	871	80	80	1000x1400x2200	256
1 S6F 6 T 400/50 EN 12845 - S4C 19T	505	395	100	400	830	490	1415	1055	615	1256	1086	80	80	1000x1400x2200	235
1 S6F 8 T 400/50 EN 12845 - S4C 25T	505	395	100	400	830	490	1415	1055	615	1398	1343	80	80	1000x1400x2200	248

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 48 m³/h



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.

SETS WITH 1 S6H SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6H 3 T 400/50 EN 12845	3 x 400 50 Hz	4	5.5	10.6	EGE 5.5T 400/50-60	48	4.8	3.5
1 S6H 4 T 400/50 EN 12845	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	48	6.3	5
1 S6H 5 T 400/50 EN 12845	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	48	7.8	6

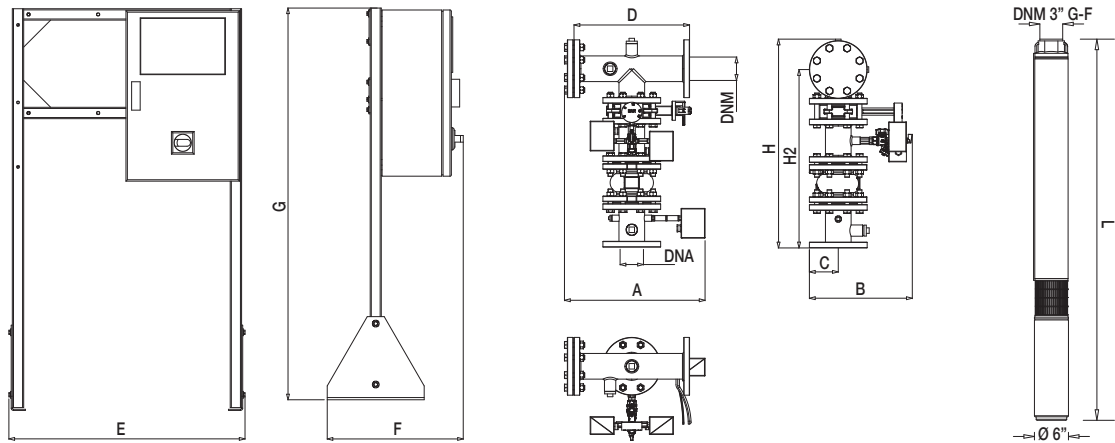
SETS WITH 1 S6H SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6H 3 T 400/50 EN 12845 - S4C 13T	3 x 400 50 Hz	4	5.5	10.6	EGE 5.5T 400/50-60	48	4.8	3.5
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S6H 4 T 400/50 EN 12845 - S4C 13T	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	48	6.3	5
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S6H 5 T 400/50 EN 12845 - S4C 19T	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	48	7.8	6
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *

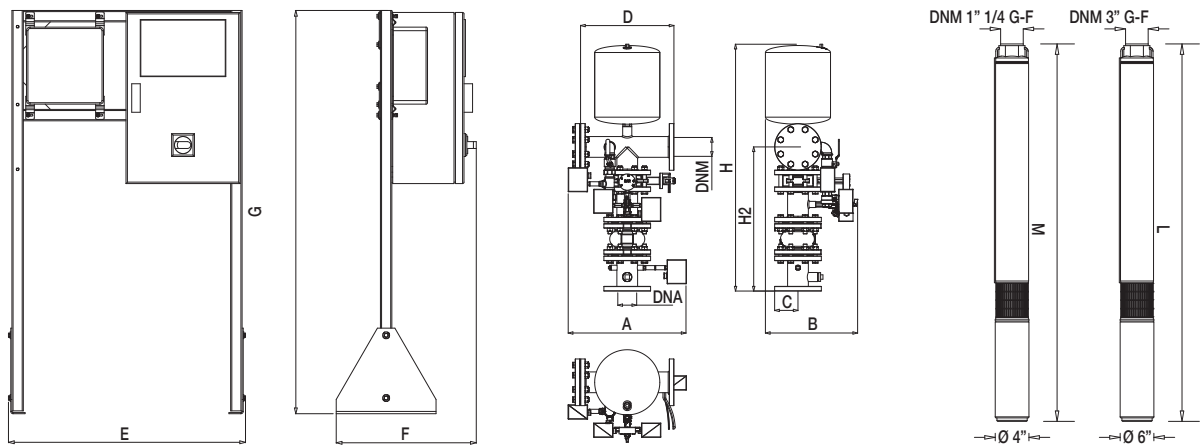
* Jockey pump

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



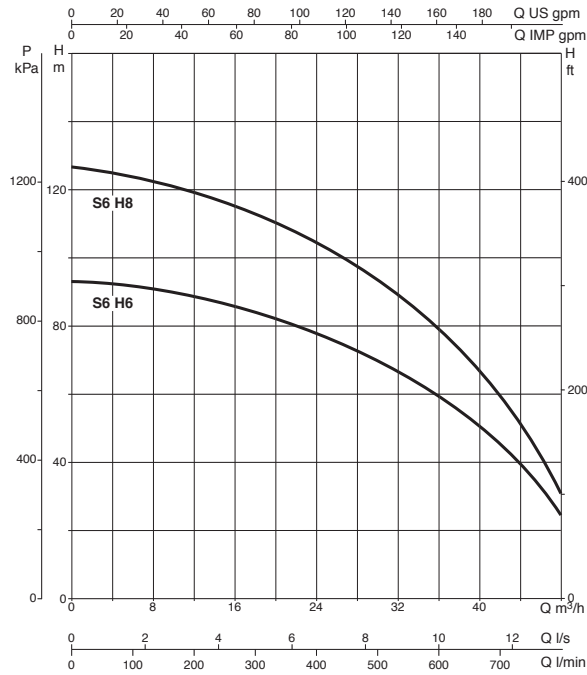
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S6H 3 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1063	-	80	80	1000x1400x2200	196
1 S6H 4 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1153	-	80	80	1000x1400x2200	200
1 S6H 5 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1242	-	80	80	1000x1400x2200	192
1 S6H 3 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1063	871	80	80	1000x1400x2200	228
1 S6H 4 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1153	871	80	80	1000x1400x2200	232
1 S6H 5 T 400/50 EN 12845 - S4C 19T	505	395	100	400	830	490	1415	1055	615	1242	1086	80	80	1000x1400x2200	237

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 48 m³/h



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.

SETS WITH 1 S6H SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6H 6 T 400/50 EN 12845	3 x 400 50 Hz	9.2	12.5	22	EGE 11T SD 400/50-60	48	9.4	7.5
1 S6H 8 T 400/50 EN 12845	3 x 400 50 Hz	11	15	25.5	EGE 11T SD 400/50-60	48	12.6	10

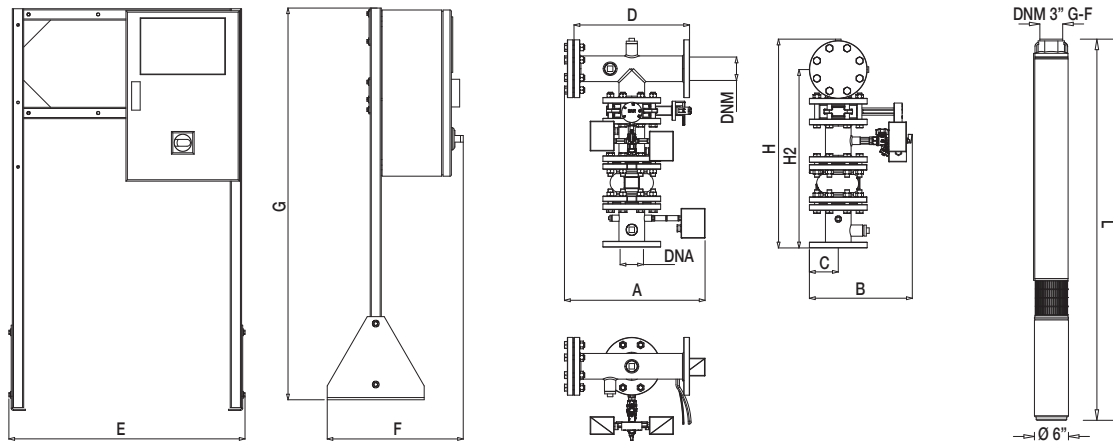
SETS WITH 1 S6H SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m ³ /h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6H 6 T 400/50 UNI EN 12845-S4C 19T	3 x 400 50 Hz	9.2	12.5	22	EGE 11T SD 400/50-60	48	9.4	7.5
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1 S6H 8 T 400/50 EN 12845-S4C 25T	3 x 400 50 Hz	11	15	25.5	EGE 11T SD 400/50-60	48	12.6	10
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

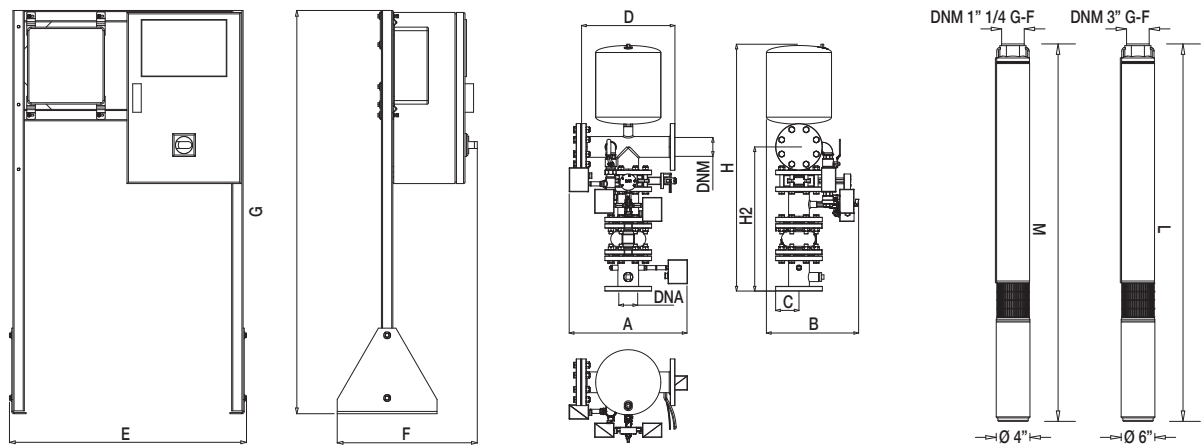
* Jockey pump

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



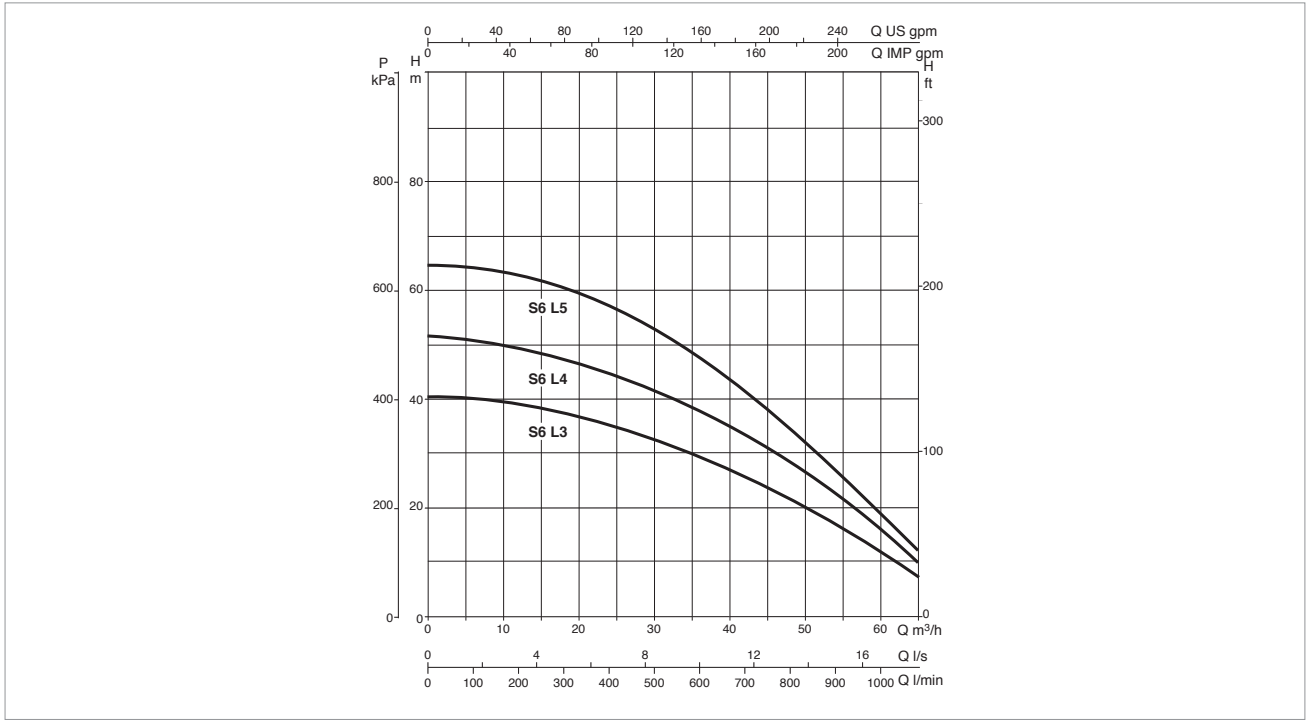
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S6H 6 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1327	-	80	80	1000x1400x2200	197
1 S6H 8 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1492	-	80	80	1000x1400x2200	202
1 S6H 6 T 400/50 EN 12845 - S4C 19T	505	395	100	400	830	490	1415	1055	615	1327	1086	80	80	1000x1400x2200	242
1 S6H 8 T 400/50 EN 12845 - S4C 25T	505	395	100	400	830	490	1415	1055	615	1492	1343	80	80	1000x1400x2200	265

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 66 m³/h



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.

SETS WITH 1 S6L SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6L 3 T 400/50 EN 12845	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	66	4	3
1 S6L 4 T 400/50 EN 12845	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	66	5.2	4
1 S6L 5 T 400/50 EN 12845	3 x 400 50 Hz	9.2	12.5	22	EGE 11T SD 400/50-60	66	6.5	5

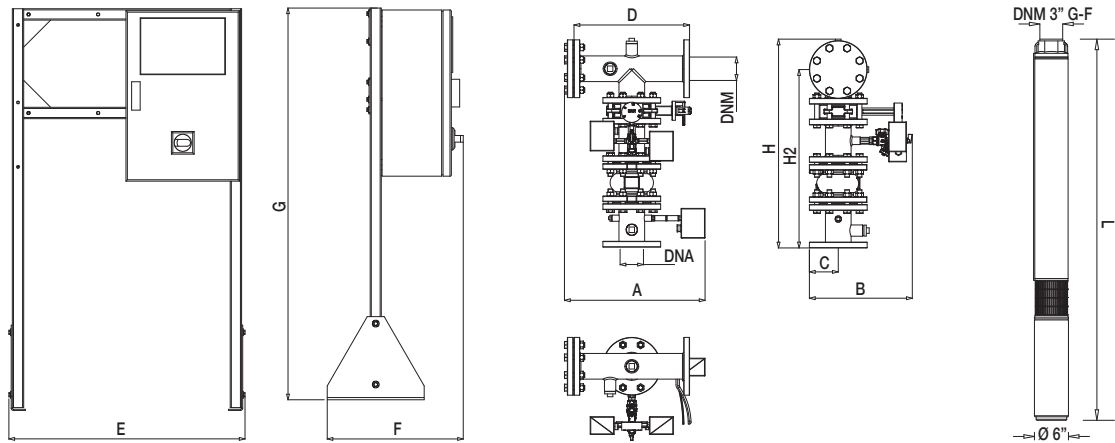
SETS WITH 1 S6L SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6L 3 T 400/50 EN 12845-S4C 13T	3 x 400 50 Hz	5.5	7.5	14	EGE 5.5T 400/50-60	66	4	3
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S6L 4 T 400/50 EN 12845-S4C 13T	3 x 400 50 Hz	7.5	10	18	EGE 7.5T 400/50-60	66	5.2	4
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *
1 S6L 5 T 400/50 EN 12845-S4C 13T	3 x 400 50 Hz	9.2	12.5	22	EGE 11T SD 400/50-60	66	6.5	5
	3 x 400 50-60 Hz *	0.75 *	1 *	2.4 *	ED 2.5T (108320350) *	4.2 *	7.1 *	6 *

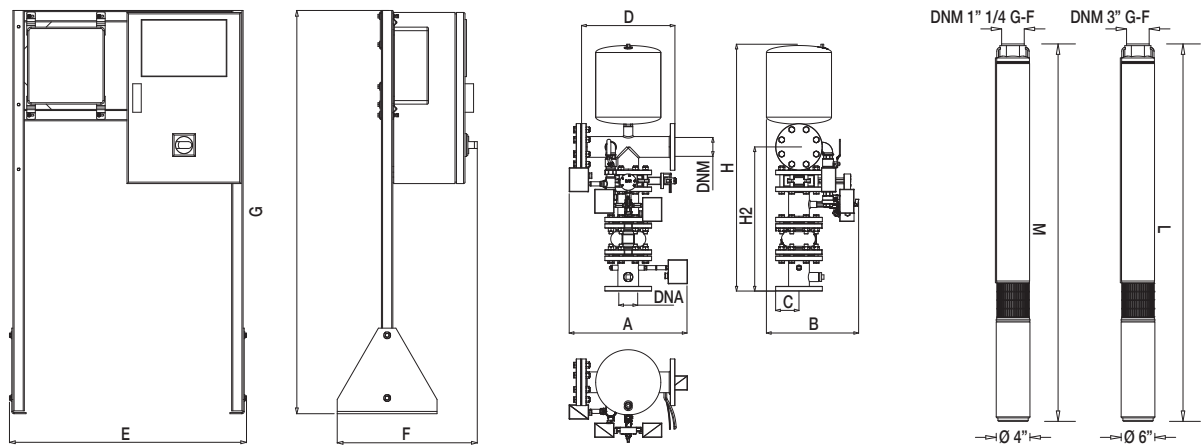
* Jockey pump

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



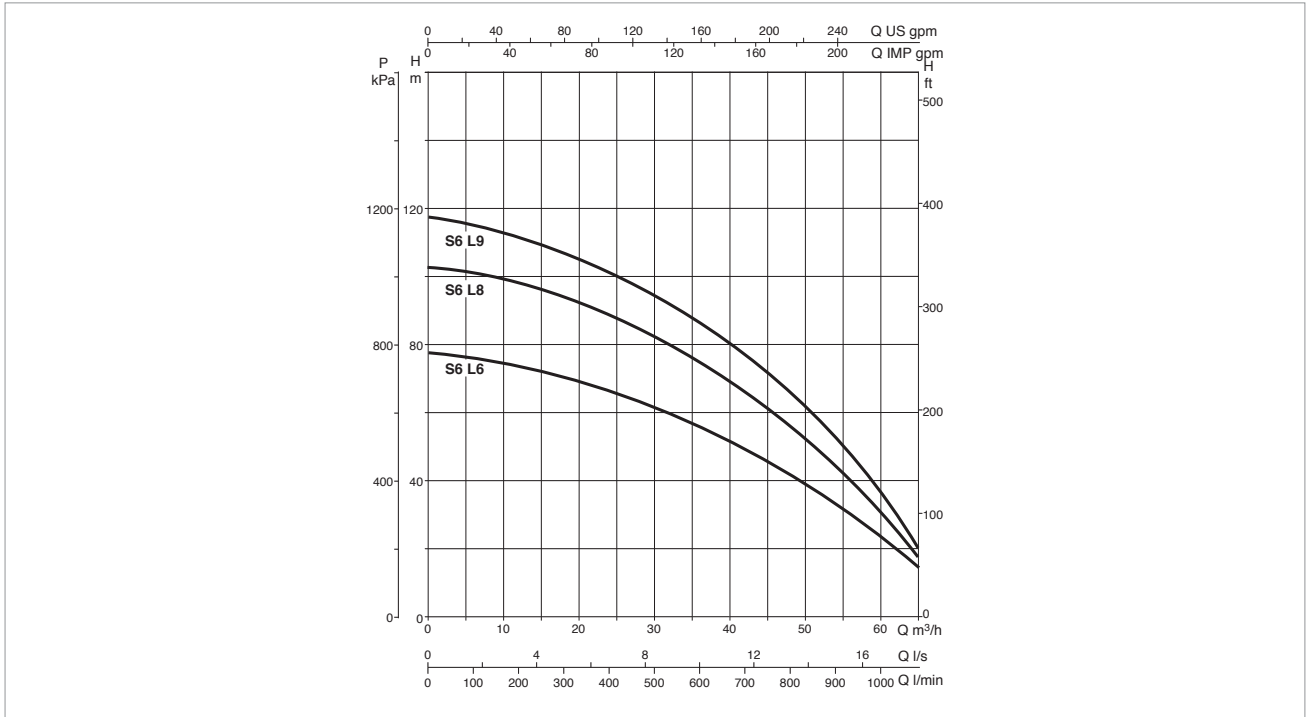
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S6L 3 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1094	-	80	80	1000x1400x2200	114
1 S6L 4 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1182	-	80	80	1000x1400x2200	117
1 S6L 5 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1267	-	80	80	1000x1400x2200	121
1 S6L 3 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1094	871	80	80	1000x1400x2200	236
1 S6L 4 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1182	871	80	80	1000x1400x2200	239
1 S6L 5 T 400/50 EN 12845 - S4C 13T	505	395	100	400	830	490	1415	1055	615	1267	871	80	80	1000x1400x2200	243

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 66 m³/h



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.

