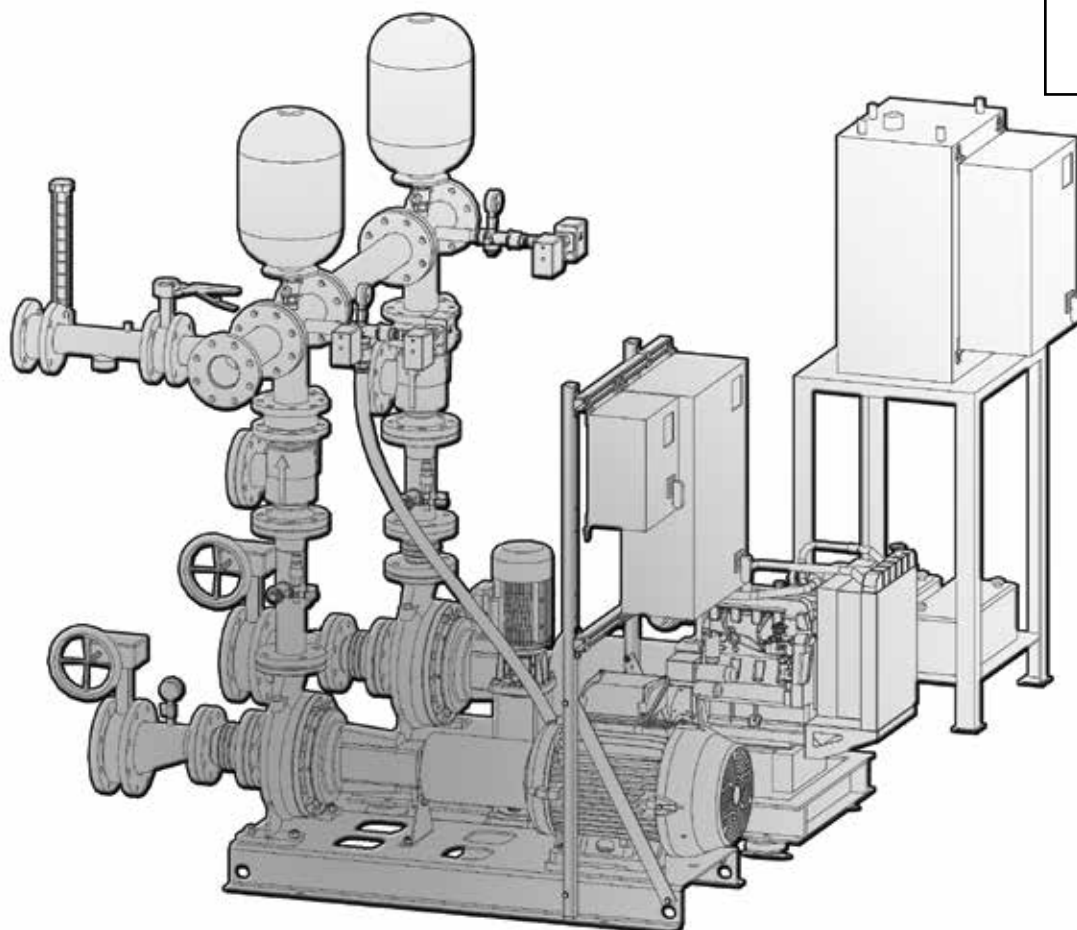


50 Hz



GEM Series

FIRE-FIGHTING MODULES EN 12845 WITH HORIZONTAL
CENTRIFUGAL NSCC AND NSC SERIES ELECTRIC AND DIESEL ENGINE PUMPS

Cod. 191020421 Rev. A Ed.06/2015

 **LOWARA**
a xylem brand

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GENERAL INTRODUCTION – PRODUCT DESCRIPTION

The GEM modular fire-fighting pressure boosters are built in conformity with EN 12845 for automatic sprinkler systems and with UNI 10779 for hydrant systems.

In accordance with the above standards, all the main components of the single-pump booster set are factory connected and assembled.

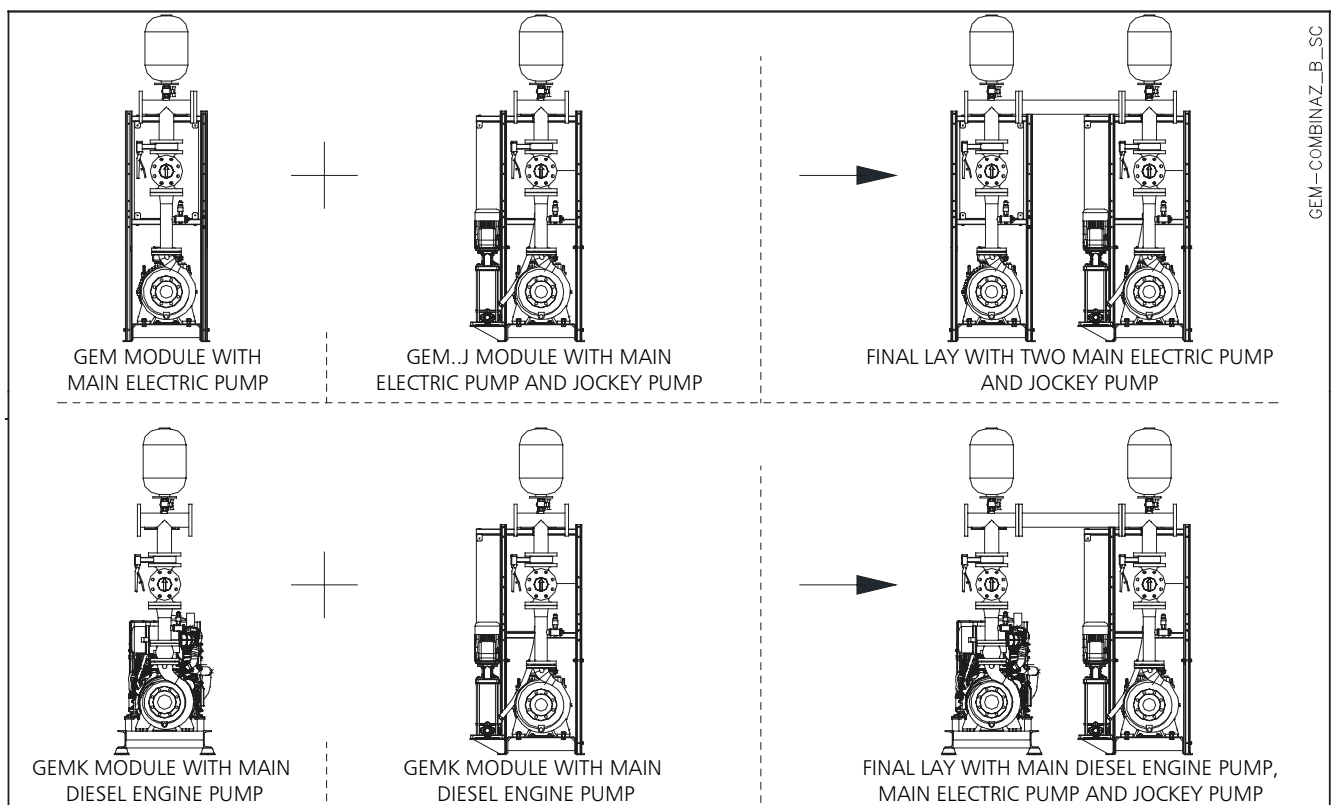
The configuration of the module, intended as a single unit, always comprises the pump and varies according to the required type of motor or engine (electric or diesel).

If modules are combined, the water supplies described in EN12845 can be obtained for the fire-fighting system in question. These water supplies can be single, superior, duplicated or combined. Fire-fighting sets are generally fitted with two main service pumps, one backing up the other. The diameter of the connection pipe is chosen considering only one operating pump; the second one serves as a backup (10.2 EN 12845). The choice of electric motors or diesel engines depends on the level of reliability required from the system. Point 10.2 of EN 12845 states that for superior or duplicate water supplies, and if more than one pump is installed, no more than one service pump can be driven by the electric motor. This concept means that most installations always comprise at least one diesel pump backing up the main electric pump.

The Lowara GEM fire-fighting booster modules are complete units and comprise the range of base-connector horizontal pumps, thus assuring an extensive choice depending on system requirements and the contents of the above standards. The GEM modular fire-fighting sets comprise:

- End-suction horizontal electric pump complete with hydraulic components and control panel.
- End-suction horizontal electric pump complete with jockey pump connected to the base of the electric pump, hydraulic components and control panels.
- Diesel engine pump with end-suction hydraulic pump complete with hydraulic components, control panel and fuel tank.

The above three modules can be combined in order to reproduce the configuration required for the fire-fighting system water supply.



GENERAL INTRODUCTION – PRODUCT DESCRIPTION

Il modulo base è completato con i seguenti componenti principali:

- On the discharge side of the service pump there is an on-off valve, a check valve and a tap for connection to the priming circuit for suction lift installations. Moreover, if the service pump works with a closed discharge line, a water recirculation cycle is performed in order to prevent the pump from overheating.
- Two pressure switches for the service pump (if the first fails, the second repeats permission for the pump to start).
- System connection via a threaded or flanged "TEE".
- Single base to which the service pump is fitted.
- Control panel bracket.

To complete the pump modules as required by the standard and to combine the various modules, the following accessories are available :

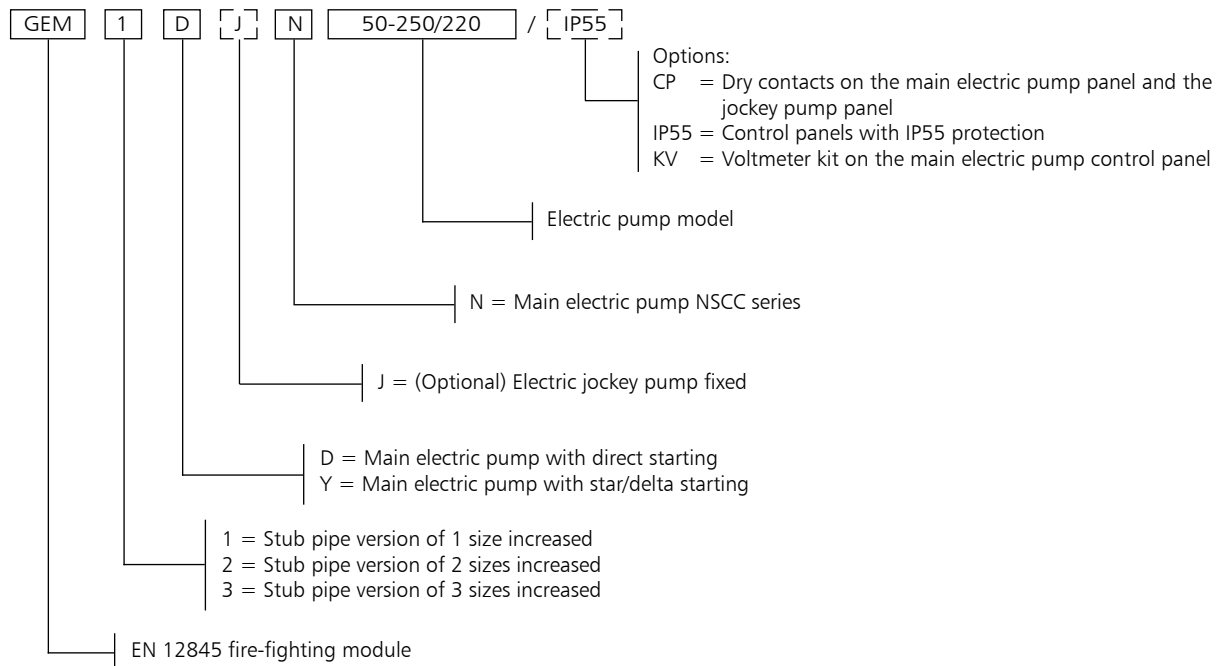
- Threaded connector kit comprising a threaded stub pipe.
- Flanged connector kit comprising a flanged stub pipe.
- Suction kit.
- Flow meter kit.
- Priming tank.
- Priming tank accessory kit.
- Electric jockey pump kit.
- On/off butterfly valve micro kit
- QAL12845.
- Multi-QAL 12845 kit.
- GSM module kit.
- Q-2RILS 485 control panel.
- Dry-running safety kit.
- Membrane vessels.
- Counterflange kit.
- Kit of universal brackets for control panels.
- Diesel supplementary catch basin kit.
- Set of spare parts for diesel engines.
- Fuel discharge valve kit.

The Customer can thus build the fire-fighting set according to UNI EN 12845 by simply summing the required modules.

E.g. to obtain a set comprising a main electric pump + jockey pump + backup diesel engine pump, 1 main electric pump module with jockey pump (GEM..J) + 1 diesel engine pump module (GEMK..) must be ordered + connector kit (threaded or flanged depending on the type of pump).

MODULE IDENTIFICATION CODE

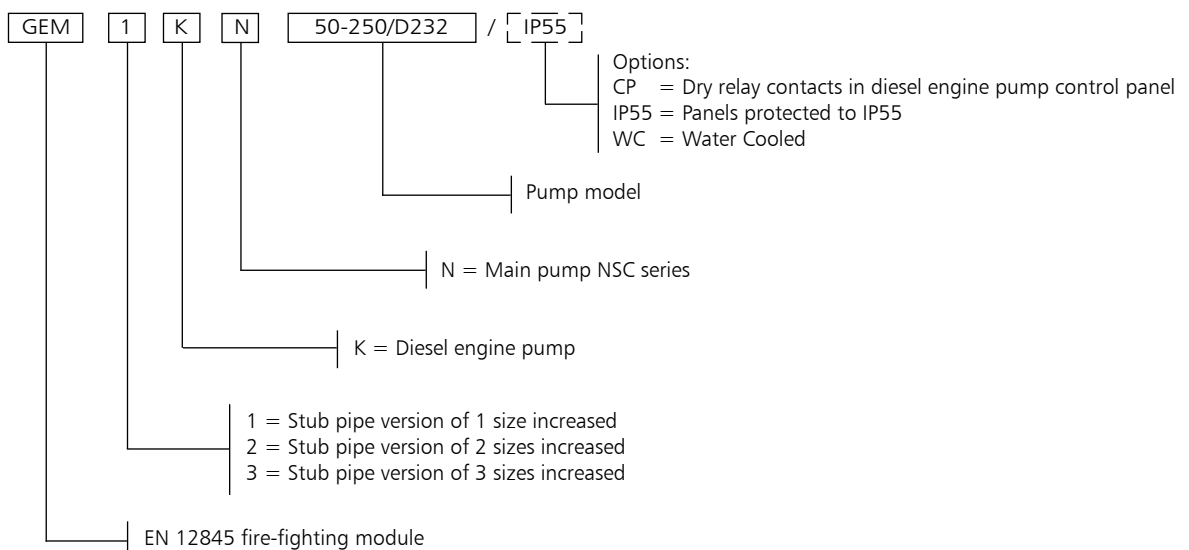
EN 12845 MODULE WITH MAIN ELECTRIC PUMP



EXAMPLES:

- GEM1YN80-250/450: EN12845 version GEM1 fire-fighting module, comprising a main electric pump NSCC series model 80 250/450, with star/delta starting.
- GEM2DJN40-200/75: EN12845 version GEM2 fire-fighting module, comprising a main electric pump NSCC series model 40-200/75, with direct starting; with electric jockey pump fixed.
- GEM3DN65-250/300: EN12845 version GEM3 fire-fighting module, comprising a main electric pump NSCC series model 65 250/300, with direct starting.

EN 12845 MODULE WITH MAIN DIESEL ENGINE PUMP



EXAMPLES:

- GEM1KN40-200/D199: EN12845 version GEM1 fire-fighting module comprising an NSC diesel engine pump model 40-200/D199.
- GEM2KN80-250/D241/WC: EN12845 version GEM2 fire-fighting module comprising an NSC diesel engine pump model 80-250/D241, water cooled engine.
- GEM3KN65-250/D243: EN12845 version GEM3 fire-fighting module comprising an NSC diesel engine pump model 65-250/D243.

GEM VERSION MODULE

The maximum speed of water through the valve installed in the discharge side of the pump should not exceed the limit specified in Point 13.2.3 of EN 12845 Standard of 6 m/s. For this reason you can choose, increasing the flow, between versions GEM1, GEM2 or GEM3. Increasing the diameter decreases the speed of water and decreases the pressure drops for the benefit of performance of the pressure module. The accessories have appropriate dimensions depending on the version chosen. For selection and dimensional details, see accessories section. With version GEM2, for example, the diameter DN of the components after the diverging pipe is equal to DN+2 to the diameter of the delivery outlet of the pump.

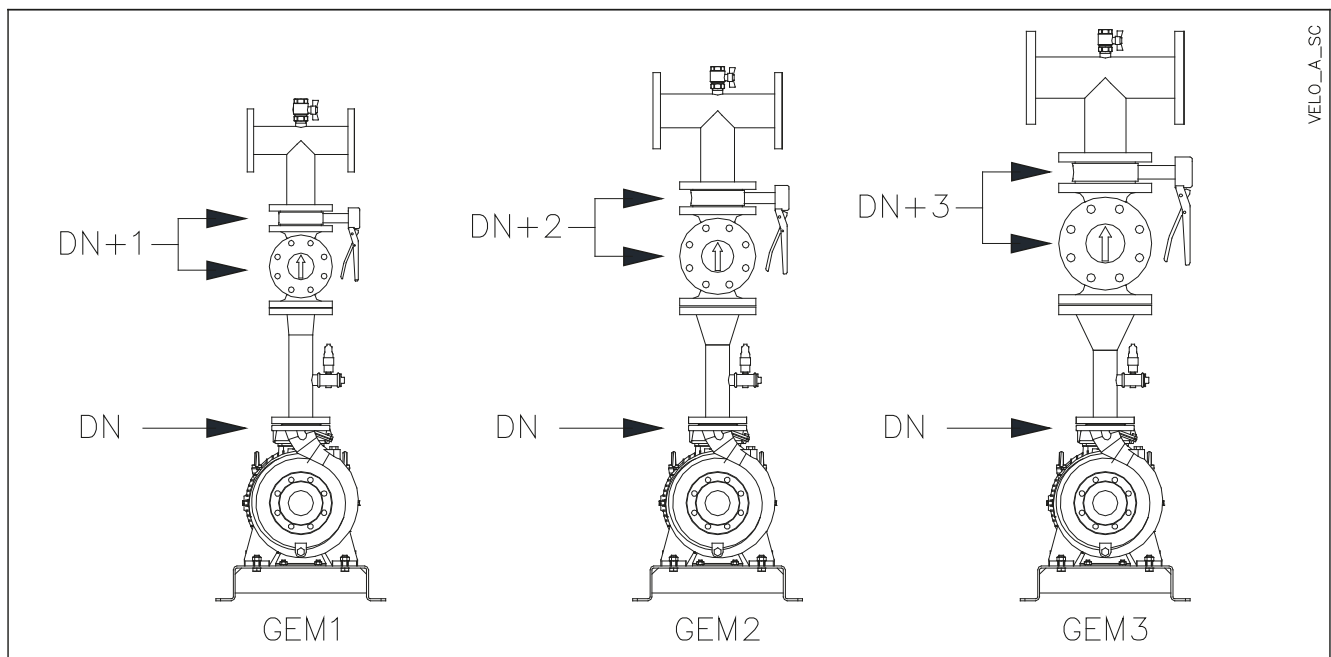
Example:

GEM2YN50-250/300 Module:

diameter of delivery outlet of the pump is DN50, diameter of on/off butterfly valve and non-return valve are DN80.

GEM3KN65-250/D243 Module:

diameter of delivery outlet of the pump is DN65, diameter of on/off butterfly valve and non-return valve are DN125.

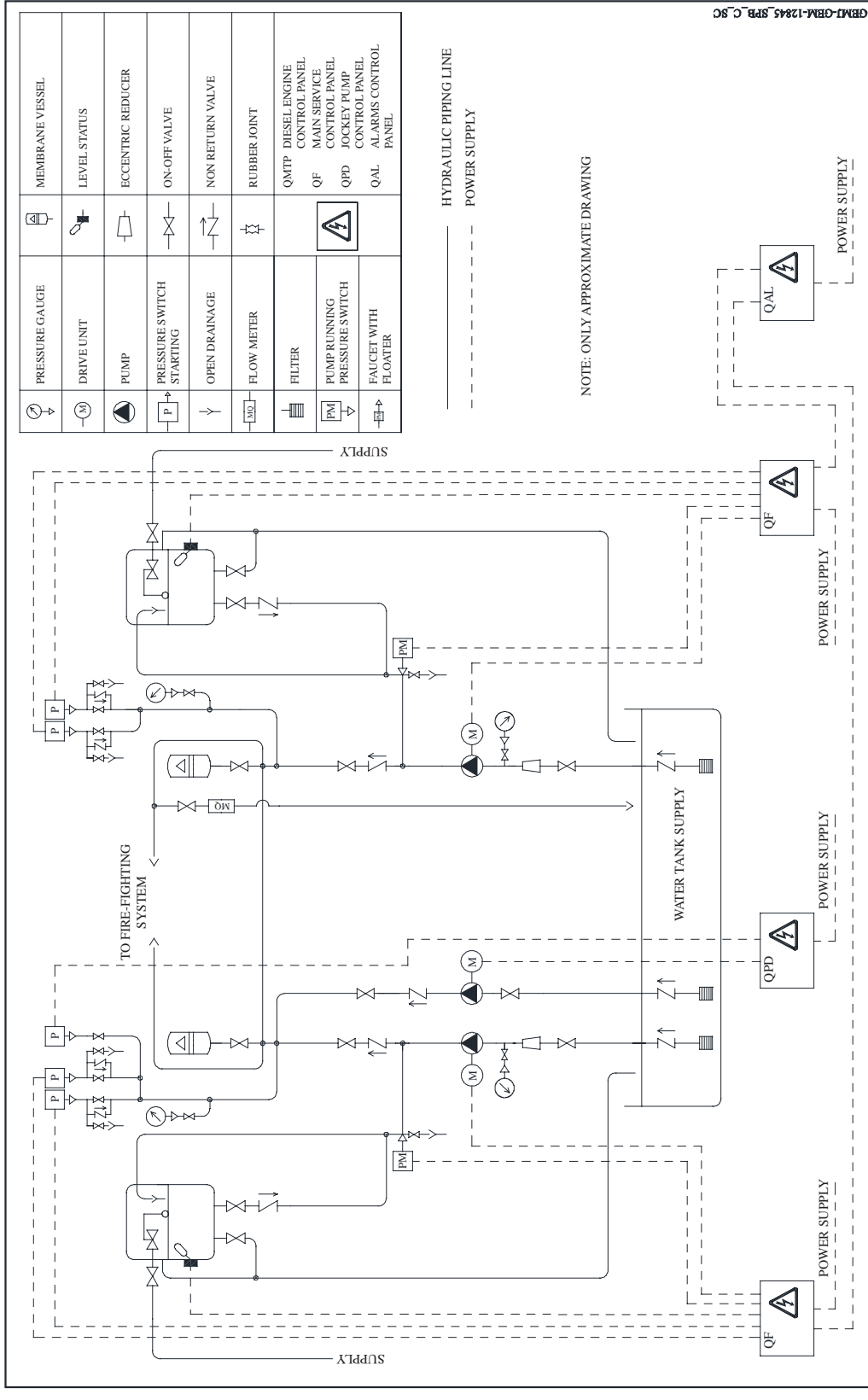


REFERENCE REGULATIONS

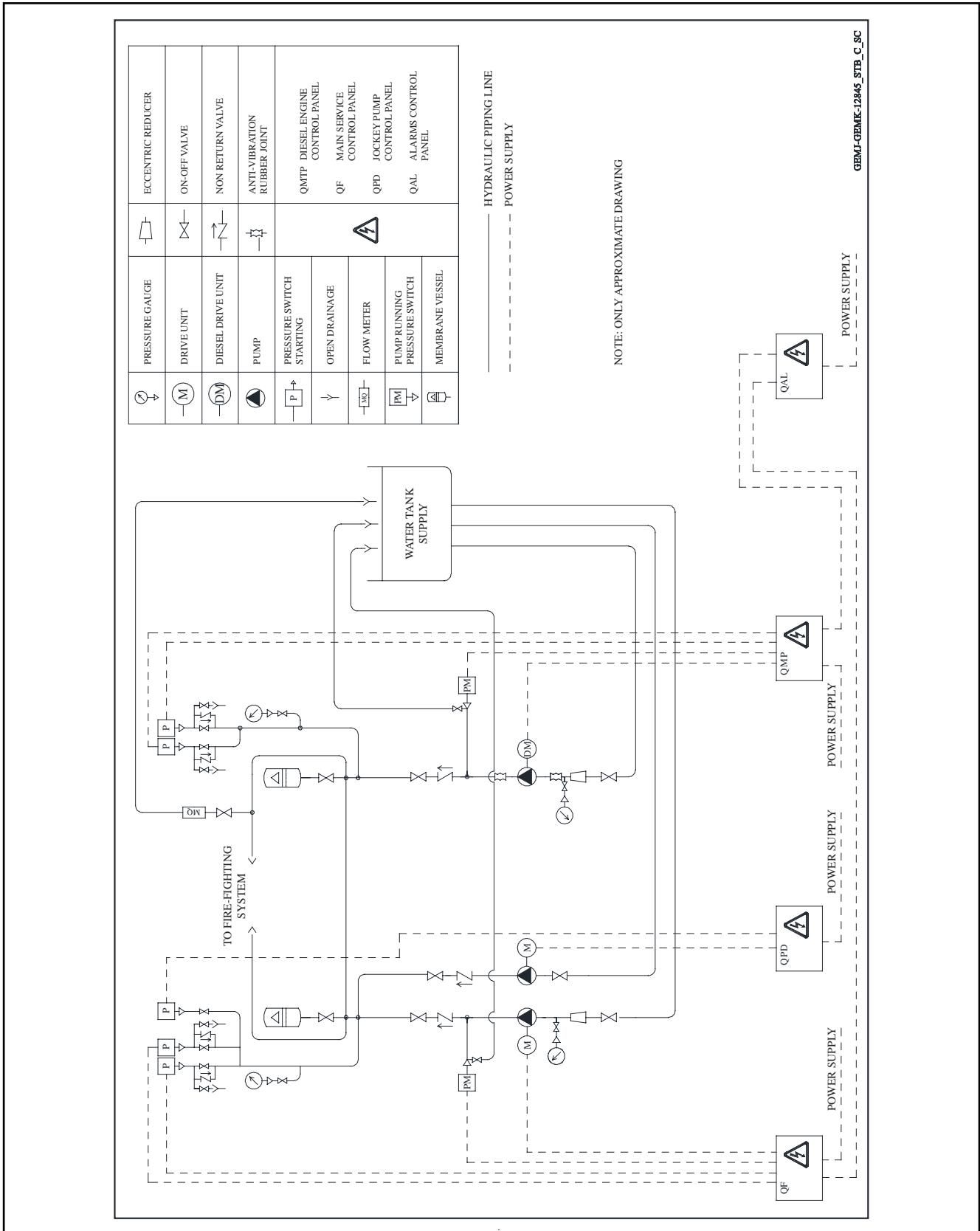
- The Lowara GEM EN 12845 fire-fighting modules are CE-marked in conformity with the following directives:
 - Machinery Directive 2006/42/EC.
 - Low Voltage Directive 2006/95/EC.
 - Electromagnetic Compatibility Directive 2004/108/EC.
- Electric pump performance complies with the following standard:
 - ISO 9906-A Rotodynamic pumps – hydraulic performance acceptance tests.
- The GEM fire-fighting modules conform to the European fire-fighting Standard EN 12845.
 - The automatic shut-off versions also conform to the UNI 10779 Italian Standard for hydrant systems.
- The NSCC, NSC series pumps used in fire-fighting modules conform to the Standard EN 12845 (rif. 10.1).

FUNCTIONAL DIAGRAM FOR SUCTION LIFT INSTALLATIONS OF AN ELECTRIC PUMP MODULE WITH JOCKEY PUMP (GEM..J) COMBINED WITH A DIESEL ENGINE PUMP MODULE (GEMK)

INTRODUCTION



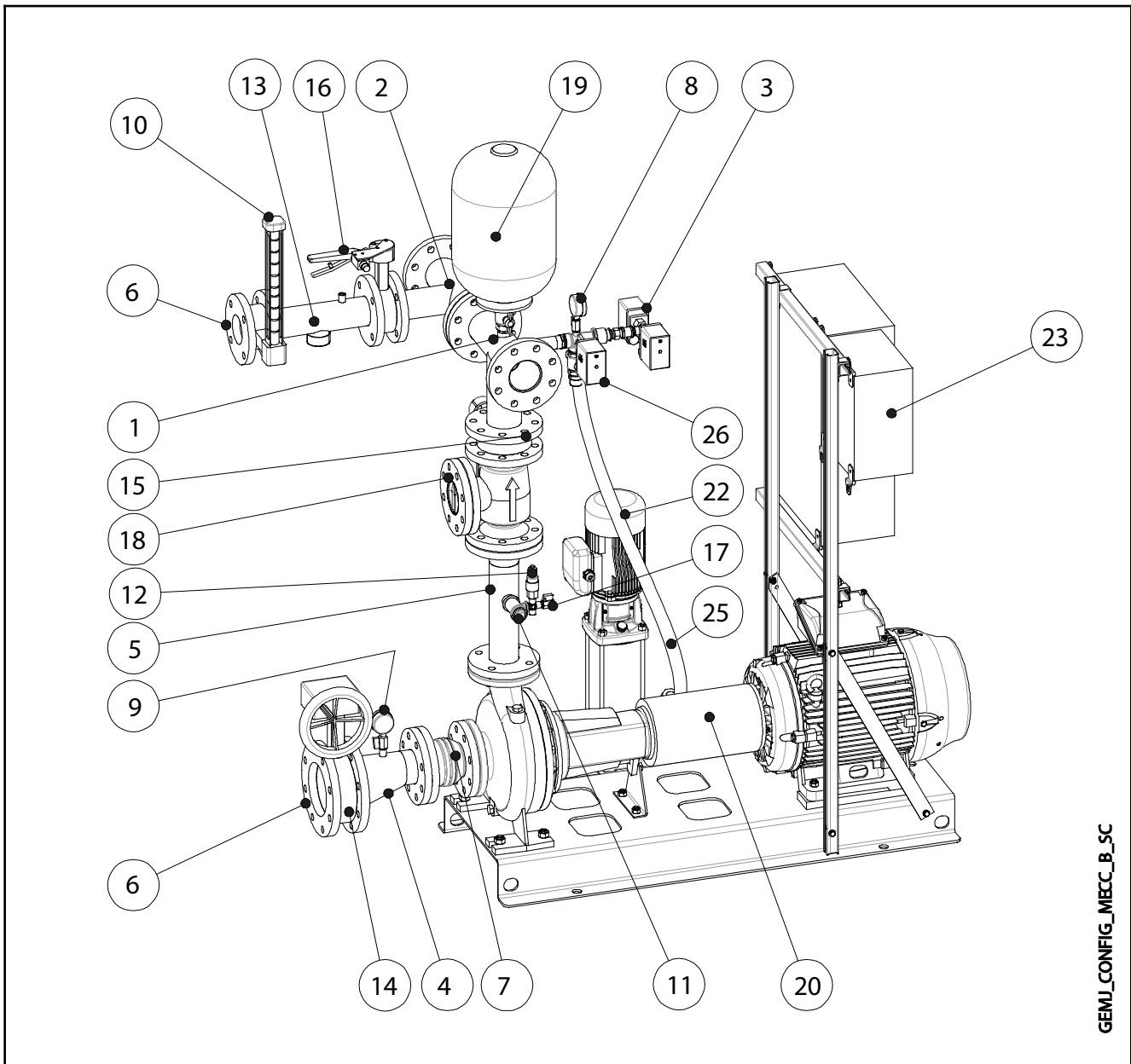
FUNCTIONAL DIAGRAM FOR POSITIVE SUCTION HEAD INSTALLATIONS OF AN ELECTRIC PUMP MODULE WITH JOCKEY PUMP (GEM...J) COMBINED WITH AN ELECTRIC PUMP MODULE (GEM)



INTRODUCTION

MECHANICAL CONFIGURATION GEM..J SERIES MODULES

INTRODUCTION



GEMJ_CONFIG_MECC_B_SC

N. RIF.	DESCRIPTION
1	TEE manifold
2	* TEE connection
3	Two start-up pressure switches
4	* Eccentric cone on suction side
5	Eccentric cone on delivery side
6	* Weld flange
7	* Anti-vibration joint on suction side **
8	Pressure gauge
9	Vacuum pressure gauge
10	* Flow meter
11	Connection from priming tank
12	Pressure switch

N. RIF.	DESCRIPTION
13	* Upstream pipe of flow meter
14	* On/off butterfly valve on suction side ***
15	On/off valve on delivery side
16	* On/off valve for flow meter
17	Test valve to check the seal of the check valves
18	Check valve
19	* Membrane tank
20	Main electric pump
22	Jockey pump
23	Control panels
25	Jockey pump delivery
26	Jockey pump pressure switch

* Components included in the kit (not supplied as standard module)

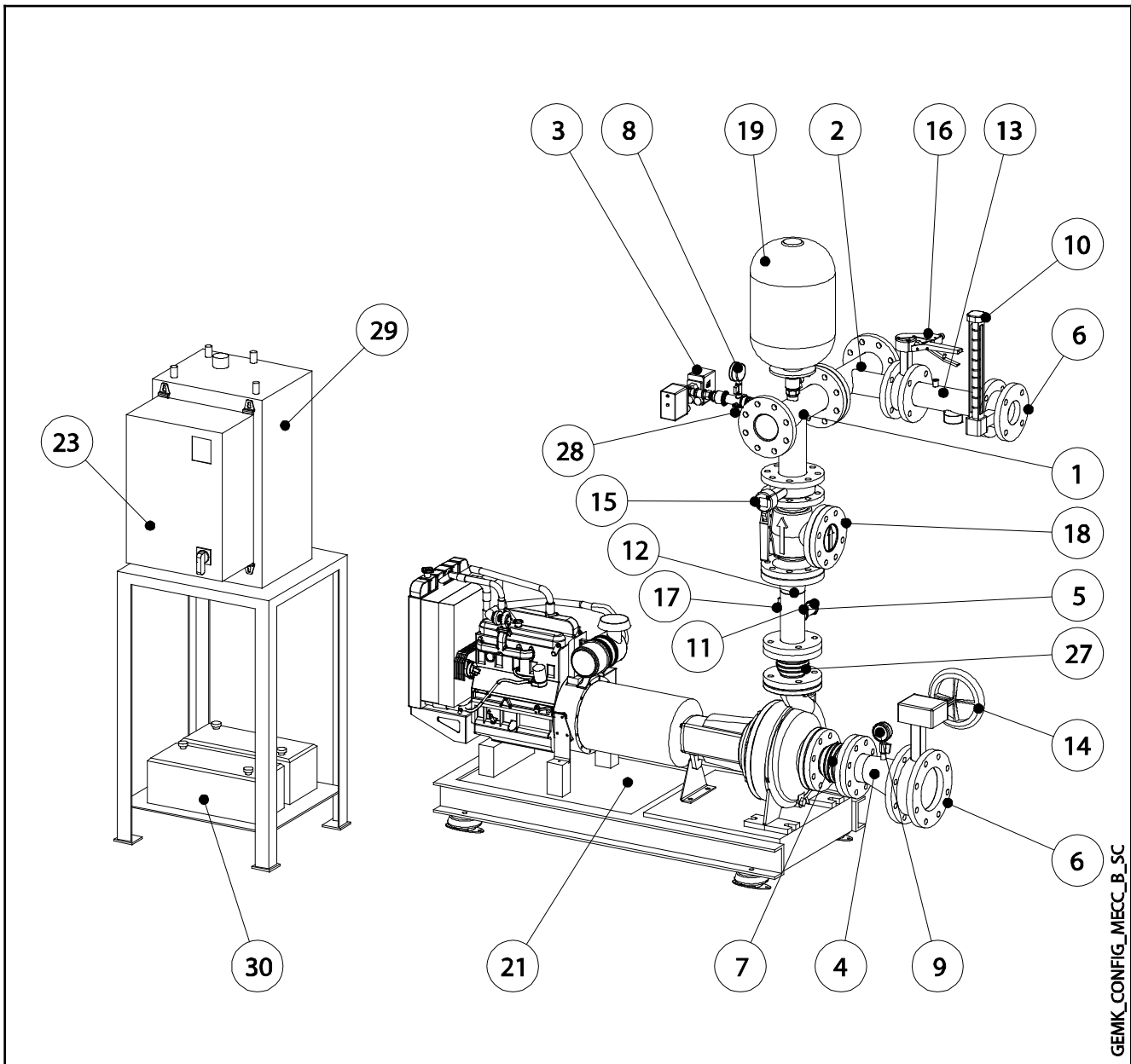
** Mandatory for diesel engines

*** Mandatory in case of positive suction head installation

gemj-comp_d_tp

**MECHANICAL CONFIGURATION
GEMK SERIES MODULES**

INTRODUCTION



N. RIF.	DESCRIPTION
1	T-shaped manifold
2 *	T-shaped connection
3	Two start-up pressure switches
4 *	Eccentric cone on suction side
5	Eccentric cone on delivery side
6 *	Weld flange
7 *	Anti-vibration joint on suction side **
8	Pressure gauge
9 *	Vacuum pressure gauge
10 *	Flow meter
11	Connection from priming tank
12	Pressure switch
13 *	Upstream pipe of flow meter

N. RIF.	DESCRIPTION
14 *	On/off butterfly valve on suction side ***
15	On/off valve on delivery side
16 *	On/off valve for flow meter
17	Test valve to check the seal of the check valves
18	Check valve
19 *	Membrane tank
21	Main diesel engine pump
23	Control panel
27	Anti-vibrations joint
28	Connection for jockey pump delivery
29	Connection for jockey pump delivery
30	Batteries

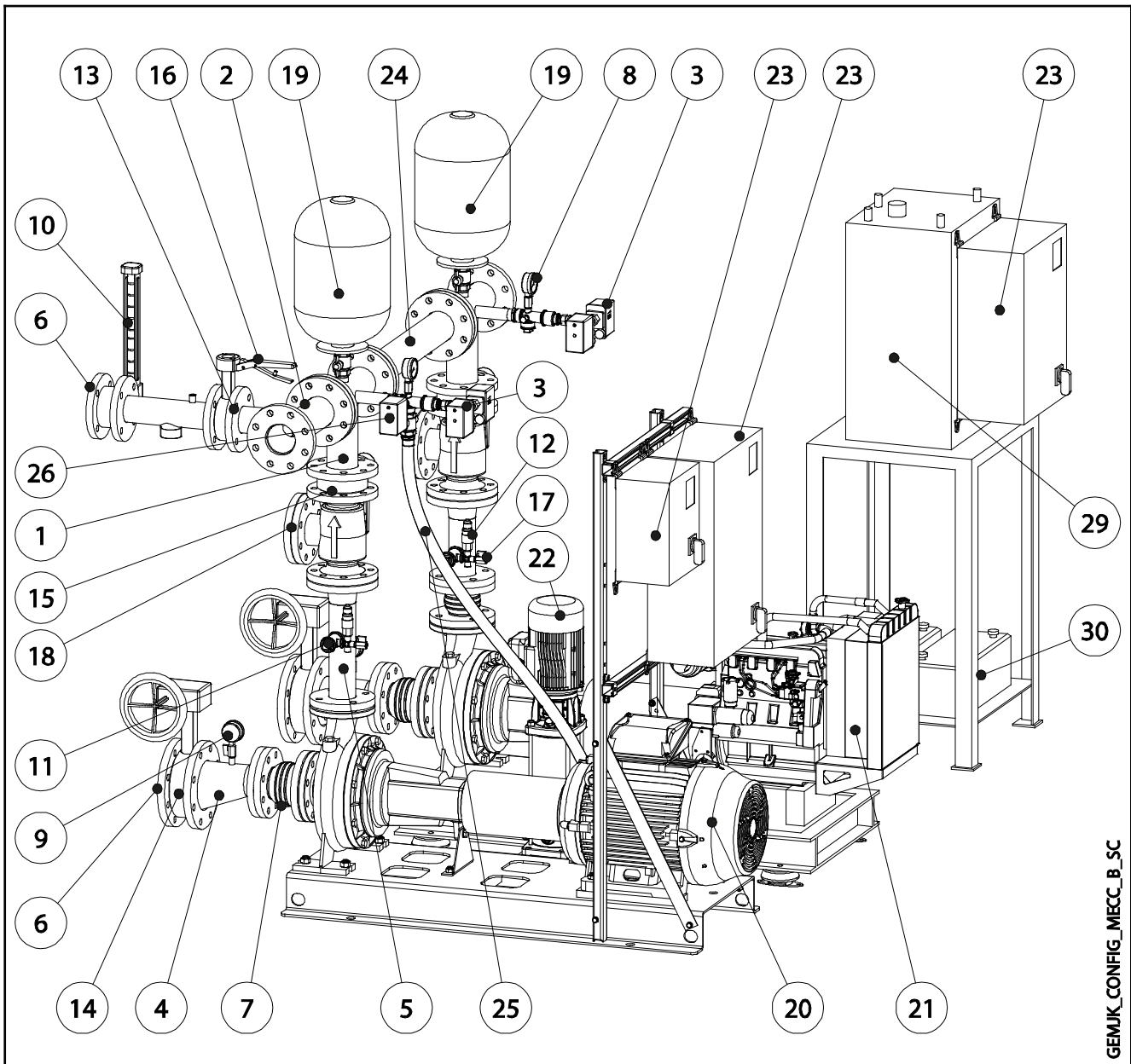
* Components included in the kit (not supplied as standard module)

** Mandatory for diesel engines

*** Mandatory in case of positive suction head installation

**MECHANICAL CONFIGURATION
GEM..J + GEMK SERIES MODULES**

INTRODUCTION



GEMJK_CONFIG_MECC_B_SC

N. RIF.	DESCRIPTION
1	T-shaped manifold
2 *	T-shaped connection
3	Two start-up pressure switches
4 *	Eccentric cone on suction side
5	Eccentric cone on delivery side
6 *	Weld flange
7 *	Anti-vibration joint on suction side **
8	Pressure gauge
9 *	Vacuum pressure gauge
10 *	Flow meter
11	Connection from priming tank
12	Pressure switch
13 *	Upstream pipe of flow meter
14 *	On/off butterfly valve on suction side ***

N. RIF.	DESCRIPTION
15	On/off valve on delivery side
16 *	On/off valve for flow meter
17	Test valve to check the seal of the check valves
18	Check valve
19 *	Membrane tank
20	Main electric pump
21	Main diesel engine pump
22	Jockey pump
23	Control panel
24 *	Joining kit
25	Jockey pump delivery
26	Jockey pump pressure switch
29	Diesel engine pump fuel tank
30	Batteries

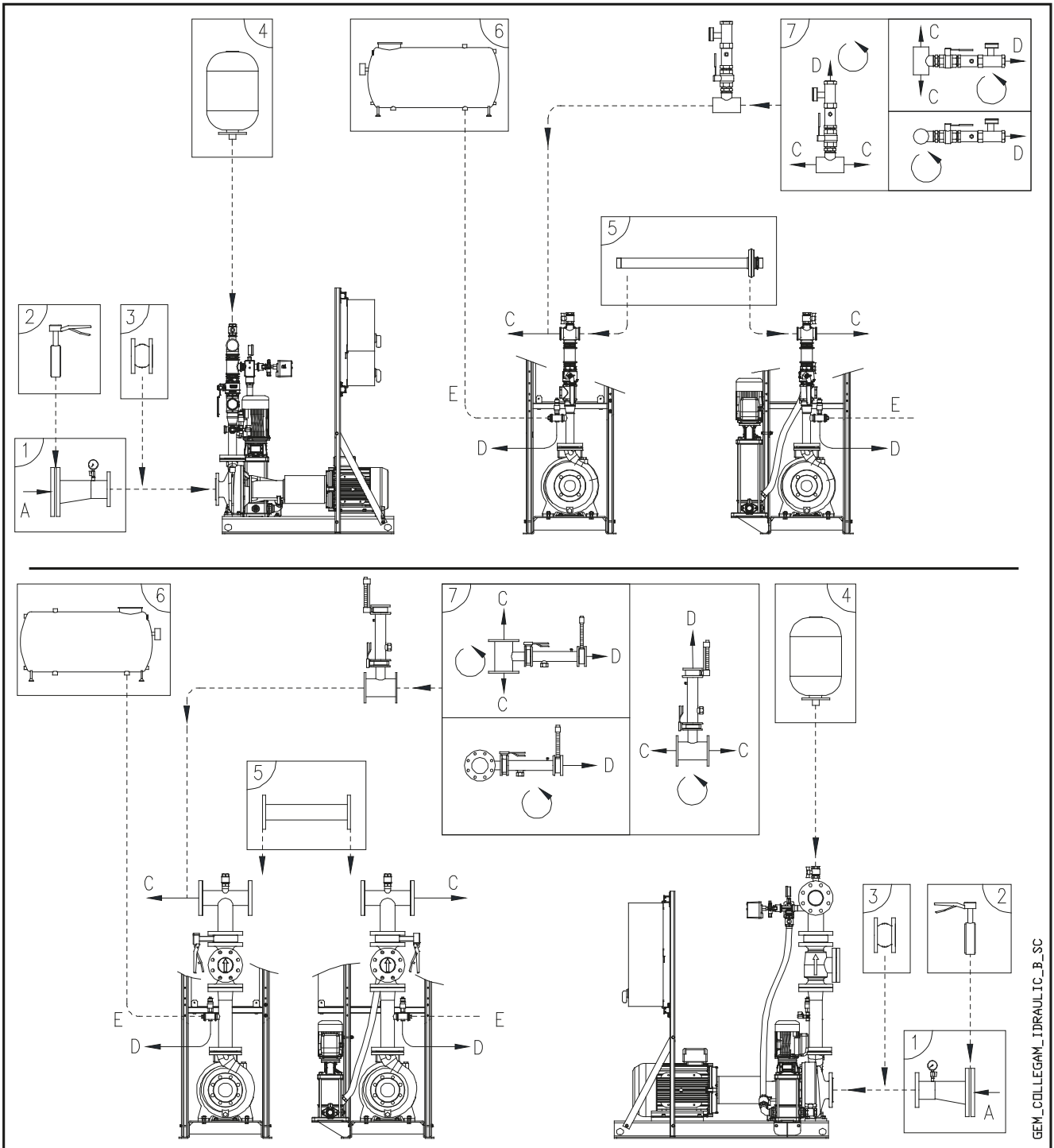
* Components included in the kit (not supplied as standard module)

** Mandatory for diesel engines

*** Mandatory in case of positive suction head installation

HYDRAULIC CONNECTIONS FOR EN 12845 FIRE-FIGHTING MODULES

INTRODUCTION



GEM_COLLEGAM_IDRAULIC_B_SC

N°	DESCRIPTION	N°	DESCRIPTION
1	Suction side kit *	A	Power water supply
2	On/off valve kit (mandatory in case of positive suction head installation)	B	Connection from pumps
3	Anti-vibrations kit * (mandatory for diesel engines)	C	Return priming tank
4	Membrane vessel	D	Connection from priming tank
5	Joining kit *		
6	Priming tank and priming tank kit * (optional in case of suction lift installations)		
7	Flow meter kit *		

* See single instruction manual

gem_collegam_idraulic_c_tc

PUMP CHARACTERISTICS

NSCC, NSC32, 40, 50, 65, 80, 100, 125

- New generation of centrifugal electric pumps with single-stage axial suction, with flanged axial suction, flanged radial discharge and horizontal shaft. The entire series conform the ErP 2015 directive. The pumps NSCC, NSC have body and sealing disc in cast iron, while the impellers are made of stainless steel, cast iron or bronze depending on the model.
- The pumps are equipped with mechanical interchangeable seals and have been designed with “back pull-out” configuration (you can remove impeller, hub and engine without disconnecting the pump body from the piping system).
- Dimensions of connection in accordance with EN 733
- Flanges according to EN 1092-2 and EN 1092-1
- Electric engines with IE3 efficiency level; motor-pump coupling by hub, support, flexible joint with spacer. Electrical performance according to EN 60034-1.
- Diesel engines: motor-pump coupling with flexible joint, continuous operation in full-load mode with continuous rated power in conformity with ISO 3046, direct transmission, standard direct air or water cooling. Other characteristics in compliance with EN12845.
- Lowara NSCC, NSC series pumps according to EN 12845 chapter 10, meets the requirements for the distribution of water in stationary sprinkler systems that use water spray. Operated in event of fire and during the tests.
- For other characteristics, consult the relative dedicated technical catalogue.



1VM SERIES ELECTRIC PUMPS (JOCKEY PUMP)

- The VM is a vertical multistage high-pressure centrifugal pump, with threaded sleeves on suction and delivery. The pumps have a one-piece design and are equipped with a mechanical seal.
- The VM series presents pump body made of cast iron, impellers are made in NorylTM, while the shirt is in stainless steel with TiG welding.
- The VM have surface IE3 motors, high performance and quiet operation, designed and produced by Lowara in compliance with EN standards.
- For other characteristics, consult the relative dedicated technical catalogue.



1SV SERIES ELECTRIC PUMPS (JOCKEY PUMP)

- SV pump is a vertical multistage pump, not self-priming, coupled with standard motor IE3.
- Suction and delivery outlets in line, body and flange in AISI 304.
- Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069.
- For other characteristics, consult the relative dedicated technical catalogue.



ADDITIONAL FEATURES

GEM standard module has the following features:

• PERIODIC AUTOTEST

The control panel of the jockey pump features, as standard, an electronic card with display including the autotest function.

Only if enabled, at a pre-set time and day the pump is started up and kept running for 1 minute. During this interval, the control circuit checks if the pressure in the re-circulation circuit closes the contact of the pressure switch.

In case of anomalies, the relative auxiliary self-test alarm relay available for remote signalling is activated and memorised. The EN12845 Standard does not provide for the presence of a self-test circuit but asks for periodic checks to be carried out by the user, hence the periodic self-test function cannot substitute the above checks.

• AUTOMATIC SHUT OFF FUNCTION (FOR UNI 10779 HYDRANT SYSTEMS)

There is an automatic shut-off circuit on the control panel of each electric service pump.

In certain situations, it allows automatic shut-off once the system pressure has been kept at higher values than the start-up values for at least twenty minutes.

The functions of self-test and automatic shut-off are available as standard for each GEM module: Functions are disabled in factory settings and must be activated by the end user.

GENERAL NOTES ON PUMP ROOMS

Each fire-fighting pump must be installed in a suitably heated room as room temperature must never fall below 4°C (see EN12845 10.3.3). The room temperature must remain below 40°C with the pumps operating at the maximum recommended load, regardless of the environmental conditions outside the room.

The size of the room must consider the need to perform maintenance and repair activities. Sufficient free space must be left around the pump to allow these activities to be performed: bear in mind that it may be necessary to dismount a complete pump or motor. In any case, leave a free space of at least 1 metre between the pump unit and the walls of the room.

To improve engine reliability during start-ups in the cold season, the diesel engines are normally fitted with electric heaters with thermostat control in order to keep the engine water (water-cooled engines) or engine oil (oil-cooled engines) within the values recommended by the manufacturer.

VENTILATION FOR ELECTRIC MOTOR

Adequate ventilation of the room in which the electric pump module is installed is very important for correct operation. It must:

- dissipate the radiated heat generated by the module while running
- ensure the inlet air flows properly and in a sufficient quantity to cool the electric motor.

For optimal operation, therefore, the air must enter through an opening with a fixed safety grille.

The size of the inlet and outlet openings must be calculated at least according to the air flow required to cool the electric motor.

VENTILATION FOR DIESEL ENGINE

Adequate ventilation of the room in which the diesel engine pump is installed is very important for correct operation. It must:

- dissipate the radiated heat generated by the set while running
- ensure the inlet air flows properly and in a sufficient quantity to allow engine combustion
- cool the engine through the radiator (for water-cooled engines) or through the engine fan (for air-cooled engines).

For optimal operation, the heat radiated by the engine and exhaust pipes must be discharged outside the pump room. Given the large amounts of air required, the natural circulation caused by the temperature difference between internal and external air is not sufficient.

Therefore:

- the air must enter via an aperture protected by a fixed grille
- a fan must be fitted to extract air from the pump room.

For water-cooled engines, the area of the air inlet and outlet apertures must be equal to or greater than the area of the radiator.

The minimum size of the air inlet and outlet apertures must be calculated according to the sum of the air flows required for cooling and combustion (consider also the radiation power of the engines). To achieve the correct air flow, the fresh air is delivered through apertures located at the bottom of the room and, whenever possible, on the opposite side, so that the air flows around the entire engine before being expelled from the room.

The air flow must also be correct both for air-cooled engines and for engines fitted with water-water exchangers. Where necessary, a forced air extraction system must be installed, guaranteed in the absence of mains power for a time required for the fire-fighting system, and which starts simultaneously with the diesel engine.

EXHAUST GAS

Always channel the exhaust gas outside the pump room via the dedicated piping connected to the silencer supplied with the diesel engine pump. The exhaust piping can run along the ceiling or the floor. It must also be protected from bad

weather and fitted with a condensate drain. The exhaust pipe must offer a low resistance to the exhaust gas, to not create an internal back pressure, which would cause a bad functioning of the engine. This implies drain pipes of limited length, diameter at least equal to that of the exhaust manifold of the engine and a reduced number of curves. The curves especially if elbow curves cause high pressure drops, resulting in an increasing back pressure.

In order not to exceed the maximum outlet back pressure (600 mm H₂O for air-cooled engines and 1000 mm H₂O for supercharged water-cooled engines), the following measures should also be taken:

- the piping must not be longer than 10 metres.
- the cross-section of the piping must equal at least that of the supplied exhaust pipe outlet.
- Use as few curves as possible (max. 6) and ensure they have a wide radius at least 2.5 times the internal diameter of the pipe.

MAIN COMPONENTS

FIRE-FIGHTING ELECTRIC PUMP MODULE (GEM..)

The electric service pump module comprises the following:

- NSCC Series Lowara normalised centrifugal service pump according to EN 733, with IE3 motors according to regulation (EC) n° 640/2009. Standard: cast-iron pump body and AISI 316 stainless steel for impeller models 32-40-50 and cast-iron for impellers models 65-80-100-125 . Alignment and anchor base. Service pump coupled by a flexible spacer joint to the three-phase motor capable of providing the maximum power absorption of the pump.
- Electric pump control panel with direct starting (DOL) up to and including 22 kW, star/triangle from 30 kW up.
- For the 32, 40, 50, 65 and 80 models of NSC service pumps up to and including 55 kW, the control panel is housed on the support fixed to the base of the electric pump. For higher power ratings, the control panel is floor-mounted and supplied with 5 m of cable. Control panel support in epoxy powder painted steel. For further details see dimensional tables.
- For the 65, 100 and 125 models of NSC pumps up to and including 55 kW, the control panel is supplied with 5 m of cable and is either wall-mounted or fixed to optional brackets. For high power ratings, the control panel is floor-mounted.
- Various pipe fittings (brass, galvanised steel)
- Stub pipe comprising a re-circulation device for the service pump. The re-circulation device allows a minimum capacity in order to prevent the pump overheating when working with closed delivery. There is also a pressure switch for activating the alarms of the pumps running, a test valve for checking the seal of the check valves, couplings for any connecting pipes to the priming tank for suction lift installations. The fitter must connect each re-circulation device to the suction tank or the priming tank or the drain.
- Inspection check valve on the delivery side of each pump. Threaded coupling for 2" diameter, flanged coupling for larger diameters.
- Main on/off valve on the delivery side of each pump, ball valves with lever handle for 2" diameter, butterfly valve with lever handle for DN65 to DN100 diameters, butterfly valve with hand-wheel and reducer for DN125 diameters and above. Device for monitoring ON/OFF status included. Electrical connections by customer. Valve locking kit available on request. Mechanical and electrical connection is responsibility of the client.
- Pressure gauge on the delivery side of the service pump
- On/off ball valve for connecting the expansion vessel (standard 24 l) and fitting for the hydraulic connection of the jockey pump delivery line, if fitted.
- Two start-up pressure switches for the service pump. Start-up takes place through the pressure switch, but it must be manually stopped (apart from the version with automatic shut-off). Pressure switches are connected to the delivery pipe with a dedicated hydraulic device. For the electric jockey pump, if present, both start-up and stopping are determined by the dedicated pressure switch.
- Limit to supply: 2"diameter female galvanized T-shaped pipe, flanged "T" in painted iron (PN 16).

Where necessary, the jockey pump is available as a floor-mounted accessory kit: GEM + JOCKEY KIT version. The hydraulic delivery piping of the jockey pump can be connected to the socket on the delivery line of the service pump. The jockey pump control panel is supplied with 5 m of cable and can be fixed to the wall. The universal bracket kit for housing the control panel can be supplied on request.

(Installation and floor-mounting by the customer).

FIRE-FIGHTING ELECTRIC PUMP MODULE WITH JOCKEY PUMP (GEM..J)

The electric service pump module, complete with jockey pump, comprises the following:

- NSCC Series Lowara normalised centrifugal service pump according to EN 733, with IE3 motors according to regulation (EC) n° 640/2009. Standard: cast-iron pump body and AISI 316 stainless steel for impeller models 32-40-50 and cast-iron for impellers models 65-80-100-125 . Alignment and anchor base. Service pump coupled by a flexible spacer joint to the three-phase motor capable of providing the maximum power absorption of the pump.
- Series VM and SV jockey pump, fixed to the base of the service pump with a dedicated bracket. Standard hydraulic components: check valve, hose, on/off ball valves on the suction and delivery side, start-up pressure switch. All the material assembled and tested.
- Electric pump control panels with direct starting (DOL) up to and including 22 kW, star/triangle from 30 kW up.
- For the 32, 40, 50, 65 and 80 models of NSC service pumps up to and including 55 kW, the control panel is housed on the support fixed to the base of the electric pump. For higher power ratings, the control panel is floor-mounted and supplied with 5 m of cable. Control panel support in epoxy powder painted steel. For further details see dimensional tables.
- For the 65, 100 and 125 models of NSC pumps up to and including 55 kW, the control panel is supplied with 5 m of cable and is either wall-mounted or fixed to optional brackets. For high power ratings, the control panel is floor-mounted.
- Various pipe fittings (brass, galvanised steel)
- Stub pipe comprising a re-circulation device for the service pump. The re-circulation device allows a minimum capacity in order to prevent the pump overheating when working with closed delivery. There is also a pressure switch for activating the alarms of the pumps running, a test valve for checking the seal of the check valves, couplings for any connecting pipes to the priming tank for suction lift installations. The fitter must connect each re-circulation device to the suction tank or the priming tank or the drain.
- Inspection check valve on the delivery side of each pump. Threaded coupling for 2" diameter, flanged coupling for larger diameters.
- Main on/off valve on the delivery side of each pump, ball valves with lever handle for 2" diameter, butterfly valve with lever handle for DN65 to DN100 diameters, butterfly valve with hand-wheel and reducer for DN125 diameters and above. Device for monitoring ON/OFF status included. Electrical connections by customer. Valve locking kit available on request. Mechanical and electrical connection is responsibility of the client.
- Pressure gauge on the delivery side of the service pump
- On/off ball valve for connecting the expansion vessel (standard 24 l).
- Hydraulic connection of the delivery side of the jockey pump.
- Two start-up pressure switches for the service pump. Start-up takes place through the pressure switch, but it must be manually stopped (apart from the version with automatic shut-off). Pressure switches are connected to the delivery pipe with a dedicated hydraulic device. For the electric jockey pump, if present, both start-up and stopping are determined by the dedicated pressure switch.
- Limit to supply: 2"diameter female galvanized T-shaped pipe, flanged "T" in painted iron (PN 16).

(Installation and floor-mounting by the customer).

DIESEL ENGINE PUMP FIRE-FIGHTING MODULE (GEMK ..)

The diesel engine pump module comprises the following:

- Lowara NSC centrifugal service pump normalised according to EN 733.
- Standard: cast-iron pump body and AISI 316 stainless steel for impeller models 32-40-50 and cast-iron for impellers models 65-80-100-125.
- Diesel Engine with engine-pump coupling via a flexible coupling, continuous operation in the full-load mode with continuous rated power in conformity with ISO 3046, direct transmission, standard direct air or water cooling. Other characteristics in compliance with EN 12845.
- Base in bent sheet metal or structural steel and epoxy powder painted in RAL 5010.
- Control panel for diesel engine pump and battery charger.
- Engine shut-off device from electric control (Electric stop).
- Fuel tank for diesel engine with supplementary catch basin (EN 12845 chap. 10), complete with float valve, reserve indicator switch and drain valve. Positioning and anchoring to the floor. A manual fuel make-up pump to mount on the metal tank support is available on request.
- Double engine starting relay.
- Diesel engine start circuit with two independent batteries. 3 m long control panel – relay box connection cable. 5 m long cables are available on request.
- Various pipe fittings (brass, galvanised steel).
- Anti-vibration coupler on the delivery side of the service pump.
- Stub pipe comprising a re-circulation device for the service pump. The re-circulation device allows a minimum capacity in order to prevent the pump overheating when working with closed delivery. There is also a pressure switch for activating the alarms of the pumps running, a test valve for checking the seal of the check valves, couplings for any connecting pipes to the priming tank for suction lift installations. The fitter must connect each re-circulation device to the suction tank or the priming tank or the drain.
- Inspection check valve on the delivery side of each pump. Threaded coupling for 2" diameter, flanged coupling for larger diameters.
- Main on/off valve on the delivery side of each pump, ball valves with lever handle for 2" diameter, butterfly valve with lever handle for DN65 to DN100 diameters, butterfly valve with hand-wheel and reducer for DN125 diameters and above. Device for monitoring ON/OFF status included. Electrical connections by customer. Valve locking kit available on request.
- Pressure gauge on the delivery side of the service pump.
- On/off valve for connecting the expansion vessel (standard 24 l) and fitting for the hydraulic connection of the jockey pump delivery line, if fitted.
- Two start-up pressure switches for the service pump. Start-up takes place through the pressure switch, but it must be manually stopped (apart from the version with automatic shut-off). For the electric jockey pump, if present, both start-up and stopping are determined by the dedicated pressure switch. The hydraulic circuit of the pressure switch starting the service pump comprises: piping to the delivery line, recirculation circuit. This circuit includes on/off valve, a non-return valve, a discharge valve and various pipe fittings. The configuration of the circuit allows the pressure switch to trip even when the relative on/off valve is closed.
- Limit to supply: 2" diameter female galvanized T-shaped pipe, flanged "T" in painted iron (PN 16).

The diesel engine pump is supplied with its own base complete with anti-vibration feet (installed and secured to the floor by the customer), control panel fixed to the fuel tank complete with 3 metre long cables (5 m long cables available on request). Fuel tanks with supplementary catch basin, batteries housed on the plate attached to the tank frame.

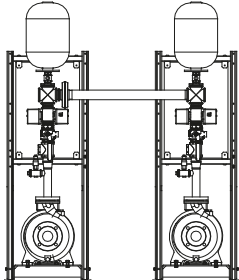
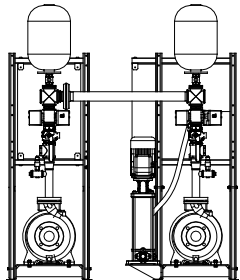
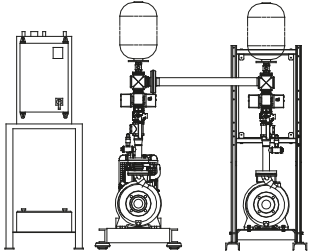
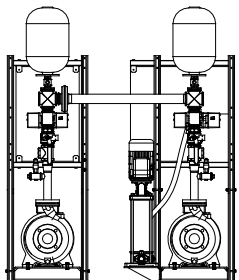
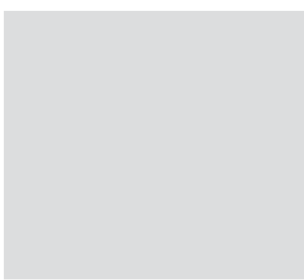
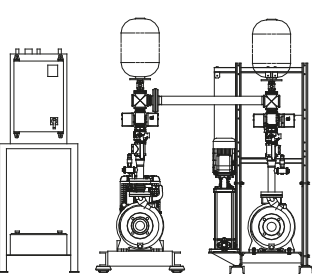
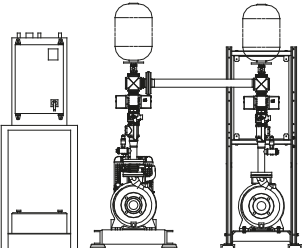
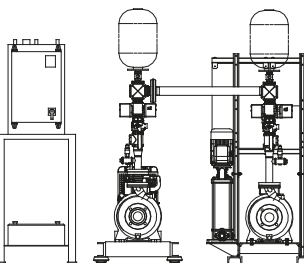
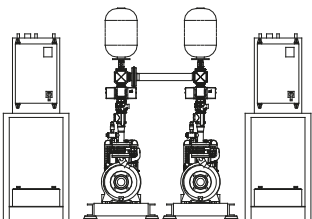
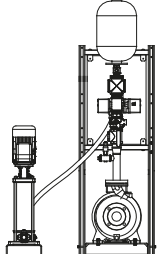
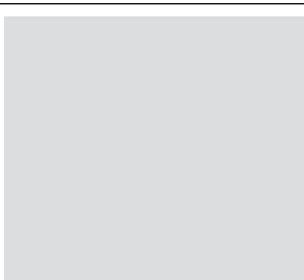
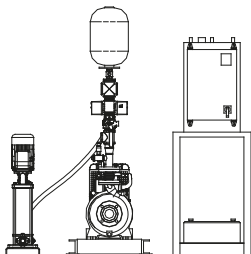
Where necessary, the jockey pump is only available as an accessory kit to attach to the floor: GEMK + JOCKEY KIT version. The hydraulic jockey pump delivery piping can be connected to the socket on the service pump delivery line. The jockey pump control panel comprises 5 m of cable and can be fixed to the fuel tank, next to the diesel engine pump control panel. The universal bracket kit for housing the jockey pump control panel can be supplied on request, otherwise the control panel can be wall-mounted.

(Installation and floor-mounting by the customer).

JOINING PIPE KITS

Lowara manufactures the single modules according to UNI EN 12845 separately in order to combine them according to system requirements. By combining the modules, in fact, the water supply specifications described in EN 12845 can be obtained. These water supplies can be single, superior, duplicated or combined. Fire-fighting modules are generally fitted with two main service pumps, one backing up the other. The choice of electric motors or diesel engines depends on the level of reliability required from the system. The above modules can be combined through joining kits in order to reproduce the required water supply configuration for the fire-fighting system. For dimension tables and combinations, see the accessories section.

Examples of multi-module layouts:

<p>POSSIBLE LAYOUTS WITH MODULE CONNECTOR KITS</p>	<p>GEM ELECTRIC PUMP MODULE</p>	<p>GEM..J ELECTRIC PUMP MODULE WITH JOCKEY PUMP</p>	<p>GEMK DIESEL ENGINE PUMP MODULE</p>
<p>GEM ELECTRIC PUMP MODULE</p>			
<p>GEM..J ELECTRIC PUMP MODULE WITH JOCKEY PUMP</p>			
<p>GEMK ELECTRIC PUMP MODULE WITH JOCKEY PUMP</p>			
<p>JOCKEY PUMP KIT</p>			

ACCESSORIES AVAILABLE ON REQUEST

- **JOINING KIT**
- **SUCTION LIFT OR POSITIVE SUCTION HEAD KIT**
- **FLOW METER KIT**
- **PRIMING TANK**
- **PRIMING TANK ACCESSORIES KIT**
- **ELECTRIC JOCKEY PUMP KIT**
- **ANTI-VIBRATION COUPLER KIT**
- **DIESEL SUPPLEMENTARY CATCH BASIN KIT**
- **MONITORING VALVES KIT**
- **QAL 12845**
- **MULTI QAL12845 KIT**
- **GSM MODULE KIT**
- **Q2RILS CONTROL PANEL**
- **DRY-RUNNING SAFETY KIT**
- **MEMBRANE VESSEL KIT**
- **COUNTERFLANGE KIT**
- **KIT OF UNIVERSAL BRACKETS FOR CONTROL PANELS**
- **SET OF SPARE PARTS FOR DIESEL ENGINES**
- **FUEL DISCHARGE VALVE KIT**

The ACCESSORIES section shows all the information relative to each accessory (detailed description, tables, dimensions, combinations and codes).

SPECIAL EQUIPMENT ON REQUEST

(Contact the Sales and Technical Assistance Service)

GEM module for pumping sea water with pumps, valves, manifold and piping in AISI 316 or compatible alloys.

GEM module with non-standard supply voltages.

GEMK module water-cooled diesel engine pump.

GEMK module air-cooled diesel engine pump.

GEMK module diesel engine pump with large fuel tank.

Notes

The GEM module is supplied without a suction manifold in accordance with EN12845 (points 10.6.2.2 and 10.6.2.3) which requires independent suction for each pump.

See EN12845 on "Fixed systems and fire extinguishing – Automatic sprinkler systems – Design, installation and maintenance" - for sizing the suction piping, defining whether the installation is to be considered suction lift or positive suction head and for operating limits.

The standard requires, whenever possible, the pumps to be installed with positive suction head, otherwise priming tanks must be provided with suitable automatic devices for signalling and replenishment (see accessories section).

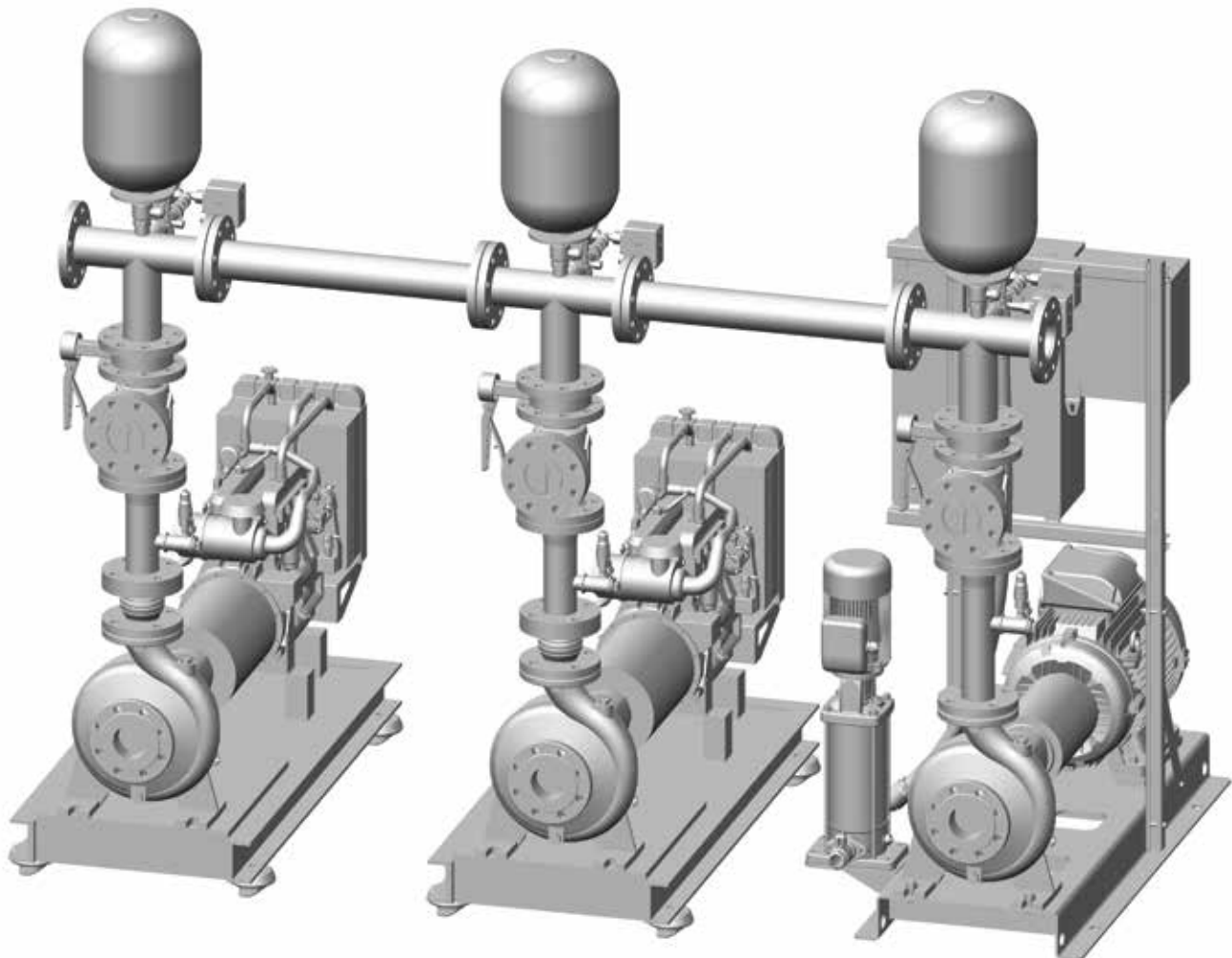
EN12845 states that the water pressure should not exceed 12 bar (point 8.2.1).

In some applications, pressures of over 12 bar can be reached (point 8.2.2).

In this case, pump sets with higher pressures than those defined in the standard are used.

The catalogue also contains GEM modules with service pump closing heads of up to 146 metres, suitable for such installations.

**FIRE-FIGHTING MODULES EN 12845 SERIES GEM
SPECIAL EQUIPMENT ON REQUEST**



INTRODUCTION

**ELECTRIC PUMP + JOCKEY PUMP MODULE (GEM..J)
COMBINED WITH TWO DIESEL ENGINE PUMP MODULES (GEMK)**

CONTROL PANEL FOR THE ELECTRIC SERVICE PUMP

Painted metal casing (IP 54) complete with:

- Main door-lock switch.
- Analogue ammeter.
- "MAN - AUT - 0" selector with extractable key only in automatic position.
- Electronic board with: display for current time and, if enabled, self- test state, keyboard for indicating electric voltage presence, correct phase sequence (three phase power supply), start-up request, pump functioning and no start-up, and pressure switch state, through LED lamps, lamp test button and starting and stopping buttons, according to EN12845 section 10.8.6, self-test circuit with contact to signal a failure in self-test

Inside:

- 12/24V transformer for auxiliary circuits and electronic board.
- Fuse holder and fuses for power and auxiliary circuits.
- Line contact maker (direct start-up up to 22 kW included), line and star/triangle contact makers (star/ triangle start-up), line contact makers and reactance switching (impedance start-up).
- Star/triangle exchanger timer or reactance switching.
- No-phase signal relay.
- Auxiliary relays.
- Current transformer.
- Terminal blocks.
- Dry contacts (max 24V, 1A) for activating no-phase acoustic/ visual alarms, pump on demand, pump running and start failure.
- Cable glands (excluding the versions to be fixed to the floor).
- Wiring diagram.



ELECTRIC SERVICE PUMP CONTROL PANEL OPTIONS AVAILABLE ON REQUEST

CP alternative

Series of dry contacts for checking the status of the electric panel, in addition to the contacts already provided for signalling alarms:

- No phase
- Motor running
- MAN-AUT-0 selector position
- No start
- Pump on demand

KV alternative

Electric panel with analogue voltmeter and phase switch.

IP55 alternative

Panel with supplementary IP55 protection.

ELECTRIC JOCKEY PUMP CONTROL PANEL

Painted metal casing (IP 55) complete with:

- Main door-lock switch.
- Line, running and thermal shutdown indicator lamps.
- Manual - automatic - off selector.

Inside:

- Transformer for 24V auxiliary circuits.
- Fuse holder and fuses for power and auxiliary circuits.
- Line contactor.
- Overload cut-out switch.
- Pump shut-off timer (0 ÷ 90 s).
- Terminal blocks.
- Cable glands.
- Wiring diagram.

Ready for connection to a float switch or minimum pressure switch for dry running protection. An optional level control module (available on request) allows the connection of probes with the possibility of adjusting sensitivity according to water hardness.



ELECTRIC JOCKEY PUMP CONTROL PANEL OPTIONS AVAILABLE ON REQUEST

CP alternative

Series of dry contacts for checking the status of the panel:

- Pump running
- Thermal shutdown (overload)
- No water

DIESEL ENGINE PUMP CONTROL PANEL

Painted metal casing (IP 54) complete with:

- Electronic unit for control and management of the diesel engine. Display of alarms and status, battery voltage, speedometer, hour counter, alarm programming, enabled for self-test function and auto shut-off, date display, main signals and manual start button.
- Man-Auto-0 selector switch with key removable only in the automatic position.
- Pair of emergency battery start buttons.
- Main door-lock switch.

Inside:

- Fuse holder and fuses for power and auxiliary circuits.
- Pair of battery chargers 12Vdc/24Vdc.
- Control unit for management of diesel engine and alarms.
- Auxiliary relays.
- Engine heaters power supply circuits.
- Terminal blocks.
- Cable glands.
- Wiring diagram.



Diesel engine pump panel

Single-phase 1x230V standard power supply, and is supplied standard with dry alarm signal contacts (max. 1A,30Vdc/125Vac/277Vac) available from the electronic controller:

- Non-automatic operating mode.
- Controller fault.
- Motor running.
- No start.
- General alarm.

DIESEL ENGINE PUMP CONTROL PANEL OPTIONS

AVAILABLE ON REQUEST

IP55 alternative

Panel with supplementary IP55 protection.

CP alternative

Series of dry relay exchange contacts for controlling the operating status of the control panel:

Each GEM module is supplied factory assembled, calibrated and tested. The set is supplied complete with an instruction manual, pump manuals and wiring diagrams for the panels.

For modules with floor-mounted panels, the electric panels are shipped together with the set in a separate pack and supplied with 5 metre long connecting cables (longer lengths available upon request). The paths must be prepared and the cables installed by the fitter.

CONTROL PANEL DIMENSIONS

SERVICE PUMP PANEL

POWER (kW)	PROTECTION CLASS	B	L	H
from 0.7 to 7.5	IP54	350	160	500
from 9.2 to 22	IP54	400	200	600
from 30 to 37	IP54	500	200	700
from 45 to 55	IP54	600	250	800
from 75 to 90	IP54	600	300	1500
from 110 to 160	IP54	800	400	1700
200	IP54	800	400	1900

IP55: same dimensions as standard panels IP54 qe-serv_e_td
Power over 55 kW: floor cupboard

QE-ELP_B_DD

JOCKEY PUMP PANEL

PROTECTION CLASS	B	L	H
IP55	250	160	300

qe-pil_c_td

QE-PIL_A_DD

DIESEL ENGINE PUMP PANEL

PROTECTION CLASS	B	L	H
IP54	350	200	500

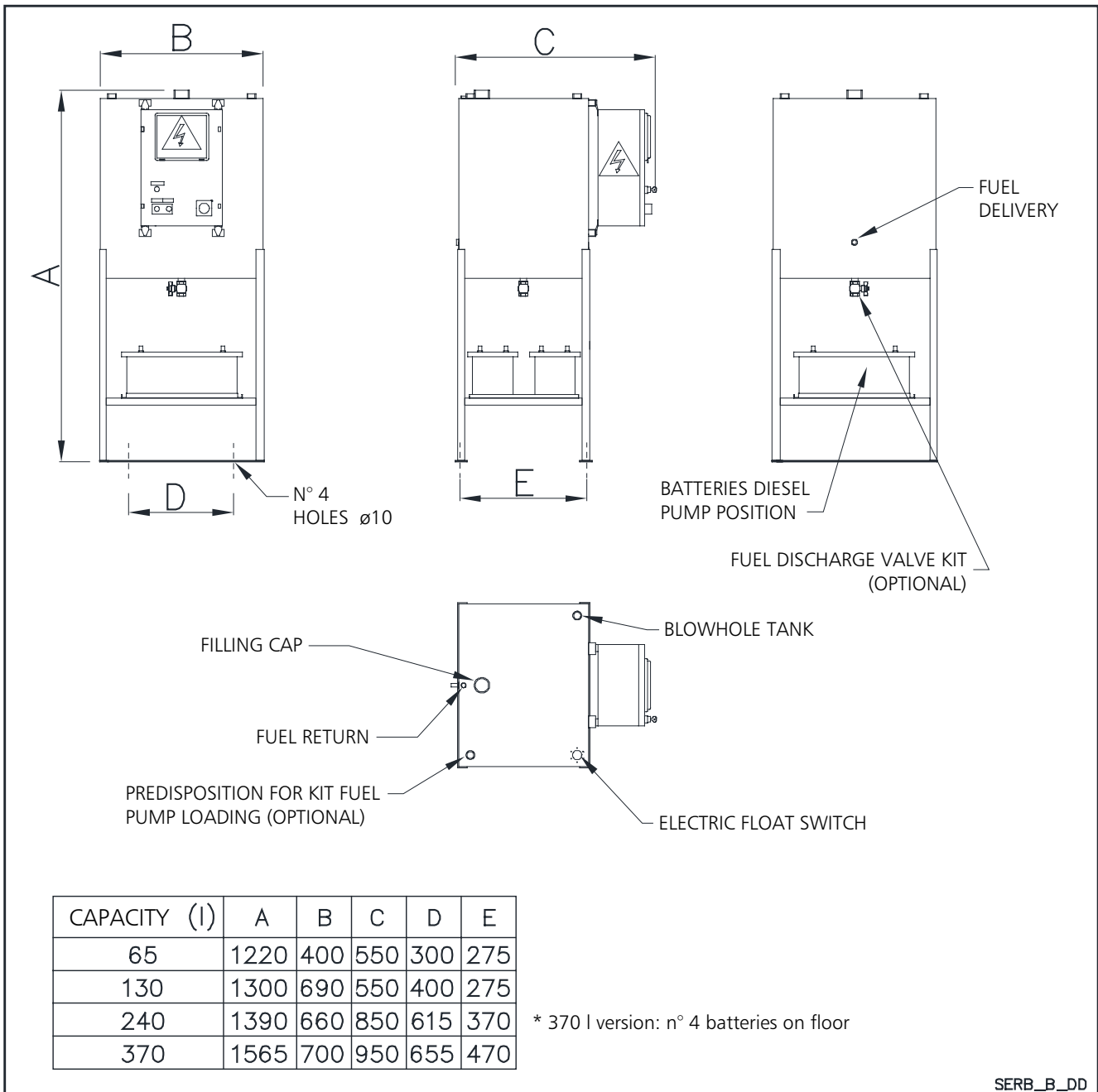
IP55: same sizes as standard IP54 qe-mtp12845_b_td

QE-MTP-EN_A_DD

* The control panels are included in the supply.

**EN 12845 DIESEL ENGINE PUMP TANKS
DIMENSIONS AND CAPACITY**

INTRODUCTION



See ACCESSORIES chapter for optional kits.