SETS WITH 1 S6L SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6L 6 T 400/50 EN 12845	3 x 400 50 Hz	11	15	25.5	EGE 11T SD 400/50-60	66	7.8	6
1 S6L 8 T 400/50 EN 12845	3 x 400 50 Hz	15	20	33.4	EGE 15T SD 400/50-60	66	10.4	8
1 S6L 9 T 400/50 EN 12845	3 x 400 50 Hz	15	20	33.4	EGE 15T SD 400/50-60	66	11.8	9.5

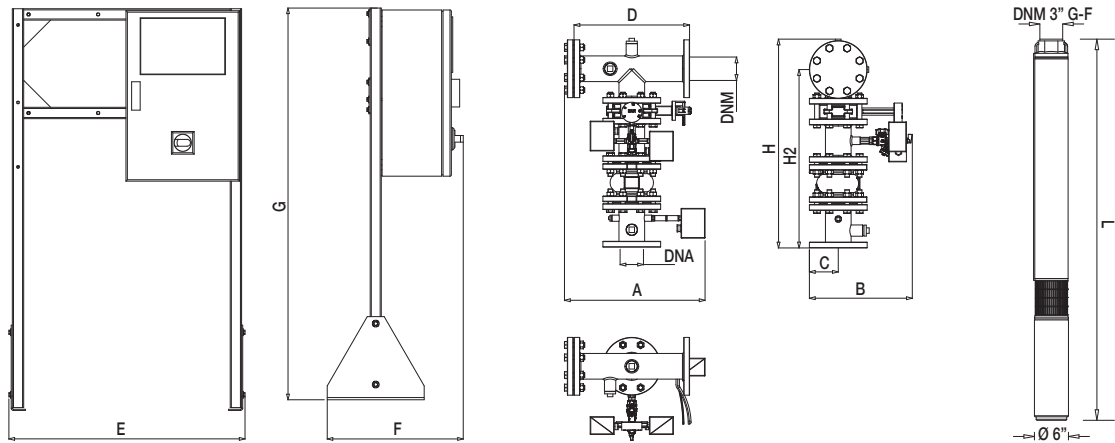
SETS WITH 1 S6L SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1 S6L 6 T 400/50 EN 12845-S4C 19T	3 x 400 50 Hz	11	15	25.5	EGE 11T SD 400/50-60	66	7.8	6
	3 x 400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1 S6L 8 T 400/50 EN 12845-S4C 25T	3 x 400 50 Hz	15	20	33.4	EGE 15T SD 400/50-60	66	10.4	8
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *
1 S6L 9 T 400/50 EN 12845-S4C 25T	3 x 400 50 Hz	15	20	33.4	EGE 15T SD 400/50-60	66	11.8	9.5
	3 x 400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

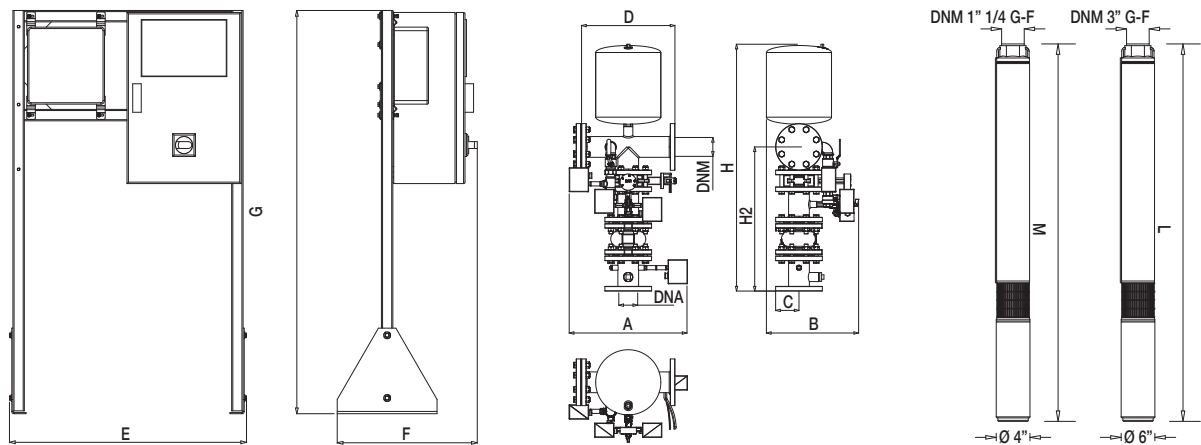
* Jockey pump

S6 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



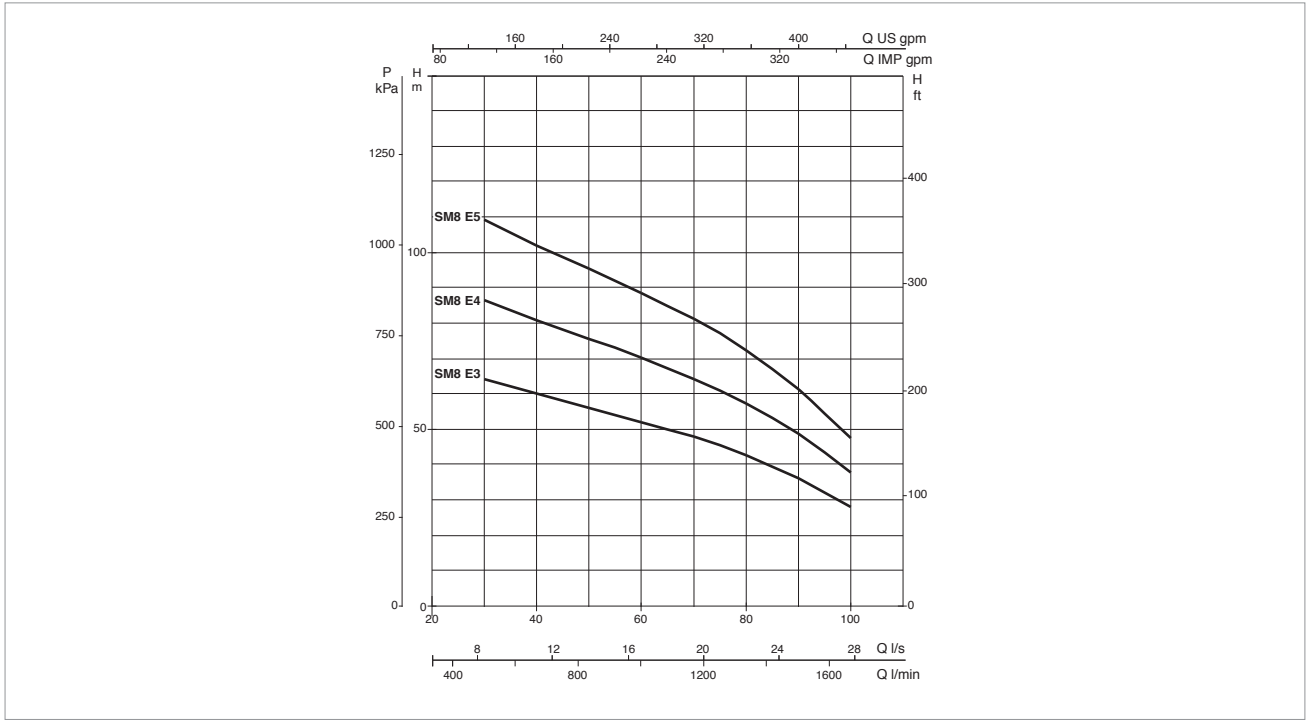
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1 S6L 6 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1372	-	80	80	1000x1400x2200	126
1 S6L 8 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1547	-	80	80	1000x1400x2200	150
1 S6L 9 T 400/50 EN 12845	485	355	100	400	830	490	1415	725	615	1607	-	80	80	1000x1400x2200	225
1 S6L 6 T 400/50 EN 12845 - S4C 19T	505	395	100	400	830	490	1415	1055	615	1372	1086	80	80	1000x1400x2200	248
1 S6L 8 T 400/50 EN 12845 - S4C 25T	505	395	100	400	830	490	1415	1055	615	1547	1343	80	80	1000x1400x2200	158
1 S6L 9 T 400/50 EN 12845 - S4C 25T	505	395	100	400	830	490	1415	1055	615	1607	1343	80	80	1000x1400x2200	245

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 100 m³/h



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.

SETS WITH 1 SM8E SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 E3A T 400/50 EN 12845	3 x 400 50 Hz	15	20	33.4	EGE 18.5T SD 400/50-60	100	7.4	6
1SM8 E4A T 400/50 EN 12845	3 x 400 50 Hz	18.5	25	41	EGE 22T SD 400/50-60	100	10	8
1SM8 E5A T 400/50 EN 12845	3 x 400 50 Hz	22	30	47	EGE 22T SD 400/50-60	100	12.6	10

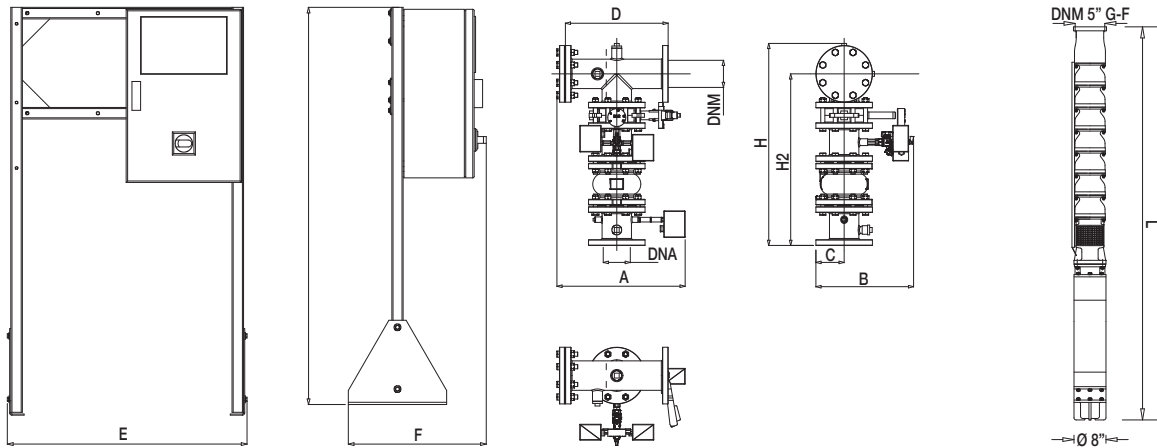
SETS WITH 1 SM8E SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 E3A T 400/50 EN 12845-S4C 19T	3x400 50 Hz	15	20	33.4	EGE 18.5T SD 400/50-60	100	7.4	6
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 E4A T 400/50 EN 12845-S4C 19T	3x400 50 Hz	18.5	25	41	EGE 22T SD 400/50-60	100	10	8
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 E5A T 400/50 EN 12845-S4C 25T	3x400 50 Hz	22	30	47	EGE 22T SD 400/50-60	100	12.6	10
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

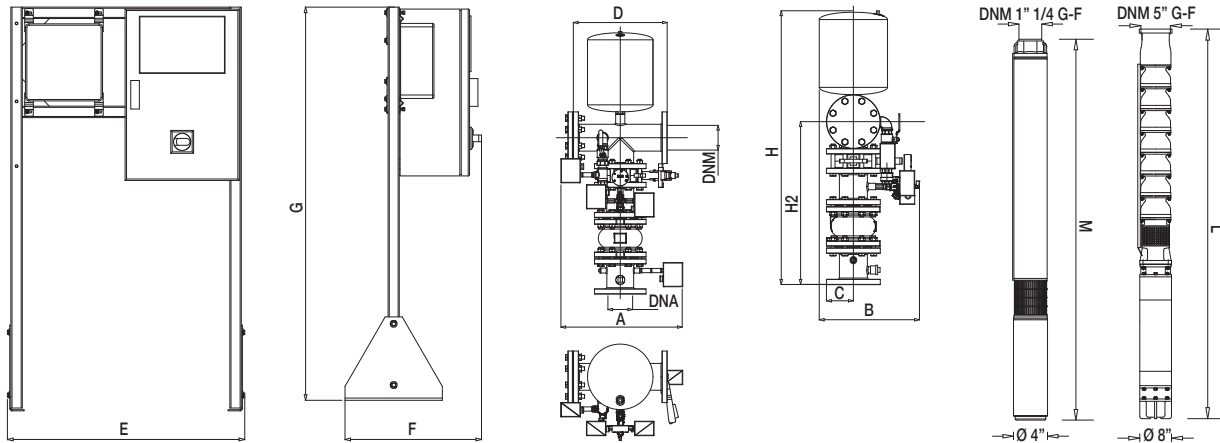
* Jockey pump

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



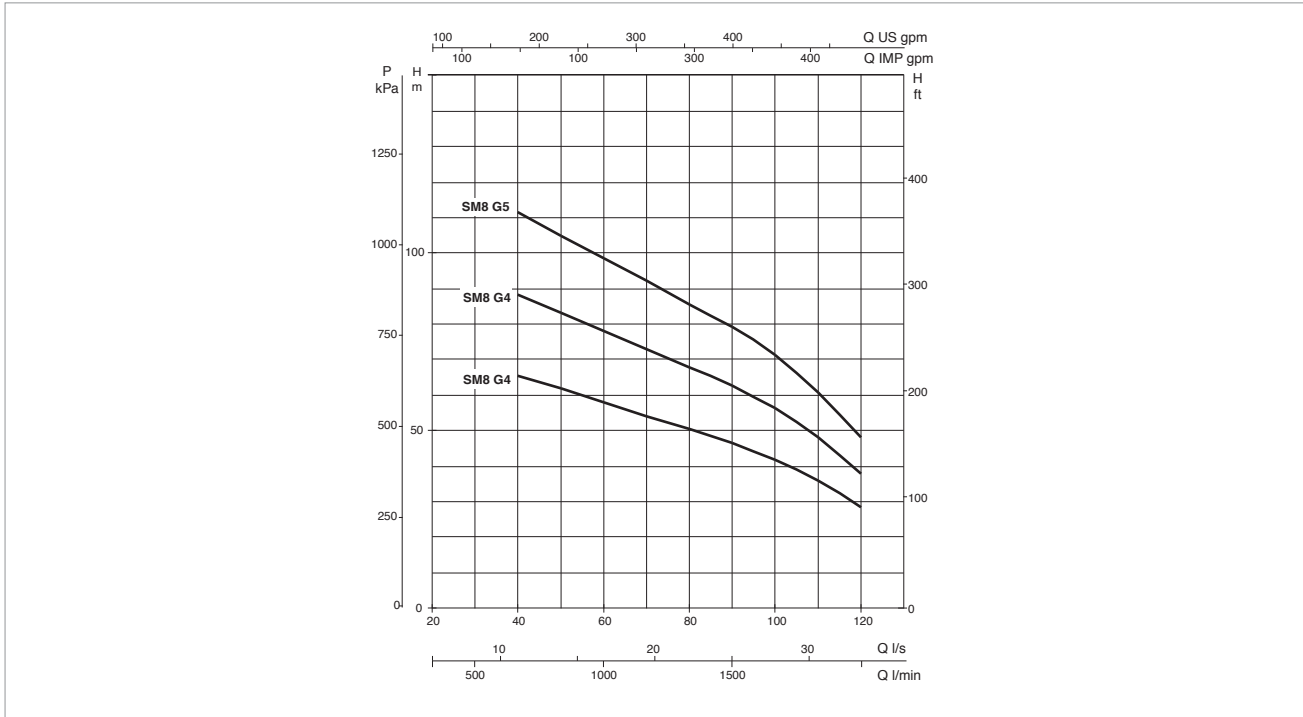
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1SM8 E3A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1653	-	100	100	1000x1400x2200	260
1SM8 E4A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1860	-	100	100	1000x1400x2200	265
1SM8 E5A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2052	-	100	100	1000x1400x2200	278
1SM8 E3A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	1653	1086	100	100	1000x1400x2200	280
1SM8 E4A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	1860	1086	100	100	1000x1400x2200	285
1SM8 E5A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	2052	1343	100	100	1000x1400x2200	298

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 120 m³/h



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.

SETS WITH 1 SM8G SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 G3A T 400/50 EN 12845	3 x 400 50 Hz	18.5	25	41	EGE 22T SD 400/50-60	120	7.9	6
1SM8 G4A T 400/50 EN 12845	3 x 400 50 Hz	22	30	47	EGE 22T SD 400/50-60	120	10.6	8.5
1SM8 G5A T 400/50 EN 12845	3 x 400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	120	13.4	10.5

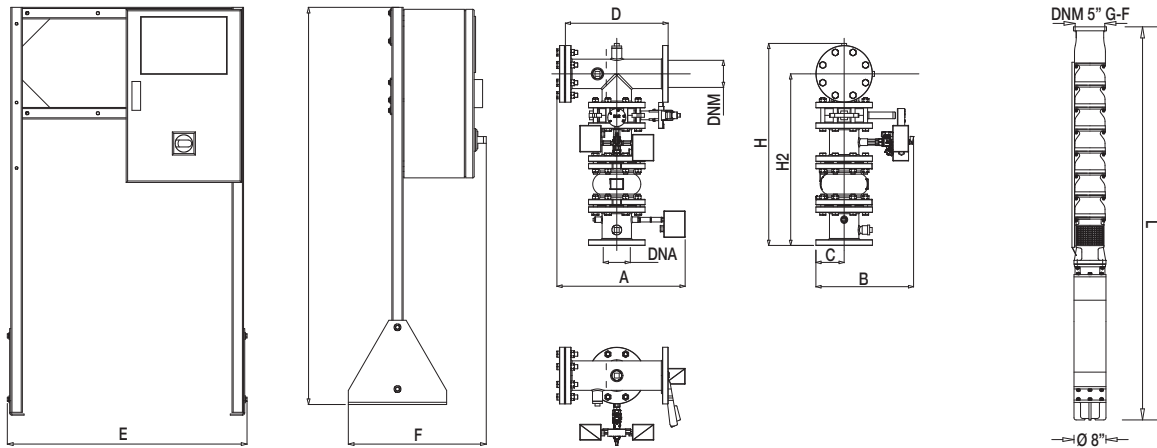
SETS WITH 1 SM8G SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 G3A T 400/50 EN 12845-S4C 19T	3x400 50 Hz	18.5	25	41	EGE 22T SD 400/50-60	120	7.9	6
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 G4A T 400/50 EN 12845-S4C 25T	3x400 50 Hz	22	30	47	EGE 22T SD 400/50-60	120	10.6	8.5
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *
1SM8 G5A T 400/50 EN 12845-S4C 25T	3x400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	120	13.4	10.5
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

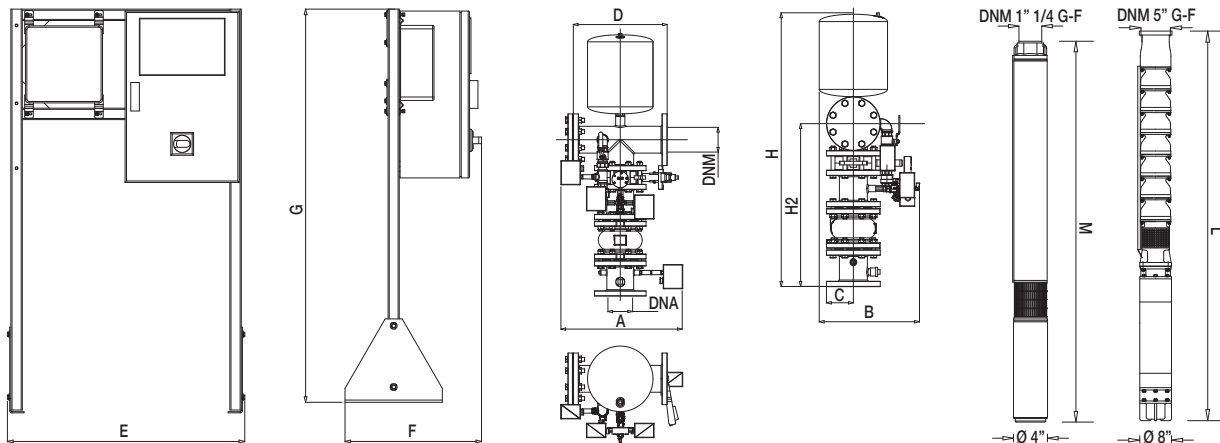
* Jockey pump

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



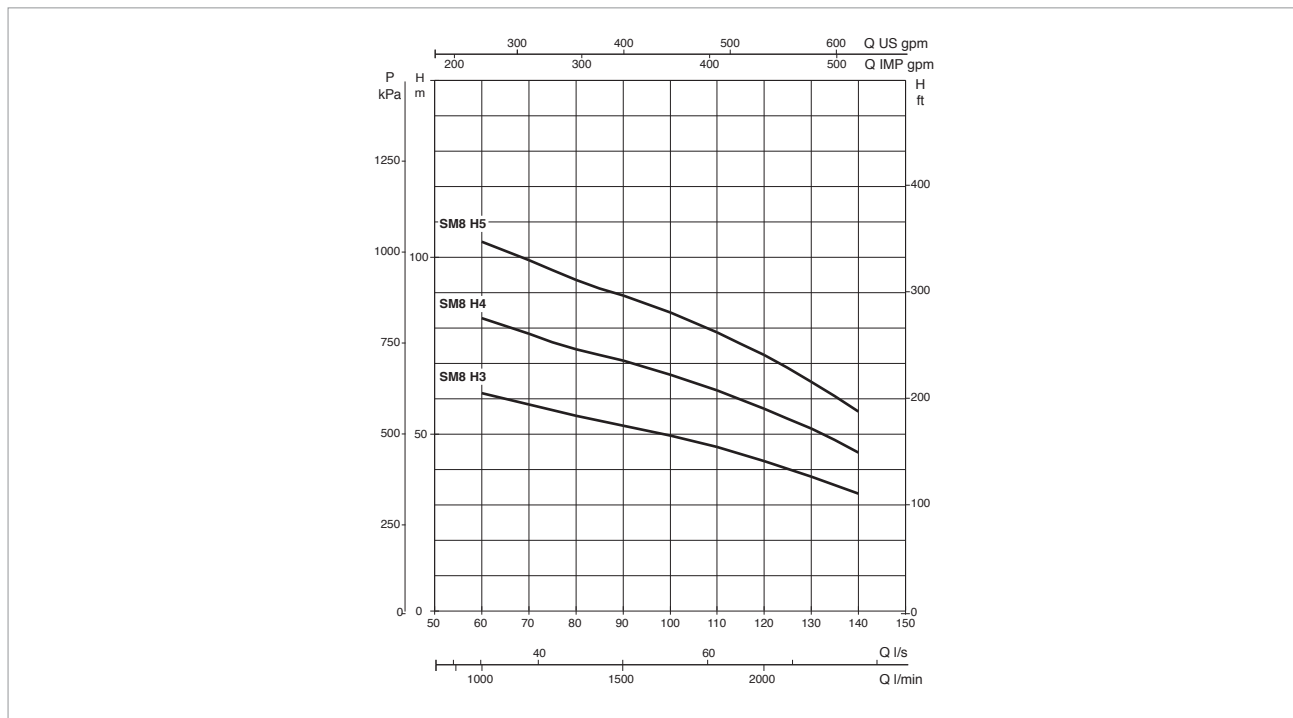
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1SM8 G3A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1728	-	100	100	1000x1400x2200	275
1SM8 G4A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1920	-	100	100	1000x1400x2200	280
1SM8 G5A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2182	-	100	100	1000x1400x2200	285
1SM8 G3A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	1728	1086	100	100	1000x1400x2200	295
1SM8 G4A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	1920	1343	100	100	1000x1400x2200	300
1SM8 G5A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	2182	1343	100	100	1000x1400x2200	305

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 140 m³/h



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.