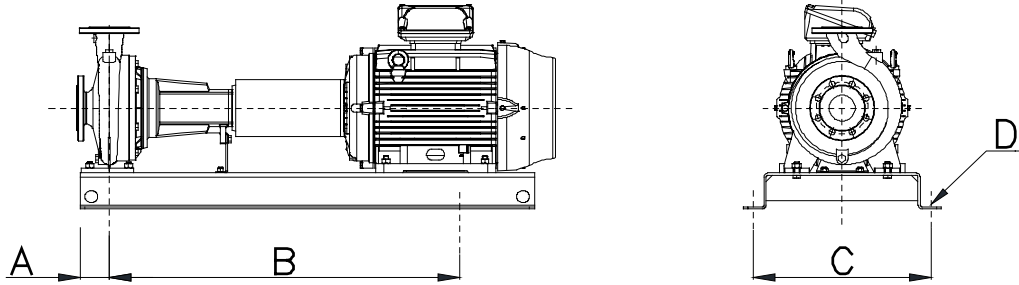
EN 12845 DIESEL ENGINE PUMP MODULE TANKS TANK AND BATTERY COMBINATIONS

PUMP	TANK CAPACITY (l)	BATTERIES		PUMP	TANK CAPACITY (l)	BATTERIES	
		CURRENT (Ah)	QUANTITY			CURRENT (Ah)	QUANTITY
N32-125/D113	65	44	2	N65-125/D113	65	44	2
N32-125/D123	65	44	2	N65-125/D127	65	50	2
N32-125/D133	65	44	2	N65-125/D137	65	50	2
N32-125/D145	65	44	2	N65-125/D146	65	70	2
N32-160/D137	65	44	2	N65-125/D148	65	70	2
N32-160/D150	65	44	2	N65-160/D145	65	50	2
N32-160/D160,5	65	44	2	N65-160/D151	65	70	2
N32-160/D171	65	50	2	N65-160/D159	65	100	2
N32-200/D154	65	44	2	N65-160/D175	65	100	2
N32-200/D171	65	44	2	N65-160/D180	65	100	2
N32-200/D186	65	50	2	N65-200/D165	65	70	2
N32-200/D205	65	50	2	N65-200/D177	65	100	2
N32-250/D208	65	50	2	N65-200/D189	65	160	2
N32-250/D226	65	70	2	N65-200/D199	65	160	2
N32-250/D239	65	100	2	N65-200/D220	65	160	2
N32-250/D259	65	100	2	N65-250/D195	65	160	2
N40-125/D105	65	44	2	N65-250/D215	65	160	2
N40-125/D118	65	44	2	N65-250/D229	130	160	2
N40-125/D130	65	44	2	N65-250/D243	130	160	2
N40-160/D127	65	44	2	N65-250/D258	130	160	2
N40-160/D139	65	44	2	N65-315/D272	130	160	2
N40-160/D154	65	50	2	N65-315/D298	240	160	2
N40-160/D165	65	70	2	N65-315/D315	240	160	2
N40-200/D165	65	50	2	N80-160/D144	65	100	2
N40-200/D179	65	70	2	N80-160/D158	65	100	2
N40-200/D189	65	70	2	N80-160/D168	65	160	2
N40-200/D199	65	100	2	N80-160/D177	65	160	2
N40-250/D195	65	70	2	N80-200/D181	65	160	2
N40-250/D206	65	100	2	N80-200/D195	65	160	2
N40-250/D228	65	100	2	N80-200/D208	130	160	2
N40-250/D243	65	160	2	N80-200/D219	130	160	2
N40-250/D257,5	65	160	2	N80-250/D214	130	160	2
N50-125/D118	65	44	2	N80-250/D227	130	160	2
N50-125/D130	65	44	2	N80-250/D241	130	160	2
N50-125/D144	65	50	2	N80-250/D259	240	160	2
N50-125/D148	65	50	2	N80-316/D280	240	160	2
N50-160/D144	65	50	2	N80-316/D298	370	185	4
N50-160/D159	65	50	2	N80-316/D310	370	185	4
N50-160/D170	65	70	2	N80-316/D321	370	185	4
N50-160/D176	65	100	2	N100-160/D144	65	100	2
N50-200/D168	65	70	2	N100-160/D156	65	160	2
N50-200/D179	65	100	2	N100-160/D167	65	160	2
N50-200/D192	65	100	2	N100-160/D187	65	160	2
N50-200/D209	65	160	2	N100-200/D188	65	160	2
N50-250/D208	65	100	2	N100-200/D202	130	160	2
N50-250/D220	65	100	2	N100-200/D213	130	160	2
N50-250/D232	65	160	2	N100-200/D227	130	160	2
N50-250/D256	65	160	2	N100-250/D213	130	160	2
				N100-250/D227	130	160	2
				N100-250/D249	240	160	2
				N100-250/D259	240	160	2
				N125-200/D179	130	160	2
				N125-200/D195	130	160	2
				N125-200/D215	240	160	2
				N125-200/D225	240	160	2
				N125-315/D250	370	185	4
				N125-315/D265	370	185	4
				N125-315/D280	370	185	4
				N125-315/D290	370	185	4

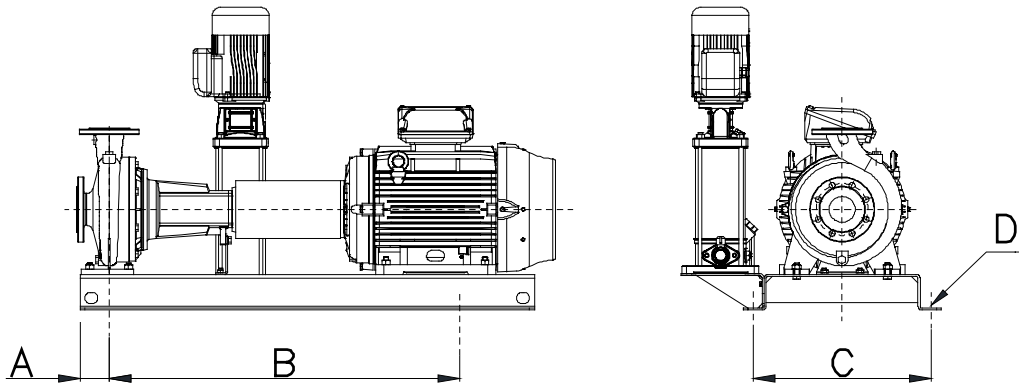
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INSTALLATION CENTRE POINTS

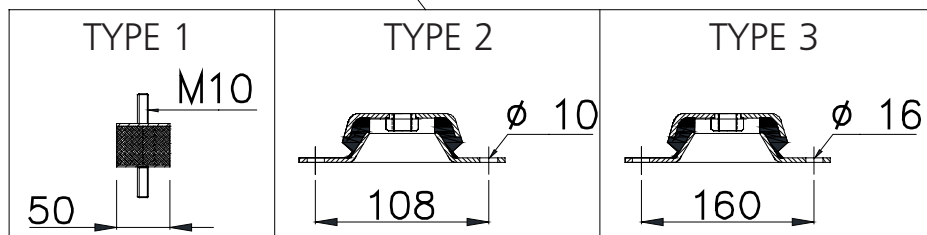
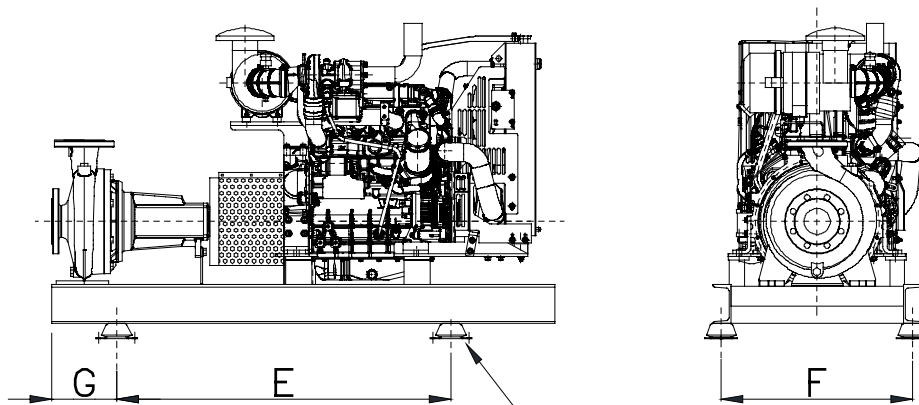
GEM



GEM J



GEM K



FSSAGGIO-NSC_B_DD

INTRODUCTION

INSTALLATION CENTRE POINTS

GEM - GEMJ - GEMK	A1	B	C	D FOR SCREWS	E	F	G	TYPE
N32-125/11/D113	60	610	320	M16	650	450	100	1
N32-125/15/D123	60	690	350	M16	650	450	100	1
N32-125/22/D133	60	690	350	M16	650	450	100	1
N32-125/30/D145	60	690	350	M16	650	450	100	1
N32-160/22/D137	60	690	350	M16	650	450	100	1
N32-160/30/D150	60	690	350	M16	650	450	100	1
N32-160/40/D160,5	60	690	350	M16	650	450	100	1
N32-160/55/D171	60	770	400	M20	650	450	100	1
N32-200/30X/D154	60	690	350	M20	650	450	100	1
N32-200/40/D171	60	690	350	M20	650	450	100	1
N32-200/55/D186	60	770	400	M20	650	450	100	1
N32-200/75/D205	60	770	400	M20	750	450	100	1
N32-250/75X/D208	75	870	440	M20	650	450	100	1
N32-250/110A/D226	75	970	490	M20	750	450	100	1
N32-250/110/D239	75	970	490	M20	850	520	100	2
N32-250/150/D259	75	970	490	M20	850	520	100	2
N40-125/15/D105	60	690	350	M16	650	450	100	1
N40-125/22/D118	60	690	350	M16	650	450	100	1
N40-125/30/D130	60	690	350	M16	650	450	100	1
N40-160/30/D127	60	690	350	M16	650	450	100	1
N40-160/40/D139	60	690	350	M16	650	450	100	1
N40-160/55/D154	60	770	400	M20	650	450	100	1
N40-160/75/D165	60	770	400	M20	750	450	100	1
N40-200/55/D165	60	770	400	M20	650	450	100	1
N40-200/75/D179	60	770	400	M20	750	450	100	1
N40-200/110A/D189	60	870	440	M20	750	450	100	1
N40-200/110/D199	60	870	440	M20	850	520	100	2
N40-250/110X/D195	75	970	490	M20	750	450	100	1
N40-250/110X1/D206	75	970	490	M20	850	520	100	2
N40-250/150/D228	75	970	490	M20	850	520	100	2
N40-250/185/D243	75	970	490	M20	1000	520	100	2
N40-250/220/D257,5	75	970	490	M20	1000	520	100	2
N50-125/30/D118	60	690	350	M16	650	450	100	1
N50-125/40/D130	60	690	350	M16	650	450	100	1
N50-125/55/D144	60	770	400	M20	650	450	100	1
N50-125/75/D148	60	770	400	M20	650	450	100	1
N50-160/55/D144	60	770	400	M20	650	450	100	1
N50-160/75/D159	60	770	400	M20	650	450	100	1
N50-160/110A/D170	60	870	440	M20	750	450	100	1
N50-160/110/D176	60	870	440	M20	1000	520	100	2
N50-200/110A/D168	60	870	440	M20	750	450	100	1
N50-200/110/D179	60	870	440	M20	1000	520	100	2
N50-200/150X/D192	60	870	440	M20	1000	520	100	2
N50-200/185/D209	60	870	440	M20	1000	520	100	2
N50-250/150/D208	75	970	490	M20	850	520	100	2
N50-250/185/D220	75	970	490	M20	1000	520	100	2
N50-250/220/D232	75	970	490	M20	1000	520	100	2
N50-250/300/D256	75	1095	550	M24	1350	590	100	2

GEM - GEMJ - GEMK	A1	B	C	D FOR SCREWS	E	F	G	TYPE
N65-125/40/D113	75	675	350	M16	650	450	100	1
N65-125/55/D127	75	755	400	M20	650	450	100	1
N65-125/75/D137	75	755	400	M20	650	450	100	1
N65-125/110A/D146	75	855	440	M20	750	450	100	1
N65-125/110/D148	75	855	440	M20	750	450	100	1
N65-160/75/D145	75	970	490	M20	650	450	100	1
N65-160/110A/D151	75	970	490	M20	750	450	100	1
N65-160/110/D159	75	970	490	M20	850	520	100	2
N65-160/150/D175	75	970	490	M20	850	520	100	2
N65-160/185/D180	75	970	490	M20	850	520	100	2
N65-200/110/D165	75	970	490	M20	750	450	100	1
N65-200/150/D177	75	970	490	M20	850	520	100	2
N65-200/185/D189	75	970	490	M20	1000	520	100	2
N65-200/220/D199	75	970	490	M20	1000	520	100	2
N65-200/300/D220	75	1095	550	M24	1350	590	100	2
N65-250/220/D195	90	970	490	M20	1050	520	100	2
N65-250/300/D215	90	1080	550	M24	1400	590	100	2
N65-250/370/D229	90	1080	550	M24	1400	590	100	2
N65-250/450/D243	90	1080	550	M24	1400	590	100	2
N65-250/550/D258	90	1240	600	M24	1400	590	100	2
N65-315/550/D272	90	1330	710	M16	1400	590	100	2
N65-315/750/D298	90	1330	710	M16	1550	650	100	3
N65-315/900/D315	90	1330	710	M16	1550	650	100	3
N80-160/110/D144	75	970	490	M20	850	520	100	2
N80-160/150/D158	75	970	490	M20	850	520	100	2
N80-160/185/D168	75	970	490	M20	1050	520	100	2
N80-160/220/D177	75	970	490	M20	1050	520	100	2
N80-200/220/D181	75	970	490	M20	1050	520	100	2
N80-200/300/D195	75	1095	550	M24	1400	590	100	2
N80-200/370/D208	75	1095	550	M24	1400	590	100	2
N80-200/450/D219	75	1095	550	M24	1400	590	100	2
N80-250/370/D214	90	1080	550	M24	1400	590	100	2
N80-250/450/D227	90	1080	550	M24	1400	590	100	2
N80-250/550/D241	90	1240	600	M24	1400	590	100	2
N80-250/750/D259	90	1410	670	M24	1550	650	100	3
N80-316/900/D280	90	1380	710	M16	1550	650	100	3
N80-316/1100/D298	90	1630	810	M20	1800	800	125	3
N80-316/1320/D310	90	1630	810	M20	1800	800	125	3
N80-316/1600/D321	90	1630	810	M20	1800	800	125	3
N100-160/150/D144	110	1110	630	M16	1050	520	100	2
N100-160/185/D156	110	1110	630	M16	1050	520	100	2
N100-160/220/D167	110	1110	630	M16	1050	520	100	2
N100-160/300/D187	110	1130	520	M16	1400	590	100	2
N100-200/300/D188	110	1130	520	M16	1400	590	100	2
N100-200/370/D202	110	1130	520	M16	1400	590	100	2
N100-200/450/D213	110	1130	520	M16	1400	590	100	2
N100-200/550/D227	110	1330	710	M16	1400	590	100	2
N100-250/450/D213	110	1130	520	M16	1400	590	100	2
N100-250/550/D227	110	1330	710	M16	1400	590	100	2
N100-250/750/D249	110	1330	710	M16	1550	650	100	3
N100-250/900/D259	110	1330	710	M16	1550	650	100	3
N125-200/450/D179	110	1130	520	M16	1400	590	100	2
N125-200/550/D195	110	1330	710	M16	1400	590	100	2
N125-200/750/D215	110	1330	710	M16	1550	650	100	3
N125-200/900/D225	110	1330	710	M16	1550	650	100	3
N125-315/1100/D250	110	1630	810	M20	1800	800	140	3
N125-315/1320/D265	110	1630	810	M20	1800	800	140	3
N125-315/1600/D280	110	1630	810	M20	1800	800	140	3
N125-315/2000/D290	110	1630	810	M20	1800	800	140	3

fissaggio-nsc-b_ttd

CHOICE AND SELECTION

Criteria for choosing fire-fighting sets

A correct choice must consider various factors, including the correct sizing of the performance levels required for the system, local regulations and legislation, and especially the installation conditions relative to the installation site and whether a suction lift or a positive suction head is involved.

Choosing the type of water supply

The type of water supply and, therefore, the type of GEM module to select depends on the type of system involved and is chosen according to the risk analysis performed by the designer.

There is no written rule for identifying the correct number of pumps to install.

GEM booster modules are normally designed so that every service pump can satisfy the following requirements:

100% of rated capacity with one or two pumps installed (one in service and the other in reserve), the joining kit is set for one operating pump.

If three pumps are installed, the capacity of the pump will be 50% of the total rated capacity and the third service pump will be considered as a reserve. In these cases, when superior or duplicated water supplies are involved, only one pump must be driven by an electric motor. Joining kit is set for two operating pumps. This type of configuration is available on request.

Suction conditions of the booster set

The type of installation, suction lift or positive suction head, tends to affect (negatively or positively) the hydraulic performance of the pump. Remembering that EN12845 recommends against using suction lift installations, the following condition given by EN12845 must be satisfied in order to use the pump curve correctly:

$$NPSHd \geq NPSHr + 1 \text{ [m]}$$

Where: NPSHd is defined available.

NPSHr is defined requested from the pump.

As the suction check condition must be made at the max. requested flow, there can be different performance levels always respecting the NPSHd condition.

To select the booster set, consult the dedicated sections. Choice and selection: hydraulic performance levels, suction lift or positive suction head installation.

Performance levels of booster sets: using the tables

The tables showing the hydraulic performance levels of GEM modules indicate the flow values at T-shaped delivery pipe. This value does not refer to pump performance but is net of the pressure drop on the pump discharge line. This field is shown in grey and the selection must be made here, where performance levels comply with the reference standard which considers the following conditions:

- Maximum water speed in the service pump discharge piping 6 m/sec.
- $NPSHd \geq NPSHr + 1$ at the maximum flow required.
- Max. difference in level of water considered 3,2 m (for suction lift).
- Suction pressure drops due to valves, piping, suction kit, flexible coupling (if diesel engine pump).

The reference suction conditions are the severest and most extreme that can occur.

CHOICE AND SELECTION - SUCTION LIFT INSTALLATION

EN12845 recommends installing pumps in positive suction head conditions wherever possible. If this is not possible, the pumps can be installed in suction lift conditions according to the following rules:

- The height of the minimum water level at the pump axis must not be greater than 3,2 m.
- A foot valve must be installed in the lowest point of the suction piping.
- If more than one pump is installed, the suction piping must not be interconnected.

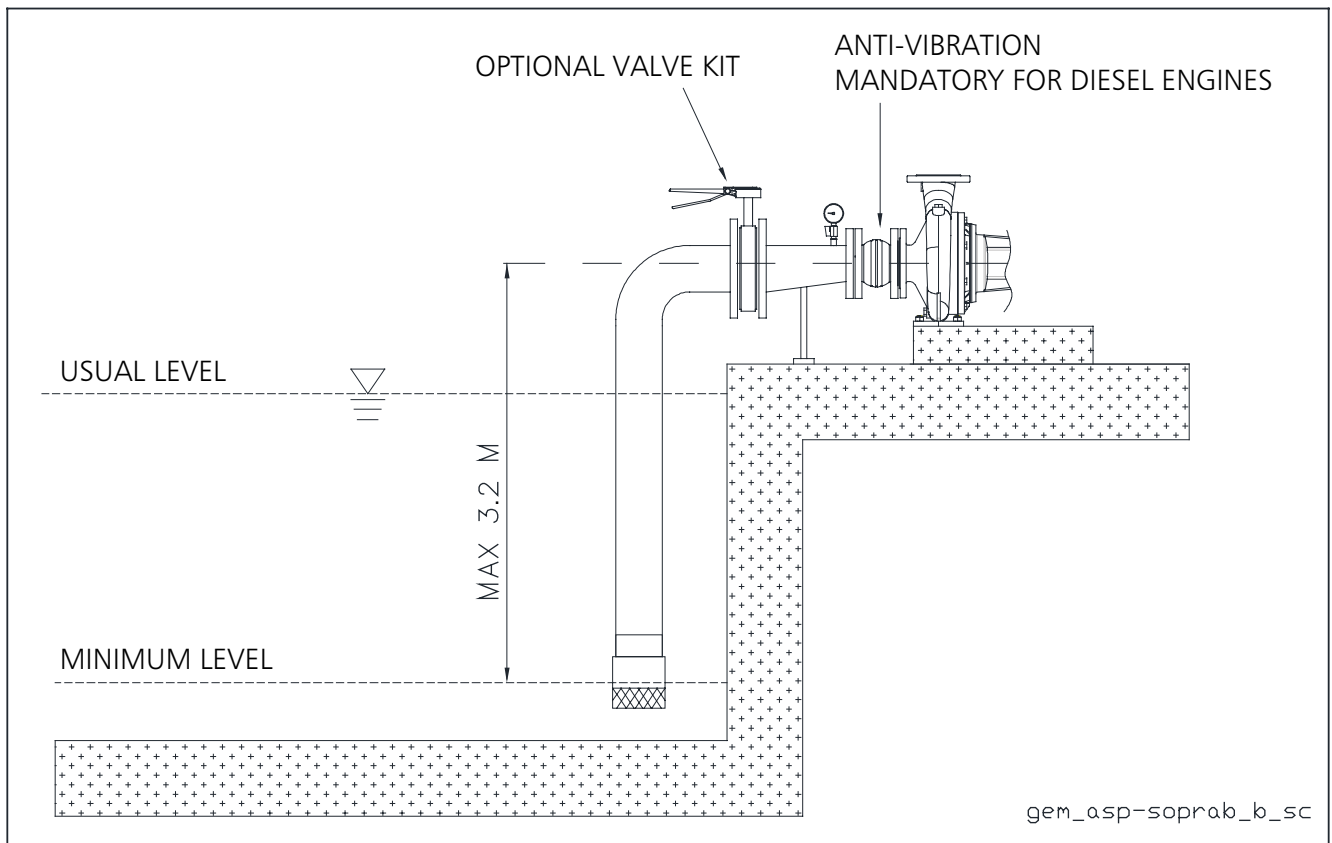


Fig. 1 suction lift installation diagram

In accordance with EN 12845 (10.6.2.1), the suction piping, including all the valves and unions, must be designed to ensure that the NPSH available at the pump inlet exceeds the required NPSH by at least 1 m at the maximum required flow rate.

$$\text{NPSHd} \geq \text{NPSHr} + 1$$

When selecting the type of pump to use for the GEM module, the installation conditions must be considered as these determine different pump performance levels.

An example of how to choose and check of the installation conditions is shown below:

considering the precalculation method, a suitable risk class for the system is identified, e.g.: OH3. Being in a suction lift condition, the most difficult situation is considered, i.e.: the maximum difference in water level of 3,2 m, as indicated in the standard. Being aware of the maximum requested flow 81 m³/h and the pressure required for the system e.g. 30 m, the pump is selected according to the tables on page 45-51 making sure the performance rating lies inside the area shown in grey.

The module version that satisfies the required work point is GEM2 and the pump is NSC50-200/D192.

CHOICE AND SELECTION - SUCTION LIFT INSTALLATION

At this point, the installation conditions (suction lift) must be checked at the **maximum required flow**.

the following values are replaced in the known relation, $NPSH_d \geq NPSH_r + 1$:

$NPSH_r$ can be deduced from the table on page 126 which in this case is 4,1 m at the maximum requested flow 81 m³/h.

After replacing the value, the following will be true (water temperature around 15°C):

$$NPSH_d = 10,33 + (-3,2) - \sum H_{ct}$$

Where

10,33 atmospheric pressure

3,2 geodetic difference in level

$\sum H_{ct}$ suction pressure drop (valves, pipes, elbows...)

The value of $\sum H_{ct}$ considers the pressure drops of the suction kit, inclusive of vibration-proof joint, reduction cone, as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

The value of H_c at the maximum required flow of the selected pump can be found in the diagram on page 144. This value is 0.06 m.

After entering it in the formula, we will have:

$$\sum H_{ct} = 0.06 + X$$

Where X is the pressure drop relative to all the suction piping after the eccentric cone,

Hence

$NPSH_d \geq NPSH_r + 1$ after replacing this, we will have:

$$10.33 + (-3.2) - \sum H_{ct} = 4.1 + 1$$

$$10.33 + (-3.2) - 0.06 - X = 4.1 + 1 \text{ which makeso}$$

$$X = 1.97 \text{ m}$$

Maximum value of total drops to consider on the inlet piping in order to respect the conditions of the standard.

Of course, this case was deliberately put in the worst suction conditions. The designer must check and set the values in an attempt to optimise suction conditions.

CHOICE AND SELECTION - SUCTION LIFT INSTALLATION

Checking performance of the set at rated flow.

The performance of the GEM module must now be checked in the installation conditions of the example used up until now.

Work point: Qm: 81 m³/h H = 30 m
 Module version: GEM2
 Selected pump: NSC50-200/D192

Starting from the usual relation given by the standard, we will have:

$$NPSH_d \geq NPSH_r + 1$$

$$NPSH_d = 10.33 + (-3.2) - \sum H_{ct}$$

NPSH_r can be deduced from the table on page 126 which in this case is 4.1 m **at the maximum flow**.

considers the pressure drops of the suction kit, inclusive of vibration-proof joint, reduction cone, as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

The value of H_c at the maximum required flow of the selected pump can be found in the diagram on page 144. This value is 0.06 m.

After entering it in the formula, we will have:

$$\sum H_{ct} = 0.06 + X$$

Where X is the pressure drop relative to all the suction piping after the eccentric cone,

Hence

NPSH_d ≥ NPSH_r + 1 after replacing this, we will have:

$$10.33 + (-3.2) - \sum H_{ct} = 4.1 + 1$$

$$10.33 + (-3.2) - 0.06 - X = 4.1 + 1 \text{ which makes}$$

$$X = 1.97 \text{ m}$$

Taking the pressure value of the selected set, the value corresponds to 38.1 m at the rated flow.

Therefore, the verification of the pressure values in the above suction conditions becomes:

$$H = 38.1 - (0.06 + 1.97) + (-3.2) = \mathbf{32.9 \text{ m} > \mathbf{30 \text{ m}}$$
 which is the pressure required for the system.

The result satisfies the performance required for the system in the installation conditions of the example.

CHOICE AND SELECTION - POSITIVE SUCTION HEAD INSTALLATION

Positive suction head installation

EN12845 recommends installing pumps in positive suction head conditions, wherever possible, according to the following rules:

- At least two thirds of the effective capacity of the suction tank must be above the level of the pump axis.
- The pump axis must not be more than 2 m above the minimum water level in the suction tank.

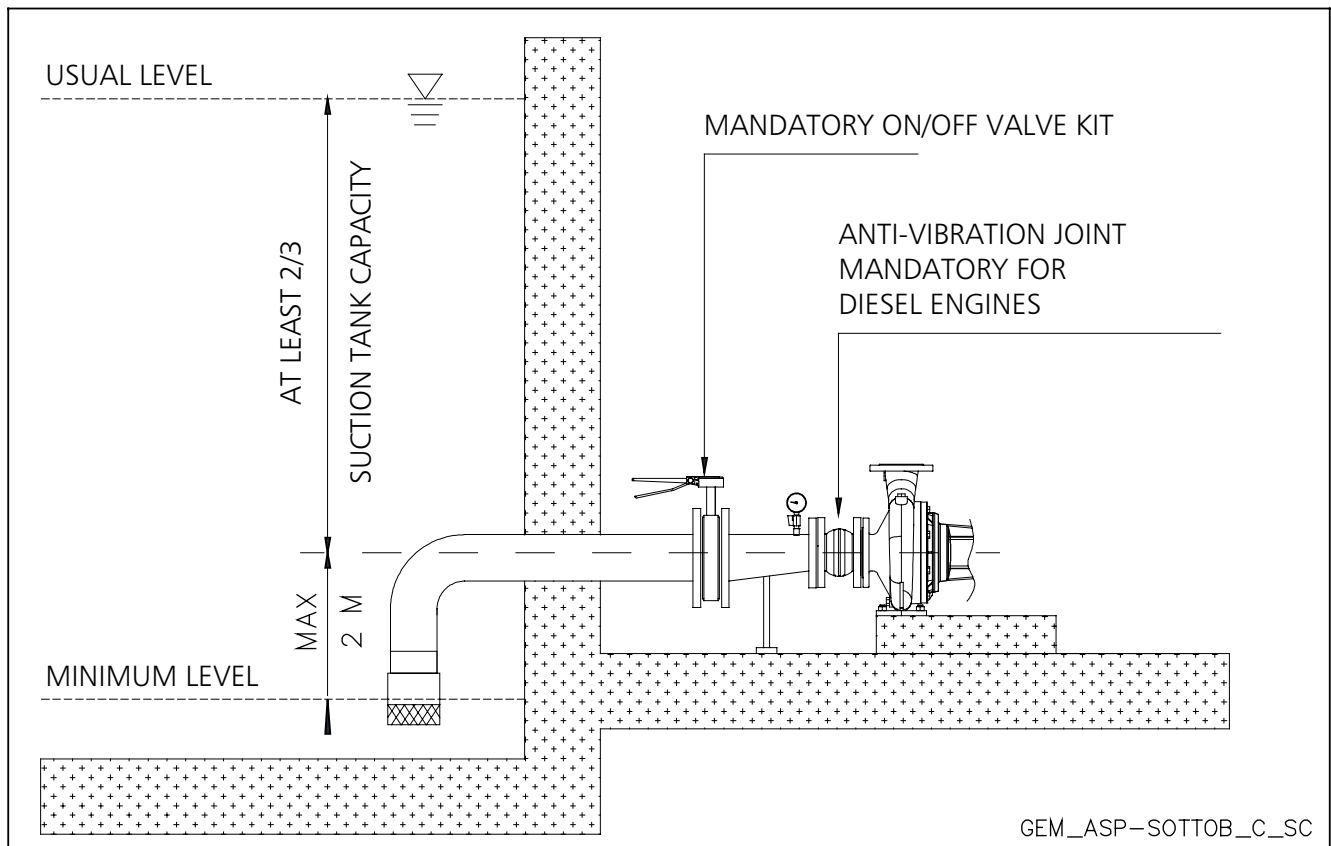


Fig. 2 positive suction head installation diagram

In accordance with EN 12845 (10.6.2.1), the suction piping, including all the valves and unions, must be designed to ensure that the NPSH available at the pump inlet exceeds the required NPSH by at least 1 m at the maximum required flow rate.

$$\text{NPSHd} \geq \text{NPSHr} + 1$$

When selecting the type of pump to use for the GEM modules, the installation conditions must be considered as these determine different pump performance levels.

An example of how to choose and check of the installation conditions is shown below:

considering the precalculation method, a suitable risk class for the system is identified, e.g.: OH3.

For this risk class, the maximum requested flow is 81 m³/h (Q_m).

Being in the positive suction head condition, a neutral situation is used in order to consider the water level on the same horizontal plane as the pump, without benefiting from any positive level.

CHOICE AND SELECTION - POSITIVE SUCTION HEAD INSTALLATION

Being aware of the maximum requested flow 81 m³/h and the pressure required for the system e.g. 35 m, the pump is selected according to the tables on pages 45-51 or tables on pages 116-142 making sure the performance rating is higher than the work point required by the system.

The module version that satisfies the required work point is GEM2 and the pump is NSC50-200/D192.

At this point, the installation conditions (positive suction head) must be checked at the maximum requested flow.

The following values are replaced in the known relation, $NPSH_d \geq NPSH_r + 1$:

$NPSH_r$ can be deduced from the table on page 126 which in this case is 4.1 m at the maximum requested flow. After replacing the value, the following will be true (water temperature around 15° C):

$$NPSH_d = 10.33 + (0) - \sum H_{ct}$$

Where

10.33 atmospheric pressure

0 geodetic difference in level

$\sum H_{ct}$ suction pressure drop (valves, pipes, elbows...)

The value of $\sum H_{ct}$ considers the pressure drops of the suction kit, inclusive of expansion joint (if diesel engine pump), reduction cone and on-off valve (mandatory for positive suction head installation), as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

The value of H_c (expansion joint and on/off valve) at the maximum required flow of the selected pump can be found in the diagram on pages 143-144. This value is 0,11 m. After entering it in the formula, we will have:

$$\sum H_{ct} = 0,11 + X$$

Where X is the pressure drop relative to all the suction piping

Hence

$NPSH_d \geq NPSH_r + 1$ after replacing this, we will have:

$$10.33 + (0) - \sum H_{ct} = 4.1 + 1$$

$$10.33 + (0) - 0,11 - X = 4.1 + 1 \text{ which makes}$$

$$X = 5.12 \text{ m}$$

Maximum value of total drops to consider on the inlet piping in order to respect the conditions of the standard. Of course, the case in point was deliberately tested in neutral suction conditions that does not benefit nor optimise suction.

The designer must check and set the values in an attempt to make suction conditions as efficient as possible.

CHOICE AND SELECTION - POSITIVE SUCTION HEAD INSTALLATION

Checking performance of the selected GEM module at maximum requested flow.

The performance of the GEM module must now be checked in the installation conditions of the example used up until now.

Work point: Qm: 81 m³/h H = 35 m
 Module version: GEM2
 Selected pump: NSC50-200/D192

Starting from the usual relation given by the standard, we will have:

$$NPSHd \geq NPSHr + 1$$

$$NPSHd = 10.33 + (0) - \Sigma Hct$$

NPSHr can be deduced from the table on page 126 which in this case is 4.1 m **at the maximum flow**.

The value of ΣHct considers the pressure drops of the suction kit, inclusive of vibration-proof joint, reduction cone and on-off valve (Hc), as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

The value of Hc at the maximum required flow of the selected pump can be found in the diagram on page 143-144. This value is 0,11 m.

After entering it in the formula, we will have:

$$\Sigma Hct = 0.11 + X$$

Where X is the pressure drop relative to all the suction piping

Hence

$NPSHd \geq NPSHr + 1$ after replacing this, we will have:

$$10.33 + (0) - \Sigma Hct = 4.1 + 1$$

$$10.33 + (0) - 0.11 - X = 4.1 + 1 \text{ which makes}$$

$$X = 5.12 \text{ m}$$

Value of the total drops to consider on the suction piping

Taking the pressure value of the GEM module, the value corresponds to 38,1 m at the rated flow.

Therefore, the verification of the pressure values in the above suction conditions becomes:

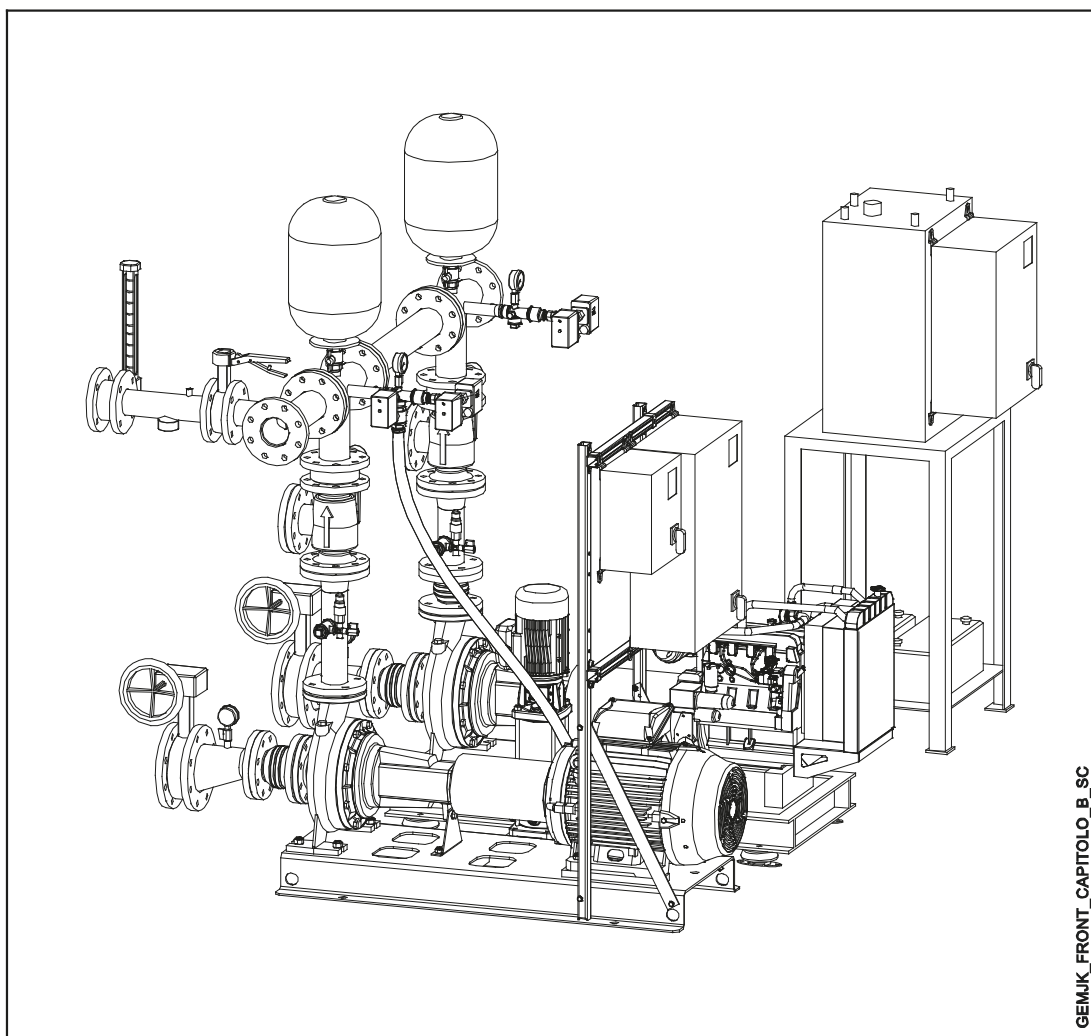
$$H = 38.1 - 0.11 - 5.12 = \mathbf{32.9 \text{ m} < \mathbf{35 \text{ m}}$$
 which is the pressure required for the system.

This value does not satisfy the performance levels required for the system, but, as is evident, we have deliberately used a neutral installation condition that does not benefit suction. If a pump with a positive level of 3 m is installed, the pressure will be 35,9 m which satisfies the relation.

Single and combined modules, NSC series

EN 12845 firefighting with horizontal centrifugal pumps series NSC

50 Hz



GEMIK_FRONT_CAPITOLO_B_SC

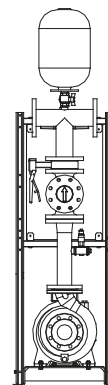
NSC MODULES

NSCC, NSC SINGLE MODULE

Single EN 12845 firefighting pressure modules with an electric service pump (GEM) and, if required, an on-board jockey pump (GEM..J) or diesel engine pump (GEMK) and, if required, a jockey pump kit, to adapt to the specific requirements of each application.

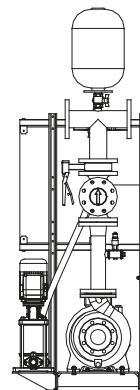
GEM.. MODULE

- Single electric service pump module with horizontal centrifugal pump and cast-iron body, NSC series.



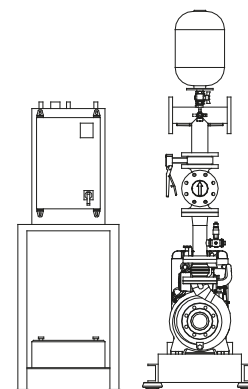
GEM..J MODULE

- Single electric service pump module with horizontal centrifugal hydraulic pump and cast-iron body, NSC series, with series 1SV or 1VM multi-stage vertical jockey pump on-board.



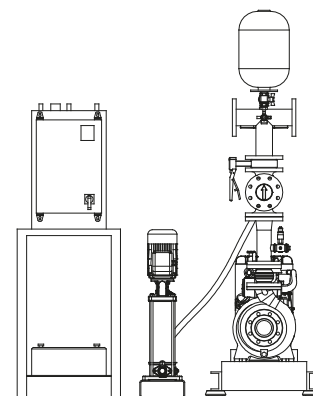
GEMK.. MODULE

- Single diesel engine service pump module with horizontal centrifugal pump and cast-iron body, NSC series.



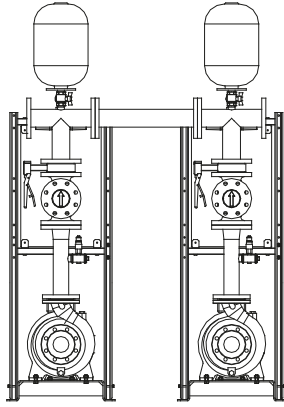
GEMK.. MODULE AND ELECTRIC JOCKEY PUMP

- Single diesel engine service pump module with horizontal centrifugal hydraulic pump and cast-iron body, NSC series, with series 1SV or 1VM multi-stage vertical jockey pump, **not on-board**, supplied as an accessory kit.



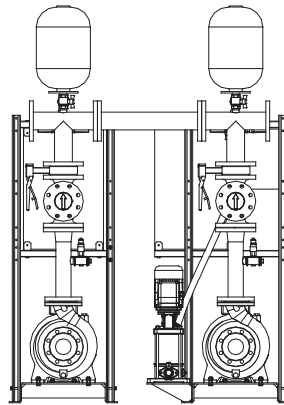
NSCC, NSC COMBINED MODULES

EN 12845 combined firefighting pressure modules, with two electric service pumps (GEM..+GEM..) and, if required, a jockey pump on-board (GEMJ..+GEM..) or an electric service pump and a diesel engine service pump (GEM..+GEMK..) and, if required, a jockey pump on-board the electric pump module, (GEMJ..+GEMK..) to adapt to the specific requirements of each application.



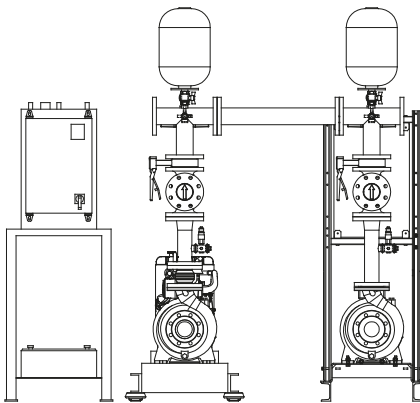
GEM..+GEM.. MODULES

- Combined modules comprising two electric service pump modules with horizontal centrifugal pumps and cast-iron bodies, NSC series.



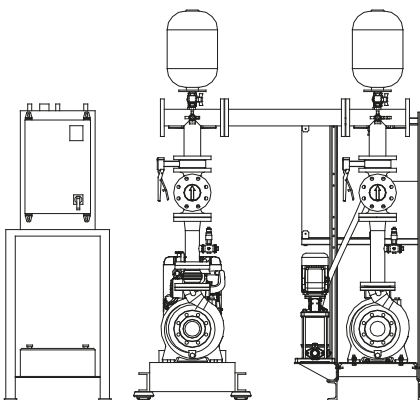
GEMJ..+GEM.. MODULES

- Combined modules comprising two electric service pump modules with horizontal centrifugal pumps and cast-iron bodies, NSC series, with series 1SV or 1VM multi-stage vertical jockey pump on-board.



GEM..+GEMK.. MODULES

- Combined modules comprising an electric service pump module and a diesel engine service pump module with horizontal centrifugal pumps and cast-iron bodies, NSC series.



GEMJ..+GEMK.. MODULES

- Combined modules comprising an electric service pump module and a diesel engine service pump module with horizontal centrifugal pumps and cast-iron bodies, NSC series, with series 1SV or 1VM multi-stage vertical jockey pump on-board the electric pump.

SERIES GEM..NSCC, NSC32-80
SERVICE PUMP – JOCKEY PUMP COMBINATIONS

ELECTRIC PUMP	PUMP	JOCKEY PUMP								
		1VM04P04T	1VM05P05T	1VM06P07T	1VM07P07T	1VM08P11T	1SV17T011T	1SV19T011T	1SV22T011T	1SV25T015T
NSCC 32-125/11	NSC 32-125/D113	•								
NSCC 32-125/15	NSC 32-125/D123	•								
NSCC 32-125/22	NSC 32-125/D133		•							
NSCC 32-125/30	NSC 32-125/D145		•							
NSCC 32-160/22	NSC 32-160/D137		•							
NSCC 32-160/30	NSC 32-160/D150		•							
NSCC 32-160/40	NSC 32-160/D160,5		•							
NSCC 32-160/55	NSC 32-160/D171			•						
NSCC 32-200/30X	NSC 32-200/D154		•							
NSCC 32-200/40	NSC 32-200/D171			•						
NSCC 32-200/55	NSC 32-200/D186			•						
NSCC 32-200/75	NSC 32-200/D205				•					
NSCC 32-250/75X	NSC 32-250/D208				•					
NSCC 32-250/110A	NSC 32-250/D226					•				
NSCC 32-250/110	NSC 32-250/D239					•				
NSCC 32-250/150	NSC 32-250/D259						•			
NSCC 40-125/15	NSC 40-125/D105	•								
NSCC 40-125/22	NSC 40-125/D118	•								
NSCC 40-125/30	NSC 40-125/D130	•								
NSCC 40-160/30	NSC 40-160/D127	•								
NSCC 40-160/40	NSC 40-160/D139		•							
NSCC 40-160/55	NSC 40-160/D154		•							
NSCC 40-160/75	NSC 40-160/D165			•						
NSCC 40-200/55	NSC 40-200/D165			•						
NSCC 40-200/75	NSC 40-200/D179			•						
NSCC 40-200/110A	NSC 40-200/D189			•						
NSCC 40-200/110	NSC 40-200/D199				•					
NSCC 40-250/110X	NSC 40-250/D195				•					
NSCC 40-250/110X1	NSC 40-250/D206				•					
NSCC 40-250/150	NSC 40-250/D228					•				
NSCC 40-250/185	NSC 40-250/D243						•			
NSCC 40-250/220	NSC 40-250/D257,5						•			
NSCC 50-125/30	NSC 50-125/D118	•								
NSCC 50-125/40	NSC 50-125/D130	•								
NSCC 50-125/55	NSC 50-125/D144		•							
NSCC 50-125/75	NSC 50-125/D148		•							
NSCC 50-160/55	NSC 50-160/D144		•							
NSCC 50-160/75	NSC 50-160/D159		•							
NSCC 50-160/110A	NSC 50-160/D170			•						
NSCC 50-160/110	NSC 50-160/D176			•						
NSCC 50-200/110A	NSC 50-200/D168			•						
NSCC 50-200/110	NSC 50-200/D179			•						
NSCC 50-200/150X	NSC 50-200/D192				•					
NSCC 50-200/185	NSC 50-200/D209				•					
NSCC 50-250/150	NSC 50-250/D208				•					
NSCC 50-250/185	NSC 50-250/D220				•					
NSCC 50-250/220	NSC 50-250/D232					•				
NSCC 50-250/300	NSC 50-250/D256						•			
NSCC 65-125/40	NSC 65-125/D113	•								
NSCC 65-125/55	NSC 65-125/D127	•								
NSCC 65-125/75	NSC 65-125/D137		•							
NSCC 65-125/110A	NSC 65-125/D146		•							
NSCC 65-125/110	NSC 65-125/D148		•							

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SERIES GEM..NSCC, NSC100-125 SERVICE PUMP – JOCKEY PUMP COMBINATIONS

ELECTRIC PUMP	PUMP	JOCKEY PUMP								
		1VM04P04T	1VM05P05T	1VM06P07T	1VM07P07T	1VM08P11T	1SV17T011T	1SV19T011T	1SV22T011T	1SV25T015T
NSCC 65-160/75	NSC 65-160/D145		•							
NSCC 65-160/110A	NSC 65-160/D151		•							
NSCC 65-160/110	NSC 65-160/D159		•							
NSCC 65-160/150	NSC 65-160/D175			•						
NSCC 65-160/185	NSC 65-160/D180			•						
NSCC 65-200/110	NSC 65-200/D165			•						
NSCC 65-200/150	NSC 65-200/D177			•						
NSCC 65-200/185	NSC 65-200/D189			•						
NSCC 65-200/220	NSC 65-200/D199				•					
NSCC 65-200/300	NSC 65-200/D220					•				
NSCC 65-250/220	NSC 65-250/D195				•					
NSCC 65-250/300	NSC 65-250/D215				•					
NSCC 65-250/370	NSC 65-250/D229					•				
NSCC 65-250/450	NSC 65-250/D243						•			
NSCC 65-250/550	NSC 65-250/D258						•			
NSCC 65-315/550	NSC 65-315/D272							•		
NSCC 65-315/750	NSC 65-315/D298								•	
NSCC 65-315/900	NSC 65-315/D315									•
NSCC 80-160/110	NSC 80-160/D144		•							
NSCC 80-160/150	NSC 80-160/D158		•							
NSCC 80-160/185	NSC 80-160/D168			•						
NSCC 80-160/220	NSC 80-160/D177			•						
NSCC 80-200/220	NSC 80-200/D181			•						
NSCC 80-200/300	NSC 80-200/D195			•						
NSCC 80-200/370	NSC 80-200/D208				•					
NSCC 80-200/450	NSC 80-200/D219					•				
NSCC 80-250/370	NSC 80-250/D214				•					
NSCC 80-250/450	NSC 80-250/D227					•				
NSCC 80-250/550	NSC 80-250/D241						•			
NSCC 80-250/750	NSC 80-250/D259						•			
NSCC 80-316/900	NSC 80-316/D280							•		
NSCC 80-316/1100	NSC 80-316/D298								•	
NSCC 80-316/1320	NSC 80-316/D310									•
NSCC 80-316/1600	NSC 80-316/D321									•
NSCC 100-160/150	NSC 100-160/D144		•							
NSCC 100-160/185	NSC 100-160/D156		•							
NSCC 100-160/220	NSC 100-160/D167		•							
NSCC 100-160/300	NSC 100-160/D187			•						
NSCC 100-200/300	NSC 100-200/D188			•						
NSCC 100-200/370	NSC 100-200/D202			•						
NSCC 100-200/450	NSC 100-200/D213				•					
NSCC 100-200/550	NSC 100-200/D227					•				
NSCC 100-250/450	NSC 100-250/D213				•					
NSCC 100-250/550	NSC 100-250/D227				•					
NSCC 100-250/750	NSC 100-250/D249					•				
NSCC 100-250/900	NSC 100-250/D259						•			
NSCC 125-200/450	NSC 125-200/D179		•							
NSCC 125-200/550	NSC 125-200/D195			•						
NSCC 125-200/750	NSC 125-200/D215				•					
NSCC 125-200/900	NSC 125-200/D225				•					
NSCC 125-315/1100	NSC 125-315/D250						•			
NSCC 125-315/1320	NSC 125-315/D265						•			
NSCC 125-315/1600	NSC 125-315/D280							•		
NSCC 125-315/2000	NSC 125-315/D290								•	

abbin_pil-65_a_tc

EN 12845 FIRE-FIGHTING MODULES GEM..NSC SERIES HYDRAULIC PERFORMANCE TABLE AT 50 Hz (JOCKEY PUMP)

PUMP TYPE	NOMINAL POWER kW	Q = DELIVERY						
		l/min 0	12	20	25	30	35	40
		m ³ /h 0	0,7	1,2	1,5	1,8	2,1	2,4
H = TOTAL HEAD METRES COLUMN OF WATER								
1SV 02	0,37	12,2	12,2	11,5	10,7	9,5	7,9	6,0
1SV 03	0,37	18,0	18,0	17,0	15,7	13,8	11,4	8,4
1SV 04	0,37	23,7	23,5	22,1	20,4	17,9	14,6	10,6
1SV 05	0,37	29,3	28,9	27,0	24,8	21,6	17,4	12,5
1SV 06	0,37	34,8	34,2	31,7	28,9	25,0	20,0	14,0
1SV 07	0,37	40,2	39,2	36,1	32,7	28,1	22,2	15,2
1SV 08	0,55	48,1	47,9	45,2	41,8	36,8	30,4	22,4
1SV 09	0,55	53,7	53,4	50,4	46,4	40,8	33,5	24,6
1SV 10	0,55	59,4	59,0	55,5	51,0	44,7	36,6	26,6
1SV 11	0,55	65,1	64,5	60,4	55,5	48,5	39,5	28,5
1SV 12	0,75	73,3	73,1	69,3	64,3	57,1	47,6	35,7
1SV 13	0,75	79,2	78,9	74,8	69,4	61,6	51,2	38,2
1SV 15	0,75	90,9	90,5	85,6	79,3	70,1	58,1	43,1
1SV 17	1,1	105,2	104,9	100,0	93,1	82,6	68,6	51,2
1SV 19	1,1	117,0	116,7	111,0	103,2	91,5	75,8	56,3
1SV 22	1,1	134,6	134,1	127,4	118,1	104,4	86,1	63,5
1SV 25	1,5	152,6	152,4	145,5	135,4	120,0	99,1	72,7

Consistent hydraulic performance ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

EN12845_pp_1sv-2p50_b_th

NSC MODULES

PUMP TYPE	NOMINAL POWER kW	Q = DELIVERY							
		l/min 0	11,7	16,0	21,0	26,0	31,0	36,0	40,0
		m ³ /h 0	0,7	1,0	1,3	1,6	1,9	2,2	2,4
H = TOTAL HEAD METRES COLUMN OF WATER									
1VM02	0,30	22,5	20,7	19,7	18,4	16,9	15,1	13,1	11,3
1VM03	0,30	32,6	29,6	28,1	26,1	23,7	21,0	17,9	15,4
1VM04	0,40	43,9	39,9	37,9	35,2	32,1	28,4	24,4	20,9
1VM05	0,50	54,2	49,0	46,3	42,9	38,9	34,4	29,3	25,0
1VM06	0,75	68,5	63,6	60,9	57,2	52,7	47,5	41,5	36,2
1VM07	0,75	79,5	73,6	70,4	66,0	60,7	54,6	47,6	41,5
1VM08	1,1	91,6	85,2	81,7	76,8	70,9	63,9	55,9	48,9

Consistent hydraulic performance ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

EN12845_pp_1VM-2p50_a_th

EN 12845 FIRE-FIGHTING MODULES GEM..NSC65 SERIES HYDRAULIC PERFORMANCE TABLE AT 50Hz

NSC MODULES

VERSION	GEM TYPE NSC	P _N kW	ØF (1)	ØT (2)	Qlim(3) m³/h HHS HHP	Q = DELIVERY																		
						l/s 0	6,7	9,6	12,5	15,5	18,4	21,3	24,3	27,2	30,1	33,0	36,0	38,9	41,6	44,8				
						m³/h 0	24	35	45	56	66	77	87	98	108	119	130	140	150	161				
H = TOTAL HEAD METRES COLUMN OF WATER																								
1	65-125/40	4		113	82	15,4	14,9	14,5	13,8	12,8	11,7	10,3	8,6	6,7	4,6	2,2								
2						15,4	15,1	14,7	14,2	13,6	12,7	11,7	10,5	9,1	7,5	5,8								
1	65-125/55	5,5		127	91	20,4		19,2	18,5	17,5	16,2	14,8	13,2	11,3	9,1	6,7								
2						20,4		19,5	18,9	18,2	17,3	16,3	15,0	13,6	12,0	10,3	8,3							
1	65-125/75	7,5		137	100	24,7		23,7	23,0	22,1	20,9	19,5	17,9	16,0	13,8	11,4								
2						24,7		24,0	23,5	22,8	22,0	21,0	19,8	18,3	16,7	14,9	12,9	10,7						
1	65-125/110A	11		146	108	28,2			27,1	26,3	25,4	24,1	22,5	20,7	18,5	16,1								
2						28,2			27,6	27,1	26,4	25,5	24,4	23,0	21,4	19,6	17,6	15,4	13,2					
1	65-125/110	11	148		111	29,1			27,9	27,2	26,2	25,0	23,4	21,6	19,4	17,0								
2						29,1			28,4	27,9	27,3	26,4	25,3	24,0	22,4	20,6	18,6	16,4	14,3	11,7				
						l/s 0	7,0	10,3	13,6	16,8	20,1	23,4	26,7	29,9	33,2	36,5	39,8	43,0	46,1	49,6				
						m³/h 0	25	37	49	61	72	84	96	108	120	131	143	155	166	178				
1	65-160/75	7,5		145	89	26,6	26,2	25,6	24,7	23,4	21,6	19,3	16,7	13,6	10,3									
1	65-160/110A	11		151	96	31,1		30,2	29,3	28,1	26,4	24,3	21,7	18,7	15,3									
2						31,1		30,5	29,9	29,0	27,7	26,0	24,0	21,6	18,9	15,9								
1	65-160/110	11		159	104	34,6		33,7	32,9	31,8	30,2	28,2	25,7	22,9	19,6									
2						34,6		34,1	33,5	32,6	31,5	29,9	28,0	25,8	23,2	20,4	17,3							
1	65-160/150	15		175	121	42,3		41,5	40,7	39,6	38,2	36,4	34,2	31,7	28,7									
2						42,3		41,8	41,3	40,5	39,5	38,2	36,5	34,6	32,3	29,7	26,8	23,7	20,6					
1	65-160/185	18,5	180		126	44,9		44,1	43,3	42,3	40,9	39,1	37,0	34,5	31,6									
2						44,9		44,4	43,9	43,2	42,2	40,9	39,3	37,4	35,2	32,7	29,9	26,9	23,8	20,1				
						l/s 0	7,6	11,4	15,2	18,9	22,7	26,5	30,3	34,0	37,8	41,6	45,3	49,1	52,6	56,7				
						m³/h 0	27	41	55	68	82	95	109	122	136	150	163	177	189	204				
1	65-200/110	11		165	80	36,8	36,0	34,9	33,3	30,9	27,7	23,4	17,9	11,0										
2						36,8	36,1	35,3	34,0	32,1	29,3	25,6	20,8	14,8										
1	65-200/150	15		177	93	44,8	44,0	43,4	42,1	40,0	37,2	33,6	29,2	23,6										
2						44,8	44,2	43,8	42,8	41,2	38,9	35,9	32,2	27,3	20,7	11,3								
1	65-200/185	18,5		189	103	51,3		49,9	48,7	46,9	44,3	41,1	37,1	32,2										
2						51,3		50,3	49,5	48,0	46,0	43,3	40,0	35,9	30,7	23,9	14,4							
1	65-200/220	22		199	111	57,1		55,7	54,6	52,9	50,5	47,5	43,7	39,2										
2						57,1		56,1	55,4	54,1	52,2	49,7	46,7	43,0	38,5	32,8	25,4	15,5						
1	65-200/300	30	220		129	70,4		69,0	68,0	66,5	64,5	61,8	58,4	54,5										
2						70,4		69,3	68,7	67,7	66,1	64,0	61,4	58,3	54,6	50,2	45,0	38,6	31,1	20,1				
						l/s 0	7,5	11,9	16,3	20,7	25,1	29,5	33,9	38,3	42,7	47,1	51,5	55,9	60,0	64,7				
						m³/h 0	27	43	59	74	90	106	122	138	154	170	185	201	216	233				
1	65-250/220	22		195	104	55,5	54,7	54,0	52,8	50,6	47,4	42,9	36,8											
2						55,5	54,9	54,5	53,6	51,9	49,3	45,5	40,3	33,7	25,3	14,8								
1	65-250/300	30		215	120	67,9		66,5	65,3	63,5	60,8	57,1	52,1											
2						67,9		66,9	66,1	64,8	62,7	59,7	55,6	50,3	43,7	35,5	25,6							
1	65-250/370	37		229	132	77,4		75,9	74,9	73,2	70,8	67,4	63,1											
2						77,4		76,4	75,7	74,5	72,7	70,1	66,6	62,0	56,2	49,2	40,7	30,6						
3						77,4		76,5	76,0	75,0	73,5	71,3	68,2	64,1	58,9	52,4	44,6	35,3						
1	65-250/450	45		243	144	87,6		86,1	85,0	83,5	81,3	78,2	74,3											
2						87,6		86,5	85,8	84,8	83,2	80,9	77,8	73,8	68,8	62,6	55,2	46,5						
3						87,6		86,7	86,1	85,3	84,0	82,1	79,5	75,9	71,5	65,9	59,2	51,2	42,5					
1	65-250/550	55	258		158	99,3		97,7	96,7	95,2	93,1	90,4	86,8											
2						99,3		98,1	97,5	96,5	95,0	93,0	90,3	86,8	82,4	77,1	70,6	63,0						
3						99,3		98,3	97,8	97,0	95,9	94,2	92,0	89,0	85,1	80,4	74,6	67,7	60,2	50,2				
						l/s 0	6,5	11,5	16,5	21,5	26,6	31,6	36,6	41,6	46,7	51,7	56,7	61,7	66,4	71,8				
						m³/h 0	23	41	59	78	96	114	132	150	168	186	204	222	239	258				
1	65-315/550	55		272	133	103,6	103,6	102,6	100,4	96,9	92,0	85,9												
2						103,6	103,7	103,0	101,2	98,3	94,2	89,0	82,7	75,2	66,0	54,2	38,6							
3						103,6	103,7	103,1	101,5	98,8	95,0	90,2	84,4	77,4	68,9	57,8	43,0	22,4						
1	65-315/750	75		298	152	126,1		125,0	123,2	120,1	115,6	109,9												
2						126,1		125,4	124,1	121,5	117,8	112,9	107,2	100,4	92,6	83,2	71,4							
3						126,1		125,5	124,3	122,0	118,6	114,2	108,9	102,7	95,5	86,9	75,8	60,9	42,0					
1	65-315/900	90	315		163	142,4		141,0	139,4	136,6	132,5	127,0												
2						142,4		141,3	140,1	137,8	134,2	129,4	123,5	116,6	108,7	99,6	88,8							
3						142,4		141,5	140,6	138,6	135,4	131,1	125,8	119,6	112,5	104,3	94,5	82,2	67,5	44,6				

Hydraulic actions in accordance with SO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_1p-nsc65-2p50_b_th

(1) External diameter full impeller

(2) Internal diameter reduced impeller (turned)

(3) Precalculated limit system selection HHP-HHS (10.7.2 EN 12845)

EN 12845 FIRE-FIGHTING MODULES GEM..NSC80 SERIES HYDRAULIC PERFORMANCE TABLE AT 50Hz

VERSION	GEM TYPE NSC	P _N kW	ØF (1)	ØT (2)	Q _{lim} (3) m ³ /h HHS HHP	Q = DELIVERY															
						l/s	0	12,2	17,4	22,6	27,7	32,9	38,1	43,2	48,4	53,6	58,8	63,9	69,1	74,3	79,4
						m ³ /h	0	44	63	81	100	118	137	156	174	193	212	230	249	267	286
H = TOTAL HEAD METRES COLUMN OF WATER																					
1	80-160/110	11		144	130	27,8	27,2	26,4	25,1	23,3	21,0	18,3	15,2	11,8	8,2						
2						27,8	27,4	26,8	25,7	24,2	22,3	19,9	17,3	14,5	11,5	8,3	4,9				
1	80-160/150	15		158	149	33,7		32,5	31,3	29,7	27,6	25,1	22,2	18,9	15,4						
2						33,7		32,8	31,9	30,6	28,9	26,7	24,3	21,6	18,6	15,5	12,2	8,8			
1	80-160/185	18,5		168	164	38,3		37,1	36,1	34,6	32,7	30,3	27,5	24,3	20,9						
2						38,3		37,5	36,7	35,5	33,9	31,9	29,6	27,0	24,1	21,0	17,8	14,4	10,8		
1	80-160/220	22	177		177	42,7		41,6	40,7	39,2	37,4	35,1	32,4	29,4	26,0						
2						42,7		42,0	41,2	40,1	38,6	36,8	34,6	32,0	29,3	26,3	23,1	19,7	16,2	12,5	
						l/s	0	13,5	19,0	24,5	30,0	35,5	41,1	46,6	52,1	57,6	63,1	68,7	74,2	79,7	85,2
						m³/h	0	48	68	88	108	128	148	168	188	207	227	247	267	287	307
1	80-200/220	22		181	156	44,8	44,3	43,7	42,6	41,0	38,6	35,6	31,8	27,5							
2						44,8	44,5	44,1	43,3	42,0	40,0	37,5	34,3	30,5	26,2	21,2	15,4				
1	80-200/300	30		195	176	53,1		51,9	51,0	49,5	47,5	44,8	41,5	37,5							
2						53,1		52,3	51,6	50,5	48,9	46,7	43,9	40,6	36,7	32,3	27,4				
1	80-200/370	37		208	194	60,8		59,6	58,7	57,4	55,6	53,2	50,2	46,5							
2						60,8		60,0	59,4	58,4	57,0	55,1	52,6	49,6	46,1	42,0	37,5	32,5			
1	80-200/450	45	219		210	67,7		66,6	65,8	64,5	62,8	60,5	57,8	54,4							
2						67,7		67,0	66,4	65,5	64,2	62,4	60,2	57,5	54,2	50,5	46,2	41,5	36,4	30,8	
						l/s	0	14,0	20,0	26,0	32,1	38,1	44,1	50,1	56,2	62,2	68,2	74,2	80,3	86,3	92,3
						m³/h	0	50	72	94	115	137	159	180	202	224	246	267	289	311	332
1	80-250/370	37		214	178	65,8	65,3	64,8	63,8	61,9	58,9	54,8	49,9	44,2							
2						65,8	65,5	65,3	64,6	63,1	60,6	57,0	52,7	47,8	42,4	36,1					
1	80-250/450	45		227	194	74,4		73,4	72,6	71,0	68,3	64,7	60,1	54,7							
2						74,4		73,9	73,3	72,1	70,0	66,9	62,9	58,3	53,1	47,4	40,9				
1	80-250/550	55		241	213	84,3		83,3	82,5	81,2	78,9	75,7	71,5	66,5							
2						84,3		83,7	83,3	82,3	80,6	77,9	74,4	70,1	65,1	59,7	53,8	47,2			
3						84,3		83,9	83,6	82,7	81,1	78,6	75,2	71,1	66,4	61,2	55,5	49,2			
1	80-250/750	75	259		237	98,0		97,0	96,3	95,1	93,2	90,5	86,9	82,4							
2						98,0		97,4	97,0	96,2	94,9	92,7	89,7	85,9	81,4	76,3	70,7	64,7			
3						98,0		97,6	97,3	96,6	95,4	93,4	90,6	87,0	82,7	77,8	72,4	66,7	60,4	53,3	
						l/s	0	10,5	17,8	25,1	32,4	39,7	47,0	54,3	61,6	68,9	76,2	83,5	90,8	98,1	105,4
						m³/h	0	38	64	90	117	143	169	195	222	248	274	301	327	353	379
1	80-316/900	90		280	224	110,7	109,9	109,3	108,6	107,1	104,4	100,0	93,9								
2						110,7	110,0	109,6	109,3	108,3	106,2	102,5	97,2	90,8	83,5	75,4	65,8				
3						110,7	110,1	109,8	109,5	108,7	106,7	103,2	98,2	92,0	85,0	77,2	67,9				
1	80-316/1100	110		298	247	125,2		123,8	123,0	121,8	119,9	116,6	111,9								
2						125,2		124,1	123,7	123,0	121,6	119,1	115,2	109,9	103,1	95,1	86,1				
3						125,2		124,3	124,0	123,4	122,2	119,9	116,2	111,1	104,6	96,9	88,2	78,5			
1	80-316/1320	132		310	262	135,1		134,0	133,3	132,1	130,2	127,3	123,3								
2						135,1		134,3	134,0	133,3	132,0	129,8	126,6	122,2	116,5	109,4	101,0				
3						135,1		134,5	134,2	133,7	132,5	130,5	127,6	123,4	118,0	111,2	103,1	93,6	83,1		
1	80-316/1600	160	321		275	146,1		144,7	144,0	142,9	141,0	138,3	134,4								
2						146,1		145,1	144,7	144,1	142,8	140,8	137,7	133,6	128,2	121,6	113,7				
3						146,1		145,2	145,0	144,5	143,4	141,5	138,7	134,8	129,7	123,4	115,8	107,0	96,9	85,7	

Hydraulic performance in accordance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_1p-nsc80-2p50_b_th

(1) External diameter full impeller

(2) Internal diameter reduced impeller (turned)

EN 12845 FIRE-FIGHTING MODULES GEM..NSC32-65 SERIES

ELECTRICAL DATA TABLE AT 50 Hz

SERVICE PUMP 3 X 400 V				ELECTRIC JOCKEY PUMP			CURRENT (*) ABSORBED SET								
ELECTRIC PUMP	TYPE NSC PUMP	NOMINAL POWER		TYPE	Pn kW	In A	1x230			3x400			3x400 + 1x230		
		Pn kW	In A				GEMK	GEM	GEM..J	GEM + GEM	GEM..J + GEM	KIT PIL + GEMK	GEM + GEMK	GEM..J + GEMK	
NSCC 32-125/11	NSC 32-125/D113	1,1	2,4	1VM04	0,4	1,3	3	2,4	3,7	4,8	6,1	4,3	5,4	6,7	
NSCC 32-125/15	NSC 32-125/D123	1,5	3,0	1VM04	0,4	1,3	3	3,0	4,3	5,9	7,2	4,3	6,0	7,3	
NSCC 32-125/22	NSC 32-125/D133	2,2	4,6	1VM05	0,5	1,5	3	4,6	6,1	9,1	10,6	4,5	7,6	9,1	
NSCC 32-125/30	NSC 32-125/D145	3	5,8	1VM05	0,5	1,5	3	5,8	7,3	11,6	13,1	4,5	8,8	10,3	
NSCC 32-160/22	NSC 32-160/D137	2,2	4,6	1VM05	0,5	1,5	3	4,6	6,1	9,1	10,6	4,5	7,6	9,1	
NSCC 32-160/30	NSC 32-160/D150	3	5,8	1VM05	0,5	1,5	3	5,8	7,3	11,6	13,1	4,5	8,8	10,3	
NSCC 32-160/40	NSC 32-160/D160,5	4	7,6	1VM05	0,5	1,5	3	7,6	9,1	15,1	16,6	4,5	10,6	12,1	
NSCC 32-160/55	NSC 32-160/D171	5,5	10,6	1VM06	0,75	1,6	3	10,6	12,2	21,2	22,8	4,6	13,6	15,2	
NSCC 32-200/30X	NSC 32-200/D154	3	5,8	1VM05	0,5	1,5	3	5,8	7,3	11,6	13,1	4,5	8,8	10,3	
NSCC 32-200/40	NSC 32-200/D171	4	7,6	1VM06	0,75	1,6	3	7,6	9,2	15,1	16,7	4,6	10,6	12,2	
NSCC 32-200/55	NSC 32-200/D186	5,5	10,6	1VM06	0,75	1,6	3	10,6	12,2	21,2	22,8	4,6	13,6	15,2	
NSCC 32-200/75	NSC 32-200/D205	7,5	14,1	1VM07	0,75	1,7	3	14,1	15,8	28,2	29,9	4,7	17,1	18,8	
NSCC 32-250/75X	NSC 32-250/D208	7,5	14,1	1VM07	0,75	1,7	3	14,1	15,8	28,2	29,9	4,7	17,1	18,8	
NSCC 32-250/110A	NSC 32-250/D226	11	19,6	1VM08	1,1	2,1	3	19,6	21,7	39,2	41,3	5,1	22,6	24,7	
NSCC 32-250/110	NSC 32-250/D239	11	19,6	1VM08	1,1	2,1	3	19,6	21,7	39,2	41,3	5,1	22,6	24,7	
NSCC 32-250/150	NSC 32-250/D259	15	26,6	1SV17	1,1	2,4	3	26,6	29,0	53,2	55,6	5,4	29,6	32,0	
NSCC 40-125/15	NSC 40-125/D105	1,5	3,0	1VM04	0,4	1,3	3	3,0	4,3	5,9	7,2	4,3	6,0	7,3	
NSCC 40-125/22	NSC 40-125/D118	2,2	4,6	1VM04	0,4	1,3	3	4,6	5,9	9,1	10,5	4,3	7,6	8,9	
NSCC 40-125/30	NSC 40-125/D130	3	5,8	1VM04	0,4	1,3	3	5,8	7,1	11,6	12,9	4,3	8,8	10,1	
NSCC 40-160/30	NSC 40-160/D127	3	5,8	1VM04	0,4	1,3	3	5,8	7,1	11,6	12,9	4,3	8,8	10,1	
NSCC 40-160/40	NSC 40-160/D139	4	7,6	1VM05	0,5	1,5	3	7,6	9,1	15,1	16,6	4,5	10,6	12,1	
NSCC 40-160/55	NSC 40-160/D154	5,5	10,6	1VM05	0,5	1,5	3	10,6	12,1	21,2	22,7	4,5	13,6	15,1	
NSCC 40-160/75	NSC 40-160/D165	7,5	14,1	1VM06	0,75	1,6	3	14,1	15,7	28,2	29,8	4,6	17,1	18,7	
NSCC 40-200/55	NSC 40-200/D165	5,5	10,6	1VM06	0,75	1,6	3	10,6	12,2	21,2	22,8	4,6	13,6	15,2	
NSCC 40-200/75	NSC 40-200/D179	7,5	14,1	1VM06	0,75	1,6	3	14,1	15,7	28,2	29,8	4,6	17,1	18,7	
NSCC 40-200/110A	NSC 40-200/D189	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 40-200/110	NSC 40-200/D199	11	19,6	1VM07	0,75	1,7	3	19,6	21,3	39,2	40,9	4,7	22,6	24,3	
NSCC 40-250/110X	NSC 40-250/D195	11	19,6	1VM07	0,75	1,7	3	19,6	21,3	39,2	40,9	4,7	22,6	24,3	
NSCC 40-250/110X1	NSC 40-250/D206	11	19,6	1VM07	0,75	1,7	3	19,6	21,3	39,2	40,9	4,7	22,6	24,3	
NSCC 40-250/150	NSC 40-250/D228	15	26,6	1VM08	1,1	2,1	3	26,6	28,7	53,2	55,3	5,1	29,6	31,7	
NSCC 40-250/185	NSC 40-250/D243	18,5	33,0	1SV17	1,1	2,4	3	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
NSCC 40-250/220	NSC 40-250/D257,5	22	39,0	1SV17	1,1	2,4	3	39,0	41,4	78,0	80,4	5,4	42,0	44,4	
NSCC 50-125/30	NSC 50-125/D118	3	5,8	1VM04	0,4	1,3	3	5,8	7,1	11,6	12,9	4,3	8,8	10,1	
NSCC 50-125/40	NSC 50-125/D130	4	7,6	1VM04	0,4	1,3	3	7,6	8,9	15,1	16,5	4,3	10,6	11,9	
NSCC 50-125/55	NSC 50-125/D144	5,5	10,6	1VM05	0,5	1,5	3	10,6	12,1	21,2	22,7	4,5	13,6	15,1	
NSCC 50-125/75	NSC 50-125/D148	7,5	14,1	1VM05	0,5	1,5	3	14,1	15,6	28,2	29,7	4,5	17,1	18,6	
NSCC 50-160/55	NSC 50-160/D144	5,5	10,6	1VM05	0,5	1,5	3	10,6	12,1	21,2	22,7	4,5	13,6	15,1	
NSCC 50-160/75	NSC 50-160/D159	7,5	14,1	1VM05	0,5	1,5	3	14,1	15,6	28,2	29,7	4,5	17,1	18,6	
NSCC 50-160/110A	NSC 50-160/D170	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 50-160/110	NSC 50-160/D176	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 50-200/110A	NSC 50-200/D168	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 50-200/110	NSC 50-200/D179	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 50-200/150X	NSC 50-200/D192	15	26,6	1VM07	0,75	1,7	3	26,6	28,3	53,2	54,9	4,7	29,6	31,3	
NSCC 50-200/185	NSC 50-200/D209	18,5	33,0	1VM07	0,75	1,7	3	33,0	34,7	66,0	67,7	4,7	36,0	37,7	
NSCC 50-250/150	NSC 50-250/D208	15	26,6	1VM07	0,75	1,7	3	26,6	28,3	53,2	54,9	4,7	29,6	31,3	
NSCC 50-250/185	NSC 50-250/D220	18,5	33,0	1VM07	0,75	1,7	3	33,0	34,7	66,0	67,7	4,7	36,0	37,7	
NSCC 50-250/220	NSC 50-250/D232	22	39,0	1VM08	1,1	2,1	3	39,0	41,1	78,0	80,1	5,1	42,0	44,1	
NSCC 50-250/300	NSC 50-250/D256	30	53,5	1SV17	1,1	2,4	3	53,5	55,9	107,0	109,4	5,4	56,5	58,9	
NSCC 65-125/40	NSC 65-125/D113	4	7,6	1VM04	0,4	1,3	3	7,6	8,9	15,1	16,5	4,3	10,6	11,9	
NSCC 65-125/55	NSC 65-125/D127	5,5	10,6	1VM04	0,4	1,3	3	10,6	11,9	21,2	22,5	4,3	13,6	14,9	
NSCC 65-125/75	NSC 65-125/D137	7,5	14,1	1VM05	0,5	1,5	3	14,1	15,6	28,2	29,7	4,5	17,1	18,6	
NSCC 65-125/110A	NSC 65-125/D146	11	19,6	1VM05	0,5	1,5	3	19,6	21,1	39,2	40,7	4,5	22,6	24,1	
NSCC 65-125/110	NSC 65-125/D148	11	19,6	1VM05	0,5	1,5	3	19,6	21,1	39,2	40,7	4,5	22,6	24,1	

(*) The current indicated is the maximum current absorbed.

MOD_EN-NSC1_2p50_a_1e

At the set composed by 3x400V three-phase power supply series GEM, GEM..J adding the control panel current of the engine pump
GEMK at single phase power supply 1x230Vac

EN 12845 FIRE-FIGHTING MODULES GEM..NSC65-125 SERIES

ELECTRICAL DATA TABLE AT 50 Hz

SERVICE PUMP 3 X 400 V				ELECTRIC JOCKEY PUMP			CURRENT (*) ABSORBED SET								
TYPE NSC		NOMINAL POWER		3x400V			1x230			3x400			3x400 + 1x230		
ELECTRIC PUMP	PUMP	Pn kW	In A	TYPE	Pn kW	In A	GEMK	GEM	GEM..J	GEM + GEM	GEM..J + GEM	KIT PIL + GEMK	GEM + GEMK	GEM..J + GEMK	
															A
NSCC 65-160/75	NSC 65-160/D145	7,5	14,1	1VM05	0,5	1,5	3	14,1	15,6	28,2	29,7	4,5	17,1	18,6	
NSCC 65-160/110A	NSC 65-160/D151	11	19,6	1VM05	0,5	1,5	3	19,6	21,1	39,2	40,7	4,5	22,6	24,1	
NSCC 65-160/110	NSC 65-160/D159	11	19,6	1VM05	0,5	1,5	3	19,6	21,1	39,2	40,7	4,5	22,6	24,1	
NSCC 65-160/150	NSC 65-160/D175	15	26,6	1VM06	0,75	1,6	3	26,6	28,2	53,2	54,8	4,6	29,6	31,2	
NSCC 65-160/185	NSC 65-160/D180	18,5	33,0	1VM06	0,75	1,6	3	33,0	34,6	66,0	67,6	4,6	36,0	37,6	
NSCC 65-200/110	NSC 65-200/D165	11	19,6	1VM06	0,75	1,6	3	19,6	21,2	39,2	40,8	4,6	22,6	24,2	
NSCC 65-200/150	NSC 65-200/D177	15	26,6	1VM06	0,75	1,6	3	26,6	28,2	53,2	54,8	4,6	29,6	31,2	
NSCC 65-200/185	NSC 65-200/D189	18,5	33,0	1VM06	0,75	1,6	3	33,0	34,6	66,0	67,6	4,6	36,0	37,6	
NSCC 65-200/220	NSC 65-200/D199	22	39,0	1VM07	0,75	1,7	3	39,0	40,7	78,0	79,7	4,7	42,0	43,7	
NSCC 65-200/300	NSC 65-200/D220	30	53,5	1VM08	1,1	2,1	3	53,5	55,6	107,0	109,1	5,1	56,5	58,6	
NSCC 65-250/220	NSC 65-250/D195	22	39,0	1VM07	0,75	1,7	3	39,0	40,7	78,0	79,7	4,7	42,0	43,7	
NSCC 65-250/300	NSC 65-250/D215	30	53,5	1VM07	0,75	1,7	3	53,5	55,2	107,0	108,7	4,7	56,5	58,2	
NSCC 65-250/370	NSC 65-250/D229	37	65,6	1VM08	1,1	2,1	3	65,6	67,7	131,2	133,3	5,1	68,6	70,7	
NSCC 65-250/450	NSC 65-250/D243	45	77,6	1SV17	1,1	2,4	3	77,6	80,0	155,2	157,6	5,4	80,6	83,0	
NSCC 65-250/550	NSC 65-250/D258	55	93,5	1SV17	1,1	2,4	3	93,5	95,9	187,0	189,4	5,4	96,5	98,9	
NSCC 65-315/550	NSC 65-315/D272	55	93,5	1SV19	1,1	2,4	3	93,5	95,9	187,0	189,4	5,4	96,5	98,9	
NSCC 65-315/750	NSC 65-315/D298	75	126,0	1SV22	1,1	2,4	3	126,0	128,4	252,0	254,4	5,4	129,0	131,4	
NSCC 65-315/900	NSC 65-315/D315	90	151,0	1SV25	1,5	3,2	3	151,0	154,2	302,0	305,2	6,2	154,0	157,2	
NSCC 80-160/110	NSC 80-160/D144	11	19,6	1VM05	0,5	1,5	3	19,6	21,1	39,2	40,7	4,5	22,6	24,1	
NSCC 80-160/150	NSC 80-160/D158	15	26,6	1VM05	0,5	1,5	3	26,6	28,1	53,2	54,7	4,5	29,6	31,1	
NSCC 80-160/185	NSC 80-160/D168	18,5	33,0	1VM06	0,75	1,6	3	33,0	34,6	66,0	67,6	4,6	36,0	37,6	
NSCC 80-160/220	NSC 80-160/D177	22	39,0	1VM06	0,75	1,6	3	39,0	40,6	78,0	79,6	4,6	42,0	43,6	
NSCC 80-200/220	NSC 80-200/D181	22	39,0	1VM06	0,75	1,6	3	39,0	40,6	78,0	79,6	4,6	42,0	43,6	
NSCC 80-200/300	NSC 80-200/D195	30	53,5	1VM06	0,75	1,6	3	53,5	55,1	107,0	108,6	4,6	56,5	58,1	
NSCC 80-200/370	NSC 80-200/D208	37	65,6	1VM07	0,75	1,7	3	65,6	67,3	131,2	132,9	4,7	68,6	70,3	
NSCC 80-200/450	NSC 80-200/D219	45	77,6	1VM08	1,1	2,1	3	77,6	79,7	155,2	157,3	5,1	80,6	82,7	
NSCC 80-250/370	NSC 80-250/D214	37	65,6	1VM07	0,75	1,7	3	65,6	67,3	131,2	132,9	4,7	68,6	70,3	
NSCC 80-250/450	NSC 80-250/D227	45	77,6	1VM08	1,1	2,1	3	77,6	79,7	155,2	157,3	5,1	80,6	82,7	
NSCC 80-250/550	NSC 80-250/D241	55	93,5	1SV17	1,1	2,4	3	93,5	95,9	187,0	189,4	5,4	96,5	98,9	
NSCC 80-250/750	NSC 80-250/D259	75	126,0	1SV17	1,1	2,4	3	126,0	128,4	252,0	254,4	5,4	129,0	131,4	
NSCC 80-316/900	NSC 80-316/D280	90	151,0	1SV19	1,1	2,4	3	151,0	153,4	302,0	304,4	5,4	154,0	156,4	
NSCC 80-316/1100	NSC 80-316/D298	110	186,0	1SV22	1,1	2,4	3	186,0	188,4	372,0	374,4	5,4	189,0	191,4	
NSCC 80-316/1320	NSC 80-316/D310	132	220,0	1SV25	1,5	3,2	3	220,0	223,2	440,0	443,2	6,2	223,0	226,2	
NSCC 80-316/1600	NSC 80-316/D321	160	263,0	1SV25	1,5	3,2	3	263,0	266,2	526,0	529,2	6,2	266,0	269,2	
NSCC 100-160/150	NSC 100-160/D144	15	26,6	1VM05	0,5	1,5	3	26,6	28,1	53,2	54,7	4,5	29,6	31,1	
NSCC 100-160/185	NSC 100-160/D156	18,5	33,0	1VM05	0,5	1,5	3	33,0	34,5	66,0	67,5	4,5	36,0	37,5	
NSCC 100-160/220	NSC 100-160/D167	22	39,0	1VM05	0,5	1,5	3	39,0	40,5	78,0	79,5	4,5	42,0	43,5	
NSCC 100-160/300	NSC 100-160/D187	30	53,5	1VM06	0,75	1,6	3	53,5	55,1	107,0	108,6	4,6	56,5	58,1	
NSCC 100-200/300	NSC 100-200/D188	30	53,5	1VM06	0,75	1,6	3	53,5	55,1	107,0	108,6	4,6	56,5	58,1	
NSCC 100-200/370	NSC 100-200/D202	37	65,6	1VM06	0,75	1,6	3	65,6	67,2	131,2	132,8	4,6	68,6	70,2	
NSCC 100-200/450	NSC 100-200/D213	45	77,6	1VM07	0,75	1,7	3	77,6	79,3	155,2	156,9	4,7	80,6	82,3	
NSCC 100-200/550	NSC 100-200/D227	55	93,5	1VM08	1,1	2,1	3	93,5	95,6	187,0	189,1	5,1	96,5	98,6	
NSCC 100-250/450	NSC 100-250/D213	45	77,6	1VM07	0,75	1,7	3	77,6	79,3	155,2	156,9	4,7	80,6	82,3	
NSCC 100-250/550	NSC 100-250/D227	55	93,5	1VM07	0,75	1,7	3	93,5	95,2	187,0	188,7	4,7	96,5	98,2	
NSCC 100-250/750	NSC 100-250/D249	75	126,0	1VM08	1,1	2,1	3	126,0	128,1	252,0	254,1	5,1	129,0	131,1	
NSCC 100-250/900	NSC 100-250/D259	90	151,0	1SV17	1,1	2,4	3	151,0	153,4	302,0	304,4	5,4	154,0	156,4	
NSCC 125-200/450	NSC 125-200/D179	45	77,6	1VM05	0,5	1,5	3	77,6	79,1	155,2	156,7	4,5	80,6	82,1	
NSCC 125-200/550	NSC 125-200/D195	55	93,5	1VM06	0,75	1,6	3	93,5	95,1	187,0	188,6	4,6	96,5	98,1	
NSCC 125-200/750	NSC 125-200/D215	75	126,0	1VM07	0,75	1,7	3	126,0	127,7	252,0	253,7	4,7	129,0	130,7	
NSCC 125-200/900	NSC 125-200/D225	90	151,0	1VM07	0,75	1,7	3	151,0	152,7	302,0	303,7	4,7	154,0	155,7	
NSCC 125-315/1100	NSC 125-315/D250	110	186,0	1SV17	1,1	2,4	3	186,0	188,4	372,0	374,4	5,4	189,0	191,4	
NSCC 125-315/1320	NSC 125-315/D265	132	220,0	1SV17	1,1	2,4	3	220,0	222,4	440,0	442,4	5,4	223,0	225,4	
NSCC 125-315/1600	NSC 125-315/D280	160	263,0	1SV19	1,1	2,4	3	263,0	265,4	526,0	528,4	5,4	266,0	268,4	
NSCC 125-315/2000	NSC 125-315/D290	200	332,0	1SV22	1,1	2,4	3	332,0	334,4	664,0	666,4	5,4	335,0	337,4	

(*) The current indicated is the maximum current absorbed.

MOD_EN-NSC2_2p50_a_1e

At the set composed by 3x400V three-phase power supply series GEM, GEM..J adding the control panel current of the engine pump
GEMK at single phase power supply 1x230Vac

EN 12845
fire-fighting
pressure
module

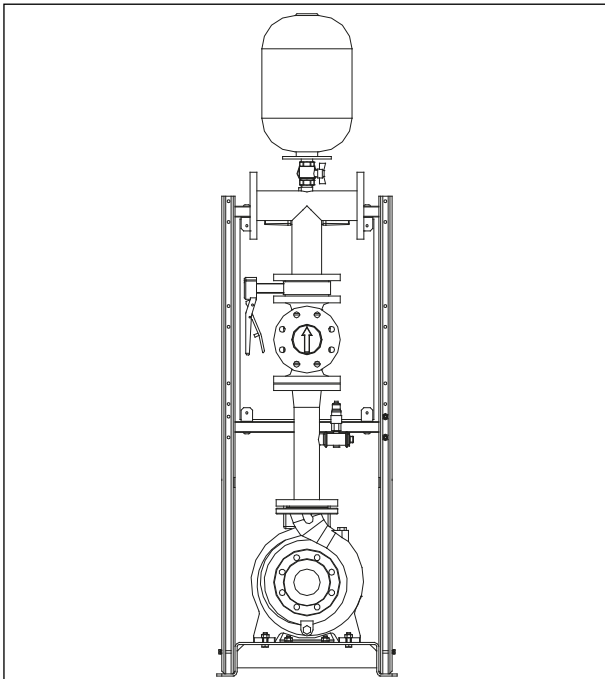
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (sprinklers).

GEM ..NSCC
series
Single electric
service pump module

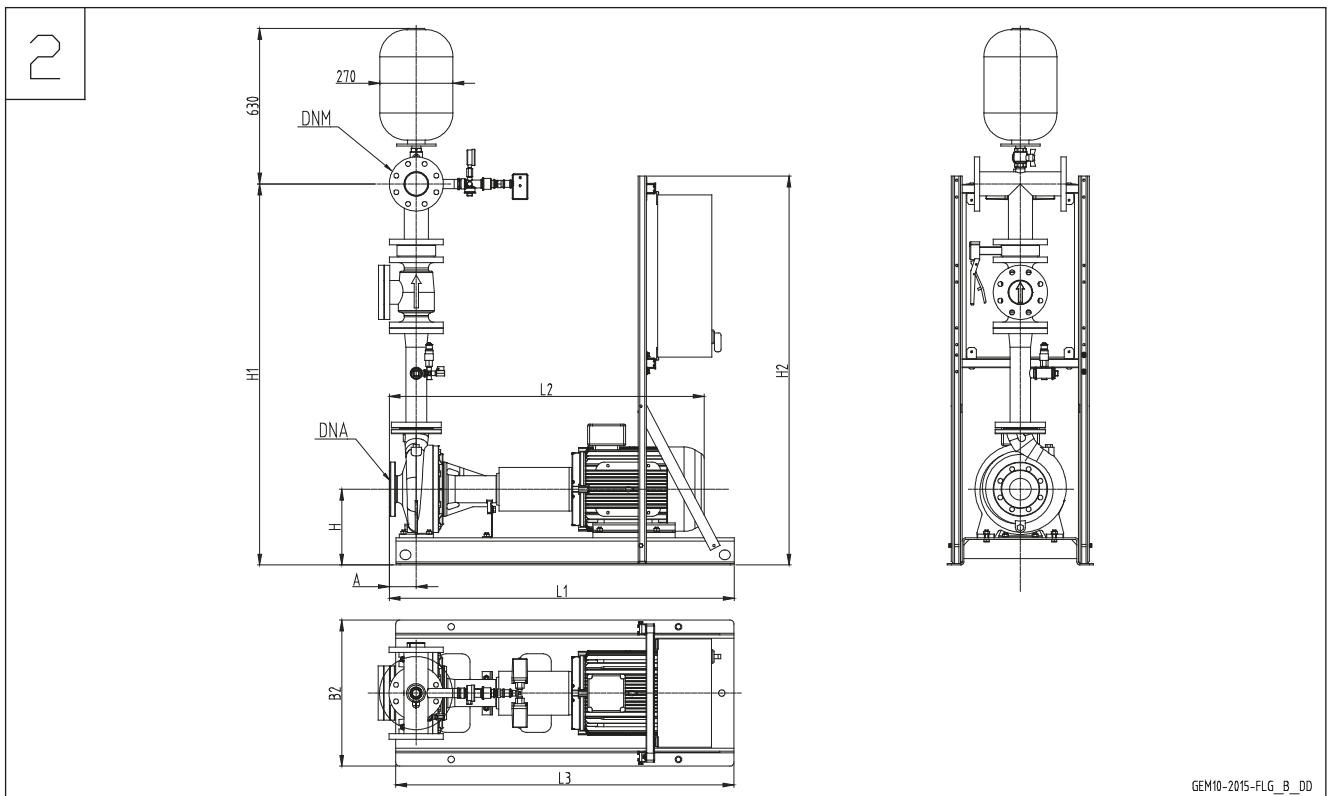
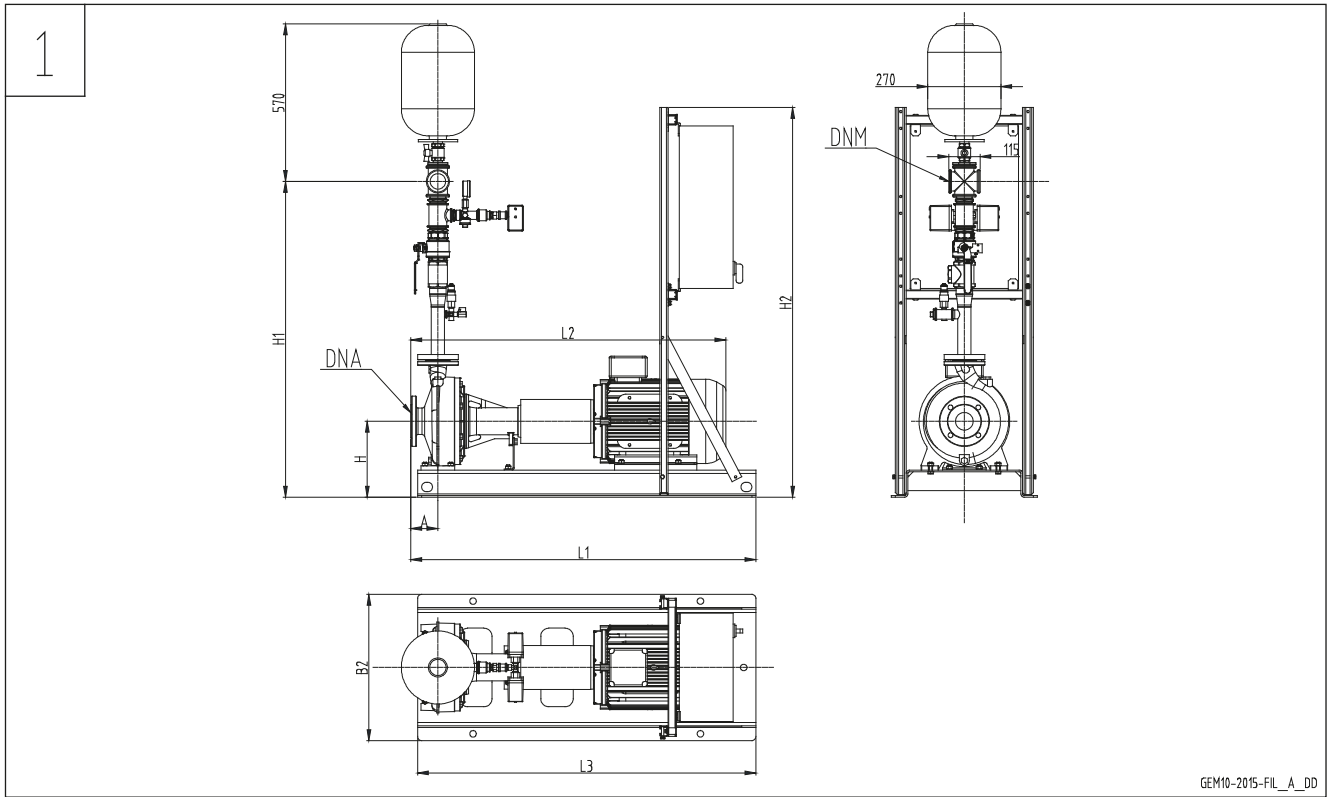


SPECIFICATIONS

- **Flow:** up to 766 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac ±10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:**
 - 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pump IP54.
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..).
- **Maximum power output:**
 - Electric service pump 200 kW.
- **Horizontal electric service pump:**
 - FHF series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC32-40 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC32-40 SERIES

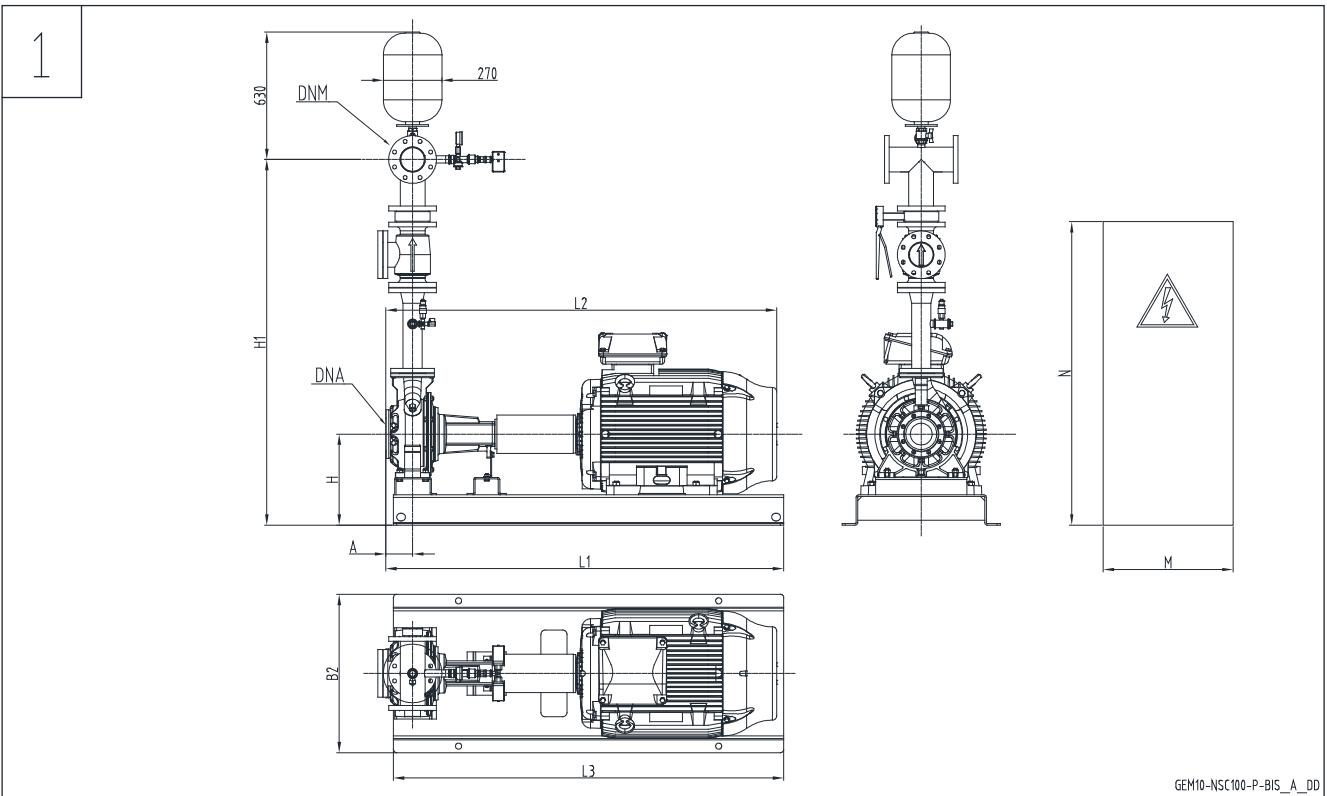
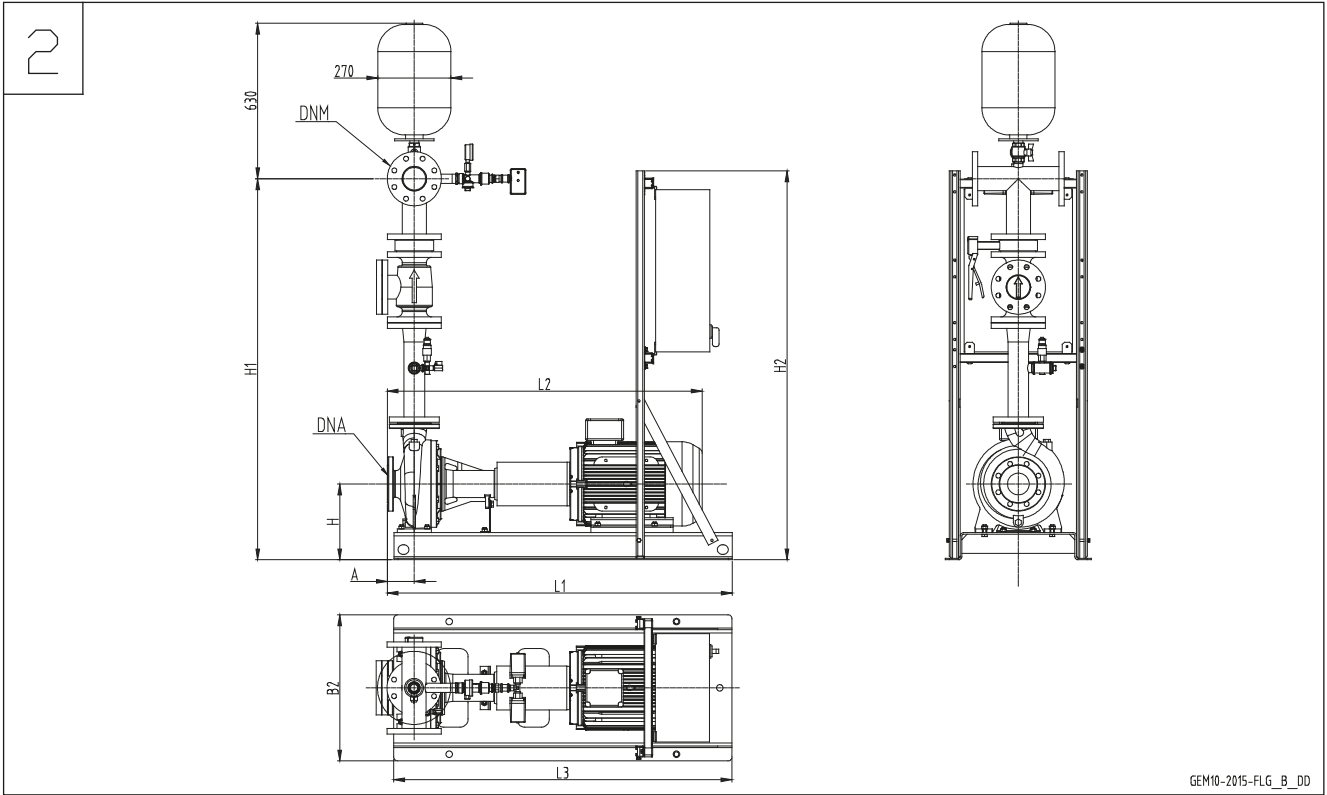
GEM	DRW N°		DNA	DNM		A	B2	H	H1		H2	L1	L2	L3
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2				
N32-125/11	/	1	50	/	Rp 2"	80	360	212	/	1018	1236	820	843	800
N32-125/15	/	1	50	/	Rp 2"	80	390	212	/	1018	1236	920	888	900
N32-125/22	/	1	50	/	Rp 2"	80	390	212	/	1018	1236	920	888	900
N32-125/30	/	1	50	/	Rp 2"	80	390	212	/	1018	1236	920	919	900
N32-160/22	/	1	50	/	Rp 2"	80	390	232	/	1058	1236	920	888	900
N32-160/30	/	1	50	/	Rp 2"	80	390	232	/	1058	1236	920	919	900
N32-160/40	/	1	50	/	Rp 2"	80	390	232	/	1058	1236	920	922	900
N32-160/55	/	1	50	/	Rp 2"	80	450	232	/	1058	1436	1020	987	1000
N32-200/30X	/	1	50	/	Rp 2"	80	390	260	/	1106	1436	920	919	900
N32-200/40	/	1	50	/	Rp 2"	80	390	260	/	1106	1436	920	922	900
N32-200/55	/	1	50	/	Rp 2"	80	450	260	/	1106	1436	1020	987	1000
N32-200/75	/	1	50	/	Rp 2"	80	450	260	/	1106	1436	1020	987	1000
N32-250/75X	/	1	50	/	Rp 2"	100	490	280	/	1171	1436	1145	1007	1120
N32-250/110A	/	1	50	/	Rp 2"	100	540	280	/	1171	1436	1275	1164	1250
N32-250/110	/	1	50	/	Rp 2"	100	540	280	/	1171	1436	1275	1164	1250
N32-250/150	/	1	50	/	Rp 2"	100	540	280	/	1171	1436	1275	1164	1250
N40-125/15	1	2	65	Rp 2"	65	80	390	212	1011	1196	1236	920	888	900
N40-125/22	1	2	65	Rp 2"	65	80	390	212	1011	1196	1236	920	888	900
N40-125/30	1	2	65	Rp 2"	65	80	390	212	1011	1196	1236	920	919	900
N40-160/30	1	2	65	Rp 2"	65	80	390	232	1051	1236	1236	920	919	900
N40-160/40	1	2	65	Rp 2"	65	80	390	232	1051	1236	1236	920	922	900
N40-160/55	1	2	65	Rp 2"	65	80	450	232	1051	1236	1436	1020	987	1000
N40-160/75	1	2	65	Rp 2"	65	80	450	232	1051	1236	1436	1020	987	1000
N40-200/55	1	2	65	Rp 2"	65	100	450	260	1099	1284	1436	1040	1007	1000
N40-200/75	1	2	65	Rp 2"	65	100	450	260	1099	1284	1436	1040	1007	1000
N40-200/110A	1	2	65	Rp 2"	65	100	490	260	1099	1284	1436	1160	1164	1120
N40-200/110	1	2	65	Rp 2"	65	100	490	260	1099	1284	1436	1160	1164	1120
N40-250/110X	1	2	65	Rp 2"	65	100	540	280	1164	1349	1436	1275	1164	1250
N40-250/110X1	1	2	65	Rp 2"	65	100	540	280	1164	1349	1436	1275	1164	1250
N40-250/150	1	2	65	Rp 2"	65	100	540	280	1164	1349	1436	1275	1164	1250
N40-250/185	1	2	65	Rp 2"	65	100	540	280	1164	1349	1436	1275	1164	1250
N40-250/220	1	2	65	Rp 2"	65	100	540	280	1164	1349	1436	1275	1224	1250

Dimensions in mm. Tolerance ± 10 mm.

gem10_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES

GEM..NSCC50-80 SERIES

GEM	DRW N°	DNA	DNM		A	B2	H	H1		H2	L1	L2	L3	M	N
			GEM1	GEM2				GEM1	GEM2						
N50-125/30	2	65	65	80	100	390	232	1230	1249	1236	940	939	900	/	/
N50-125/40	2	65	65	80	100	390	232	1230	1249	1236	940	942	900	/	/
N50-125/55	2	65	65	80	100	450	232	1230	1249	1436	1040	1007	1000	/	/
N50-125/75	2	65	65	80	100	450	232	1230	1249	1436	1040	1007	1000	/	/
N50-160/55	2	65	65	80	100	450	260	1278	1297	1436	1040	1007	1000	/	/
N50-160/75	2	65	65	80	100	450	260	1278	1297	1436	1040	1007	1000	/	/
N50-160/110A	2	65	65	80	100	490	260	1278	1297	1436	1160	1164	1120	/	/
N50-160/110	2	65	65	80	100	490	260	1278	1297	1436	1160	1164	1120	/	/
N50-200/110A	2	65	65	80	100	490	260	1298	1317	1436	1160	1164	1120	/	/
N50-200/110	2	65	65	80	100	490	260	1298	1317	1436	1160	1164	1120	/	/
N50-200/150X	2	65	65	80	100	490	260	1298	1317	1436	1160	1164	1120	/	/
N50-200/185	2	65	65	80	100	490	260	1298	1317	1436	1160	1164	1120	/	/
N50-250/150	2	65	65	80	100	540	280	1343	1362	1436	1275	1164	1250	/	/
N50-250/185	2	65	65	80	100	540	280	1343	1362	1436	1275	1164	1250	/	/
N50-250/220	2	65	65	80	100	540	280	1343	1362	1436	1275	1124	1250	/	/
N50-250/300	2	65	65	80	100	610	310	1373	1392	1836	1425	1327	1400	/	/
N65-125/40	2	80	80	100	100	390	260	1346	1398	1236	925	942	900	/	/
N65-125/55	2	80	80	100	100	450	260	1346	1398	1436	1025	1007	1000	/	/
N65-125/75	2	80	80	100	100	450	260	1346	1398	1436	1025	1007	1000	/	/
N65-125/110A	2	80	80	100	100	490	260	1346	1398	1436	1145	1164	1120	/	/
N65-125/110	2	80	80	100	100	490	260	1346	1398	1436	1145	1164	1120	/	/
N65-160/75	2	80	80	100	100	490	260	1366	1418	1436	1145	1007	1120	/	/
N65-160/110A	2	80	80	100	100	540	260	1366	1418	1436	1275	1164	1250	/	/
N65-160/110	2	80	80	100	100	540	260	1366	1418	1436	1275	1164	1250	/	/
N65-160/150	2	80	80	100	100	540	260	1366	1418	1436	1275	1164	1250	/	/
N65-160/185	2	80	80	100	100	540	260	1366	1418	1436	1275	1164	1250	/	/
N65-200/110	2	80	80	100	100	540	280	1411	1463	1436	1275	1204	1250	/	/
N65-200/150	2	80	80	100	100	540	280	1411	1463	1436	1275	1204	1250	/	/
N65-200/185	2	80	80	100	100	540	280	1411	1463	1436	1275	1204	1250	/	/
N65-200/220	2	80	80	100	100	540	280	1411	1463	1436	1275	1264	1250	/	/
N65-200/300	2	80	80	100	100	610	310	1441	1493	1836	1425	1367	1400	/	/
N65-250/220	2	80	80	100	100	540	310	1466	1518	1836	1260	1374	1250	/	/
N65-250/300	2	80	80	100	100	610	310	1466	1518	1836	1410	1477	1400	/	/
N65-250/370	2	80	80	100	100	610	310	1466	1518	1836	1410	1477	1400	/	/
N65-250/450	2	80	80	100	100	610	365	1521	1573	1836	1410	1566	1400	/	/
N65-250/550	2	80	80	100	100	660	390	1546	1598	1837	1610	1675	1600	/	/
N65-315/550	1 *	80	80	100	125	750	405	1591	1643	/	1565	1700	1550	600	800
N65-315/750	1	80	80	100	125	750	390	1576	1628	/	1565	1806	1550	600	1500
N65-315/900	1	80	80	100	125	750	390	1576	1628	/	1565	1806	1550	600	1500
N80-160/110	2	100	100	125	125	540	280	1494	1575	1436	1300	1229	1250	/	/
N80-160/150	2	100	100	125	125	540	280	1494	1575	1436	1300	1229	1250	/	/
N80-160/185	2	100	100	125	125	540	280	1494	1575	1436	1300	1229	1250	/	/
N80-160/220	2	100	100	125	125	540	280	1494	1575	1436	1300	1289	1250	/	/
N80-200/220	2	100	100	125	125	540	280	1519	1600	1436	1300	1399	1250	/	/
N80-200/300	2	100	100	125	125	610	310	1549	1630	1836	1450	1502	1400	/	/
N80-200/370	2	100	100	125	125	610	310	1549	1630	1836	1450	1502	1400	/	/
N80-200/450	2	100	100	125	125	610	365	1604	1685	1836	1450	1591	1400	/	/
N80-250/370	2	100	100	125	125	610	310	1579	1660	1836	1435	1502	1400	/	/
N80-250/450	2	100	100	125	125	610	365	1634	1715	1836	1435	1591	1400	/	/
N80-250/550	2	100	100	125	125	660	390	1659	1740	1837	1635	1700	1600	/	/
N80-250/750	1	100	100	125	125	730	420	1689	1770	/	1835	1806	1800	600	1500
N80-316/900	1	100	100	125	125	750	440	1744	1825	/	1615	1866	1600	600	1500
N80-316/1100	1	100	100	125	125	860	505	1809	1890	/	1865	2039	1850	800	1700
N80-316/1320	1	100	100	125	125	860	505	1809	1890	/	1865	2039	1850	800	1700
N80-316/1600	1	100	100	125	125	860	505	1809	1890	/	1865	2039	1850	800	1700

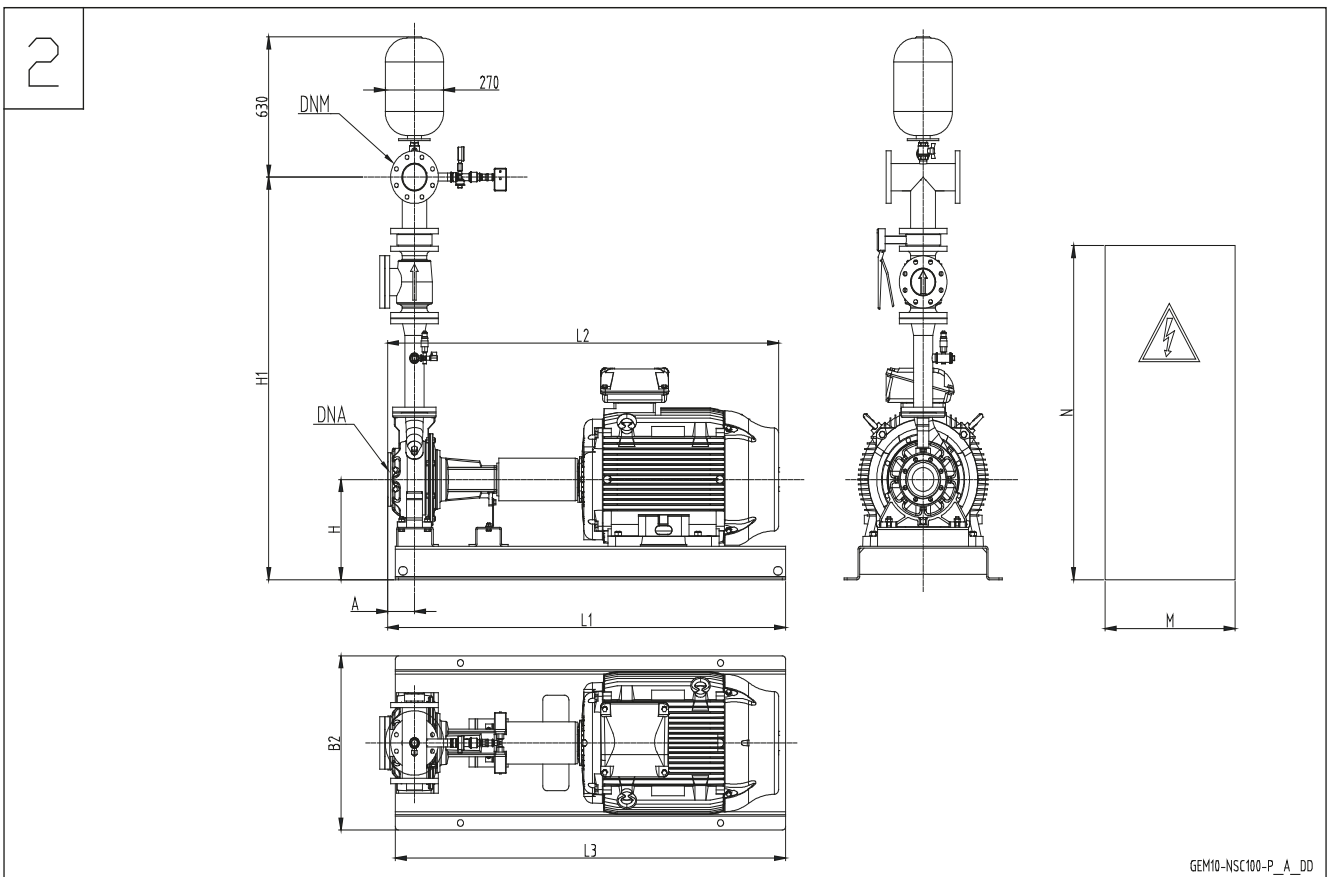
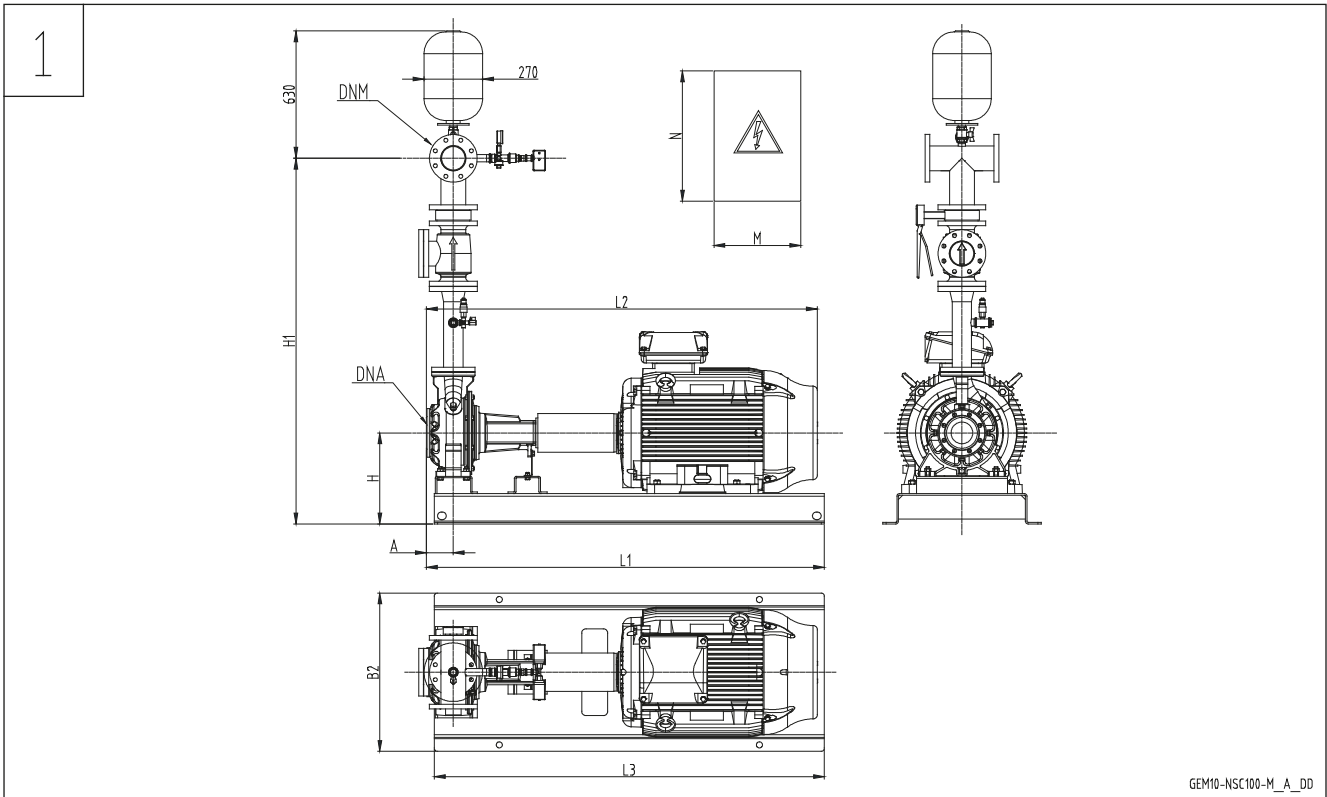
Dimensions in mm. Tolerance ± 10 mm.

gem10_nsc50-80_a_td

* Wall-mounted electric control panels for service pump, 1 support bracket kit available on request.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC100-125 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC100-125 SERIES

GEM	DRW N°	DNA	DNM		A	B2	H	H1		L1	L2	L3	M	N
			GEM1	GEM2				GEM1	GEM2					
N100-160/150	1	125	125	150	125	670	365	1718	1815	1345	1333	1330	400	600
N100-160/185	1	125	125	150	125	670	365	1718	1815	1345	1377	1330	400	600
N100-160/220	1	125	125	150	125	670	385	1738	1835	1345	1399	1330	400	600
N100-160/300	1	125	125	150	125	560	330	1683	1780	1365	1502	1350	500	700
N100-200/300	1	125	125	150	125	560	330	1683	1780	1365	1502	1350	500	700
N100-200/370	1	125	125	150	125	560	330	1683	1780	1365	1502	1350	500	700
N100-200/450	1	125	125	150	125	560	355	1708	1805	1365	1591	1350	600	800
N100-200/550	1	125	125	150	125	750	405	1758	1855	1565	1700	1550	600	800
N100-250/450	1	125	125	150	140	560	355	1708	1805	1380	1606	1350	600	800
N100-250/550	1	125	125	150	140	750	405	1758	1855	1580	1715	1550	600	800
N100-250/750	2	125	125	150	140	750	390	1743	1840	1580	1821	1550	600	1500
N100-250/900	2	125	125	150	140	750	390	1743	1840	1580	1821	1550	600	1500
N125-200/450	1	150	150	200	140	560	355	1850	2010	1380	1606	1350	600	800
N125-200/550	1	150	150	200	140	750	405	1900	2060	1580	1715	1550	600	800
N125-200/750	2	150	150	200	140	750	405	1900	2060	1580	1821	1550	600	1500
N125-200/900	2	150	150	200	140	750	405	1900	2060	1580	1821	1550	600	1500
N125-315/1100	2	150	150	200	140	860	505	2040	2200	1880	2054	1850	800	1700
N125-315/1320	2	150	150	200	140	860	505	2040	2200	1880	2054	1850	800	1700
N125-315/1600	2	150	150	200	140	860	505	2040	2200	1880	2054	1850	800	1900
N125-315/2000	2	150	150	200	140	860	505	2040	2200	1880	2163	1850	800	1900

Dimensions in mm. Tolerance ± 10 mm.

gem10_nsc100_c_td

Up to 55 kW, wall-mounted electric control panel for service pump, 1 support bracket kit available on request. Over 55 kW, floor-mounted electric control panel for service pump.

EN 12845
fire-fighting
pressure
module

MARKET SECTORS

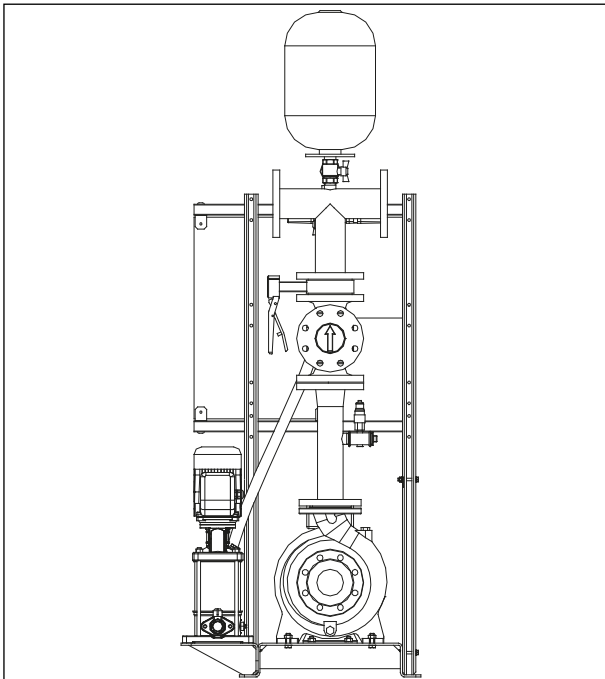
CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEM..J..NSCC
series

Single electric service pump module,
with jockey pump on board

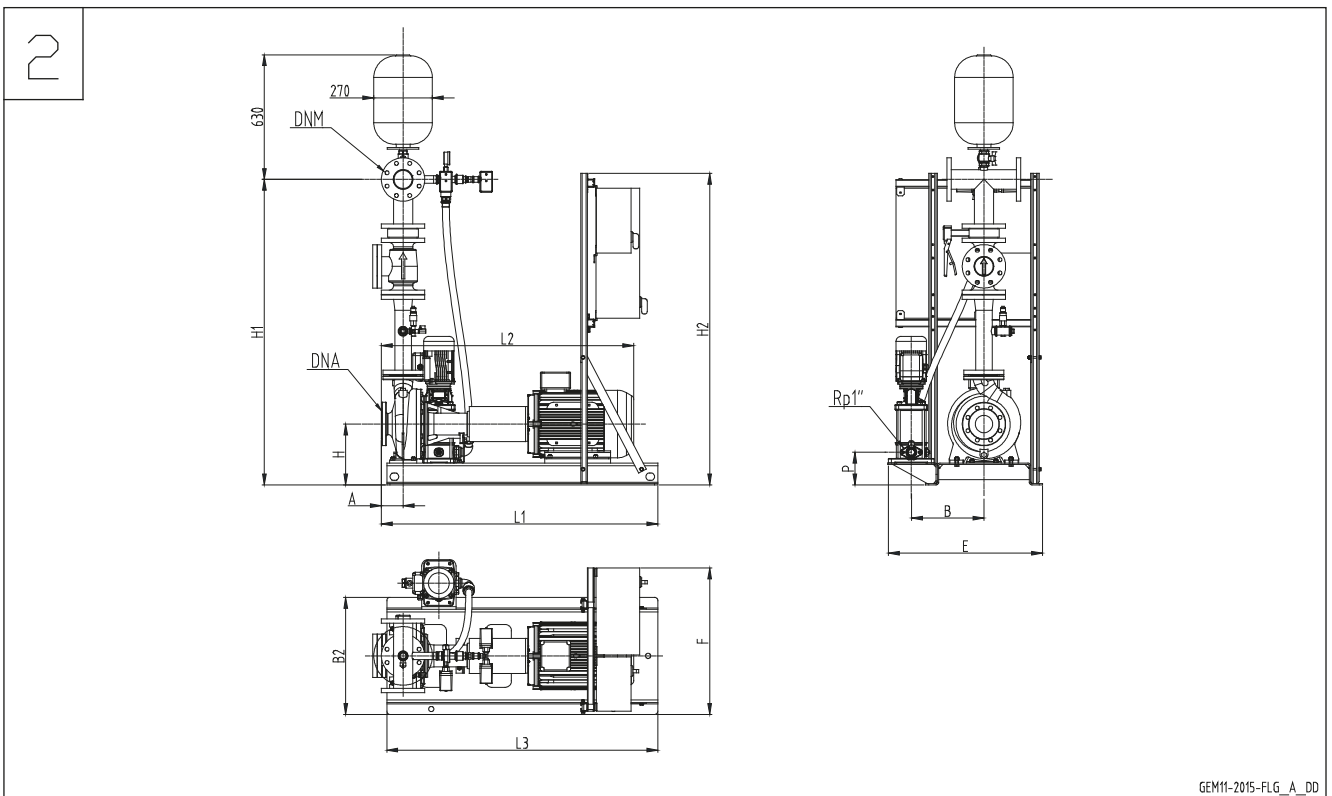
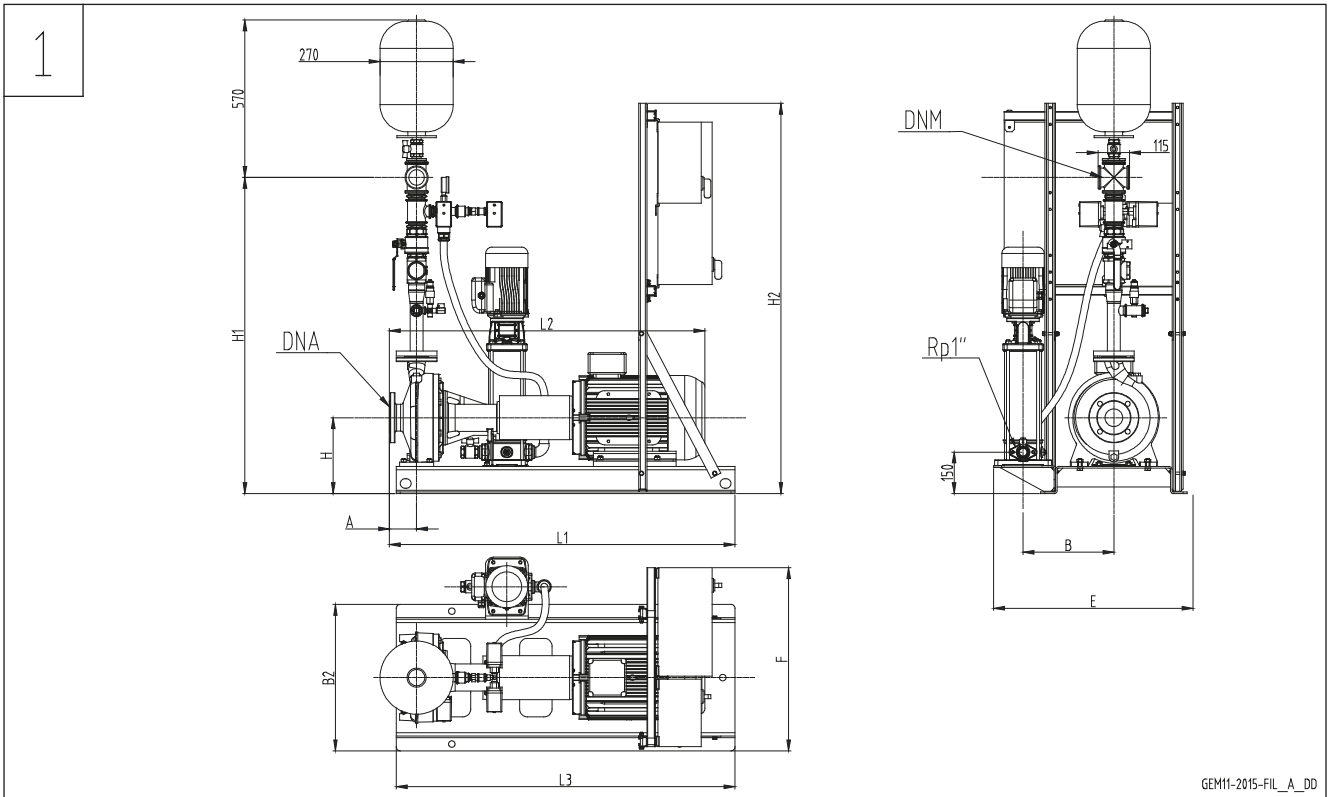


SPECIFICATIONS

- **Flow:** up to 766 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac ±10%.
 - Jockey pump 3 x 400 Vac ±10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pump IP54.
 - Jockey pump IP55
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..).
- **Maximum power output:**
 - Electric service pump 132 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T or 1VM series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...J..NSCC32-40 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC32-40 SERIES

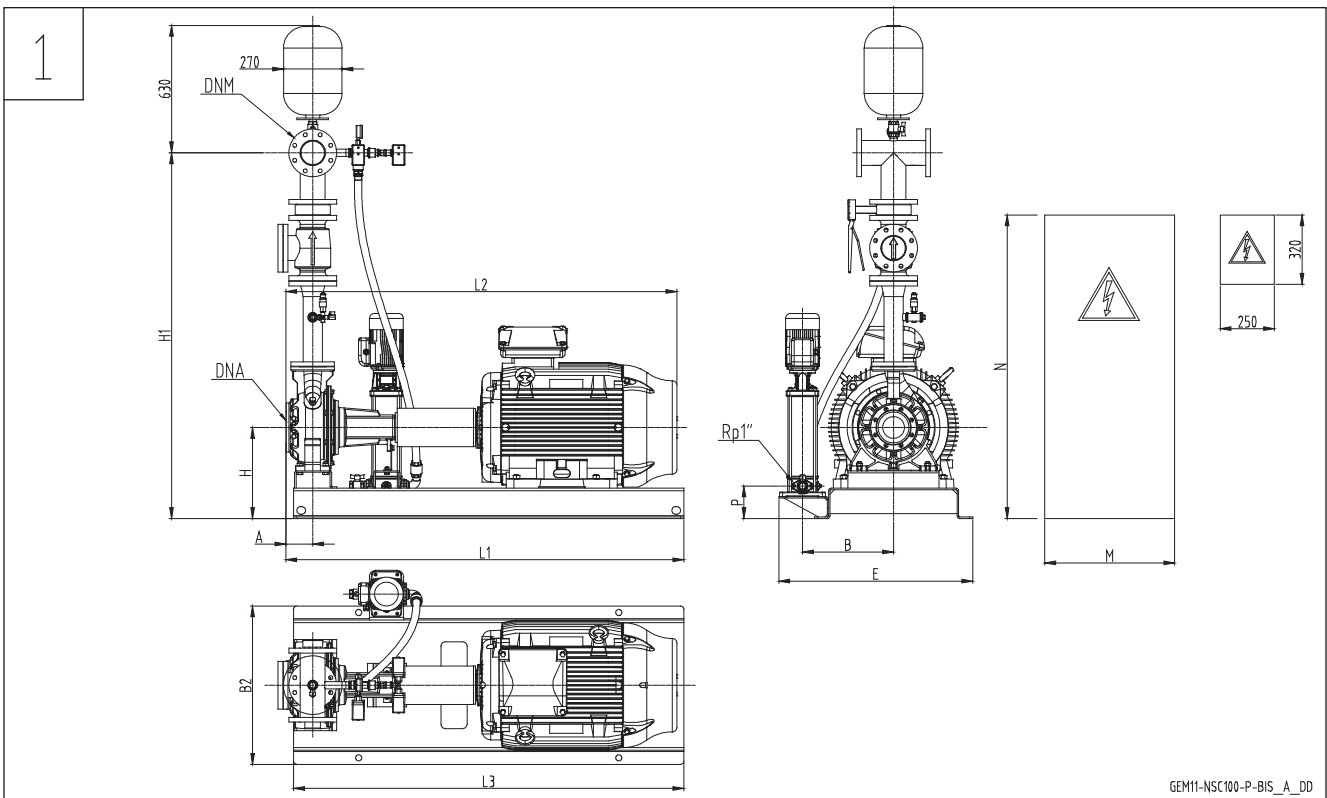
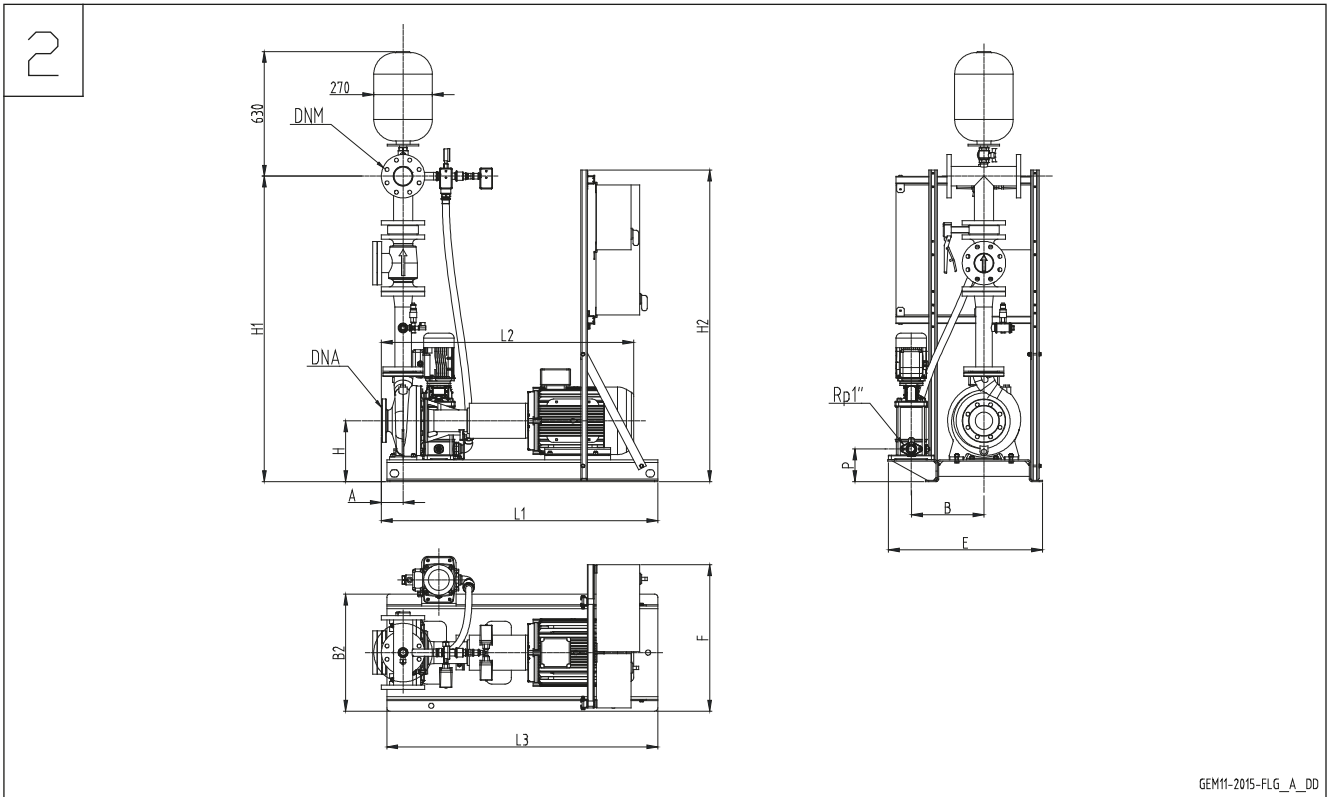
GEMJ	DRW N°		DNA	DNM		A	B2	E	F	G	H	H1		H2	L1	L2	L3
	GEM1	GEM2		GEM1	GEM2							GEM1	GEM2				
N32-125/11	/	1	50	/	Rp 2"	80	360	545	610	120	212	/	1018	1236	820	843	800
N32-125/15	/	1	50	/	Rp 2"	80	390	575	610	120	212	/	1018	1236	920	888	900
N32-125/22	/	1	50	/	Rp 2"	80	390	575	610	120	212	/	1018	1236	920	888	900
N32-125/30	/	1	50	/	Rp 2"	80	390	575	610	120	212	/	1018	1236	920	919	900
N32-160/22	/	1	50	/	Rp 2"	80	390	575	610	120	232	/	1058	1236	920	888	900
N32-160/30	/	1	50	/	Rp 2"	80	390	575	610	120	232	/	1058	1236	920	919	900
N32-160/40	/	1	50	/	Rp 2"	80	390	575	610	120	232	/	1058	1236	920	922	900
N32-160/55	/	1	50	/	Rp 2"	80	450	625	610	120	232	/	1058	1436	1020	987	1000
N32-200/30X	/	1	50	/	Rp 2"	80	390	575	610	120	260	/	1106	1436	920	919	900
N32-200/40	/	1	50	/	Rp 2"	80	390	575	610	120	260	/	1106	1436	920	922	900
N32-200/55	/	1	50	/	Rp 2"	80	450	625	610	120	260	/	1106	1436	1020	987	1000
N32-200/75	/	1	50	/	Rp 2"	80	450	625	610	120	260	/	1106	1436	1020	987	1000
N32-250/75X	/	1	50	/	Rp 2"	100	490	665	610	120	280	/	1171	1436	1145	1007	1120
N32-250/110A	/	1	50	/	Rp 2"	100	540	715	660	120	280	/	1171	1436	1275	1164	1250
N32-250/110	/	1	50	/	Rp 2"	100	540	715	660	120	280	/	1171	1436	1275	1164	1250
N32-250/150	/	1	50	/	Rp 2"	100	540	715	660	120	280	/	1171	1436	1275	1164	1250
N40-125/15	1	2	65	Rp 2"	65	80	390	575	610	120	212	1011	1196	1236	920	888	900
N40-125/22	1	2	65	Rp 2"	65	80	390	575	610	120	212	1011	1196	1236	920	888	900
N40-125/30	1	2	65	Rp 2"	65	80	390	575	610	120	212	1011	1196	1236	920	919	900
N40-160/30	1	2	65	Rp 2"	65	80	390	575	610	120	232	1051	1236	1236	920	919	900
N40-160/40	1	2	65	Rp 2"	65	80	390	575	610	120	232	1051	1236	1236	920	922	900
N40-160/55	1	2	65	Rp 2"	65	80	450	625	610	120	232	1051	1236	1436	1020	987	1000
N40-160/75	1	2	65	Rp 2"	65	80	450	625	610	120	232	1051	1236	1436	1020	987	1000
N40-200/55	1	2	65	Rp 2"	65	100	450	625	610	120	260	1099	1284	1436	1040	1007	1000
N40-200/75	1	2	65	Rp 2"	65	100	450	625	610	120	260	1099	1284	1436	1040	1007	1000
N40-200/110A	1	2	65	Rp 2"	65	100	490	665	660	120	260	1099	1284	1436	1160	1164	1120
N40-200/110	1	2	65	Rp 2"	65	100	490	665	660	120	260	1099	1284	1436	1160	1164	1120
N40-250/110X	1	2	65	Rp 2"	65	100	540	715	660	120	280	1164	1349	1436	1275	1164	1250
N40-250/110X1	1	2	65	Rp 2"	65	100	540	715	660	120	280	1164	1349	1436	1275	1164	1250
N40-250/150	1	2	65	Rp 2"	65	100	540	715	660	120	280	1164	1349	1436	1275	1164	1250
N40-250/185	1	2	65	Rp 2"	65	100	540	715	660	120	280	1164	1349	1436	1275	1164	1250
N40-250/220	1	2	65	Rp 2"	65	100	540	715	660	120	280	1164	1349	1436	1275	1224	1250

Dimensions in mm. Tolerance ± 10 mm.

gem11_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC50-80 SERIES

NSC MODULES

GEMJ	DRW N°	DNA	DNM		A	B	B2	E	F	G	H	H1		H2	L1	L2	L3	M	N	P
			GEM1	GEM2								GEM1	GEM2							
N50-125/30	2	65	65	80	100	270	390	575	610	340	232	1230	1249	1236	940	939	900	/	/	150
N50-125/40	2	65	65	80	100	270	390	575	610	340	232	1230	1249	1236	940	942	900	/	/	150
N50-125/55	2	65	65	80	100	290	450	625	610	340	232	1230	1249	1436	1040	1007	1000	/	/	150
N50-125/75	2	65	65	80	100	290	450	625	610	340	232	1230	1249	1436	1040	1007	1000	/	/	150
N50-160/55	2	65	65	80	100	290	450	625	610	340	260	1278	1297	1436	1040	1007	1000	/	/	150
N50-160/75	2	65	65	80	100	290	450	625	610	340	260	1278	1297	1436	1040	1007	1000	/	/	150
N50-160/110A	2	65	65	80	100	310	490	665	660	340	260	1278	1297	1436	1160	1164	1120	/	/	150
N50-160/110	2	65	65	80	100	310	490	665	660	340	260	1278	1297	1436	1160	1164	1120	/	/	150
N50-200/110A	2	65	65	80	100	310	490	665	660	340	260	1298	1317	1436	1160	1164	1120	/	/	150
N50-200/110	2	65	65	80	100	310	490	665	660	340	260	1298	1317	1436	1160	1164	1120	/	/	150
N50-200/150X	2	65	65	80	100	310	490	665	660	340	260	1298	1317	1436	1160	1164	1120	/	/	150
N50-200/185	2	65	65	80	100	310	490	665	660	340	260	1298	1317	1436	1160	1164	1120	/	/	150
N50-250/150	2	65	65	80	100	335	540	715	660	340	280	1343	1362	1436	1275	1164	1250	/	/	150
N50-250/185	2	65	65	80	100	335	540	715	660	340	280	1343	1362	1436	1275	1164	1250	/	/	150
N50-250/220	2	65	65	80	100	335	540	715	660	340	280	1343	1362	1436	1275	1124	1250	/	/	150
N50-250/300	2	65	65	80	100	360	610	775	560	340	310	1373	1392	1836	1425	1327	1400	/	/	150
N65-125/40	2	80	80	100	100	270	390	575	610	340	260	1346	1398	1236	925	942	900	/	/	150
N65-125/55	2	80	80	100	100	290	450	625	610	340	260	1346	1398	1436	1025	1007	1000	/	/	150
N65-125/75	2	80	80	100	100	290	450	625	610	340	260	1346	1398	1436	1025	1007	1000	/	/	150
N65-125/110A	2	80	80	100	100	310	490	665	660	340	260	1346	1398	1436	1145	1164	1120	/	/	150
N65-125/110	2	80	80	100	100	310	490	665	660	340	260	1346	1398	1436	1145	1164	1120	/	/	150
N65-160/75	2	80	80	100	100	310	490	665	660	340	260	1366	1418	1436	1145	1007	1120	/	/	150
N65-160/110A	2	80	80	100	100	335	540	715	660	340	260	1366	1418	1436	1275	1164	1250	/	/	150
N65-160/110	2	80	80	100	100	335	540	715	660	340	260	1366	1418	1436	1275	1164	1250	/	/	150
N65-160/150	2	80	80	100	100	335	540	715	660	340	260	1366	1418	1436	1275	1164	1250	/	/	150
N65-160/185	2	80	80	100	100	335	540	715	660	340	260	1366	1418	1436	1275	1164	1250	/	/	150
N65-200/110	2	80	80	100	100	335	540	715	660	340	280	1411	1463	1436	1275	1204	1250	/	/	150
N65-200/150	2	80	80	100	100	335	540	715	660	340	280	1411	1463	1436	1275	1204	1250	/	/	150
N65-200/185	2	80	80	100	100	335	540	715	660	340	280	1411	1463	1436	1275	1204	1250	/	/	150
N65-200/220	2	80	80	100	100	335	540	715	660	340	280	1411	1463	1436	1275	1264	1250	/	/	150
N65-200/300	2	80	80	100	100	360	610	775	560	340	310	1441	1493	1836	1425	1367	1400	/	/	150
N65-250/220	2	80	80	100	100	335	540	715	660	340	310	1466	1518	1836	1260	1374	1250	/	/	150
N65-250/300	2	80	80	100	100	360	610	775	560	340	310	1466	1518	1836	1410	1477	1400	/	/	150
N65-250/370	2	80	80	100	100	360	610	775	560	340	310	1466	1518	1836	1410	1477	1400	/	/	150
N65-250/450	2	80	80	100	100	360	610	775	600	340	365	1521	1573	1836	1410	1566	1400	/	/	150
N65-250/550	2	80	80	100	100	385	660	825	610	340	390	1546	1598	1837	1610	1675	1600	/	/	150
N65-315/550	1 *	80	80	100	125	355	750	840	/	340	405	1591	1643	/	1565	1700	1550	600	800	155
N65-315/750	1	80	80	100	125	355	750	840	/	340	390	1576	1628	/	1565	1806	1550	600	1500	155
N65-315/900	1	80	80	100	125	355	750	840	/	340	390	1576	1628	/	1565	1806	1550	600	1500	155
N80-160/110	2	100	100	125	125	335	540	715	660	340	280	1494	1575	1436	1300	1229	1250	/	/	150
N80-160/150	2	100	100	125	125	335	540	715	660	340	280	1494	1575	1436	1300	1229	1250	/	/	150
N80-160/185	2	100	100	125	125	335	540	715	660	340	280	1494	1575	1436	1300	1229	1250	/	/	150
N80-160/220	2	100	100	125	125	335	540	715	660	340	280	1494	1575	1436	1300	1289	1250	/	/	150
N80-200/220	2	100	100	125	125	335	540	715	660	340	280	1519	1600	1436	1300	1399	1250	/	/	150
N80-200/300	2	100	100	125	125	360	610	775	560	340	310	1549	1630	1836	1450	1502	1400	/	/	150
N80-200/370	2	100	100	125	125	360	610	775	560	340	310	1549	1630	1836	1450	1502	1400	/	/	150
N80-200/450	2	100	100	125	125	360	610	775	610	340	365	1604	1685	1836	1450	1591	1400	/	/	150
N80-250/370	2	100	100	125	125	360	610	775	560	340	310	1579	1660	1836	1435	1502	1400	/	/	150
N80-250/450	2	100	100	125	125	360	610	775	600	340	365	1634	1715	1836	1435	1591	1400	/	/	150
N80-250/550	2	100	100	125	125	385	660	825	610	340	390	1659	1740	1837	1635	1700	1600	/	/	150
N80-250/750	1	100	100	125	125	420	730	895	/	340	420	1689	1770	/	1835	1806	1800	600	1500	150
N80-316/900	1	100	100	125	125	355	750	840	/	340	440	1744	1825	/	1615	1866	1600	600	1500	155
N80-316/1100	1	100	100	125	125	405	860	945	/	340	505	1809	1890	/	1865	2039	1850	800	1700	215
N80-316/1320	1	100	100	125	125	405	860	945	/	340	505	1809	1890	/	1865	2039	1850	800	1700	215
N80-316/1600	1	100	100	125	125	405	860	945	/	340	505	1809	1890	/	1865	2039	1850	800	1700	215

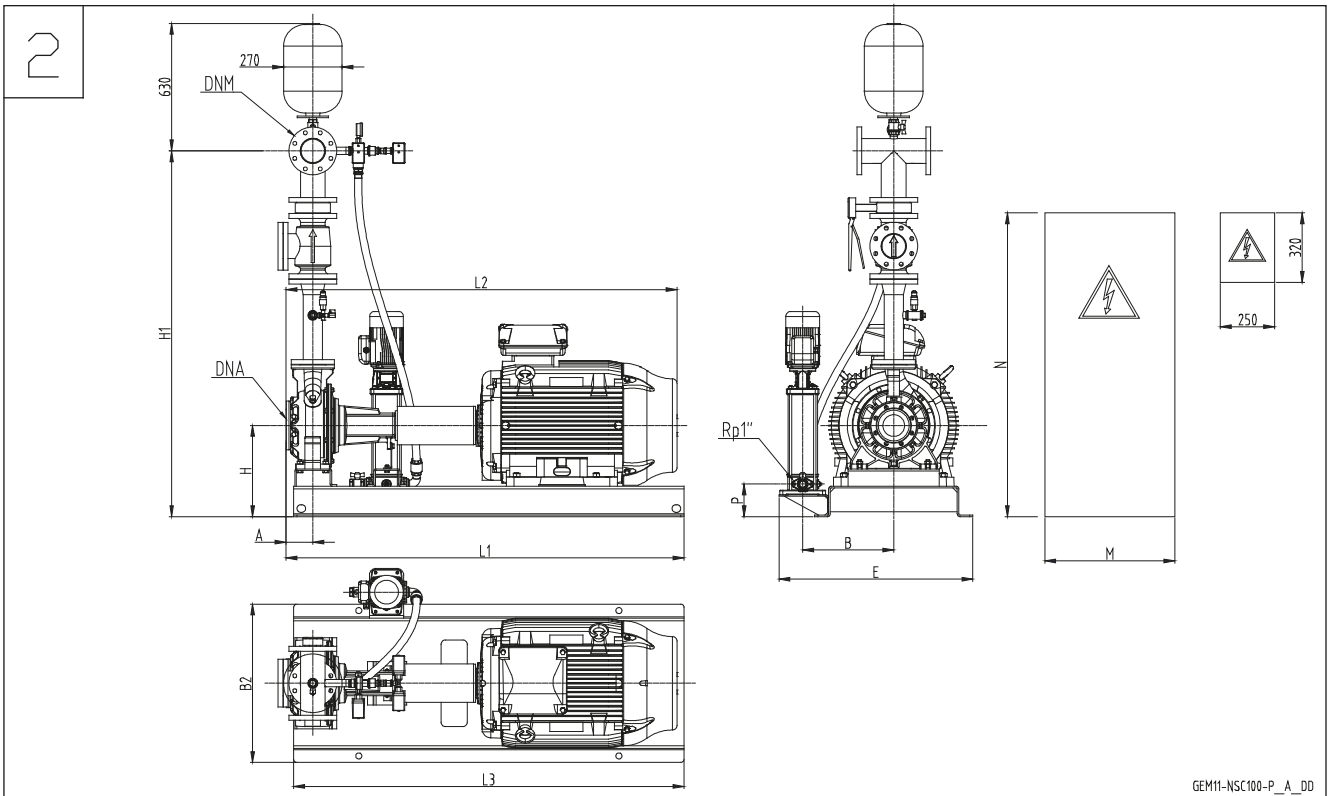
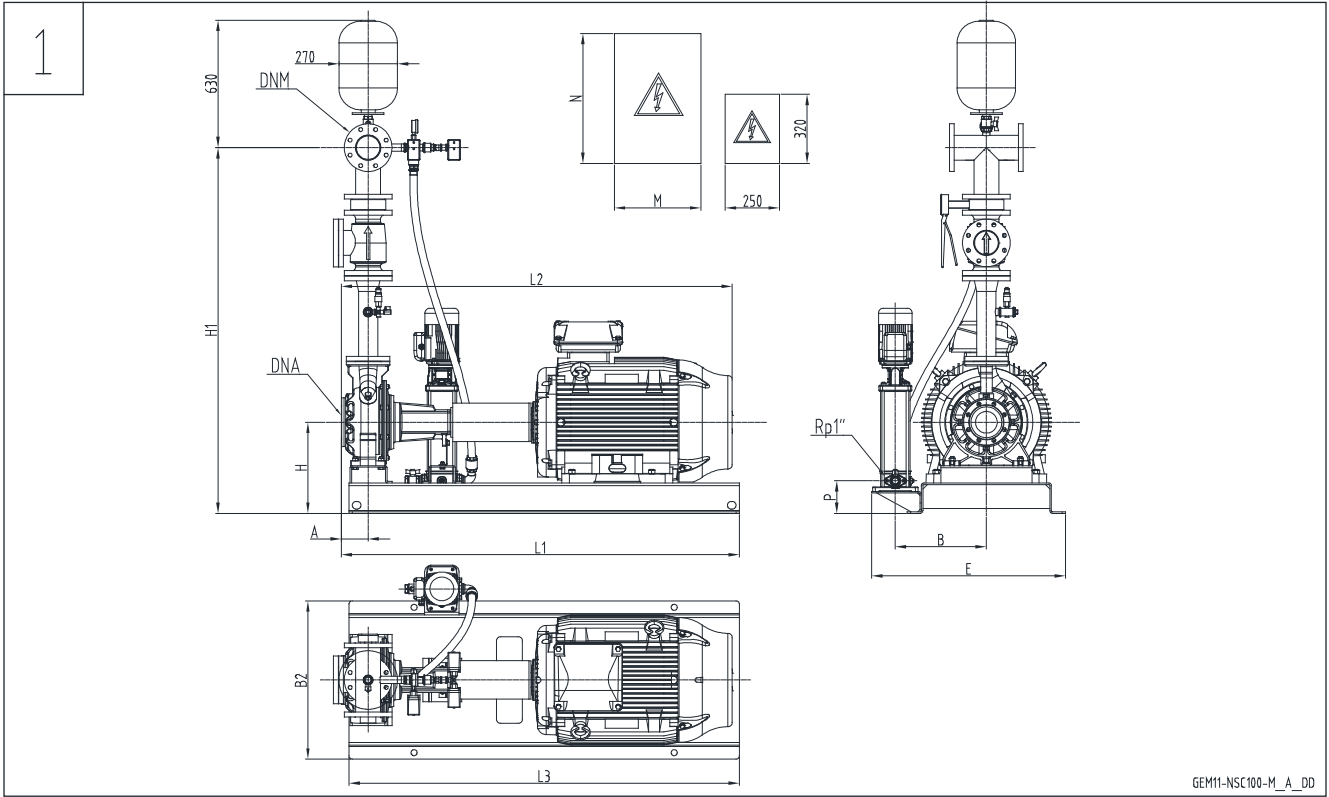
Dimensions in mm. Tolerance ± 10 mm.

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* Wall-mounted electric control panel for service pump, 1 support bracket kit available on request

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC100-125 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC100-125 SERIES

GEMJ	DRW N°	DNA	DNM		A	B	B2	E	G	H	H1		L1	L2	L3	M	N	P
			GEM1	GEM2							GEM1	GEM2						
N100-160/150	1	125	125	150	125	315	670	760	340	365	1718	1815	1345	1333	1330	400	600	135
N100-160/185	1	125	125	150	125	315	670	760	340	365	1718	1815	1345	1377	1330	400	600	135
N100-160/220	1	125	125	150	125	315	670	760	340	385	1738	1835	1345	1399	1330	400	600	135
N100-160/300	1	125	125	150	125	260	560	650	340	330	1683	1780	1365	1502	1350	500	700	135
N100-200/300	1	125	125	150	125	260	560	650	340	330	1683	1780	1365	1502	1350	500	700	135
N100-200/370	1	125	125	150	125	260	560	650	340	330	1683	1780	1365	1502	1350	500	700	135
N100-200/450	1	125	125	150	125	260	560	650	340	355	1708	1805	1365	1591	1350	600	800	135
N100-200/550	1	125	125	150	125	355	750	840	340	405	1758	1855	1565	1700	1550	600	800	155
N100-250/450	1	125	125	150	140	260	560	650	340	355	1708	1805	1380	1606	1350	600	800	135
N100-250/550	1	125	125	150	140	355	750	840	340	405	1758	1855	1580	1715	1550	600	800	155
N100-250/750	2	125	125	150	140	355	750	840	340	390	1743	1840	1580	1821	1550	600	1500	155
N100-250/900	2	125	125	150	140	355	750	840	340	390	1743	1840	1580	1821	1550	600	1500	155
N125-200/450	1	150	150	200	140	260	560	650	380	355	1850	2010	1380	1606	1350	600	800	135
N125-200/550	1	150	150	200	140	355	750	840	380	405	1900	2060	1580	1715	1550	600	800	155
N125-200/750	2	150	150	200	140	355	750	840	380	405	1900	2060	1580	1821	1550	600	1500	155
N125-200/900	2	150	150	200	140	355	750	840	380	405	1900	2060	1580	1821	1550	600	1500	155
N125-315/1100	2	150	150	200	140	405	860	945	380	505	2040	2200	1880	2054	1850	800	1700	215
N125-315/1320	2	150	150	200	140	405	860	945	380	505	2040	2200	1880	2054	1850	800	1700	215
N125-315/1600	2	150	150	200	140	405	860	945	380	505	2040	2200	1880	2054	1850	800	1900	215
N125-315/2000	2	150	150	200	140	405	860	945	380	505	2040	2200	1880	2163	1850	800	1900	215

Dimensions in mm. Tolerance ± 10 mm.

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Up to 55 kW, wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

Over 55 kW, floor-mounted electric control panel for service pump.

Wall-mounted electric control panel for jockey pump, 1 support bracket kit available on request.

EN 12845 fire-fighting pressure module

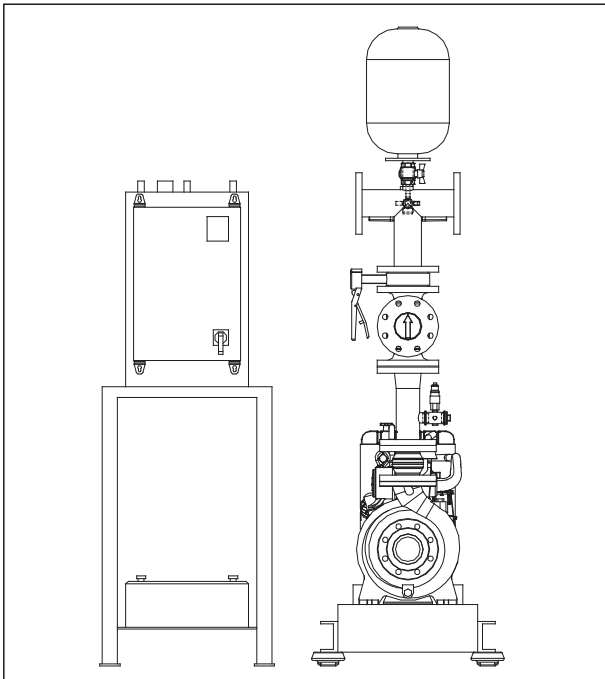
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEMK..NSCC series Single diesel engine service pump module

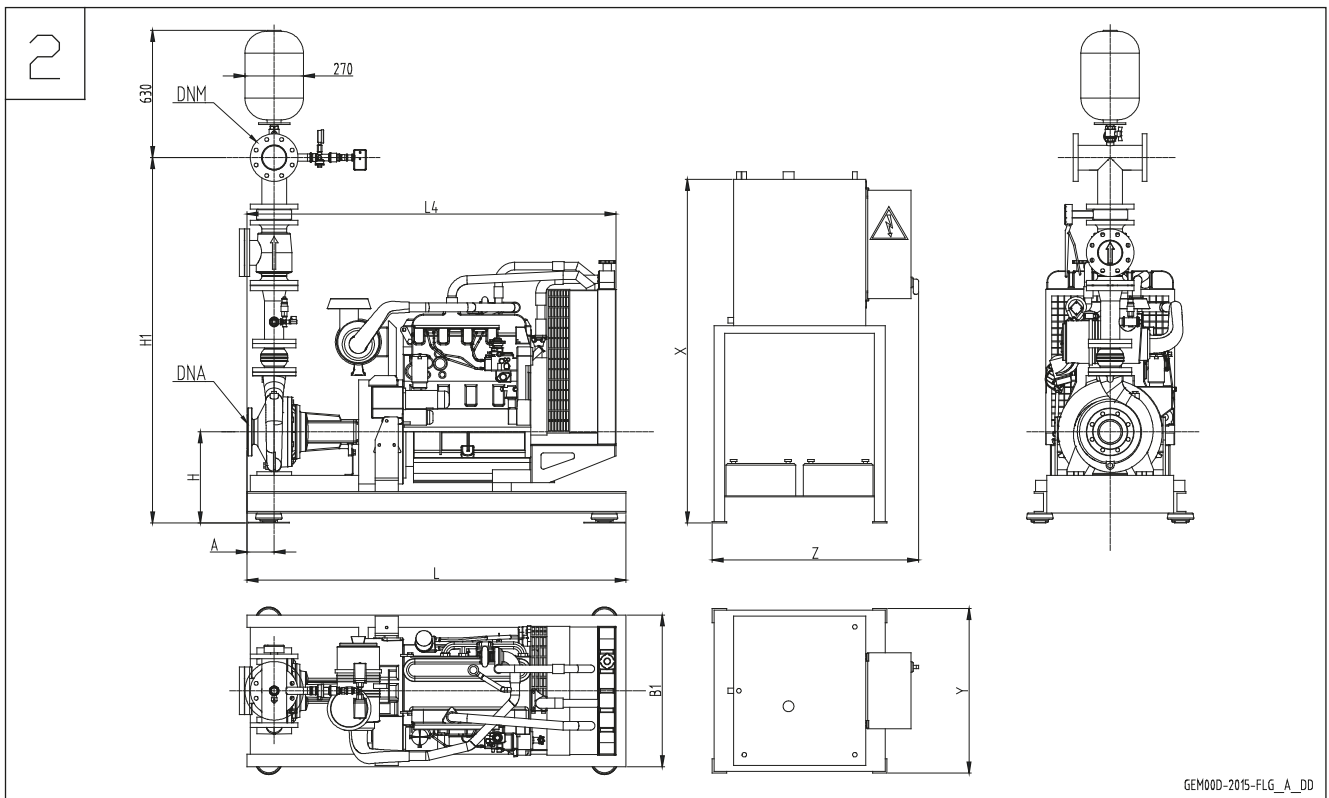
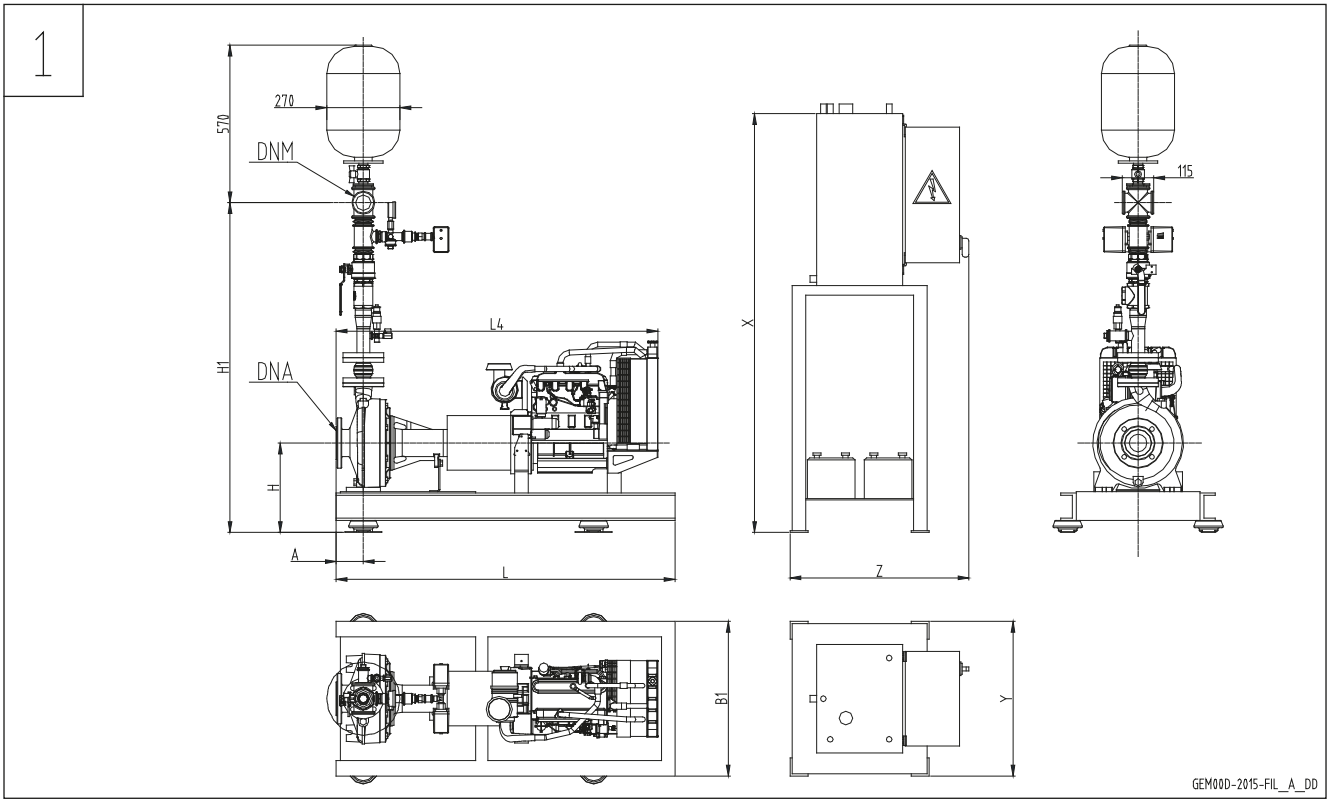


SPECIFICATIONS

- **Flow:** up to 766 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Diesel engine service pump 1 x 230 Vac ± 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:**
 - 12 – 24 Vac.
- **Control panel protection grade:**
 - Diesel engine service pump IP54.
- **Electric motor starting:** from batteries.
- **Maximum power output:**
 - Diesel engine service pump 200 kW.
- **Horizontal electric service pump:**
 - NSCC series.
- **Maximum operating pressure:** 16 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSCC32-40 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..NSCC32-40 SERIES

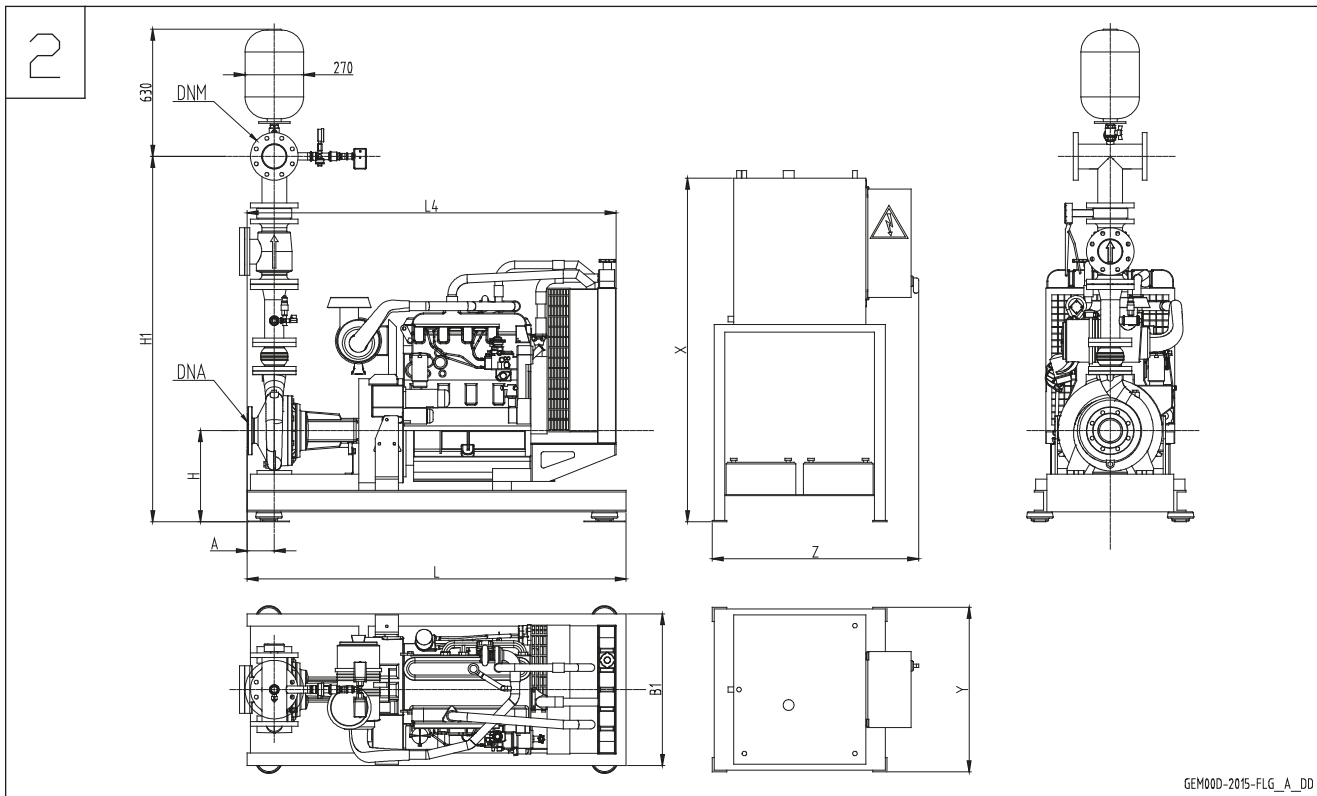
GEMK	DRW N°		DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2					
N32-125/D113	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D123	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D133	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D145	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-160/D137	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D150	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D160,5	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D171	/	1	50	/	Rp 2"	80	500	282	/	1108	950	901	1220	400	500
N32-200/D154	/	1	50	/	Rp 2"	80	500	310	/	1156	950	885	1220	400	500
N32-200/D171	/	1	50	/	Rp 2"	80	500	310	/	1156	950	885	1220	400	500
N32-200/D186	/	1	50	/	Rp 2"	80	500	310	/	1156	950	901	1220	400	500
N32-200/D205	/	1	50	/	Rp 2"	80	500	310	/	1156	950	977	1220	400	500
N32-250/D208	/	1	50	/	Rp 2"	100	500	280	/	1171	950	923	1220	400	500
N32-250/D226	/	1	50	/	Rp 2"	100	500	280	/	1171	950	997	1220	400	500
N32-250/D239	/	1	50	/	Rp 2"	100	570	330	/	1221	1250	1169	1220	400	500
N32-250/D259	/	1	50	/	Rp 2"	100	570	330	/	1221	1250	1169	1220	400	500
N40-125/D105	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-125/D118	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-125/D130	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-160/D127	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	885	1220	400	500
N40-160/D139	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	885	1220	400	500
N40-160/D154	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	901	1220	400	500
N40-160/D165	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	977	1220	400	500
N40-200/D165	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	921	1220	400	500
N40-200/D179	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	997	1220	400	500
N40-200/D189	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	997	1220	400	500
N40-200/D199	1	2	65	Rp 2"	65	100	570	360	1199	1384	1250	1009	1220	400	500
N40-250/D195	1	2	65	Rp 2"	65	100	500	310	1194	1379	950	997	1220	400	500
N40-250/D206	1	2	65	Rp 2"	65	100	570	330	1214	1399	1250	1009	1220	400	500
N40-250/D228	1	2	65	Rp 2"	65	100	570	330	1214	1399	1250	1169	1220	400	500
N40-250/D243	1	2	65	Rp 2"	65	100	570	380	1264	1449	1250	1289	1220	400	500
N40-250/D257,5	1	2	65	Rp 2"	65	100	570	380	1264	1449	1250	1289	1220	400	500

Dimensions in mm. Tolerance ± 10 mm.

gem00d_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..NSC50-80 SERIES

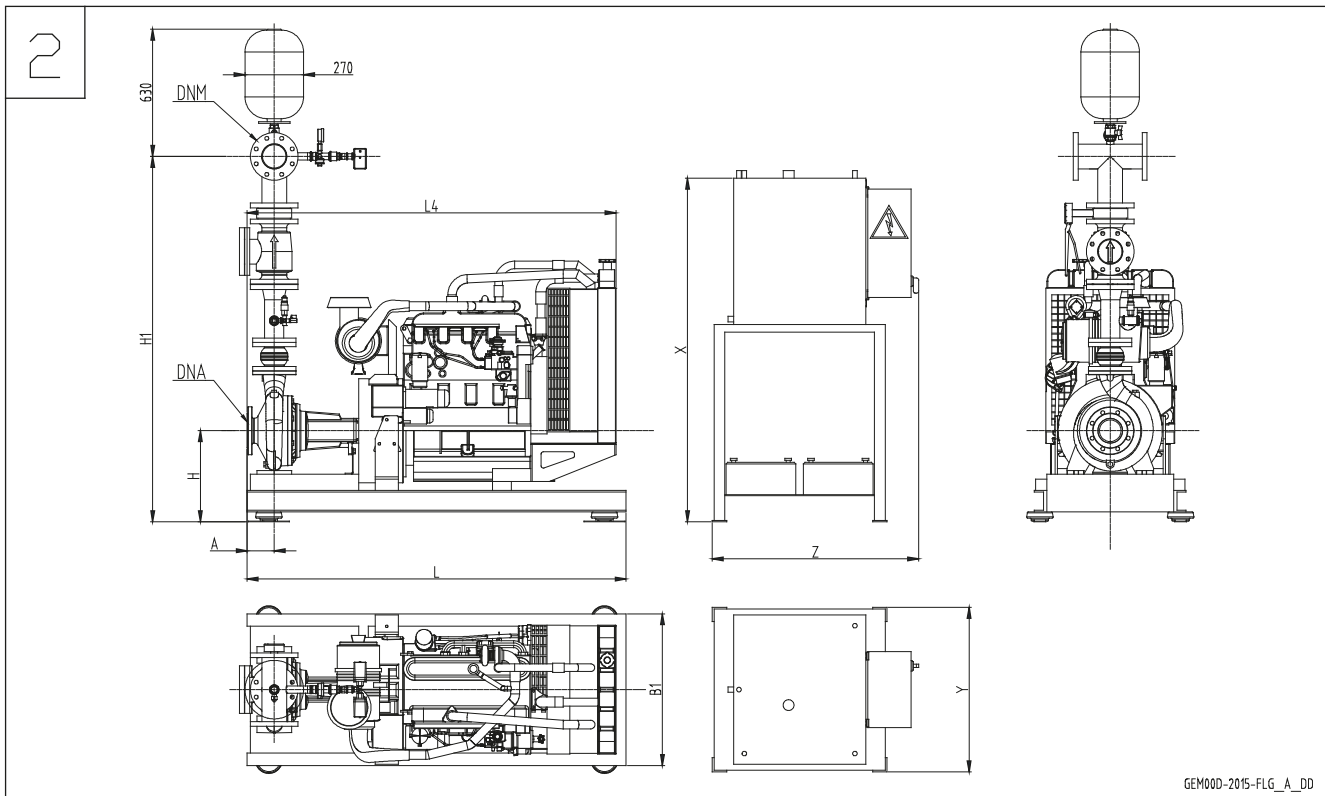
GEMK	DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
		GEM1	GEM2				GEM1	GEM2					
N50-125/D118	65	65	80	100	500	282	1280	1299	950	905	1220	400	500
N50-125/D130	65	65	80	100	500	282	1280	1299	950	905	1220	400	500
N50-125/D144	65	65	80	100	500	282	1280	1299	950	921	1220	400	500
N50-125/D148	65	65	80	100	500	282	1280	1299	950	921	1220	400	500
N50-160/D144	65	65	80	100	500	310	1328	1347	950	921	1220	400	500
N50-160/D159	65	65	80	100	500	310	1328	1347	950	923	1220	400	500
N50-160/D170	65	65	80	100	500	310	1328	1347	950	997	1220	400	500
N50-160/D176	65	65	80	100	570	360	1378	1397	1250	1169	1220	400	500
N50-200/D168	65	65	80	100	500	310	1348	1367	950	997	1220	400	500
N50-200/D179	65	65	80	100	570	360	1398	1417	1250	1169	1220	400	500
N50-200/D192	65	65	80	100	570	360	1398	1417	1250	1169	1220	400	500
N50-200/D209	65	65	80	100	570	360	1398	1417	1250	1289	1220	400	500
N50-250/D208	65	65	80	100	570	330	1393	1412	1250	1169	1220	400	500
N50-250/D220	65	65	80	100	570	380	1443	1462	1250	1289	1220	400	500
N50-250/D232	65	65	80	100	570	380	1443	1462	1250	1289	1220	400	500
N50-250/D256	65	65	80	100	640	360	1423	1442	1550	1400	1220	400	500
N65-125/D113	80	80	100	100	500	310	1396	1448	950	905	1220	400	500
N65-125/D127	80	80	100	100	500	310	1396	1448	950	921	1220	400	500
N65-125/D137	80	80	100	100	500	310	1396	1448	950	923	1220	400	500
N65-125/D146	80	80	100	100	500	310	1396	1448	950	997	1220	400	500
N65-125/D148	80	80	100	100	500	310	1396	1448	950	997	1220	400	500
N65-160/D145	80	80	100	100	500	310	1416	1468	950	923	1220	400	500
N65-160/D151	80	80	100	100	500	310	1416	1468	950	997	1220	400	500
N65-160/D159	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-160/D175	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-160/D180	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-200/D165	80	80	100	100	500	280	1411	1463	950	997	1220	400	500
N65-200/D177	80	80	100	100	570	330	1461	1513	1250	1169	1220	400	500
N65-200/D189	80	80	100	100	570	380	1511	1563	1250	1289	1220	400	500
N65-200/D199	80	80	100	100	570	380	1511	1563	1250	1289	1220	400	500
N65-200/D220	80	80	100	100	640	360	1491	1543	1550	1400	1220	400	500
N65-250/D195	80	80	100	100	570	360	1516	1568	1250	1399	1220	400	500
N65-250/D215	80	80	100	100	640	360	1516	1568	1550	1510	1220	400	500
N65-250/D229	80	80	100	100	640	360	1516	1568	1550	1510	1300	690	500
N65-250/D243	80	80	100	100	640	365	1521	1573	1550	1510	1300	690	500
N65-250/D258	80	80	100	100	640	390	1546	1598	1550	1670	1300	690	500
N65-315/D272	80	80	100	125	640	405	1591	1643	1550	1695	1300	690	500
N65-315/D298	80	80	100	125	700	390	1576	1628	1750	2013	1390	660	800
N65-315/D315	80	80	100	125	700	390	1576	1628	1750	2013	1390	660	800
N80-160/D144	100	100	125	125	570	330	1544	1625	1250	1194	1220	400	500
N80-160/D158	100	100	125	125	570	330	1544	1625	1250	1194	1220	400	500
N80-160/D168	100	100	125	125	570	380	1594	1675	1250	1314	1220	400	500
N80-160/D177	100	100	125	125	570	380	1594	1675	1250	1314	1220	400	500
N80-200/D181	100	100	125	125	570	380	1619	1700	1350	1424	1220	400	500
N80-200/D195	100	100	125	125	640	360	1599	1680	1550	1535	1220	400	500
N80-200/D208	100	100	125	125	640	360	1599	1680	1550	1535	1300	690	500
N80-200/D219	100	100	125	125	640	365	1604	1685	1550	1535	1300	690	500
N80-250/D214	100	100	125	125	640	360	1629	1710	1550	1535	1300	690	500
N80-250/D227	100	100	125	125	640	365	1634	1715	1550	1535	1300	690	500
N80-250/D241	100	100	125	125	640	390	1659	1740	1550	1695	1300	690	500
N80-250/D259	100	100	125	125	700	420	1689	1770	1750	2013	1390	660	800
N80-316/D280	100	100	125	125	700	440	1744	1825	1750	2074	1390	660	800
N80-316/D298	100	100	125	125	850	505	1809	1890	2300	2284	1680	660	800
N80-316/D310	100	100	125	125	850	505	1809	1890	2300	2284	1680	660	800
N80-316/D321	100	100	125	125	850	505	1809	1890	2000	2139	1680	660	800

Dimensions in mm. Tolerance ± 10 mm.