SETS WITH 1 SM8H SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 H3A T 400/50 EN 12845	3 x 400 50 Hz	22	30	47	EGE 22T SD 400/50-60	140	7.4	6
1SM8 H4A T 400/50 EN 12845	3 x 400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	140	10	8
1SM8 H5A T 400/50 EN 12845	3 x 400 50 Hz	37	50	79.5	EGE 37T SD 400/50-60	140	12.7	10

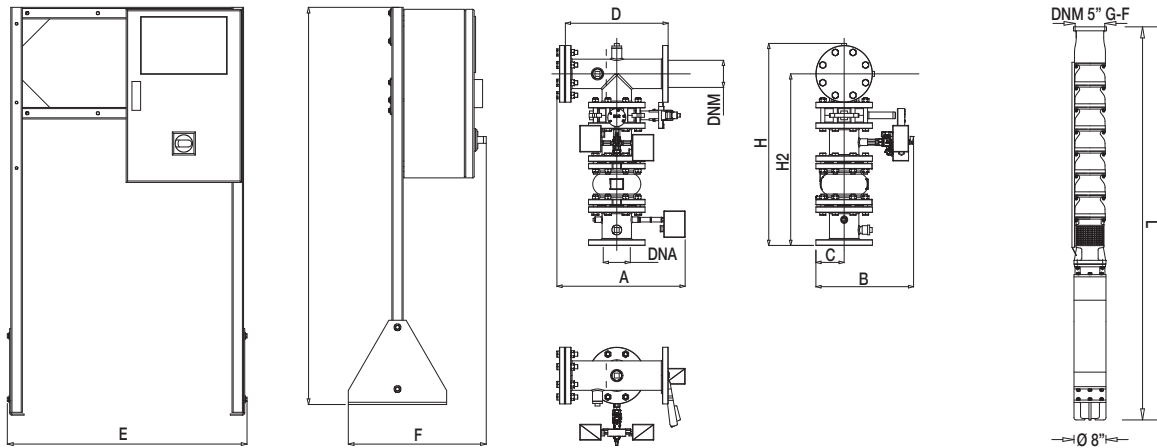
SETS WITH 1 SM8H SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 H3A T 400/50 EN 12845 - S4C 19T	3x400 50 Hz	22	30	47	EGE 22T SD 400/50-60	140	7.4	6
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 H4A T 400/50 EN 12845 - S4C 19T	3x400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	140	10	8
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 H5A T 400/50 EN 12845 - S4C 25T	3x400 50 Hz	37	50	79.5	EGE 37T SD 400/50-60	140	12.7	10
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

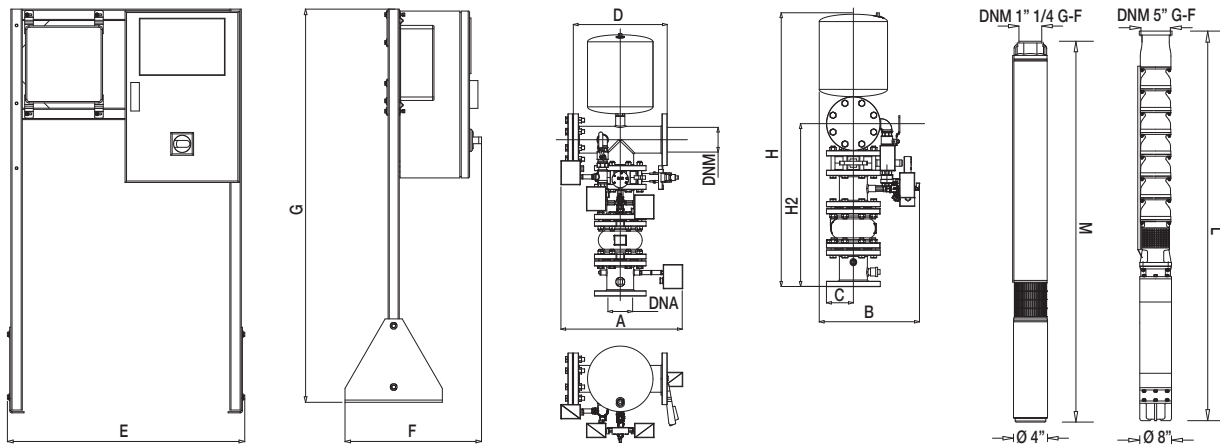
* Jockey pump

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

SETS WITH 1 SUBMERGED PUMP



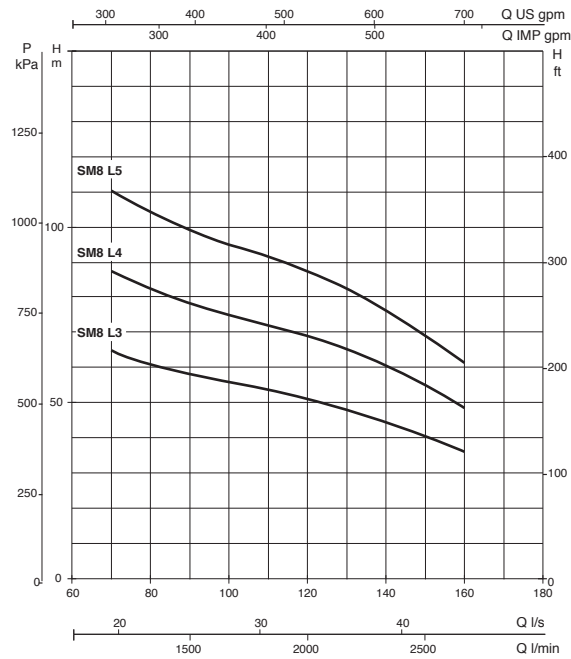
SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1SM8 H3A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1788	-	100	100	1000x1400x2200	244
1SM8 H4A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2050	-	100	100	1000x1400x2200	252
1SM8 H5A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2312	-	100	100	1000x1400x2200	260
1SM8 H3A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	1788	1086	100	100	1000x1400x2200	264
1SM8 H4A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	2050	1086	100	100	1000x1400x2200	272
1SM8 H5A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	2312	1343	100	100	1000x1400x2200	290

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

Pumped liquid temperature range: from 0°C to +40°C - Maximum ambient temperature: from 4°C to +40 °C - Maximum flow rate: 160 m³/h



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.

SETS WITH 1 SM8H SUBMERGED PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	MODEL CONTROL PANEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 L3A T 400/50 EN 12845	3 x 400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	160	7.7	6
1SM8 L4A T 400/50 EN 12845	3 x 400 50 Hz	37	50	79.5	EGE 37T SD 400/50-60	160	10.3	8
1SM8 L5A T 400/50 EN 12845	3 x 400 50 Hz	45	60	92	EGE 45T SD 400/50-60	160	13.1	10.5

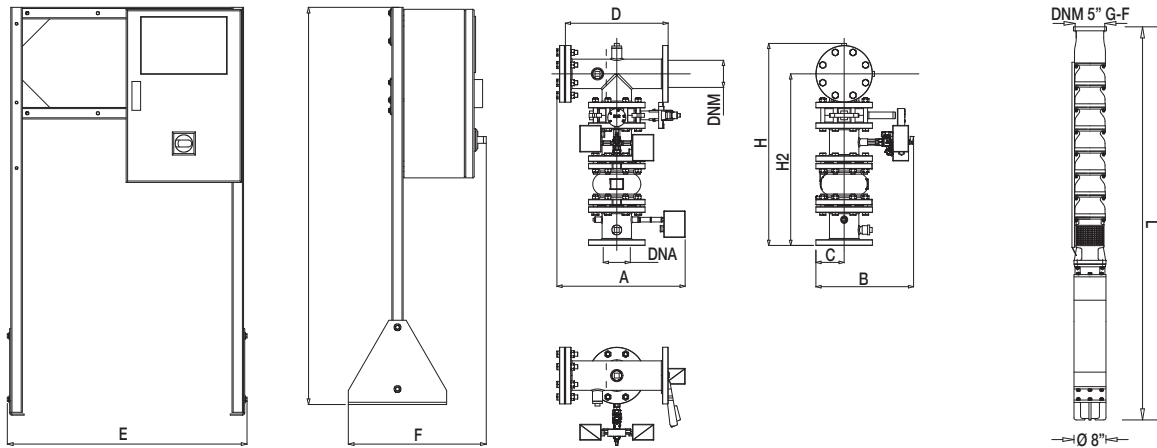
SETS WITH 1 SM8H SUBMERGED PUMP + JOCKEY PUMP

MODEL	POWER INPUT 50 Hz	P2 NOMINAL		In (A)	CONTROL PANEL MODEL	MAX FLOW RATE m³/h	MAX OBTAINABLE PRESSURE	STANDARD PRESSURE (bar)
		kW	Hp					
1SM8 L3A T 400/50 EN 12845-S4C 19T	3 x 400 50 Hz	30	40	61.5	EGE 30T SD 400/50-60	160	7.7	6
	3x400 50-60 Hz *	1.1 *	1.5 *	3.4 *	ED 1.5T (108320340) *	4.2 *	10.4 *	8 *
1SM8 L4A T 400/50 EN 12845-S4C 25T	3x400 50 Hz	37	50	79.5	EGE 37T SD 400/50-60	160	10.3	8
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *
1SM8 L5A T 400/50 EN 12845-S4C 25T	3x400 50 Hz	45	60	92	EGE 45T SD 400/50-60	160	13.1	10,5
	3x400 50-60 Hz *	1.5 *	2 *	4.4 *	ED 2.5T (108320350) *	4.2 *	13.7 *	11 *

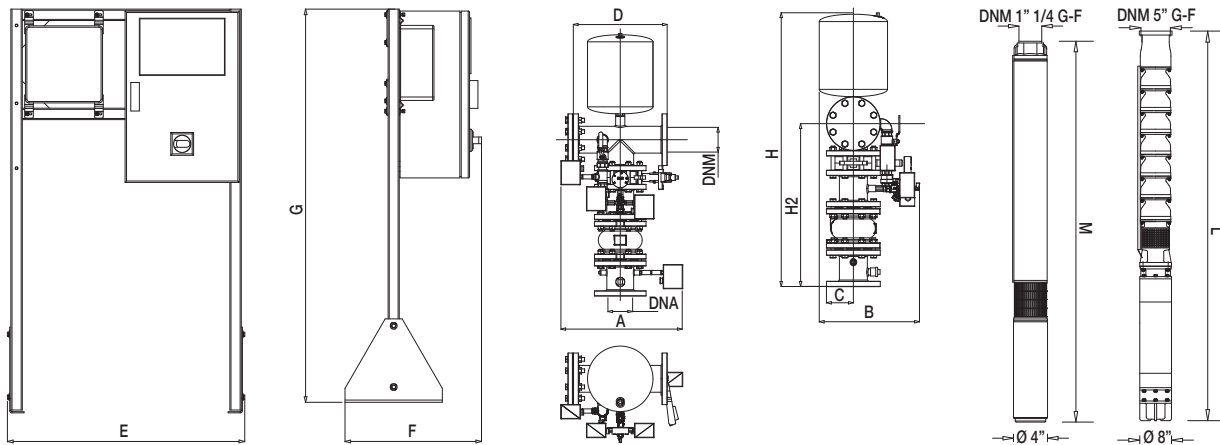
* Jockey pump

SM8 SETS - UNI EN 12845 FIRE-FIGHTING SETS

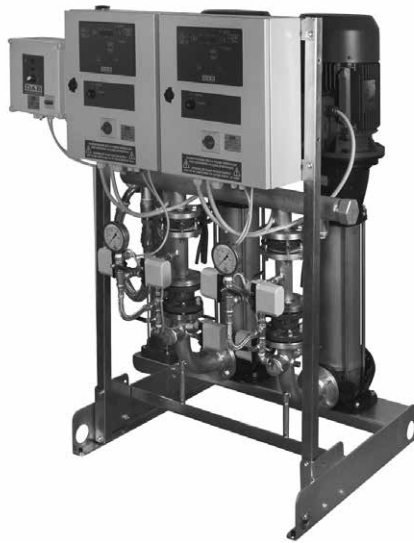
SETS WITH 1 SUBMERGED PUMP



SETS WITH 1 SUBMERGED PUMP + JOCKEY PUMP



MODEL	A	B	C	D	E	F	G	H	H2	L	M	DNA	DNM	PACKING (bpxh)	WEIGHT kg
1SM8 L3A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	1918	-	100	100	1000x1400x2200	380
1SM8 L4A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2180	-	100	100	1000x1400x2200	390
1SM8 L5A T 400/50 EN 12845	500	380	110	400	830	490	1415	785	665	2402	-	100	100	1000x1400x2200	400
1SM8 L3A T 400/50 EN 12845 - S4C 19T	520	410	110	400	830	490	1415	1120	665	1918	1086	100	100	1000x1400x2200	400
1SM8 L4A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	2180	1343	100	100	1000x1400x2200	410
1SM8 L5A T 400/50 EN 12845 - S4C 25T	520	410	110	400	830	490	1415	1120	665	2402	1343	100	100	1000x1400x2200	420



TECHNICAL DATA

Operating range: from 4 to 29 m³/h

Pumped liquid: clean, free of solids and abrasives, non-viscous, non-aggressive, non-crystallised and chemically neutral, with properties similar to water.

Pumped liquid temperature range: from -15 to 70 °C.

Maximum ambient temperature: + 40°C

Maximum operating pressure: 14 bar (1400 kPa) PN16

TECHNICAL DATA

.Fire-fighting pump sets in accordance with UNI EN 12845 European Standard
Fixed fire-fighting installations - Automatic sprinkler systems

NOTES ON UNI EN 12845

UNI EN 12845, the Italian version of European Standard EN 12845, sets the design, installation and maintenance criteria for sprinkler systems. It replaces the earlier Italian standards UNI 9489 and UNI 9490.

An automatic sprinkler system is designed to detect the presence of fire and extinguish it during the initial stages, or to keep flames under control until they can be extinguished fully using other means.

The classic sprinkler system is composed of: a water source, a fire-fighting pump unit, a series of control valves, and a sprinkler circuit.

MULTI-PUMP SET COMPOSITION

The pumps of UNI EN 12845 sets will have the same characteristics; in addition:

- if TWO pumps are installed, each pump must deliver the total system load (100 %),
- if THREE pumps are installed, each pump must deliver 50 % of the load required by the design.

"In applications in which more than one pump is installed with higher or duplicated feed, only one of the pumps will be electrically driven (section 10.2 of the standard)".

In case of single water supply, there are no limitations on the number of electric pumps that can be installed.

UNI EN 12845 FIRE-FIGHTING PUMP SET OPERATION

In normal conditions, (zero water request), the system is under static pressure.

The first time there is a water request, the compensation pump activates (if present), reinstating the system pressure.

In case of significant water request (activation of the fire-fighting sprinklers), the pressure drops until the two pressure switches connected in series activate the main pump.

The two pressure switches must be calibrated to start the pumps at the following pressure values:

ONE-PUMP SETS	P = 0,8 X MAX PUMP PRESSURE	
TWO-PUMP SETS	PUMP 1: P1 = 0,8 X MAX PRESSURE	PUMP 2: P2 = 0,6 X MAX PRESSURE

E.g.: Max pump pressure 10 bar - pump 1 starts at 8 bar, pump 2 starts at 6 bar

The main pump continues to operate until it is manually stopped using the STOP pushbutton on the electric control panel.

In case of hydrant systems refer to UNI 10779 - July 07. In addition to prescribing feed pumps in compliance with UNI EN 12845, UNI 10779 allows automatic stopping of the pumps 20 minutes after the closing of the hydrants, in case of non permanently supervised operation. DAB pump sets are suitable for sprinkler systems with manual stop, and for hydrant systems with automatic stop.

PUMPS - UNI EN 12845

UNI EN 12845 (10.1) standard prescribes "Horizontal or vertical pumps with coinciding maximum and zero flow rate head. They can be driven by electric motor or Diesel engine. For HHP and HHS pre-calculated systems, they shall be able to supply 140 % of the flow rate at 70 % of the head of the operating point (100 %).

PRESSURE COMPENSATION PUMP - "JOCKEY"

The compensation pump (jockey) is a pump that intervenes when the collection of a small amount of water is required. This avoids pointless starts of the main pumps in case of small system leaks. DAB fire-fighting sets are available with and without jockey pump.

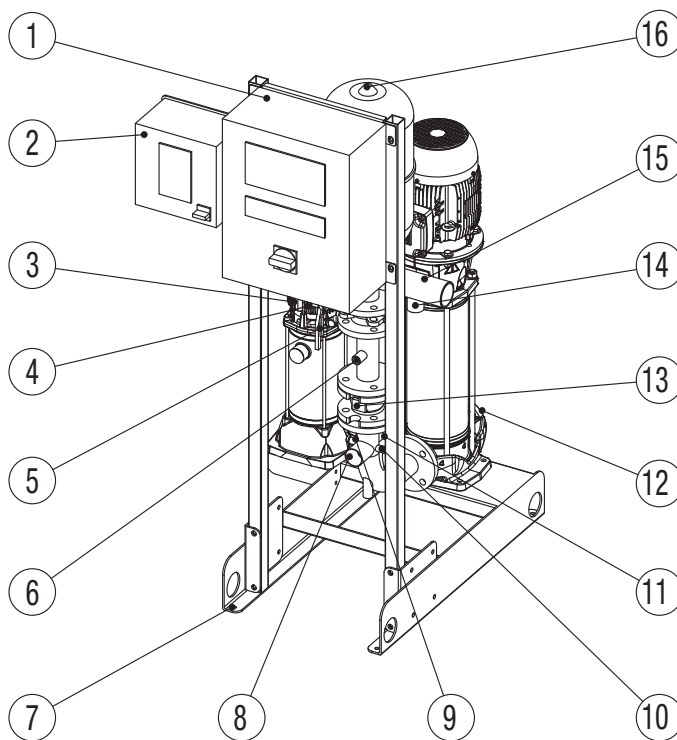
WARNING - NOTE

In case of higher or duplicated feed, only one electric pump can be used. According to the UNI EN 12825 (10.2) standard, "In applications in which more than one pump is installed with higher or duplicated feed, only one of the pumps will be electrically driven".

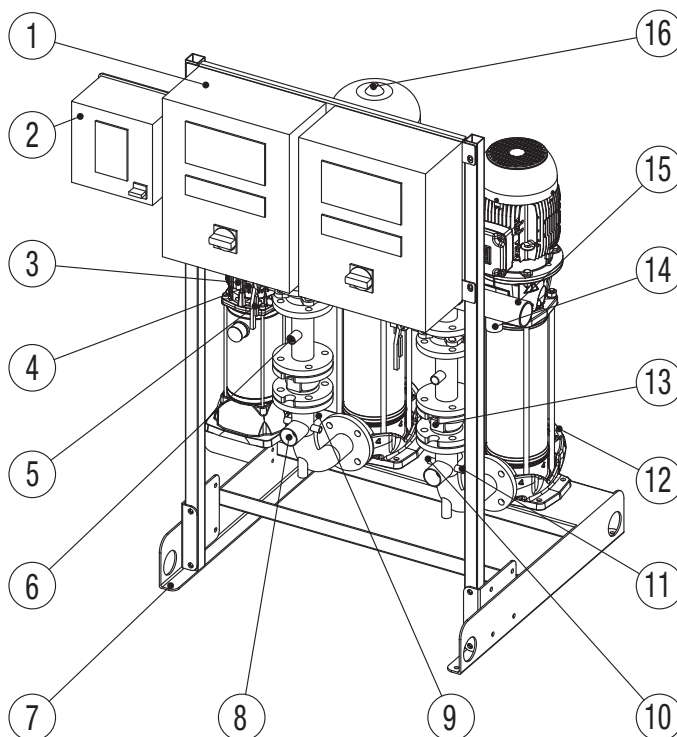
1/2 NKV

UNI EN 12845 FIRE-FIGHTING SETS WITH VERTICAL PUMPS

N.	COMPONENTS
1	Independent control panel for each main pump
2	Jockey pump control panel
3	Jockey pump
4	Jockey pump pressure switch
5	Lockable shut-off valve
6	Start pressure switch circuit
7	Ground anchoring holes
8	2" connection for priming tank
9	1/4" connection for water recirculation
10	Running pump pressure switch
11	Check valve test system
12	Independent suctions
13	Check valve on service pump
14	1" connection for pump room sprinkler flow switch
15	Unique delivery manifold
16	Jockey pump expansion vessel



N.	COMPONENTS
1	Independent control panel for each main pump
2	Jockey pump control panel
3	Jockey pump
4	Jockey pump pressure switch
5	Lockable shut-off valve
6	Start pressure switch circuit
7	Ground anchoring holes
8	2" connection for priming tank
9	1/4" connection for water recirculation
10	Running pump pressure switch
11	Check valve test system
12	Independent suctions
13	Check valve on service pump
14	1" connection for pump room sprinkler flow switch
15	Unique delivery manifold
16	Jockey pump expansion vessel



ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS



TECHNICAL DATA

Nominal power input voltage: 400 V +/- 5%

Phases: 3

Frequency: 50-60 Hz

Number of pumps that can be connected: 1

Maximum nominal power of use:
from 3 to 110 kW (depending on model).

Maximum nominal current of use: from 10 Amp to 250 Amp.

Ambient temperature operation limits: from +4 °C to +40 °C.

Relative humidity (without condensation):

50% at 40 °C MAX (90% a 20 °C)

Max. altitude: 3000 m (a.s.l.).