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**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSC100-125 SERIES**

NSC MODULES



GEMK	DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
		GEM1	GEM2				GEM1	GEM2					
N100-160/D144	125	125	150	125	570	365	1718	1815	1250	1304	1220	400	500
N100-160/D156	125	125	150	125	570	365	1718	1815	1350	1424	1220	400	500
N100-160/D167	125	125	150	125	570	385	1738	1835	1350	1424	1220	400	500
N100-160/D187	125	125	150	125	640	330	1683	1780	1550	1535	1220	400	500
N100-200/D188	125	125	150	125	640	330	1683	1780	1550	1535	1220	400	500
N100-200/D202	125	125	150	125	640	330	1683	1780	1550	1535	1300	690	500
N100-200/D213	125	125	150	125	640	355	1708	1805	1550	1535	1300	690	500
N100-200/D227	125	125	150	125	640	405	1758	1855	1550	1695	1300	690	500
N100-250/D213	125	125	150	140	640	355	1708	1805	1550	1550	1300	690	500
N100-250/D227	125	125	150	140	640	405	1758	1855	1550	1710	1300	690	500
N100-250/D249	125	125	150	140	700	390	1743	1840	1750	2028	1390	660	800
N100-250/D259	125	125	150	140	700	390	1743	1840	1750	2028	1390	660	800
N125-200/D179	150	150	200	140	640	355	1850	2010	1550	1550	1300	690	500
N125-200/D195	150	150	200	140	640	405	1900	2060	1550	1710	1300	690	500
N125-200/D215	150	150	200	140	700	405	1900	2060	1750	2028	1390	660	800
N125-200/D225	150	150	200	140	700	405	1900	2060	1750	2028	1390	660	800
N125-315/D250	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D265	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D280	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D290	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800

Dimensions in mm. Tolerance ± 10 mm.

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EN 12845
fire-fighting
pressure
module

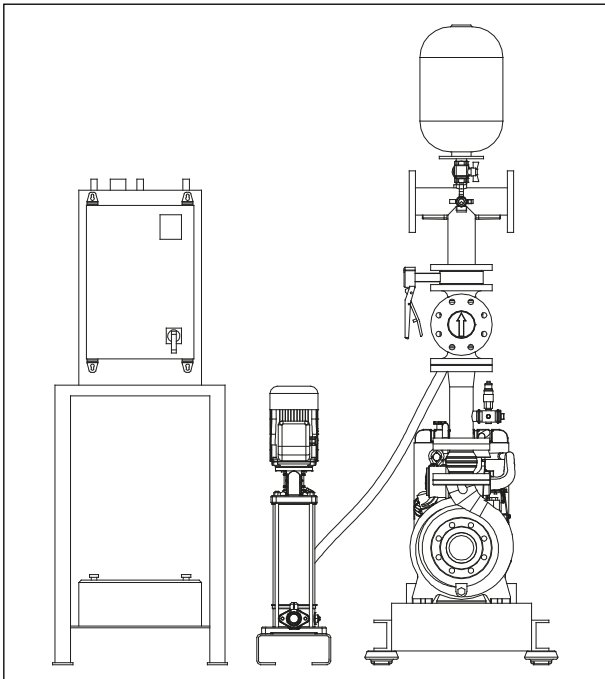
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEMK..NSC series + JOCKEY KIT
Single diesel engine service pump module,
with electric jockey pump kit

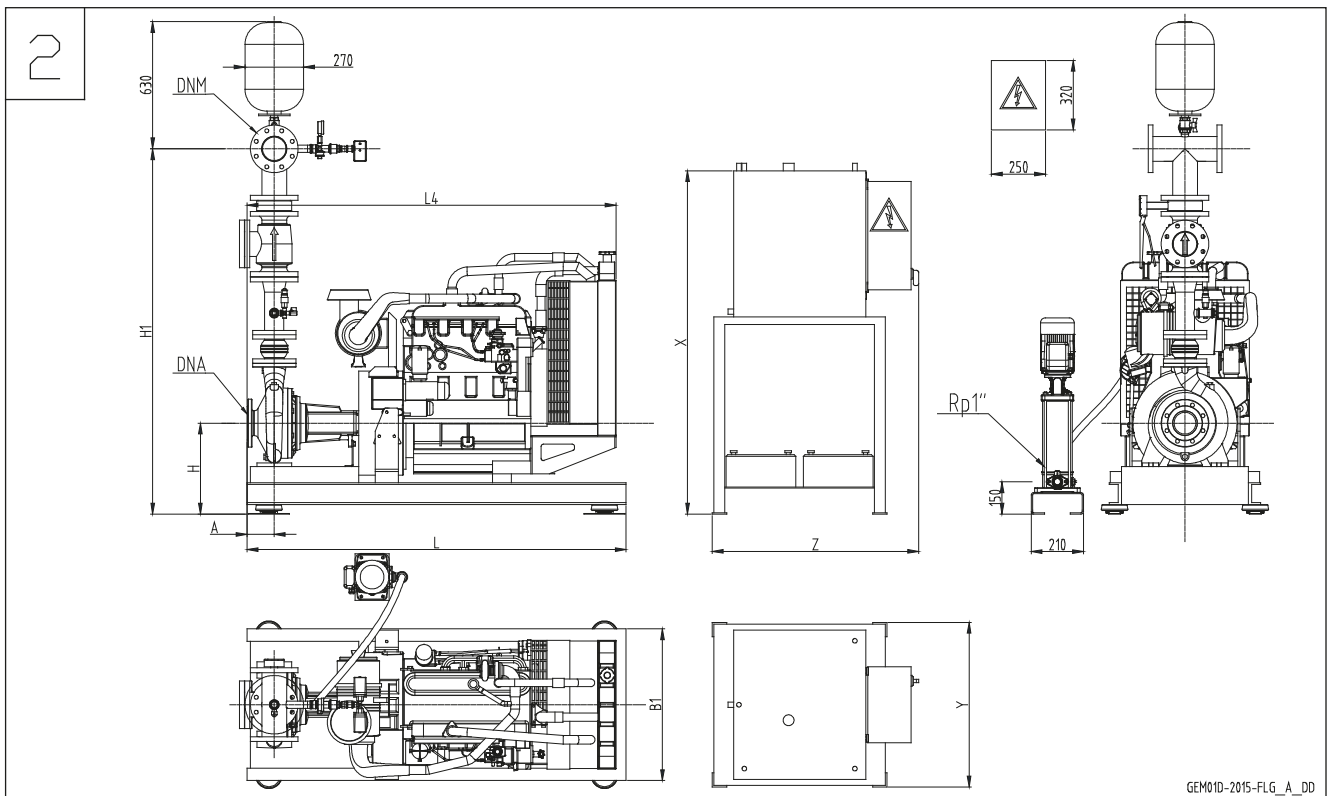
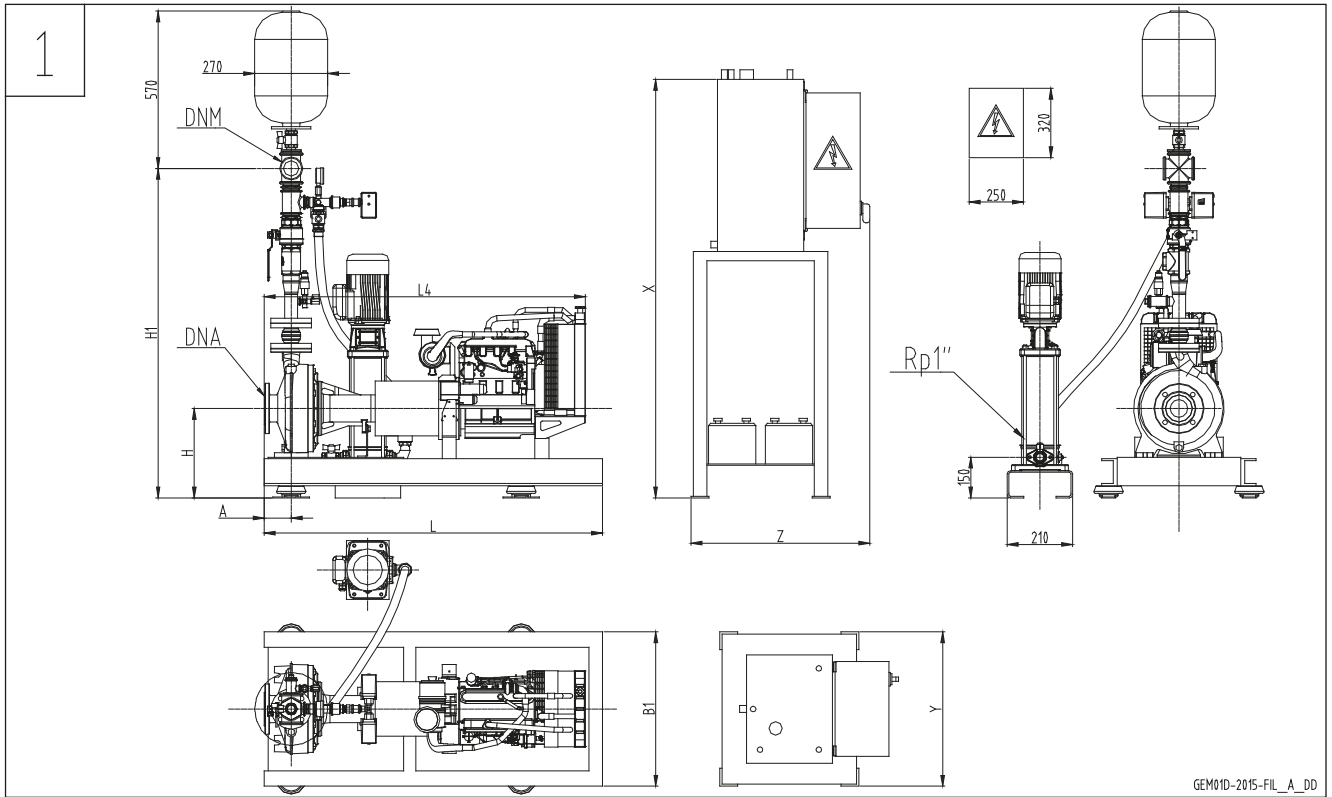


SPECIFICATIONS

- **Flow:** up to 766 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Diesel engine service pump 1 x 230 Vac ± 10%.
 - Jockey pump 3 x 400 Vac ± 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 12 – 24 Vac.
- **Control panel protection grade:**
 - Diesel engine service pump IP54.
 - Jockey pump IP55
- **Diesel engine starting:** from batteries
- **Maximum power output:**
 - Diesel engine service pump 200 kW.
- **Horizontal electric service pump:**
 - NSC series.
- **Vertical jockey pump:**
 - 1SV series version T or 1VM series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSC32-40 SERIES + JOCKEY KIT**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..NSC32-40 SERIES + JOCKEY KIT

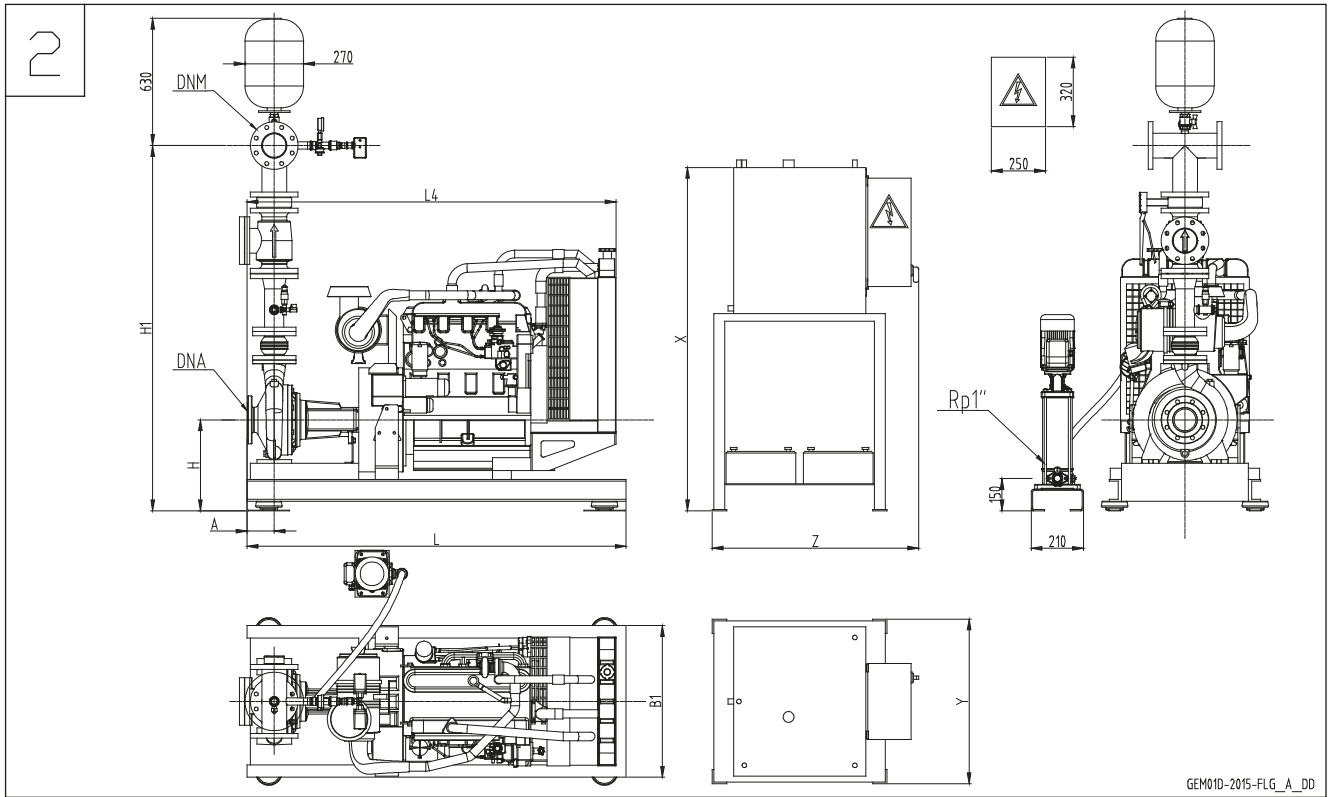
GEMK + JOCKEY KIT	DRW N°		DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2					
N32-125/D113	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D123	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D133	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-125/D145	/	1	50	/	Rp 2"	80	500	262	/	1068	950	885	1220	400	500
N32-160/D137	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D150	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D160,5	/	1	50	/	Rp 2"	80	500	282	/	1108	950	885	1220	400	500
N32-160/D171	/	1	50	/	Rp 2"	80	500	282	/	1108	950	901	1220	400	500
N32-200/D154	/	1	50	/	Rp 2"	80	500	310	/	1156	950	885	1220	400	500
N32-200/D171	/	1	50	/	Rp 2"	80	500	310	/	1156	950	885	1220	400	500
N32-200/D186	/	1	50	/	Rp 2"	80	500	310	/	1156	950	901	1220	400	500
N32-200/D205	/	1	50	/	Rp 2"	80	500	310	/	1156	950	977	1220	400	500
N32-250/D208	/	1	50	/	Rp 2"	100	500	280	/	1171	950	923	1220	400	500
N32-250/D226	/	1	50	/	Rp 2"	100	500	280	/	1171	950	997	1220	400	500
N32-250/D239	/	1	50	/	Rp 2"	100	570	330	/	1221	1250	1169	1220	400	500
N32-250/D259	/	1	50	/	Rp 2"	100	570	330	/	1221	1250	1169	1220	400	500
N40-125/D105	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-125/D118	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-125/D130	1	2	65	Rp 2"	65	80	500	262	1061	1246	950	885	1220	400	500
N40-160/D127	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	885	1220	400	500
N40-160/D139	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	885	1220	400	500
N40-160/D154	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	901	1220	400	500
N40-160/D165	1	2	65	Rp 2"	65	80	500	282	1101	1286	950	977	1220	400	500
N40-200/D165	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	921	1220	400	500
N40-200/D179	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	997	1220	400	500
N40-200/D189	1	2	65	Rp 2"	65	100	500	310	1149	1334	950	997	1220	400	500
N40-200/D199	1	2	65	Rp 2"	65	100	570	360	1199	1384	1250	1009	1220	400	500
N40-250/D195	1	2	65	Rp 2"	65	100	500	310	1194	1379	950	997	1220	400	500
N40-250/D206	1	2	65	Rp 2"	65	100	570	330	1214	1399	1250	1009	1220	400	500
N40-250/D228	1	2	65	Rp 2"	65	100	570	330	1214	1399	1250	1169	1220	400	500
N40-250/D243	1	2	65	Rp 2"	65	100	570	380	1264	1449	1250	1289	1220	400	500
N40-250/D257,5	1	2	65	Rp 2"	65	100	570	380	1264	1449	1250	1289	1220	400	500

Dimensions in mm. Tolerance ± 10 mm.

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**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSC50-80 SERIES + JOCKEY KIT**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..NSC50-80 SERIES + JOCKEY KIT

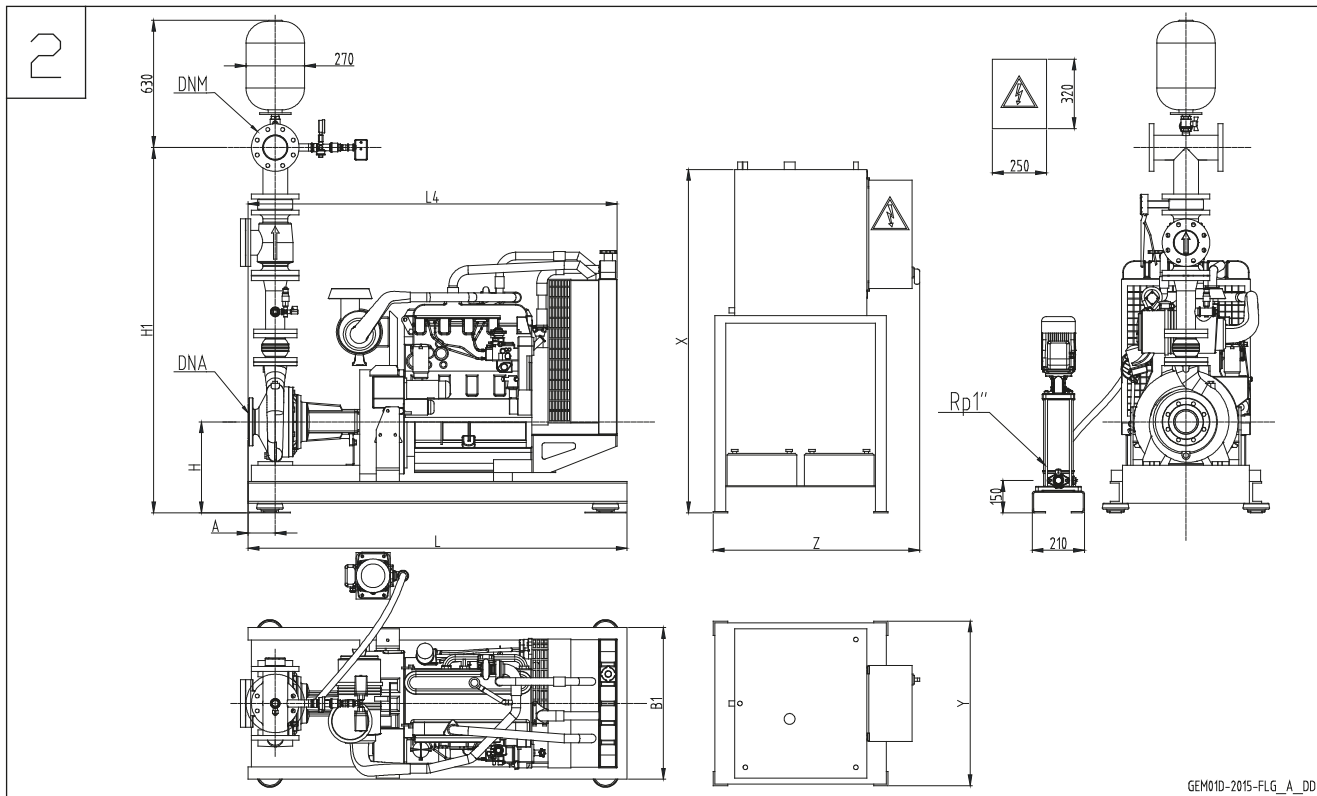
GEMK + JOCKEY KIT	DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
		GEM1	GEM2				GEM1	GEM2					
N50-125/D118	65	65	80	100	500	282	1280	1299	950	905	1220	400	500
N50-125/D130	65	65	80	100	500	282	1280	1299	950	905	1220	400	500
N50-125/D144	65	65	80	100	500	282	1280	1299	950	921	1220	400	500
N50-125/D148	65	65	80	100	500	282	1280	1299	950	921	1220	400	500
N50-160/D144	65	65	80	100	500	310	1328	1347	950	921	1220	400	500
N50-160/D159	65	65	80	100	500	310	1328	1347	950	923	1220	400	500
N50-160/D170	65	65	80	100	500	310	1328	1347	950	997	1220	400	500
N50-160/D176	65	65	80	100	570	360	1378	1397	1250	1169	1220	400	500
N50-200/D168	65	65	80	100	500	310	1348	1367	950	997	1220	400	500
N50-200/D179	65	65	80	100	570	360	1398	1417	1250	1169	1220	400	500
N50-200/D192	65	65	80	100	570	360	1398	1417	1250	1169	1220	400	500
N50-200/D209	65	65	80	100	570	360	1398	1417	1250	1289	1220	400	500
N50-250/D208	65	65	80	100	570	330	1393	1412	1250	1169	1220	400	500
N50-250/D220	65	65	80	100	570	380	1443	1462	1250	1289	1220	400	500
N50-250/D232	65	65	80	100	570	380	1443	1462	1250	1289	1220	400	500
N50-250/D256	65	65	80	100	640	360	1423	1442	1550	1400	1220	400	500
N65-125/D113	80	80	100	100	500	310	1396	1448	950	905	1220	400	500
N65-125/D127	80	80	100	100	500	310	1396	1448	950	921	1220	400	500
N65-125/D137	80	80	100	100	500	310	1396	1448	950	923	1220	400	500
N65-125/D146	80	80	100	100	500	310	1396	1448	950	997	1220	400	500
N65-125/D148	80	80	100	100	500	310	1396	1448	950	997	1220	400	500
N65-160/D145	80	80	100	100	500	310	1416	1468	950	923	1220	400	500
N65-160/D151	80	80	100	100	500	310	1416	1468	950	997	1220	400	500
N65-160/D159	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-160/D175	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-160/D180	80	80	100	100	570	360	1466	1518	1250	1169	1220	400	500
N65-200/D165	80	80	100	100	500	280	1411	1463	950	997	1220	400	500
N65-200/D177	80	80	100	100	570	330	1461	1513	1250	1169	1220	400	500
N65-200/D189	80	80	100	100	570	380	1511	1563	1250	1289	1220	400	500
N65-200/D199	80	80	100	100	570	380	1511	1563	1250	1289	1220	400	500
N65-200/D220	80	80	100	100	640	360	1491	1543	1550	1400	1220	400	500
N65-250/D195	80	80	100	100	570	360	1516	1568	1250	1399	1220	400	500
N65-250/D215	80	80	100	100	640	360	1516	1568	1550	1510	1220	400	500
N65-250/D229	80	80	100	100	640	360	1516	1568	1550	1510	1300	690	500
N65-250/D243	80	80	100	100	640	365	1521	1573	1550	1510	1300	690	500
N65-250/D258	80	80	100	100	640	390	1546	1598	1550	1670	1300	690	500
N65-315/D272	80	80	100	125	640	405	1591	1643	1550	1695	1300	690	500
N65-315/D298	80	80	100	125	700	390	1576	1628	1750	2013	1390	660	800
N65-315/D315	80	80	100	125	700	390	1576	1628	1750	2013	1390	660	800
N80-160/D144	100	100	125	125	570	330	1544	1625	1250	1194	1220	400	500
N80-160/D158	100	100	125	125	570	330	1544	1625	1250	1194	1220	400	500
N80-160/D168	100	100	125	125	570	380	1594	1675	1250	1314	1220	400	500
N80-160/D177	100	100	125	125	570	380	1594	1675	1250	1314	1220	400	500
N80-200/D181	100	100	125	125	570	380	1619	1700	1350	1424	1220	400	500
N80-200/D195	100	100	125	125	640	360	1599	1680	1550	1535	1220	400	500
N80-200/D208	100	100	125	125	640	360	1599	1680	1550	1535	1300	690	500
N80-200/D219	100	100	125	125	640	365	1604	1685	1550	1535	1300	690	500
N80-250/D214	100	100	125	125	640	360	1629	1710	1550	1535	1300	690	500
N80-250/D227	100	100	125	125	640	365	1634	1715	1550	1535	1300	690	500
N80-250/D241	100	100	125	125	640	390	1659	1740	1550	1695	1300	690	500
N80-250/D259	100	100	125	125	700	420	1689	1770	1750	2013	1390	660	800
N80-316/D280	100	100	125	125	700	440	1744	1825	1750	2074	1390	660	800
N80-316/D298	100	100	125	125	850	505	1809	1890	2300	2284	1680	660	800
N80-316/D310	100	100	125	125	850	505	1809	1890	2300	2284	1680	660	800
N80-316/D321	100	100	125	125	850	505	1809	1890	2000	2139	1680	660	800

Dimensions in mm. Tolerance \pm 10 mm.

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**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEMK..NSC100-125 SERIES + JOCKEY KIT**

NSC MODULES



GEMK + JOCKEY KIT	DNA	DNM		A	B1	H	H1		L	L4	X	Y	Z
		GEM1	GEM2				GEM1	GEM2					
N100-160/D144	125	125	150	125	570	365	1718	1815	1250	1304	1220	400	500
N100-160/D156	125	125	150	125	570	365	1718	1815	1350	1424	1220	400	500
N100-160/D167	125	125	150	125	570	385	1738	1835	1350	1424	1220	400	500
N100-160/D187	125	125	150	125	640	330	1683	1780	1550	1535	1220	400	500
N100-200/D188	125	125	150	125	640	330	1683	1780	1550	1535	1220	400	500
N100-200/D202	125	125	150	125	640	330	1683	1780	1550	1535	1300	690	500
N100-200/D213	125	125	150	125	640	355	1708	1805	1550	1535	1300	690	500
N100-200/D227	125	125	150	125	640	405	1758	1855	1550	1695	1300	690	500
N100-250/D213	125	125	150	140	640	355	1708	1805	1550	1550	1300	690	500
N100-250/D227	125	125	150	140	640	405	1758	1855	1550	1710	1300	690	500
N100-250/D249	125	125	150	140	700	390	1743	1840	1750	2028	1390	660	800
N100-250/D259	125	125	150	140	700	390	1743	1840	1750	2028	1390	660	800
N125-200/D179	150	150	200	140	640	355	1850	2010	1550	1550	1300	690	500
N125-200/D195	150	150	200	140	640	405	1900	2060	1550	1710	1300	690	500
N125-200/D215	150	150	200	140	700	405	1900	2060	1750	2028	1390	660	800
N125-200/D225	150	150	200	140	700	405	1900	2060	1750	2028	1390	660	800
N125-315/D250	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D265	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D280	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800
N125-315/D290	150	150	200	140	850	505	2040	2200	2300	2300	1680	660	800

Dimensions in mm. Tolerance ± 10 mm.

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EN 12845 fire-fighting pressure module

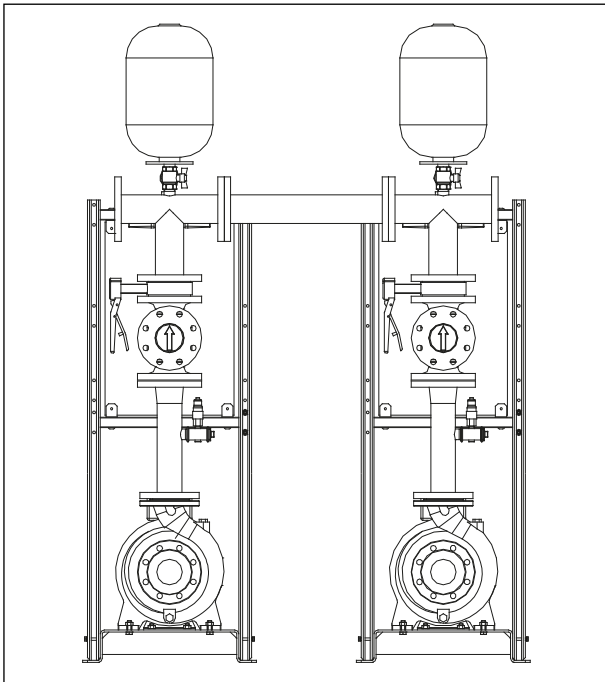
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEM..NSCC + GEM..NSCC Series

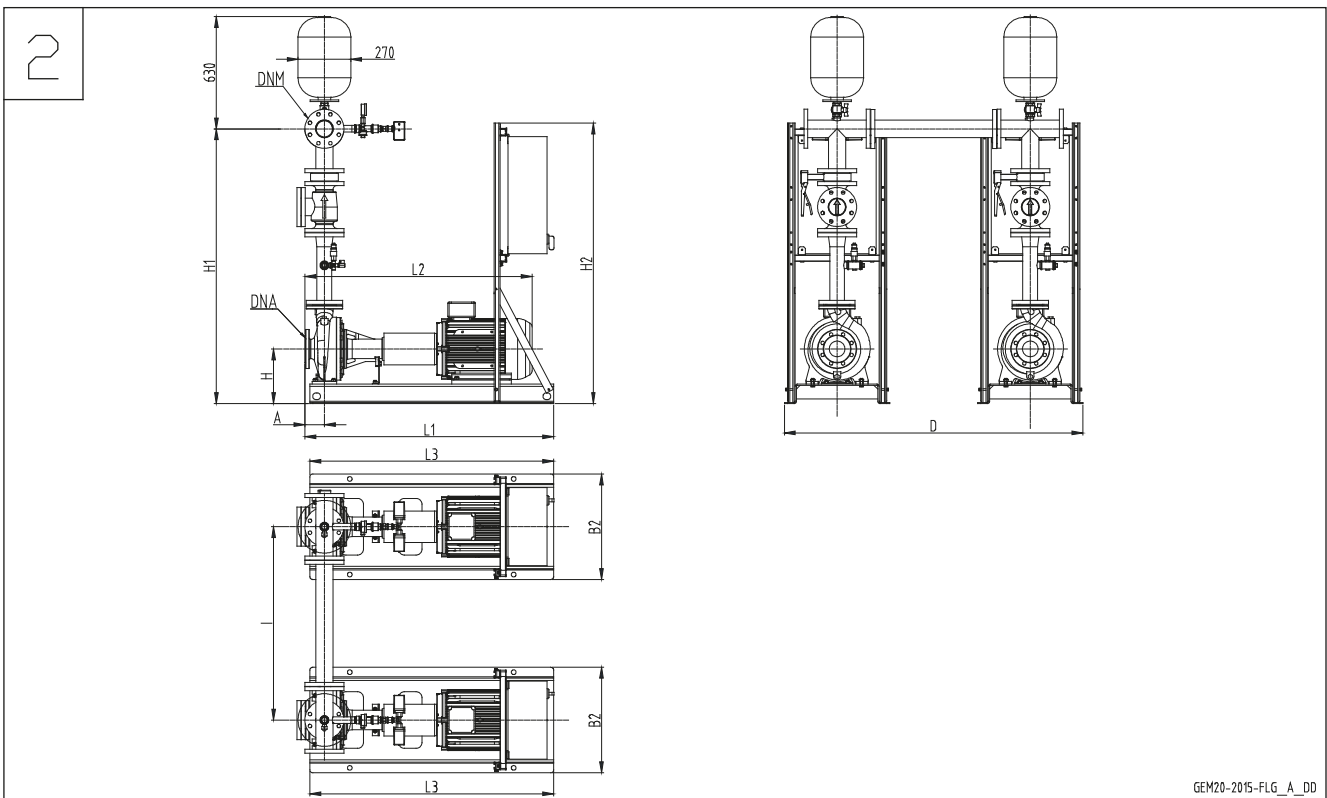
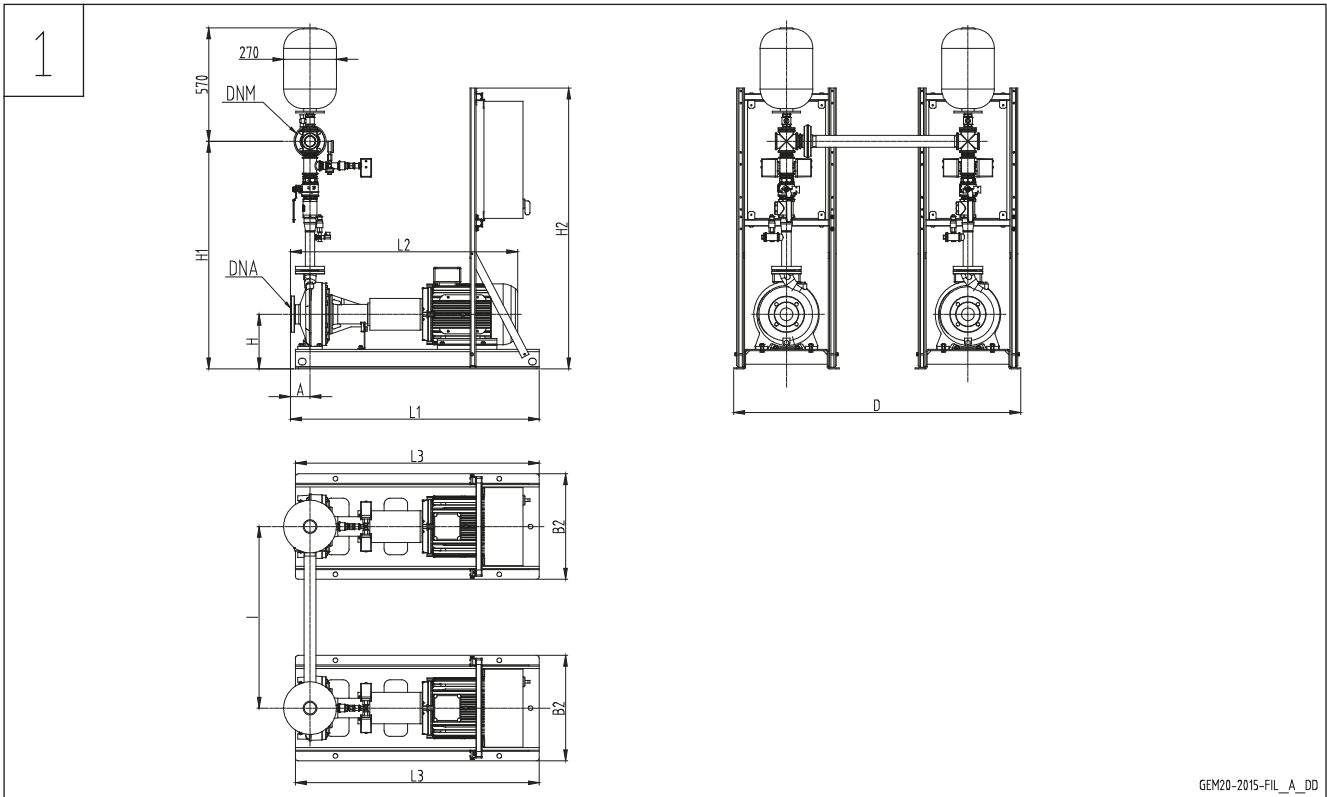


SPECIFICATIONS

- **Flow:** up to 766 m³/h for each service pump
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pumps 3 x 400 Vac ±10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:**
 - 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pumps IP54.
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..)
- **Maximum power output:**
 - Electric service pumps 200 kW.
- **Horizontal electric service pump:**
 - FHF series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC32-40 + GEM..NSCC32-40 SERIES**

NSC MODULES



12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC32-40 + GEM..NSCC32-40 SERIES

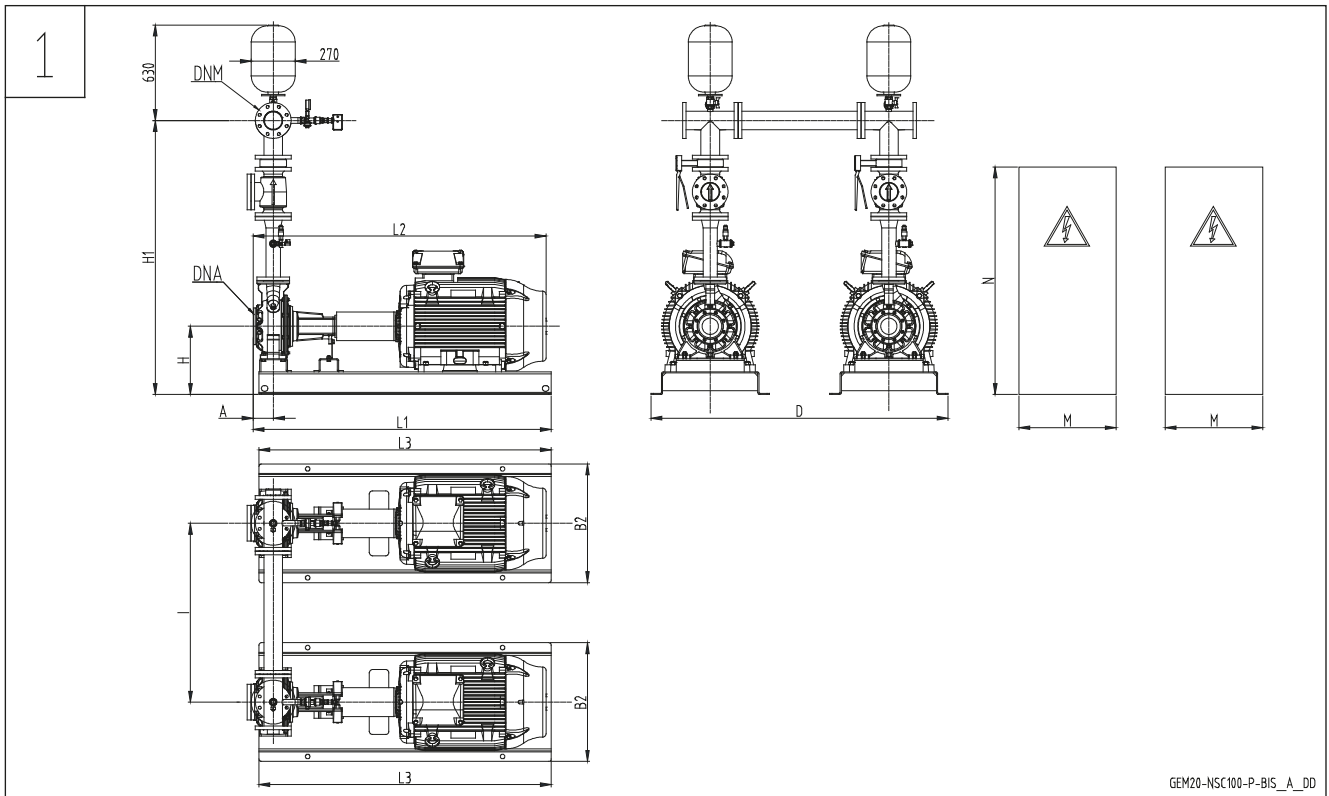
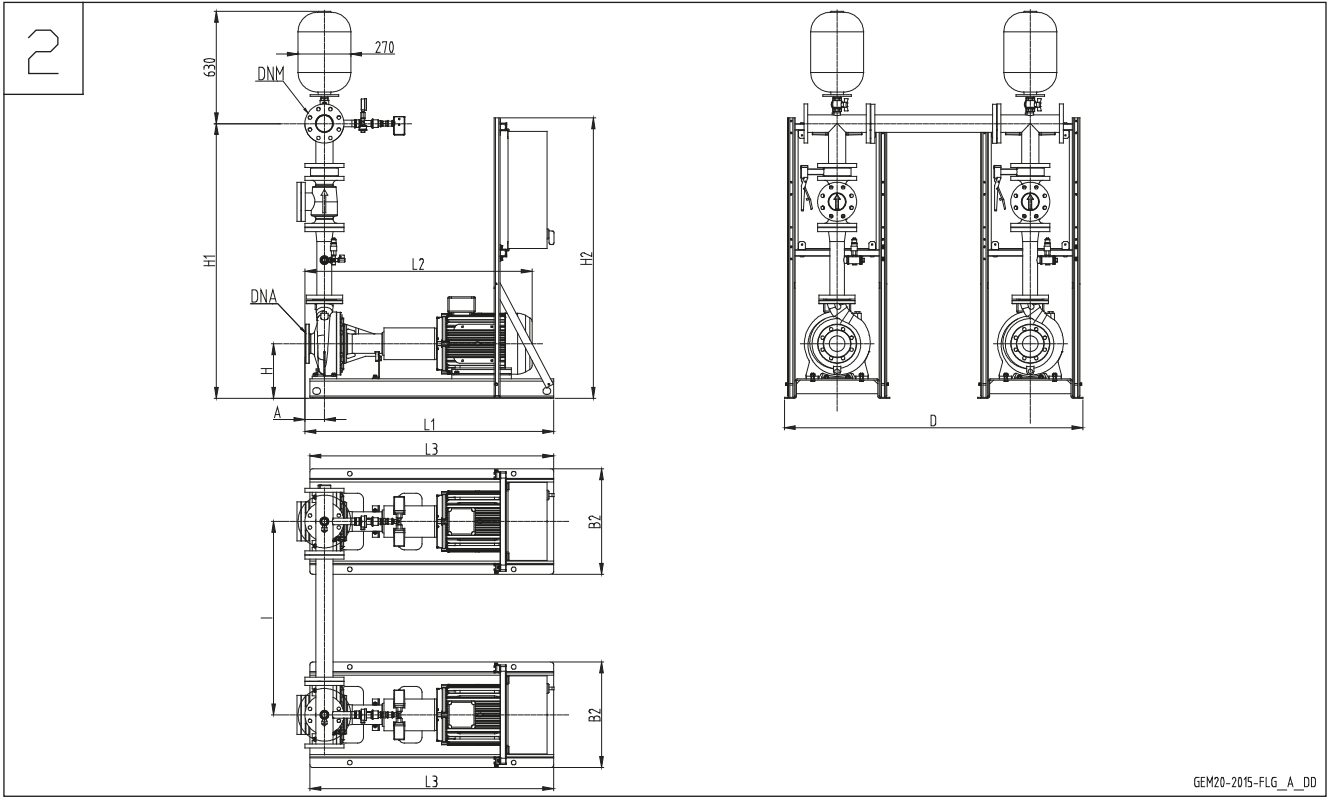
GEM+GEM	DRW N°		DNA	DNM		A	B2	D	H	H1		H2	I	L1	L2	L3
	GEM1	GEM2		GEM1	GEM2					GEM1	GEM2					
N32-125/11	/	1	50	/	Rp 2"	80	360	1290	212	/	1018	1236	930	820	843	800
N32-125/15	/	1	50	/	Rp 2"	80	390	1320	212	/	1018	1236	930	920	888	900
N32-125/22	/	1	50	/	Rp 2"	80	390	1320	212	/	1018	1236	930	920	888	900
N32-125/30	/	1	50	/	Rp 2"	80	390	1320	212	/	1018	1236	930	920	919	900
N32-160/22	/	1	50	/	Rp 2"	80	390	1320	232	/	1058	1236	930	920	888	900
N32-160/30	/	1	50	/	Rp 2"	80	390	1320	232	/	1058	1236	930	920	919	900
N32-160/40	/	1	50	/	Rp 2"	80	390	1320	232	/	1058	1236	930	920	922	900
N32-160/55	/	1	50	/	Rp 2"	80	450	1380	232	/	1058	1436	930	1020	987	1000
N32-200/30X	/	1	50	/	Rp 2"	80	390	1320	260	/	1106	1436	930	920	919	900
N32-200/40	/	1	50	/	Rp 2"	80	390	1320	260	/	1106	1436	930	920	922	900
N32-200/55	/	1	50	/	Rp 2"	80	450	1380	260	/	1106	1436	930	1020	987	1000
N32-200/75	/	1	50	/	Rp 2"	80	450	1380	260	/	1106	1436	930	1020	987	1000
N32-250/75X	/	1	50	/	Rp 2"	100	490	1420	280	/	1171	1436	930	1145	1007	1120
N32-250/110A	/	1	50	/	Rp 2"	100	540	1470	280	/	1171	1436	930	1275	1164	1250
N32-250/110	/	1	50	/	Rp 2"	100	540	1470	280	/	1171	1436	930	1275	1164	1250
N32-250/150	/	1	50	/	Rp 2"	100	540	1470	280	/	1171	1436	930	1275	1164	1250
N40-125/15	1	2	65	Rp 2"	65	80	390	1320	212	1011	1196	1236	930	920	888	900
N40-125/22	1	2	65	Rp 2"	65	80	390	1320	212	1011	1196	1236	930	920	888	900
N40-125/30	1	2	65	Rp 2"	65	80	390	1320	212	1011	1196	1236	930	920	919	900
N40-160/30	1	2	65	Rp 2"	65	80	390	1320	232	1051	1236	1236	930	920	919	900
N40-160/40	1	2	65	Rp 2"	65	80	390	1320	232	1051	1236	1236	930	920	922	900
N40-160/55	1	2	65	Rp 2"	65	80	450	1380	232	1051	1236	1436	930	1020	987	1000
N40-160/75	1	2	65	Rp 2"	65	80	450	1380	232	1051	1236	1436	930	1020	987	1000
N40-200/55	1	2	65	Rp 2"	65	100	450	1380	260	1099	1284	1436	930	1040	1007	1000
N40-200/75	1	2	65	Rp 2"	65	100	450	1380	260	1099	1284	1436	930	1040	1007	1000
N40-200/110A	1	2	65	Rp 2"	65	100	490	1420	260	1099	1284	1436	930	1160	1164	1120
N40-200/110	1	2	65	Rp 2"	65	100	490	1420	260	1099	1284	1436	930	1160	1164	1120
N40-250/110X	1	2	65	Rp 2"	65	100	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/110X1	1	2	65	Rp 2"	65	100	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/150	1	2	65	Rp 2"	65	100	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/185	1	2	65	Rp 2"	65	100	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/220	1	2	65	Rp 2"	65	100	540	1470	280	1164	1349	1436	930	1275	1224	1250

Dimensions in mm. Tolerance ± 10 mm.

gem20_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC50-80 + GEM..NSCC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC50-80 + GEM..NSCC50-80 SERIES

GEM+GEM	DRW N°	DNA	DNM		A	B2	D	H	H1		H2	I	L1	L2	L3	M	N
			GEM1	GEM2					GEM1	GEM2							
N50-125/30	2	65	65	80	100	390	1380	232	1230	1249	1236	990	940	939	900	/	/
N50-125/40	2	65	65	80	100	390	1380	232	1230	1249	1236	990	940	942	900	/	/
N50-125/55	2	65	65	80	100	450	1440	232	1230	1249	1436	990	1040	1007	1000	/	/
N50-125/75	2	65	65	80	100	450	1440	232	1230	1249	1436	990	1040	1007	1000	/	/
N50-160/55	2	65	65	80	100	450	1440	260	1278	1297	1436	990	1040	1007	1000	/	/
N50-160/75	2	65	65	80	100	450	1440	260	1278	1297	1436	990	1040	1007	1000	/	/
N50-160/110A	2	65	65	80	100	490	1480	260	1278	1297	1436	990	1160	1164	1120	/	/
N50-160/110	2	65	65	80	100	490	1480	260	1278	1297	1436	990	1160	1164	1120	/	/
N50-200/110A	2	65	65	80	100	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/110	2	65	65	80	100	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/150X	2	65	65	80	100	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/185	2	65	65	80	100	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-250/150	2	65	65	80	100	540	1530	280	1343	1362	1436	990	1275	1164	1250	/	/
N50-250/185	2	65	65	80	100	540	1530	280	1343	1362	1436	990	1275	1164	1250	/	/
N50-250/220	2	65	65	80	100	540	1530	280	1343	1362	1436	990	1275	1124	1250	/	/
N50-250/300	2	65	65	80	100	610	1600	310	1373	1392	1836	990	1425	1327	1400	/	/
N65-125/40	2	80	80	100	100	390	1380	260	1346	1398	1236	990	925	942	900	/	/
N65-125/55	2	80	80	100	100	450	1440	260	1346	1398	1436	990	1025	1007	1000	/	/
N65-125/75	2	80	80	100	100	450	1440	260	1346	1398	1436	990	1025	1007	1000	/	/
N65-125/110A	2	80	80	100	100	490	1480	260	1346	1398	1436	990	1145	1164	1120	/	/
N65-125/110	2	80	80	100	100	490	1480	260	1346	1398	1436	990	1145	1164	1120	/	/
N65-160/75	2	80	80	100	100	490	1480	260	1366	1418	1436	990	1145	1007	1120	/	/
N65-160/110A	2	80	80	100	100	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/110	2	80	80	100	100	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/150	2	80	80	100	100	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/185	2	80	80	100	100	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-200/110	2	80	80	100	100	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/150	2	80	80	100	100	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/185	2	80	80	100	100	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/220	2	80	80	100	100	540	1530	280	1411	1463	1436	990	1275	1264	1250	/	/
N65-200/300	2	80	80	100	100	610	1600	310	1441	1493	1836	990	1425	1367	1400	/	/
N65-250/220	2	80	80	100	100	540	1530	310	1466	1518	1836	990	1260	1374	1250	/	/
N65-250/300	2	80	80	100	100	610	1600	310	1466	1518	1836	990	1410	1477	1400	/	/
N65-250/370	2	80	80	100	100	610	1600	310	1466	1518	1836	990	1410	1477	1400	/	/
N65-250/450	2	80	80	100	100	610	1600	365	1521	1573	1836	990	1410	1566	1400	/	/
N65-250/550	2	80	80	100	100	660	1650	390	1546	1598	1837	990	1610	1675	1600	/	/
N65-315/550	1 *	80	80	100	125	750	1740	405	1591	1643	/	990	1565	1700	1550	600	800
N65-315/750	1	80	80	100	125	750	1740	390	1576	1628	/	990	1565	1806	1550	600	1500
N65-315/900	1	80	80	100	125	750	1740	390	1576	1628	/	990	1565	1806	1550	600	1500
N80-160/110	2	100	100	125	125	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/150	2	100	100	125	125	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/185	2	100	100	125	125	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/220	2	100	100	125	125	540	1640	280	1494	1575	1436	1100	1300	1289	1250	/	/
N80-200/220	2	100	100	125	125	540	1640	280	1519	1600	1436	1100	1300	1399	1250	/	/
N80-200/300	2	100	100	125	125	610	1710	310	1549	1630	1836	1100	1450	1502	1400	/	/
N80-200/370	2	100	100	125	125	610	1710	310	1549	1630	1836	1100	1450	1502	1400	/	/
N80-200/450	2	100	100	125	125	610	1710	365	1604	1685	1836	1100	1450	1591	1400	/	/
N80-250/370	2	100	100	125	125	610	1710	310	1579	1660	1836	1100	1435	1502	1400	/	/
N80-250/450	2	100	100	125	125	610	1710	365	1634	1715	1836	1100	1435	1591	1400	/	/
N80-250/550	2	100	100	125	125	660	1760	390	1659	1740	1837	1100	1635	1700	1600	/	/
N80-250/750	1	100	100	125	125	730	1830	420	1689	1770	/	1100	1835	1806	1800	600	1500
N80-316/900	1	100	100	125	125	750	1850	440	1744	1825	/	1100	1615	1866	1600	600	1500
N80-316/1100	1	100	100	125	125	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700
N80-316/1320	1	100	100	125	125	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700
N80-316/1600	1	100	100	125	125	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700

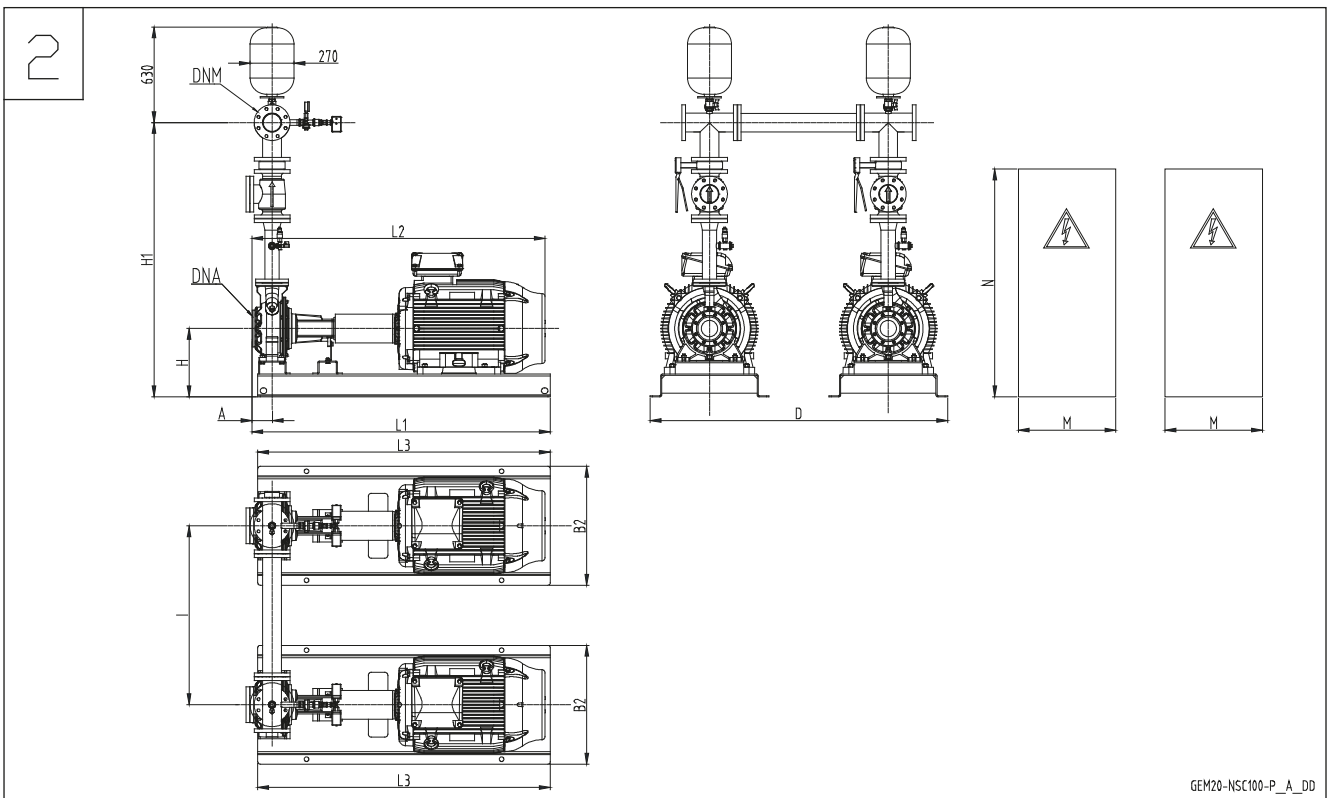
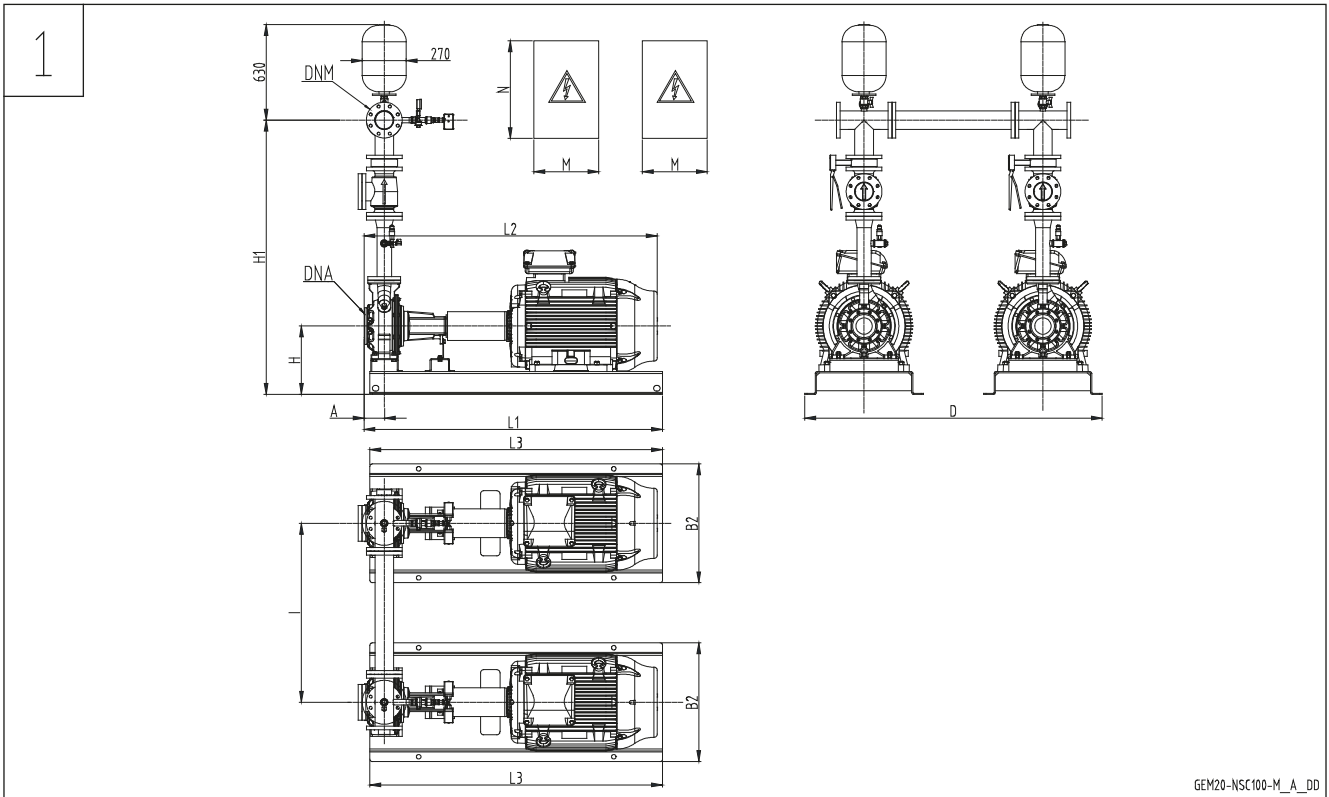
Dimensions in mm. Tolerance ± 10 mm.

gem20_nsc50-80_a_td

* Wall-mounted electric control panels for service pumps, 2 support bracket kits available on request.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC100-125 + GEM..NSCC100-125 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC100-125 + GEM..NSCC100-125 SERIES

GEM+GEM	DRW N°	DNA	DNM		A	B2	D	H	H1		I	L1	L2	L3	M	N
			GEM1	GEM2					GEM1	GEM2						
N100-160/150	1	125	125	150	125	670	1770	365	1718	1815	1100	1345	1333	1330	400	600
N100-160/185	1	125	125	150	125	670	1770	365	1718	1815	1100	1345	1377	1330	400	600
N100-160/220	1	125	125	150	125	670	1770	385	1738	1835	1100	1345	1399	1330	400	600
N100-160/300	1	125	125	150	125	560	1660	330	1683	1780	1100	1365	1502	1350	500	700
N100-200/300	1	125	125	150	125	560	1660	330	1683	1780	1100	1365	1502	1350	500	700
N100-200/370	1	125	125	150	125	560	1660	330	1683	1780	1100	1365	1502	1350	500	700
N100-200/450	1	125	125	150	125	560	1660	355	1708	1805	1100	1365	1591	1350	600	800
N100-200/550	1	125	125	150	125	750	1850	405	1758	1855	1100	1565	1700	1550	600	800
N100-250/450	1	125	125	150	140	560	1660	355	1708	1805	1100	1380	1606	1350	600	800
N100-250/550	1	125	125	150	140	750	1850	405	1758	1855	1100	1580	1715	1550	600	800
N100-250/750	2	125	125	150	140	750	1850	390	1743	1840	1100	1580	1821	1550	600	1500
N100-250/900	2	125	125	150	140	750	1850	390	1743	1840	1100	1580	1821	1550	600	1500
N125-200/450	1	150	150	200	140	560	1760	355	1850	2010	1200	1380	1606	1350	600	800
N125-200/550	1	150	150	200	140	750	1950	405	1900	2060	1200	1580	1715	1550	600	800
N125-200/750	2	150	150	200	140	750	1950	405	1900	2060	1200	1580	1821	1550	600	1500
N125-200/900	2	150	150	200	140	750	1950	405	1900	2060	1200	1580	1821	1550	600	1500
N125-315/1100	2	150	150	200	140	860	2060	505	2040	2200	1200	1880	2054	1850	800	1700
N125-315/1320	2	150	150	200	140	860	2060	505	2040	2200	1200	1880	2054	1850	800	1700
N125-315/1600	2	150	150	200	140	860	2060	505	2040	2200	1200	1880	2054	1850	800	1900
N125-315/2000	2	150	150	200	140	860	2060	505	2040	2200	1200	1880	2163	1850	800	1900

Dimensions in mm. Tolerance ± 10 mm.

gem20_nsc100_c_td

Up to 55 kW, wall-mounted electric control panels for service pumps, 2 support bracket kits available on request.

Over 55 kW, floor-mounted electric control panels for service pumps.

EN 12845 fire-fighting pressure module

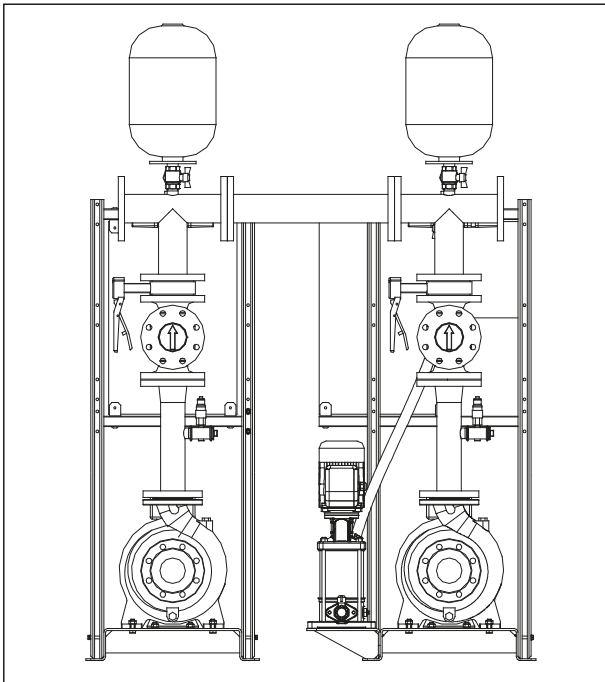
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEM..J..NSCC + GEM..NSCC Series

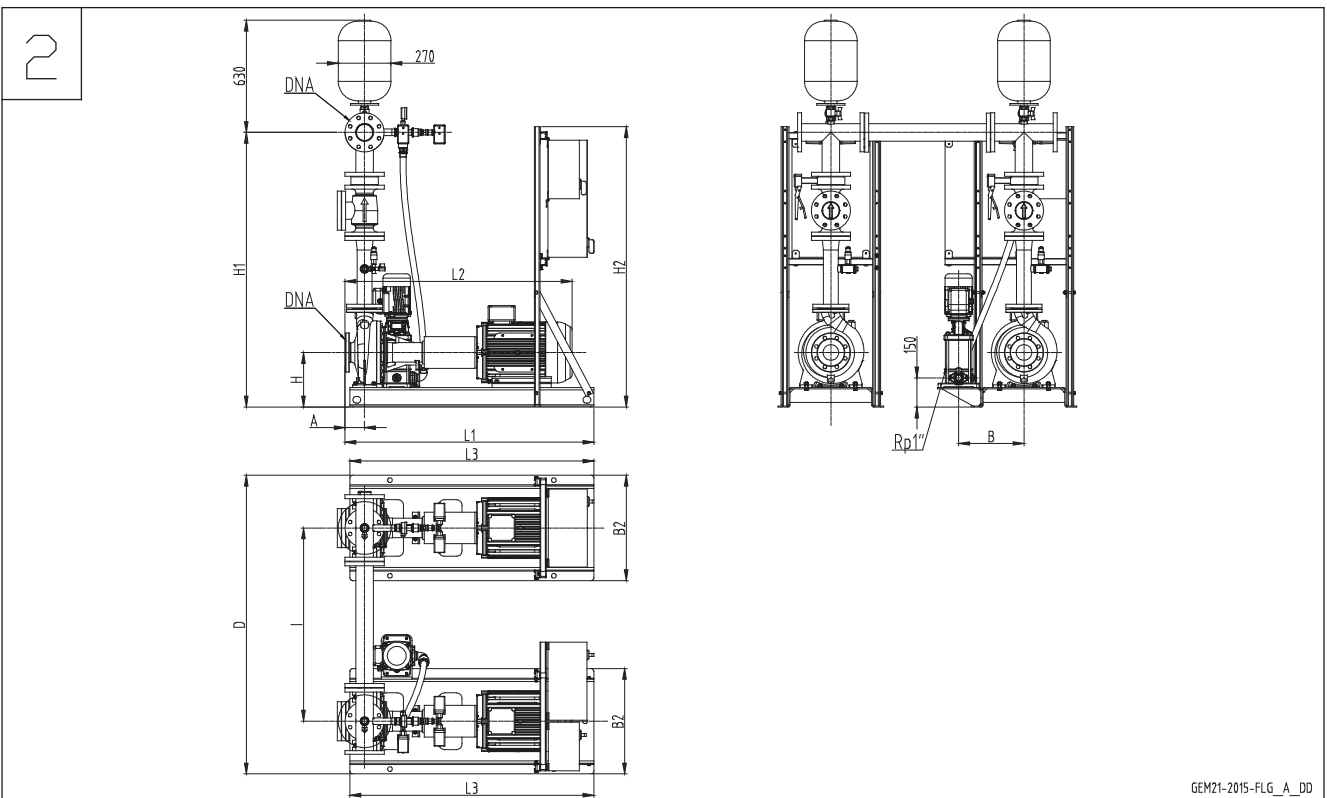
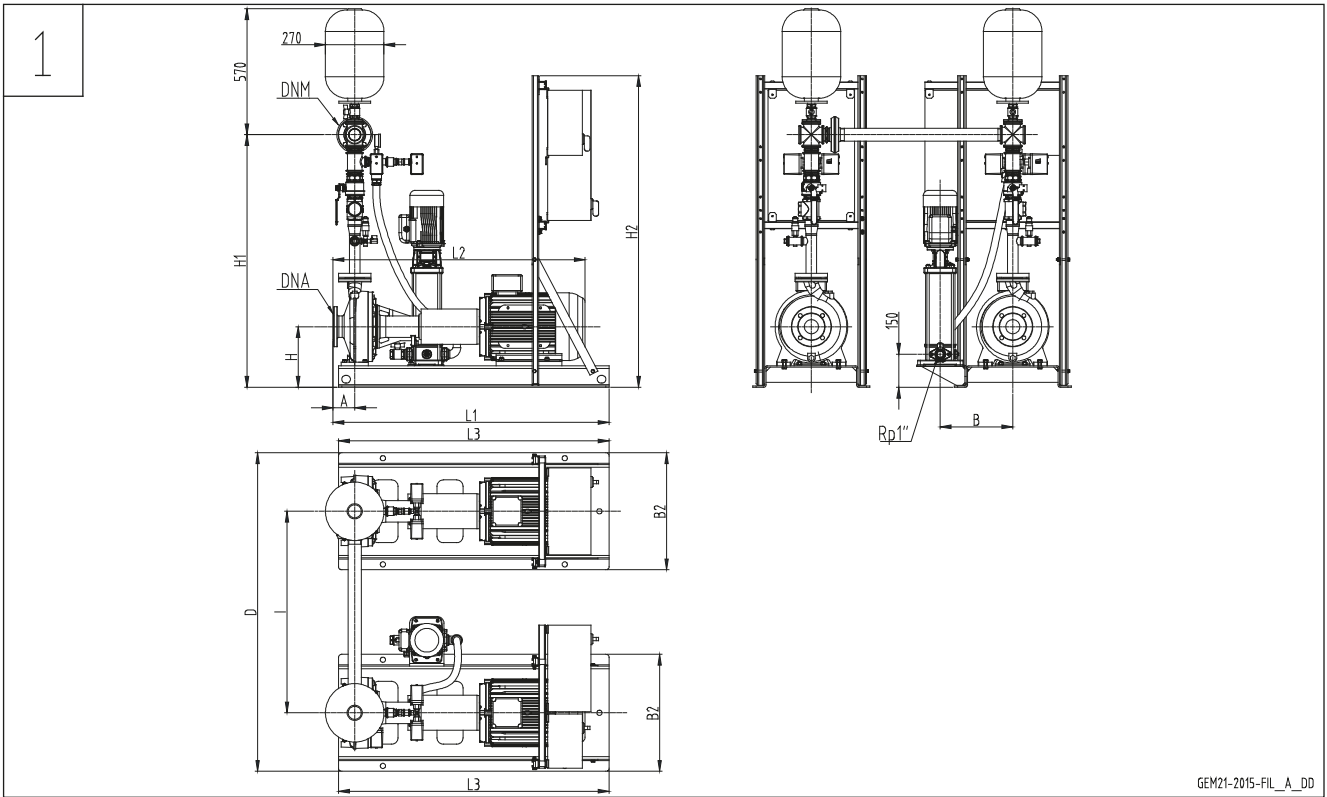


SPECIFICATIONS

- **Flow:** up to 766 m³/h for each service pump
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac ± 10%.
 - Jockey pump 3 x 400 Vac ± 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pump IP54.
 - Jockey pump IP55.
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..).
- **Maximum power output:**
 - Electric service pumps 200 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T or 1VM series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC32-40 + GEM..NSCC32-40

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES

GEM...NSCC32-40 + GEM..NSCC32-40

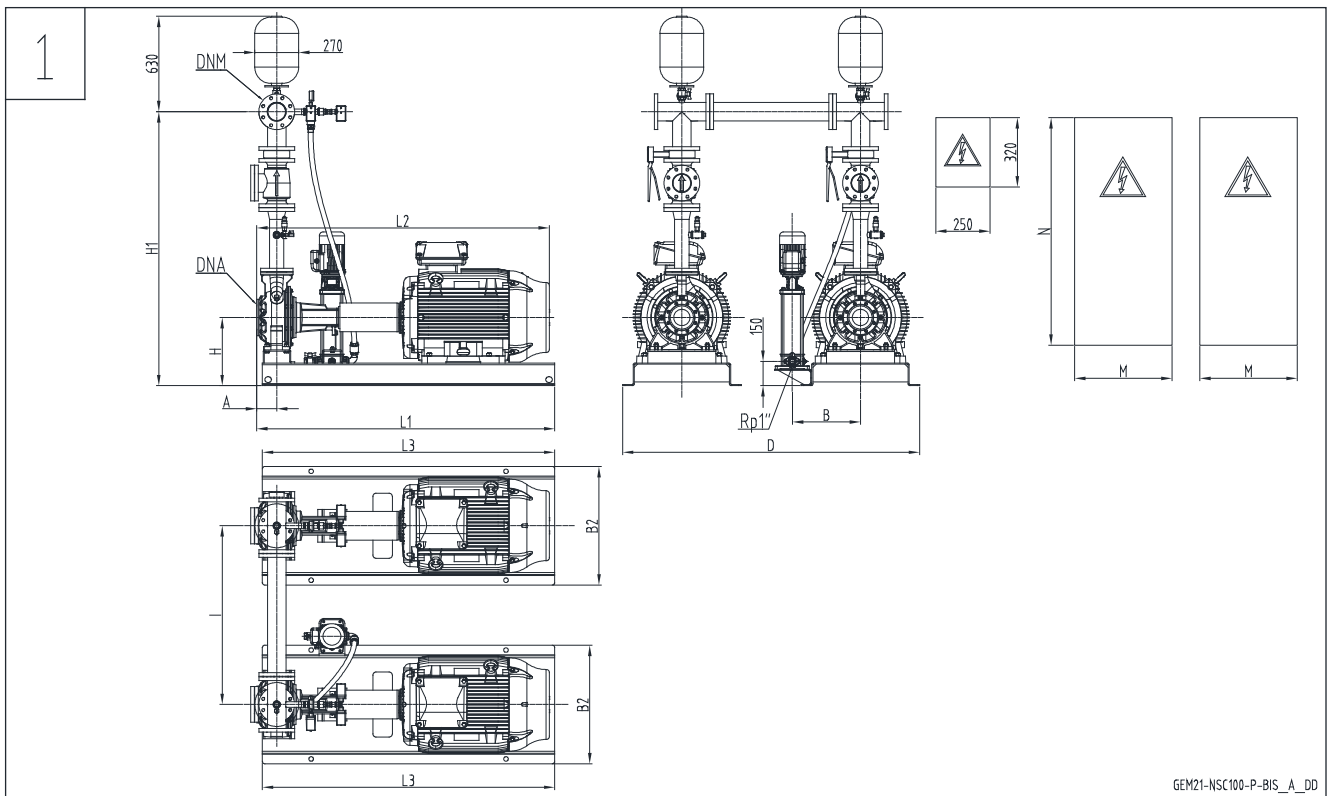
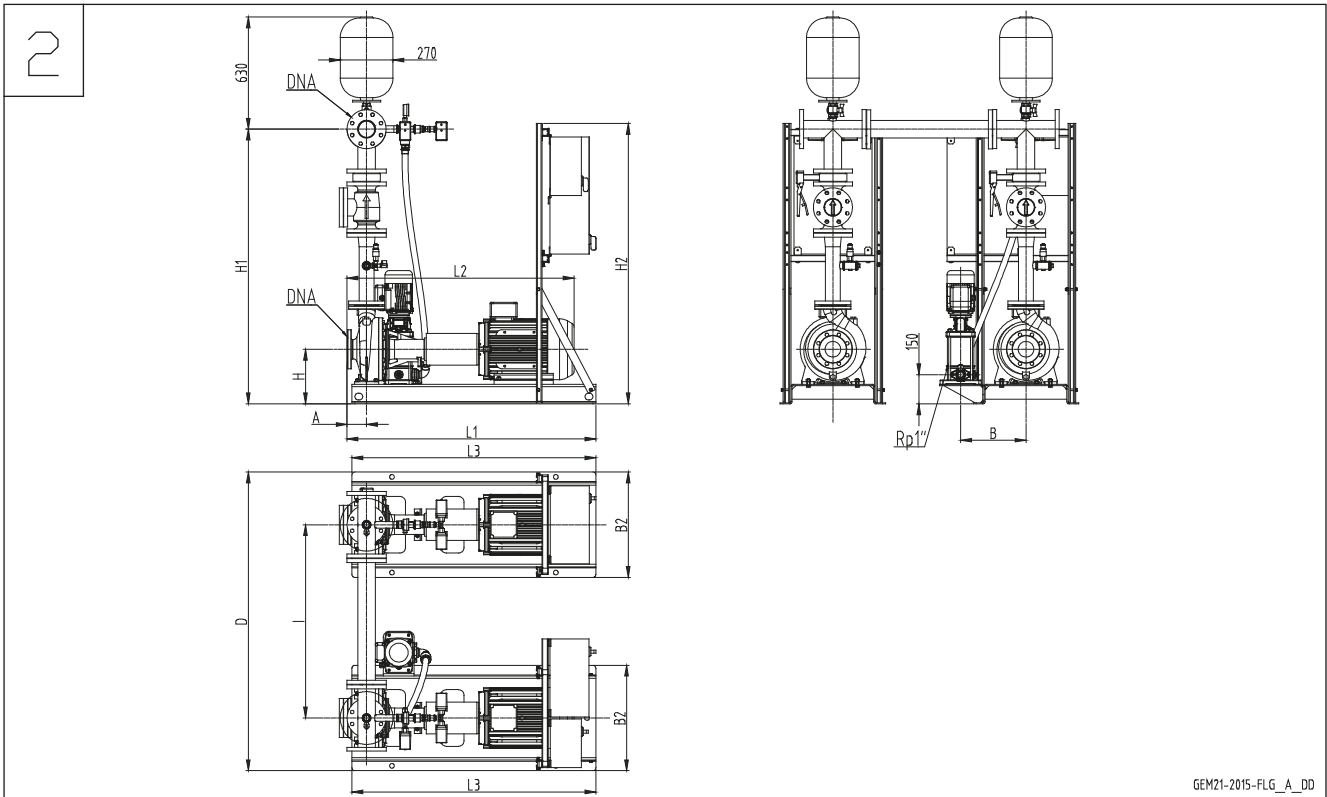
GEMJ+GEM	DRW N°		DNA	DNM		A	B	B2	D	H	H1		H2	I	L1	L2	L3
	GEM1	GEM2		GEM1	GEM2						GEM1	GEM2					
N32-125/11	/	1	50	/	Rp 2"	80	255	360	1290	212	/	1018	1236	930	820	843	800
N32-125/15	/	1	50	/	Rp 2"	80	270	390	1320	212	/	1018	1236	930	920	888	900
N32-125/22	/	1	50	/	Rp 2"	80	270	390	1320	212	/	1018	1236	930	920	888	900
N32-125/30	/	1	50	/	Rp 2"	80	270	390	1320	212	/	1018	1236	930	920	919	900
N32-160/22	/	1	50	/	Rp 2"	80	270	390	1320	232	/	1058	1236	930	920	888	900
N32-160/30	/	1	50	/	Rp 2"	80	270	390	1320	232	/	1058	1236	930	920	919	900
N32-160/40	/	1	50	/	Rp 2"	80	270	390	1320	232	/	1058	1236	930	920	922	900
N32-160/55	/	1	50	/	Rp 2"	80	290	450	1380	232	/	1058	1436	930	1020	987	1000
N32-200/30X	/	1	50	/	Rp 2"	80	270	390	1320	260	/	1106	1436	930	920	919	900
N32-200/40	/	1	50	/	Rp 2"	80	270	390	1320	260	/	1106	1436	930	920	922	900
N32-200/55	/	1	50	/	Rp 2"	80	290	450	1380	260	/	1106	1436	930	1020	987	1000
N32-200/75	/	1	50	/	Rp 2"	80	290	450	1380	260	/	1106	1436	930	1020	987	1000
N32-250/75X	/	1	50	/	Rp 2"	100	310	490	1420	280	/	1171	1436	930	1145	1007	1120
N32-250/110A	/	1	50	/	Rp 2"	100	335	540	1470	280	/	1171	1436	930	1275	1164	1250
N32-250/110	/	1	50	/	Rp 2"	100	335	540	1470	280	/	1171	1436	930	1275	1164	1250
N32-250/150	/	1	50	/	Rp 2"	100	335	540	1470	280	/	1171	1436	930	1275	1164	1250
N40-125/15	1	2	65	Rp 2"	65	80	270	390	1320	212	1011	1196	1236	930	920	888	900
N40-125/22	1	2	65	Rp 2"	65	80	270	390	1320	212	1011	1196	1236	930	920	888	900
N40-125/30	1	2	65	Rp 2"	65	80	270	390	1320	212	1011	1196	1236	930	920	919	900
N40-160/30	1	2	65	Rp 2"	65	80	270	390	1320	232	1051	1236	1236	930	920	919	900
N40-160/40	1	2	65	Rp 2"	65	80	270	390	1320	232	1051	1236	1236	930	920	922	900
N40-160/55	1	2	65	Rp 2"	65	80	290	450	1380	232	1051	1236	1436	930	1020	987	1000
N40-160/75	1	2	65	Rp 2"	65	80	290	450	1380	232	1051	1236	1436	930	1020	987	1000
N40-200/55	1	2	65	Rp 2"	65	100	290	450	1380	260	1099	1284	1436	930	1040	1007	1000
N40-200/75	1	2	65	Rp 2"	65	100	290	450	1380	260	1099	1284	1436	930	1040	1007	1000
N40-200/110A	1	2	65	Rp 2"	65	100	310	490	1420	260	1099	1284	1436	930	1160	1164	1120
N40-200/110	1	2	65	Rp 2"	65	100	310	490	1420	260	1099	1284	1436	930	1160	1164	1120
N40-250/110X	1	2	65	Rp 2"	65	100	335	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/110X1	1	2	65	Rp 2"	65	100	335	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/150	1	2	65	Rp 2"	65	100	335	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/185	1	2	65	Rp 2"	65	100	335	540	1470	280	1164	1349	1436	930	1275	1164	1250
N40-250/220	1	2	65	Rp 2"	65	100	335	540	1470	280	1164	1349	1436	930	1275	1224	1250

Dimensions in mm. Tolerance ± 10 mm.

gem21_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC50-80 + GEM..NSCC50-80**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC50-80 + GEM..NSCC50-80

GEMJ+GEM	DRW N°	DNA	DNM		A	B	B2	D	H	H1		H2	I	L1	L2	L3	M	N
			GEM1	GEM2						GEM1	GEM2							
N50-125/30	2	65	65	80	100	270	390	1380	232	1230	1249	1236	990	940	939	900	/	/
N50-125/40	2	65	65	80	100	270	390	1380	232	1230	1249	1236	990	940	942	900	/	/
N50-125/55	2	65	65	80	100	290	450	1440	232	1230	1249	1436	990	1040	1007	1000	/	/
N50-125/75	2	65	65	80	100	290	450	1440	232	1230	1249	1436	990	1040	1007	1000	/	/
N50-160/55	2	65	65	80	100	290	450	1440	260	1278	1297	1436	990	1040	1007	1000	/	/
N50-160/75	2	65	65	80	100	290	450	1440	260	1278	1297	1436	990	1040	1007	1000	/	/
N50-160/110A	2	65	65	80	100	310	490	1480	260	1278	1297	1436	990	1160	1164	1120	/	/
N50-160/110	2	65	65	80	100	310	490	1480	260	1278	1297	1436	990	1160	1164	1120	/	/
N50-200/110A	2	65	65	80	100	310	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/110	2	65	65	80	100	310	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/150X	2	65	65	80	100	310	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-200/185	2	65	65	80	100	310	490	1480	260	1298	1317	1436	990	1160	1164	1120	/	/
N50-250/150	2	65	65	80	100	335	540	1530	280	1343	1362	1436	990	1275	1164	1250	/	/
N50-250/185	2	65	65	80	100	335	540	1530	280	1343	1362	1436	990	1275	1164	1250	/	/
N50-250/220	2	65	65	80	100	335	540	1530	280	1343	1362	1436	990	1275	1124	1250	/	/
N50-250/300	2	65	65	80	100	360	610	1600	310	1373	1392	1836	990	1425	1327	1400	/	/
N65-125/40	2	80	80	100	100	270	390	1380	260	1346	1398	1236	990	925	942	900	/	/
N65-125/55	2	80	80	100	100	290	450	1440	260	1346	1398	1436	990	1025	1007	1000	/	/
N65-125/75	2	80	80	100	100	290	450	1440	260	1346	1398	1436	990	1025	1007	1000	/	/
N65-125/110A	2	80	80	100	100	310	490	1480	260	1346	1398	1436	990	1145	1164	1120	/	/
N65-125/110	2	80	80	100	100	310	490	1480	260	1346	1398	1436	990	1145	1164	1120	/	/
N65-160/75	2	80	80	100	100	310	490	1480	260	1366	1418	1436	990	1145	1007	1120	/	/
N65-160/110A	2	80	80	100	100	335	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/110	2	80	80	100	100	335	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/150	2	80	80	100	100	335	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-160/185	2	80	80	100	100	335	540	1530	260	1366	1418	1436	990	1275	1164	1250	/	/
N65-200/110	2	80	80	100	100	335	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/150	2	80	80	100	100	335	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/185	2	80	80	100	100	335	540	1530	280	1411	1463	1436	990	1275	1204	1250	/	/
N65-200/220	2	80	80	100	100	335	540	1530	280	1411	1463	1436	990	1275	1264	1250	/	/
N65-200/300	2	80	80	100	100	360	610	1600	310	1441	1493	1836	990	1425	1367	1400	/	/
N65-250/220	2	80	80	100	100	335	540	1530	310	1466	1518	1836	990	1260	1374	1250	/	/
N65-250/300	2	80	80	100	100	360	610	1600	310	1466	1518	1836	990	1410	1477	1400	/	/
N65-250/370	2	80	80	100	100	360	610	1600	310	1466	1518	1836	990	1410	1477	1400	/	/
N65-250/450	2	80	80	100	100	360	610	1600	365	1521	1573	1836	990	1410	1566	1400	/	/
N65-250/550	2	80	80	100	100	385	660	1650	390	1546	1598	1837	990	1610	1675	1600	/	/
N65-315/550	1 *	80	80	100	125	355	750	1740	405	1591	1643	/	990	1565	1700	1550	600	800
N65-315/750	1	80	80	100	125	355	750	1740	390	1576	1628	/	990	1565	1806	1550	600	1500
N65-315/900	1	80	80	100	125	355	750	1740	390	1576	1628	/	990	1565	1806	1550	600	1500
N80-160/110	2	100	100	125	125	335	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/150	2	100	100	125	125	335	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/185	2	100	100	125	125	335	540	1640	280	1494	1575	1436	1100	1300	1229	1250	/	/
N80-160/220	2	100	100	125	125	335	540	1640	280	1494	1575	1436	1100	1300	1289	1250	/	/
N80-200/220	2	100	100	125	125	335	540	1640	280	1519	1600	1436	1100	1300	1399	1250	/	/
N80-200/300	2	100	100	125	125	360	610	1710	310	1549	1630	1836	1100	1450	1502	1400	/	/
N80-200/370	2	100	100	125	125	360	610	1710	310	1549	1630	1836	1100	1450	1502	1400	/	/
N80-200/450	2	100	100	125	125	360	610	1710	365	1604	1685	1836	1100	1450	1591	1400	/	/
N80-250/370	2	100	100	125	125	360	610	1710	310	1579	1660	1836	1100	1435	1502	1400	/	/
N80-250/450	2	100	100	125	125	360	610	1710	365	1634	1715	1836	1100	1435	1591	1400	/	/
N80-250/550	2	100	100	125	125	385	660	1760	390	1659	1740	1837	1100	1635	1700	1600	/	/
N80-250/750	1	100	100	125	125	420	730	1830	420	1689	1770	/	1100	1835	1806	1800	600	1500
N80-316/900	1	100	100	125	125	355	750	1850	440	1744	1825	/	1100	1615	1866	1600	600	1500
N80-316/1100	1	100	100	125	125	405	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700
N80-316/1320	1	100	100	125	125	405	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700
N80-316/1600	1	100	100	125	125	405	860	1960	505	1809	1890	/	1100	1865	2039	1850	800	1700

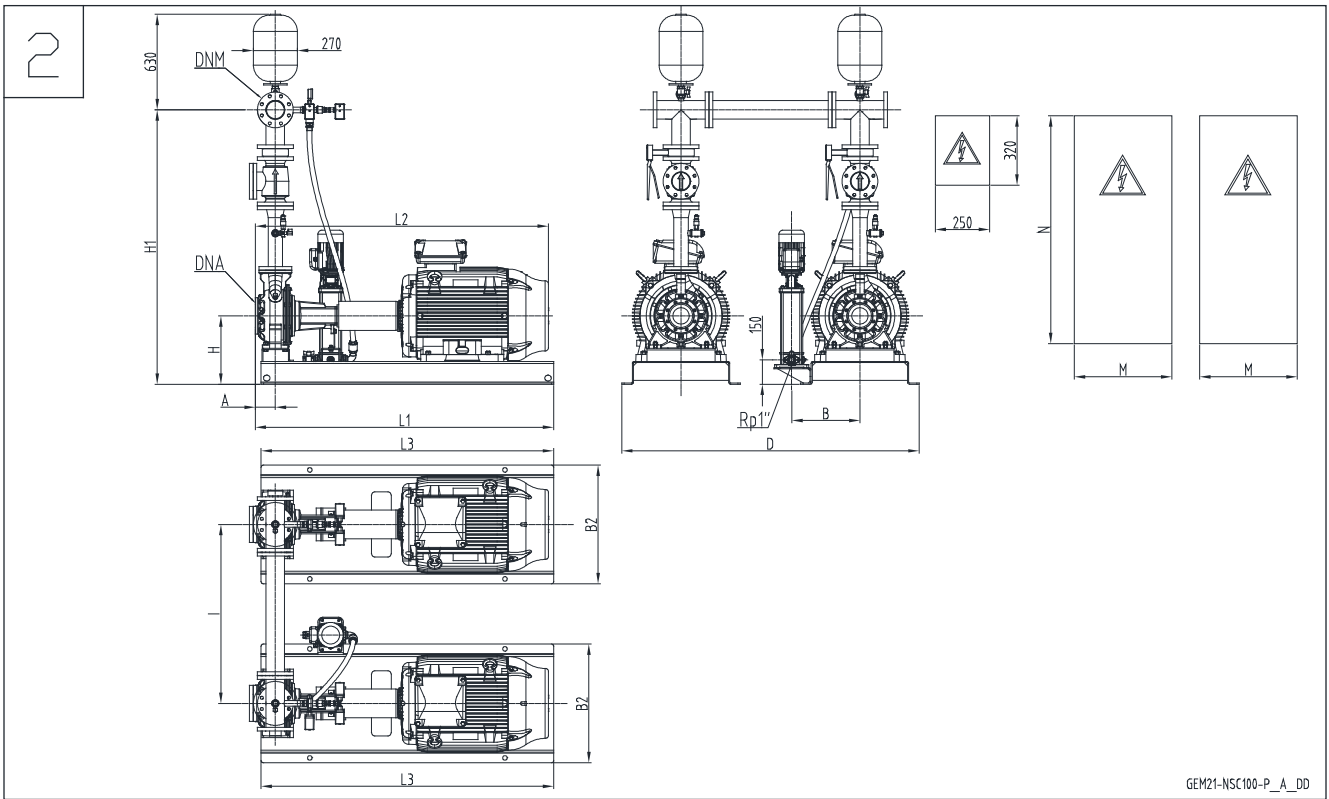
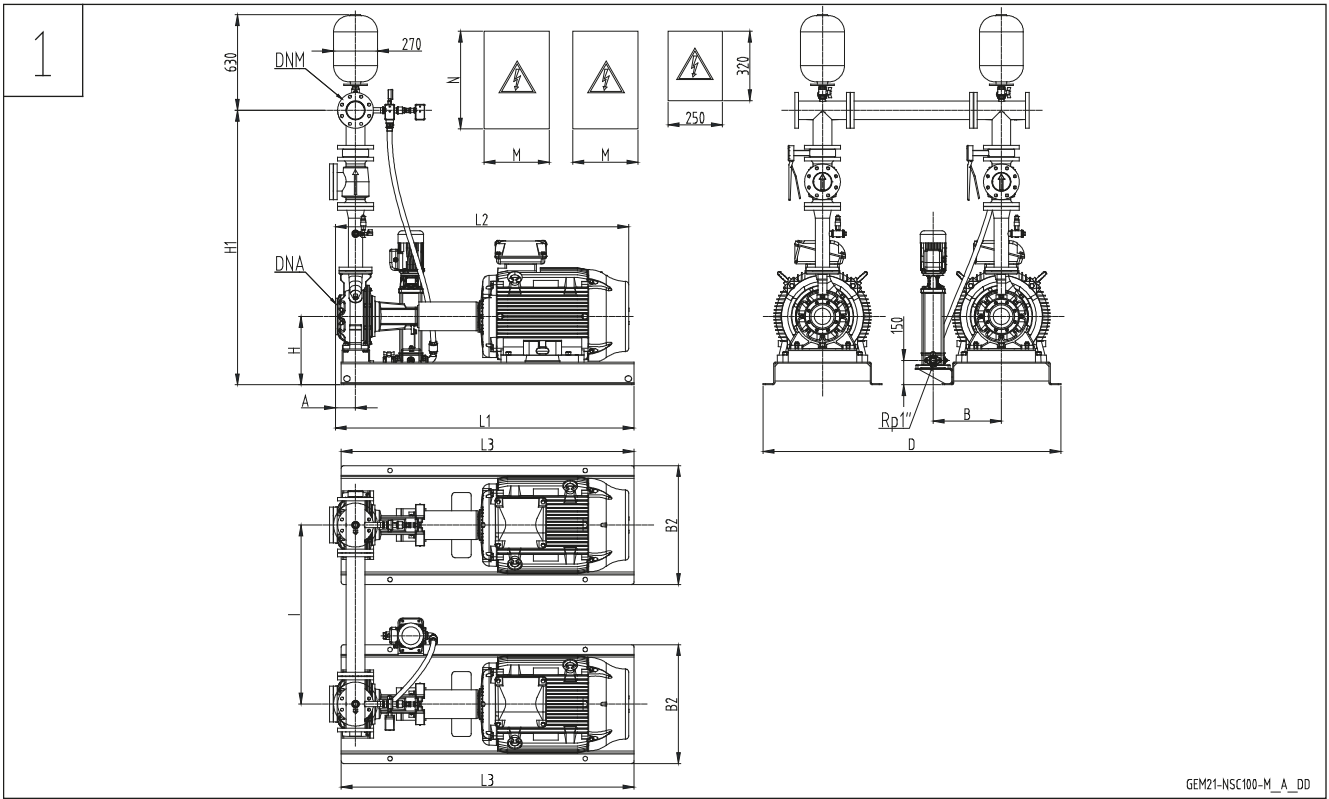
Dimensions in mm. Tolerance ± 10 mm.

gem21_nsc50-80_a_td

* Wall-mounted electric control panels for service pumps, 2 support bracket kits available on request.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC100-125 + GEM..NSCC100-125**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC100-125 + GEM..NSCC100-125

GEMJ+GEM	DRW N°	DNA	DNM		A	B	B2	D	H	H1		I	L1	L2	L3	M	N	P
			GEM1	GEM2						GEM1	GEM2							
N100-160/150	1	125	125	150	125	315	670	1770	365	1718	1815	1100	1345	1333	1330	400	600	135
N100-160/185	1	125	125	150	125	315	670	1770	365	1718	1815	1100	1345	1377	1330	400	600	135
N100-160/220	1	125	125	150	125	315	670	1770	385	1738	1835	1100	1345	1399	1330	400	600	135
N100-160/300	1	125	125	150	125	260	560	1660	330	1683	1780	1100	1365	1502	1350	500	700	135
N100-200/300	1	125	125	150	125	260	560	1660	330	1683	1780	1100	1365	1502	1350	500	700	135
N100-200/370	1	125	125	150	125	260	560	1660	330	1683	1780	1100	1365	1502	1350	500	700	135
N100-200/450	1	125	125	150	125	260	560	1660	355	1708	1805	1100	1365	1591	1350	600	800	135
N100-200/550	1	125	125	150	125	355	750	1850	405	1758	1855	1100	1565	1700	1550	600	800	155
N100-250/450	1	125	125	150	140	260	560	1660	355	1708	1805	1100	1380	1606	1350	600	800	135
N100-250/550	1	125	125	150	140	355	750	1850	405	1758	1855	1100	1580	1715	1550	600	800	155
N100-250/750	2	125	125	150	140	355	750	1850	390	1743	1840	1100	1580	1821	1550	600	1500	155
N100-250/900	2	125	125	150	140	355	750	1850	390	1743	1840	1100	1580	1821	1550	600	1500	155
N125-200/450	1	150	150	200	140	260	560	1760	355	1850	2010	1200	1380	1606	1350	600	800	135
N125-200/550	1	150	150	200	140	355	750	1950	405	1900	2060	1200	1580	1715	1550	600	800	155
N125-200/750	2	150	150	200	140	355	750	1950	405	1900	2060	1200	1580	1821	1550	600	1500	155
N125-200/900	2	150	150	200	140	355	750	1950	405	1900	2060	1200	1580	1821	1550	600	1500	155
N125-315/1100	2	150	150	200	140	405	860	2060	505	2040	2200	1200	1880	2054	1850	800	1700	215
N125-315/1320	2	150	150	200	140	405	860	2060	505	2040	2200	1200	1880	2054	1850	800	1700	215
N125-315/1600	2	150	150	200	140	405	860	2060	505	2040	2200	1200	1880	2054	1850	800	1900	215
N125-315/2000	2	150	150	200	140	405	860	2060	505	2040	2200	1200	1880	2163	1850	800	1900	215

Dimensions in mm. Tolerance ± 10 mm.

gem21_nsc100_b_td

Up to 55 kW, wall-mounted electric control panels for service pumps, 2 support bracket kits available on request.

Over 55 kW, floor-mounted electric control panels for service pumps.

Wall-mounted electric control panel for jockey pump, 1 support bracket kit available on request.

EN 12845 fire-fighting pressure module

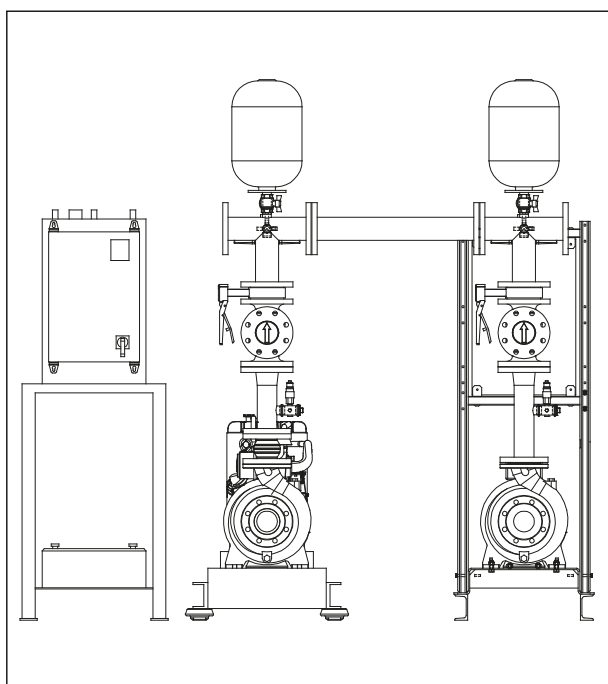
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEM..NSCC + GEMK..NSC Series

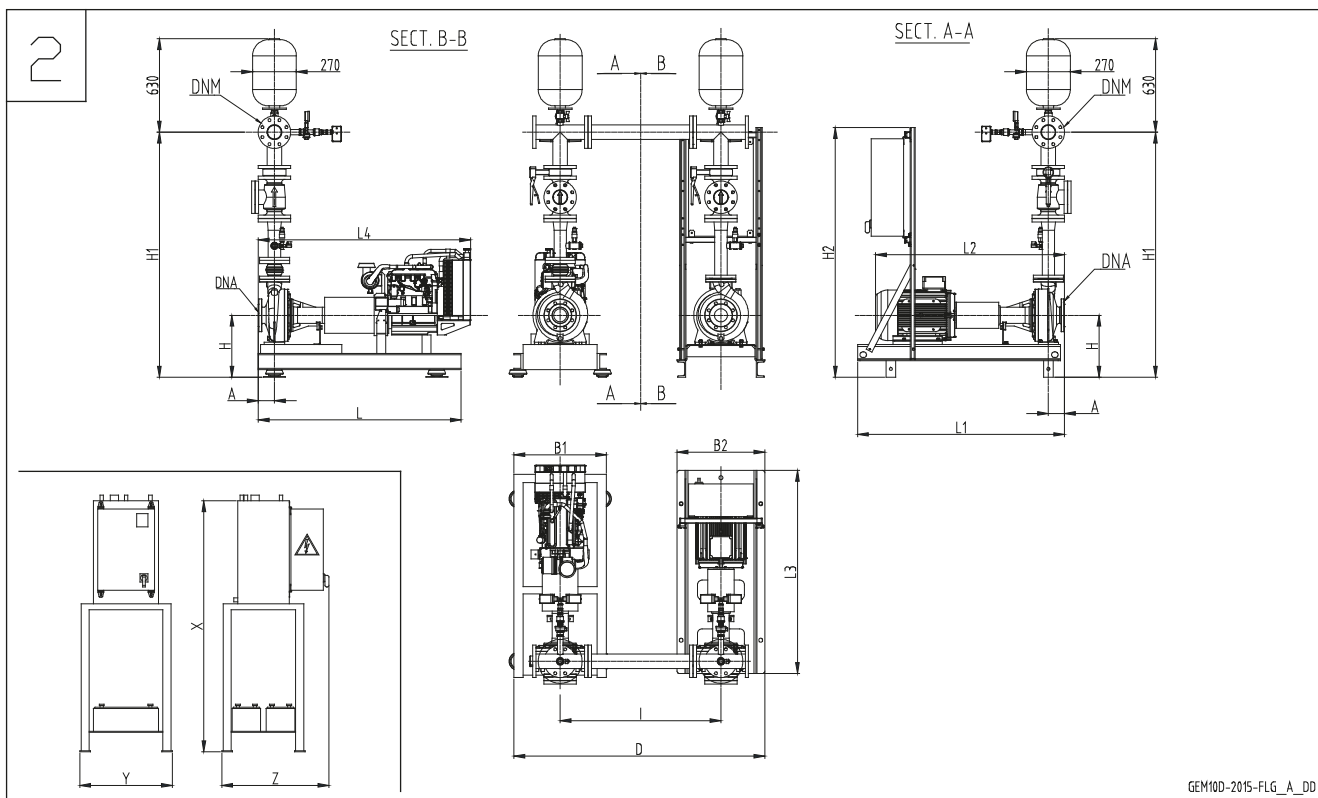
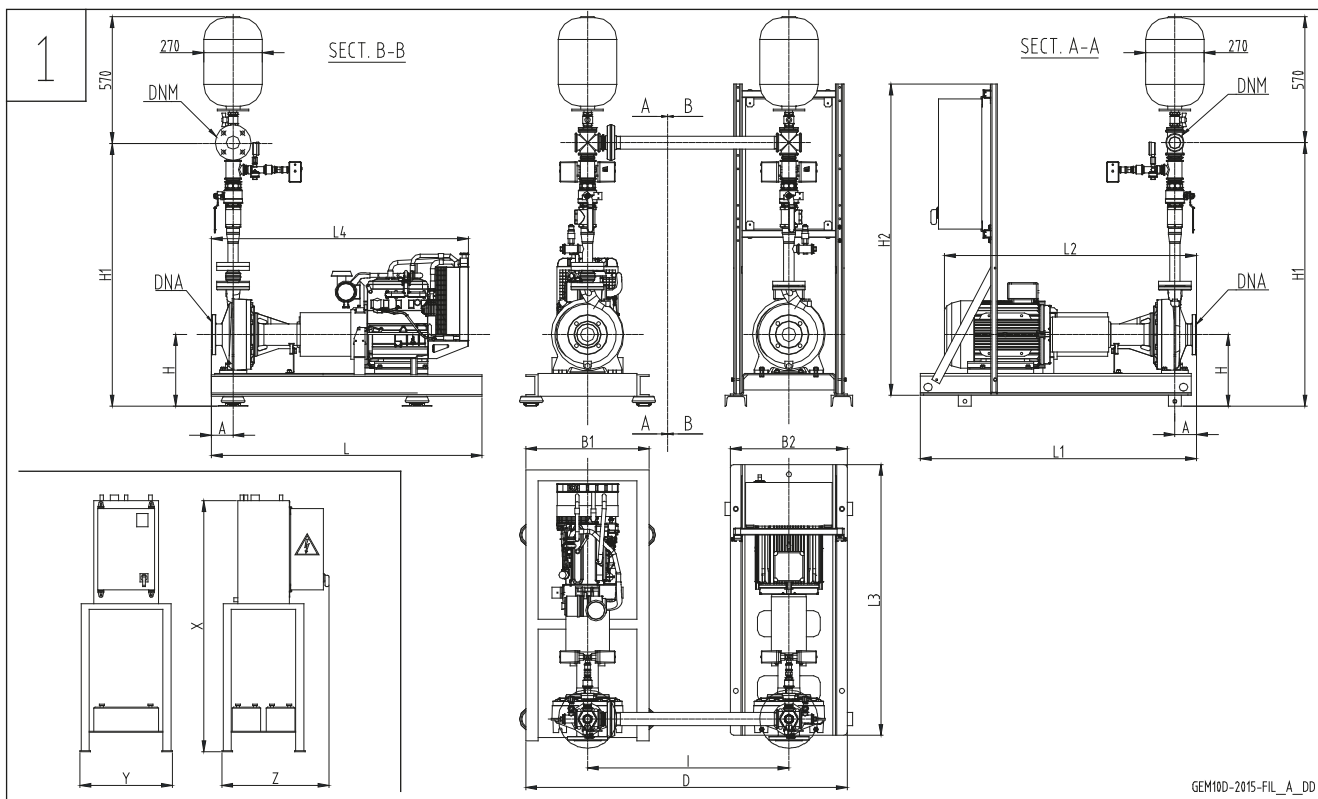


SPECIFICATIONS

- **Flow:** up to 766 m³/h for each service pump
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac \pm 10%.
 - Diesel engine service pump 1 x 230 Vac \pm 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pumps IP54.
 - Diesel engine service pump IP54
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..).
- **Maximum power output:**
 - Electric service pumps 200 kW.
 - Diesel engine service pump 200 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - NSC series.
- **Maximum operating pressure:** 16 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC32-40 + GEMK..NSC32-40 SERIES

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC32-40 + GEMK..NSC32-40 SERIES

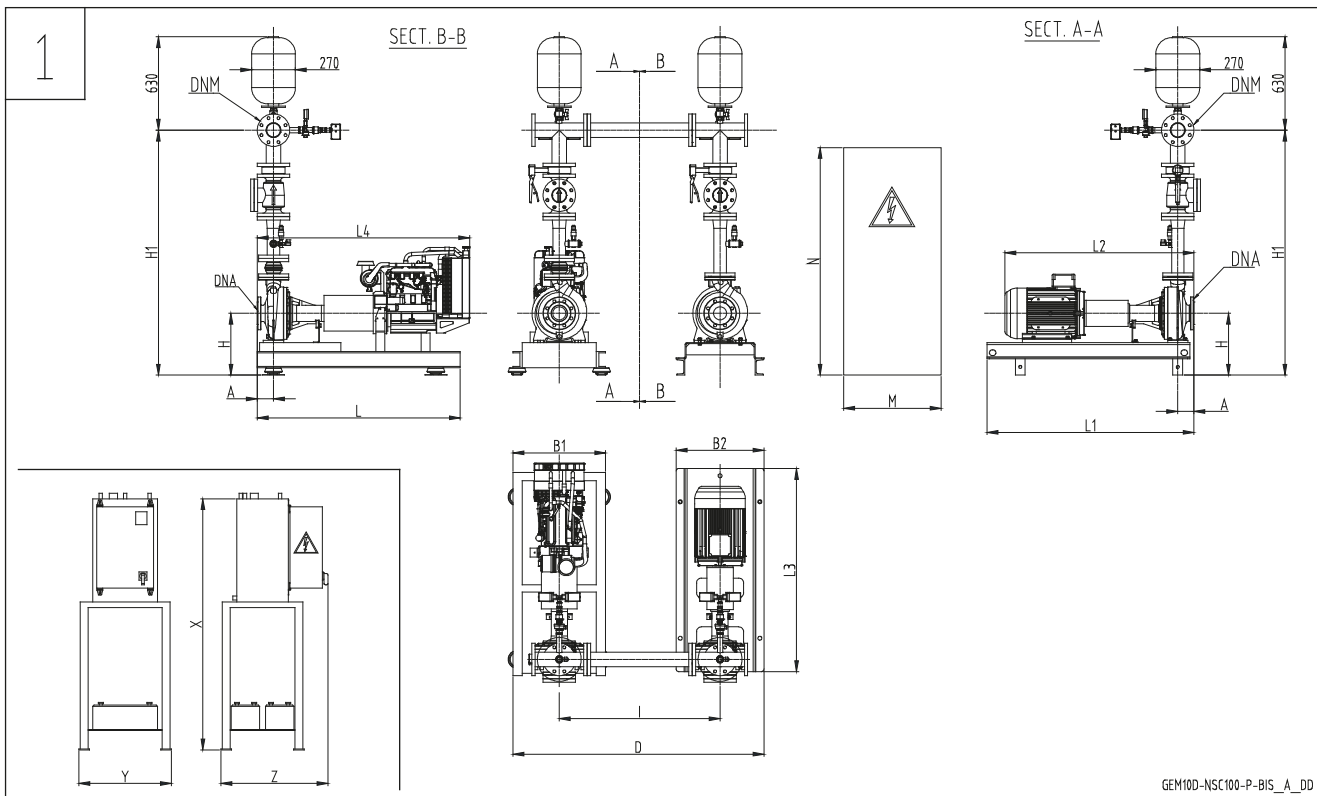
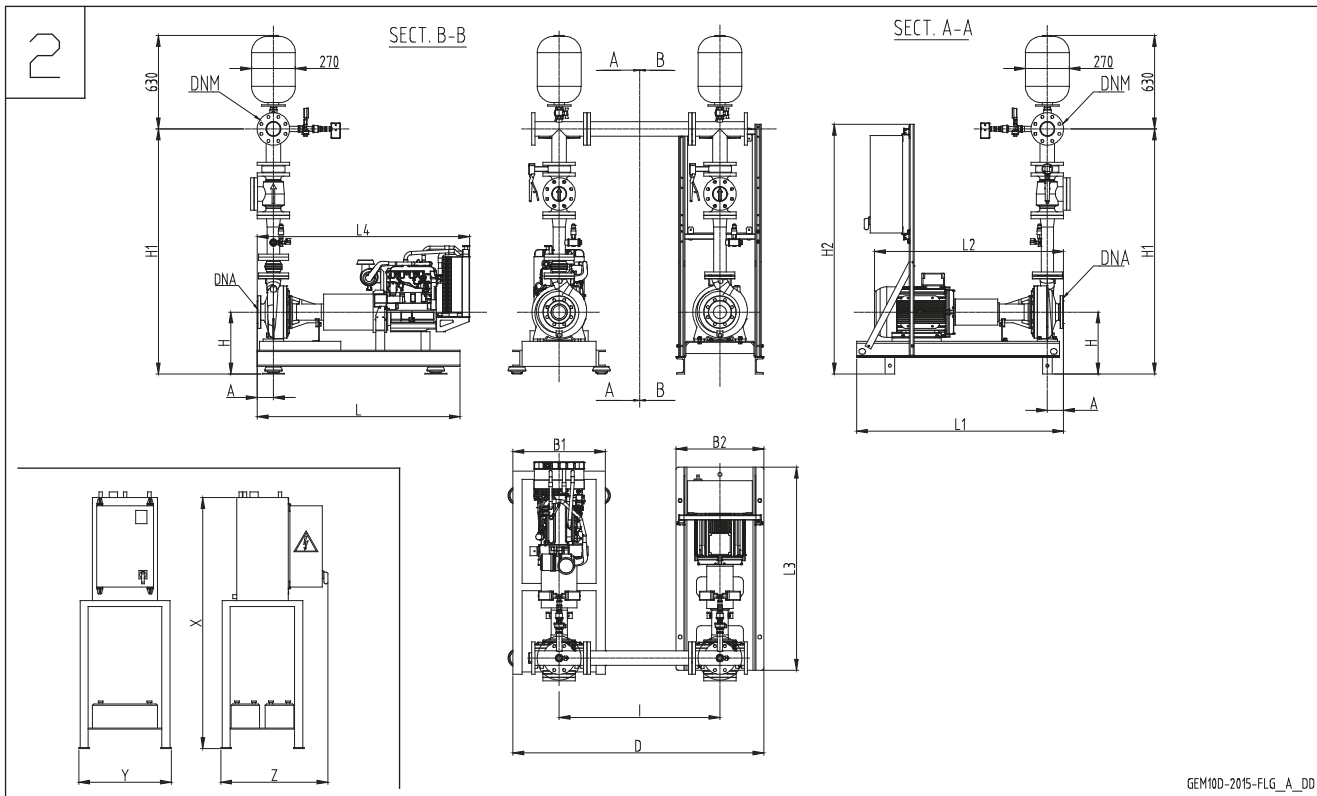
GEM+GEMK	DRW N°		DNA	DNM		A	B1	B2	D	H	H1		H2	I	L	L1	L2	L3	L4	X	Y	Z
	GEM1	GEM2		GEM1	GEM2						GEM1	GEM2										
N32-125/11/D113	/	1	50	/	Rp 2"	80	500	360	1360	262	/	1068	1286	930	950	820	843	800	885	1220	400	500
N32-125/15/D123	/	1	50	/	Rp 2"	80	500	390	1375	262	/	1068	1286	930	950	920	888	900	885	1220	400	500
N32-125/22/D133	/	1	50	/	Rp 2"	80	500	390	1375	262	/	1068	1286	930	950	920	888	900	885	1220	400	500
N32-125/30/D145	/	1	50	/	Rp 2"	80	500	390	1375	262	/	1068	1286	930	950	920	919	900	885	1220	400	500
N32-160/22/D137	/	1	50	/	Rp 2"	80	500	390	1375	282	/	1108	1286	930	950	920	888	900	885	1220	400	500
N32-160/30/D150	/	1	50	/	Rp 2"	80	500	390	1375	282	/	1108	1286	930	950	920	919	900	885	1220	400	500
N32-160/40/D160,5	/	1	50	/	Rp 2"	80	500	390	1375	282	/	1108	1286	930	950	920	922	900	885	1220	400	500
N32-160/55/D171	/	1	50	/	Rp 2"	80	500	450	1405	282	/	1108	1486	930	950	1020	987	1000	901	1220	400	500
N32-200/30X/D154	/	1	50	/	Rp 2"	80	500	390	1375	310	/	1156	1486	930	950	920	919	900	885	1220	400	500
N32-200/40/D171	/	1	50	/	Rp 2"	80	500	390	1375	310	/	1156	1486	930	950	920	922	900	885	1220	400	500
N32-200/55/D186	/	1	50	/	Rp 2"	80	500	450	1405	310	/	1156	1486	930	950	1020	987	1000	901	1220	400	500
N32-200/75/D205	/	1	50	/	Rp 2"	80	500	450	1405	310	/	1156	1486	930	950	1020	987	1000	977	1220	400	500
N32-250/75X/D208	/	1	50	/	Rp 2"	100	500	490	1425	280	/	1171	1436	930	950	1145	1007	1120	923	1220	400	500
N32-250/110A/D226	/	1	50	/	Rp 2"	100	500	540	1450	280	/	1171	1436	930	950	1275	1164	1250	997	1220	400	500
N32-250/110/D239	/	1	50	/	Rp 2"	100	570	540	1485	330	/	1221	1486	930	1250	1275	1164	1250	1169	1220	400	500
N32-250/150/D259	/	1	50	/	Rp 2"	100	570	540	1485	330	/	1221	1486	930	1250	1275	1164	1250	1169	1220	400	500
N40-125/15/D105	1	2	65	Rp 2"	65	80	500	390	1375	262	1061	1246	1286	930	950	920	888	900	885	1220	400	500
N40-125/22/D118	1	2	65	Rp 2"	65	80	500	390	1375	262	1061	1246	1286	930	950	920	888	900	885	1220	400	500
N40-125/30/D130	1	2	65	Rp 2"	65	80	500	390	1375	262	1061	1246	1286	930	950	920	919	900	885	1220	400	500
N40-160/30/D127	1	2	65	Rp 2"	65	80	500	390	1375	282	1101	1286	1286	930	950	920	919	900	885	1220	400	500
N40-160/40/D139	1	2	65	Rp 2"	65	80	500	390	1375	282	1101	1286	1286	930	950	920	922	900	885	1220	400	500
N40-160/55/D154	1	2	65	Rp 2"	65	80	500	450	1405	282	1101	1286	1486	930	950	1020	987	1000	901	1220	400	500
N40-160/75/D165	1	2	65	Rp 2"	65	80	500	450	1405	282	1101	1286	1486	930	950	1020	987	1000	977	1220	400	500
N40-200/55/D165	1	2	65	Rp 2"	65	100	500	450	1405	310	1149	1334	1486	930	950	1040	1007	1000	921	1220	400	500
N40-200/75/D179	1	2	65	Rp 2"	65	100	500	450	1405	310	1149	1334	1486	930	950	1040	1007	1000	997	1220	400	500
N40-200/110A/D189	1	2	65	Rp 2"	65	100	500	490	1425	310	1149	1334	1486	930	950	1160	1164	1120	997	1220	400	500
N40-200/110/D199	1	2	65	Rp 2"	65	100	570	490	1460	360	1199	1384	1536	930	1250	1160	1164	1120	1009	1220	400	500
N40-250/110X/D195	1	2	65	Rp 2"	65	100	500	540	1450	310	1194	1379	1466	930	950	1275	1164	1250	997	1220	400	500
N40-250/110X1/D206	1	2	65	Rp 2"	65	100	570	540	1485	330	1214	1399	1486	930	1250	1275	1164	1250	1009	1220	400	500
N40-250/150/D228	1	2	65	Rp 2"	65	100	570	540	1485	330	1214	1399	1486	930	1250	1275	1164	1250	1169	1220	400	500
N40-250/185/D243	1	2	65	Rp 2"	65	100	570	540	1485	380	1264	1449	1536	930	1250	1275	1164	1250	1289	1220	400	500
N40-250/220/D257,5	1	2	65	Rp 2"	65	100	570	540	1485	380	1264	1449	1536	930	1250	1275	1224	1250	1289	1220	400	500

Dimensions in mm. Tolerance ± 10 mm.

gem10d_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC50-80 + GEMK..NSC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC50-80 + GEMK..NSC50-80 SERIES

GEM+GEMK	DRW N°	DNA	DNM		A	B1	B2	D	H	H1		H2	I	L	L1	L2	L3	L4	M	N	X	Y	Z
			GEM1	GEM2						GEM1	GEM2												
N50-125/30/D118	2	65	65	80	100	500	390	1435	282	1280	1299	1286	990	950	940	939	900	905	/	/	1220	400	500
N50-125/40/D130	2	65	65	80	100	500	390	1435	282	1280	1299	1286	990	950	940	942	900	905	/	/	1220	400	500
N50-125/55/D144	2	65	65	80	100	500	450	1465	282	1280	1299	1486	990	950	1040	1007	1000	921	/	/	1220	400	500
N50-125/75/D148	2	65	65	80	100	500	450	1465	282	1280	1299	1486	990	950	1040	1007	1000	921	/	/	1220	400	500
N50-160/55/D144	2	65	65	80	100	500	450	1465	310	1328	1347	1486	990	950	1040	1007	1000	923	/	/	1220	400	500
N50-160/75/D159	2	65	65	80	100	500	450	1465	310	1328	1347	1486	990	950	1040	1007	1000	923	/	/	1220	400	500
N50-160/110A/D170	2	65	65	80	100	500	490	1485	310	1328	1347	1486	990	950	1160	1164	1120	997	/	/	1220	400	500
N50-160/110/D176	2	65	65	80	100	570	490	1520	360	1378	1397	1536	990	1250	1160	1164	1120	1169	/	/	1220	400	500
N50-200/110A/D168	2	65	65	80	100	500	490	1485	310	1348	1367	1486	990	950	1160	1164	1120	997	/	/	1220	400	500
N50-200/110/D179	2	65	65	80	100	570	490	1520	360	1398	1417	1536	990	1250	1160	1164	1120	1169	/	/	1220	400	500
N50-200/150X/D192	2	65	65	80	100	570	490	1520	360	1398	1417	1536	990	1250	1160	1164	1120	1169	/	/	1220	400	500
N50-200/185/D209	2	65	65	80	100	570	490	1520	360	1398	1417	1536	990	1250	1160	1164	1120	1289	/	/	1220	400	500
N50-250/150/D208	2	65	65	80	100	570	540	1545	330	1393	1412	1486	990	1250	1275	1164	1250	1169	/	/	1220	400	500
N50-250/185/D220	2	65	65	80	100	570	540	1545	380	1443	1462	1536	990	1250	1275	1164	1250	1289	/	/	1220	400	500
N50-250/220/D232	2	65	65	80	100	570	540	1545	380	1443	1462	1536	990	1250	1275	1124	1250	1289	/	/	1220	400	500
N50-250/300/D256	2	65	65	80	100	640	610	1615	360	1423	1442	1886	990	1550	1425	1327	1400	1400	/	/	1220	400	500
N65-125/40/D113	2	80	80	100	100	500	390	1435	310	1396	1448	1286	990	950	925	942	900	905	/	/	1220	400	500
N65-125/55/D127	2	80	80	100	100	500	450	1465	310	1396	1448	1486	990	950	1025	1007	1000	921	/	/	1220	400	500
N65-125/75/D137	2	80	80	100	100	500	450	1465	310	1396	1448	1486	990	950	1025	1007	1000	923	/	/	1220	400	500
N65-125/110A/D146	2	80	80	100	100	500	490	1485	310	1396	1448	1486	990	950	1145	1164	1120	997	/	/	1220	400	500
N65-125/110/D148	2	80	80	100	100	500	490	1485	310	1396	1448	1486	990	950	1145	1164	1120	997	/	/	1220	400	500
N65-160/75/D145	2	80	80	100	100	500	490	1485	310	1416	1468	1486	990	950	1145	1007	1120	923	/	/	1220	400	500
N65-160/110A/D151	2	80	80	100	100	500	540	1510	310	1416	1468	1486	990	950	1275	1164	1250	997	/	/	1220	400	500
N65-160/110/D159	2	80	80	100	100	570	540	1545	360	1466	1518	1536	990	1250	1275	1164	1250	1169	/	/	1220	400	500
N65-160/150/D175	2	80	80	100	100	570	540	1545	360	1466	1518	1536	990	1250	1275	1164	1250	1169	/	/	1220	400	500
N65-160/185/D180	2	80	80	100	100	570	540	1545	360	1466	1518	1536	990	1250	1275	1164	1250	1169	/	/	1220	400	500
N65-200/110/D165	2	80	80	100	100	500	540	1510	280	1411	1463	1436	990	950	1275	1204	1250	997	/	/	1220	400	500
N65-200/150/D177	2	80	80	100	100	570	540	1545	330	1461	1513	1486	990	1250	1275	1204	1250	1169	/	/	1220	400	500
N65-200/185/D189	2	80	80	100	100	570	540	1545	380	1511	1563	1536	990	1250	1275	1204	1250	1289	/	/	1220	400	500
N65-200/220/D199	2	80	80	100	100	570	540	1545	380	1511	1563	1536	990	1250	1275	1264	1250	1289	/	/	1220	400	500
N65-200/300/D220	2	80	80	100	100	640	610	1615	360	1491	1543	1886	990	1550	1425	1367	1400	1400	/	/	1220	400	500
N65-250/220/D195	2	80	80	100	100	570	540	1545	360	1516	1568	1886	990	1250	1260	1374	1250	1399	/	/	1220	400	500
N65-250/300/D215	2	80	80	100	100	640	610	1615	360	1516	1568	1886	990	1550	1410	1477	1400	1510	/	/	1220	400	500
N65-250/370/D229	2	80	80	100	100	640	610	1615	360	1516	1568	1886	990	1550	1410	1477	1400	1510	/	/	1300	690	500
N65-250/450/D243	2	80	80	100	100	640	610	1615	365	1521	1573	1836	990	1550	1410	1566	1400	1510	/	/	1300	690	500
N65-250/550/D258	2	80	80	100	100	640	660	1640	390	1546	1598	1837	990	1550	1610	1675	1600	1670	/	/	1300	690	500
N65-315/550/D272	1 *	80	80	100	125	640	750	1685	405	1591	1643	/	990	1550	1565	1700	1550	1695	600	800	1300	690	500
N65-315/750/D298	1	80	80	100	125	700	750	1715	390	1576	1628	/	990	1750	1565	1806	1550	2013	600	1500	1390	660	800
N65-315/900/D315	1	80	80	100	125	700	750	1715	390	1576	1628	/	990	1750	1565	1806	1550	2013	600	1500	1390	660	800
N80-160/110/D144	2	100	100	125	125	570	540	1655	330	1544	1625	1486	1100	1250	1300	1229	1250	1194	/	/	1220	400	500
N80-160/150/D158	2	100	100	125	125	570	540	1655	330	1544	1625	1486	1100	1250	1300	1229	1250	1194	/	/	1220	400	500
N80-160/185/D168	2	100	100	125	125	570	540	1655	380	1594	1675	1536	1100	1250	1300	1229	1250	1314	/	/	1220	400	500
N80-160/220/D177	2	100	100	125	125	570	540	1655	380	1594	1675	1536	1100	1250	1300	1289	1250	1314	/	/	1220	400	500
N80-200/220/D181	2	100	100	125	125	570	540	1655	380	1619	1700	1536	1100	1350	1300	1399	1250	1424	/	/	1220	400	500
N80-200/300/D195	2	100	100	125	125	640	610	1725	360	1599	1680	1886	1100	1550	1450	1502	1400	1535	/	/	1220	400	500
N80-200/370/D208	2	100	100	125	125	640	610	1725	360	1599	1680	1886	1100	1550	1450	1502	1400	1535	/	/	1300	690	500
N80-200/450/D219	2	100	100	125	125	640	610	1725	365	1604	1685	1836	1100	1550	1450	1591	1400	1535	/	/	1300	690	500
N80-250/370/D214	2	100	100	125	125	640	610	1725	360	1629	1710	1886	1100	1550	1435	1502	1400	1535	/	/	1300	690	500
N80-250/450/D227	2	100	100	125	125	640	610	1725	365	1634	1715	1836	1100	1550	1435	1591	1400	1535	/	/	1300	690	500
N80-250/550/D241	2	100	100	125	125	640	660	1750	390	1659	1740	1837	1100	1550	1635	1700	1600	1695	/	/	1300	690	500
N80-250/750/D259	1	100	100	125	125	700	730	1815	420	1689	1770	/	1100	1750	1835	1806	1800	2013	600	1500	1390	660	800
N80-316/900/D280	1	100	100	125	125	700	750	1825	440	1744	1825	/	1100	1750	1615	1866	1600	2074	600	1500	1390	660	800
N80-316/1100/D298	1	100	100	125	125	850	860	1955	505	1809	1890	/	1100	2300	1865	2039	1850	2284	800	1700	1680	660	800
N80-316/1320/D310	1	100	100	125	125	850	860	1955	505	1809	1890	/	1100	2300	1865	2039	1850	2284	800	1700	1680	660	800
N80-316/1600/D321	1	100	100	125	125	850	860	1955	505	1809	1890	/	1100	2000	1865	2039	1850	2139	800	1700	1680	660	800

Dimensions in mm. Tolerance ± 10 mm.

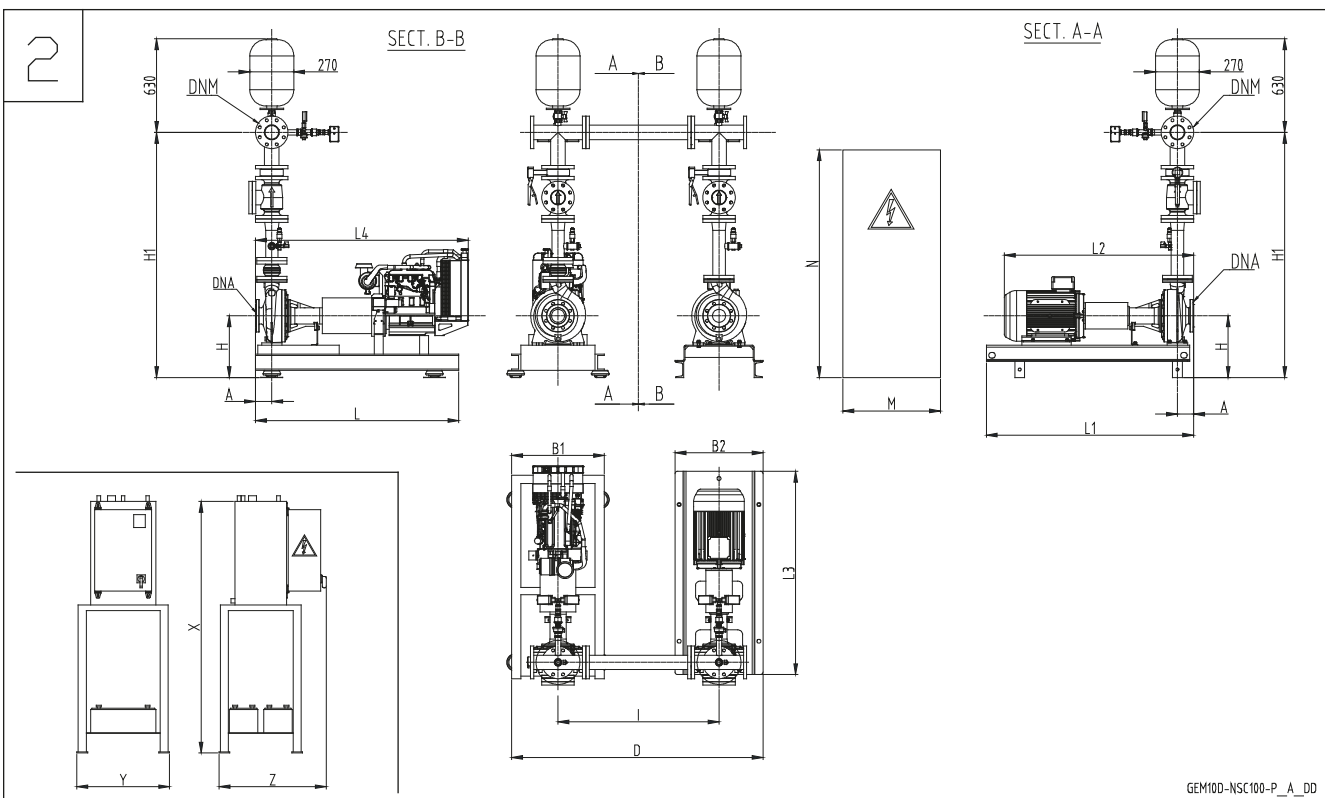
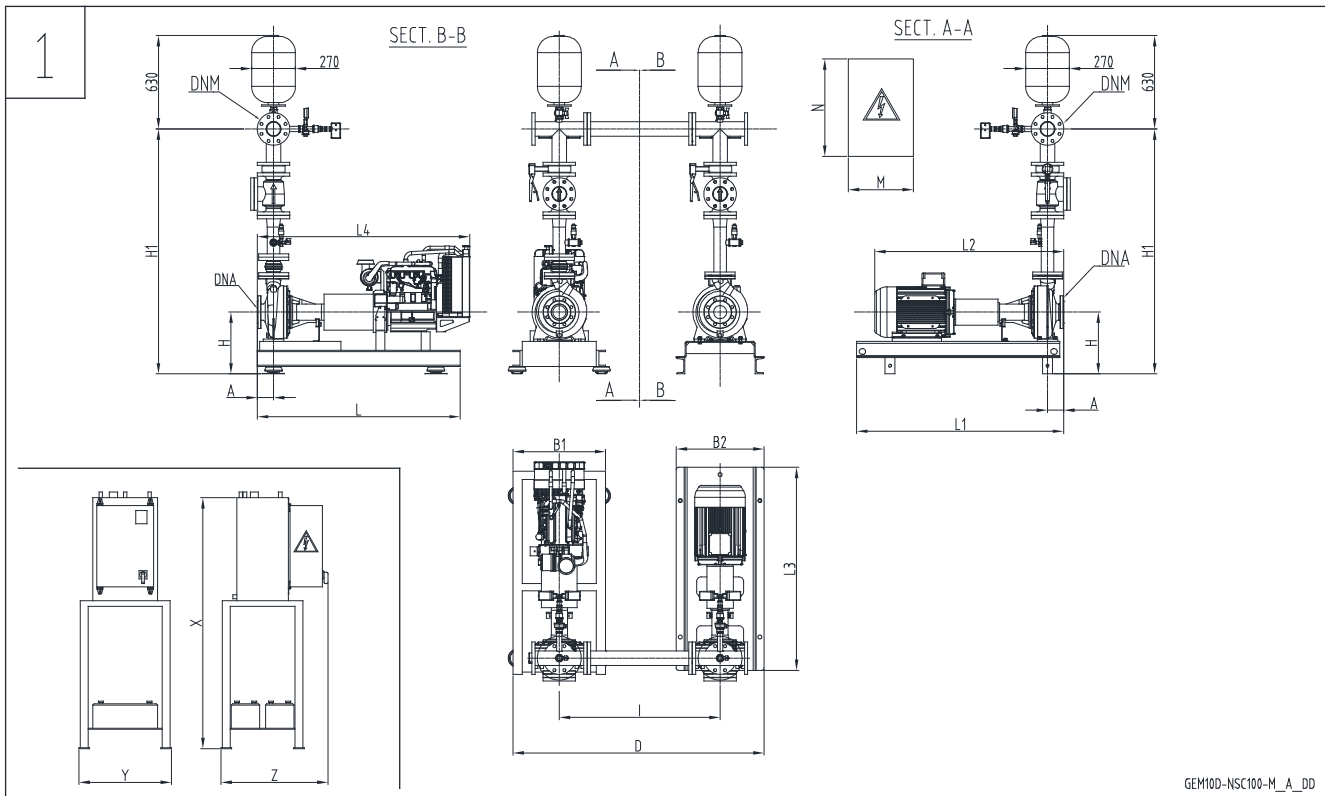
* Wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

gem10d_nsc50-80_a_id

NSC MODULES

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..NSCC100-125 + GEMK..NSC100-125 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..NSCC100-125 + GEMK..NSC100-125 SERIES

GEM+GEMK	DIS N°	DNA	DNM		A	B1	B2	D	H	H1		I	L	L1	L2	L3	L4	M	N	X	Y	Z
			GEM1	GEM2						GEM1	GEM2											
N100-160/150/D144	1	125	125	150	125	570	670	1720	365	1718	1815	1100	1250	1345	1333	1330	1304	400	600	1220	400	500
N100-160/185/D156	1	125	125	150	125	570	670	1720	365	1718	1815	1100	1350	1345	1377	1330	1424	400	600	1220	400	500
N100-160/220/D167	1	125	125	150	125	570	670	1720	385	1738	1835	1100	1350	1345	1399	1330	1424	400	600	1220	400	500
N100-160/300/D187	1	125	125	150	125	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1220	400	500
N100-200/300/D188	1	125	125	150	125	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1220	400	500
N100-200/370/D202	1	125	125	150	125	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1300	690	500
N100-200/450/D213	1	125	125	150	125	640	560	1700	355	1708	1805	1100	1550	1365	1591	1350	1535	600	800	1300	690	500
N100-200/550/D227	1	125	125	150	125	640	750	1795	405	1758	1855	1100	1550	1565	1700	1550	1695	600	800	1300	690	500
N100-250/450/D213	1	125	125	150	140	640	560	1700	355	1708	1805	1100	1550	1380	1606	1350	1550	600	800	1300	690	500
N100-250/550/D227	1	125	125	150	140	640	750	1795	405	1758	1855	1100	1550	1580	1715	1550	1710	600	800	1300	690	500
N100-250/750/D249	2	125	125	150	140	700	750	1825	390	1743	1840	1100	1750	1580	1821	1550	2028	600	1500	1390	660	800
N100-250/900/D259	2	125	125	150	140	700	750	1825	390	1743	1840	1100	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-200/450/D179	1	150	150	200	140	640	560	1800	355	1850	2010	1200	1550	1380	1606	1350	1550	600	800	1300	690	500
N125-200/550/D195	1	150	150	200	140	640	750	1895	405	1900	2060	1200	1550	1580	1715	1550	1710	600	800	1300	690	500
N125-200/750/D215	2	150	150	200	140	700	750	1925	405	1900	2060	1200	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-200/900/D225	2	150	150	200	140	700	750	1925	405	1900	2060	1200	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-315/1100/D250	2	150	150	200	140	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1700	1680	660	800
N125-315/1320/D265	2	150	150	200	140	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1700	1680	660	800
N125-315/1600/D280	2	150	150	200	140	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1900	1680	660	800
N125-315/2000/D290	2	150	150	200	140	850	860	2055	505	2040	2200	1200	2300	1880	2163	1850	2300	800	1900	1680	660	800

Dimensions in mm. Tolerance ± 10 mm.

gem10d_nsc100-125_a_td

Up to 55 kW, wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

Over 55 kW, floor-mounted electric control panel for service pump.

EN 12845
fire-fighting
pressure
module

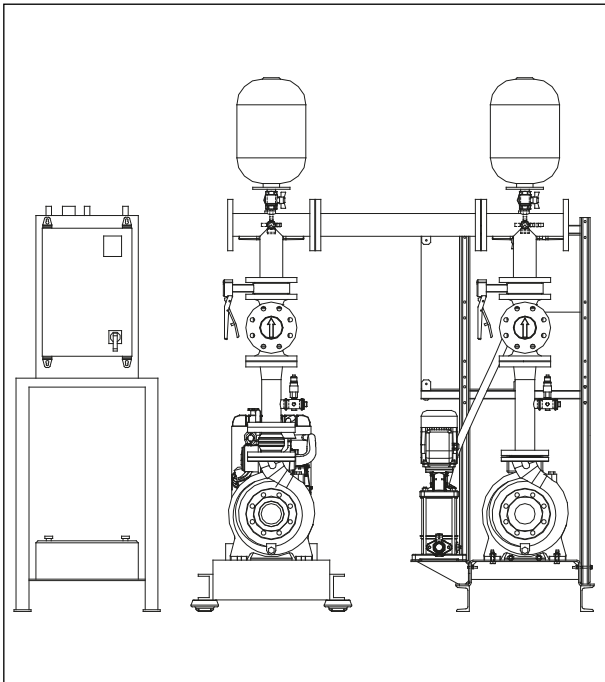
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

- Automatic fire-fighting networks and systems (Sprinkler).

GEM..J..NSCC + GEMK..NSC
Series



SPECIFICATIONS

- **Flow:** up to 766 m³/h for each service pump
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac ± 10%.
 - Diesel engine service pump 1 x 230 Vac ± 10%.
 - Jockey pump 3 x 400 Vac ± 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 12 – 24 Vac.
- **Control panel protection grade:**
 - Electric service pump IP54.
 - Diesel engine service pump IP54.
 - Jockey pump IP55.
- **Electric motor starting:**
 - Direct (DOL) for power ratings up to and including 22 kW (GEMD...).
 - Star/Triangle from 30 kW up (GEMY..).
- **Diesel engine starting:** from batteries
- **Maximum power output:**
 - Electric service pumps 200 kW.
 - Diesel engine service pump 200 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - NSC series.
- **Vertical jockey pump:**
 - 1SV series version T or 1VM (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC32-40 + GEMK..NSC32-40 SERIES

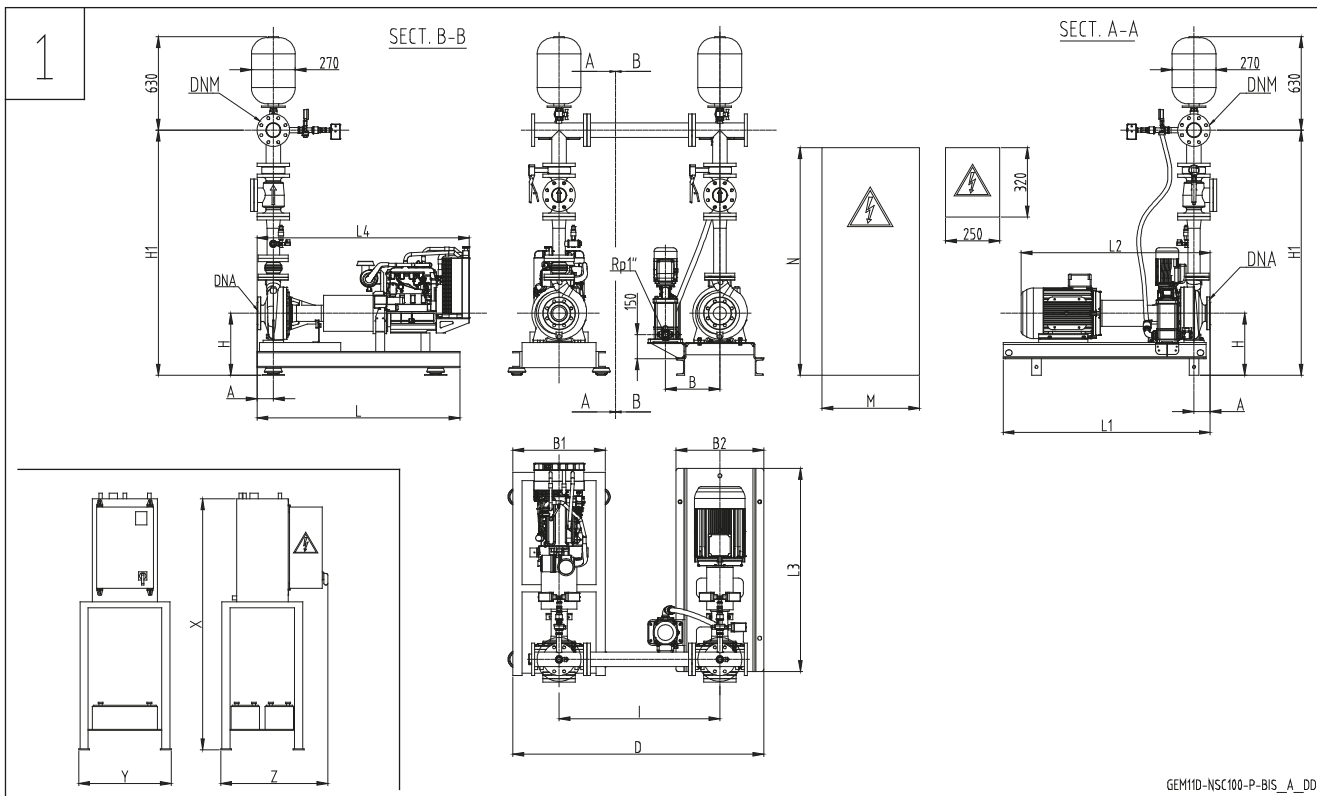
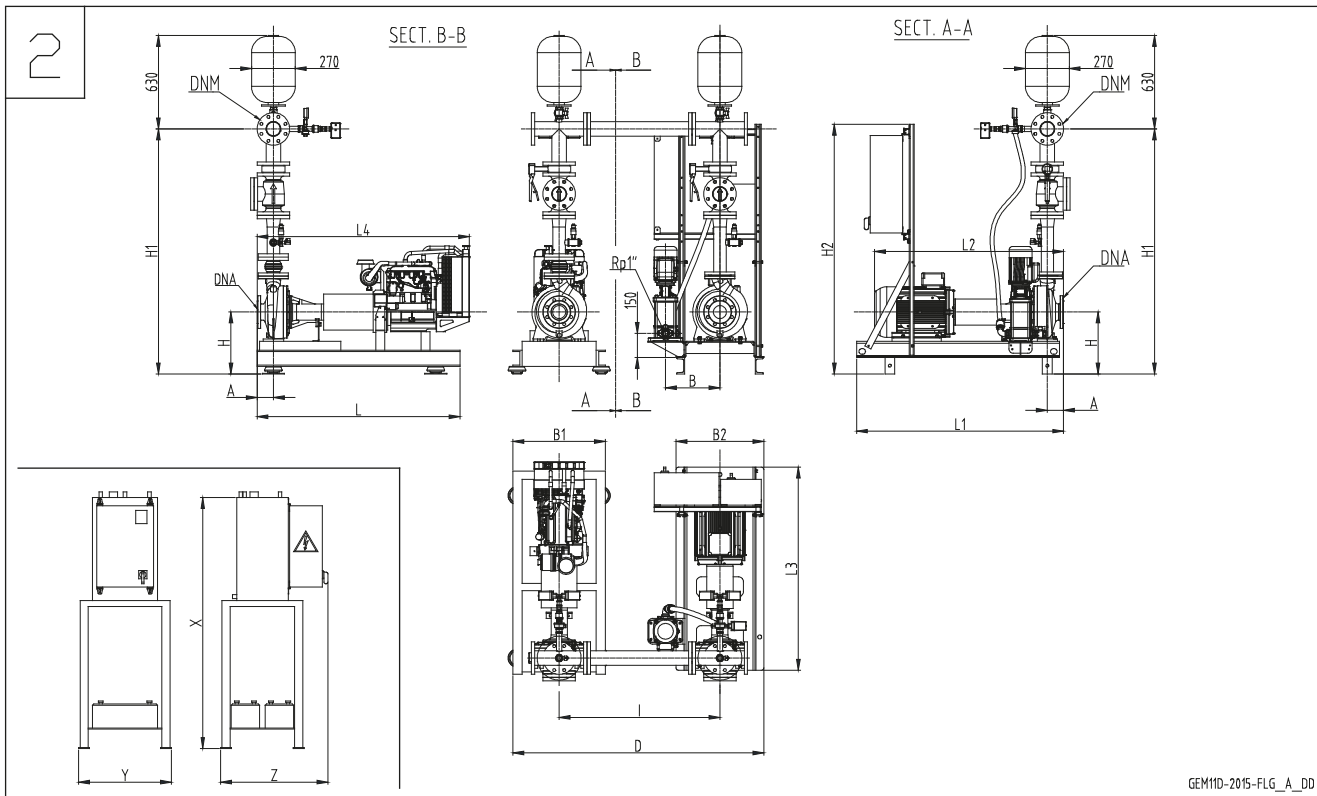
GEMJ+GEMK	DRW N°		DNA	DNM		A	B	B1	B2	D	H	H1		H2	I	L	L1	L2	L3	L4	X	Y	Z
	GEM1	GEM2		GEM1	GEM2							GEM1	GEM2										
N32-125/11/D113	/	1	50	/	Rp 2"	80	255	500	360	1360	262	/	1068	1286	930	950	820	843	800	885	1220	400	500
N32-125/15/D123	/	1	50	/	Rp 2"	80	270	500	390	1375	262	/	1068	1286	930	950	920	888	900	885	1220	400	500
N32-125/22/D133	/	1	50	/	Rp 2"	80	270	500	390	1375	262	/	1068	1286	930	950	920	888	900	885	1220	400	500
N32-125/30/D145	/	1	50	/	Rp 2"	80	270	500	390	1375	262	/	1068	1286	930	950	920	919	900	885	1220	400	500
N32-160/22/D137	/	1	50	/	Rp 2"	80	270	500	390	1375	282	/	1108	1286	930	950	920	888	900	885	1220	400	500
N32-160/30/D150	/	1	50	/	Rp 2"	80	270	500	390	1375	282	/	1108	1286	930	950	920	919	900	885	1220	400	500
N32-160/40/D160,5	/	1	50	/	Rp 2"	80	270	500	390	1375	282	/	1108	1286	930	950	920	922	900	885	1220	400	500
N32-160/55/D171	/	1	50	/	Rp 2"	80	290	500	450	1405	282	/	1108	1486	930	950	1020	987	1000	901	1220	400	500
N32-200/30X/D154	/	1	50	/	Rp 2"	80	270	500	390	1375	310	/	1156	1486	930	950	920	919	900	885	1220	400	500
N32-200/40/D171	/	1	50	/	Rp 2"	80	270	500	390	1375	310	/	1156	1486	930	950	920	922	900	885	1220	400	500
N32-200/55/D186	/	1	50	/	Rp 2"	80	290	500	450	1405	310	/	1156	1486	930	950	1020	987	1000	901	1220	400	500
N32-200/75/D205	/	1	50	/	Rp 2"	80	290	500	450	1405	310	/	1156	1486	930	950	1020	987	1000	977	1220	400	500
N32-250/75X/D208	/	1	50	/	Rp 2"	100	310	500	490	1425	280	/	1171	1436	930	950	1145	1007	1120	923	1220	400	500
N32-250/110A/D226	/	1	50	/	Rp 2"	100	335	500	540	1450	280	/	1171	1436	930	950	1275	1164	1250	997	1220	400	500
N32-250/110/D239	/	1	50	/	Rp 2"	100	335	570	540	1485	330	/	1221	1486	930	1250	1275	1164	1250	1169	1220	400	500
N32-250/150/D259	/	1	50	/	Rp 2"	100	335	570	540	1485	330	/	1221	1486	930	1250	1275	1164	1250	1169	1220	400	500
N40-125/15/D105	1	2	65	Rp 2"	65	80	270	500	390	1375	262	1061	1246	1286	930	950	920	888	900	885	1220	400	500
N40-125/22/D118	1	2	65	Rp 2"	65	80	270	500	390	1375	262	1061	1246	1286	930	950	920	888	900	885	1220	400	500
N40-125/30/D130	1	2	65	Rp 2"	65	80	270	500	390	1375	262	1061	1246	1286	930	950	920	919	900	885	1220	400	500
N40-160/30/D127	1	2	65	Rp 2"	65	80	270	500	390	1375	282	1101	1286	1286	930	950	920	919	900	885	1220	400	500
N40-160/40/D139	1	2	65	Rp 2"	65	80	270	500	390	1375	282	1101	1286	1286	930	950	920	922	900	885	1220	400	500
N40-160/55/D154	1	2	65	Rp 2"	65	80	290	500	450	1405	282	1101	1286	1486	930	950	1020	987	1000	901	1220	400	500
N40-160/75/D165	1	2	65	Rp 2"	65	80	290	500	450	1405	282	1101	1286	1486	930	950	1020	987	1000	977	1220	400	500
N40-200/55/D165	1	2	65	Rp 2"	65	100	290	500	450	1405	310	1149	1334	1486	930	950	1040	1007	1000	921	1220	400	500
N40-200/75/D179	1	2	65	Rp 2"	65	100	290	500	450	1405	310	1149	1334	1486	930	950	1040	1007	1000	997	1220	400	500
N40-200/110A/D189	1	2	65	Rp 2"	65	100	310	500	490	1425	310	1149	1334	1486	930	950	1160	1164	1120	997	1220	400	500
N40-200/110/D199	1	2	65	Rp 2"	65	100	310	570	490	1460	360	1199	1384	1536	930	1250	1160	1164	1120	1009	1220	400	500
N40-250/110X/D195	1	2	65	Rp 2"	65	100	335	500	540	1450	310	1194	1379	1466	930	950	1275	1164	1250	997	1220	400	500
N40-250/110X1/D206	1	2	65	Rp 2"	65	100	335	570	540	1485	330	1214	1399	1486	930	1250	1275	1164	1250	1009	1220	400	500
N40-250/150/D228	1	2	65	Rp 2"	65	100	335	570	540	1485	330	1214	1399	1486	930	1250	1275	1164	1250	1169	1220	400	500
N40-250/185/D243	1	2	65	Rp 2"	65	100	335	570	540	1485	380	1264	1449	1536	930	1250	1275	1164	1250	1289	1220	400	500
N40-250/220/D257,5	1	2	65	Rp 2"	65	100	335	570	540	1485	380	1264	1449	1536	930	1250	1275	1224	1250	1289	1220	400	500

Dimensions in mm. Tolerance ± 10 mm.

gem11d_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC50-80 + GEMK..NSC50-80 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC50-80 + GEMK..NSC50-80 SERIES

GEMJ + GEMK	DRW N°	DNA	DNM		A	B	B1	B2	D	H	H1		H2	I	L	L1	L2	L3	L4	M	N	X	Y	Z
			GEM1	GEM2							GEM1	GEM2												
N50-125/30	2	65	65	80	100	270	500	390	1360	262	/	1068	1286	990	950	940	939	900	885	/	/	1220	400	500
N50-125/40	2	65	65	80	100	270	500	390	1375	262	/	1068	1286	990	950	940	942	900	885	/	/	1220	400	500
N50-125/55	2	65	65	80	100	290	500	450	1375	262	/	1068	1286	990	950	1040	1007	1000	885	/	/	1220	400	500
N50-125/75	2	65	65	80	100	290	500	450	1375	262	/	1068	1286	990	950	1040	1007	1000	885	/	/	1220	400	500
N50-160/55	2	65	65	80	100	290	500	450	1375	282	/	1108	1286	990	950	1040	1007	1000	885	/	/	1220	400	500
N50-160/75	2	65	65	80	100	290	500	450	1375	282	/	1108	1286	990	950	1040	1007	1000	885	/	/	1220	400	500
N50-160/110A	2	65	65	80	100	310	500	490	1375	282	/	1108	1286	990	950	1160	1164	1120	885	/	/	1220	400	500
N50-160/110	2	65	65	80	100	310	500	490	1405	282	/	1108	1486	990	950	1160	1164	1120	901	/	/	1220	400	500
N50-200/110A	2	65	65	80	100	310	500	490	1375	310	/	1156	1486	990	950	1160	1164	1120	885	/	/	1220	400	500
N50-200/110	2	65	65	80	100	310	500	490	1375	310	/	1156	1486	990	950	1160	1164	1120	885	/	/	1220	400	500
N50-200/150X	2	65	65	80	100	310	500	490	1405	310	/	1156	1486	990	950	1160	1164	1120	901	/	/	1220	400	500
N50-200/185	2	65	65	80	100	310	500	490	1405	310	/	1156	1486	990	950	1160	1164	1120	977	/	/	1220	400	500
N50-250/150	2	65	65	80	100	335	500	540	1425	280	/	1171	1436	990	950	1275	1164	1250	923	/	/	1220	400	500
N50-250/185	2	65	65	80	100	335	500	540	1450	280	/	1171	1436	990	950	1275	1164	1250	997	/	/	1220	400	500
N50-250/220	2	65	65	80	100	335	570	540	1485	330	/	1221	1486	990	1250	1275	1124	1250	1169	/	/	1220	400	500
N50-250/300	2	65	65	80	100	360	570	610	1485	330	/	1221	1486	990	1250	1425	1327	1400	1169	/	/	1220	400	500
N65-125/40	2	80	80	100	100	270	500	390	1375	262	1061	1246	1286	990	950	925	942	900	885	/	/	1220	400	500
N65-125/55	2	80	80	100	100	290	500	450	1375	262	1061	1246	1286	990	950	1025	1007	1000	885	/	/	1220	400	500
N65-125/75	2	80	80	100	100	290	500	450	1375	262	1061	1246	1286	990	950	1025	1007	1000	885	/	/	1220	400	500
N65-125/110A	2	80	80	100	100	310	500	490	1375	282	1101	1286	1286	990	950	1145	1164	1120	885	/	/	1220	400	500
N65-125/110	2	80	80	100	100	310	500	490	1375	282	1101	1286	1286	990	950	1145	1164	1120	885	/	/	1220	400	500
N65-160/75	2	80	80	100	100	310	500	490	1405	282	1101	1286	1486	990	950	1145	1007	1120	901	/	/	1220	400	500
N65-160/110A	2	80	80	100	100	335	500	540	1405	282	1101	1286	1486	990	950	1275	1164	1250	977	/	/	1220	400	500
N65-160/110	2	80	80	100	100	335	500	540	1405	310	1149	1334	1486	990	950	1275	1164	1250	921	/	/	1220	400	500
N65-160/150	2	80	80	100	100	335	500	540	1405	310	1149	1334	1486	990	950	1275	1164	1250	997	/	/	1220	400	500
N65-160/185	2	80	80	100	100	335	500	540	1425	310	1149	1334	1486	990	950	1275	1164	1250	997	/	/	1220	400	500
N65-200/110	2	80	80	100	100	335	570	540	1460	360	1199	1384	1536	990	1250	1275	1204	1250	1009	/	/	1220	400	500
N65-200/150	2	80	80	100	100	335	500	540	1450	310	1194	1379	1466	990	950	1275	1204	1250	997	/	/	1220	400	500
N65-200/185	2	80	80	100	100	335	570	540	1485	330	1214	1399	1486	990	1250	1275	1204	1250	1009	/	/	1220	400	500
N65-200/220	2	80	80	100	100	335	570	540	1485	330	1214	1399	1486	990	1250	1275	1264	1250	1169	/	/	1220	400	500
N65-200/300	2	80	80	100	100	360	570	610	1485	380	1264	1449	1536	990	1250	1425	1367	1400	1289	/	/	1220	400	500
N65-250/220	2	80	80	100	100	335	570	540	1485	380	1264	1449	1536	990	1250	1260	1374	1250	1289	/	/	1220	400	500
N65-250/300	2	80	80	100	100	360	500	610	1435	282	1280	1299	1286	990	950	1410	1477	1400	905	/	/	1220	400	500
N65-250/370	2	80	80	100	100	360	500	610	1435	282	1280	1299	1286	990	950	1410	1477	1400	905	/	/	1220	400	500
N65-250/450	2	80	80	100	100	360	500	610	1465	282	1280	1299	1486	990	950	1410	1566	1400	921	/	/	1220	400	500
N65-250/550	2	80	80	100	100	385	500	660	1465	282	1280	1299	1486	990	950	1610	1675	1600	921	/	/	1220	400	500
N65-315/550	1*	80	80	100	125	355	500	750	1465	310	1328	1347	1486	990	950	1565	1700	1550	921	600	800	1220	400	500
N65-315/750	1	80	80	100	125	355	500	750	1465	310	1328	1347	1486	990	950	1565	1806	1550	923	600	1500	1220	400	500
N65-315/900	1	80	80	100	125	355	500	750	1485	310	1328	1347	1486	990	950	1565	1806	1550	997	600	1500	1220	400	500
N80-160/110	2	100	100	125	125	335	570	540	1520	360	1378	1397	1536	1100	1250	1300	1229	1250	1169	/	/	1220	400	500
N80-160/150	2	100	100	125	125	335	500	540	1485	310	1348	1367	1486	1100	950	1300	1229	1250	997	/	/	1220	400	500
N80-160/185	2	100	100	125	125	335	570	540	1520	360	1398	1417	1536	1100	1250	1300	1229	1250	1169	/	/	1220	400	500
N80-160/220	2	100	100	125	125	335	570	540	1520	360	1398	1417	1536	1100	1250	1300	1289	1250	1169	/	/	1220	400	500
N80-200/220	2	100	100	125	125	335	570	540	1520	360	1398	1417	1536	1100	1250	1300	1399	1250	1289	/	/	1220	400	500
N80-200/300	2	100	100	125	125	360	570	610	1545	330	1393	1412	1486	1100	1250	1450	1502	1400	1169	/	/	1220	400	500
N80-200/370	2	100	100	125	125	360	570	610	1545	380	1443	1462	1536	1100	1250	1450	1502	1400	1289	/	/	1220	400	500
N80-200/450	2	100	100	125	125	360	570	610	1545	380	1443	1462	1536	1100	1250	1450	1591	1400	1289	/	/	1220	400	500
N80-250/370	2	100	100	125	125	360	640	610	1615	360	1423	1442	1886	1100	1550	1435	1502	1400	1400	/	/	1220	400	500
N80-250/450	2	100	100	125	125	360	500	610	1435	310	1396	1448	1286	1100	950	1435	1591	1400	905	/	/	1220	400	500
N80-250/550	2	100	100	125	125	385	500	660	1465	310	1396	1448	1486	1100	950	1635	1700	1600	921	/	/	1220	400	500
N80-250/750	1	100	100	125	125	420	500	730	1465	310	1396	1448	1486	1100	950	1835	1806	1800	923	600	1500	1220	400	500
N80-316/900	1	100	100	125	125	355	500	750	1485	310	1396	1448	1486	1100	950	1615	1866	1600	997	600	1500	1220	400	500
N80-316/1100	1	100	100	125	125	405	500	860	1485	310	1396	1448	1486	1100	950	1865	2039	1850	997	800	1700	1220	400	500
N80-316/1320	1	100	100	125	125	405	500	860	1485	310	1416	1468	1486	1100	950	1865	2039	1850	923	800	1700	1220	400	500
N80-316/1600	1	100	100	125	125	405	500	860	1510	310	1416	1468	1486	1100	950	1865	2039	1850	997	800	1700	1220	400	500

Dimensions in mm. Tolerance ± 10 mm.

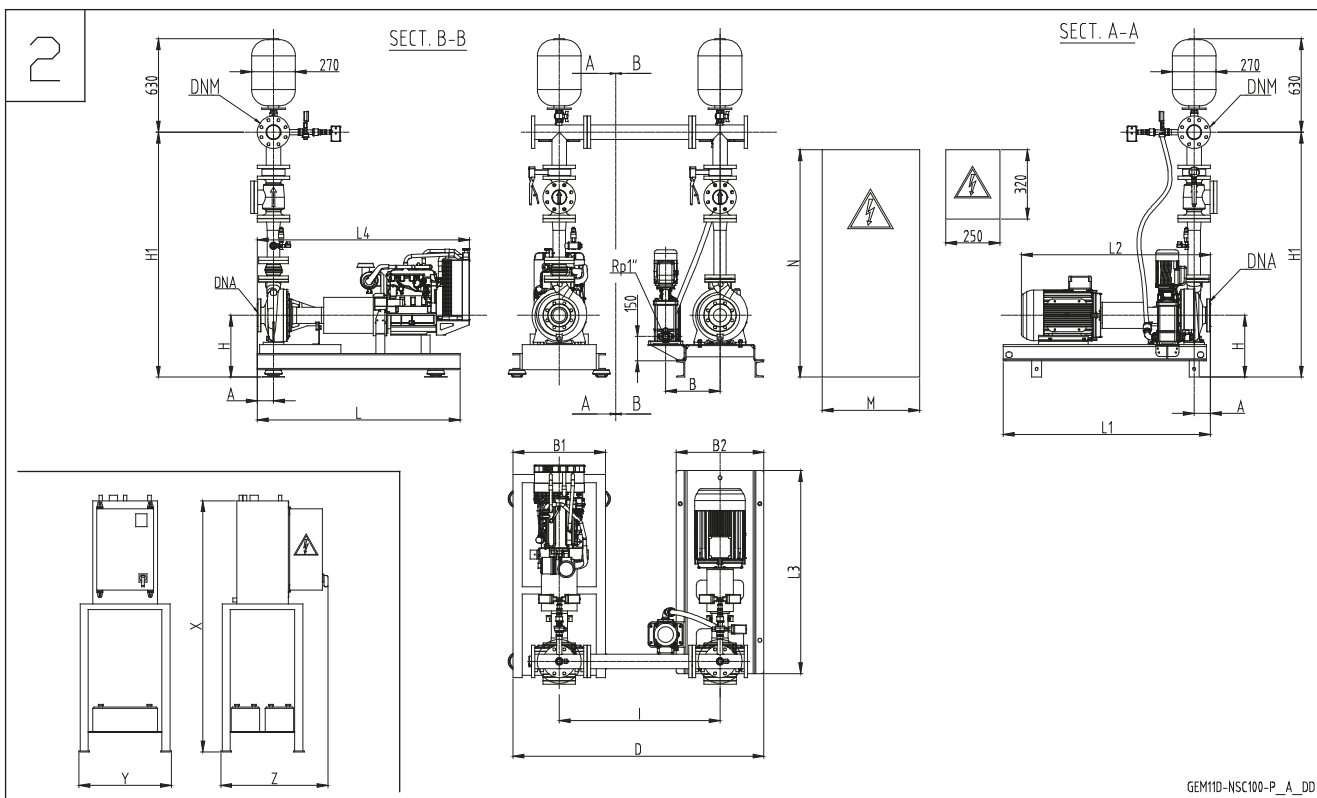
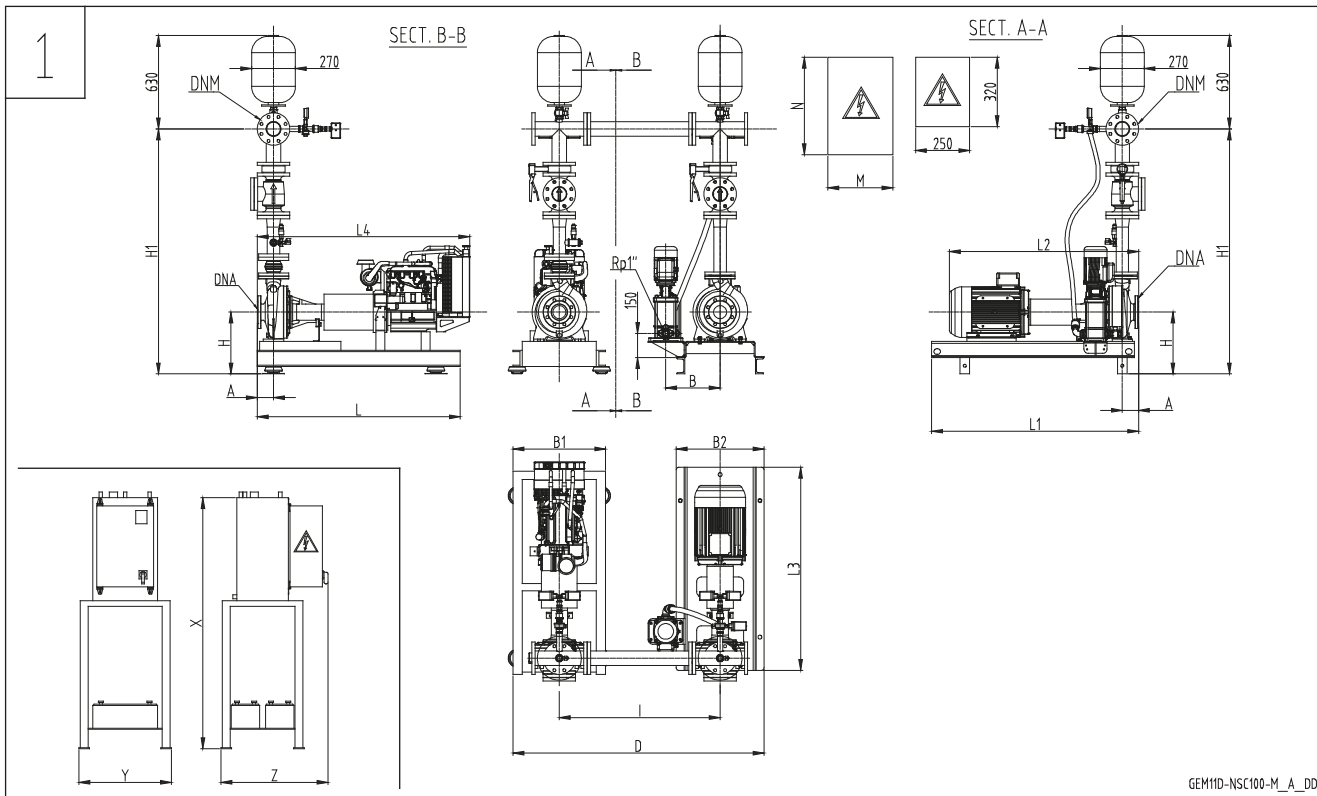
* Wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

gem11d_nsc50-80_a_td

NSC MODULES

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...NSCC100-125 + GEMK..NSC100-125 SERIES**

NSC MODULES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...NSCC100-125 + GEMK..NSC100-125 SERIES

GEMJ+GEMK	DRW N°	DNA	DNM		A	B	B1	B2	D	H	H1		I	L	L1	L2	L3	L4	M	N	X	Y	Z
			GEM1	GEM2							GEM1	GEM2											
N100-160/150/D144	1	125	125	150	125	315	570	670	1720	365	1718	1815	1100	1250	1345	1333	1330	1304	400	600	1220	400	500
N100-160/185/D156	1	125	125	150	125	315	570	670	1720	365	1718	1815	1100	1350	1345	1377	1330	1424	400	600	1220	400	500
N100-160/220/D167	1	125	125	150	125	315	570	670	1720	385	1738	1835	1100	1350	1345	1399	1330	1424	400	600	1220	400	500
N100-160/300/D187	1	125	125	150	125	260	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1220	400	500
N100-200/300/D188	1	125	125	150	125	260	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1220	400	500
N100-200/370/D202	1	125	125	150	125	260	640	560	1700	330	1683	1780	1100	1550	1365	1502	1350	1535	500	700	1300	690	500
N100-200/450/D213	1	125	125	150	125	260	640	560	1700	355	1708	1805	1100	1550	1365	1591	1350	1535	600	800	1300	690	500
N100-200/550/D227	1	125	125	150	125	355	640	750	1795	405	1758	1855	1100	1550	1565	1700	1550	1695	600	800	1300	690	500
N100-250/450/D213	1	125	125	150	140	260	640	560	1700	355	1708	1805	1100	1550	1380	1606	1350	1550	600	800	1300	690	500
N100-250/550/D227	1	125	125	150	140	355	640	750	1795	405	1758	1855	1100	1550	1580	1715	1550	1710	600	800	1300	690	500
N100-250/750/D249	2	125	125	150	140	355	700	750	1825	390	1743	1840	1100	1750	1580	1821	1550	2028	600	1500	1390	660	800
N100-250/900/D259	2	125	125	150	140	355	700	750	1825	390	1743	1840	1100	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-200/450/D179	1	150	150	200	140	260	640	560	1800	355	1850	2010	1200	1550	1380	1606	1350	1550	600	800	1300	690	500
N125-200/550/D195	1	150	150	200	140	355	640	750	1895	405	1900	2060	1200	1550	1580	1715	1550	1710	600	800	1300	690	500
N125-200/750/D215	2	150	150	200	140	355	700	750	1925	405	1900	2060	1200	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-200/900/D225	2	150	150	200	140	355	700	750	1925	405	1900	2060	1200	1750	1580	1821	1550	2028	600	1500	1390	660	800
N125-315/1100/D250	2	150	150	200	140	405	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1700	1680	660	800
N125-315/1320/D265	2	150	150	200	140	405	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1700	1680	660	800
N125-315/1600/D280	2	150	150	200	140	405	850	860	2055	505	2040	2200	1200	2300	1880	2054	1850	2300	800	1900	1680	660	800
N125-315/2000/D290	2	150	150	200	140	405	850	860	2055	505	2040	2200	1200	2300	1880	2163	1850	2300	800	1900	1680	660	800

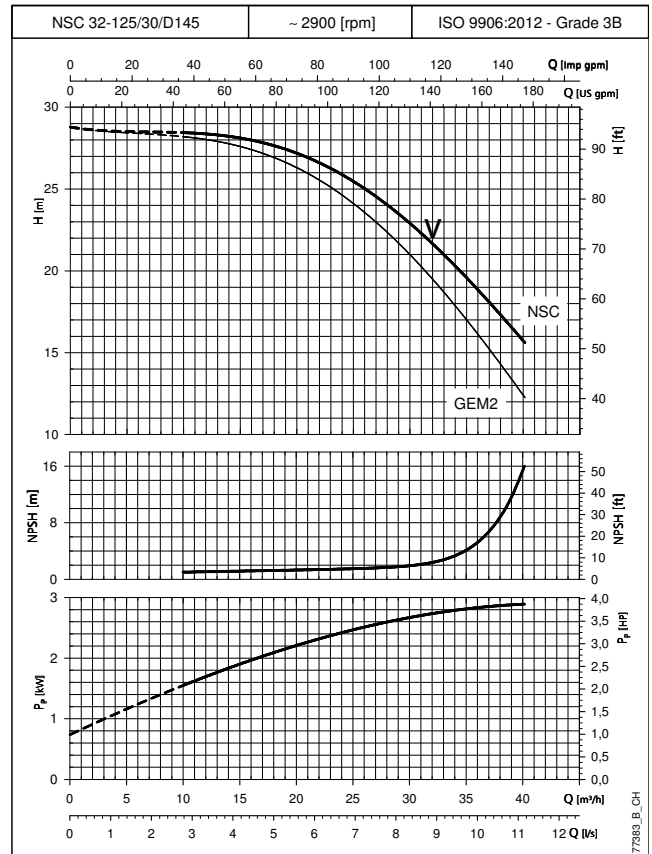
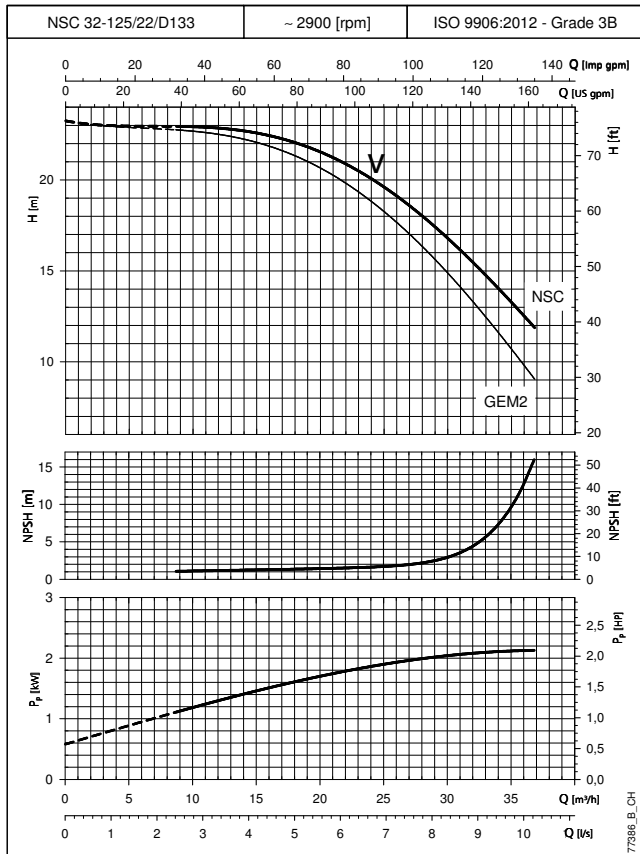
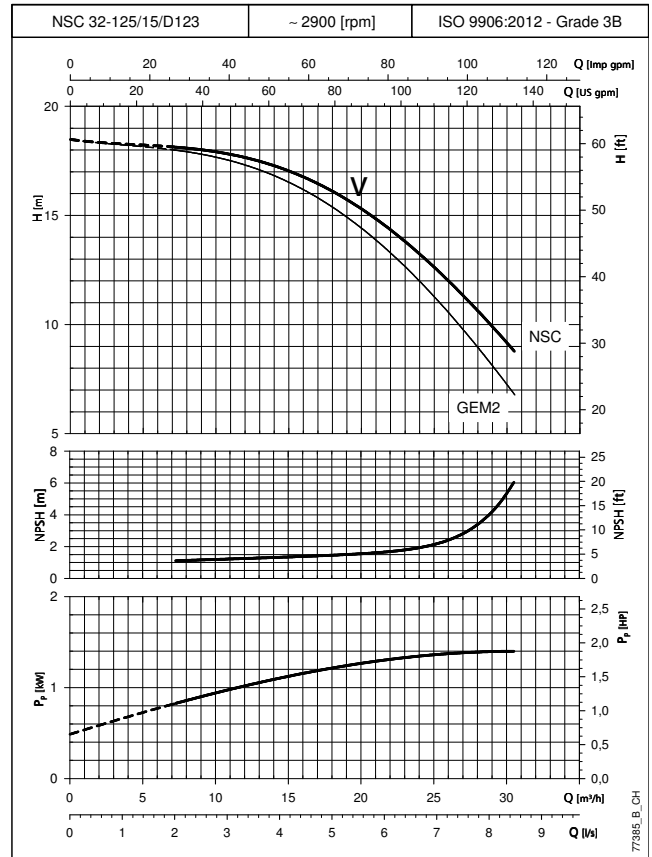
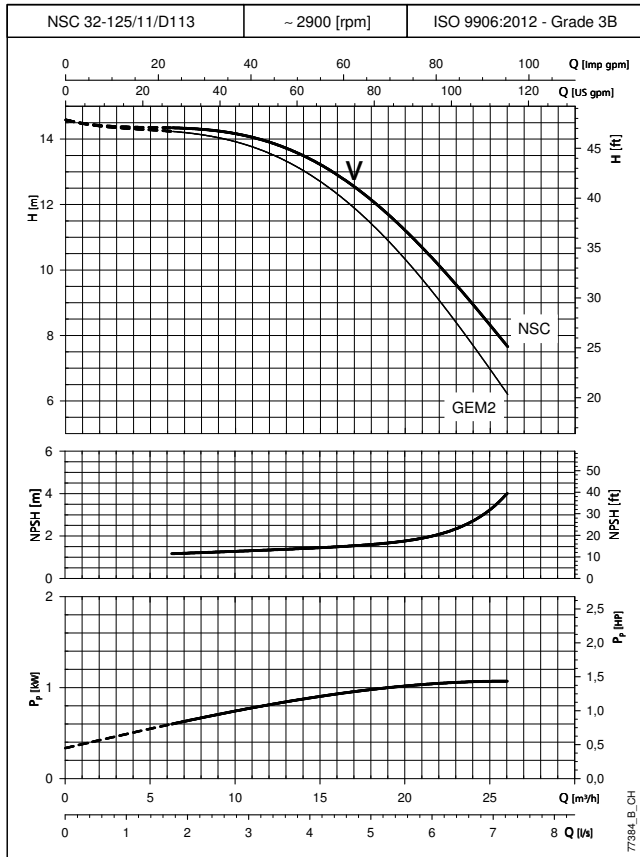
Dimensions in mm. Tolerance ± 10 mm.

gem11d_nsc100-125_a_td

* Wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

PERFORMANCE CURVES

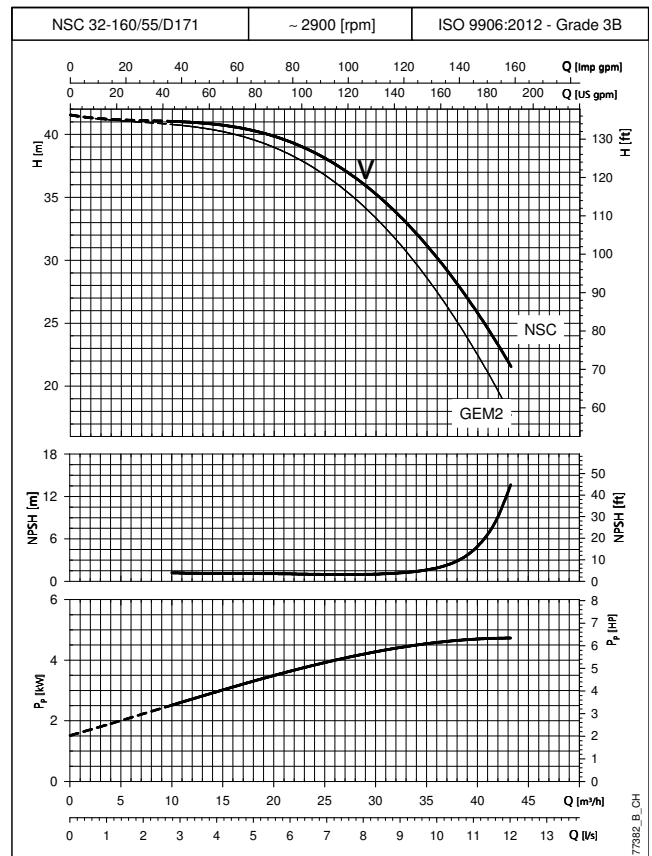
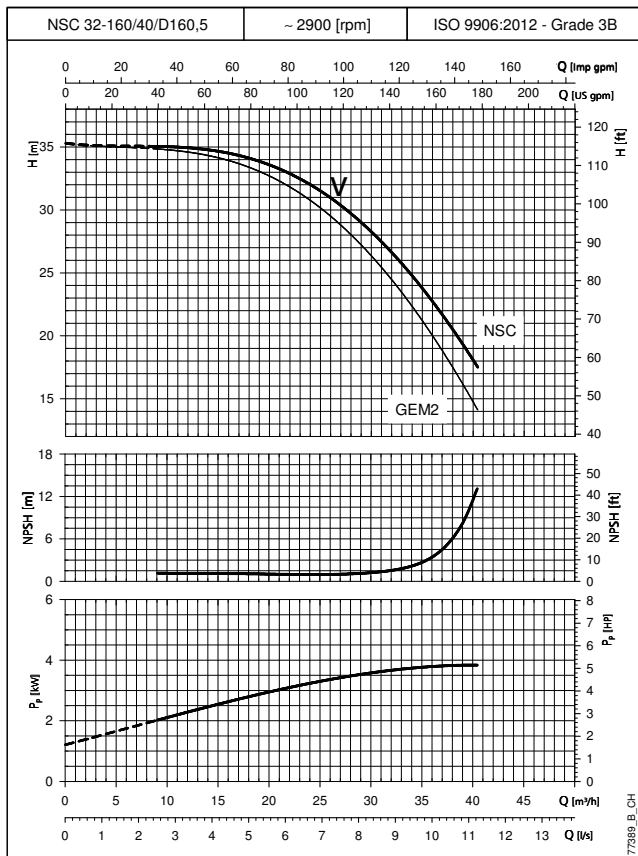
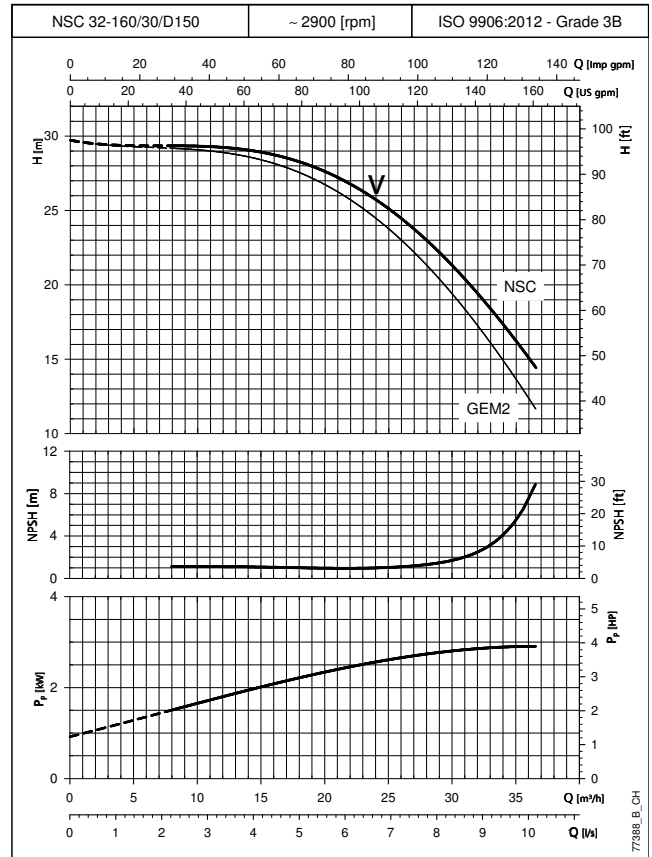
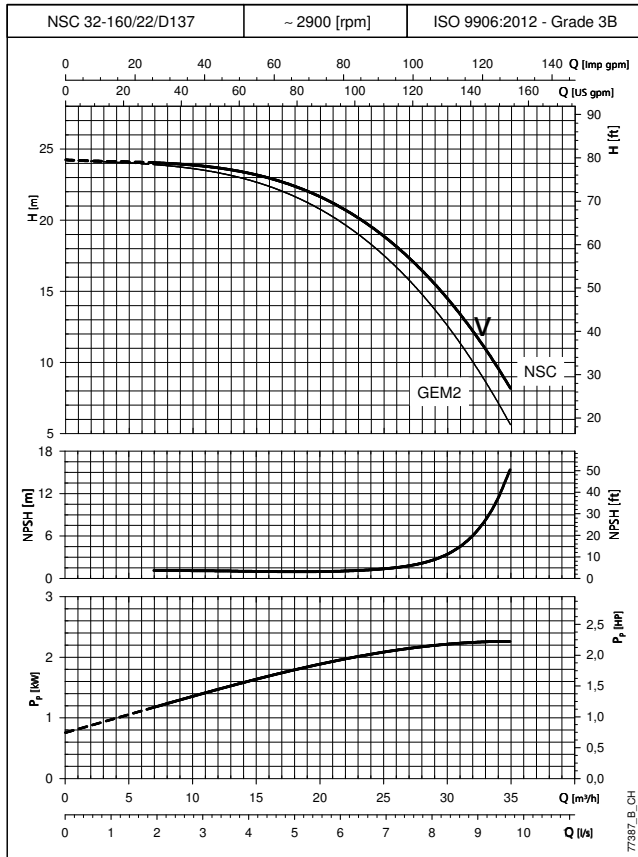
EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



GEM1, GEM2, GEM3 = pressure module hydraulic performance. NSC = pump hydraulic performance without drops.