Protection class: IP55

Control panel construction:

According to EN60204, EN 60439-1, and UNI EN 12845/10779.

COMPONENTS

The control and protection panel includes the following components

INTERIOR OF CABINET

Connector for the powering of a GSM Modem (230 V, protected by fuse).

Motor protection fuses (aM type); current surge relay-motor protectors are not permitted by the standard.

Auxiliary circuit protection fuses (Gg type).

Direct pump starters (up to 7,5 kW).

Star/triangle starters (11 kW and over).

24 V auxiliary circuit transformers.

Alarm relay with terminal box for remote status control (as required by the UNI EN 12845 standard).

System start-up input connection terminal box.

ON FRONT PANEL

Electric pump control unit with:

Multifunction instrument with display (voltmeter, ammeter, cosfi metre, wattmeter, alarms and status).

Start and stop pushbuttons.

Status and alarm notification lamps.

Alarm/notification lamp test pushbutton.

0 - 1 selector (0 = automatic disabled; 1 = automatic on), key removable only for position one (AUTOMATIC ON).

REMOTELY CONTROLLED ALARMS:

Voltage present.

Phase sequence.

Pump start request from the pressure switches.

Pump start request from priming tank.

Pump in operation.

Start failed.

The above alarms can be remotely controlled in the following ways:

With relay wiring to the CSR-1 control panel (optional).

With RS-485 wiring to the CSR-1 control panel (optional).

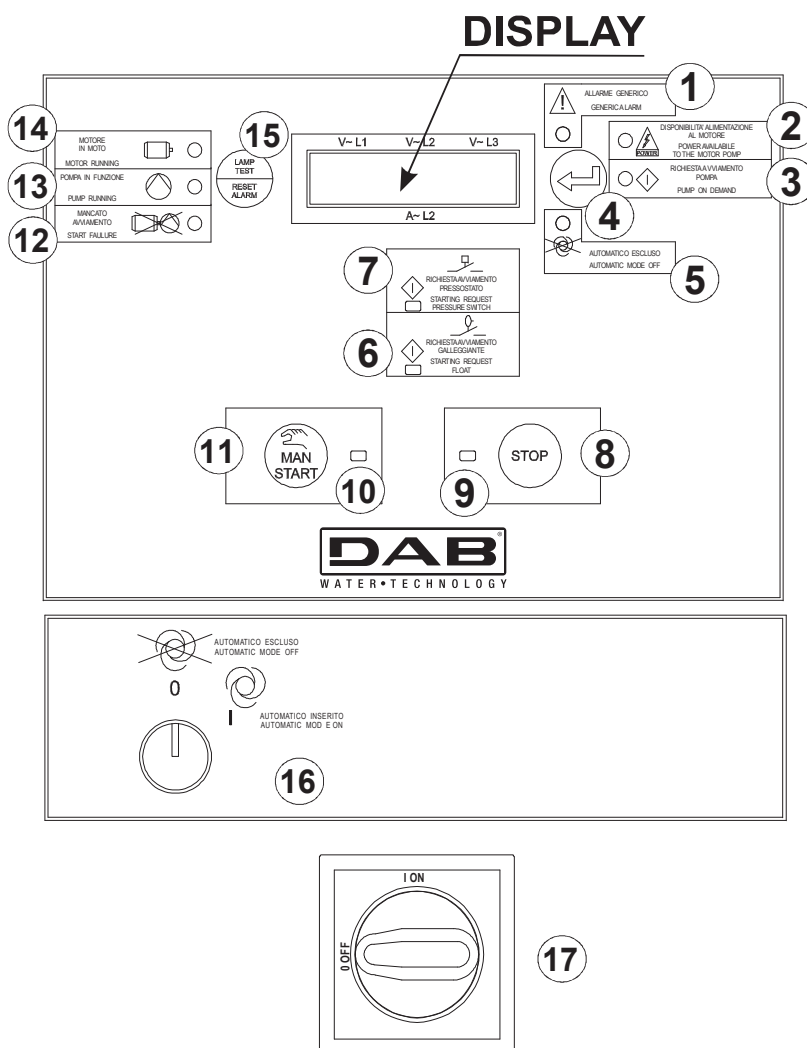
With GSM Modem inside the cabinet, for forwarding status and/or alarm signals (optional).

ELECTRIC PUMP CONTROL PANEL

UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP CONTROL UNIT

The A1 electronic control unit supplied with the control panel offers the following features: automatic start from the pressure switches or the priming float switch, manual start, automatic monitoring of pump set faults and incorrect or unavailable power input voltage.



ALIMENTAZIONE DELLA POMPA SPRINKLER
NON SPEGNERE IN CASO DI INCENDIO

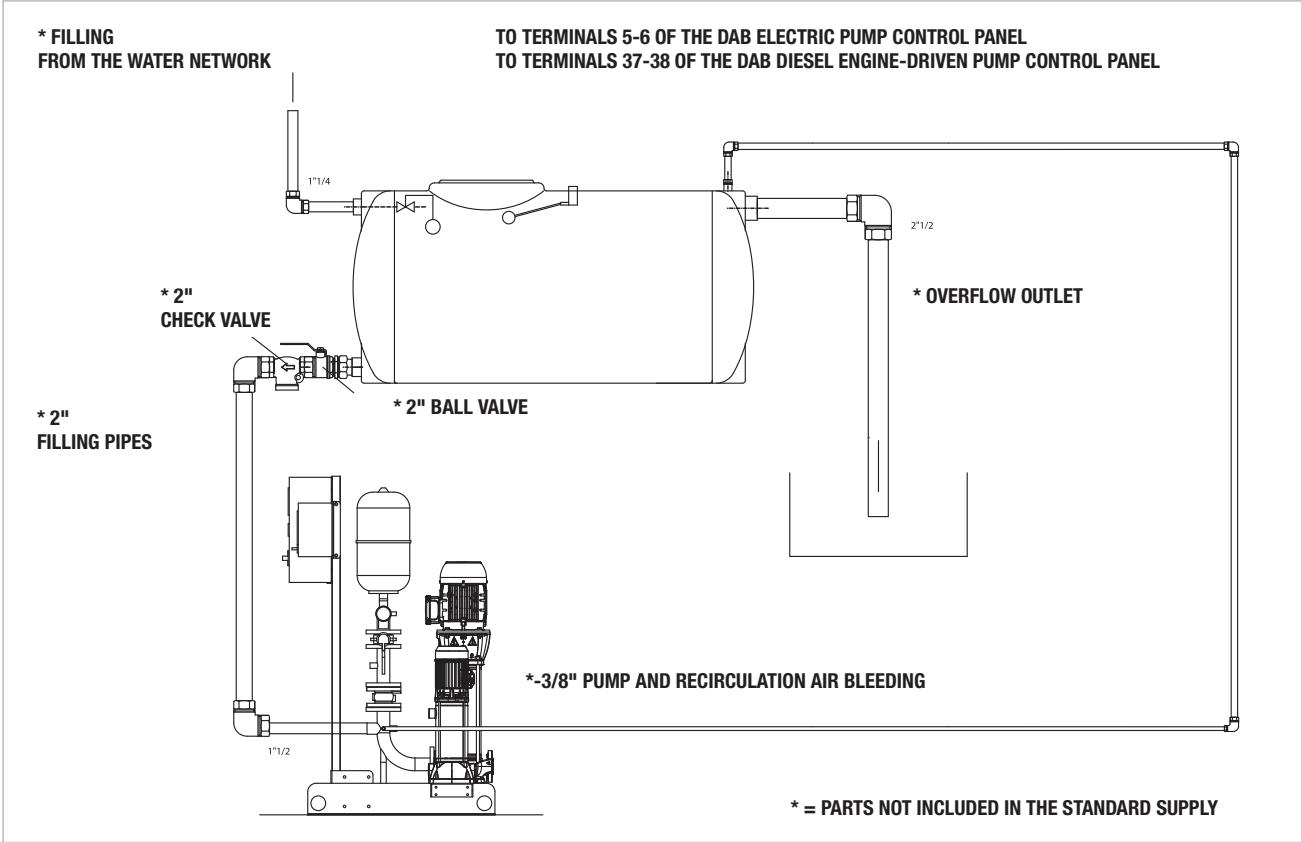
! SPRINKLER PUMP MOTOR SUPPLY !
NOT TO BE SWITCHED OF IN THE EVENT OF FIRE

REF.	FUNCTION
1	LAMP - Generic alarm
2	LAMP - Power input to the motor detected
3	LAMP - Pump START request
4	Press to display the instruments
5	LAMP - Automatic start disabled
6	LAMP - START request from the priming tank float switch
7	LAMP - START request (call) from the pressure switches
8	MANUAL STOP pushbutton
9	LAMP - MANUAL STOP with STOP pushbutton notification

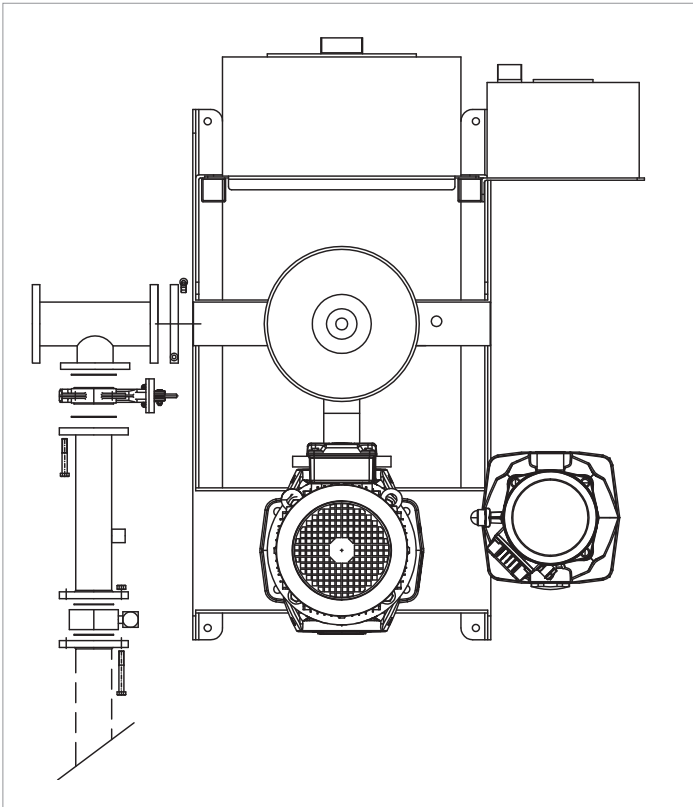
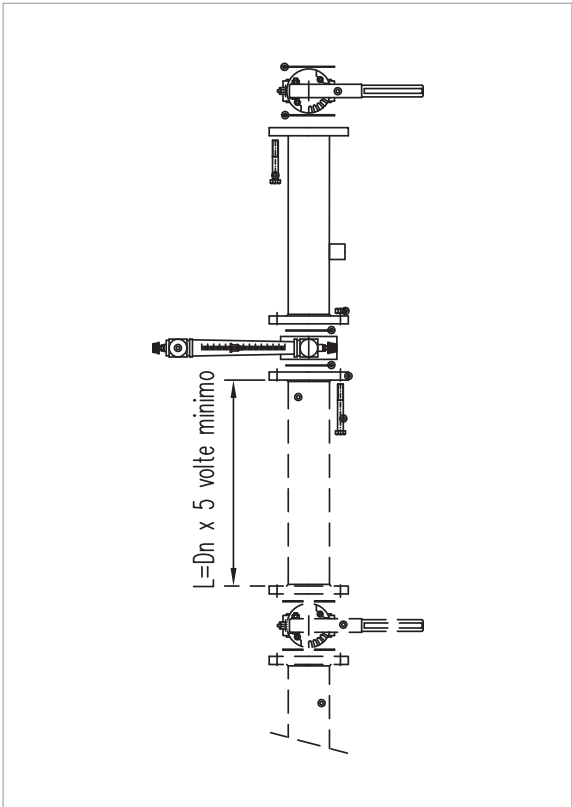
REF.	FUNCTION
10	LAMP - MANUAL START with MAN START pushbutton notification
11	MANUAL START pushbutton
12	LAMP - Start failed
13	LAMP - ELECTRIC PUMP RUNNING with motor running; detected by the electric pump running pressure switch
14	LAMP - MOTOR RUNNING; controlled by the ammeter detection
15	Reset lamp test pushbutton
16	Automatic mode disabling selector
17	Power input disconnection switch

UNI EN 12845 PRIMING TANK

One 500 l priming tank must be installed for each main pump, only in case of **positive suction feed**.



FLOW METER KIT

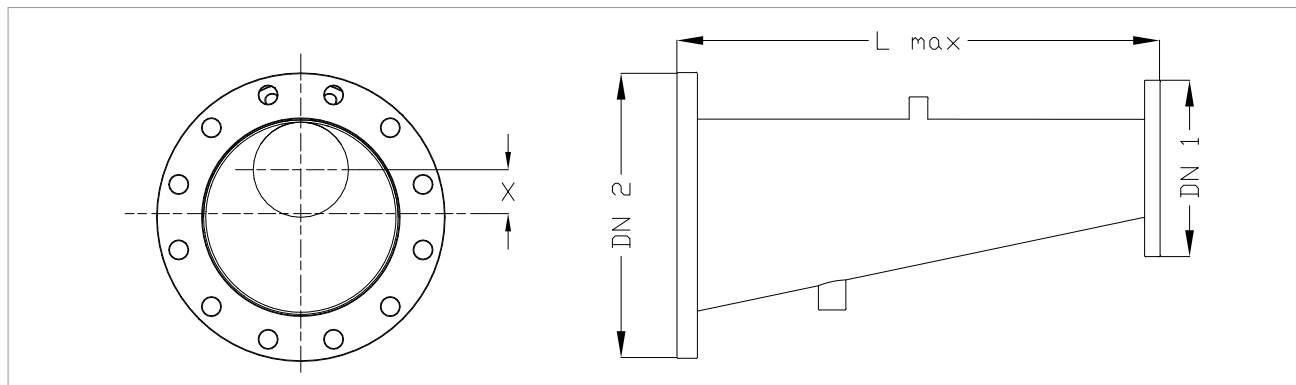


SUCTION KIT

The kit consists of a conical eccentric adaptor, screws and washers.

It is required in order to avoid air pockets at the suction, and to keep the water speed below 1,5 m/s, as required by section 10.6.2.3 of UNI EN 12845.

No. 1 kit must be installed at the suction of each main pump.



UNI EN 12845 ECCENTRIC SUCTION ADAPTORS

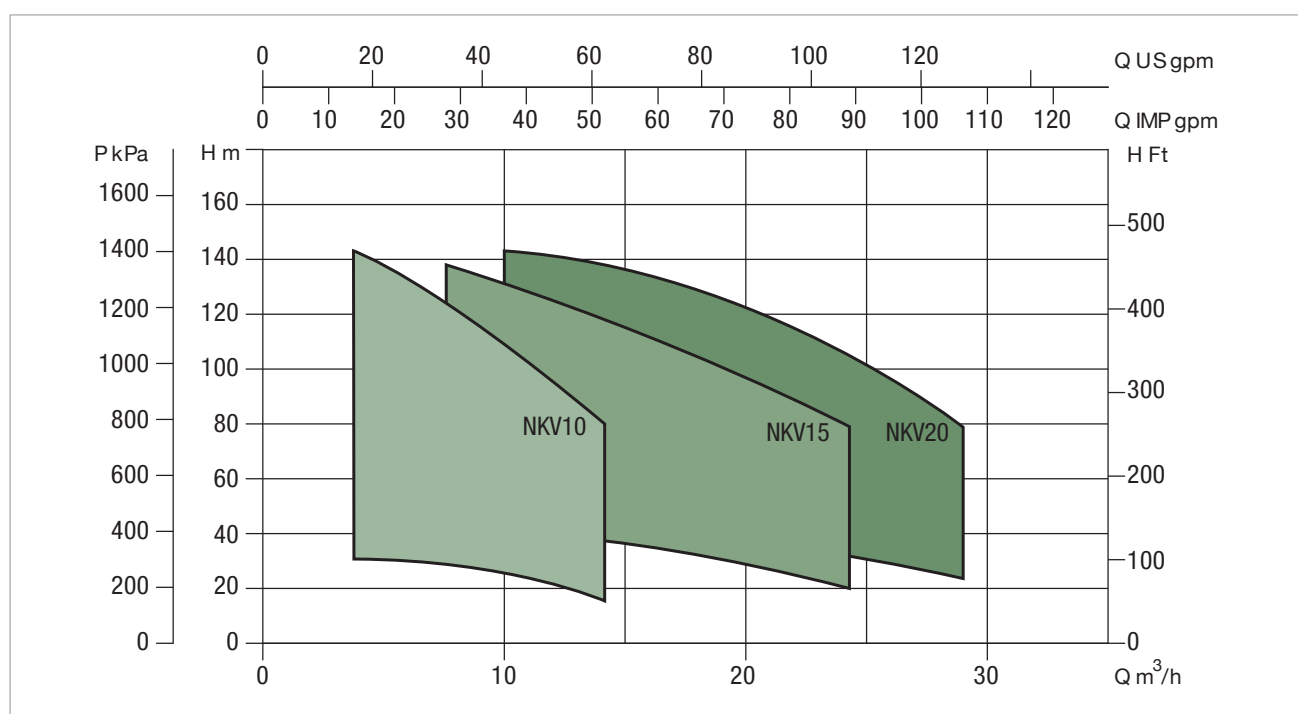
PUMP MODEL	ADAPTOR MODEL	DN1 – PN 16 PUMP SIDE	DN2 – PN16 SYSTEM SIDE	L (mm)	X (mm)
NKV 10	KIT ASP.NKV10 EN12845 (DN65 - 19°)	DN 40	DN 65*	145	14
NKV 15 – NKV 20 KDN 32	KIT ASP.KDN32/NKV15-20 EN12845(DN80-19°)	DN 50	DN 80	200	14
KDN 40	KIT ASP.KDN40 EN12845 (DN100 - 19°)	DN 65	DN 100	235	19
KDN 50	KIT ASP.KDN50 EN12845 (DN125 - 19°)	DN 65	DN 125	320	32
KDN 65	KIT ASP.KDN65 EN12845 (DN150 - 19°)	DN 80	DN 150	380	40
KDN 80	KIT ASP.KDN80 EN12845 (DN200 - 19°)	DN 100	DN 200	570	52
KDN 100	KIT ASP.KDN100 EN12845 (DN250 - 19°)	DN 125	DN 250	685	67

*The standard requires DN 80 minimum for positive suction installations. In this case contact our sales network.

PERFORMANCE RANGE

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.

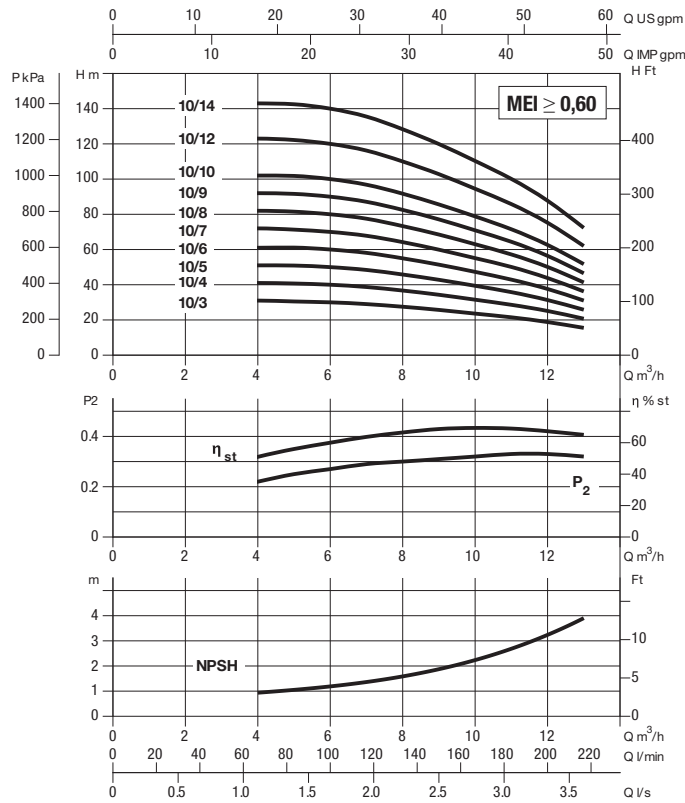
GRAPHIC SELECTION TABLE



NKV 10 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 13 m³/h

≈ 2900 1/min



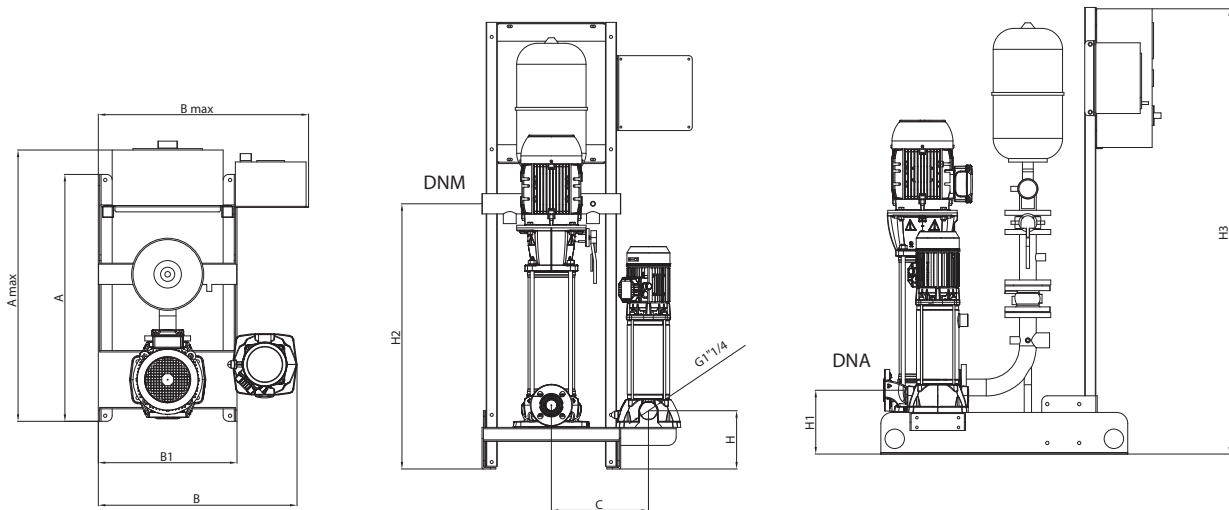
Performance curves and electric data referred to only one pump in operation.

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.

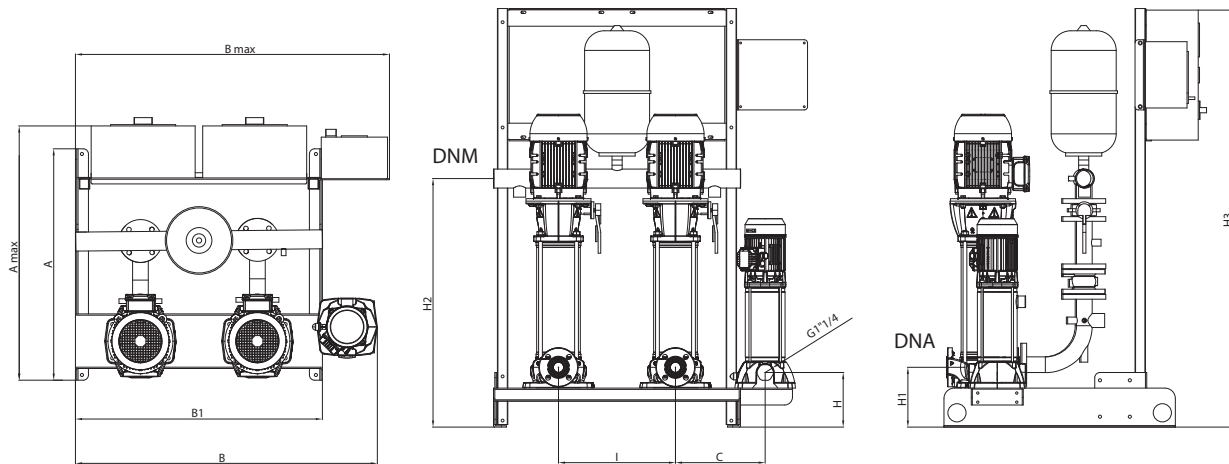
MODEL	ELECTRICAL DATA			
	POWER INPUT 50 Hz	P2 NOMINAL		In A
		kW	HP	
NKV 10/3	3x400 V	1,10	1,5	2,50
NKV 10/4	3x400 V	1,50	2	3,50
NKV 10/5	3x400 V	2,2	3	4,70
NKV 10/6	3x400 V	2,2	3	4,70
NKV 10/7	3x400 V	3,0	4	5,8
NKV 10/8	3x400 V	3,0	4	5,8
NKV 10/9	3x400 V	3,0	4	5,8
NKV 10/10	3x400 V	4,0	5,5	7,6
NKV 10/12	3x400 V	4,0	5,5	7,6
NKV 10/14	3x400 V	5,5	7,5	11

NKV 10 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP SET 1



ELECTRIC PUMP SET 2

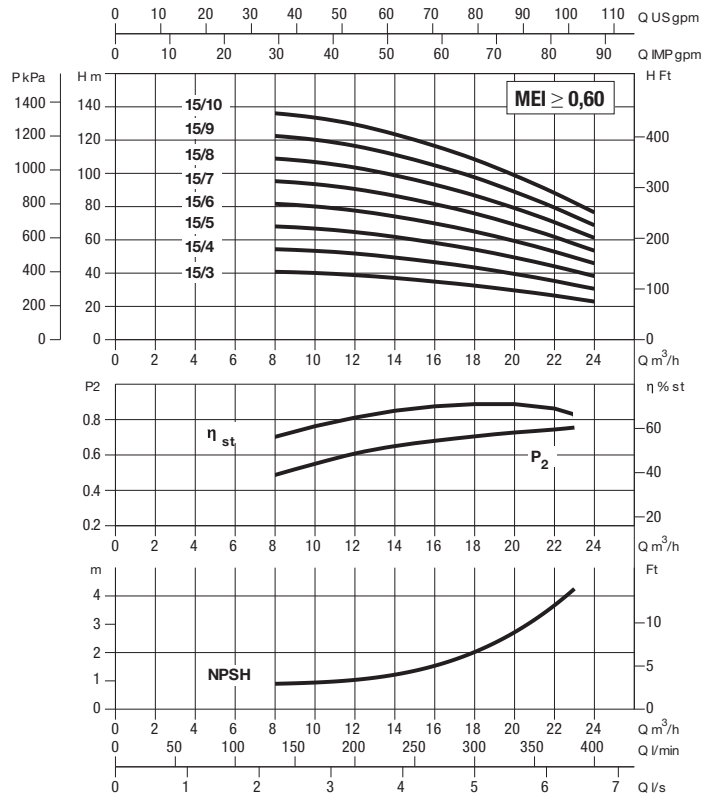


MODEL	A	A max	B	B1	B max	C	I	H	H1	H2	H3	DNA	DNM
1 NKV10	1000	1100	700	500	745	350	-	210	230	960	1600	40	2"
2 NKV10	1000	1100	1100	950	1200	350	450	210	230	960	1600	40	2"

NKV 15 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 24 m³/h

≈ 2900 1/min



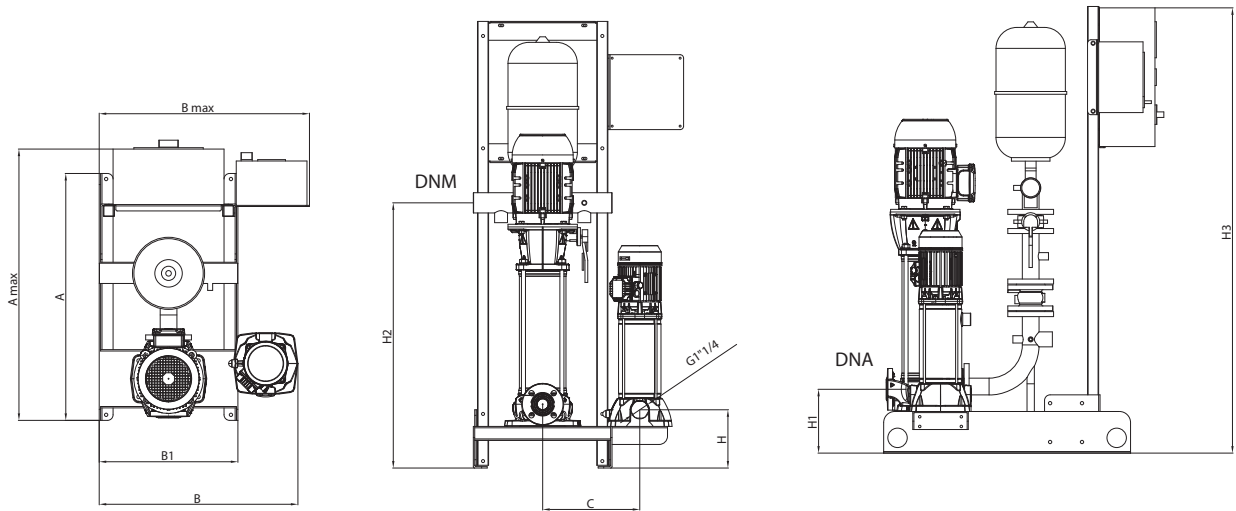
Performance curves and electric data referred to only one pump in operation.

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.

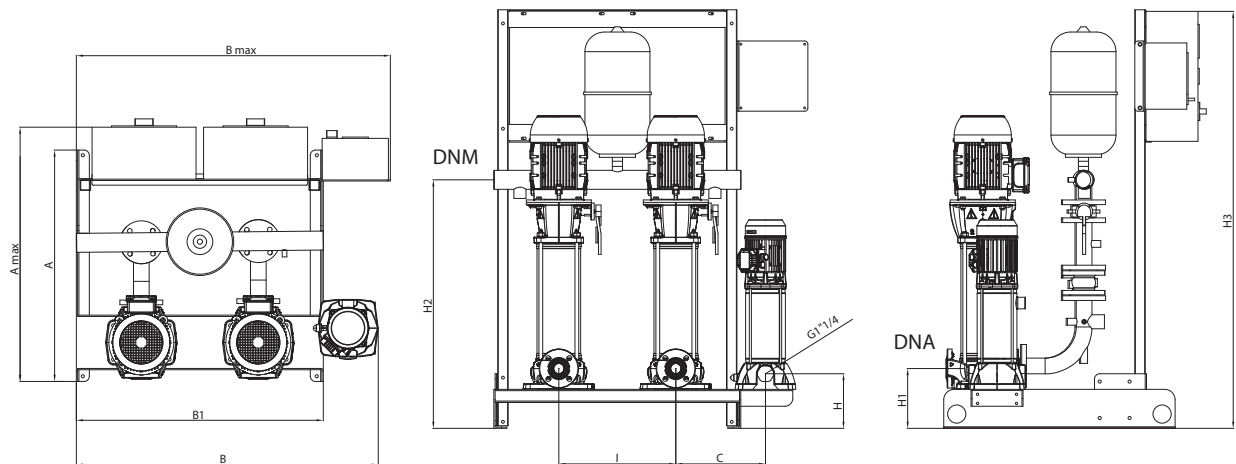
MODEL	ELECTRICAL DATA			
	POWER INPUT 50 Hz	P2 NOMINAL		In A
		kW	HP	
NKV 15/3	3x400 V	3,00	4	5,8
NKV 15/4	3x400 V	4,00	5,5	7,6
NKV 15/5	3x400 V	4,00	5,5	7,6
NKV 15/6	3x400 V	5,5	7,5	11
NKV 15/7	3x400 V	5,5	7,5	11
NKV 15/8	3x400 V	7,5	10	14,8
NKV 15/9	3x400 V	7,5	10	14,8
NKV 15/10	3x400 V	11,0	15	22,4

NKV 15 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP SET 1



ELECTRIC PUMP SET 2

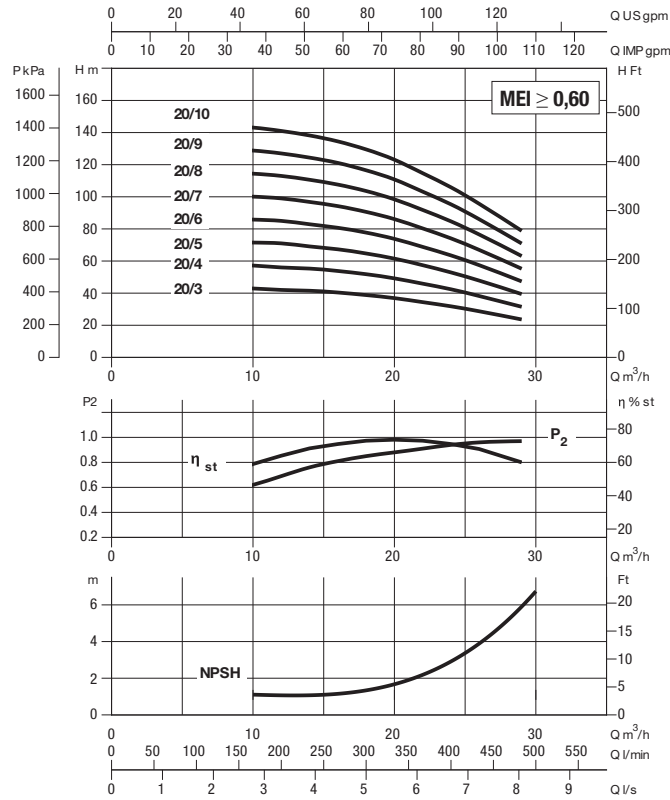


MODEL	A	A max	B	B1	B max	C	I	H	H1	H2	H3	DNA	DNM
1 NKV15	1000	1100	700	500	745	350	-	210	240	970	1600	50	2" 1/2
2 NKV15	1000	1100	1100	950	1200	350	450	210	240	970	1600	50	2" 1/2

NKV 20 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

Pumped liquid temperature range: from -15 °C to +70 °C - Maximum ambient temperature: from +4 °C to +40 °C - Maximum flow rate: 29 m³/h

= ~ 2900 1/min



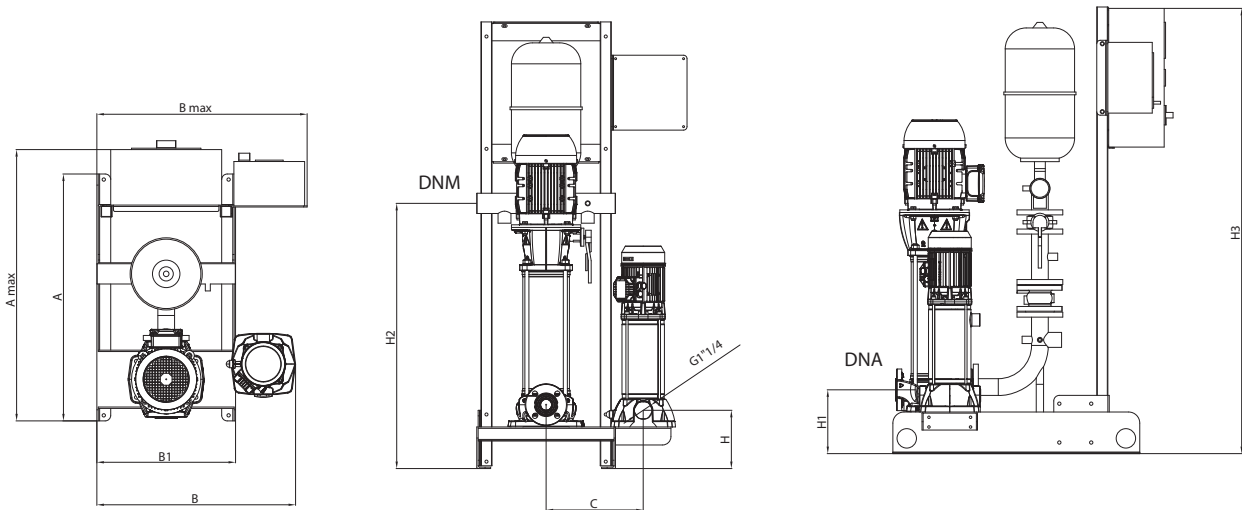
Performance curves and electric data referred to only one pump in operation.

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.

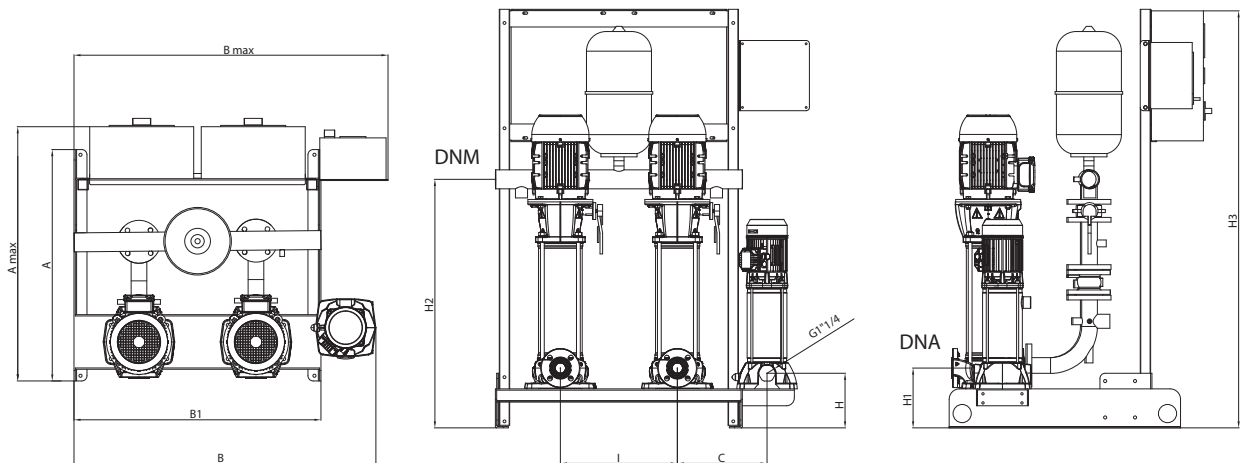
MODEL	ELECTRICAL DATA			
	POWER INPUT 50 Hz	P2 NOMINAL		In A
		kW	HP	
NKV 20/3	3x400 V	4,00	5,5	7,6
NKV 20/4	3x400 V	5,50	7,5	11
NKV 20/5	3x400 V	5,50	7,5	11
NKV 20/6	3x400 V	7,5	10	14,8
NKV 20/7	3x400 V	7,5	10	14,8
NKV 20/8	3x400 V	11,0	15	22,4
NKV 20/9	3x400 V	11,0	15	22,4
NKV 20/10	3x400 V	11,0	15	22,4

NKV 20 - UNI EN 12845 FIRE-FIGHTING PUMP SETS

ELECTRIC PUMP SET 1



ELECTRIC PUMP SET 2





MODEL	A	A max	B	B1	B max	C	I	H	H1	H2	H3	DNA	DNM
1 NKV20	1000	1100	700	500	745	350	-	210	240	970	1600	50	2" 1/2
2 NKV20	1000	1100	1100	950	1200	350	450	210	240	970	1600	50	2" 1/2


ACCESSORIES


ACCESSORIES


UNI EN 12845 FIRE-FIGHTING SETS

SUCTION KIT		DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>Suction kit consisting of an eccentric cone with related screws, nuts, and seals. It keeps the water speed below 1,5 m/s, and avoids the formation of air pockets.</p> <ul style="list-style-type: none"> No. 1 SUCTION KIT is required for each 1 KDN set (electric or Diesel). No. 1 SUCTION KIT is required for 1NKV sets, and no. 2 SUCTION KITS are required for 2NKV sets. 	SUCTION KIT DN 65 (NKV 10)		•		
	SUCTION KIT DN 80 (NDN 32 - NKV 15-20)	•	•		
	SUCTION KIT DN 100 (KDN 40)	•			
	SUCTION KIT DN 125 (KDN 50)	•			
	SUCTION KIT KDN 65 (DN 150)	•			
	SUCTION KIT KDN 80 (DN 200)	•			
	SUCTION KIT KDN 100 (DN 250)	•			

COUPLING KIT		DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>Only for sets consisting of two modules (electric pump and/or Diesel engine-driven pump), one coupling KIT is required.</p>	COUPLING KIT (2KDN 32)	•			
	COUPLING KIT (2KDN 40)	•			
	COUPLING KIT (2KDN 50)	•			
	COUPLING KIT (2KDN 65)	•			
	COUPLING KIT (2KDN 80)	•			
	COUPLING KIT (2KDN 100)	•			


SUCTION SIDE BUTTERFLY VALVES		DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>They are necessary in order to be able to perform pump maintenance in flooded suction installations.</p> <ul style="list-style-type: none"> No. 1 BUTTERFLY VALVE is required for each 1 KDN set (electric or Diesel). No. 1 BUTTERFLY VALVE is required for 1NKV sets, and no. 2 BUTTERFLY VALVES are required for 2NKV sets. 	BUTTERFLY VALVE DN65 (NKV 10)		•		
	BUTTERFLY VALVE DN 80 (KDN 32 - NKV 15-20)	•	•		
	BUTTERFLY VALVE DN 100 (1 KDN 40)	•			
	BUTTERFLY VALVE DN 125 (1 KDN 50)	•			
	BUTTERFLY VALVE DN 150 (1 KDN 65)	•			
	BUTTERFLY VALVE DN 200 (1 KDN 80)	•			
	BUTTERFLY VALVE DN 250 (1 KDN 100)	•			


FOOT VALVES WITH SUCTION ROSE		DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>They are required to maintain priming of the pump suction in flooded suction installations.</p> <ul style="list-style-type: none"> No. 1 FOOT VALVE is required for each 1 KDN set (electric or Diesel). No. 1 BUTTERFLY VALVE is required for 1NKV sets, and no. 2 BUTTERFLY VALVES are required for 2NKV sets. 	FOOT VALVE WITH SUCTION ROSE DN65 (NKV 10)		•		
	FOOT VALVE WITH SUCTION ROSE DN 80 (KDN 32 - NKV 15-20)	•	•		
	FOOT VALVE WITH SUCTION ROSE DN 100 (1 KDN 40)	•			
	FOOT VALVE WITH SUCTION ROSE DN 125 (1 KDN 50)	•			
	FOOT VALVE WITH SUCTION ROSE DN 150 (1 KDN 65)	•			
	FOOT VALVE WITH SUCTION ROSE DN 200 (1 KDN 80)	•			
	FOOT VALVE WITH SUCTION ROSE DN 250 (1 KDN 100)	•			


ANTI-VIBRATION COUPLINGS FOR THE SUCTION		DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>The anti-vibration coupling is useful to reduce the vibrations transmitted to the system, particularly in case of set with Diesel engine-driven pump.</p> <ul style="list-style-type: none"> No. 1 COUPLING is required for each 1 KDN set (electric or Diesel). (Not mandatory as far as UNI EN 12845). No. 1 COUPLING is required for 1NKV sets, and no. 2 COUPLINGS are required for 2NKV sets. 	ANTI-VIBRATION COUPLING DN 65 (NKV 10)		•		
	ANTI-VIBRATION COUPLING DN 80 (KDN 32 - NKV 15-20)	•	•		
	ANTI-VIBRATION COUPLING DN 100 - KDN 40	•			
	ANTI-VIBRATION COUPLING DN 125 - KDN 50	•			
	ANTI-VIBRATION COUPLING DN 150 - KDN 65	•			
	ANTI-VIBRATION COUPLING DN 200 - KDN 80	•			
	ANTI-VIBRATION COUPLING DN 250 - KDN 100	•			


ACCESSORIES

UNI EN 12845 FIRE-FIGHTING SETS

ANTI-VIBRATION COUPLINGS FOR THE SYSTEM DELIVERY MANIFOLDS	DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>The anti-vibration coupling is useful to reduce the vibrations transmitted to the system, particularly in case of sets with Diesel engine-driven pump. One coupling is sufficient.</p> <ul style="list-style-type: none"> • both for no. 1 and for no. 2 1 KDN sets (electric or Diesel). • Both for 1NKV and 2NKV sets no. 1 anti-vibration coupling is sufficient. <p>(Not mandatory as far as UNI EN 12845).</p>	ANTI-VIBRATION COUPLING DN 2" (KDN 32 -NKV10)	•	•	
	ANTI-VIBRATION COUPLING DN 2" ½ (KDN 40- NKV 15-20)	•	•	
	ANTI-VIBRATION COUPLING DN 80 - KDN 50	•		
	ANTI-VIBRATION COUPLING DN 100 - KDN 65	•		
	ANTI-VIBRATION COUPLING DN 125 - KDN 80	•		
	ANTI-VIBRATION COUPLING DN 150 - KDN 100	•		