V = Pre-calculated systems limit selection HHP-HHS (10.7.2 EN 12845). These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$. The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m.

EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

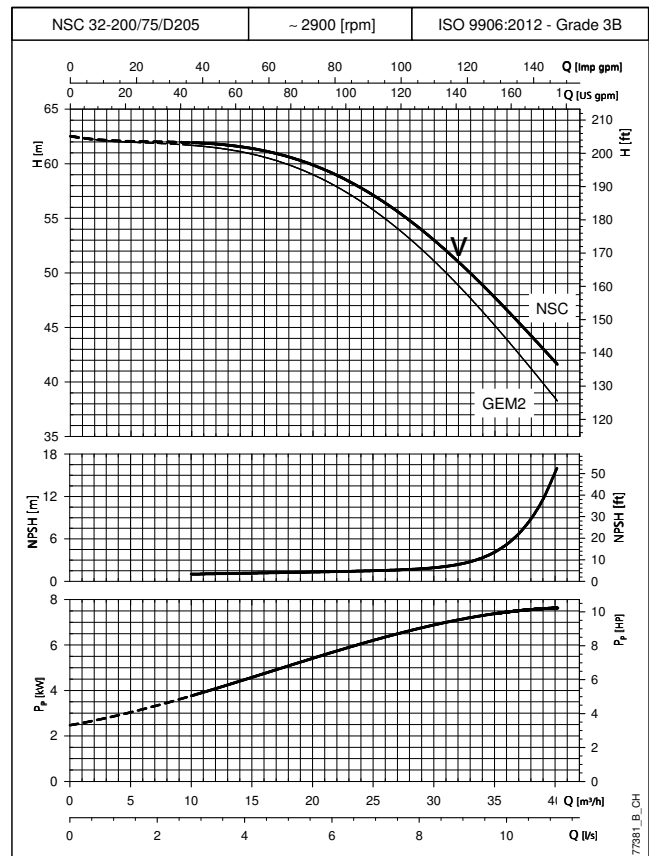
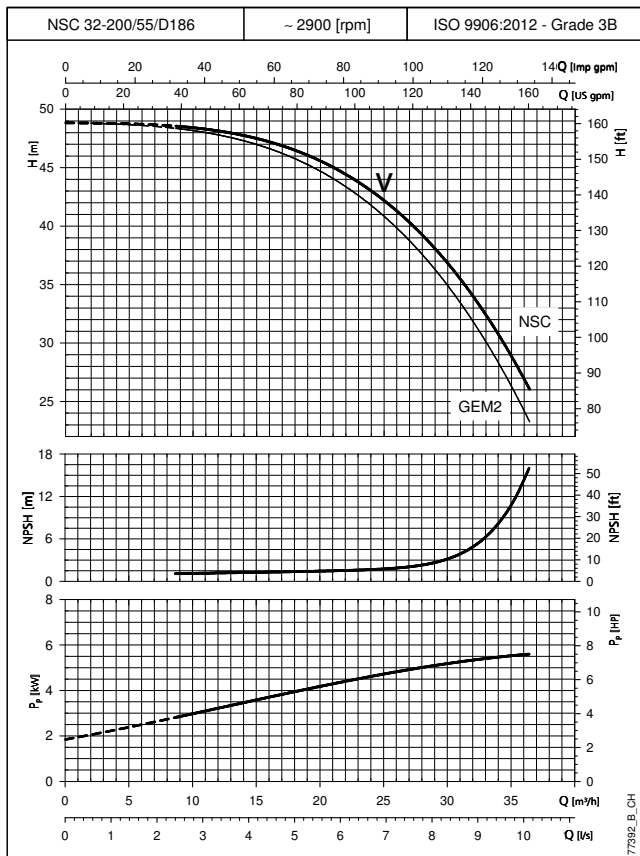
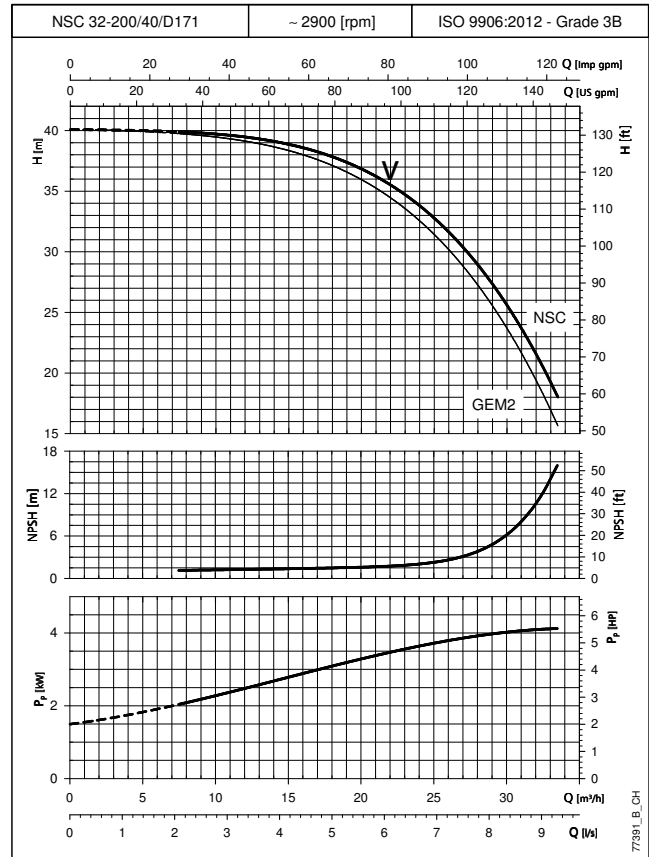
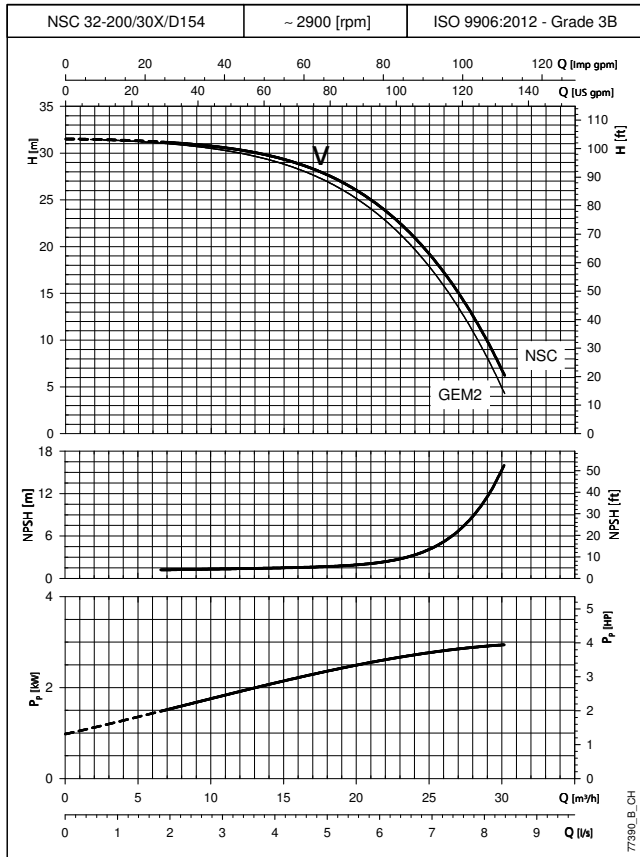


GEM1, GEM2, GEM3 = pressure module hydraulic performance. NSC = pump hydraulic performance without drops.

V = Pre-calculated systems limit selection HHP-HHS (10.7.2 EN 12845). These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$. The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m..

CURVES

EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

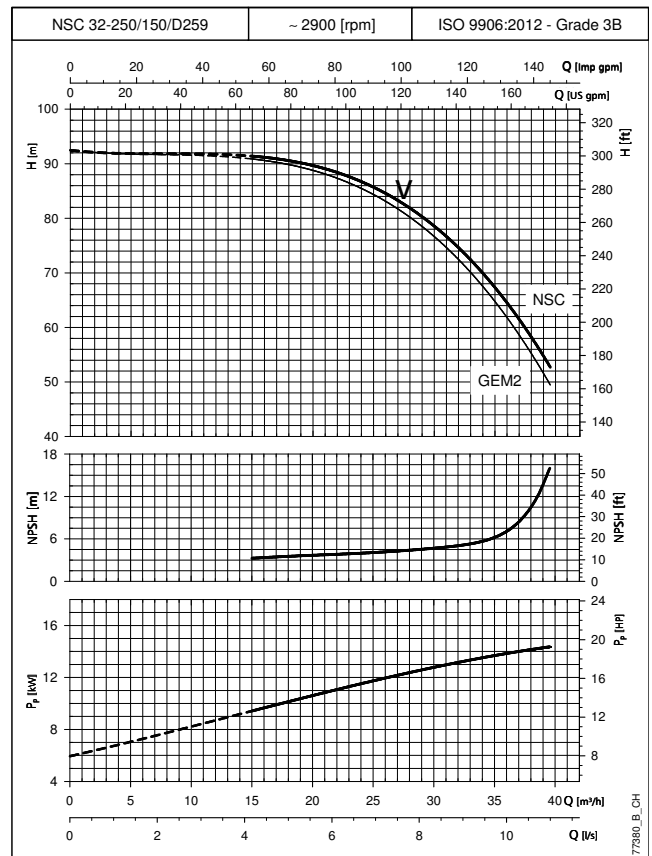
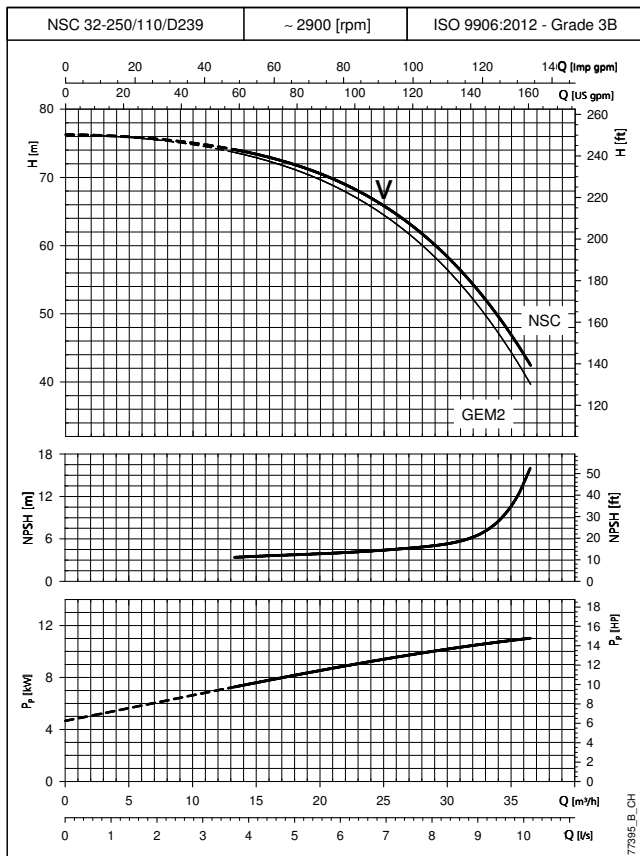
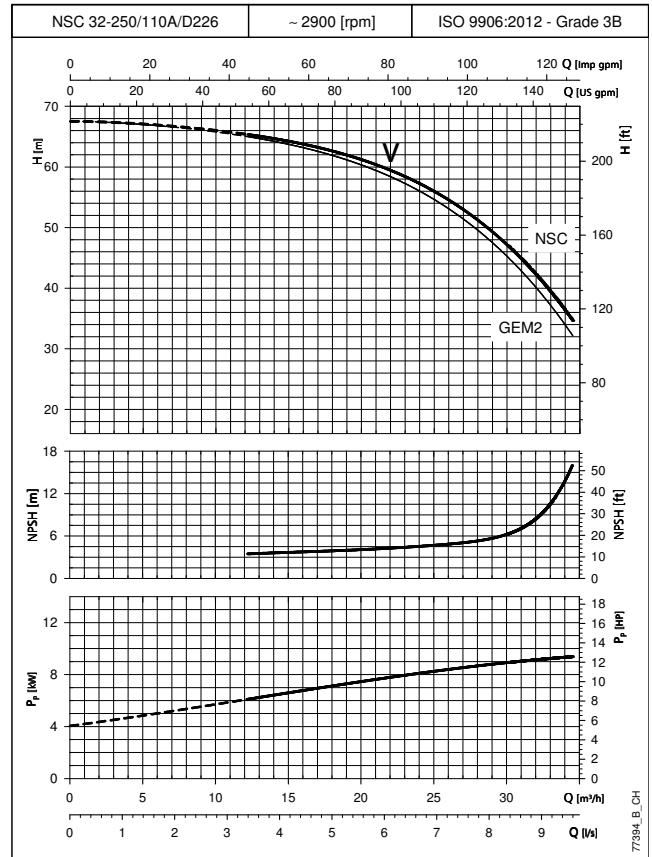
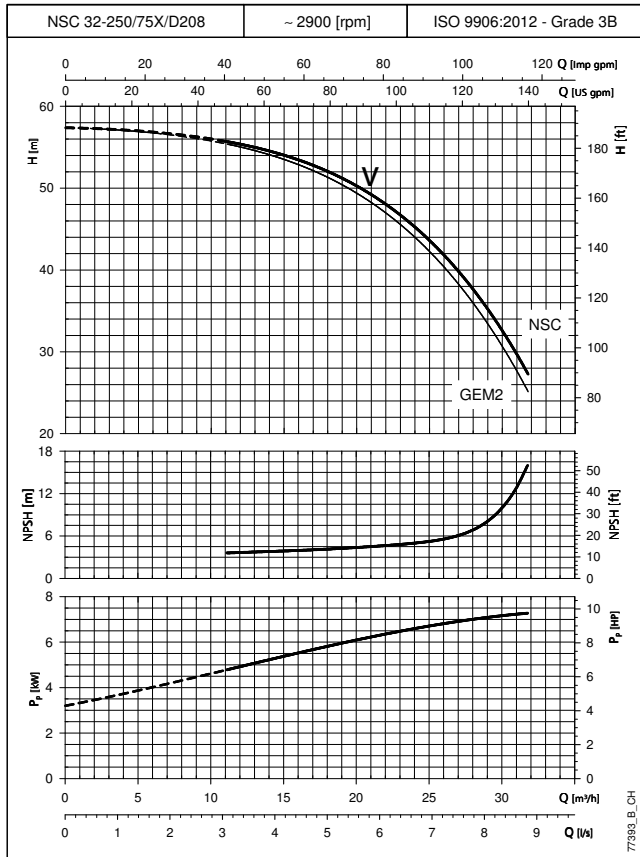


CURVES

GEM1, GEM2, GEM3 = pressure module hydraulic performance. NSC = pump hydraulic performance without drops.

V = Pre-calculated systems limit selection HHP-HHS (10.7.2 EN 12845). These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$. The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m.

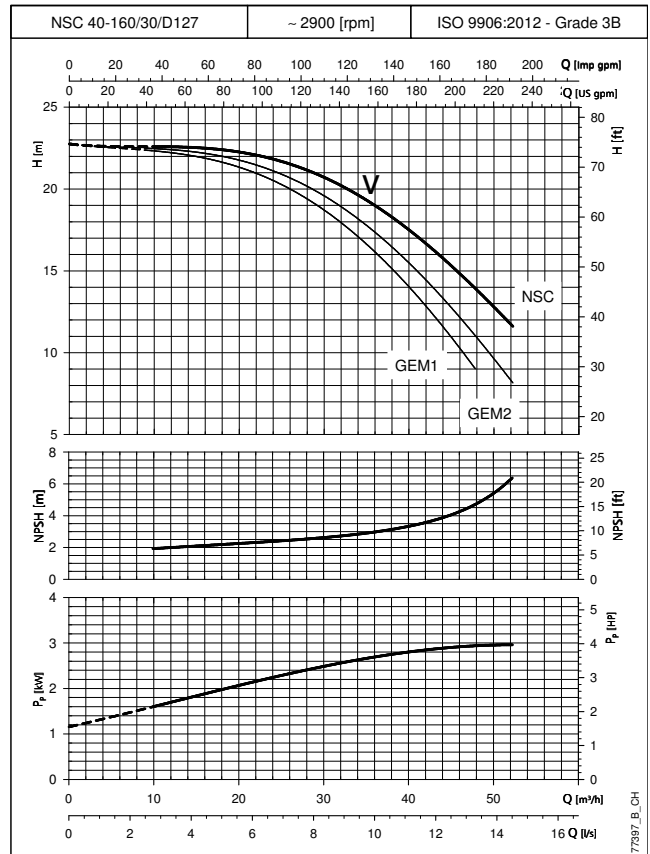
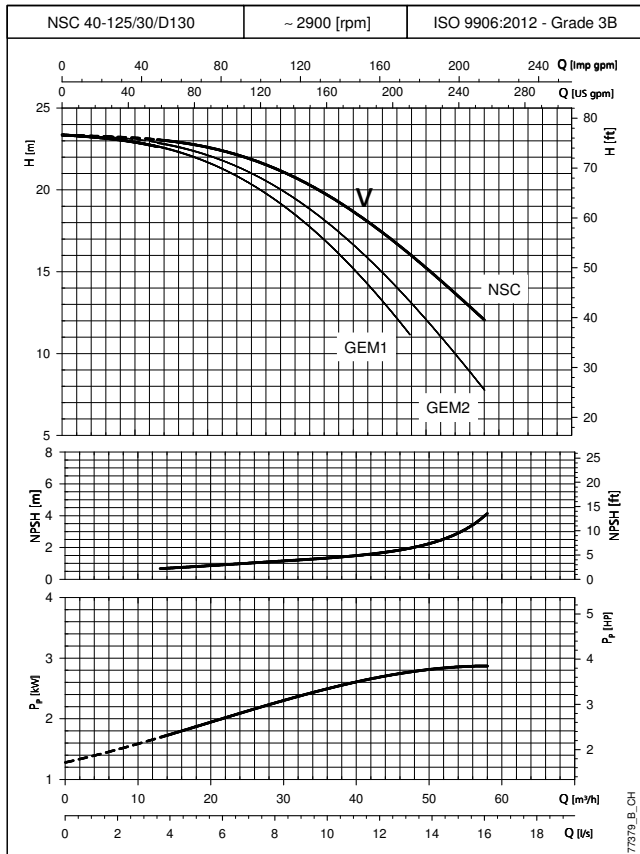
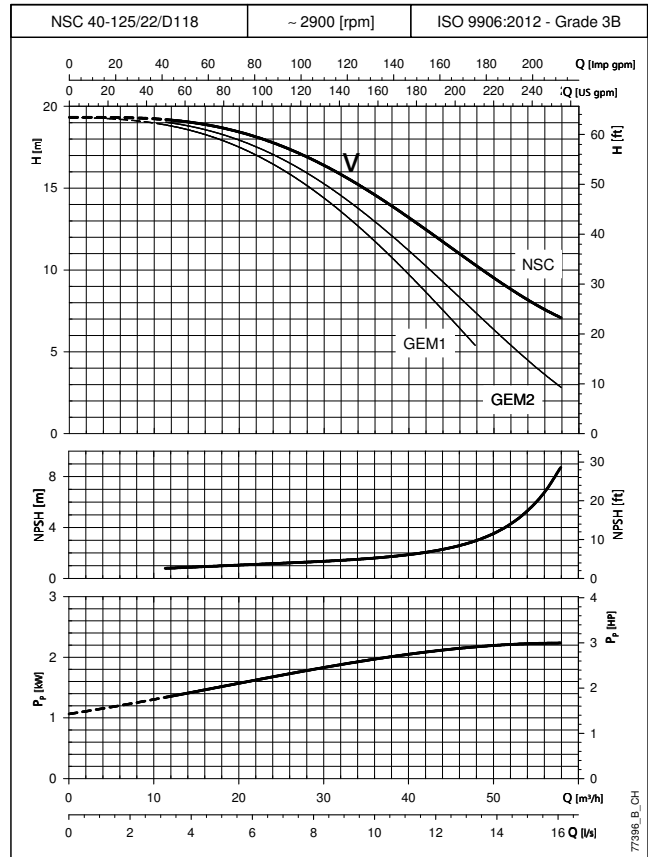
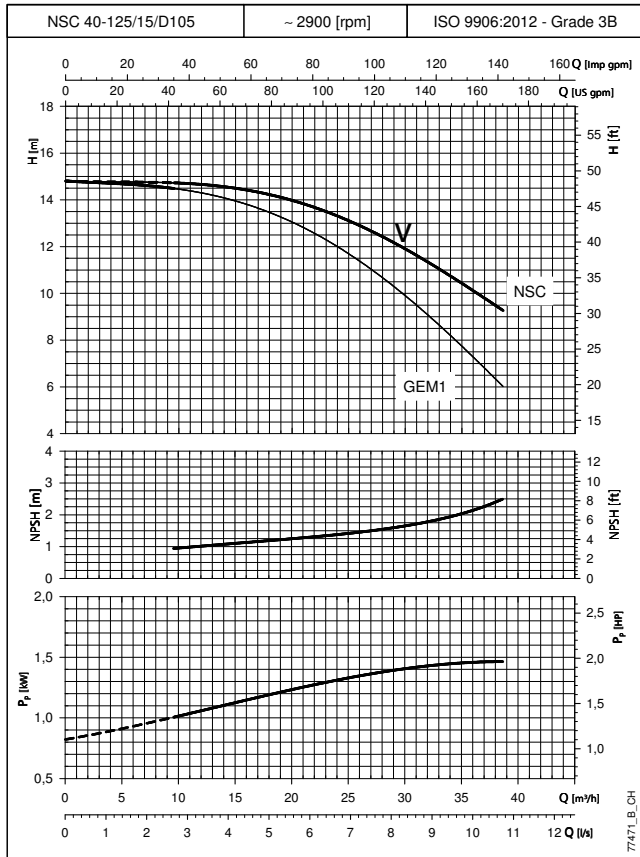
EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



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 The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m..

CURVES

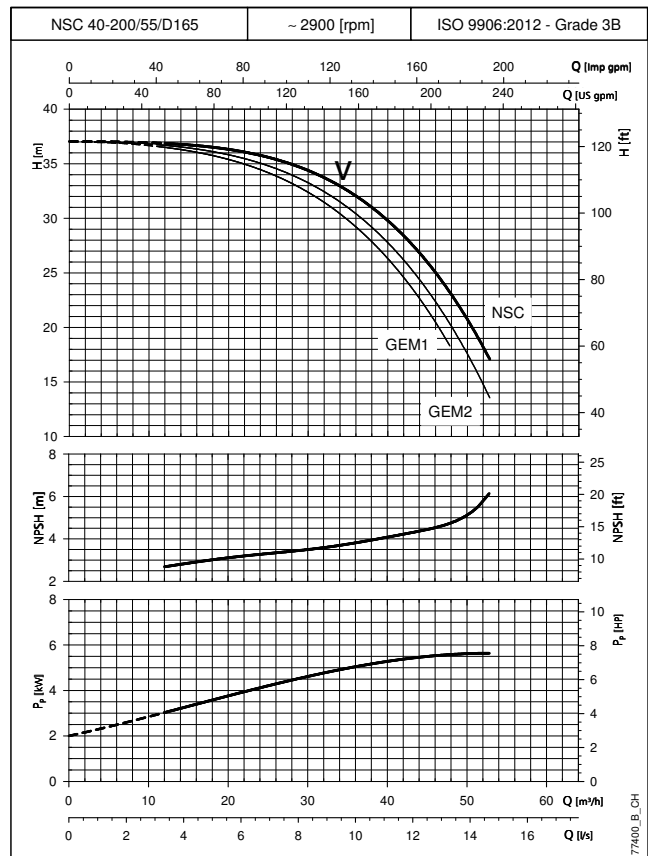
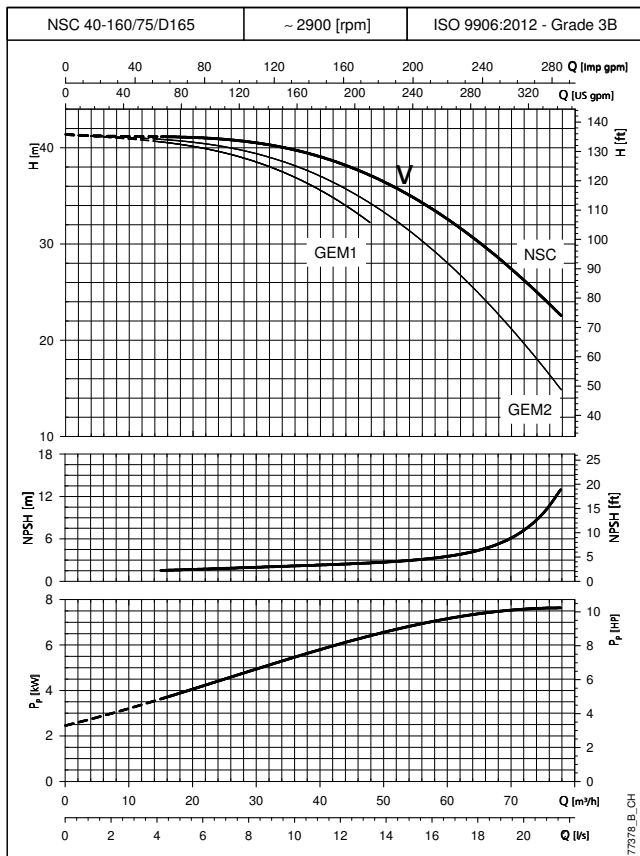
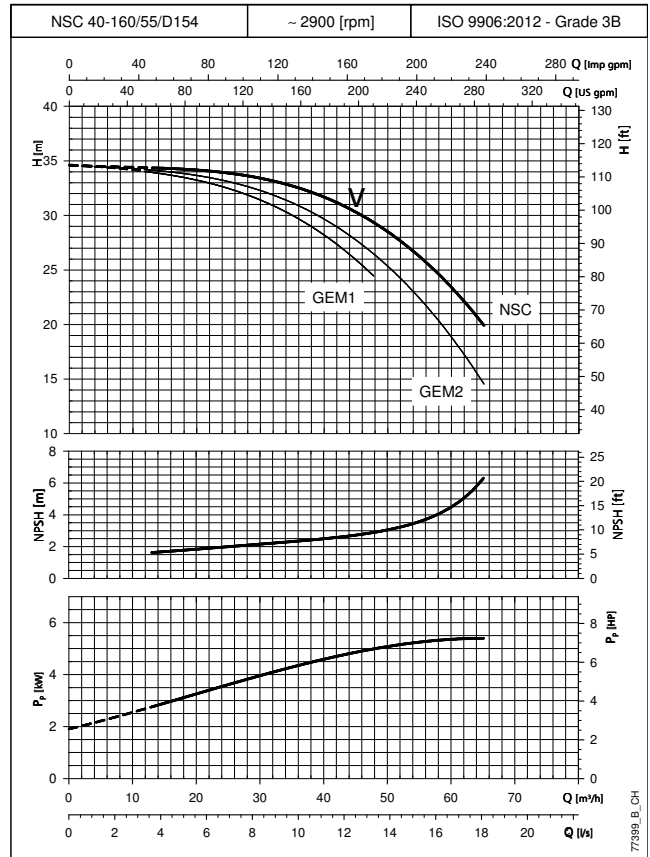
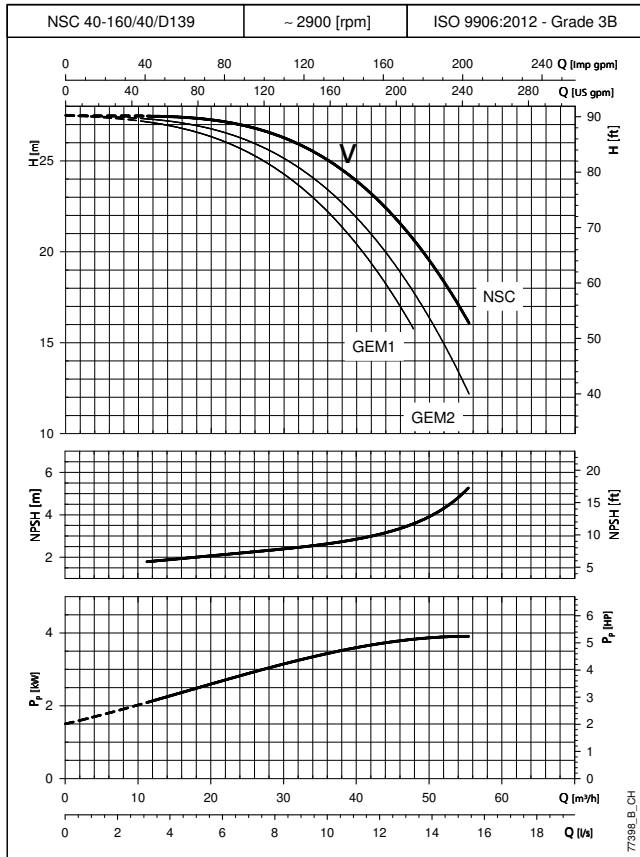
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CURVES

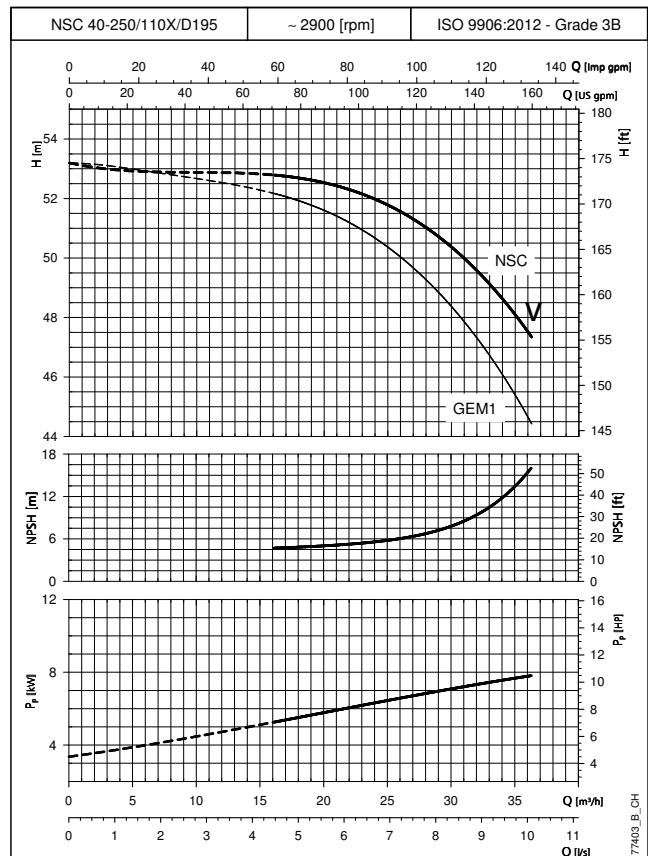
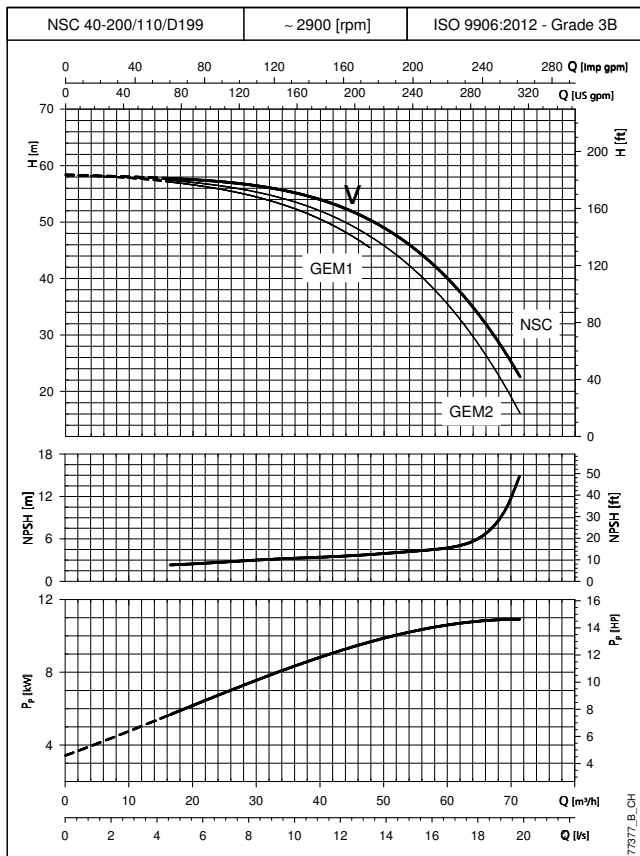
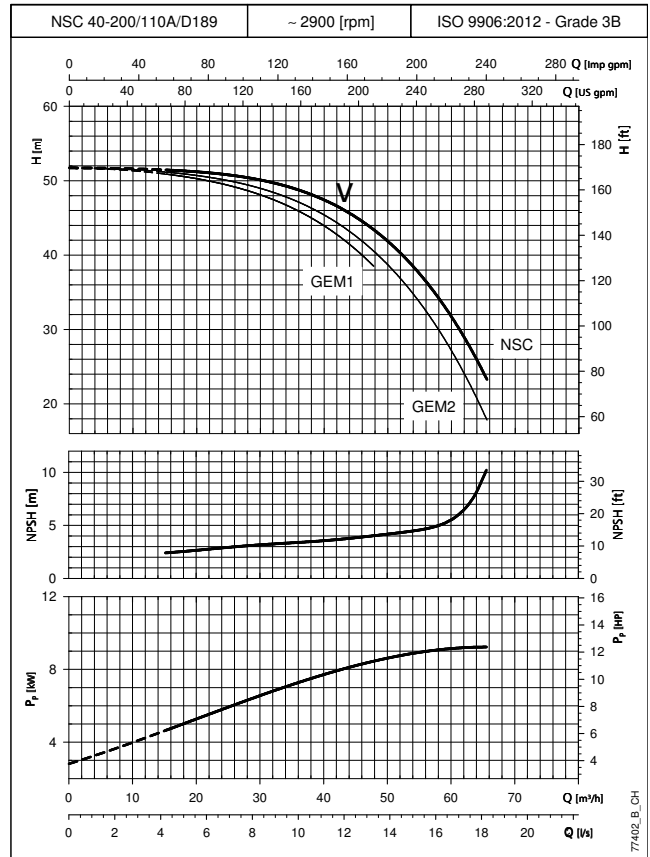
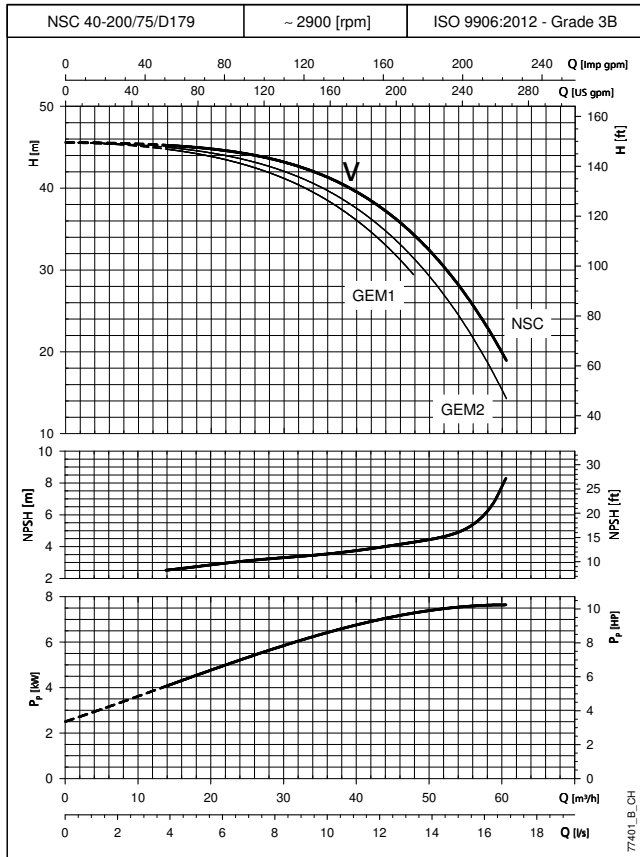
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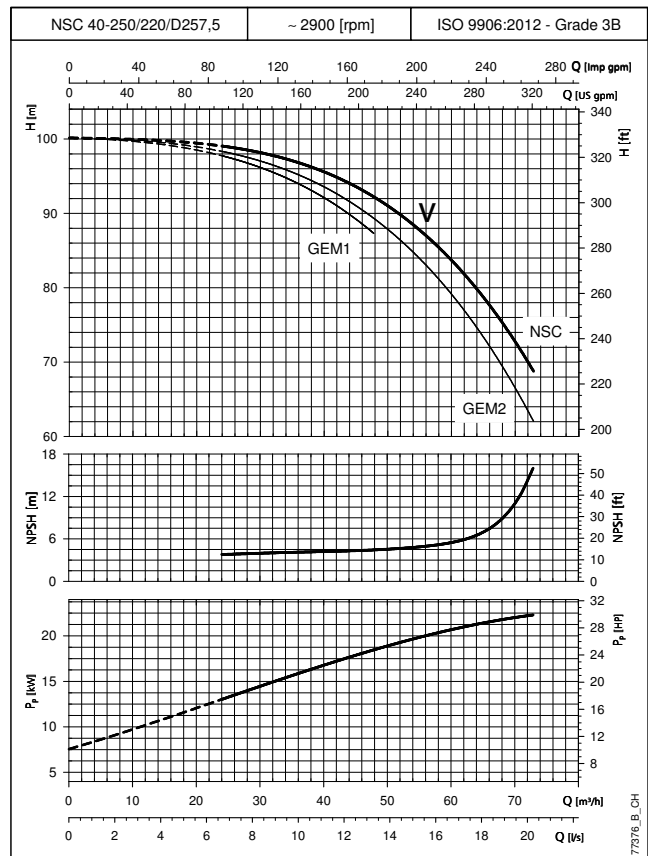
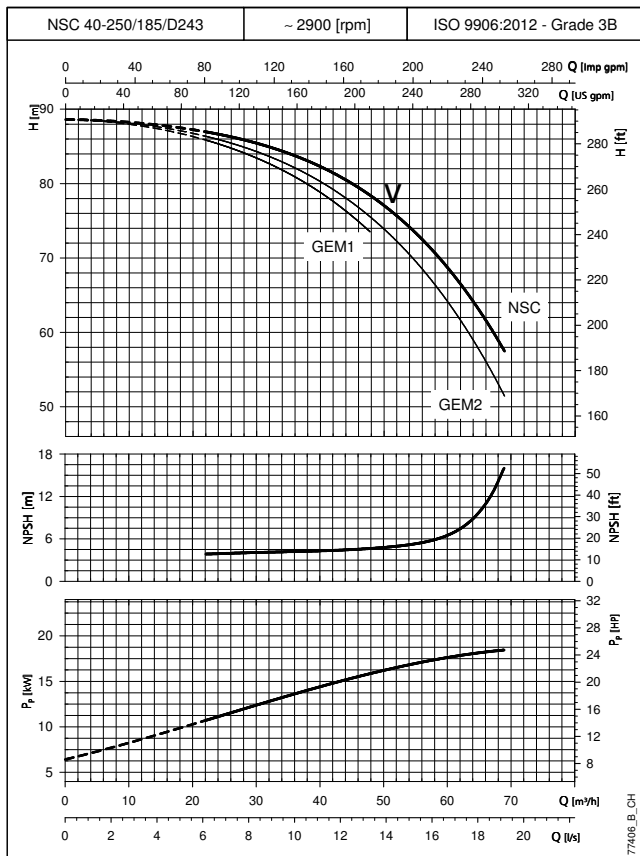
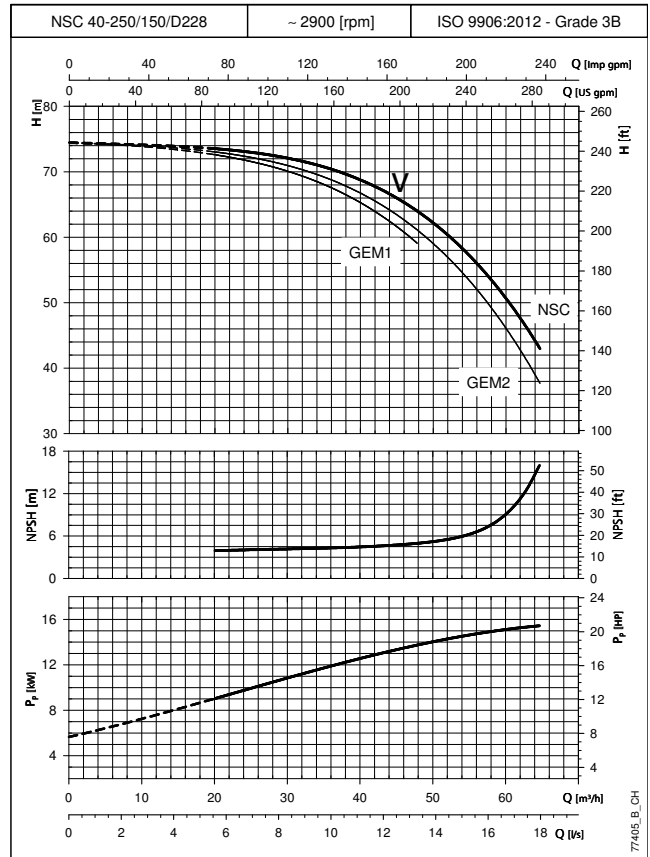
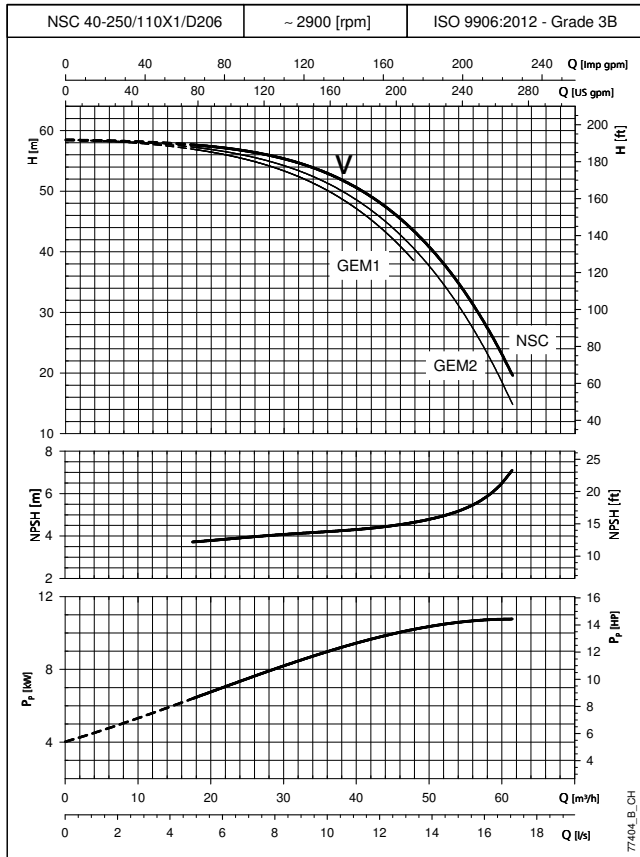
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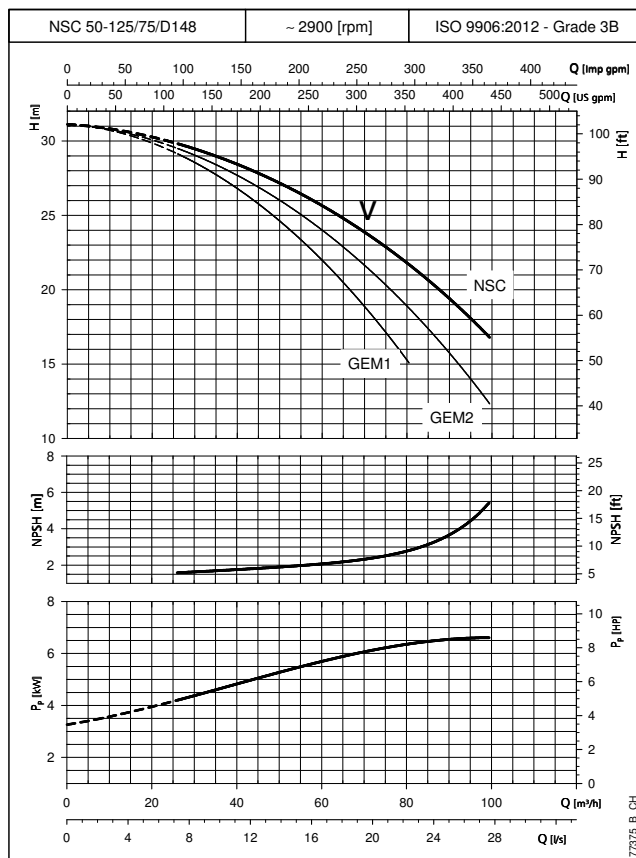
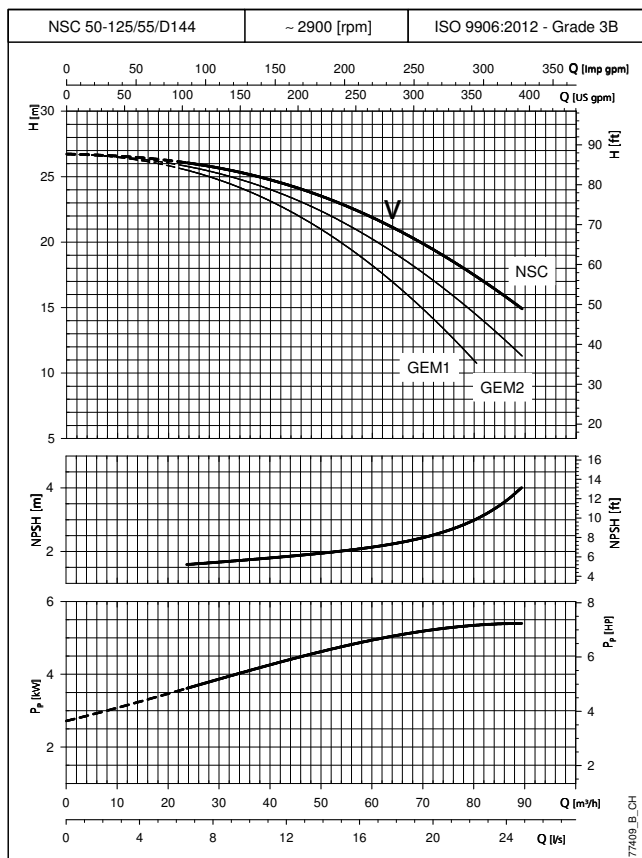
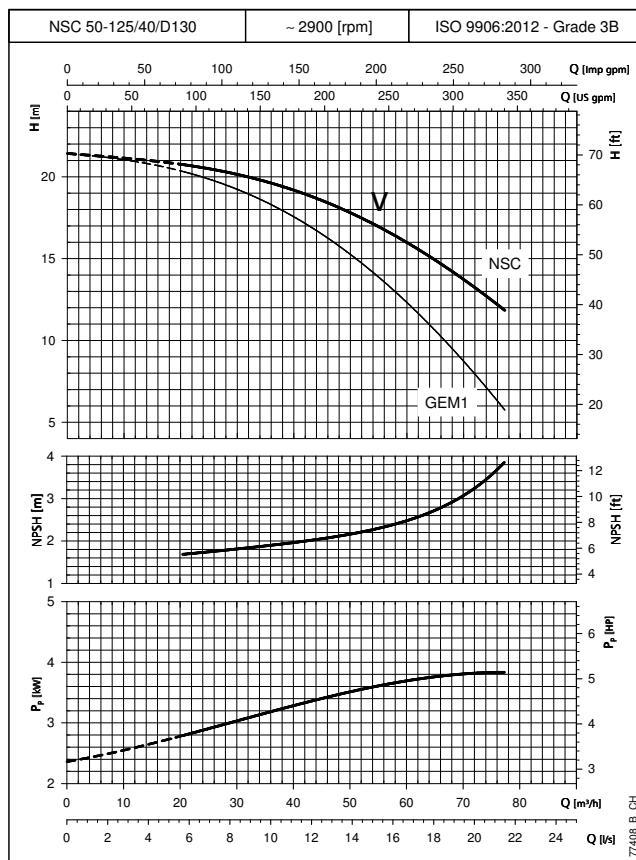
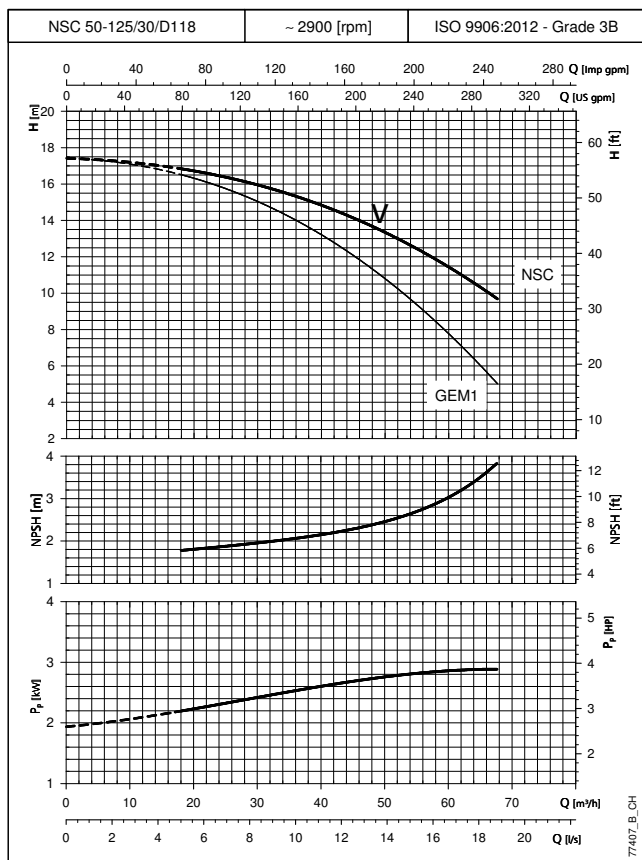
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CURVES

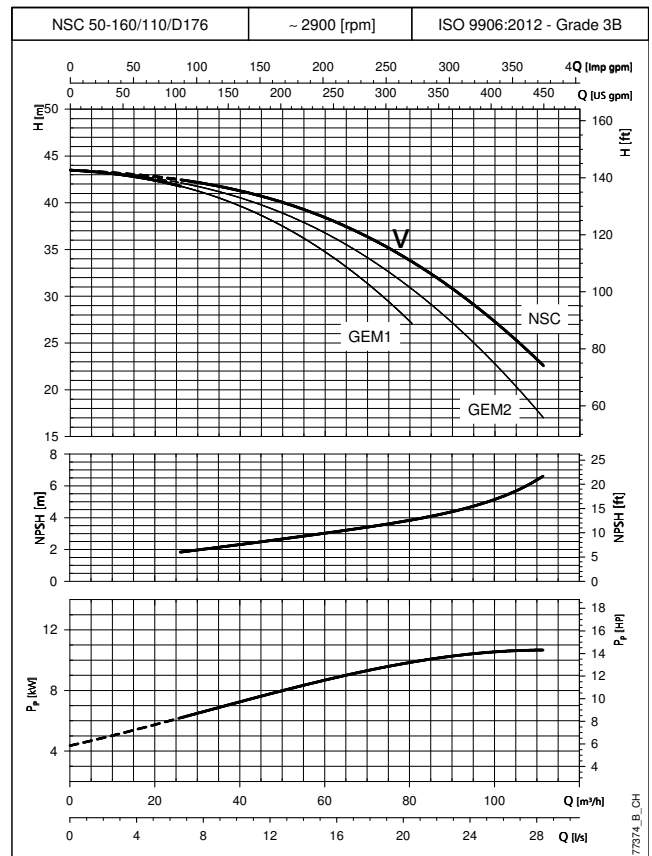
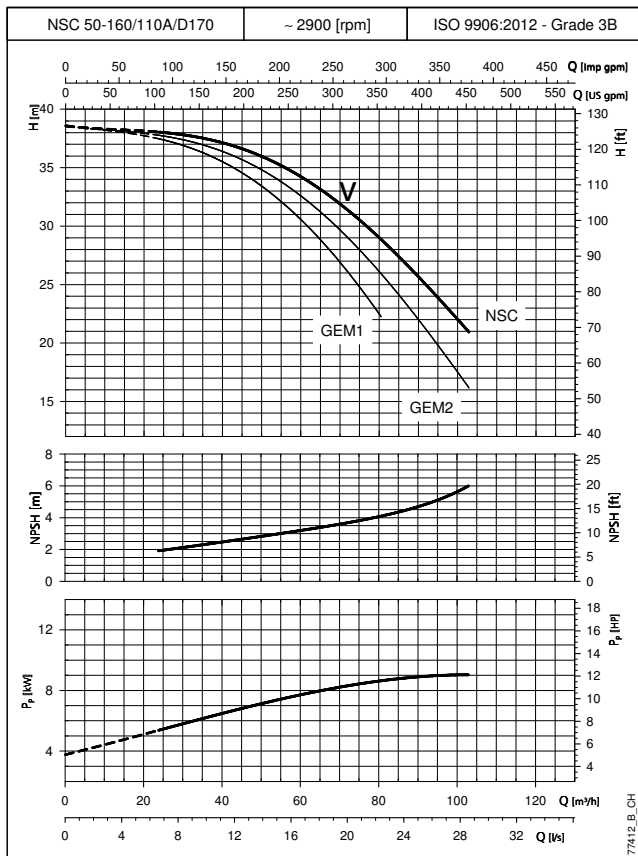
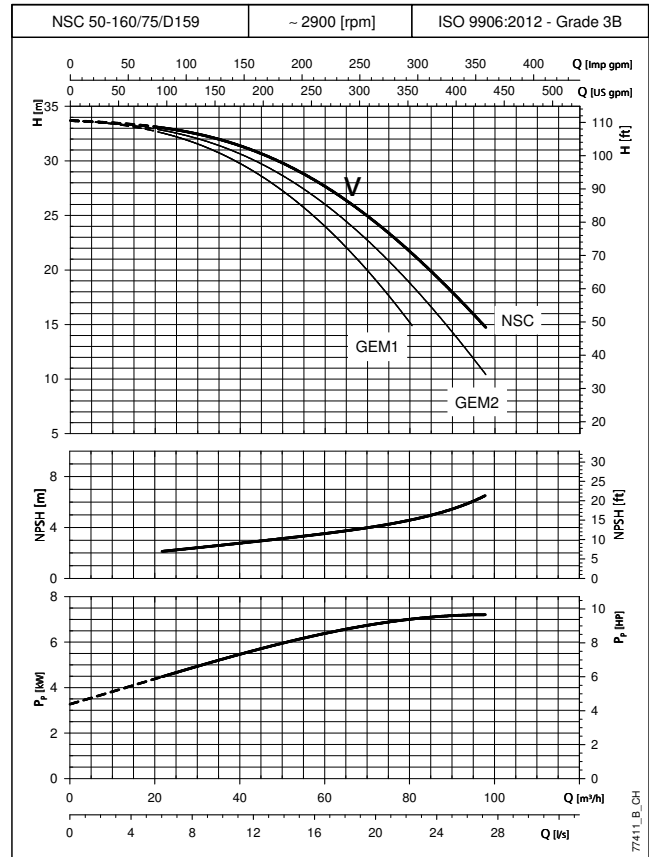
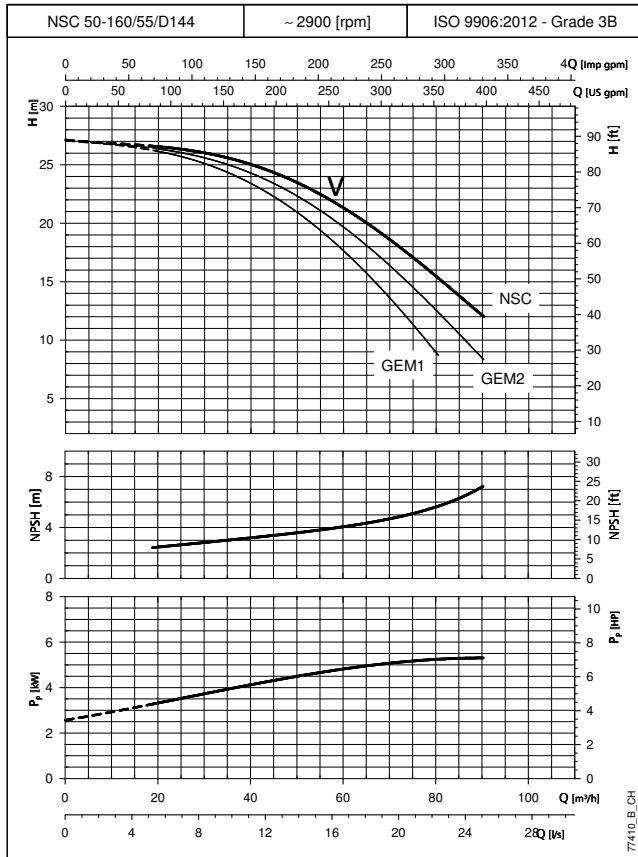
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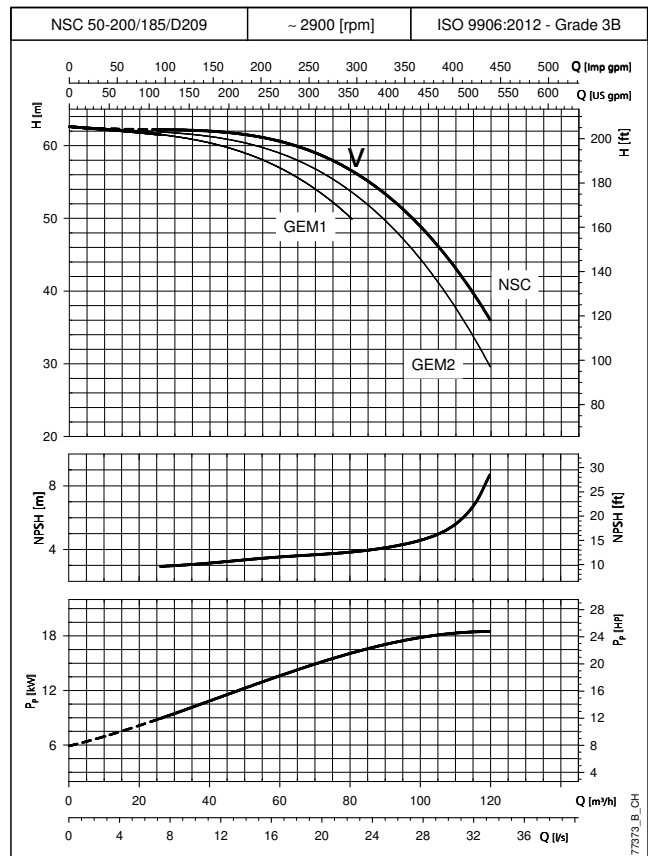
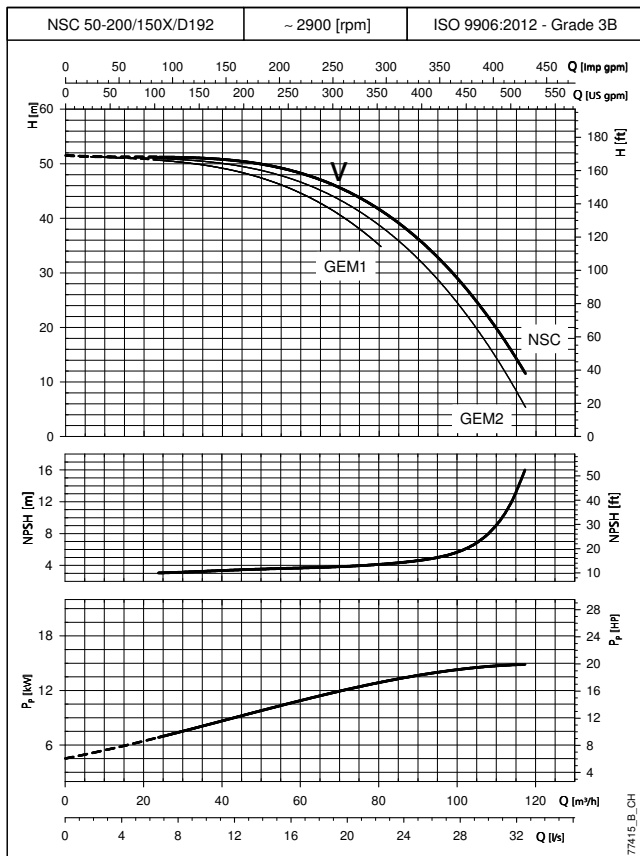
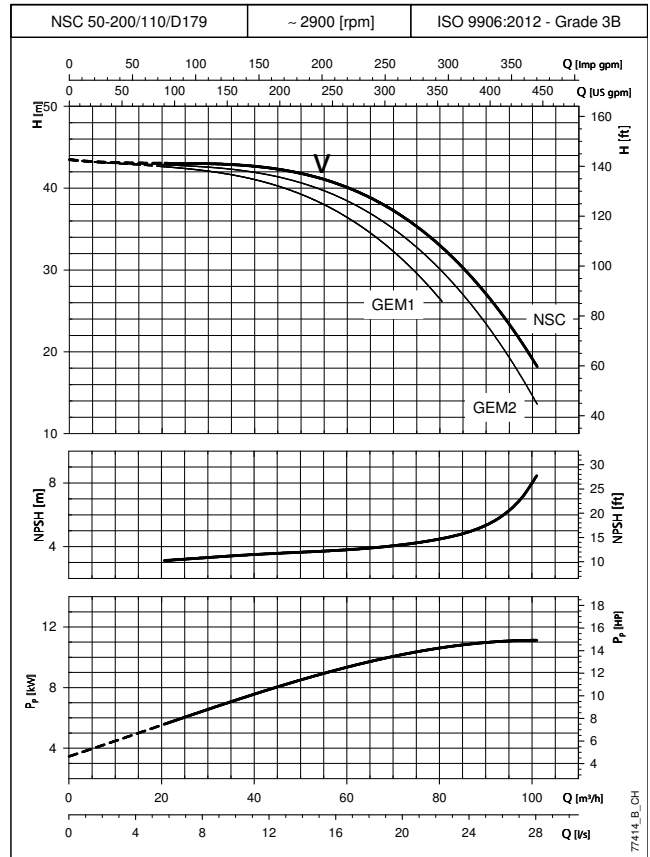
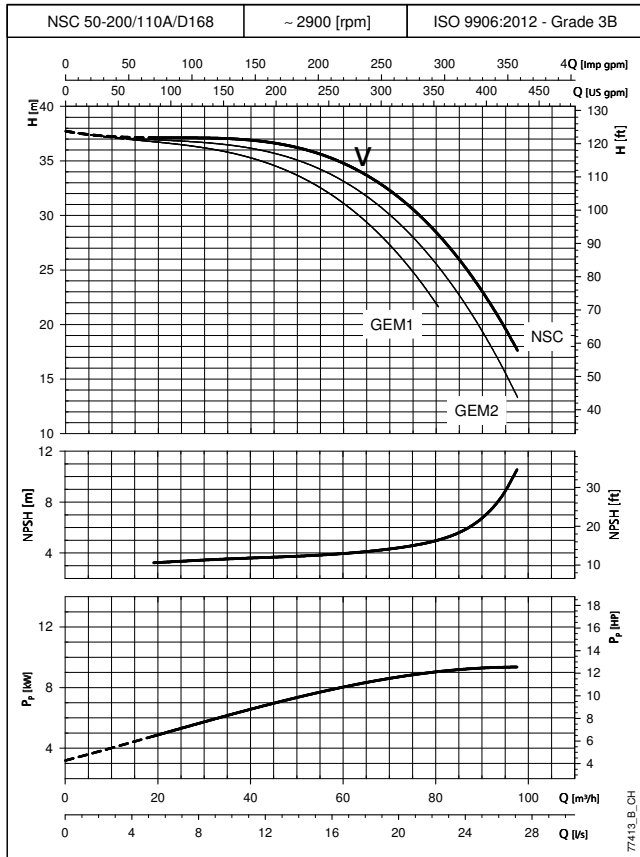
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CURVES

EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

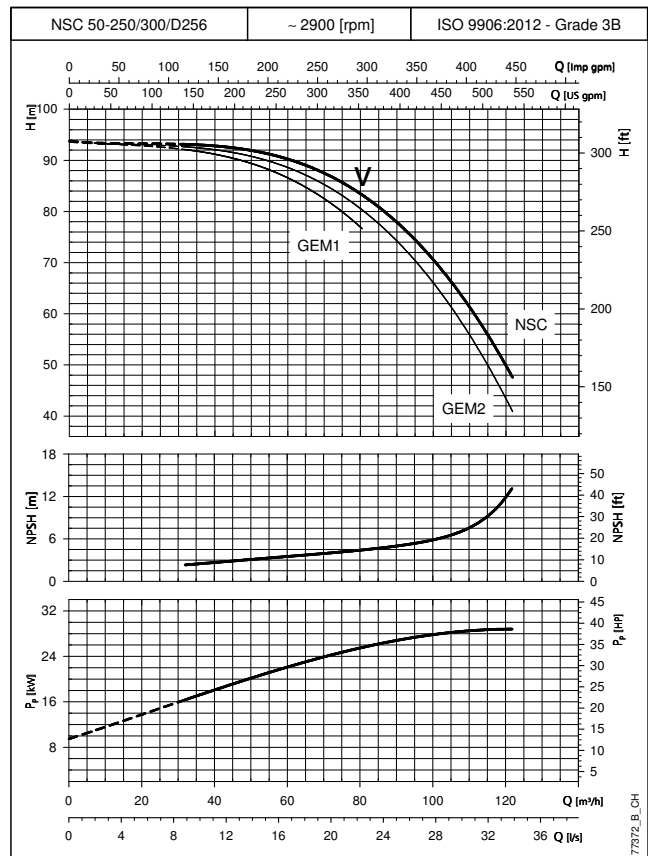
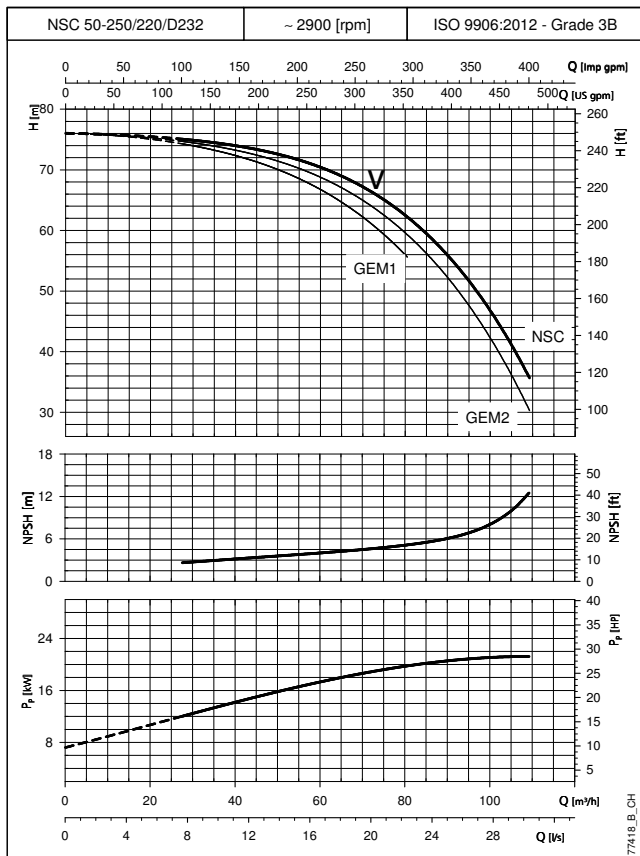
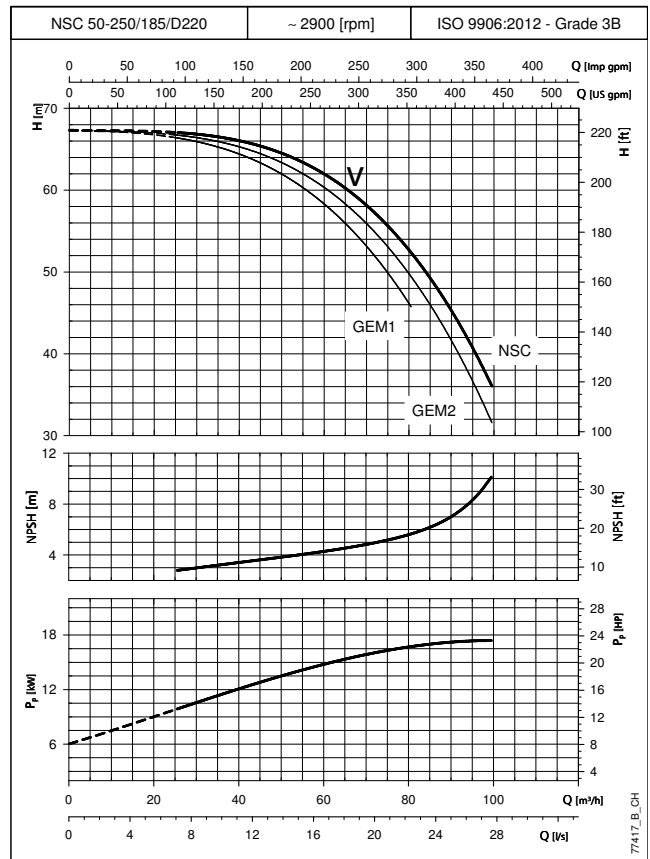
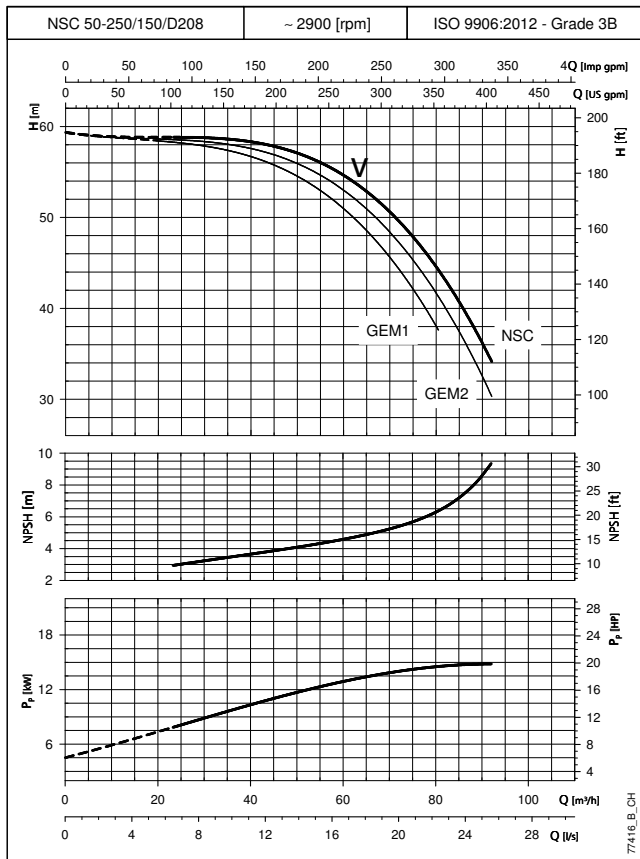


CURVES

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EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

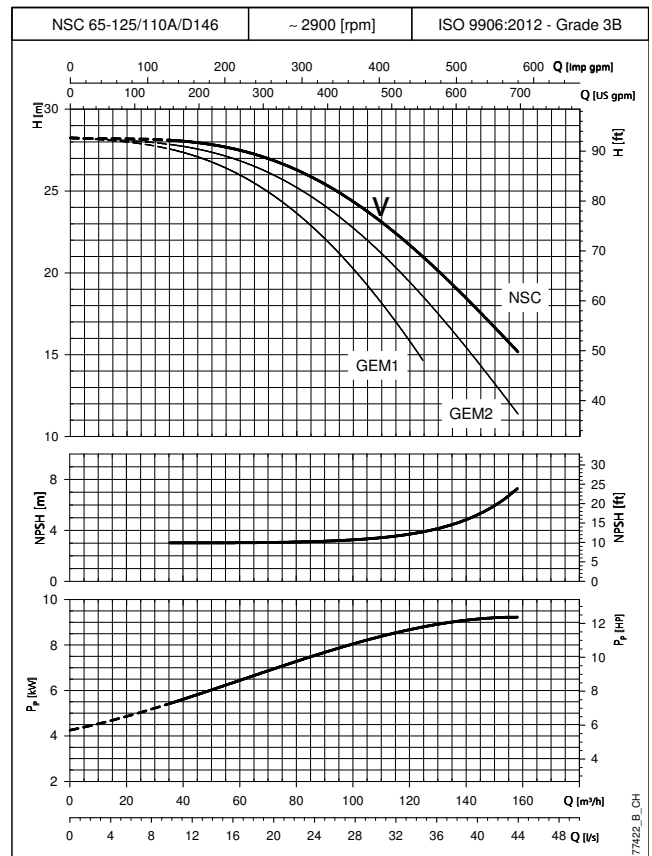
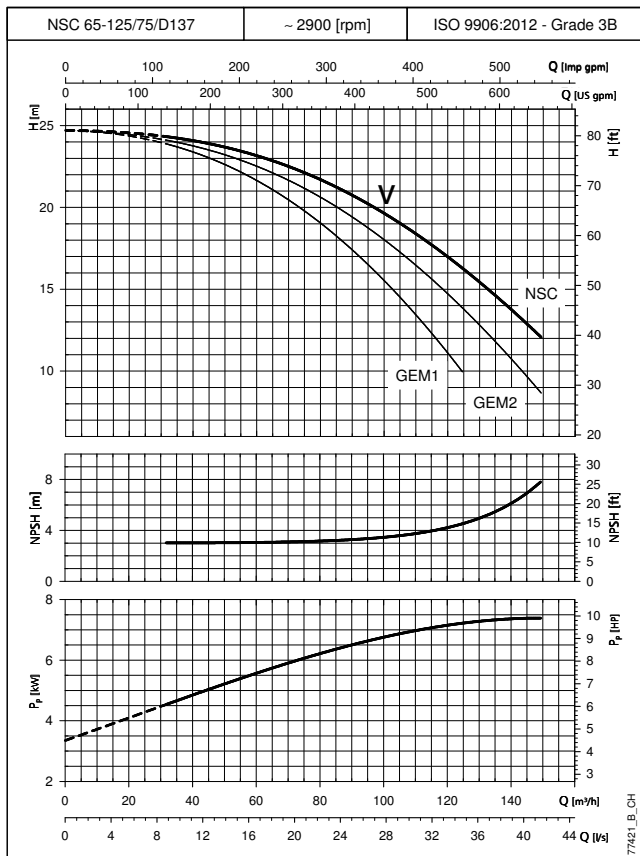
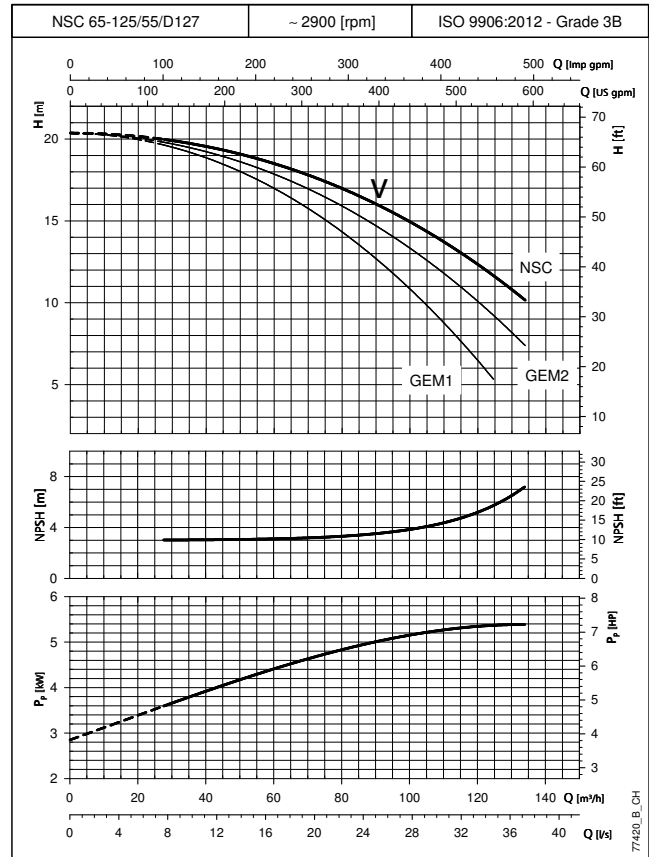
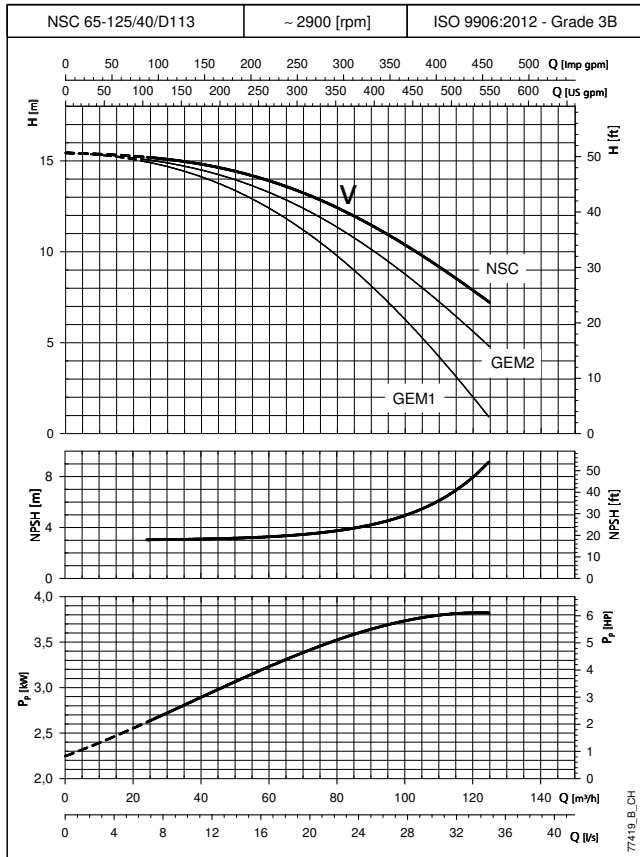