FLOW RATE METER KIT	DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>The meter kit must be installed on a branch on the delivery manifold of the set.</p> <ul style="list-style-type: none"> • No. 1 METER KIT is sufficient both for no. 1 and for no. 2 1 KDN sets (electric or Diesel). • Both for 1NKV and 2NKV sets no. 1 meter KIT is sufficient. 	FLOW RATE METER KIT (S4)			•
	FLOW RATE METER KIT (S6)			•
	FLOW RATE METER KIT (KDN 32)	•		
	FLOW RATE METER KIT (KDN 40)	•		
	FLOW RATE METER KIT (KDN 50)	•		
	FLOW RATE METER KIT (KDN 65 - SM8)	•		•
	FLOW RATE METER KIT (KDN 80)	•		
	FLOW RATE METER KIT (KDN 100)	•		
	FLOW RATE METER KIT (NKV 10)		•	
	FLOW RATE METER KIT (NKV 15-20)		•	

FLOW METERS FOR FLOW RATE METER KITS	DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
	FLOW METER DN 40 (3,5-25 m3/h) NKV10- S4	•	•	•
	FLOW METER DN 50 (7-50 m3/h) KDN 32 - NKV 15-20	•	•	
	FLOW METER DN 65 (10-80 m3/h) KDN 40 - S6	•		•
	FLOW METER DN 80 (17,5-130 m3/h) KDN 50	•		
	FLOW METER DN 100 (25-200 m3/h) KDN 65 - SM8	•		•
	FLOW METER DN 125 (40-300 m3/h) KDN 80	•		
	FLOW METER DN 150 (45-350 m3/h) KDN 100	•		

DIESEL MOTOR SPARE PART KIT	DESCRIPTION	KDN	1/2 NKV	S4-S6-SM8
 <p>Each Kit consists of:</p> <ol style="list-style-type: none"> 2 sets of filtering elements and their seals, for the fuel; 2 sets of filtering elements and their seals, for the lubricating oil; 2 sets of belts (if used); 1 complete set of manifolds, seals and hoses for the engine; 2 injector nozzles. 	DIESEL MOTOR SPARE PART KIT 26 kW (11LD)	•		
	DIESEL MOTOR SPARE PART KIT 19 kW (9LD)	•		
	DIESEL MOTOR SPARE PART KIT 11 kW (25LD)	•		
	DIESEL MOTOR SPARE PART KIT 15 kW (12LD)	•		
	DIESEL MOTOR SPARE PART KIT 37-53 kW (D703)	•		
	DIESEL MOTOR SPARE PART KIT 68 kW (D704)	•		
	DIESEL MOTOR SPARE PART KIT 110 kW (D706)	•		




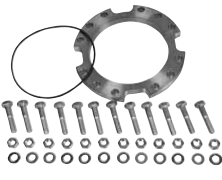
ACCESSORIES

UNI EN 12845 FIRE-FIGHTING SETS

	DESCRIPTION	USE	KDN	1/2 NKV	S4-S6-SM8
	CSR 1 UNI EN 12845 NOTIFICATION CONTROLLER	Suitable for sets with 1 and/or 2 pumps	•	•	•
	GSM MODULE for CSR 1	Forwarding of alarm signal to mobile phone	•	•	•
	UNI EN 12845 PRIMING TANK	No. 1 for each pump	•	•	
	UNI EN 12845 FLOW SWITCH KIT (for pump room sprinkler)	Suitable for sets with 1 and/or 2 pumps	•	•	•
	MODEM FOR 1 KDN or 1NKV electric pump	Alarm signal forwarding	•	•	•
	MODEM FOR 1 KDN Diesel pump	Alarm signal forwarding	•		
	DIESEL COLLECTION RESERVOIR FOR 50 L TANK	(engines up to 26 kWatt)	•		
	DIESEL COLLECTION RESERVOIR FOR 250 L TANK (engines over 110 kWatt)	(engines between 37 and 110 kWatt)	•		
	VISUAL RECIRCULATION FLOW INDICATOR 3/4"		•	•	•

ACCESSORIES

UNI EN 12845 FIRE-FIGHTING SETS

	DESCRIPTION	S4	S6	SM8
	COOLING PIPE KIT 4" L.400	•		
	COOLING PIPE KIT 4" L.525	•		
	COOLING PIPE KIT 4" L.885	•		
	COOLING PIPE KIT 6" L.725		•	
	COOLING PIPE KIT 6" L.960		•	
	COOLING PIPE KIT 6" L.1220		•	
	COOLING PIPE KIT 6" L.1490		•	
	COOLING HORIZONTAL SUPPORT KIT 4"	•		
	COOLING HORIZONTAL SUPPORT KIT 6"		•	
	COOLING FILTER KIT 4"	•		
	COOLING FILTER KIT 6"		•	
	COUNTER FLANGE KIT SM8			•

TECHNICAL APPENDIX

NOTES ON UNI EN 12845

UNI EN 12845, the Italian version of European Standard EN 12845, sets the design, installation and maintenance criteria for sprinkler systems. An automatic sprinkler system is designed to detect the presence of fire and extinguish it during the initial stages, or to keep flames under control until they can be extinguished fully using other means. The classic sprinkler system is composed of: a water source, a fire-fighting pump unit, a series of control valves, and a sprinkler circuit.

COMPOSITION OF THE PUMP SETS

The pumps of UNI EN 12845 sets will have the same characteristics; in addition:

- if TWO pumps are installed, each pump must deliver the total system load (100 %),
- if THREE pumps are installed, each pump must deliver 50 % of the load required by the design.

"In applications in which more than one pump is installed with higher or duplicated feed, only one of the pumps will be electrically driven (section 10.2 of the standard)".

This means that in applications with higher or duplicated feed, the sets will consist of:

- No. 1 electric or Diesel pump (100 %)
- No. 1 electric pump + No. 1 Diesel pump (100 % + 100 %)
- No. 1 electric pump + No. 2 Diesel pumps (50 % + 50 % + 50 %)
- No. 3 Diesel pumps (+ 50 % + 50 % + 50 %)

In case of single water supply, there are no limitations on the number of electric pumps that can be installed. DAB provides "modular" type sets, so that all the versions contemplated by the UNI EN 12845 standard

- OPERATION OF UNI EN 12845 FIRE-FIGHTING PUMP SETS - CAN BE COMPLETED.

In normal conditions, (zero water request), the system is under static pressure. The first time there is a water request, the compensation pump activates (if present), reinstating the system pressure. In case of significant water request (activation of the fire-fighting sprinklers) the pressure drops until two pressure switches connected in series (contact N.C. under pressure) activate the main pump (electric or Diesel). The two pressure switches must be calibrated to start the pumps at the following pressure values:

- **One pump sets --> pressure switches calibrated at 80 % of the maximum pressure**
- **Two pump sets --> pressure switches of pump one calibrated at 80 %, and pressure switches of pump two calibrated at 60 % of the maximum pressure.**

(E.g. Max pump pressure 10 bar - pump 1 starts at 8 bar, pump 2 starts at 6 bar).

Note: DAB modules are supplied individually, and therefore the calibration of the pressure switches in case of sets consisting of several pump must be performed on location.

The main pump continues to operate until it is manually stopped using the STOP pushbutton on the electric control panel. In case of hydrant systems refer to UNI 10779 - July 07.

In addition to prescribing feed pumps in compliance with UNI EN 12845, UNI 10779 allows automatic stopping of the pumps 20 minutes after the closing of the hydrants, in case of non permanently supervised operation. DAB sets are ready for both manual stop sprinkler systems and automatic stop hydrant systems (the factory settings are for sprinkler systems).

PUMPS - UNI EN 12845

The UNI EN 12845 (10.1) standard prescribes "Horizontal or (preferably) vertical pumps with coinciding maximum and zero flow rate head. They can be driven by electric motor or Diesel engine. For HHP and HHS pre-calculated systems, they shall be able to supply 140 % of the flow rate at 70 % of the head of the operating point (100 %). The transmission coupling between motor and pump must ensure that both can be removed independently, so that the internal parts of the pump may be removed without affecting the pipeline. Axial suction pumps will be of the "back pull-out" type.

In order to fully meet the above requirements, DAB uses standardised pumps with spacer coupling, both for the electric motor and the Diesel engine version.

PRESSURE COMPENSATION PUMP - "JOCKEY"

The compensation pump (jockey) is a pump that intervenes when the collection of a small amount of water is required. This avoids pointless starts of the main pumps in case of small system leaks. The DAB fire-fighting sets are available with or without JOCKEY.

MAINTENANCE AND REGULAR CHECKS

MAINTENANCE, INSPECTION, AND CHECKS

The UNI EN 12845 standard gives a lot of importance to the maintenance of the system, including the pump set. The system must always be in perfect efficient condition.

According to section 20.1.1 of the UNI EN 12845 standard, the user must follow a plan of inspections and checks, establish a test, support, and maintenance program, document and record the activities, keeping such documentation in an appropriate folder in the building. The user must ensure that the test, support, and maintenance program is followed under contract by the system installer, or **by a similarly qualified company**.

The installer shall provide to the user a system control and inspection procedure, paying particular attention to the operation of the system, and the manual pump emergency start procedures.

WEEKLY CHECK (to be performed at intervals not exceeding 7 days)

The following values must be checked and recorded:

- pressure at the pressure gauges
- water levels in the tanks - water reservoirs
- correct position of the shut-off valves

Perform an automatic pump start test (both for electric and Diesel pumps) following the procedure below:

- Open the manual test valve.
- Check that the pump starts, and record the start pressure.
- Close the manual test valve.
In case of Diesel engine, this must be left running for at least 5 minutes.
- Stop the pump using the STOP pushbutton.
- PROCEDURE FOR DIESEL ENGINE-DRIVEN PUMPS.
Immediately after the stop, the Diesel engine-driven pump must be restarted using the manual start pushbutton "OPERATE MANUAL START".
- Stop the pump using the STOP pushbutton.

The oil pressure and the water flow in engines with heat exchanger will be monitored during the test.

MONTHLY CHECK

Check the level and the specific gravity of the start-up battery acid using a densimeter. If the specific gravity of the acid is low, check the battery charger and, if necessary, change the batteries.

THREE-MONTHLY CHECK

(at intervals of no more than 13 weeks – 20.3.2)
Check any modifications in the system, change of the risk class, etc.
Check the sprinklers, pipelines, and pipeline supporting systems.
Start the pumps, and check pressure and flow rate.
Check the operation of any generator sets connected to the system.
Check the correct position of the shut-off valves.

SIX-MONTHLY CHECK

(at intervals of no more than 13 weeks – 20.3.3)
Check the dry alarm valves (in the system).
Check that the alarms in the local control room and/or Fire Department control room are working correctly.

YEARLY CHECK

(at intervals of no more than 12 months)
Check the operation of the feed pumps at full load and any start failures

THREE-YEARLY CHECK

Check the tanks for any external and INTERNAL corrosion and reapply any protective coating if necessary.
Check shut-off and check valves and replace as necessary.

TEN-YEARLY CHECK

After no more than 10 years clean all tanks and check the internal structure.

GENERAL SERVICE CONDITIONS

REPAIR AT AUTHORISED TECHNICAL SUPPORT CENTRES

In order to guarantee the technical support for its movable products, DAB takes advantage of a capillary network of authorised Technical Support Centres (TSC), the full list of which can be found below, and to which the product can be sent or taken for repair.

For products that cannot be removed from their installation positions, it is possible to ask the TSC to intervene on site. In any case, the intervention will need to be authorised in advanced by Customer Service.

TSCs are authorised to apply on behalf of DAB the terms of the warranty for defective products. However, the warranty is subjected to the compliance by the customer with the warranty terms, and to the technical analysis carried out by the TSC to confirm the defect. In order to take advantage of the warranty, the product must be accompanied by proof of purchase, and must not have been previously disassembled or tampered with.

If the intervention or repair of the product is outside the terms of the warranty, the cost for the service provided will be decided by the TSC.

ON-SITE FIRST START-UP TECHNICAL ACTIVITIES - REQUEST OF INTERVENTION

DAB guarantees on-site technical interventions for complex pumping systems, such as pressurization sets/variable speed systems, or fire-fighting pressurisation sets that after installation require to be put into service by a specialist technician capable to show how to operate the equipment correctly, and how to set the installation parameters.

On-site technical interventions are carried out by TSCs possessing specific and appropriate technical skills. The first start-up technical interventions may be purchased directly from DAB when purchasing the pressurisation set / variable speed system.

The purchase of the first start-up service gives the right, during the 24 months following the first start-up of the equipment, to free of charge on-site interventions, provided that these are within the terms of the warranty (see section 6 of the General Sales Conditions).

LIMITS OF THE INTERVENTION

Before the intervention takes place, make sure that everything has been set to enable it to be completed: complete installation of the set, hydraulic and electric connections, availability of electricity, availability of pumped liquid, oil for Diesel engines, pump/motor coupling alignment, etc...

The technical intervention is subjected to positive results of all the safety checks that the technician will carry out before the same.

During the intervention, personnel appointed by the customer must be present, capable of carrying out any necessary system sectioning and regulation activities that may be required for the completion of the same. In addition, the personnel in charge of the site shall be at the disposal of the technician for all the time required for the completion of the intervention.

Any waiting or stop times for any reasons that cannot be attributed to our technician, will be debited to the customer as labour costs.

Any equipment required for moving the equipment shall be made available and used by the customer.

FIRE-FIGHTING PUMP ROOMS

The Italian standard of reference for correct realisation of technical rooms intended for housing fire-fighting pump sets is the **UNI 11292** (August 2008). Here are some extracts of the standard.

LOCATION OF PUMP ROOMS

The rooms shall be above ground or underground, and separated, in adjoining positions, within the protected building.

- Access must be easy (also in case of system in operation), and well indicated.
- The doors of the rooms, made of non-combustible material, must be at least **2 m high, and 0,80 m wide**.
- The possibility of easily introducing /removing the main components must be guaranteed.

CHARACTERISTICS OF THE ROOMS

- The rooms must be naturally ventilated by permanent openings (of at least 0,1 m²)
- The internal walls must be a pale colour, preferably white.
- The minimum sizes must enable to carry out maintenance activities in safe conditions.
- The minimum height of the room must be 2,4 metres.
- The width of the working area around the pumping set must be at least **0,80 m on three side of each set**.

FUNCTIONAL FEATURES:

- The 200 lux lighting system must guarantee at least 25 lux for 60 minutes in case of black out.
 - The room must have a draining system for any water discharge.
 - Underground rooms must be connected to a sewer system with a flow rate capacity of at least 20 m³/h.
- If this is not possible, at least TWO draining pumps shall be required (one as a back-up to the other) with minimum flow rate not more than 5 % lower than the maximum flow rate of the set (and in any case not less than 10 m³/h).
- One of them must be connected to an emergency power input line with autonomy of 30 min. in case of black out.
 - Any fault of the draining pumps must be notified at a manned location.

OPERATIONS FOR THE DIESEL ENGINE-DRIVEN PUMP.

Although more reliable when compared with the electric pump (it also works in case of black out), the Diesel engine-driven pump needs specific measures to avoid excessive noise, vibration, contamination from discharge gases, overheating.

Below are some measures to implement to ensure maximum efficiency.

Diesel engine-driven pump discharge gases. Always channel any discharge gases to the outside of the pump room, using appropriate dedicate exhaust ducts connected to the silencing muffler supplied with the Diesel engine-driven pump.

The exhaust ducts must run at least 2,4 m above the plane of reference (UNI 11292), at a distance of at least 1,5 metres from doors, windows, etcetera (UNI 11292). In addition, they must be protected by weather conditions and fitted with a draining system for the drainage of any condensation.

In order to avoid exceeding the maximum back pressure value at the discharge (600 mm H₂O for air cooled engines, and 1000 mm H₂O for turbocharged – liquid cooled engines), compliance with the following is recommended:

- the exhaust ducts must not be longer than 10 metres,
- the cross section of the ducts must be at least equal to the outlet port of the muffler supplied.

For the calculation of the duct cross-section for lengths in excess of 10 metres, increase the section by 10 % for each 10 metres of duct. E.g. 50 mm duct L 20m S= (50 mm + 10 %) + 10 %: at least 55,5 mm.

Reduce as much as possible the number of bends (max. 6), and ensure that they have the widest possible radius.

It is essential to avoid contamination of the water reservoir in the event of fuel spills from the engine-driven pump fuel tank.

For this purpose, DAB can supply a fuel containment reservoir (OPTIONAL), to be installed under the engine-driven pump tank.

VENTILATION FOR DIESEL ENGINE-DRIVEN PUMPS

For optimum operation, it is necessary that the heat produced by the engine is dispersed outside the pump room. Sufficient combustion air flow must also be guaranteed. The natural circulation caused by the difference between the internal and the external temperature is normally not sufficient. The following is therefore necessary (UNI 11292 5.4.2):

- an air inlet vent, protected by grid, with a net surface at least twice the S surface of the cooling device (e.g. water radiator),
- an air outlet vent, protected by grid, with a net surface at least 1,5 times the S surface of the cooling device.

In case of engine with water/water heat exchanger, the S surface (m²) will be 0,002 x Engine Power (kW).

In this case, the S surface of the conduits / openings, must be at least 0,15 m².

A fan must also be installed, for the extraction of the air from the room, with operation guaranteed also in case of black out:

- with air cooled engines,
- with water/water heat exchanger engines*

(*if ventilation openings are not possible)

Fan capacity - air cooled engines

$Q \text{ (m}^3\text{/h)} = 100 \times \text{Engine Power (kW)}$

Fan capacity - heat exchanger engines

$Q \text{ (m}^3\text{/h)} = 50 \times \text{Engine Power (kW)}$

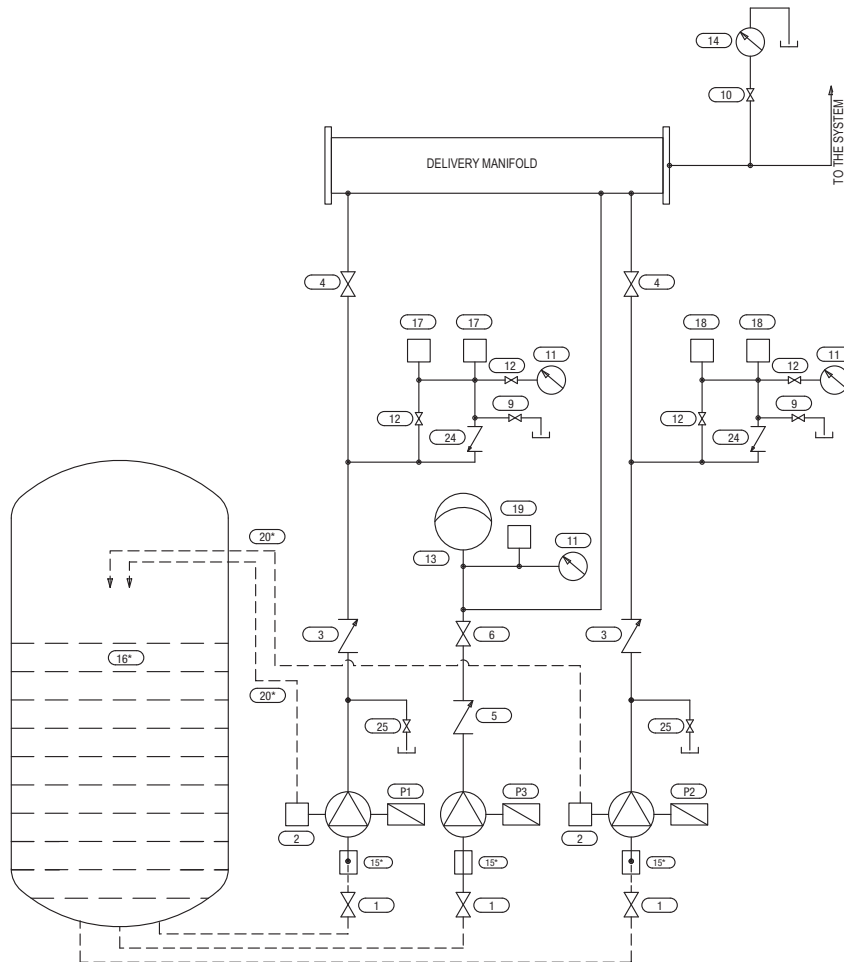
The fan starts with the Diesel engine-driven pump

(DAB control panels have a dedicated contact for this purpose)

HYDRAULIC DIAGRAMS

FLOODED SUCTION HYDRAULIC DIAGRAMS

According to UNI EN 12845, a flooded suction type installation is to be preferred, with at least 2/3 of the tank level above the pump suction port. Each pump has a suction pipeline of at least 65 mm.