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CURVES

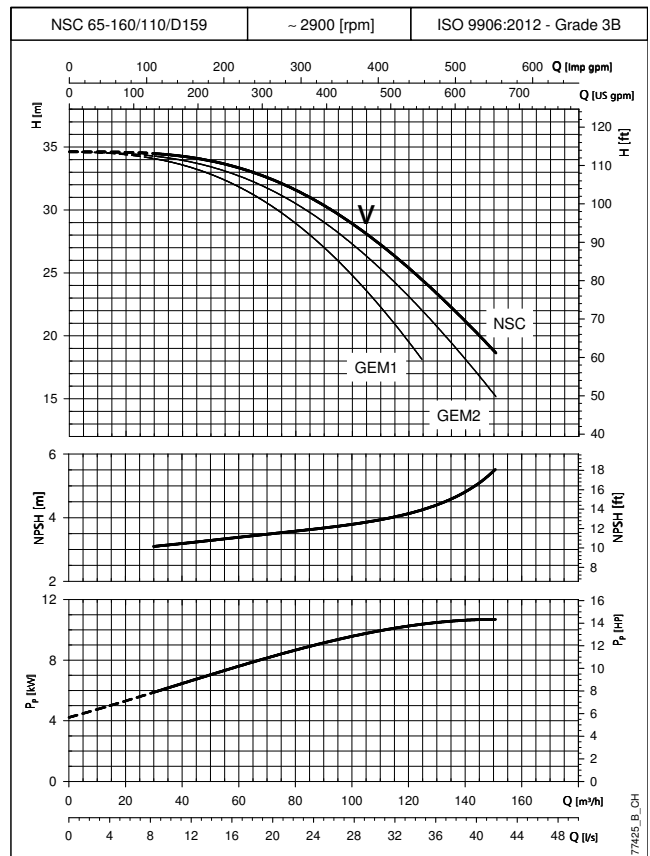
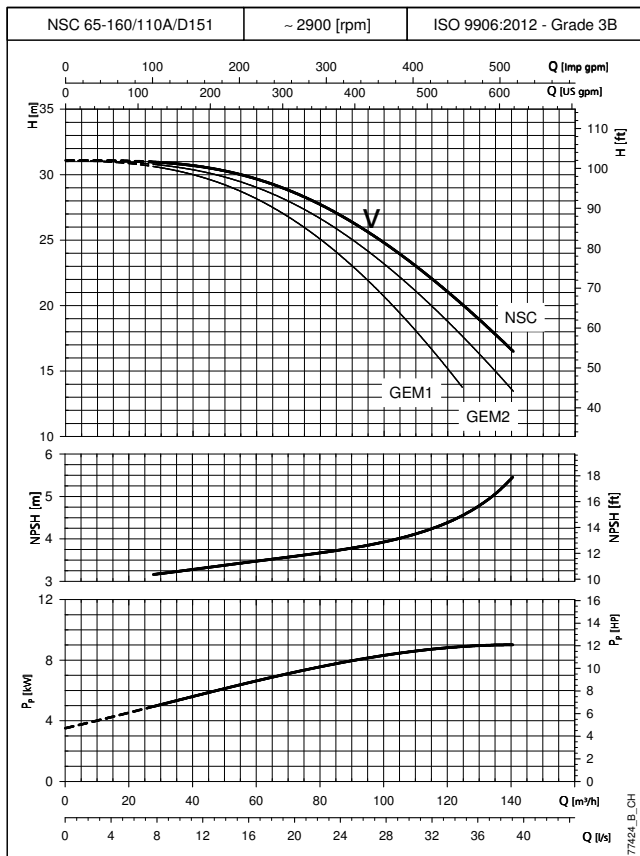
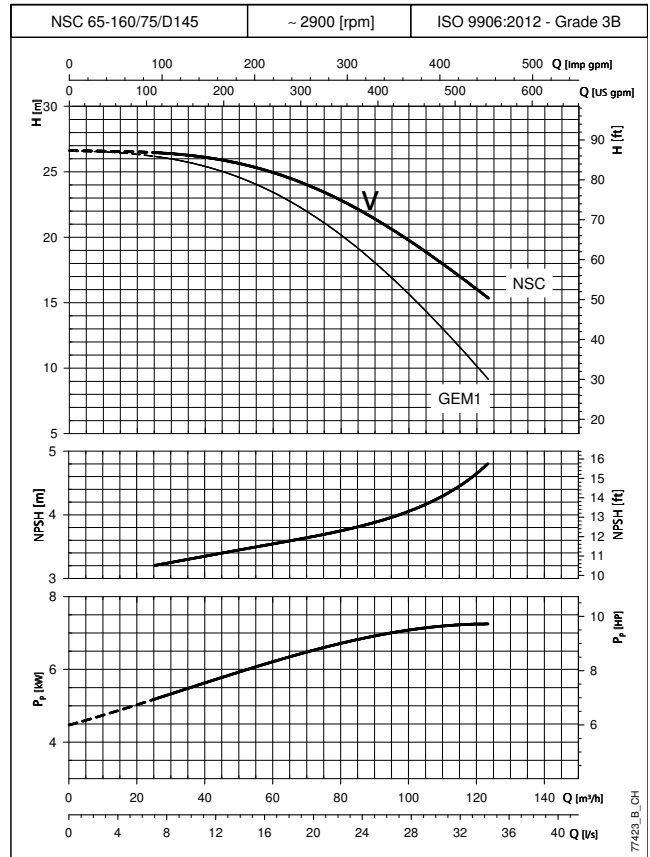
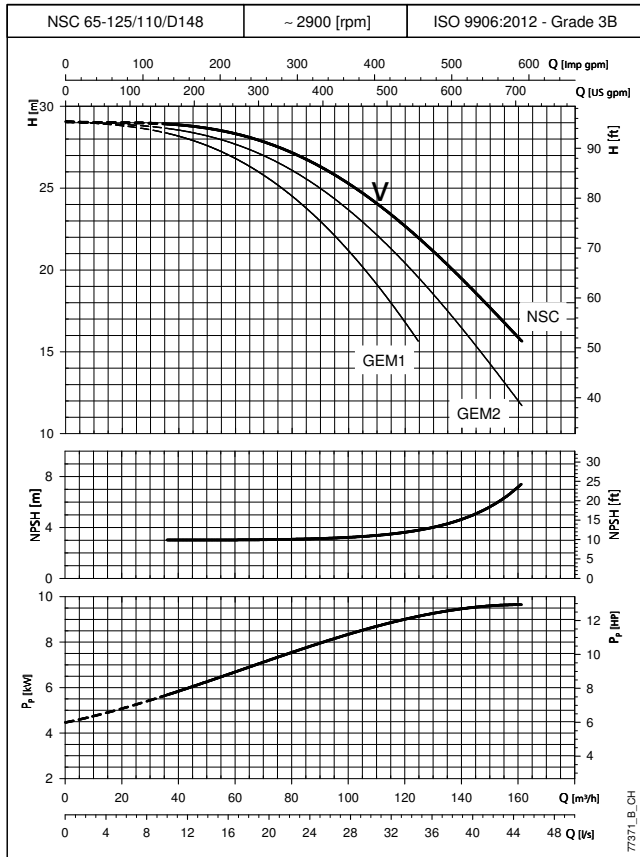
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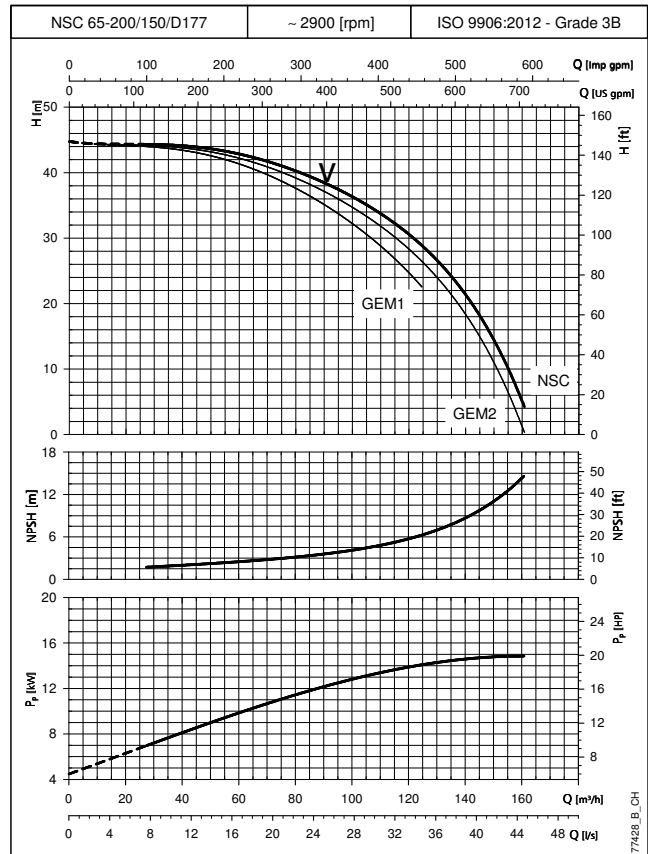
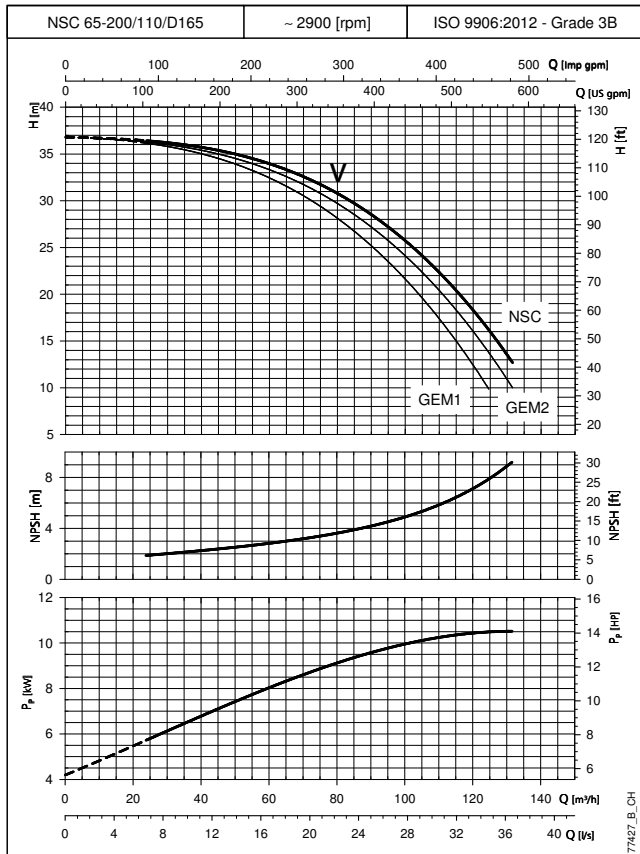
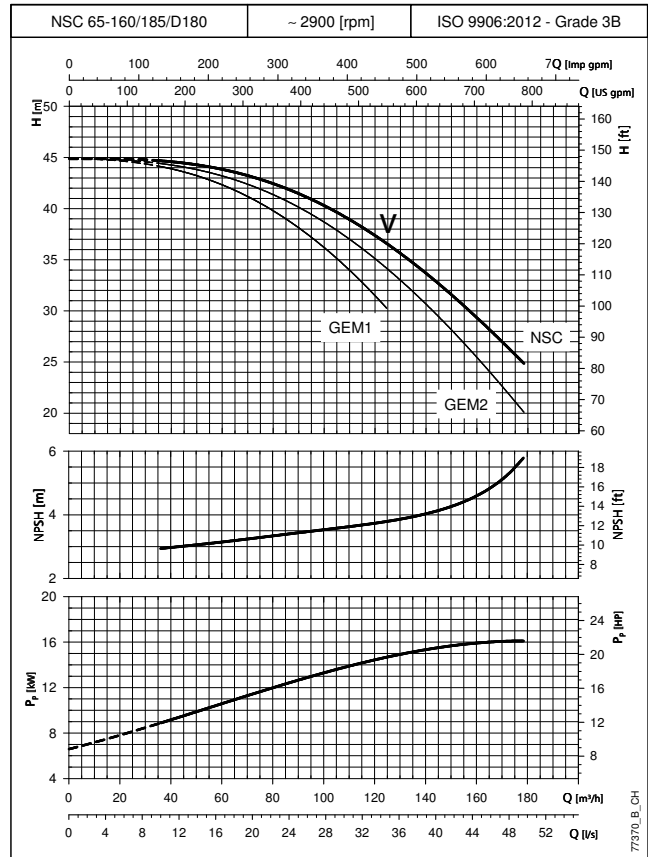
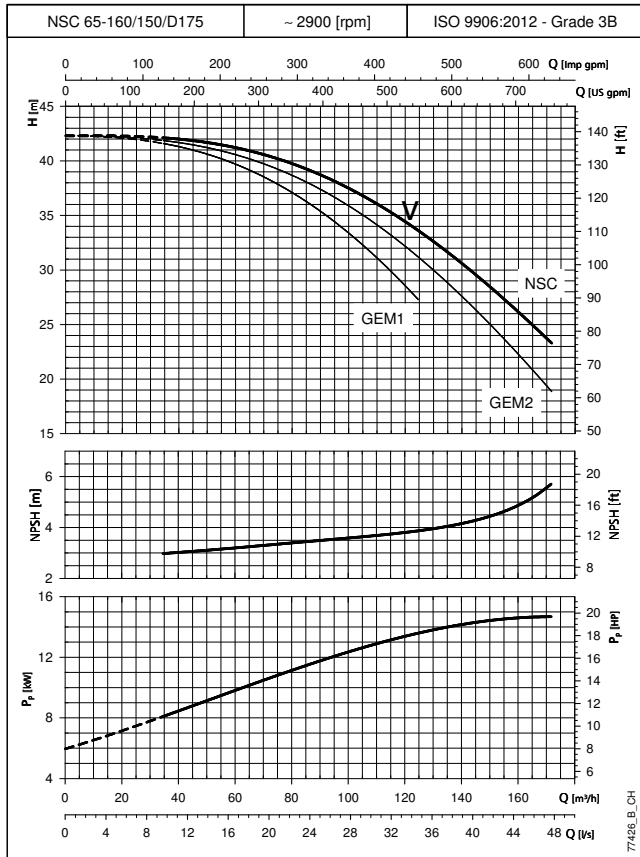
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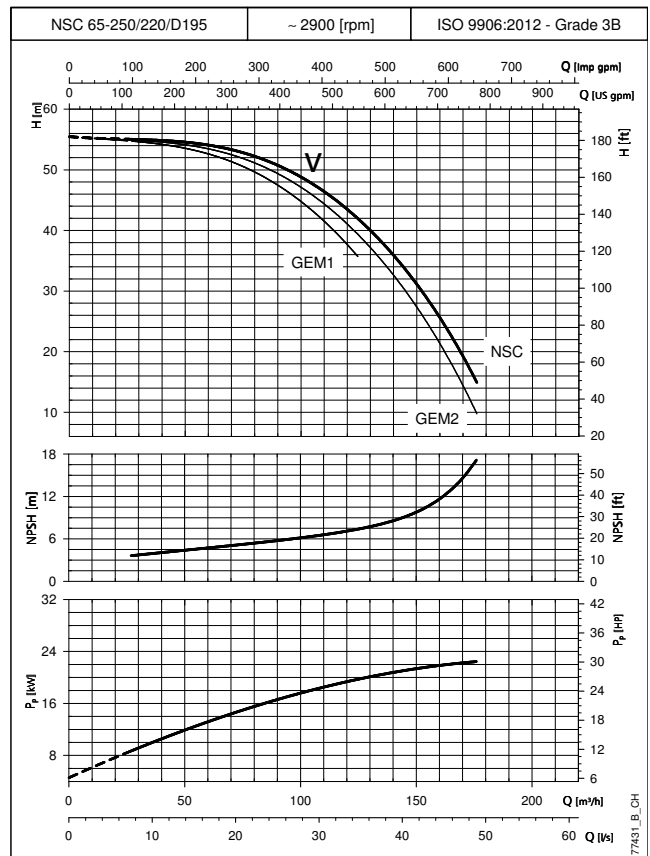
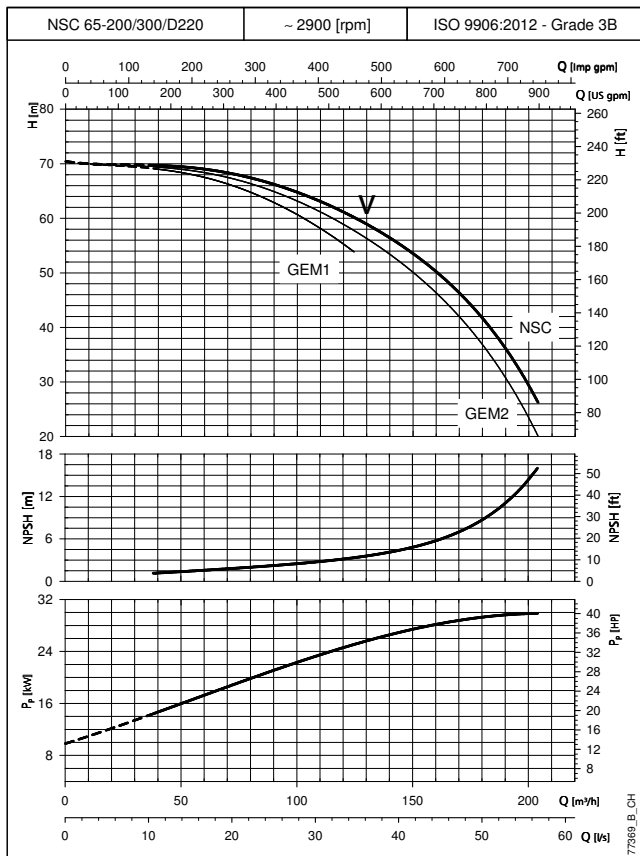
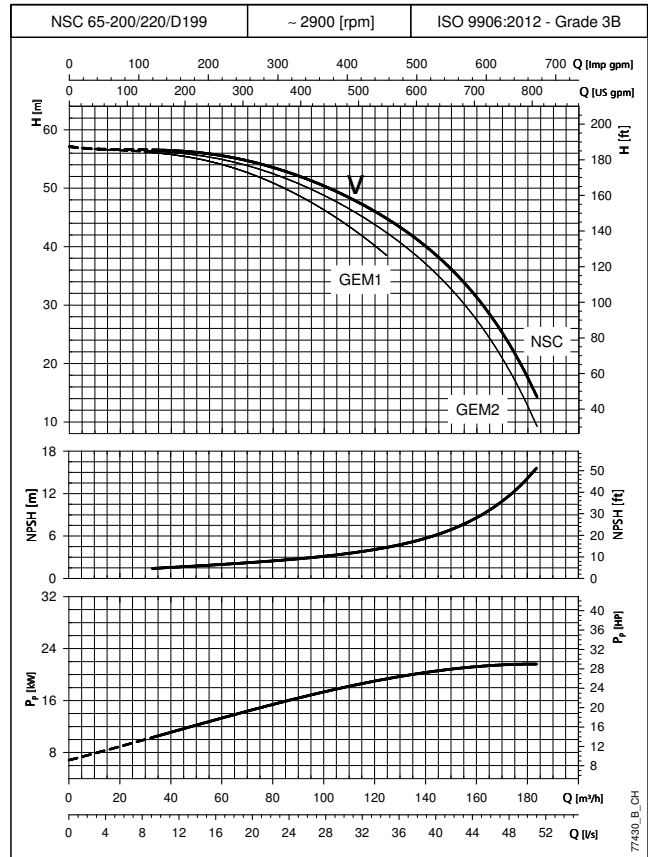
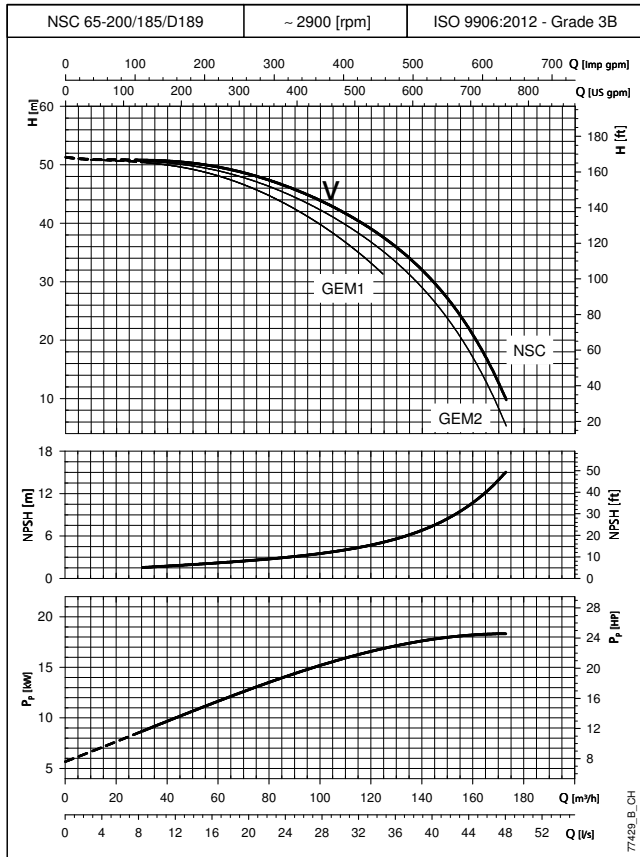
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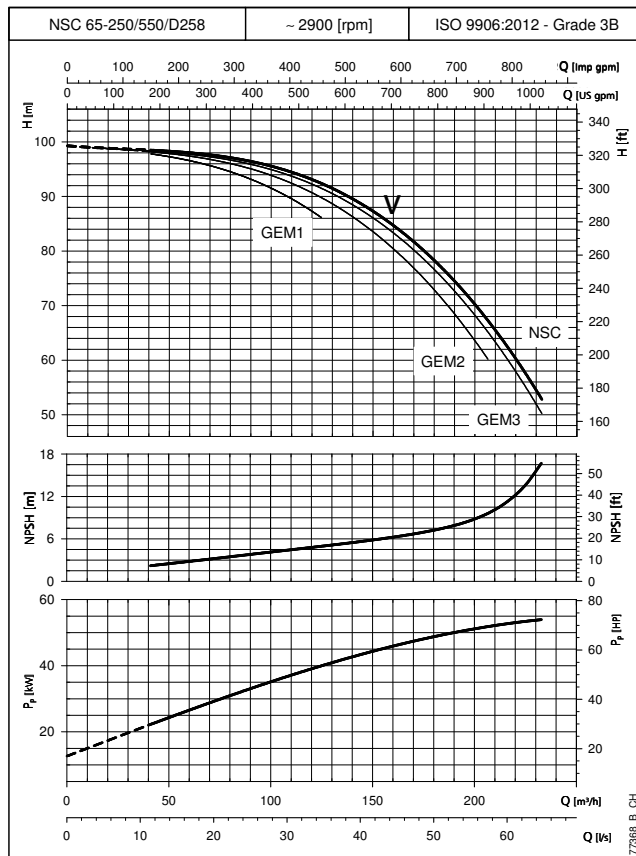
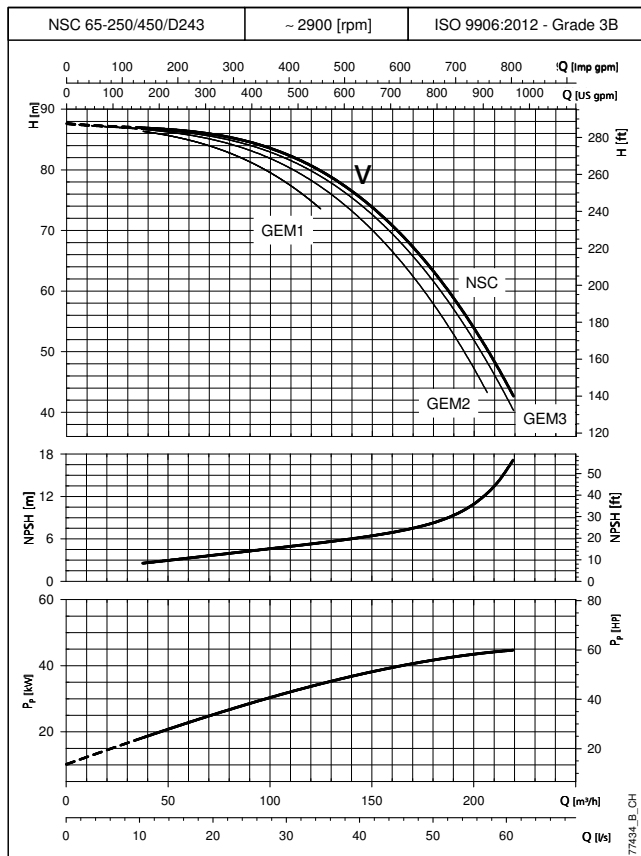
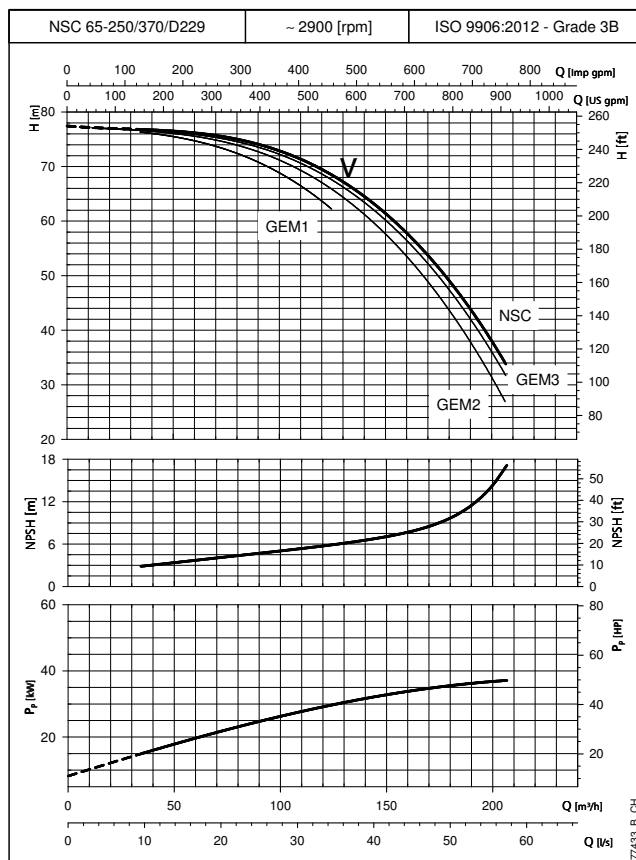
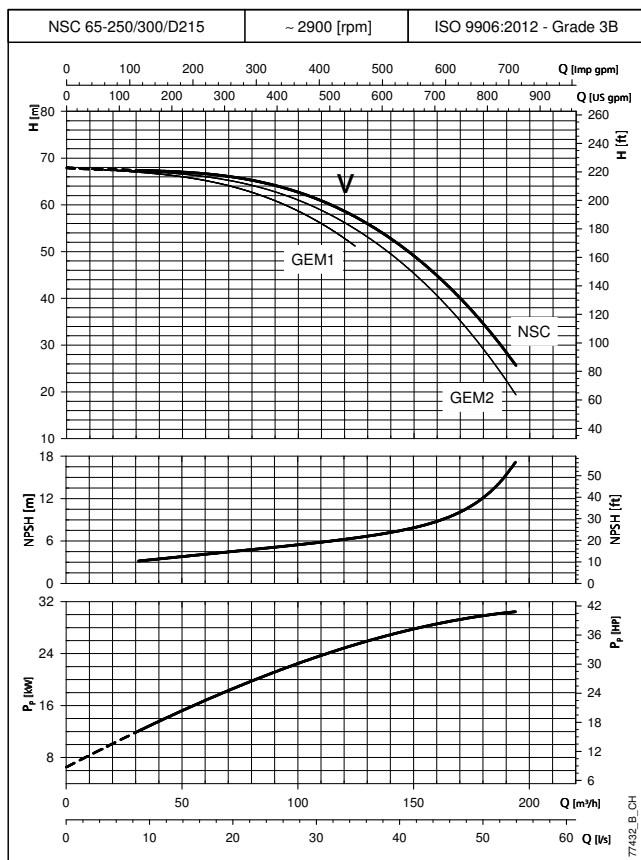
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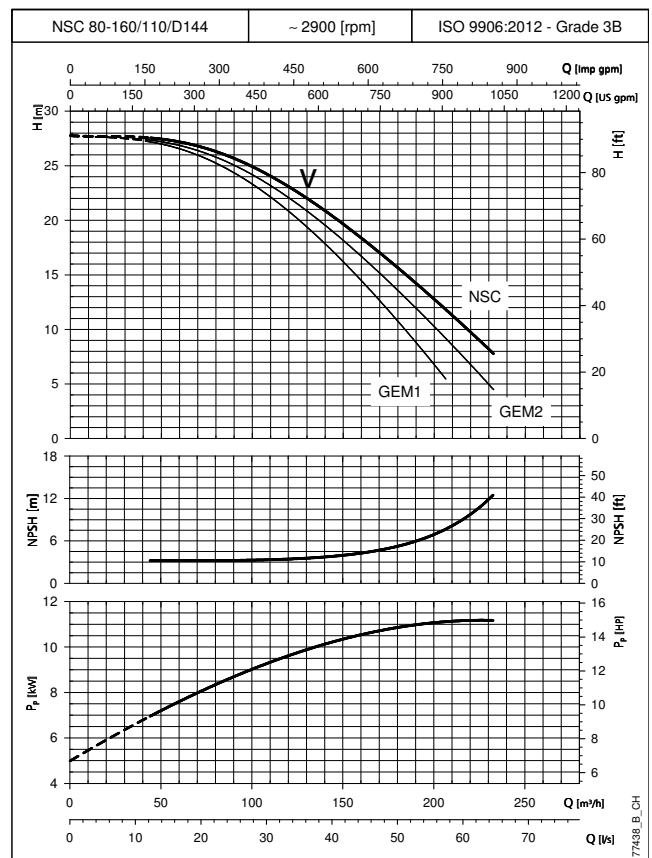
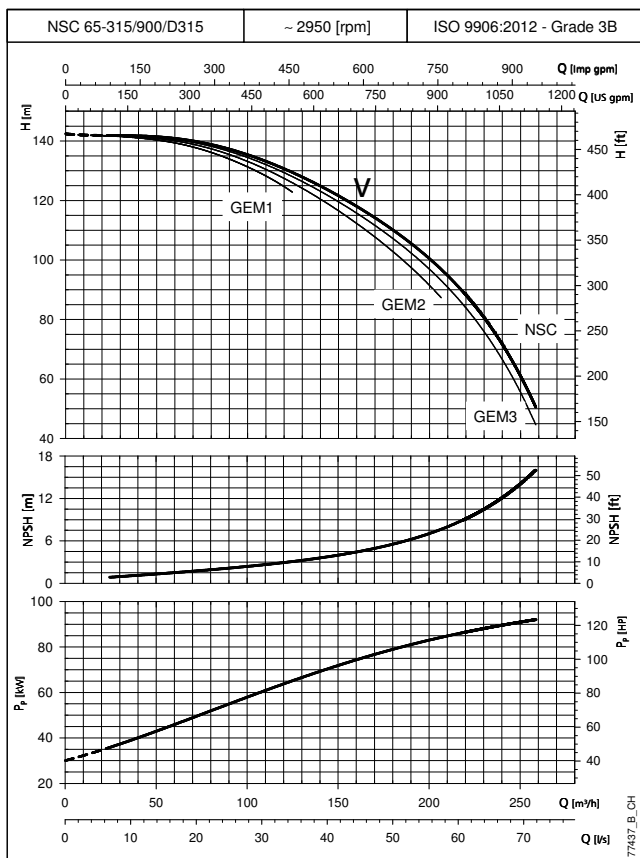
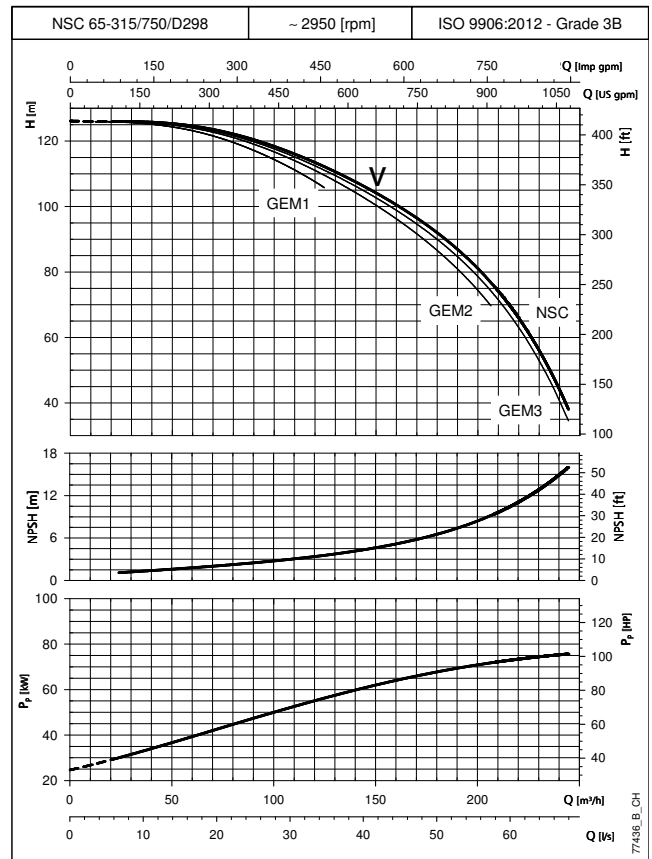
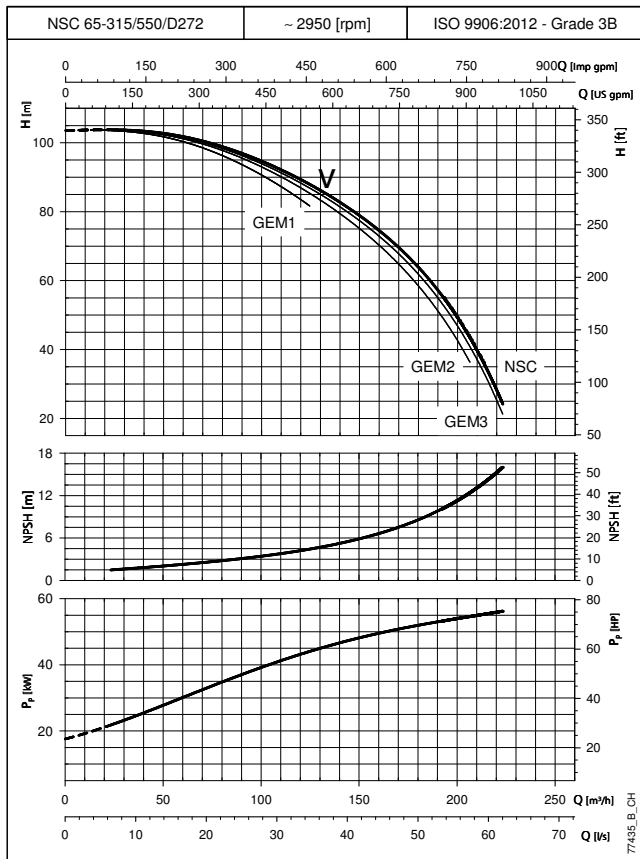
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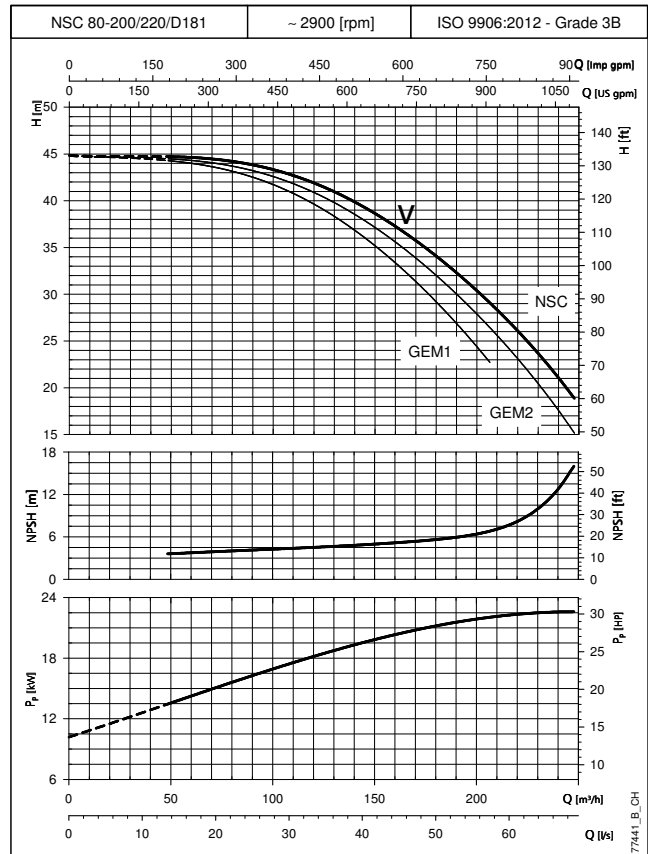
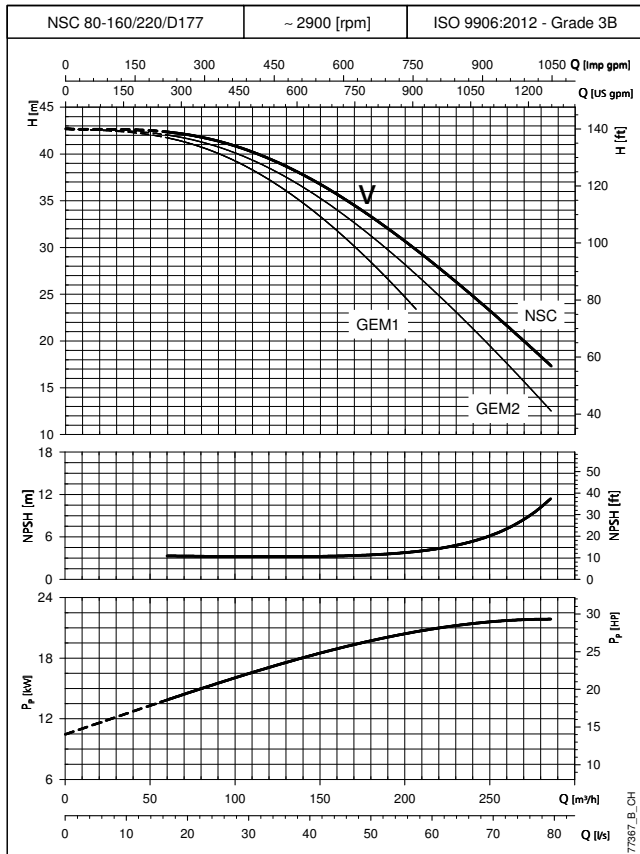
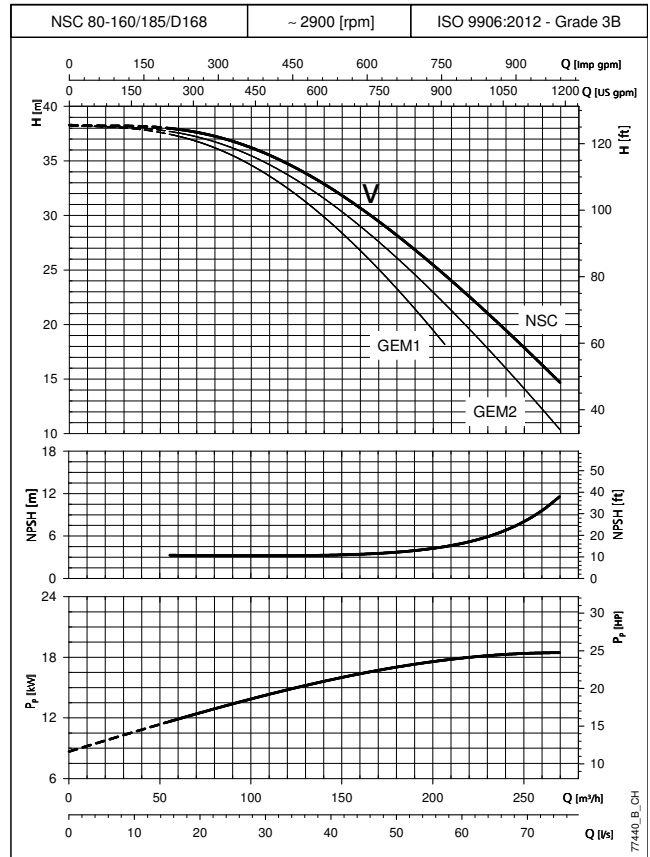
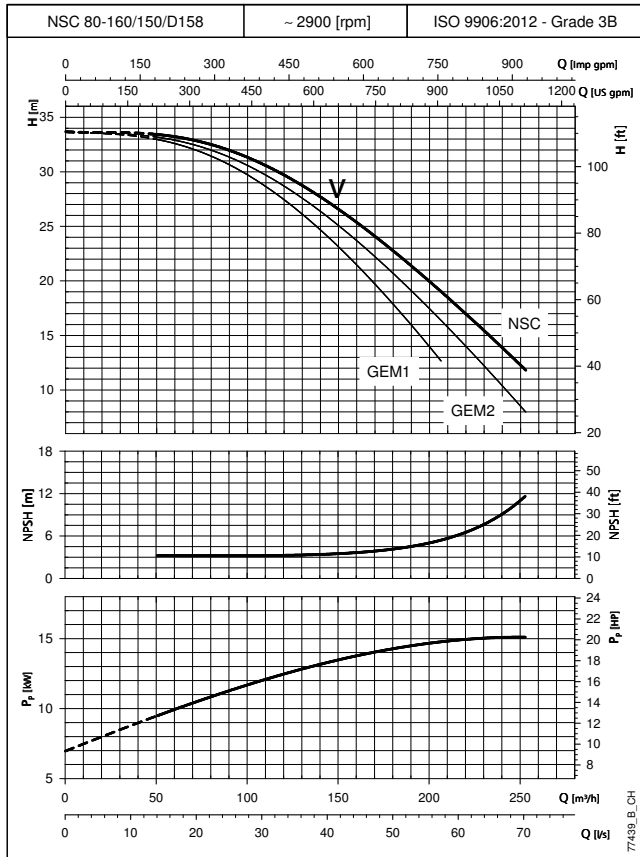


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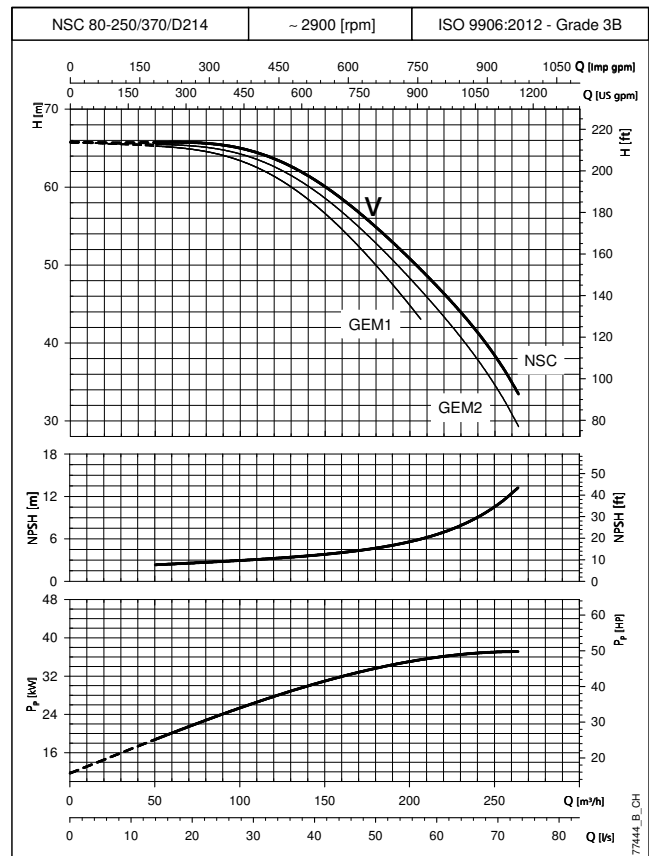
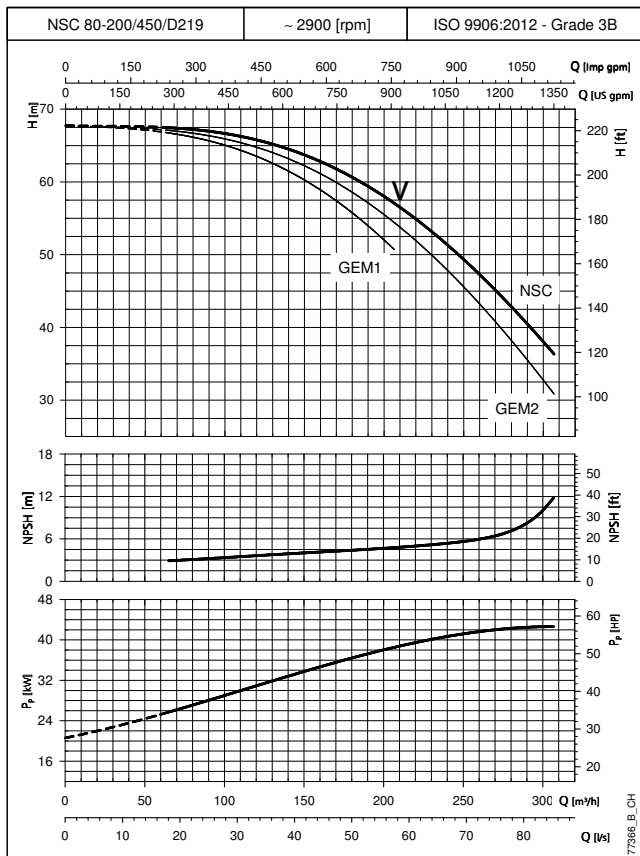
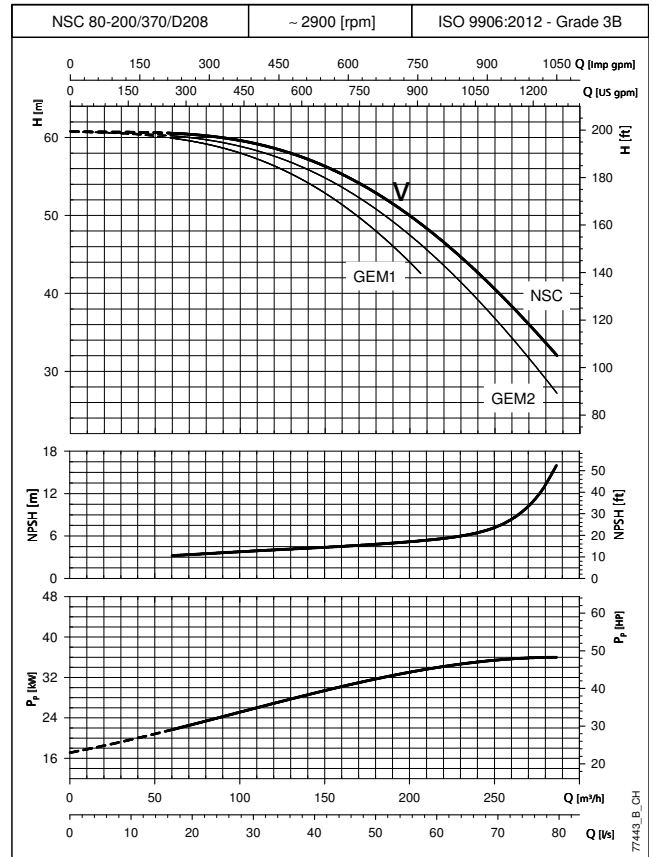
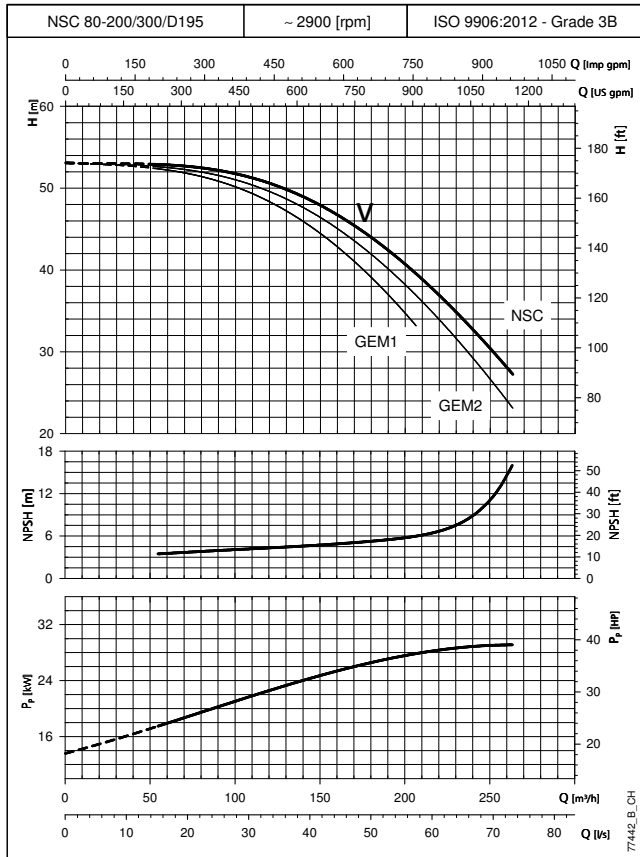


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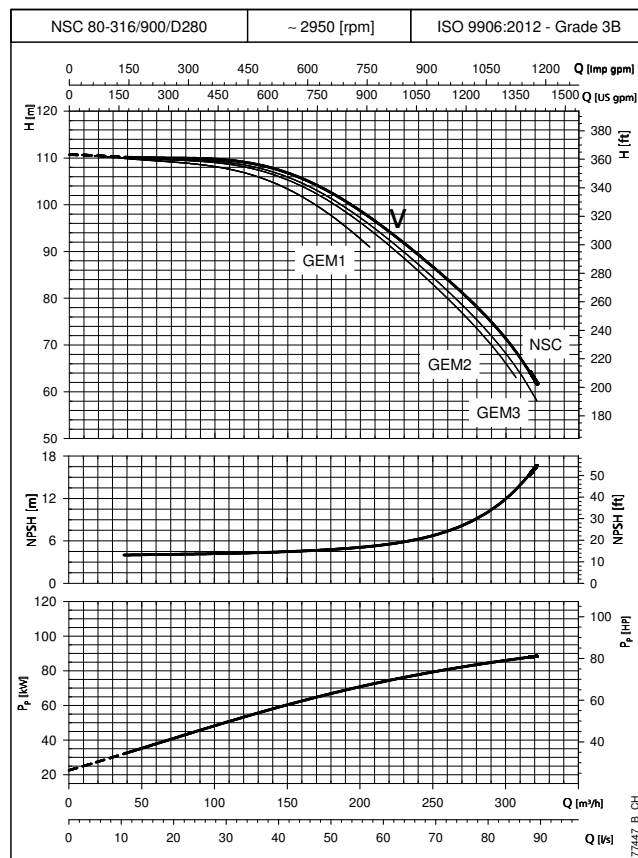
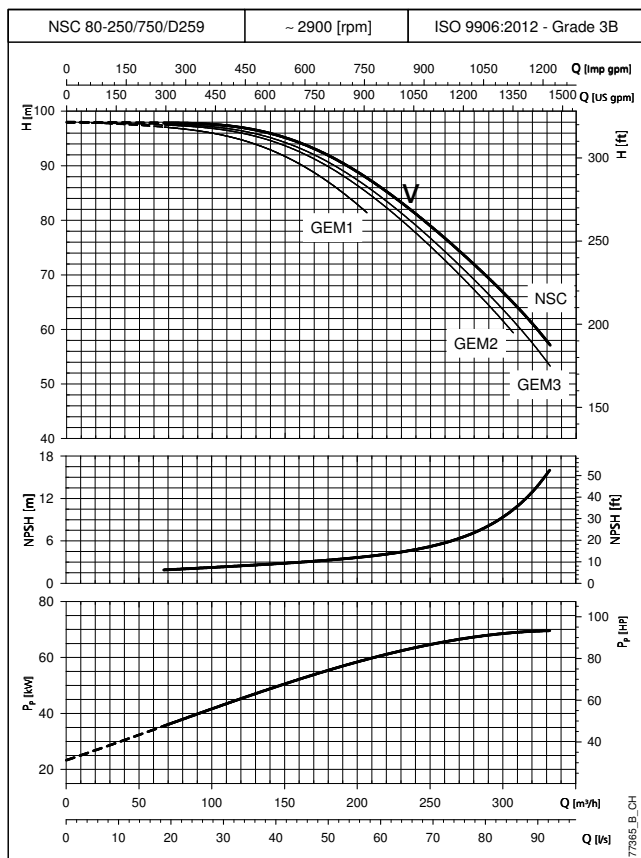
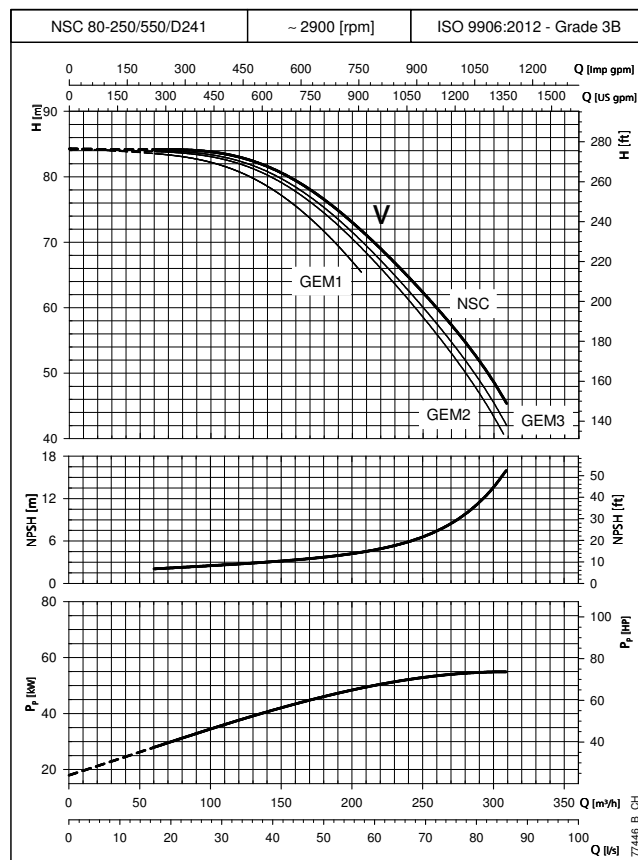
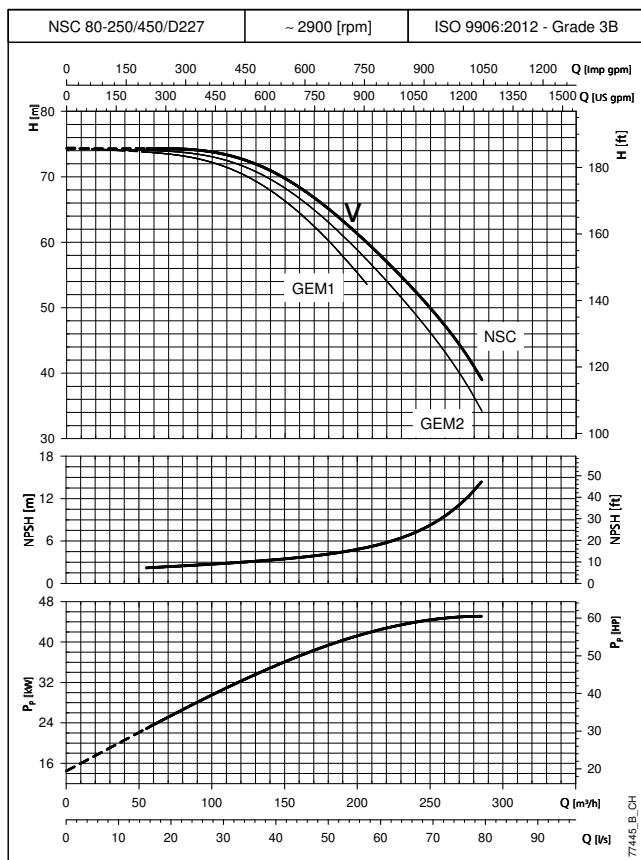


GEM1, GEM2, GEM3 = pressure module hydraulic performance. NSC = pump hydraulic performance without drops.

V = Pre-calculated systems limit selection HHP-HHS (10.7.2 EN 12845). These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$. The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m..

CURVES

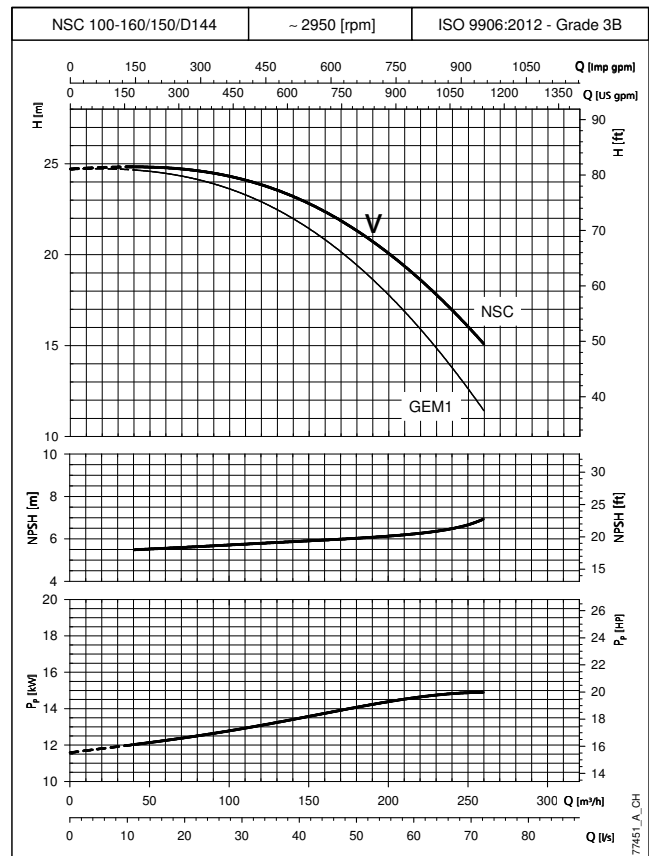
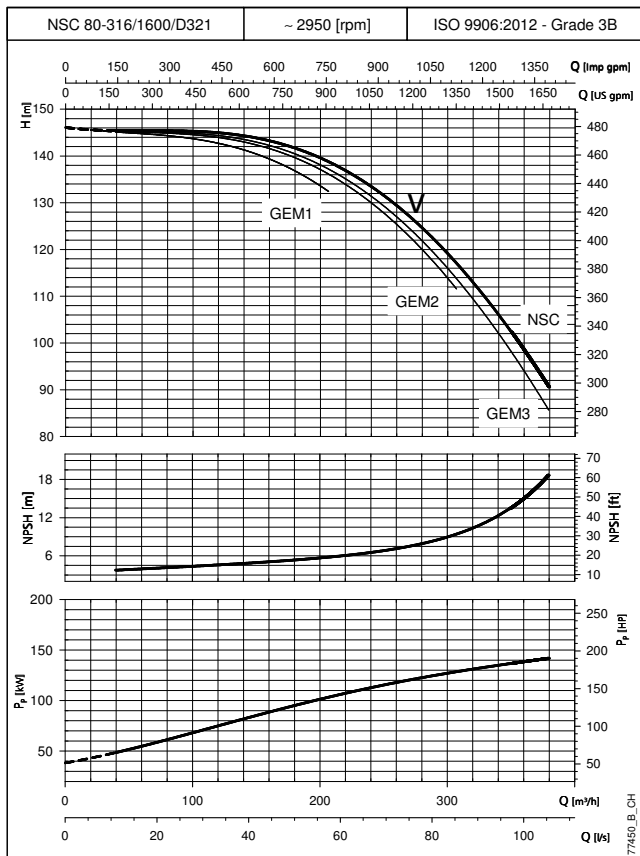
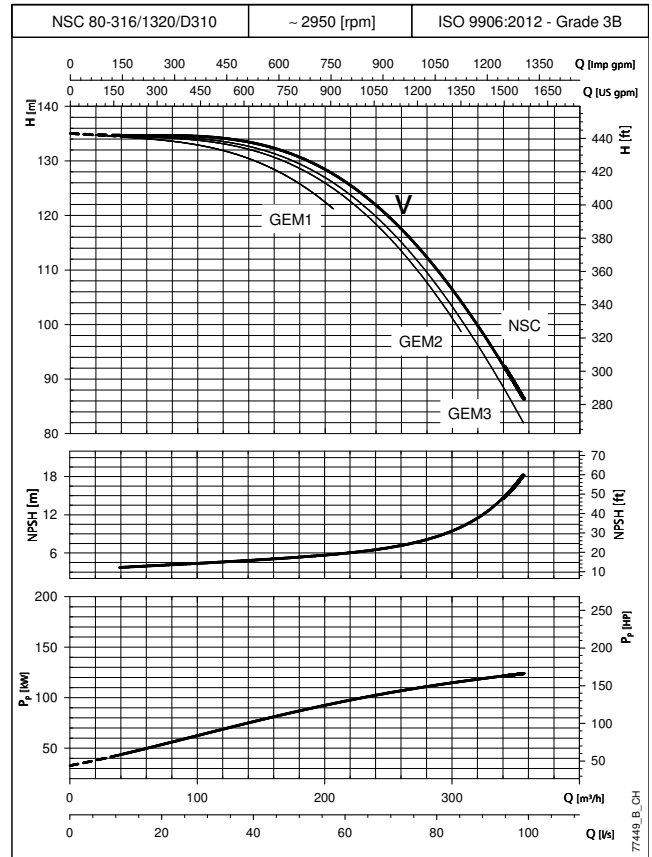
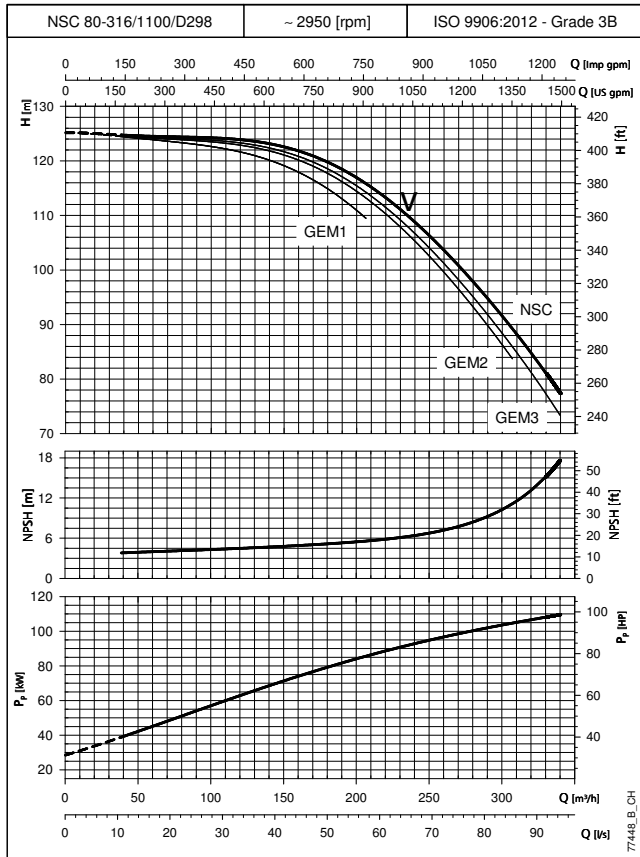
EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



GEM1, GEM2, GEM3 = pressure module hydraulic performance. NSC = pump hydraulic performance without drops.

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EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

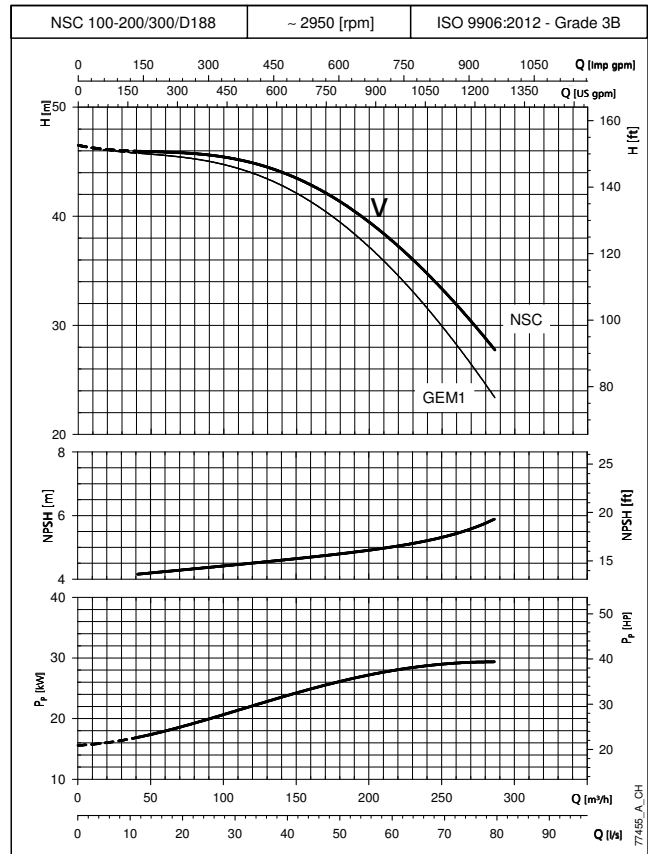
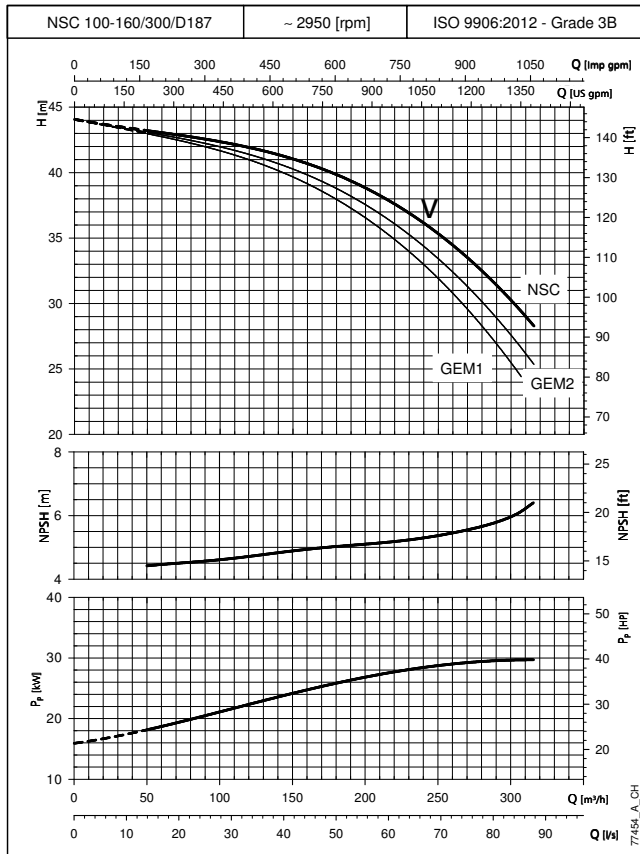
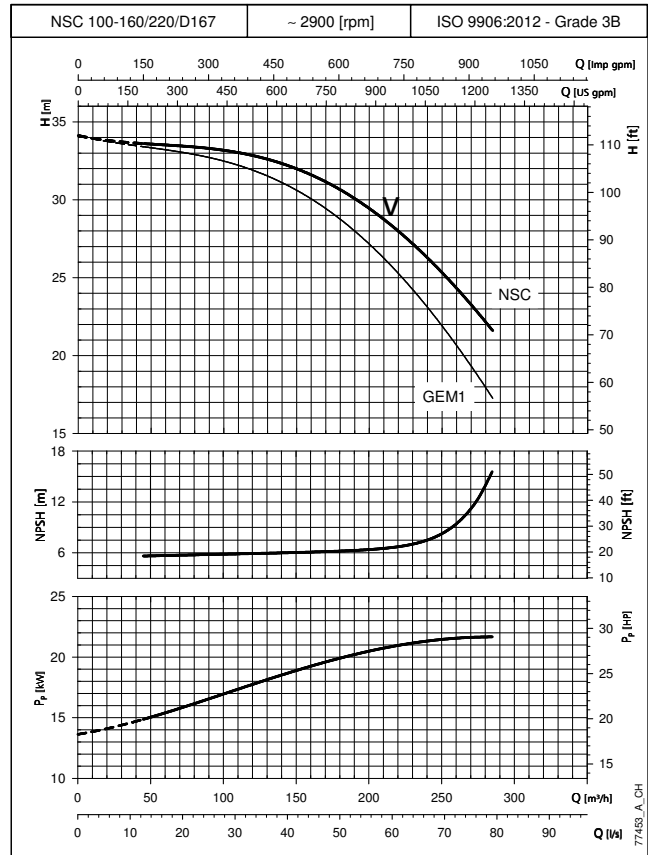
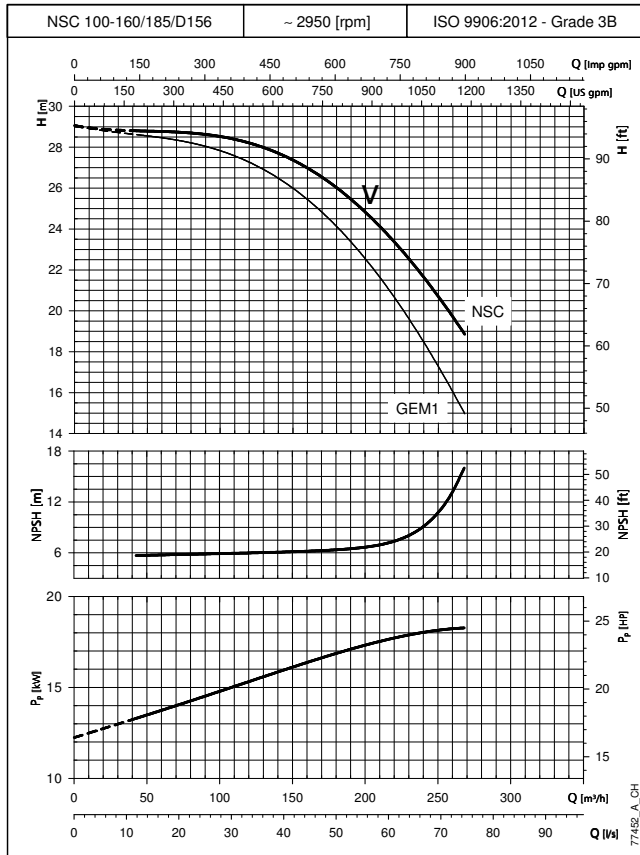


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CURVES

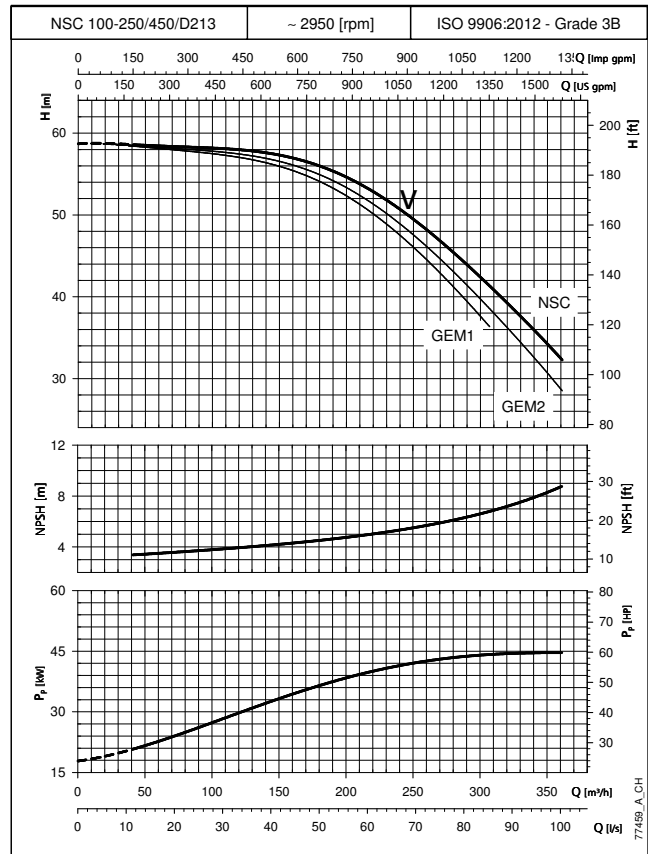
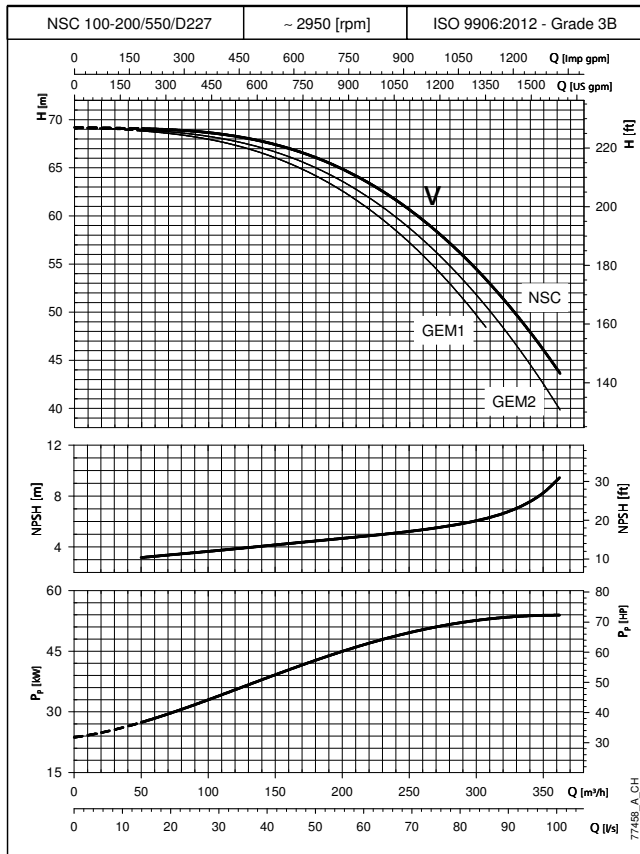
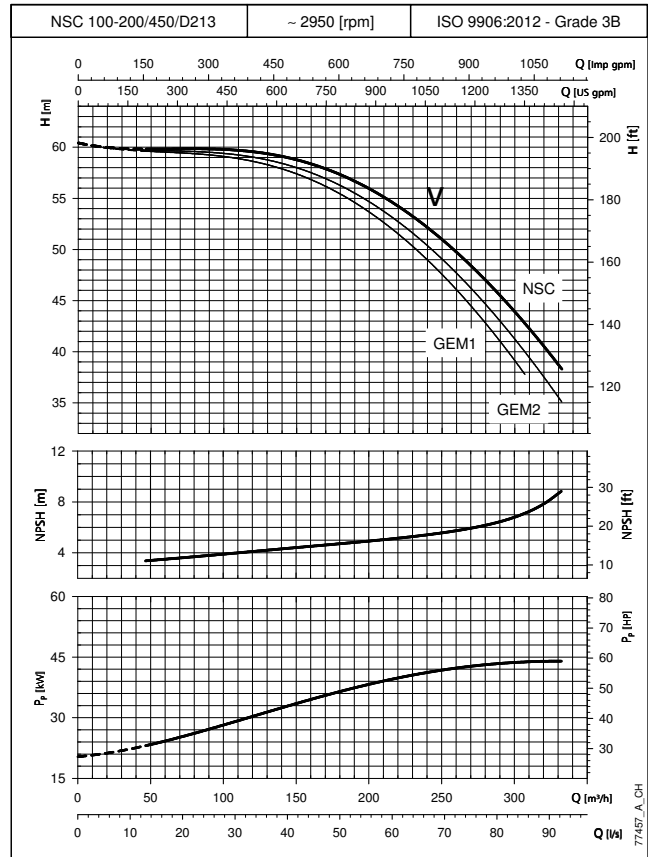
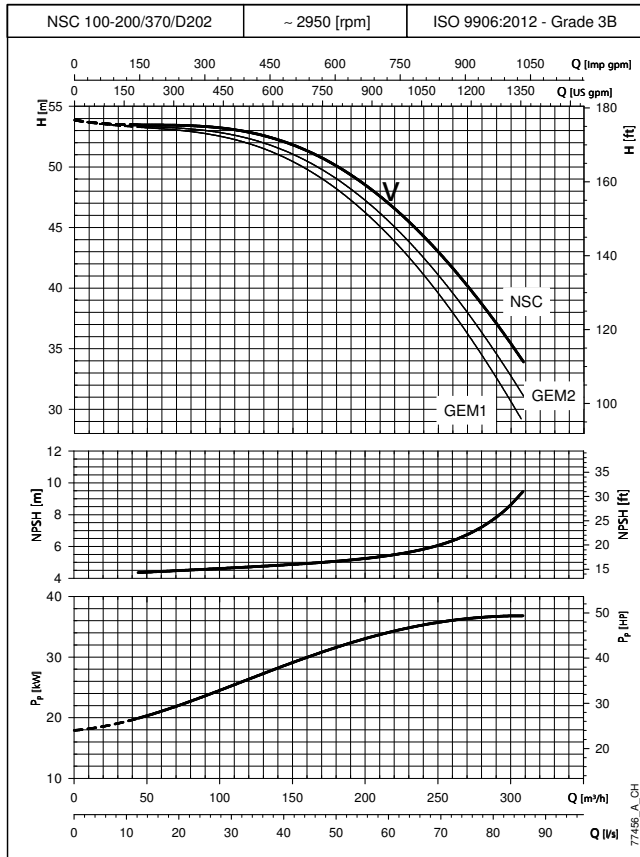
EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



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 The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m..