REF.	NAME
25	Check valve test line
24	Manual test circuit check valve
20*	Water recirculation and air bleed pipeline
19	Electric jockey pump pressure switch
18	Electric pump no. 2 start-up pressure switches
17	Electric pump no. 1 start-up pressure switches
16*	Water reserve
15*	Suction strainer
14*	Flow meter
13	Membrane expansion vessel
12	Pressure switch shut-off valve
11	Manometer

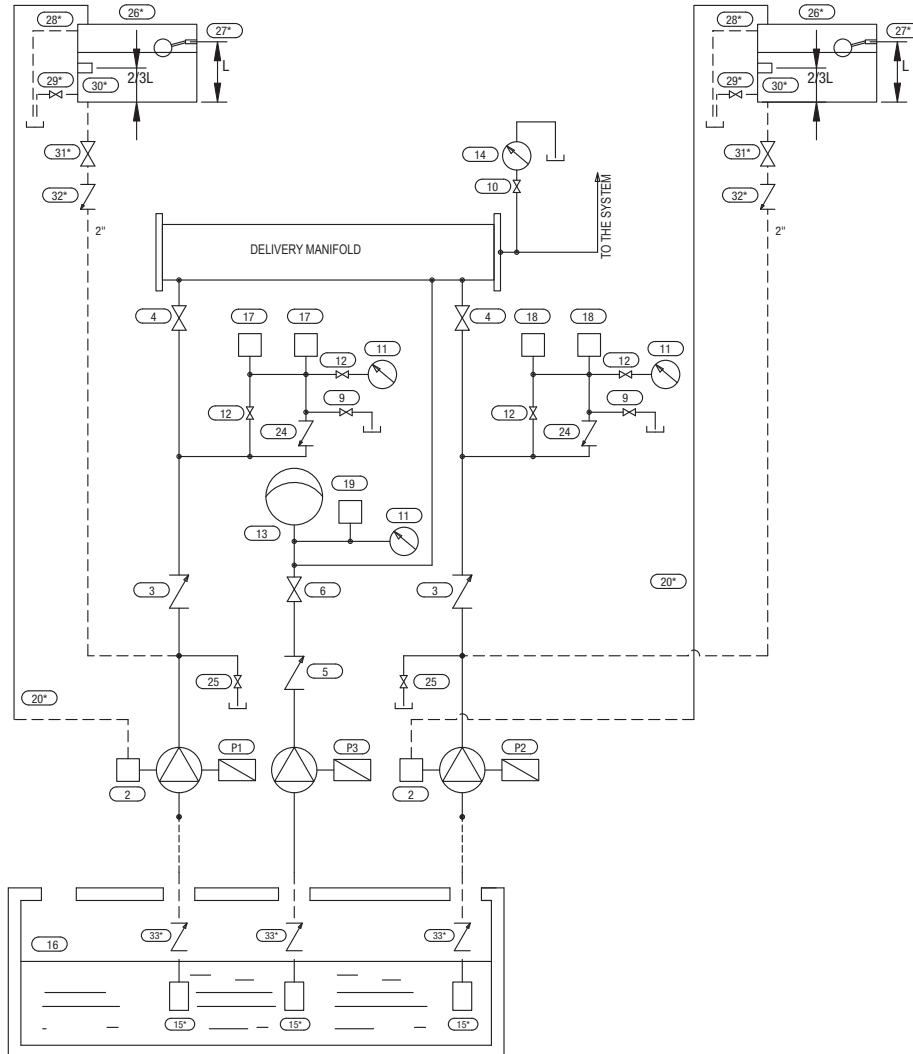
REF.	NAME
10*	Flow meter shut-off valve
9	Pump manual test valve
6	Delivery shut-off valve
5	Non-return valve
4	Delivery shut-off valve
3	Non-return valve
2	Water recirculation and air bleed diaphragm
1*	Suction shut-off valve
P3	Jockey pump
P2	Feed pump no. 2
P1	Feed pump no. 1

* Parts not included in the standard supply

HYDRAULIC DIAGRAMS

SUCTION LIFT HYDRAULIC DIAGRAMS

In suction lift installation, the distance between the pump suction and the minimum tank level must be less than 3,2 metres. A foot valve must be installed for each pump suction line. A priming tank must be installed for each main pump.



REF.	NAME
33*	Foot valve
32*	Priming line check valve
31*	Priming line shut-off valve
30*	Tank float
29*	Tank drain valve
28*	Overflow outlet
27*	Tank replenishment
26*	Priming tank
25	Check valve test line
24	Manual test circuit check valve
20*	Water recirculation and air bleed pipeline
19	Electric jockey pump pressure switch
18	Electric pump no. 2 start-up pressure switches
17	Electric pump no. 1 start-up pressure switches
16*	Water reserve

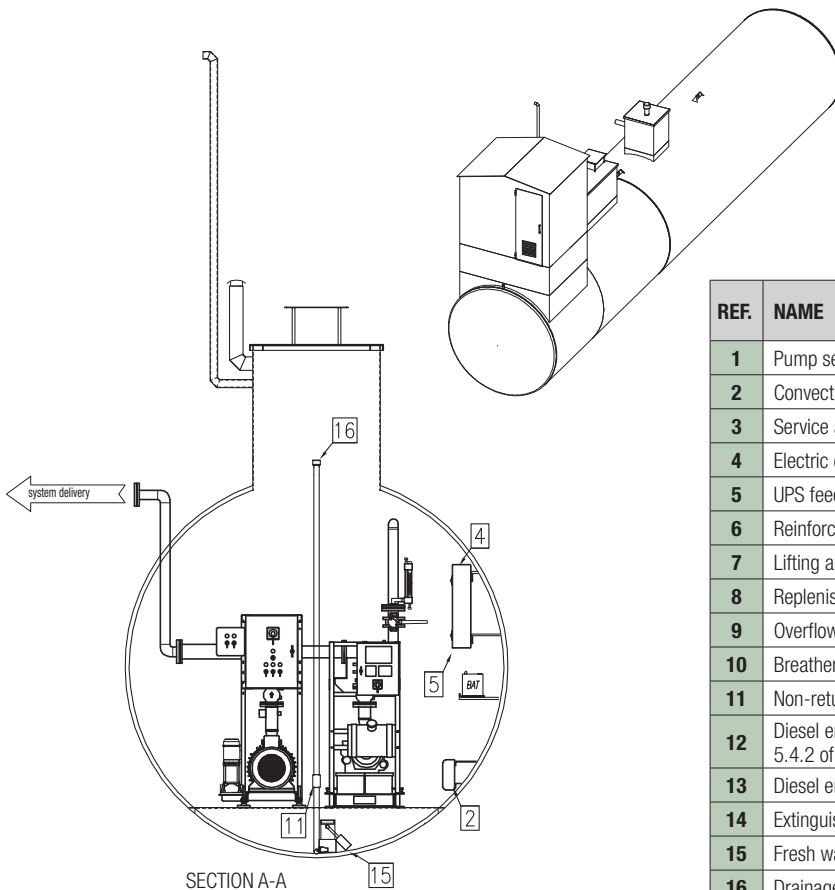
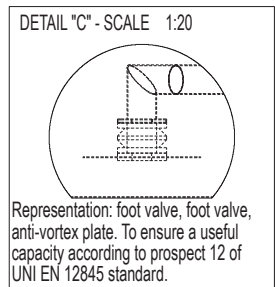
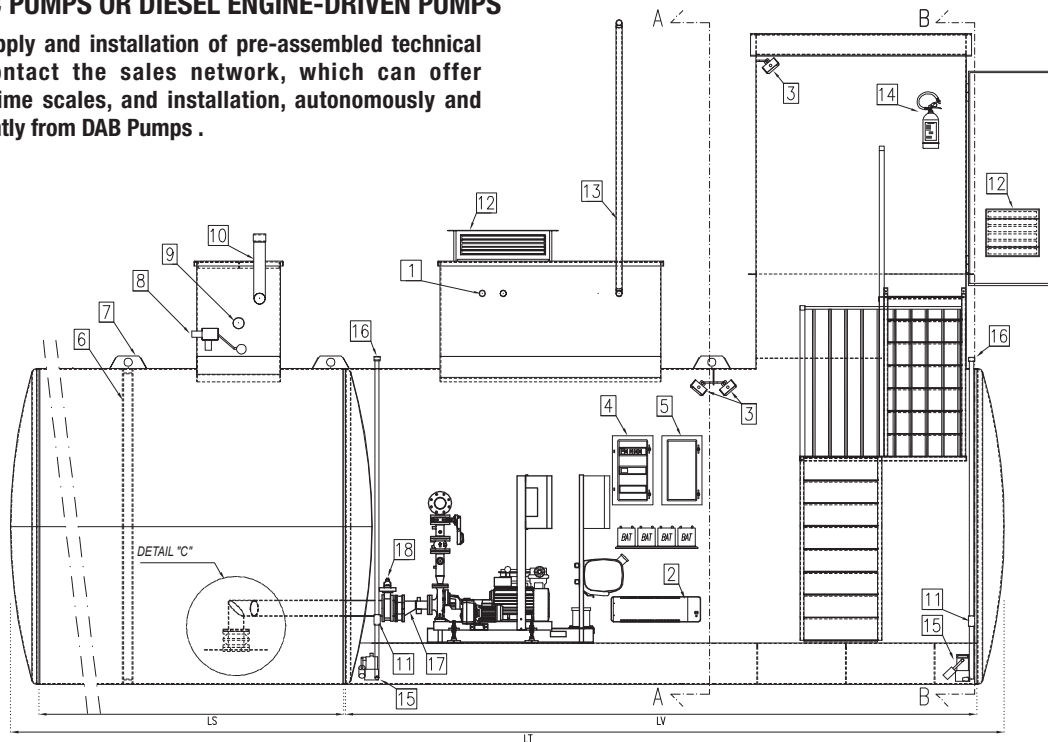
REF.	NAME
15*	Suction strainer
14*	Flow meter
13	Membrane expansion vessel
12	Pressure switch shut-off valve
11	Manometer
10*	Flow meter shut-off valve
9	Pump manual test valve
6	Delivery shut-off valve
5	Non-return valve
4	Delivery shut-off valve
3	Non-return valve
2	Water recirculation and air bleed diaphragm
P3	Jockey pump
P2	Feed pump no. 2
P1	Feed pump no. 1

* Parts not included in the standard supply

EXAMPLE OF INSTALLATION OF A FIRE-FIGHTING SYSTEM

WITH UNDERGROUND TANK AND PUMP ROOM, ACCORDING TO UNI 11292
ELECTRIC PUMPS OR DIESEL ENGINE-DRIVEN PUMPS

For the supply and installation of pre-assembled technical rooms, contact the sales network, which can offer supplies, time scales, and installation, autonomously and independently from DAB Pumps .



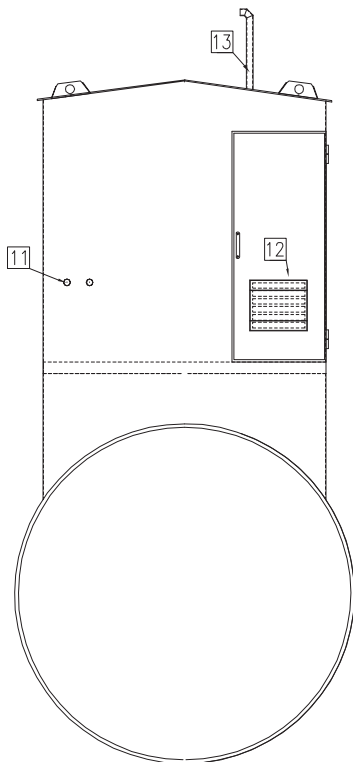
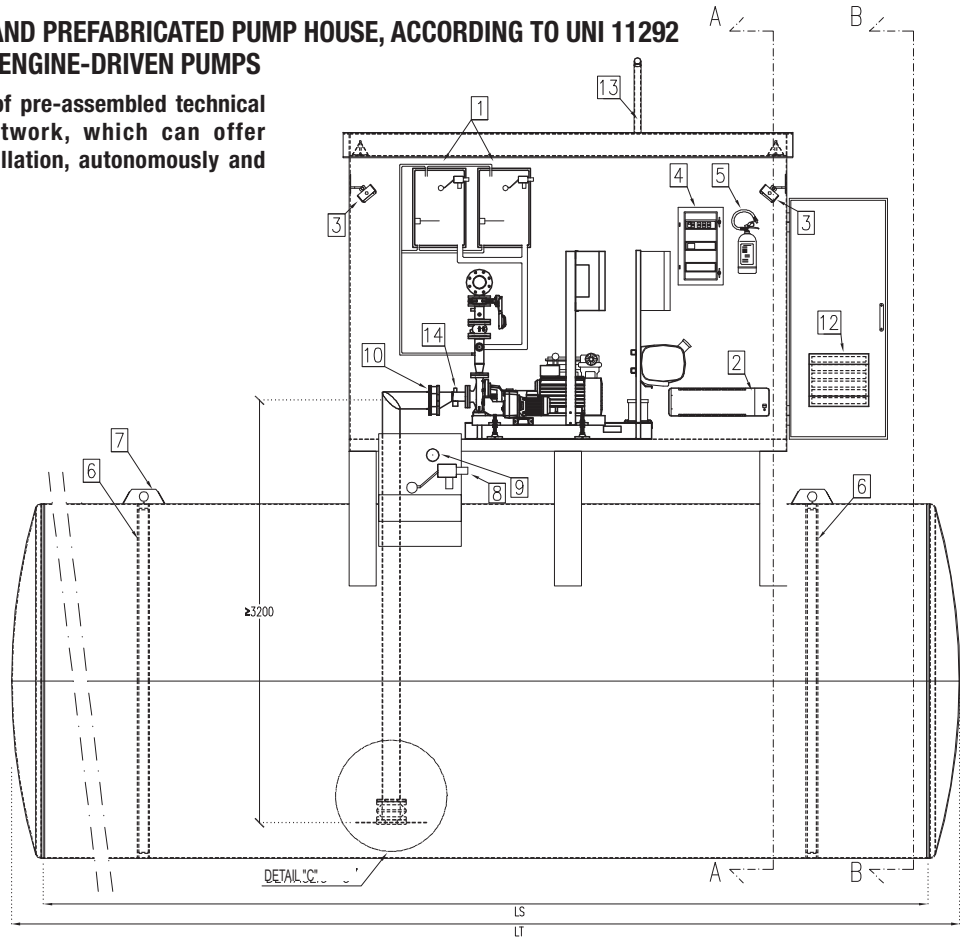
REF.	NAME
1	Pump set electric power input conduits
2	Convection heater
3	Service and emergency lights
4	Electric control panel
5	UPS feeding the lift pumps
6	Reinforcement U beam
7	Lifting and/or handling eye bolt
8	Replenishment stub pipes
9	Overflow
10	Breather
11	Non-return valve
12	Diesel engine ventilation and cooling grid in accordance with section 5.4.2 of UNI 11292
13	Diesel engine fume exhaust duct (not included in the supply)
14	Extinguishing class 34A144 BC extinguisher
15	Fresh water lifting pump
16	Drainage pump attachment to be connected to the drain
17	Eccentric adaptor
18	Tank suction shut-off valve

All systems are built in accordance with UNI EN 12845 and UNI 11292 standards.

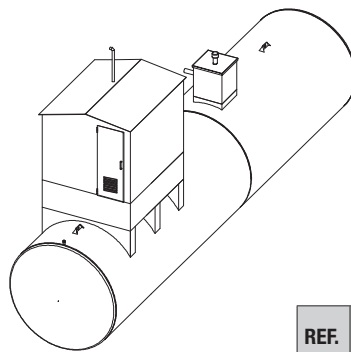
EXAMPLE OF INSTALLATION OF A FIRE-FIGHTING SYSTEM

WITH ABOVE GROUND TANK AND PREFABRICATED PUMP HOUSE, ACCORDING TO UNI 11292
ELECTRIC PUMPS OR DIESEL ENGINE-DRIVEN PUMPS

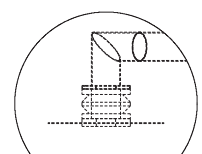
For the supply and installation of pre-assembled technical rooms, contact the sales network, which can offer supplies, time scales, and installation, autonomously and independently from DAB Pumps .



SECTION B-B



DETAIL "C" - SCALE 1:20



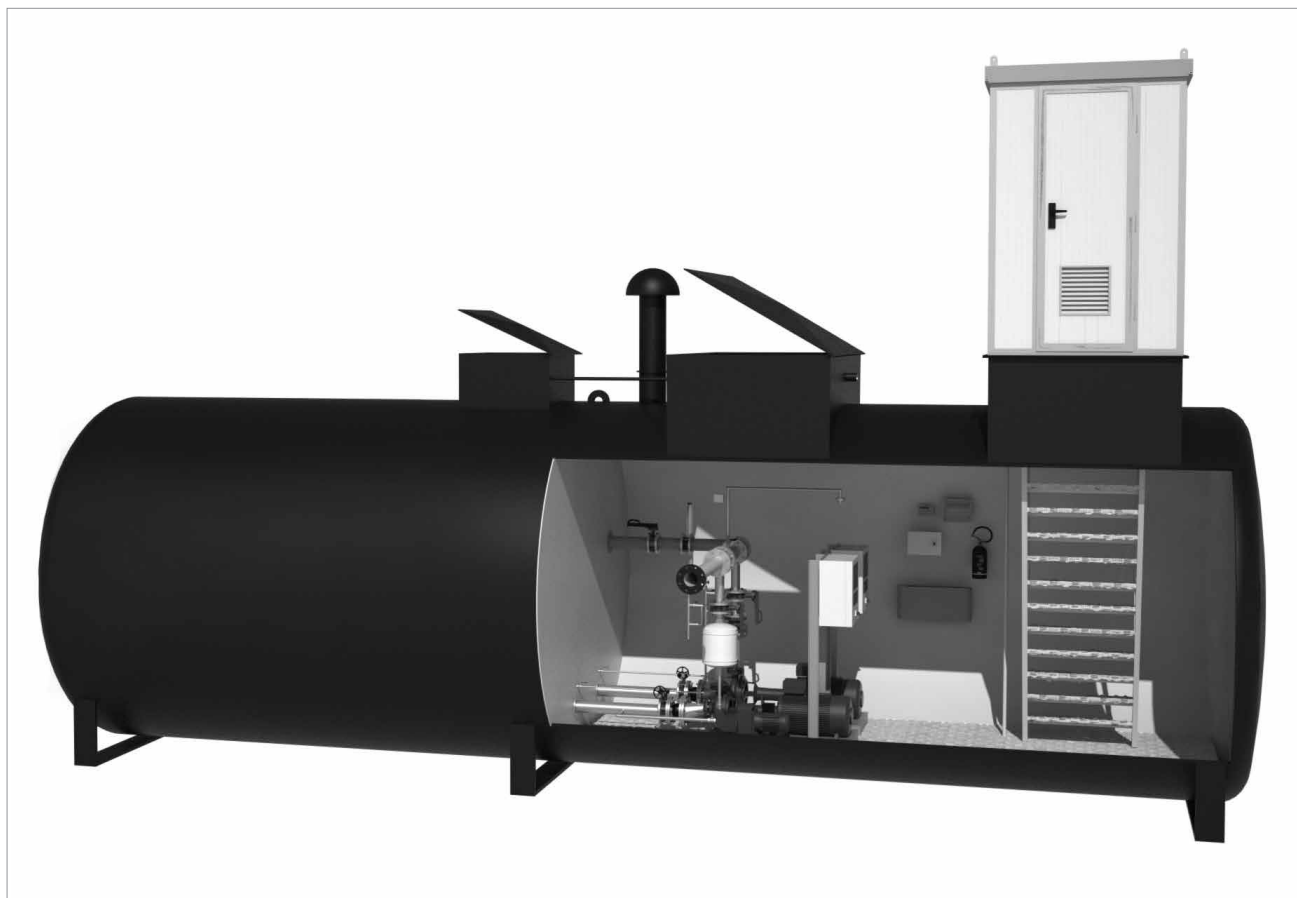
Representation: foot valve, foot valve, anti-vortex plate. To ensure a useful capacity according to prospect 12 of UNI EN 12845 standard.

REF.	NAME
1	Priming tanks
2	Convection heater
3	Service and emergency lights
4	Electric control panel
5	Extinguishing class 34A144 BC extinguisher
6	Reinforcement U beam
7	Lifting and/or handling eye bolt
8	Replenishment stub pipes
9	Overflow
10	Anti-vibration coupling
11	Pump set electric power input conduits
12	Diesel engine ventilation and cooling grid in accordance with section 5.4.2 of UNI 11292
13	Diesel engine fume exhaust duct (not included in the supply)
14	Eccentric adaptor

All systems are built in accordance with UNI EN 12845 and UNI 11292 standards.

EXAMPLE OF INSTALLATION OF A FIRE-FIGHTING SYSTEM

For the supply and installation of pre-assembled technical rooms, contact the sales network, which can offer supplies, time scales, and installation, autonomously and independently from DAB Pumps .

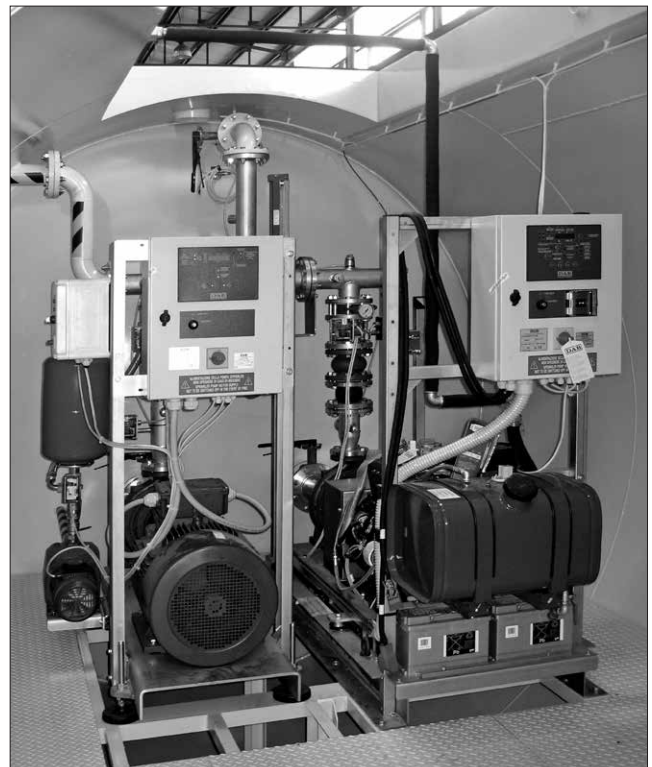
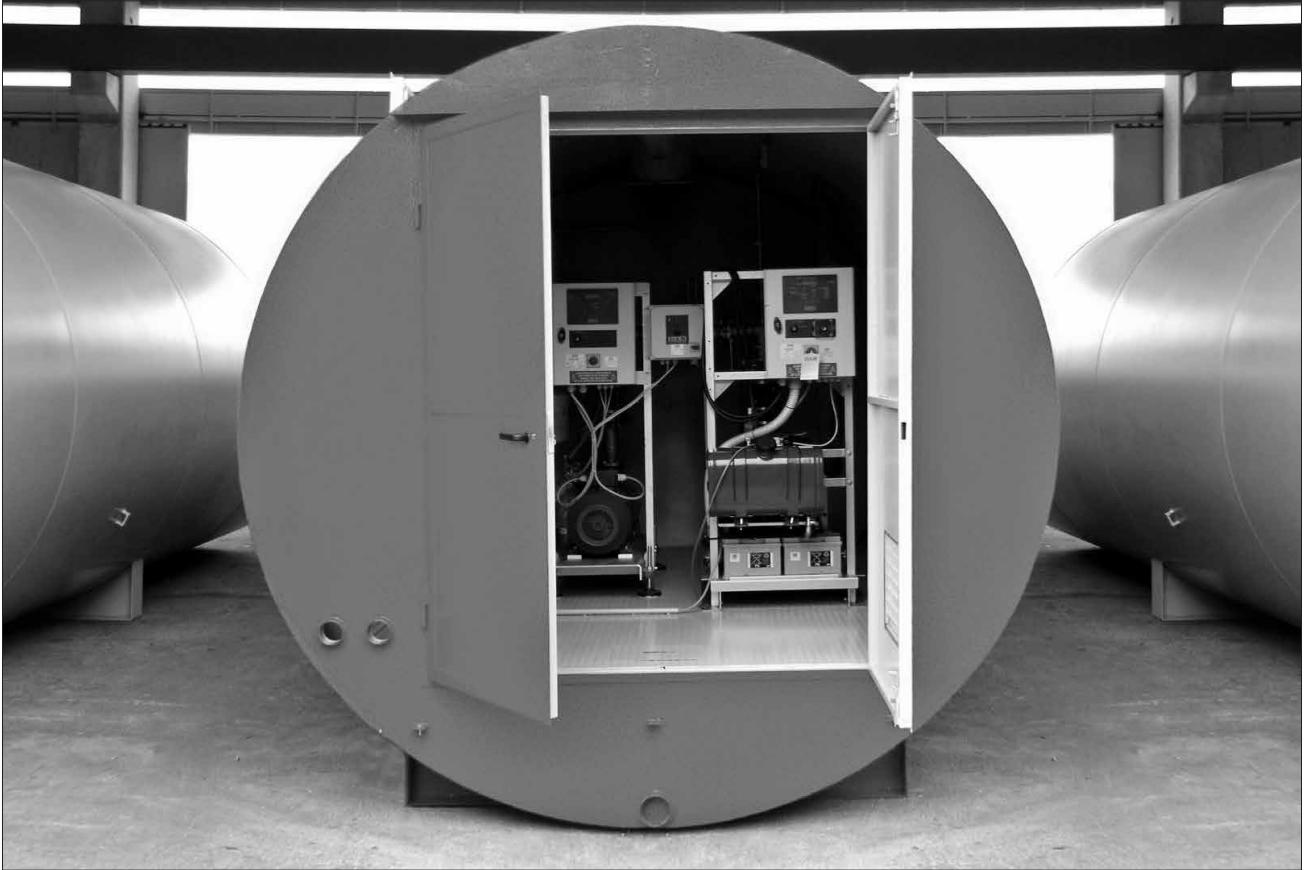


STORAGE TANK

The storage tank can be made of steel having a gauge between 5 and 6 mm, depending on the capacity, with internal U braces.

Externally, the entire module is protected by a thick layer of bitumen paint or, on request, a root-proof polyester liner, while the interior of the tank is protected with a red lead rust-proof primer. There is a manhole on the top of the tank providing access to the inspection well, protected by a grid and prearranged for connection of the replenishment pipe, breather pipe, and a pipe for the insertion of the level float.

If the capacity of a single tank is insufficient two or more tanks can be combined by means of a prearranged flanged interconnecting pipeline.

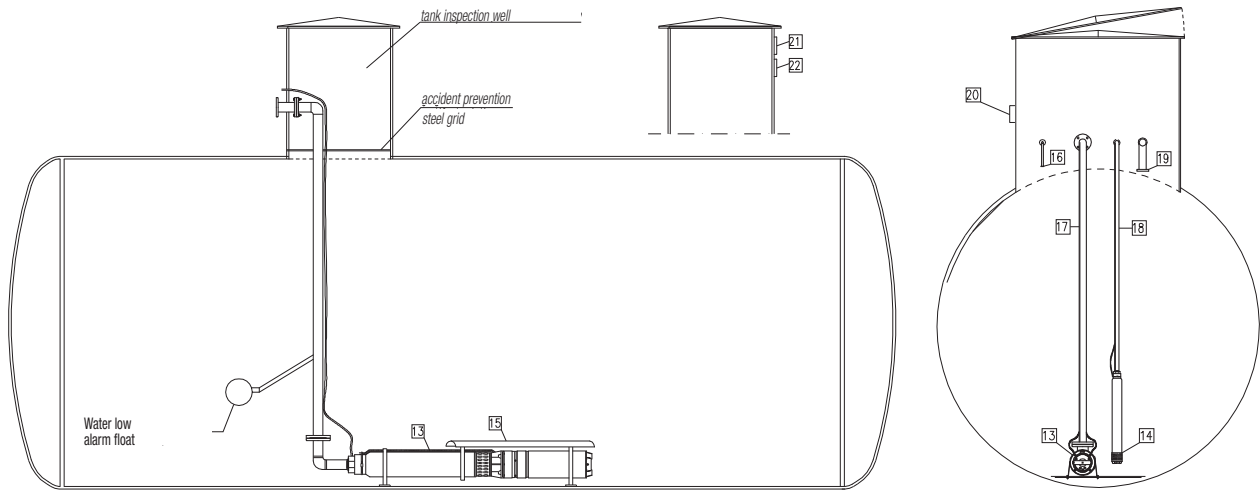


TECHNICAL APPENDIX

UNI EN 12845 FIRE-FIGHTING PUMP SETS

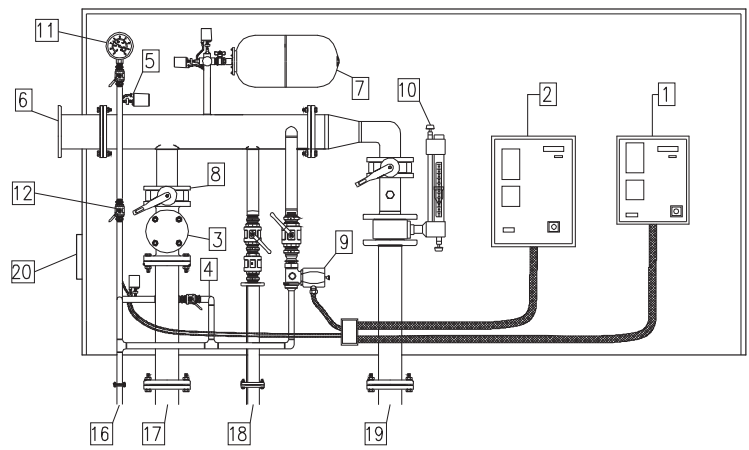
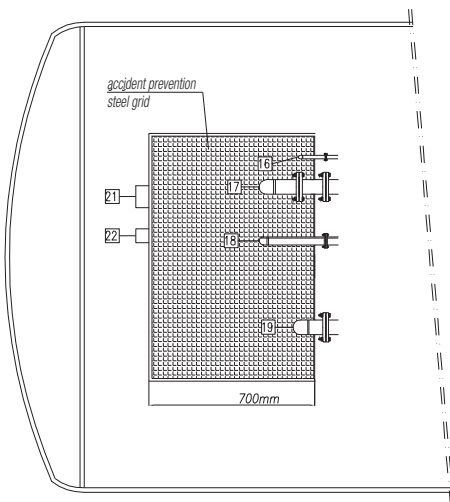
EXAMPLE OF INSTALLATION OF A FIRE-FIGHTING SYSTEM WITH SUBMERGED PUMPS

For the supply and installation of pre-assembled technical rooms, contact the sales network, which can offer supplies, time scales, and installation, autonomously and independently from DAB Pumps .



DETAIL OF REGULATION COMPONENTS/ SUBMERGED PUMP FIRE-FIGHTING SET CONTROL ROOM

FIRE-FIGHTING SET ELECTRIC CONTROL PANEL AND MANIFOLD KIT TO UNI EN 12845, TO BE INSTALLED ON THE WALL OR IN A CONTAINMENT COMPARTMENT IN THE IMMEDIATE PROXIMITY OF THE TANK



All systems are built in accordance with UNI EN 12845 and UNI 11292 standards.

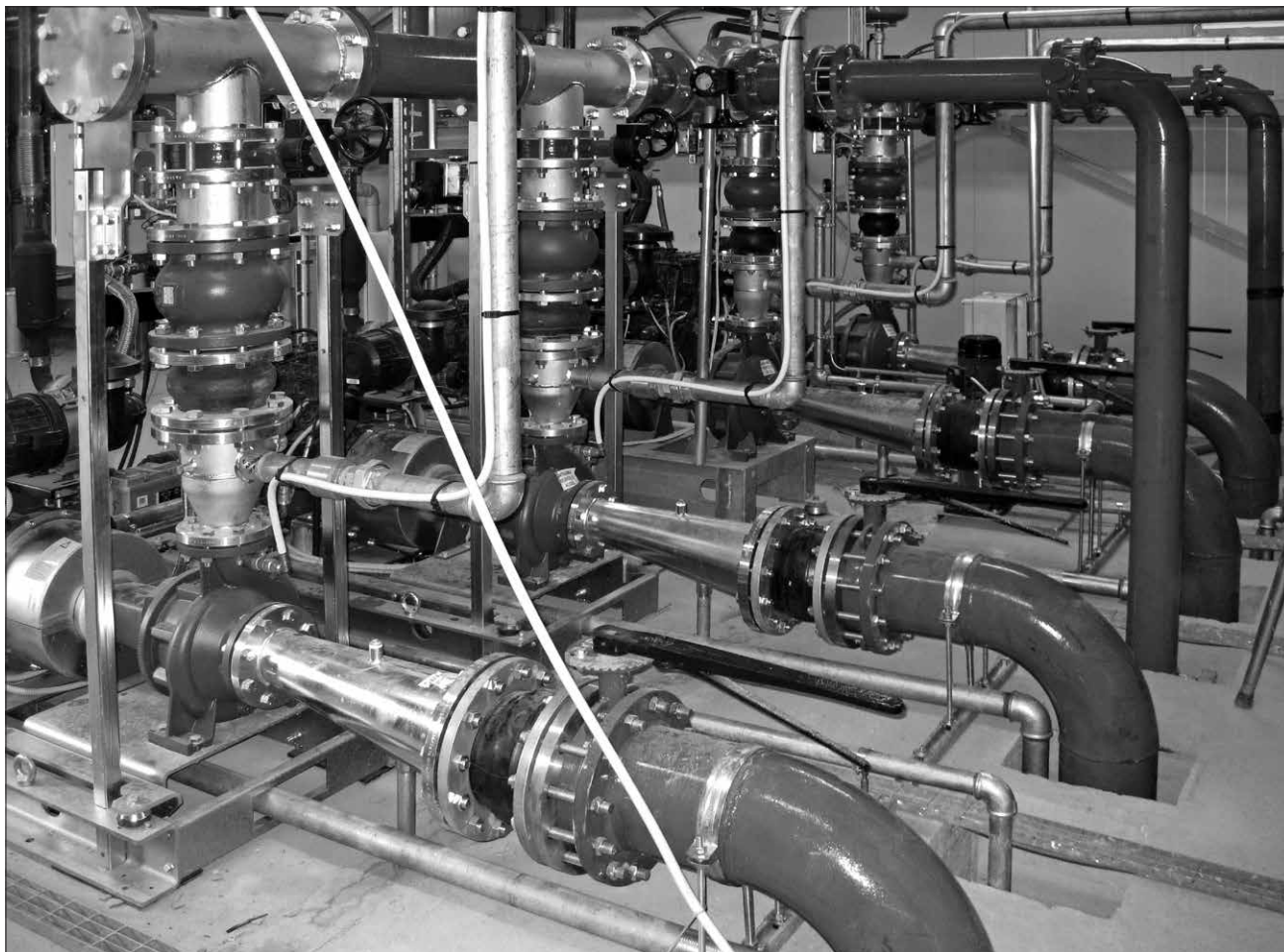
REF.	NAME
1	Feed pump control panel
2	Jockey pump control panel
3	Inspectionable check valve
4	Water recirculation diaphragm
5	Main pump start pressure switch
6	Delivery manifold
7	Membrane expansion vessel
8	Suction valve
9	Weekly test solenoid valve
10	Flow meter
11	Manometer
12	Manual test cock

REF.	NAME
13	Feed pump/s
14	Jockey pump
15	Anti-vortex plate
16	Test circuit drain pipeline
17	Delivery feed pump pipeline
18	Delivery jockey pump pipeline
19	Flow meter water drain pipeline
20	Cable gland plate
21	Tank air breather
22	Tank water load

EXAMPLE OF FIRE-FIGHTING SYSTEM INSTALLATION

UNI EN 12845 PRIMING TANK

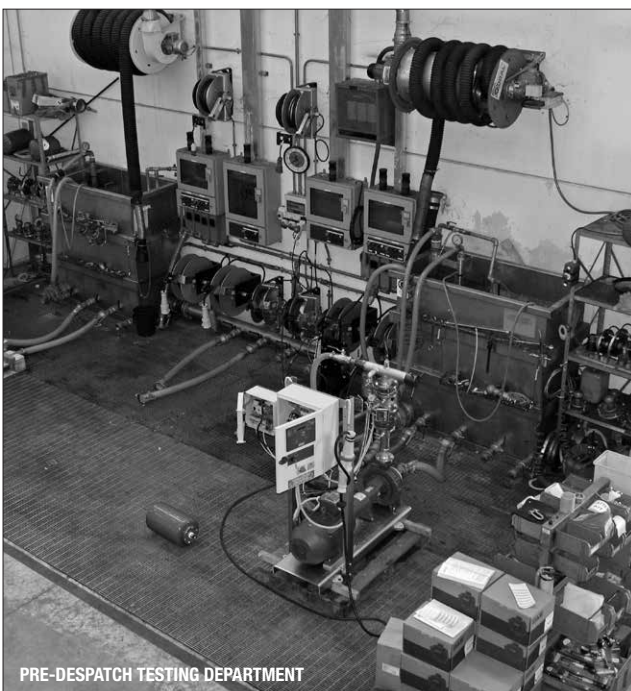
Monobloc system for underground installation, complete with water reserve, technical compartment, and pump set, designed and built in compliance with UNI EN 12845 and UNI 11292. Technical compartment equipped with forced ventilation and two drainage pumps including a generator set. Access to the technical room by means of a ladder protected by a prefabricated structure; possibility to make the fire water tank transportable by means of internal support inserts. The benefits of the SBAI system are ease of installation, and safety in compliance with standards. All systems are built in accordance with UNI EN 12845 and UNI 11292 standards.



DAB INTERNAL PRODUCTION LINE

DAB Pumps S.p.A internally designs all the products, including pressurisation sets for civil and industrial applications.

During the years, DAB has particularly specialised in fire-fighting applications, offering solutions capable of meeting the requirement of modern system techniques. In 2014 DAB asked a prestigious third party Certifying Body to carry out a "Technical assessment for compliance to the requirements of UNI EN 12845 standards" for some fire-fighting pump models. **DAB has obtained the relevant certification, and the reassurance of being able to offer quality products to its customers.**



UNI EN 12845 CERTIFICATION



Istituto Giordano S.p.A.
Via Rossini, 2 - 47814 Bellaria-Igea Marina (RN) - Italia
Tel. +39 0541 343030 - Fax +39 0541 345540
istitutogiordano@giordano.it - www.giordano.it
PEC: ist-giordano@legalmail.it
Cod. Fisc./Part. IVA: 00 549 540 409 - Cap. Soc. € 1.500.000 i.v.
R.E.A. c/o C.C.I.A.A. (RN) 156766
Registro Imprese di Rimini n. 00 549 540 409

COMPLIANCE EVALUATION REPORT No. 313795

Place and date of issue: Bellaria-Igea Marina - Italy, 28/02/2014

Customer: DAB PUMPS S.p.A. - Via Marco Polo, 14 - 30035 MESTRINO (PD) - Italy

Date test requested: 20/01/2014

Order number and date: 61935, 21/01/2014

Test date: 20/02/2014

Purpose of test: technical evaluation of compliance with the specifications of standard UNI EN 12845:2009 of a pre-assembled pumpset used to supply water to automatic sprinkler systems

Evaluation venue: at the Customer's premises

Specimen origin: sampled and supplied by the Customer

Specimen name

The specimen undergoing compliance evaluation is called "1KDN32-200/219 11 T EN12845-JET - code 500813550 - serial number 5.1408".

Description of specimen*

The specimen undergoing compliance evaluation comprises a pre-assembled pumpset used to supply water to automatic sprinkler systems.

(* according to that stated by the Customer.

Comp. AV Revis. GC	This compliance evaluation report consists of 8 sheets and 1 annex. This document is the English translation of the compliance evaluation report No. 313795 dated 28/02/2014 issued in Italian. Date of translation: 30/04/2014.	Sheet 1 of 8
-----------------------	--	-----------------

CLAUSES: This document relates only to the sample or material tested and shall not be reproduced except in full without Istituto Giordano's written approval.

UNI EN 12845 DIESEL CERTIFICATION



Istituto Giordano S.p.A.
Via Rossini, 2 - 47814 Bellaria-Igea Marina (RN) - Italia
Tel. +39 0541 343030 - Fax +39 0541 345540
istitutogiordano@giordano.it - www.giordano.it
PEC: ist-giordano@legalmail.it
Cod. Fisc./Part. IVA: 00 549 540 409 - Cap. Soc. € 1.500.000 i.v.
R.E.A. c/o C.C.I.A.A. (RN) 156766
Registro Imprese di Rimini n. 00 549 540 409

COMPLIANCE EVALUATION REPORT No. 313798

Place and date of issue: Bellaria-Igea Marina - Italy, 28/02/2014

Customer: DAB PUMPS S.p.A. - Via Marco Polo, 14 - 30035 MESTRINO (PD) - Italy

Date test requested: 20/01/2014

Order number and date: 61935, 21/01/2014

Test date: 20/02/2014

Purpose of test: technical evaluation of compliance with the specifications of standard UNI EN 12845:2009 of a pre-assembled pumpset used to supply water to automatic sprinkler systems

Evaluation venue: at the Customer's premises

Specimen origin: sampled and supplied by the Customer

Specimen name

The specimen undergoing compliance evaluation is called "1KDN 32-200/219 MD EN 12845 - code 503883100 - serial number 5.1405".

Description of specimen*

The specimen undergoing compliance evaluation comprises a pre-assembled pumpset used to supply water to automatic sprinkler systems.

(* according to that stated by the Customer.

Comp. AV
Revis. GC

This compliance evaluation report consists of 10 sheets and 1 annex.
This document is the English translation of the compliance evaluation report No. 313798 dated 28/02/2014 issued in Italian.
Date of translation: 30/04/2014.

Sheet
1 of 10

CLAUSES: This document relates only to the sample or material tested and shall not be reproduced except in full without Istituto Giordano's written approval.

TRANSPORT AND INSTALLATION

Due to the sizes of the system, transport is relatively easy, and can be fully included in the offer.
When installing the whole system, it is sufficient to take the precaution to spread a bed of sand over the floor.



For the supply and installation of pre-assembled technical rooms, contact the sales network, which can offer supplies, time scales, and installation, autonomously and independently from DAB Pumps .

DNA
PUMPS SELECTOR

On-line product selection



DAB PUMPS LTD.

Unit 4 and 5, Stortford Hall Industrial Park,
Dunmow Road,
Bishops Stortford,
Herts
CM23 5GZ - UK
salesuk@dwtgroup.com
Tel. +44 1279 652 776
Fax +44 1279 657 727



DAB PUMPS IBERICA S.L.

Avenida de Castilla nr.1 Local 14
28830 - San Fernando De Henares - Madrid
Spain
info.spain@dwtgroup.com
Tel. +34 91 6569545
Fax: +34 91 6569676



DAB PUMPS INC.

3226 Benchmark Drive
Ladson, SC 29456 - USA
info.usa@dwtgroup.com
Tel. 1-843-824-6332
Toll Free 1-866-896-4DAB (4322)
Fax 1-843-797-3366



DAB PUMPS B.V.

Brusselstraat 150
B-1702 Groot-Bijgaarden - Belgium
info.belgium@dwtgroup.com
Tel. +32 2 4668353
Fax +32 2 4669218



DAB PRODUCTION HUNGARY KFT.

H-8800
Nagykanizsa, Buda Ernó u.5
Hungary
Tel. +36 93501700



DWT SOUTH AFRICA

Podium at Menlyn,
3rd Floor, Unit 3001b, 43 Ingersol Road,
C/O Lois and Atterbury street,
Menlyn, Pretoria, 0181 - South-Africa
info.sa@dwtgroup.com
Tel. +27 12 361 3997
Fax +27 12 361 3137



DAB PUMPS B.V.

Albert Einsteinweg, 4
5151 DL Drunen - Nederland
info.netherlands@dwtgroup.com
Tel. +31 416 387280
Fax +31 416 387299



DAB PUMPS POLAND Sp. z o.o.

Mokotow Marynarska
ul. Postępu 15C
02-676 Warszawa - Poland
Tel. +48 223 81 6085



DAB PUMPS CHINA

No.40 Kaituo Road, Qingdao Economic & Technological
Development Zone
Qingdao City, Shandong Province - China
PC: 266500
info.china@dwtgroup.com
Tel. +8653286812030-6270
Fax +8653286812210



DAB UKRAINE Representative Office

Regus Horizon Park
4 M. Hrinchenka St, suit 147
03680 Kiev - Ukraine
Tel. +38 044 391 59 43



DAB PUMPEN DEUTSCHLAND GmbH

Tackweg 11
D - 47918 Tönisvorst - Germany
info.germany@dwtgroup.com
Tel. +49 2151 82136-0
Fax +49 2151 82136-36



OOO DAB PUMPS

Novgorodskaya str, 1, bld G, office 308
127247 Moscow - Russia
info.russia@dwtgroup.com
Tel. +7 495 122 00 35
Fax +7 495 122 00 36



DAB PUMPS DE MÉXICO, S.A. DE C.V.

Av Gral Álvaro Obregón 270, oficina 355
Hipódromo, Cuauhtémoc 06100
México, D.F.
Tel. +52 55 6719 0493