CURVES

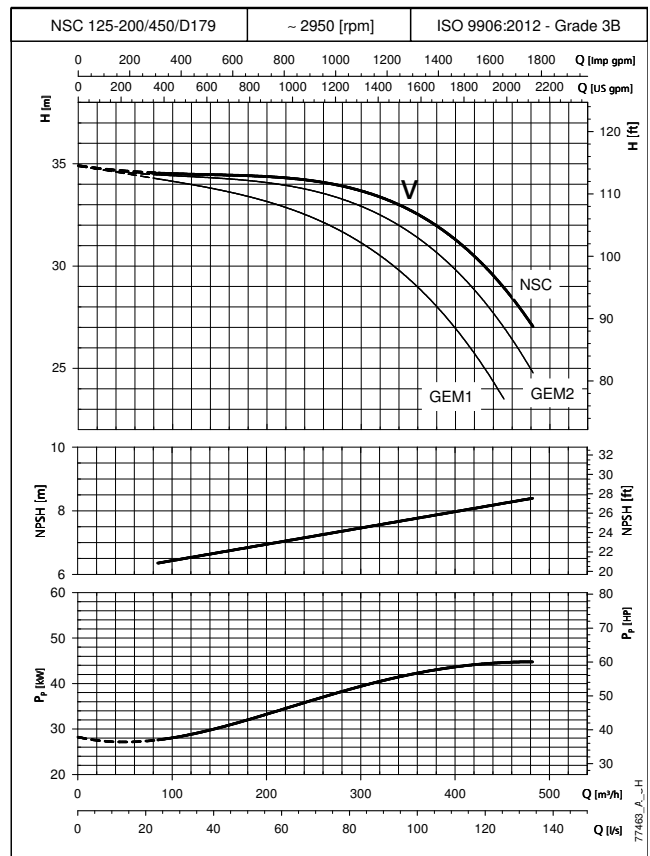
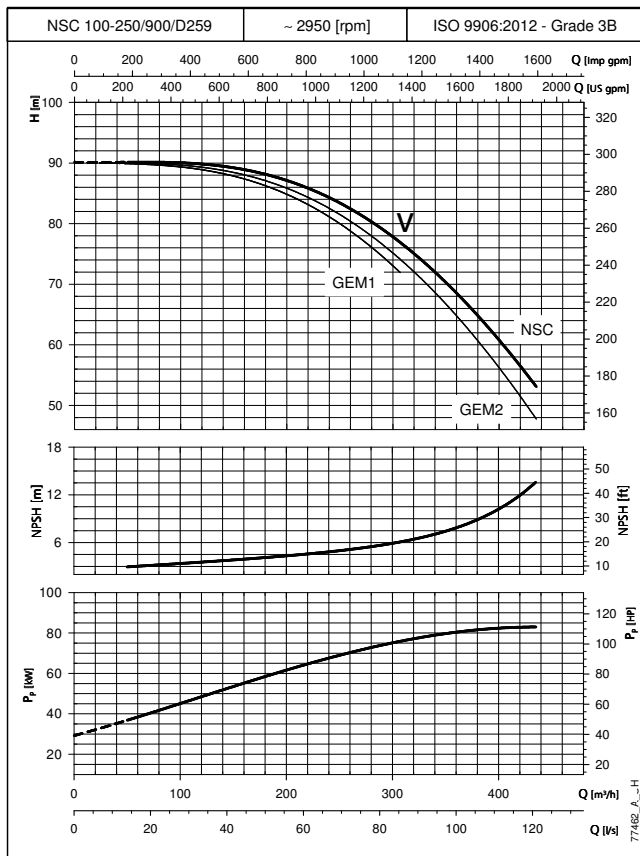
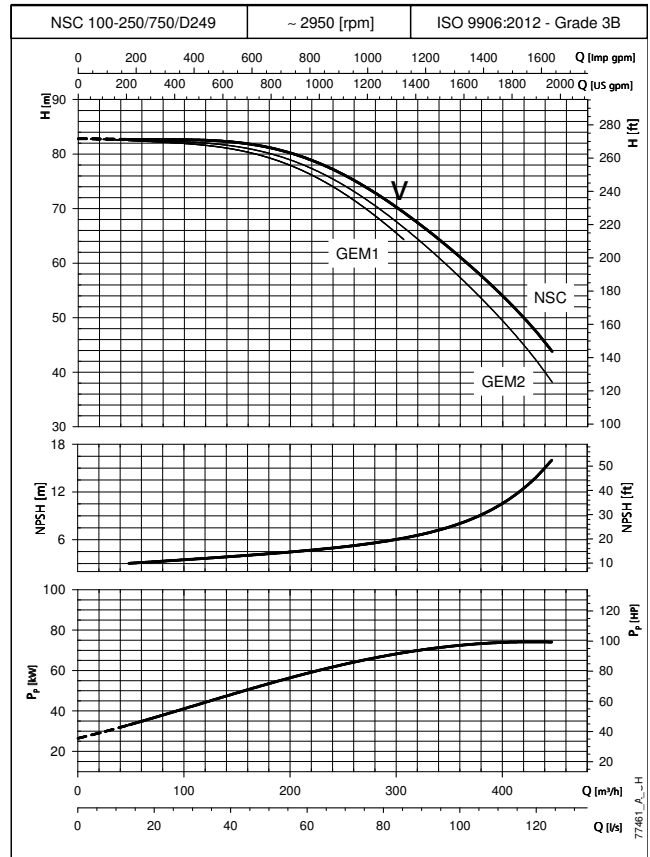
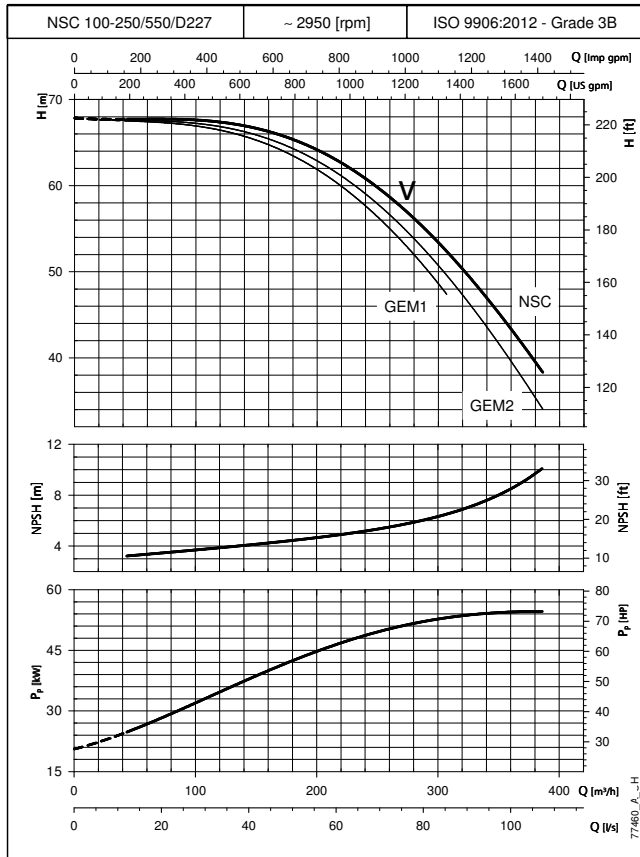
EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



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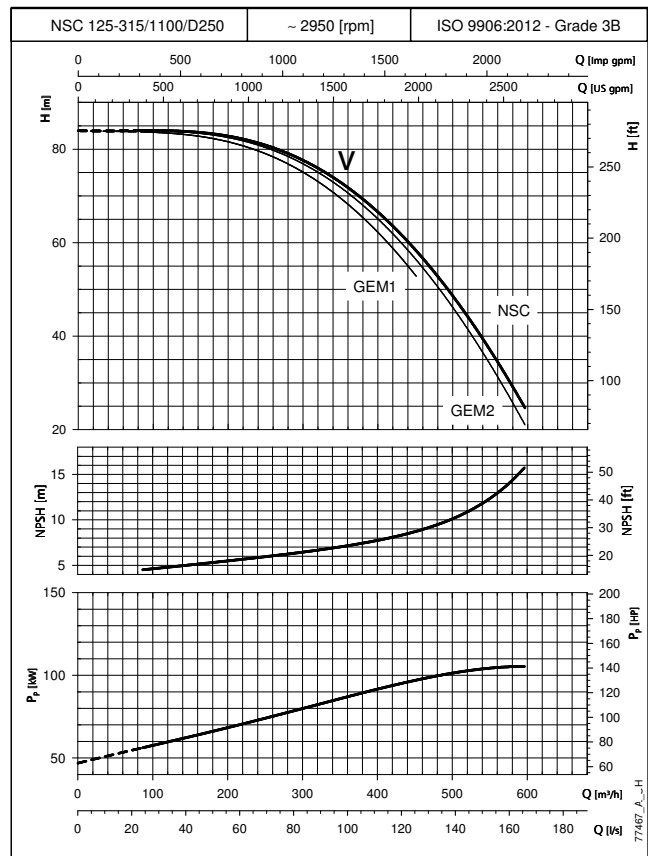
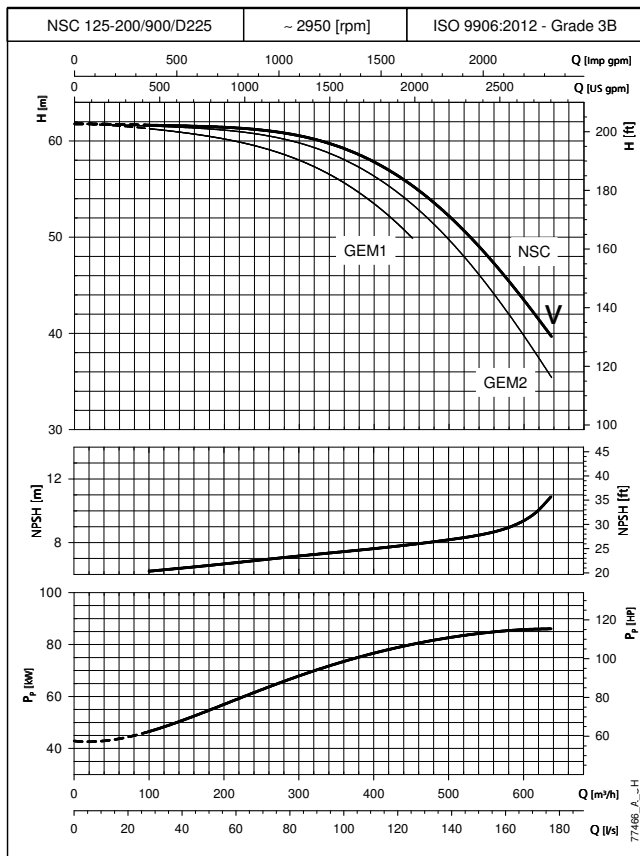
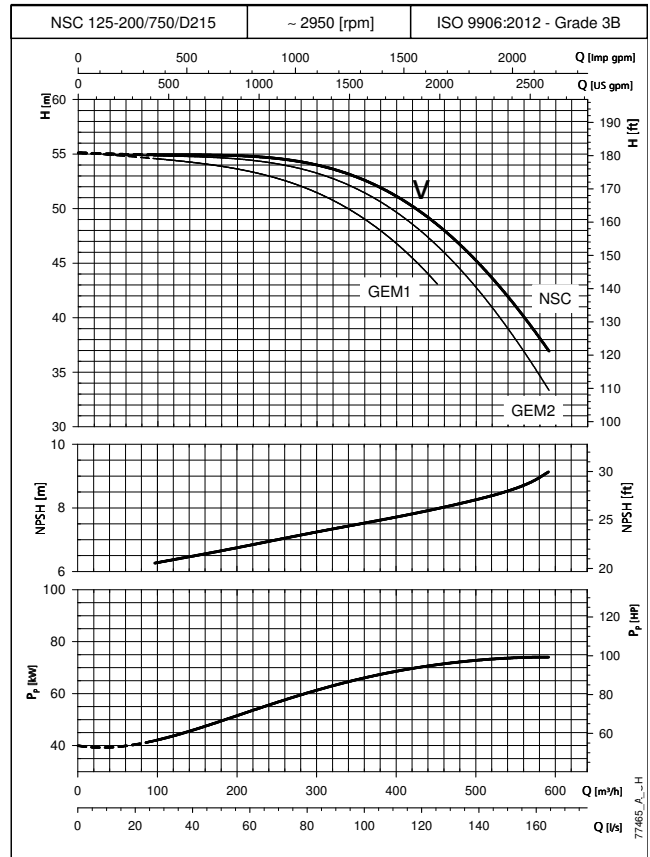
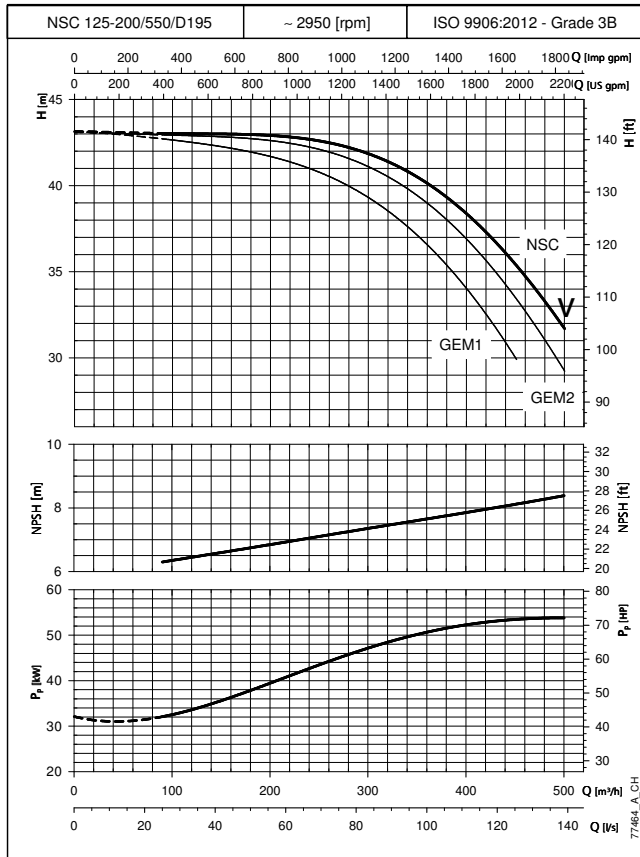
CURVES

EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES



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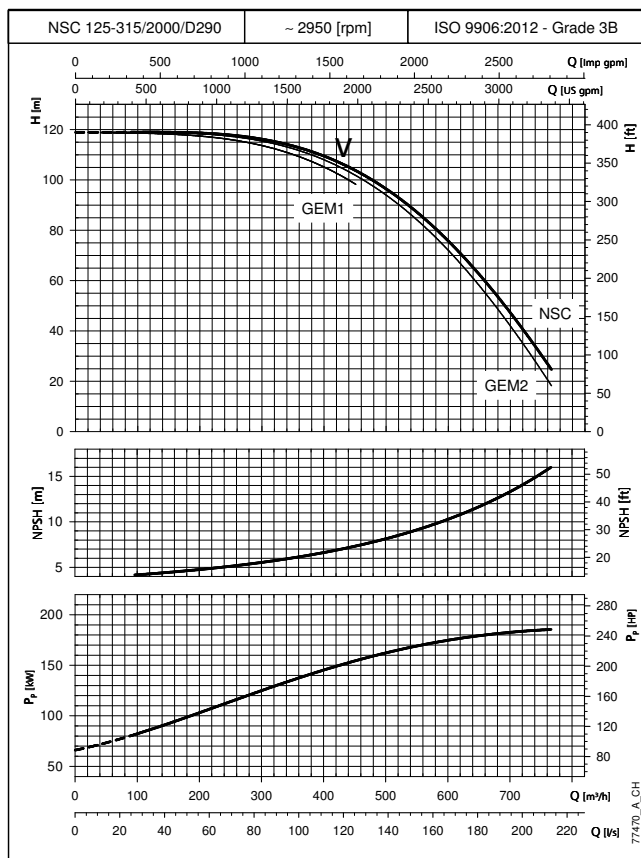
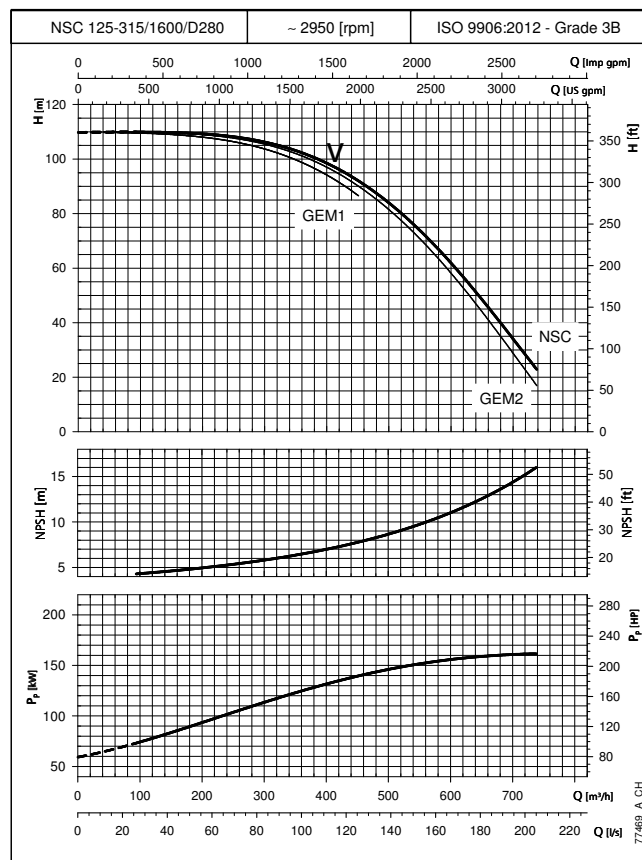
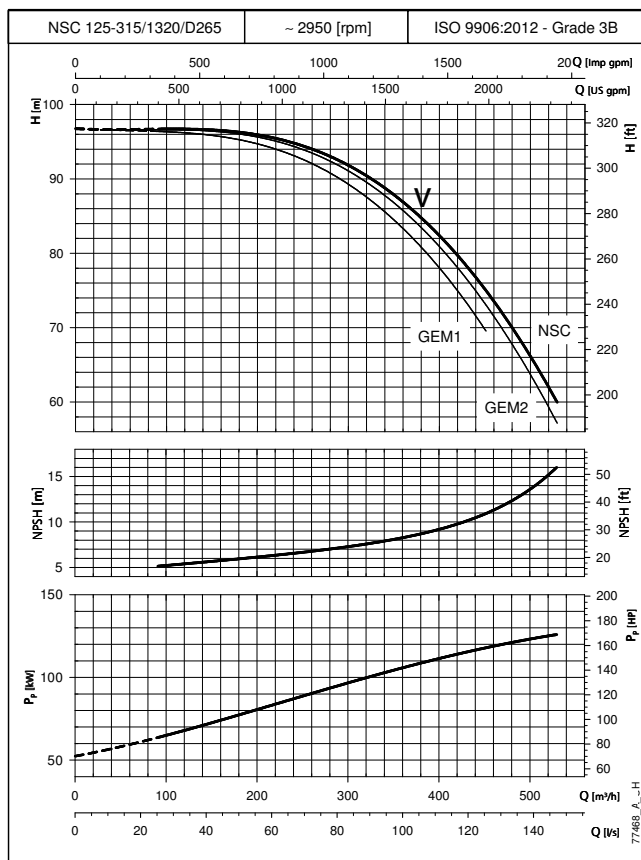
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CURVES

EN 12845 PRESSURE MODULES GEM..NSC SERIES PERFORMANCE CURVES AT 50 Hz, 2 POLES

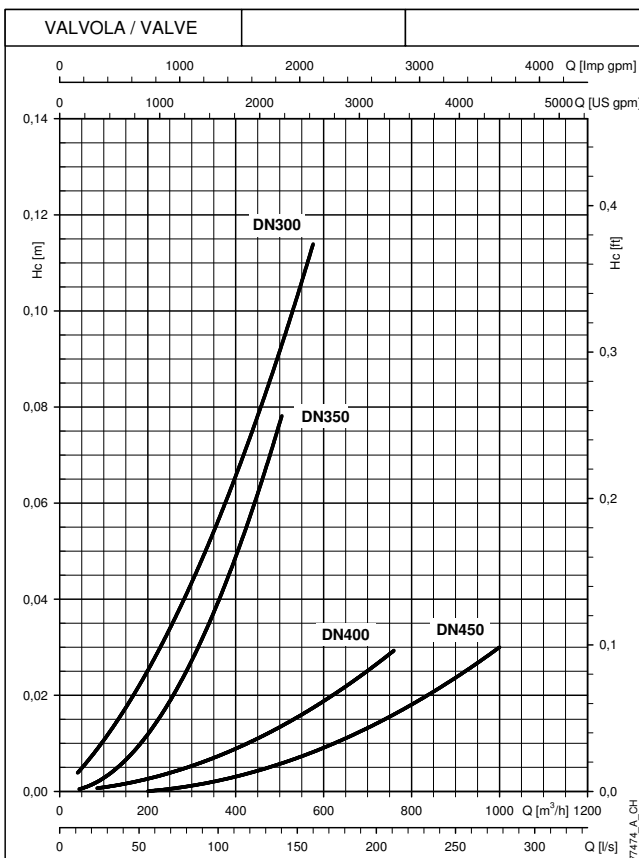
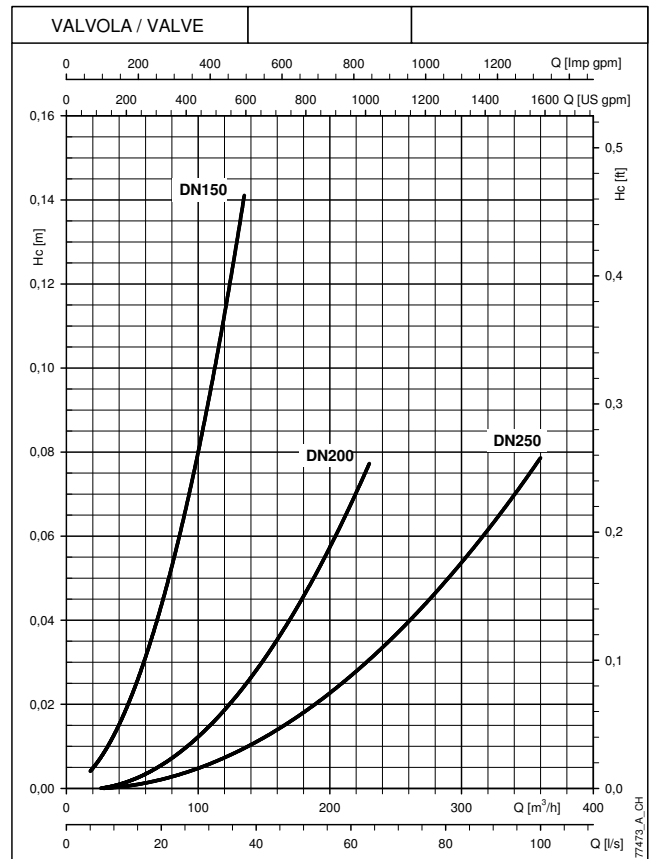
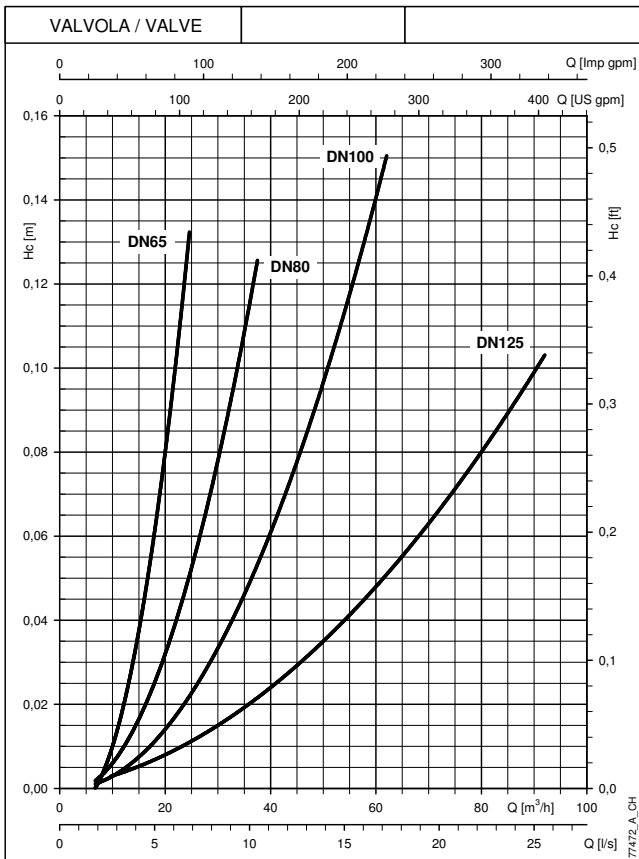


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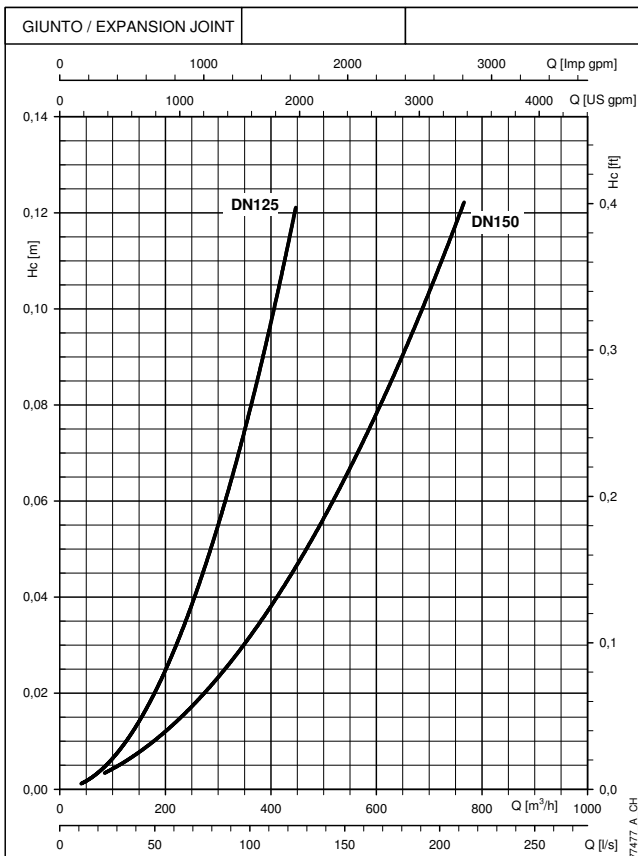
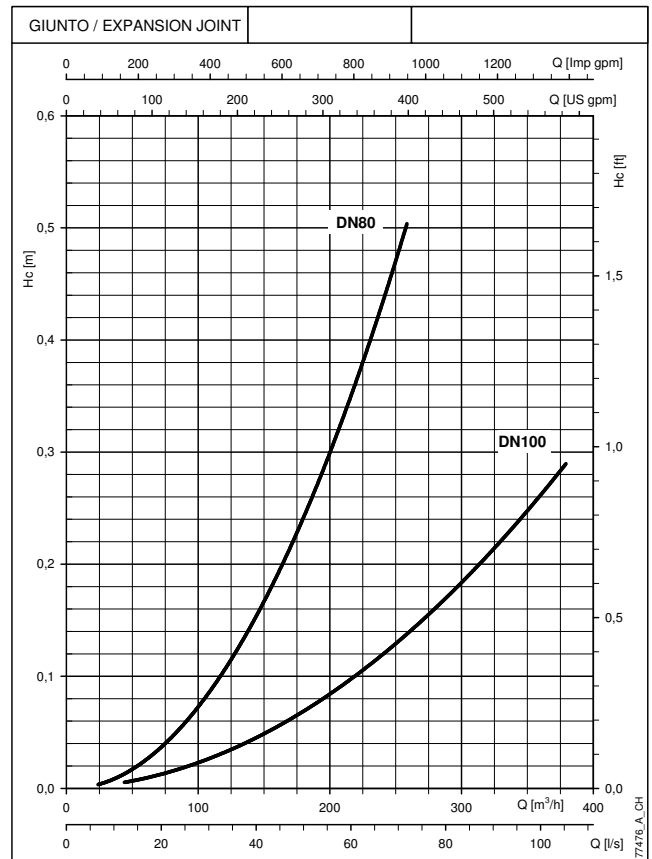
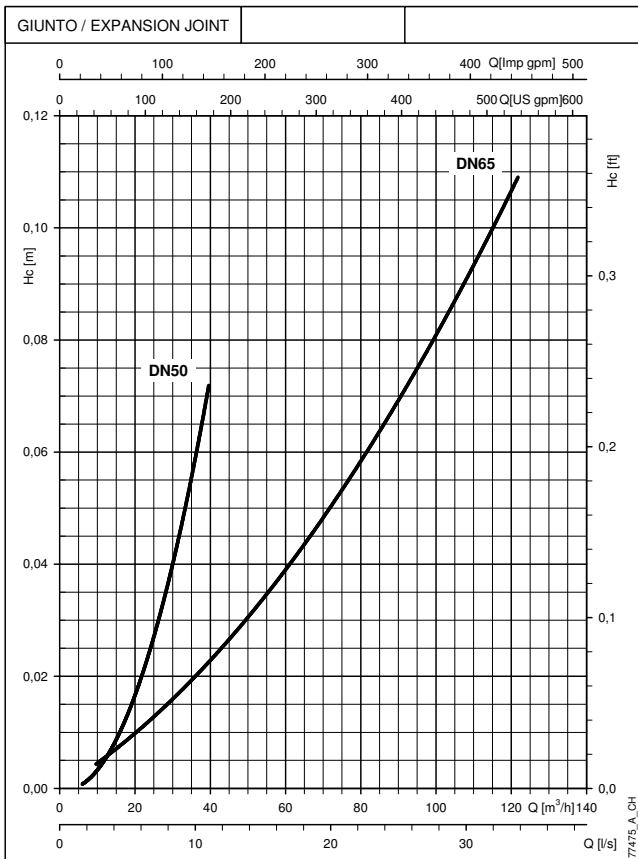
CURVES

EN 12845 PRESSURE MODULES GEM..NSC SERIES HC PRESSURE DROP CURVE IN ON/OFF BUTTERFLY VALVE



CURVES

**EN 12845 PRESSURE MODULES GEM..NSC SERIES
HC PRESSURE DROP CURVE IN EXPANSION JOINT**



CURVES

ACCESSORIES

JOINING PIPE KIT

The single modules according to UNI EN 12845 are supplied separately so that they can be combined according to system requirements.

By combining the modules, in fact, the water supply specifications described in EN 12845 can be obtained. These water supplies can be single, superior, duplicated or combined. Fire-fighting modules are generally fitted with two main service pumps, one backing up the other.

The choice of electric motors or diesel engines depends on the level of reliability required from the system.

The firefighting modules can be combined through joining kits in order to reproduce the required water supply configuration for the fire-fighting system.

The connector kits act as hydraulic connections, are mounted between the two chosen modules and are sized for two running pumps; they are flexible and allow many different possibilities of connection to the system, to the flow meter, to the tanks and to all the other pipes.

They comprise a crosshead and include two connectors for the two modules.

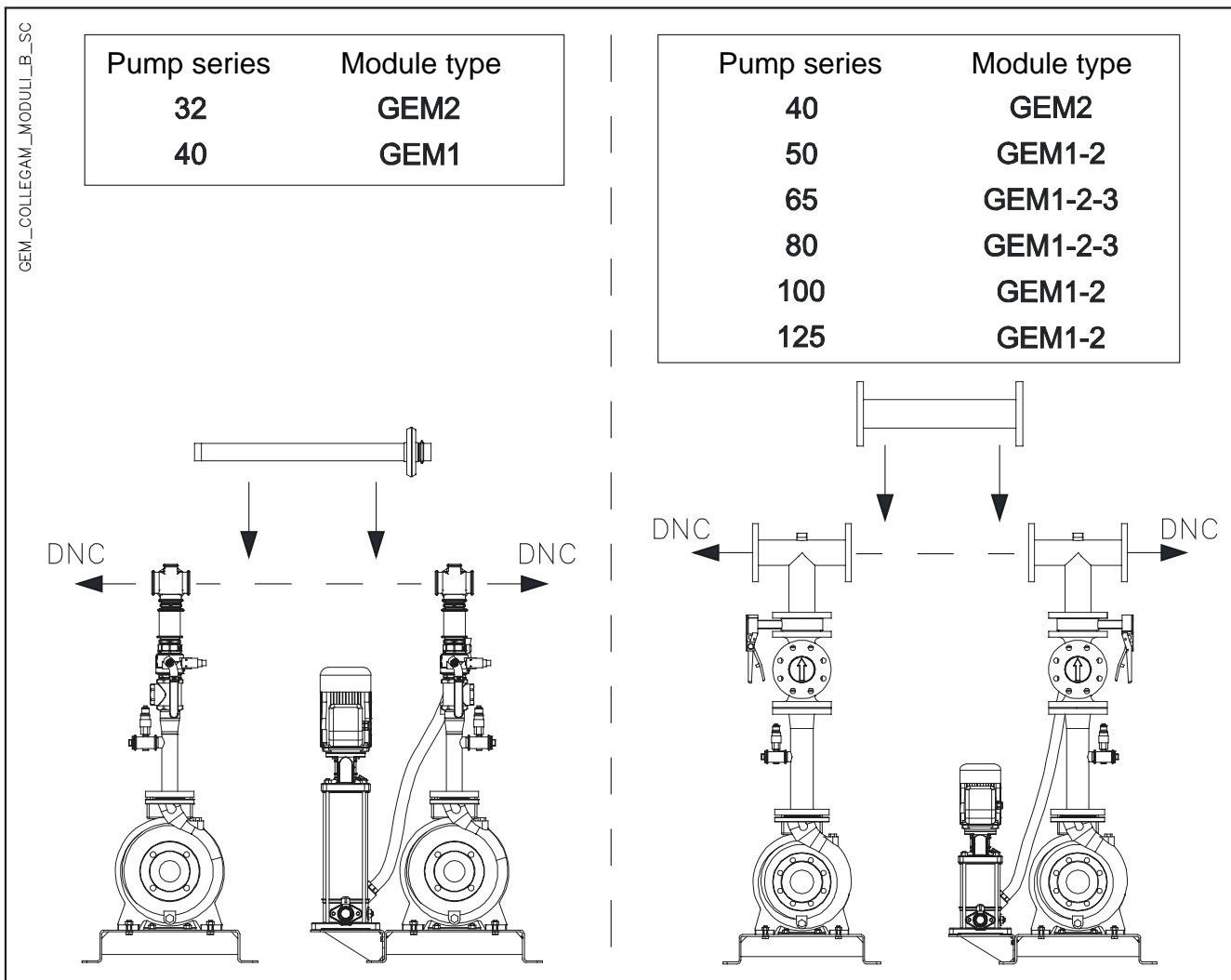


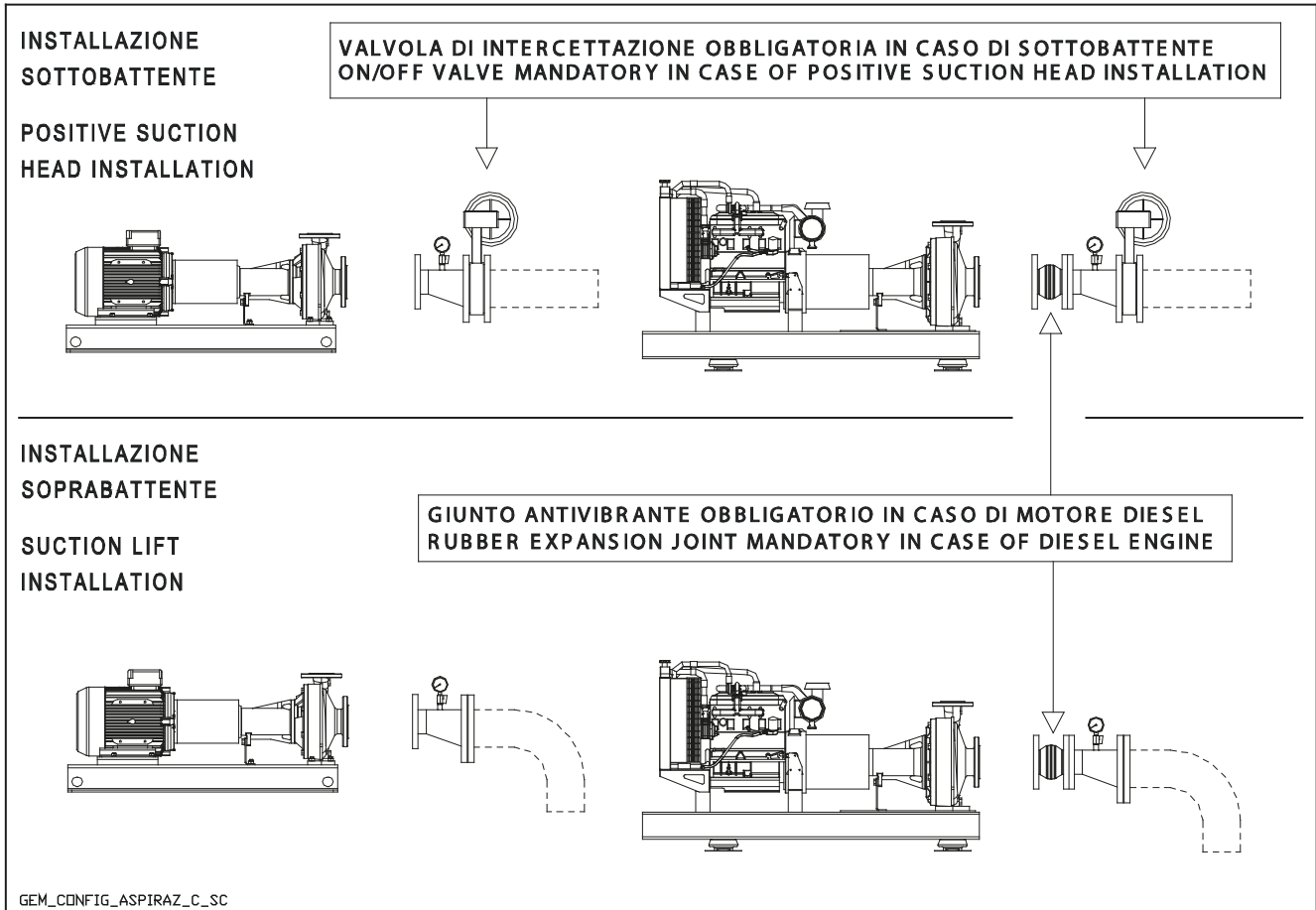
TABLE OF COMBINATIONS FOR JOINING KITS

PUMP NSC SERIES	MODULE GEM SERIES	JOINING KIT TYPE	DNC
32	GEM2	THREADED	50
40	GEM1		50
	GEM2	FLANGED	65
50	GEM1		65
	GEM2		80
65	GEM1		80
	GEM2		100
	GEM3		125
80	GEM1		100
	GEM2		125
	GEM3		150
100	GEM1		125
	GEM2		150
125	GEM1		150
	GEM2		200

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SUCTION SIDE KITS

The EN 12845 fire-fighting pressure modules are supplied without valves and stubs on the suction side of the service pump and can be completed with suitable kits according to the requirements of the standard. These requirements are expressed by EN 12845 (chapter 10.5 and chapter 10.6) and are connected with the maximum speed of the water in the pipes, their minimum cross-section and the type of installation, suction lift or positive suction head.



In case of suction lift installation the Cone kit must be used, and the On/off valve kit is optional. For positive suction head installation the On/off valve kit is mandatory (according to EN12845, chapter 10.5), than the Cone kit must be used together with the On/off valve kit. For diesel engines the Rubber expansion joint kit is mandatory. The Cone kit is equipped with:

- Eccentric cone or flanged stub pipe.
- Vacuum pressure gauge with relative 1/4" shut-off valve.
- Welding flange.

The On/off valve kit is equipped with:

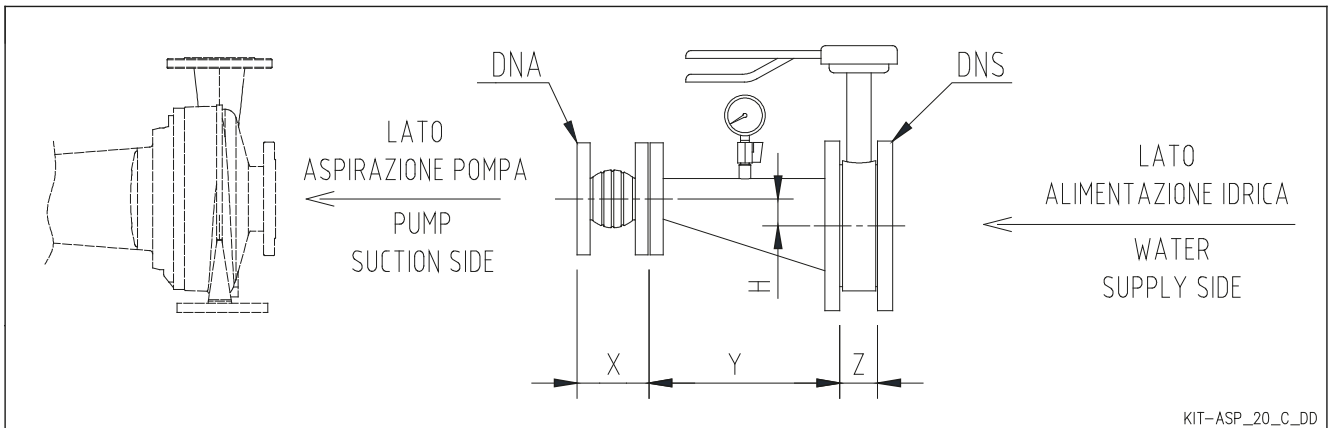
- On/off butterfly valve (optional for suction lift installations) with lever handle for diameters up to DN100, butterfly valve with handwheel and reducer for DN125 and higher.
 (Valve lock kit and device for monitoring ON/OFF status available on request).

The Rubber expansion joint kit is equipped with:

- rubber joint that must be fixed to the pump suction side, mandatory in case of diesel engine.

The following table summarises the pump type installed on the fire-fighting sets and the kit that corresponds to the installation type.

SUCTION SIDE KIT DIMENSIONS TABLE



PUMP NSC SERIES	QMAX POSITIVE SUCTION HEAD	QMAX SUCTION LIFT	KIT TYPE	DIMENSIONS							
	m3/h			DNA	PN	DNS	PN	H	X	Y	Z
	(mm)										
32	fino a 24,2	-	50 X 65	50	16	65	16	7,9	105	138	46
	fino a 37,4	fino a 31,1	50 X 80	50	16	80	16	14,3	105	138	46
	fino a 61,9	fino a 51,6	50 X 100	50	16	100	16	27	105	210	52
40	fino a 37,4	fino a 31,1	65 X 80	65	16	80	16	6,4	115	139	46
	fino a 61,9	fino a 51,5	65 X 100	65	16	100	16	19,1	115	167	52
	fino a 92,1	fino a 76,7	65 X 125	65	16	125	16	31,8	115	237	56
50	fino a 37,4	fino a 31,1	65 X 80	65	16	80	16	6,4	115	139	46
	fino a 61,9	fino a 51,5	65 X 100	65	16	100	16	19,1	115	167	52
	fino a 92,1	fino a 76,7	65 X 125	65	16	125	16	31,8	115	237	56
	fino a 135,4	fino a 112,8	65 X 150	65	16	150	16	46,1	115	318	56
	-	fino a 191,8	65 X 200	65	16	200	10	TBD	115	TBD	60
65	fino a 61,9	fino a 51,5	80 X 100	80	16	100	16	12,7	130	141	52
	fino a 92,1	fino a 76,7	80 X 125	80	16	125	16	25,4	130	202	56
	fino a 135,4	fino a 112,8	80 X 150	80	16	150	16	39,7	130	283	56
	fino a 230,3	fino a 191,8	80 X 200	80	16	200	10	65,1	130	422	60
	fino a 357,4	fino a 297,8	80 X 250	80	16	250	10	TBD	130	TBD	68
80	fino a 92,1	fino a 76,7	100 X 125	100	16	125	16	12,7	135	143	56
	fino a 135,4	fino a 112,8	100 X 150	100	16	150	16	27	135	215	56
	fino a 230,3	fino a 191,8	100 X 200	100	16	200	10	52,4	135	354	60
	fino a 357,4	fino a 297,8	100 X 250	100	16	250	10	79,4	135	508	68
	fino a 504,7	fino a 420,5	100 X 300	100	16	300	10	TBD	135	TBD	78
100	fino a 135,4	fino a 112,8	125 X 150	125	16	150	16	14,3	170	158	56
	fino a 230,3	fino a 191,8	125 X 200	125	16	200	10	39,7	170	285	60
	fino a 357,4	fino a 297,8	125 X 250	125	16	250	10	66,7	170	438	68
	fino a 504,7	fino a 420,5	125 X 300	125	16	300	10	92,1	170	575	78
	-	fino a 477,6	125 X 350	125	16	350	10	TBD	170	TBD	78
125	fino a 230,3	fino a 191,8	150 X 200	150	16	200	10	25,4	180	208	60
	fino a 357,4	fino a 297,8	150 X 250	150	16	250	10	52,4	180	361	68
	fino a 504,7	fino a 420,5	150 X 300	150	16	300	10	77,8	180	498	78
	fino a 573,2	fino a 477,6	150 X 350	150	16	350	10	93,7	180	587	78
	fino a 759,9	fino a 633,2	150 X 400	150	16	400	10	119	180	731	102
	fino a 971,9	fino a 809,9	150 X 450	150	16	450	10	TBD	180	TBD	114

Dimensions in mm. Tolerance ± 10 mm.

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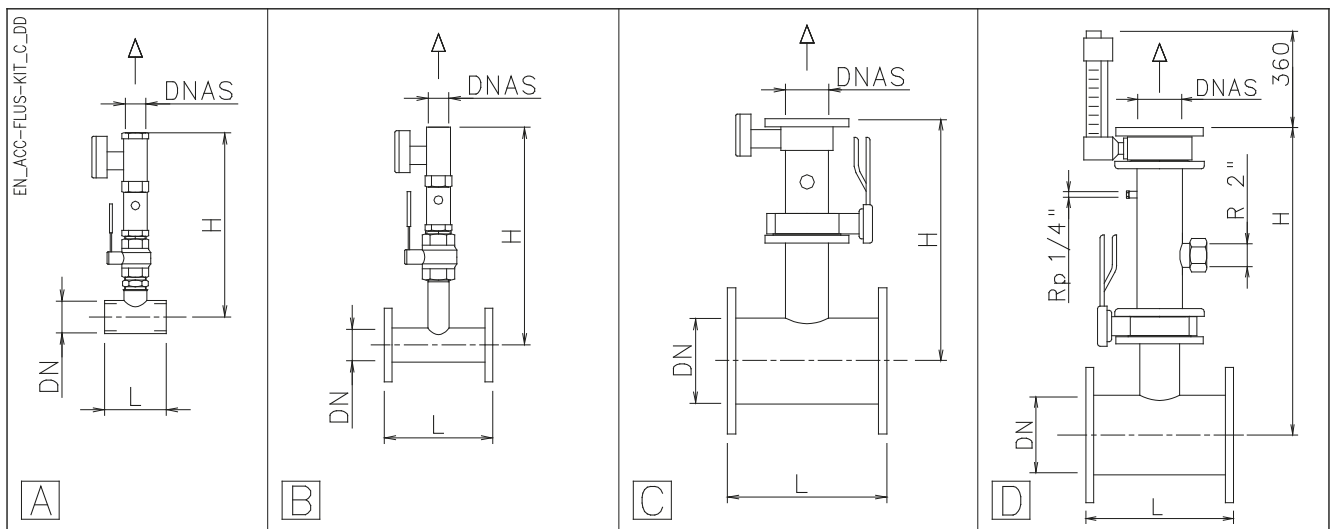
FLOW METER KIT

The flow meter is supplied in kit form. EN 12845 requires the presence of a flow meter to check hydraulic performance during the test stage and during periodic inspections. The kit includes:

- Direct reading flow meter.
- On/off ball valve for diameters up to 2" inclusive, butterfly valve with lever handle from DN65 to DN100 diameter, butterfly valve with handwheel and reduction manual gear for DN125 diameter and above. (Valve lock kit and device for monitoring ON/OFF status available on request).
- Connection piping and straight piping upline from the flow meter.

The flow meter is available in various sizes according to the flow of a service pump and can be connected to the pump delivery line. For a correct match, identify the type as shown in the set dimensions tables. The flow meter must be installed, where possible, in a stretch of piping with a steady flow and sufficient back pressure at the discharge outlet.

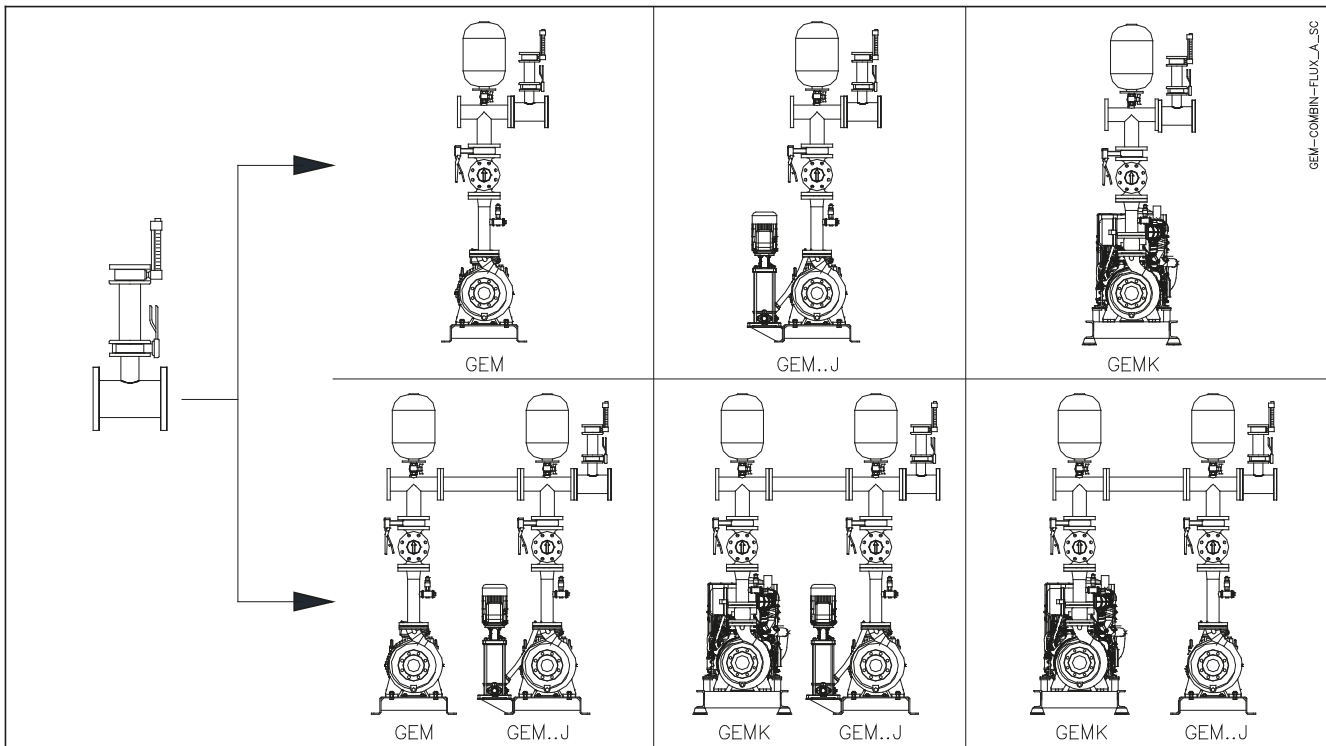
The fitter must assemble the discharge piping towards the tank or discharge outlet.



TYPE	SHAPE	DN	DNAS	DIMENSIONS		TYPE	SHAPE	DN	DNAS	DIMENSIONS	
				L	H					L	H
				(mm)						(mm)	
2" X 25P	A	50	25	105	610	100 X 150	D	100	150	340	1080
2" X 32P	A	50	32	105	635	125 X 32P	B	125	32	300	740
2" X 40P	A	50	40	105	655	125 X 40P	B	125	40	300	775
2" X 50P	A	50	50	105	645	125 X 50P	B	125	50	300	760
65 X 25P	B	65	25	340	700	125 X 65P	C	125	65	340	425
65 X 32P	B	65	32	340	710	125 X 80P	C	125	80	340	425
65 X 40P	B	65	40	340	730	125 X 125	D	125	125	340	755
65 X 50P	B	65	50	340	730	125 X 150	D	125	150	340	1085
65 X 65P	C	65	65	340	390	150 X 50P	B	150	50	380	775
65 X 80P	C	65	80	340	595	150 X 65P	C	150	65	380	435
80 X 32P	B	80	32	300	715	150 X 80P	C	150	80	380	440
80 X 40P	B	80	40	300	745	150 X 125	D	150	125	380	770
80 X 50P	B	80	50	300	735	150 X 150	D	150	150	380	900
80 X 65P	C	80	65	340	400	150 X 200	D	150	200	380	1380
80 X 80P	C	80	80	340	400	200 X 65P	C	200	65	380	445
80 X 125	D	80	125	340	910	200 X 80P	C	200	80	380	465
100 X 32P	B	100	32	300	725	200 X 125	D	200	125	380	795
100 X 40P	B	100	40	300	760	200 X 150	D	200	150	380	925
100 X 50P	B	100	50	300	750	200 X 200	D	200	200	380	1170
100 X 65P	C	100	65	340	410	250 X 125	D	250	125	440	825
100 X 80P	C	100	80	340	410	250 X 150	D	250	150	440	950
100 X 125	D	100	125	340	945	250 X 200	D	250	200	440	1195

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TABLE OF COMBINATIONS FOR FLOW METER KIT



GEM-COMBIN-FLUX_A_SC

PUMP NSC SERIES	MODULE GEM SERIES	QMAX (m3/h)									
		21,3	34	47	72	123	213	357	493	850	1343
32	GEM2	2" X 25P	2" X 32P	2" X 40P	2" X 50P						
40	GEM1	2" X 25P	2" X 32P	2" X 40P	2" X 50P						
40	GEM2	65 X 25P	65 X 32P	65 X 40P	65 X 50P						
50	GEM1	65 X 25P	65 X 32P	65 X 40P	65 X 50P	65 X 65P	65 X 80P				
50	GEM2	80 X 25P	80 X 32P	80 X 40P	80 X 50P	80 X 65P	80 X 80P				
65	GEM1	80 X 25P	80 X 32P	80 X 40P	80 X 50P	80 X 65P	80 X 80P	80 X 125			
65	GEM2	100 X 25P	100 X 32P	100 X 40P	100 X 50P	100 X 65P	100 X 80P	100 X 125			
65	GEM3	125 X 25P	125 X 32P	125 X 40P	125 X 50P	125 X 65P	125 X 80P	125 X 125			
80	GEM1		100 X 32P	100 X 40P	100 X 50P	100 X 65P	100 X 80P	100 X 125	100 X 150		
80	GEM2		125 X 32P	125 X 40P	125 X 50P	125 X 65P	125 X 80P	125 X 125	125 X 150		
80	GEM3		150 X 32P	150 X 40P	150 X 50P	150 X 65P	150 X 80P	150 X 125	150 X 150		
100	GEM1			125 X 40P	125 X 50P	125 X 65P	125 X 80P	125 X 125	125 X 150	125 X 200	
100	GEM2			150 X 40P	150 X 50P	150 X 65P	150 X 80P	150 X 125	150 X 150	150 X 200	
125	GEM1				150 X 50P	150 X 65P	150 X 80P	150 X 125	150 X 150	150 X 200	
125	GEM2				200 X 50P	200 X 65P	200 X 80P	200 X 125	200 X 150	200 X 200	

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ACCESSORIES

PRIMING TANK

The priming tank is used in suction lift installations and carries out the function of maintaining the pump body and suction pipe full of water even if there are leaks through the bottom valve.

Each pump must have its own independent priming tank, placed at a higher level than the pump. The tank must be connected to a water source for adding water and keeping it full. The diameter of the connecting pipe to the pump depends on the use class. The return piping for re-circulation can be connected to the tank, which must also feature an overflow drain.

A level switch automatically activates the service pump if the level of the tank drops and is not reintegrated. The hydraulic connections must be made by the fitter.

The horizontal 500 L tank is made of galvanised steel.

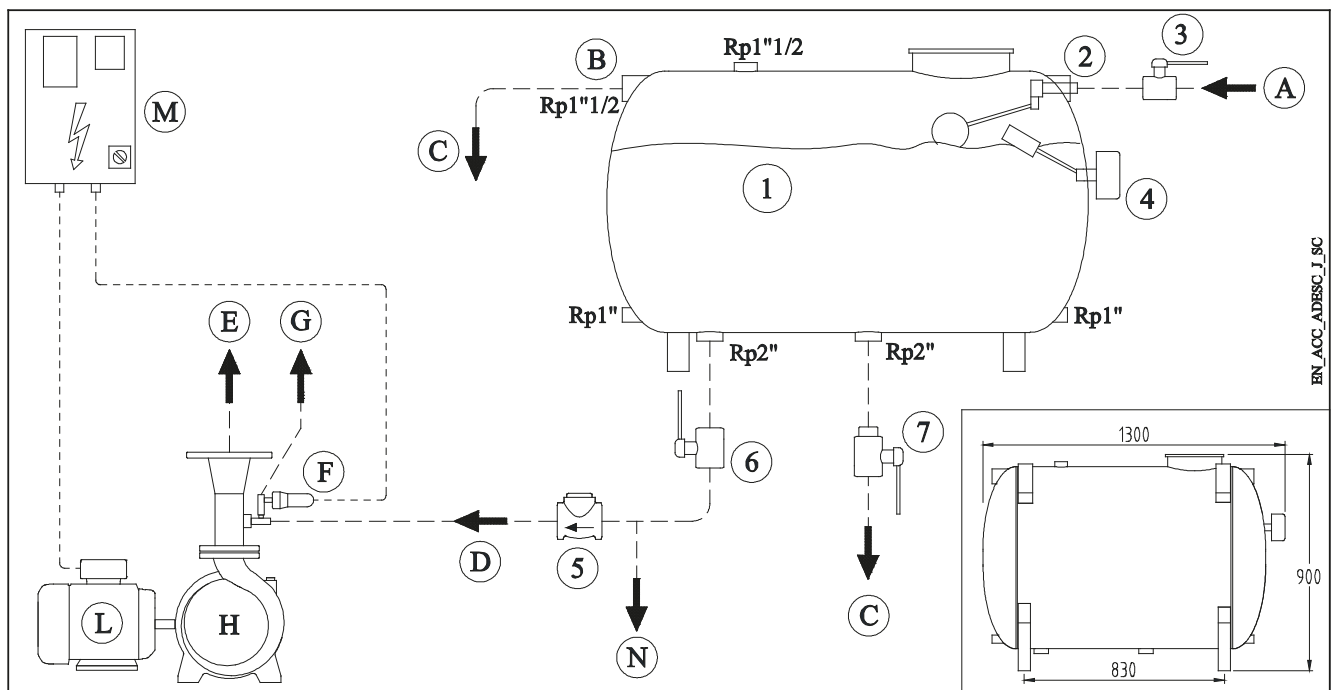
ACCESSORIES KIT FOR PRIMING TANK

The accessories kit includes:

- Filling and discharge valves, reductions, non-return valve.
- Float switch tap complete with ring nut for fixing to the tank through-hole.
- Level indicator to connect to the electric panel and assembly instruction sheet.

75, 100, 150 and 200 cm high tank supports are available on request.

Example of connection to the tank and accessories:



N°	DESCRIPTION	N°	DESCRIPTION
1	Priming tank *	C	Drain
2	Floating valve *	D	Connection to trunk of main service pump
3	In flow on-off 1" ball valve *	E	To trunk main
4	4 Low level switch *	F	Pressure switch
5	Priming supply 2" non return valve *	G	To priming tank
6	Priming supply 2" on-off ball valve, always open *	H	Pump
7	Drain 2" ball valve *	L	Motor
A	In flow	M	Main electric pump control panel
B	Over flow	N	Possible priming jockey pump

* items included on kit

En-acc-adesc_c_t

ELECTRIC JOCKEY PUMP KIT

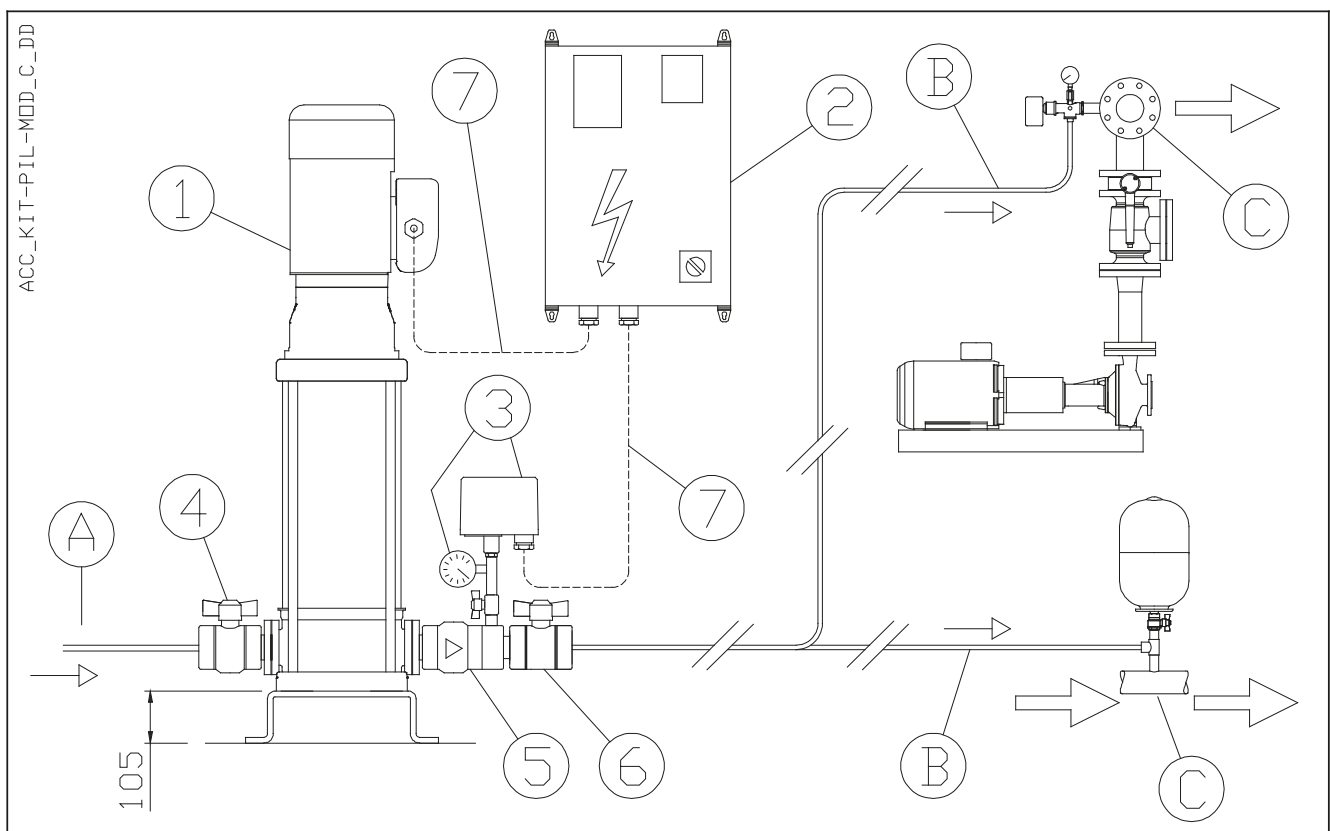
The jockey pump or compensation pump has the job of keeping the system under pressure and compensating for any small losses without the intervention of the service pumps. In fact, the jockey pump is commanded by an automatic shut-off panel.

The kit includes:

- the hydraulic components for installing the electric pump (base, valves, pressure switch, pressure gauge).
- the pre-chosen electric pump and the relative electric panel with 5 m long cables.

The hydraulic connection to the module can be easily made using the standard union on each module, as shown in the following example. Kits are available for the vertical electric jockey pumps 1SV or 1VM series; kits for other e-SV or VM electric pump models are available on request.

The diagram illustrates some connection examples:



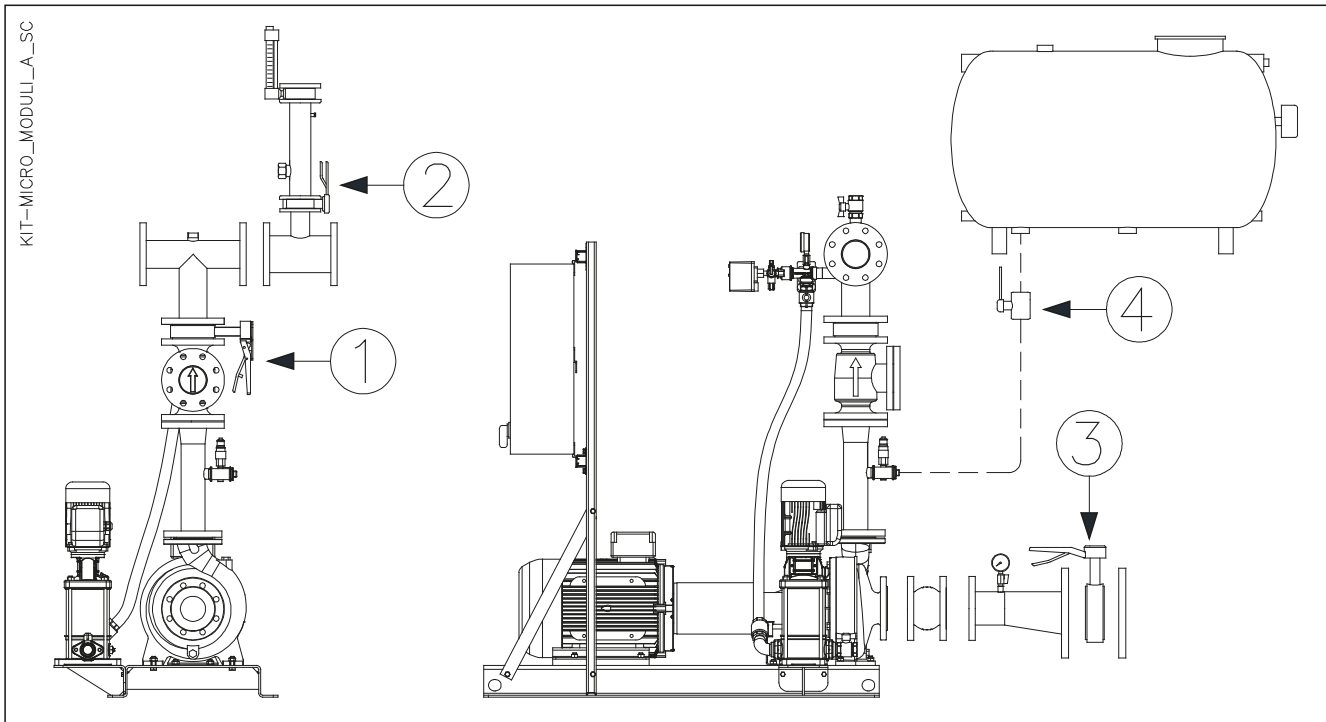
N°	DESCRIPTION
1	Jockey electric pump
2	Command panel for jockey pump
3	Pressure switch and pressure gauge
4	Ball valve on suction side
5	Non return valve
6	Ball valve on delivery side
7	Electric cables, 5 metres
A	Suction side connection
B	Pipe connection from delivery side of the jockey pump to main trunk
C	Main trunk

P.S: 1,2,3,4,5,6,7 are included on kit

gem_acc_kit-pil_b_tc

MICRO KIT FOR ON/OFF VALVES

The micro kit is available as an accessory. It's an electro-mechanical device capable of monitoring the status of the valve. It includes the limit switch that allows you to control the open or closed state of the valve, depending on the function associated with it. The electrical signal is connected to QAL12845 control panel, as stated in paragraphs D.3.4 and H.2 of the EN 12845 Standard. The micro kit can be installed in four different points of the system: on-off valve on delivery side, on the valve of the flow meter kit, on the valve of the pump on suction side and on the on/off valve of the priming kit.



POSITION	MICRO KIT TYPE	DESCRIPTION	STATUS
1	A	MONITORING KIT BALL VALVE 2"	OPEN
	B	MONITORING KIT BUTTERFLY VALVE WITH LEVER HANDLE, DIAMETERS DN50-100	OPEN
	C	MONITORING KIT BUTTERFLY VALVE WITH HANDWHEEL, DIAMETERS DN125-450	OPEN
2	B	MONITORING KIT BUTTERFLY VALVE WITH LEVER HANDLE, DIAMETERS DN50-100	CLOSED
	C	MONITORING KIT BUTTERFLY VALVE WITH HANDWHEEL, DIAMETERS DN125-450	CLOSED
	D	MONITORING KIT BALL VALVE 1"	CLOSED
	E	MONITORING KIT BALL VALVE 1"1/4	CLOSED
	F	MONITORING KIT BALL VALVE 1"1/2	CLOSED
3	B	MONITORING KIT BUTTERFLY VALVE WITH LEVER HANDLE, DIAMETERS DN50-100	OPEN
	C	MONITORING KIT BUTTERFLY VALVE WITH HANDWHEEL, DIAMETERS DN125-450	OPEN
	A	MONITORING KIT BALL VALVE 2", OPEN STATUS	OPEN

kit-micro_model-en_b_tc

The following tables explain the combinations for each valve:

Position 1: see table of combinations **"On/off valve on delivery side"**

Position 2: see table of combinations **"Flow meter kit valve"**

Position 3: see table of combinations **"Pump valve on suction side"**

Position 4: see table of combinations **"n/off valve of priming kit"**.

**TABLE OF COMBINATIONS
 MICRO KIT FOR ON/OFF VALVE ON DELIVERY SIDE**

ELECTRIC PUMP	PUMP	MICRO KIT TYPE		
		GEM1...	GEM2...	GEM3...
NSCC 32-125/11	NSC 32-125/D113	-	A	-
NSCC 32-125/15	NSC 32-125/D123	-	A	-
NSCC 32-125/22	NSC 32-125/D133	-	A	-
NSCC 32-125/30	NSC 32-125/D145	-	A	-
NSCC 32-160/22	NSC 32-160/D137	-	A	-
NSCC 32-160/30	NSC 32-160/D150	-	A	-
NSCC 32-160/40	NSC 32-160/D160,5	-	A	-
NSCC 32-160/55	NSC 32-160/D171	-	A	-
NSCC 32-200/30X	NSC 32-200/D154	-	A	-
NSCC 32-200/40	NSC 32-200/D171	-	A	-
NSCC 32-200/55	NSC 32-200/D186	-	A	-
NSCC 32-200/75	NSC 32-200/D205	-	A	-
NSCC 32-250/75X	NSC 32-250/D208	-	A	-
NSCC 32-250/110A	NSC 32-250/D226	-	A	-
NSCC 32-250/110	NSC 32-250/D239	-	A	-
NSCC 32-250/150	NSC 32-250/D259	-	A	-
NSCC 40-125/15	NSC 40-125/D105	A	B	-
NSCC 40-125/22	NSC 40-125/D118	A	B	-
NSCC 40-125/30	NSC 40-125/D130	A	B	-
NSCC 40-160/30	NSC 40-160/D127	A	B	-
NSCC 40-160/40	NSC 40-160/D139	A	B	-
NSCC 40-160/55	NSC 40-160/D154	A	B	-
NSCC 40-160/75	NSC 40-160/D165	A	B	-
NSCC 40-200/55	NSC 40-200/D165	A	B	-
NSCC 40-200/75	NSC 40-200/D179	A	B	-
NSCC 40-200/110A	NSC 40-200/D189	A	B	-
NSCC 40-200/110	NSC 40-200/D199	A	B	-
NSCC 40-250/110X	NSC 40-250/D195	A	B	-
NSCC 40-250/110X1	NSC 40-250/D206	A	B	-
NSCC 40-250/150	NSC 40-250/D228	A	B	-
NSCC 40-250/185	NSC 40-250/D243	A	B	-
NSCC 40-250/220	NSC 40-250/D257,5	A	B	-
NSCC 50-125/30	NSC 50-125/D118	B	B	-
NSCC 50-125/40	NSC 50-125/D130	B	B	-
NSCC 50-125/55	NSC 50-125/D144	B	B	-
NSCC 50-125/75	NSC 50-125/D148	B	B	-
NSCC 50-160/55	NSC 50-160/D144	B	B	-
NSCC 50-160/75	NSC 50-160/D159	B	B	-
NSCC 50-160/110A	NSC 50-160/D170	B	B	-
NSCC 50-160/110	NSC 50-160/D176	B	B	-
NSCC 50-200/110A	NSC 50-200/D168	B	B	-
NSCC 50-200/110	NSC 50-200/D179	B	B	-
NSCC 50-200/150X	NSC 50-200/D192	B	B	-
NSCC 50-200/185	NSC 50-200/D209	B	B	-
NSCC 50-250/150	NSC 50-250/D208	B	B	-
NSCC 50-250/185	NSC 50-250/D220	B	B	-
NSCC 50-250/220	NSC 50-250/D232	B	B	-
NSCC 50-250/300	NSC 50-250/D256	B	B	-
NSCC 65-125/40	NSC 65-125/D113	B	B	C
NSCC 65-125/55	NSC 65-125/D127	B	B	C
NSCC 65-125/75	NSC 65-125/D137	B	B	C
NSCC 65-125/110A	NSC 65-125/D146	B	B	C
NSCC 65-125/110	NSC 65-125/D148	B	B	C

abbin_micro_modulo32_a_tc

TABLE OF COMBINATIONS MICRO KIT FOR ON/OFF VALVE ON DELIVERY SIDE

ELECTRIC PUMP	PUMP	MICRO KIT TYPE		
		GEM1...	GEM2...	GEM3...
NSCC 65-160/75	NSC 65-160/D145	B	B	C
NSCC 65-160/110A	NSC 65-160/D151	B	B	C
NSCC 65-160/110	NSC 65-160/D159	B	B	C
NSCC 65-160/150	NSC 65-160/D175	B	B	C
NSCC 65-160/185	NSC 65-160/D180	B	B	C
NSCC 65-200/110	NSC 65-200/D165	B	B	C
NSCC 65-200/150	NSC 65-200/D177	B	B	C
NSCC 65-200/185	NSC 65-200/D189	B	B	C
NSCC 65-200/220	NSC 65-200/D199	B	B	C
NSCC 65-200/300	NSC 65-200/D220	B	B	C
NSCC 65-250/220	NSC 65-250/D195	B	B	C
NSCC 65-250/300	NSC 65-250/D215	B	B	C
NSCC 65-250/370	NSC 65-250/D229	B	B	C
NSCC 65-250/450	NSC 65-250/D243	B	B	C
NSCC 65-250/550	NSC 65-250/D258	B	B	C
NSCC 65-315/550	NSC 65-315/D272	B	B	C
NSCC 65-315/750	NSC 65-315/D298	B	B	C
NSCC 65-315/900	NSC 65-315/D315	B	B	C
NSCC 80-160/110	NSC 80-160/D144	B	C	C
NSCC 80-160/150	NSC 80-160/D158	B	C	C
NSCC 80-160/185	NSC 80-160/D168	B	C	C
NSCC 80-160/220	NSC 80-160/D177	B	C	C
NSCC 80-200/220	NSC 80-200/D181	B	C	C
NSCC 80-200/300	NSC 80-200/D195	B	C	C
NSCC 80-200/370	NSC 80-200/D208	B	C	C
NSCC 80-200/450	NSC 80-200/D219	B	C	C
NSCC 80-250/370	NSC 80-250/D214	B	C	C
NSCC 80-250/450	NSC 80-250/D227	B	C	C
NSCC 80-250/550	NSC 80-250/D241	B	C	C
NSCC 80-250/750	NSC 80-250/D259	B	C	C
NSCC 80-316/900	NSC 80-316/D280	B	C	C
NSCC 80-316/1100	NSC 80-316/D298	B	C	C
NSCC 80-316/1320	NSC 80-316/D310	B	C	C
NSCC 80-316/1600	NSC 80-316/D321	B	C	C
NSCC 100-160/150	NSC 100-160/D144	C	C	-
NSCC 100-160/185	NSC 100-160/D156	C	C	-
NSCC 100-160/220	NSC 100-160/D167	C	C	-
NSCC 100-160/300	NSC 100-160/D187	C	C	-
NSCC 100-200/300	NSC 100-200/D188	C	C	-
NSCC 100-200/370	NSC 100-200/D202	C	C	-
NSCC 100-200/450	NSC 100-200/D213	C	C	-
NSCC 100-200/550	NSC 100-200/D227	C	C	-
NSCC 100-250/450	NSC 100-250/D213	C	C	-
NSCC 100-250/550	NSC 100-250/D227	C	C	-
NSCC 100-250/750	NSC 100-250/D249	C	C	-
NSCC 100-250/900	NSC 100-250/D259	C	C	-
NSCC 125-200/450	NSC 125-200/D179	C	C	-
NSCC 125-200/550	NSC 125-200/D195	C	C	-
NSCC 125-200/750	NSC 125-200/D215	C	C	-
NSCC 125-200/900	NSC 125-200/D225	C	C	-
NSCC 125-315/1100	NSC 125-315/D250	C	C	-
NSCC 125-315/1320	NSC 125-315/D265	C	C	-
NSCC 125-315/1600	NSC 125-315/D280	C	C	-
NSCC 125-315/2000	NSC 125-315/D290	C	C	-

abbin_micro_modulo65_a_tc

TABLE OF COMBINATIONS MICRO KIT FOR FLOW METER KIT VALVE

MEASURING KIT	MICRO KIT TYPE	MEASURING KIT	MICRO KIT TYPE	MEASURING KIT	MICRO KIT TYPE	MEASURING KIT	MICRO KIT TYPE
50 X 25P	D	80 X 32P	E	100 X 80P	B	150 X 50P	G
50 X 32P	E	80 X 40P	F	125 X 150	C	150 X 65P	B
50 X 40P	F	80 X 50P	G	125 X 200	C	150 X 80P	B
50 X 50P	G	80 X 65P	B	125 X 32P	E	200 X 150	C
65 X 25P	D	80 X 80P	B	125 X 40P	F	200 X 200	C
65 X 32P	E	100 X 150	C	125 X 50P	G	200 X 65P	B
65 X 40P	F	100 X 32P	E	125 X 65P	B	200 X 80P	B
65 X 50P	G	100 X 40P	F	125 X 80P	B		
65 X 65P	B	100 X 50P	G	150 X 150	C		
65 X 80P	B	100 X 65P	B	150 X 200	C		

abbin_micro_kit-flux_a_tc

TABLE OF COMBINATIONS MICRO KIT FOR PUMP VALVE ON SUCTION SIDE

VALVE KIT	MICRO KIT TYPE	VALVE KIT	MICRO KIT TYPE	VALVE KIT	MICRO KIT TYPE	VALVE KIT	MICRO KIT TYPE
DN 65	B	DN 125	C	DN 250	C	DN 400	C
DN 80	B	DN 150	C	DN 300	C	DN 450	C
DN 100	B	DN 200	C	DN 350	C		

abbin_micro_valvola_a_tc

TABLE OF COMBINATIONS MICRO KIT FOR ON/OFF VALVE OF PRIMING KIT

VALVE KIT	MICRO KIT TYPE
2"	A

abbin_micro_adesc_a_tc

ELECTRICAL ALARMS PANEL QAL12845

Electric panel for remote status and alarm monitoring of one or two Lowara pumps installed in GEM fire-fighting pressure modules, according to EN12845.

In the electric service pump mode, the following conditions are visualised:

- Mains power supply to motor.
- Pump start-up request.
- Pump running.
- No start-up.

Additionally: minimum suction tank level, minimum priming tank level, on-off valve on suction and delivery side not fully open. The valves are complete with a status monitor.

In the diesel engine service pump mode, the following conditions are indicated, as required by EN12845:

- Diesel engine pump control panel mode selector in non-automatic position.
- Diesel engine fails to start after 6 attempts.
- Pump running.
- Controller fault.

Additionally: minimum fuel or suction tank level, minimum priming tank level, on-off valve on suction and delivery side not fully open.

The valves are complete with a status monitor.

All the above conditions, required by EN12845, are indicated with signal LED's and buzzers. A buzzer alarm reset button and LED tester button are included.



Quadro QAL12845

The control unit is also fitted out to signal the following general alarms, if present:

- General alarm for incorrect electrical connection in the exchange contacts of: flow meter circuit valve, drain pump, jockey pump status.
- Fault in electrical connection in the exchange contact relative to panel 1 (electric pump/diesel engine pump)
- Fault in electrical connection in the exchange contact relative to panel 2 (electric pump/diesel engine pump)
- Jockey pump overload (*).
- Jockey pump running(*).
- Discharge pump overload (*).
- Battery voltage low.
- Communications failure with ModBus system.

All the above conditions are visualised with signal LED's and on the display. The customer may decide to enable the buzzer.

The panel comprises a plastic casing (IP55), battery, battery charger, alarms and pump status display, if connected with 485 serial communication.

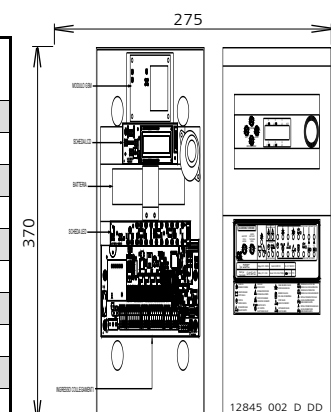
Fitted to transmit alarms for GSM or PC modules.

The fitter must make the electric connection between the contacts on the electric alarms control panel and other electric panels.

(*). Check that the electric control panel combined with the electric pump is complete with dry contacts for pump running and overload signals.

TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE
Input voltage (single-phase)	(1F+N) 230V +/-10%, 50-60 Hz
Absorbed	0,1A
Dimensions	370 x 275 x 160 mm
Protection grade	IP55
Battery	Al piombo ermetica
Rated battery voltage	12 Vcc
Rated battery capacity	2,3 Ah (scarica in 20 h)
Dimensions of battery	178 x 34 x 66 mm
Sound emission levels	75dB
Control panel weight	1,5kg

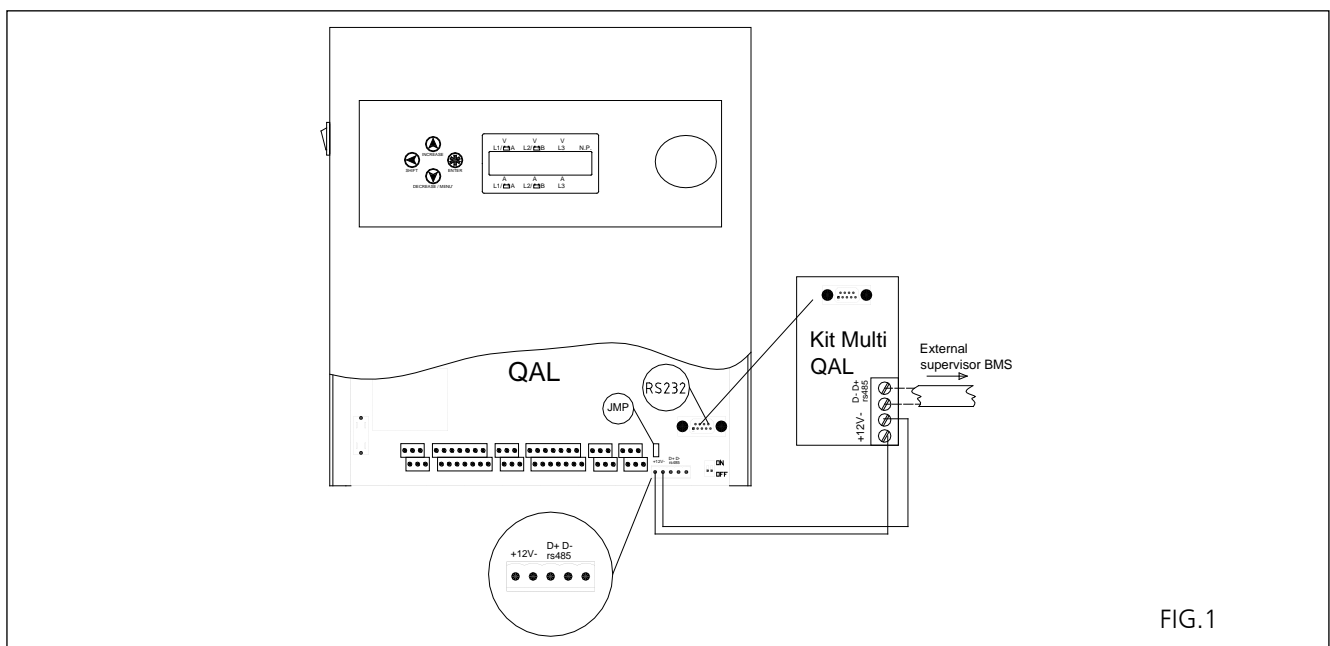


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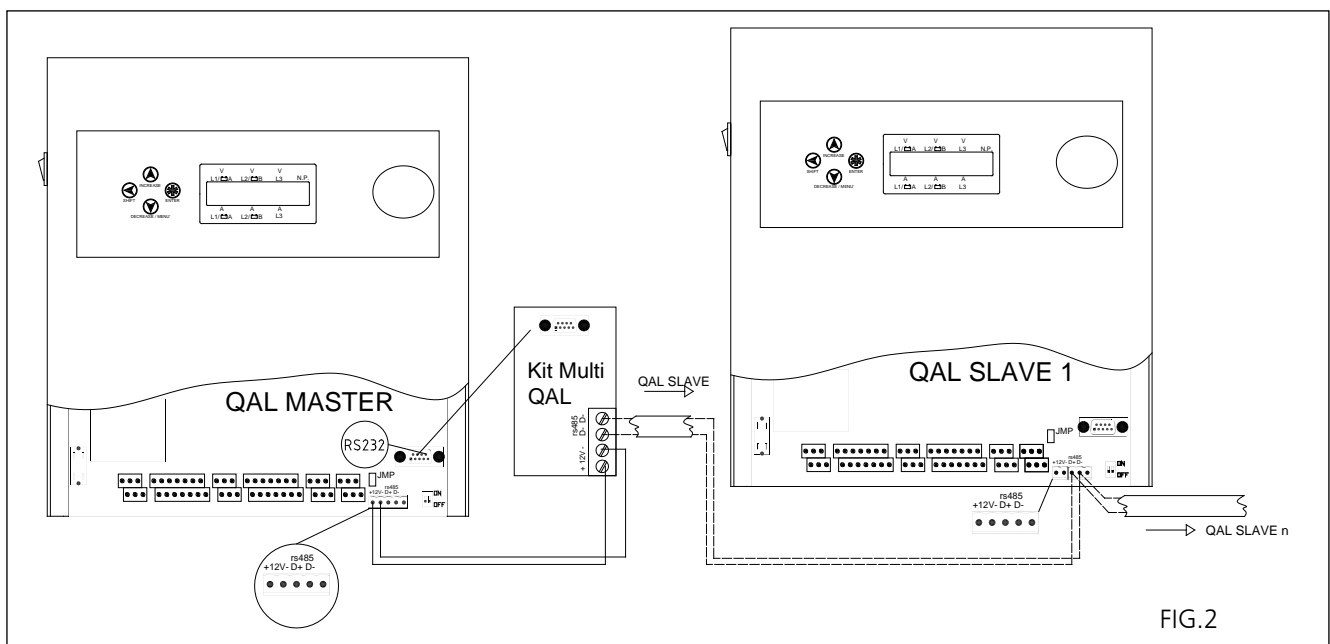
MULTI-QAL 12845 KIT

This is an electronic module (232/485 signal converter) required to realise systems with more than one QAL 12845 alarm panel (QAL for short) and to connect, if necessary, the QAL to an external supervision system. The communication and connection language between the QAL and the external supervisor is of the ModBus Standards RTU (9600/8/1/P) type and the connection is of the RS485 type. If more than one QAL is installed, the QAL connected to the electrical panels of the service pumps and auxiliary services, or to the Q-2Rils485, is identified as QAL MASTER and the Kit Multi-QAL module must be installed inside it. The QAL panels connected to the QAL MASTER are identified as QAL SLAVE modules. A system could comprise one QAL MASTER and up to a maximum of seven QAL SLAVE modules. An external supervision system must be connected to the Multi QAL Kit. This can be installed on the QAL if the system comprises just one QAL or on one of the QAL SLAVE modules.

Examples of system with QAL 12845 alarms management panel and connection to the external supervisor via the Multi-QAL electronic module kit (FIG.1)



Examples of compound systems with more than one QAL 12845 alarms management panel via the Multi-QAL electronic module kit (FIG.2)



ACCESSORIES

Examples of compound systems with more than one QAL 12845 alarms management panel and connection to the external supervisor via the Multi-QAL electronic module kit (FIG.3)

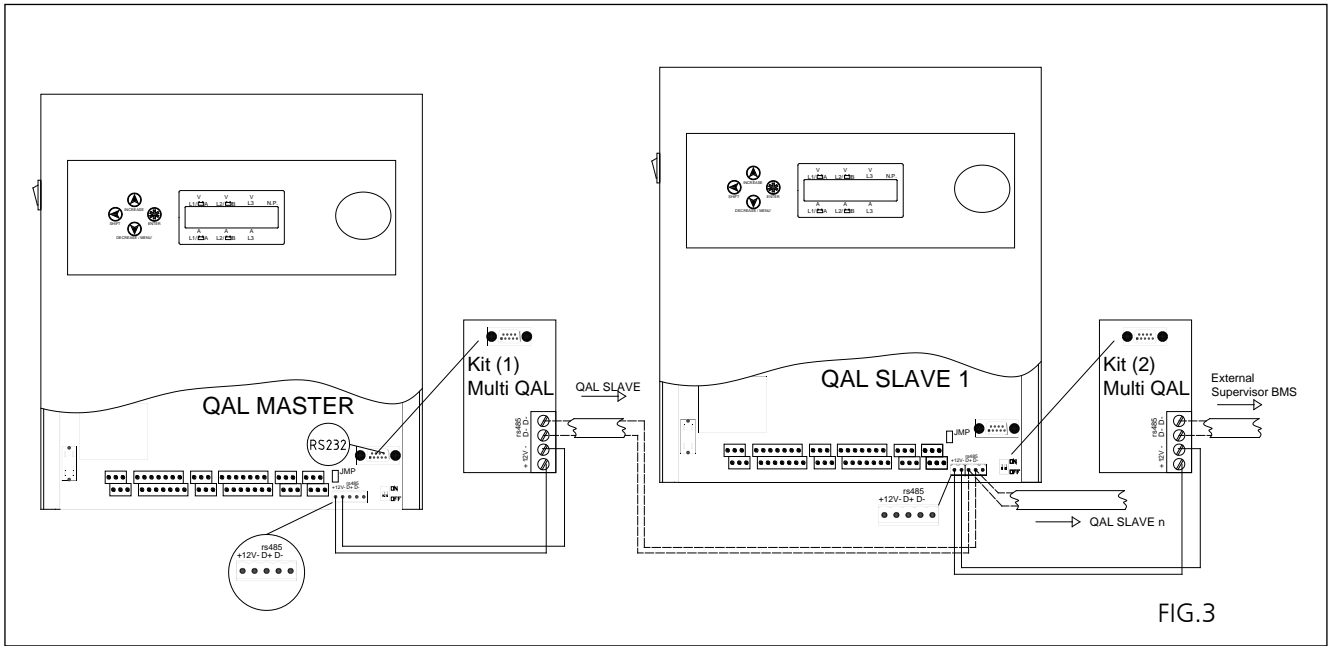


FIG.3

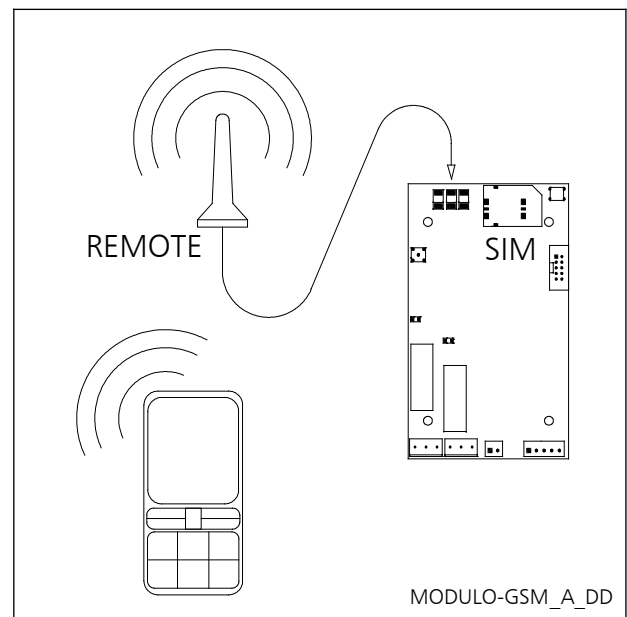
For other solutions, contact the technical assistance service.

GSM MODULE KIT

This module can be directly fixed inside the QAL 12845 alarms management system and, depending on the type of installation, it can be used in two different ways:

- Basic applications, with the transmission of a single customisable alarm message if a contact closes or opens
- Application with serial communication (DB9 connector), for transmitting a series of coded messages (same messages shown on the QAL 12845 display) that can be read on a cell phone. In this case, the module also sends a "Communication down" message if communication is interrupted.
- Each message sent is replicated to all the set recipients.
1 to 10 different recipients can be set.

The standard GSM module is fitted with a local magnetic aerial with a 5 m cable. Greater lengths are available on request.



Q-2RILS 485 CONTROL PANEL

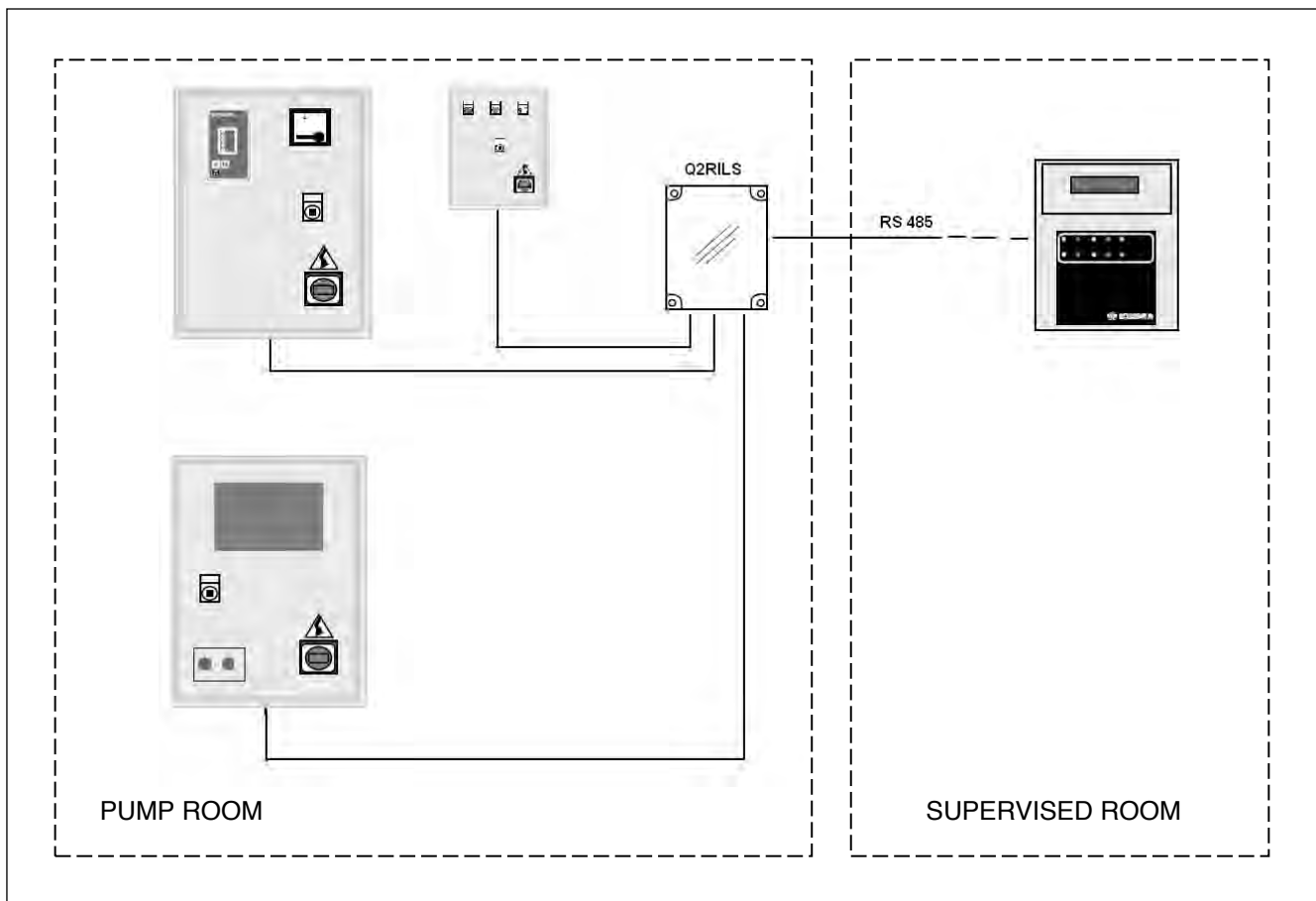
This is an accessory which converts the digital inputs in the room housing the Lowara pumping modules for EN12845 firefighting systems into ModBus-type 485 serial communications with two-pin wiring. Consistently with EN12845, the Q-2Rils 485 panel must be connected to the QAL 12845 alarms management panel located in the supervised room.

The Q-2Rils 485 panel contains:

- Main switch.
- Two digital– serial 485 conversion units.
- Electronic battery charger unit.
- Buffer battery 12Vdc.

The panel can manage sets with up to two service pumps, jockey pump and relative auxiliary devices, if present. The managed alarms are the same as those present in the QAL 12845 panel.

This solution eliminates all the cables, for each alarm, between the electrical panels of the electric service pump and diesel engine pump modules and the QAL 12845 alarms management panel. Installation benefits in the event of considerable distances between the pump room and the supervised room. Connection of the alarms of a typical system comprising: electric service pump module with jockey pump, diesel engine pump module.



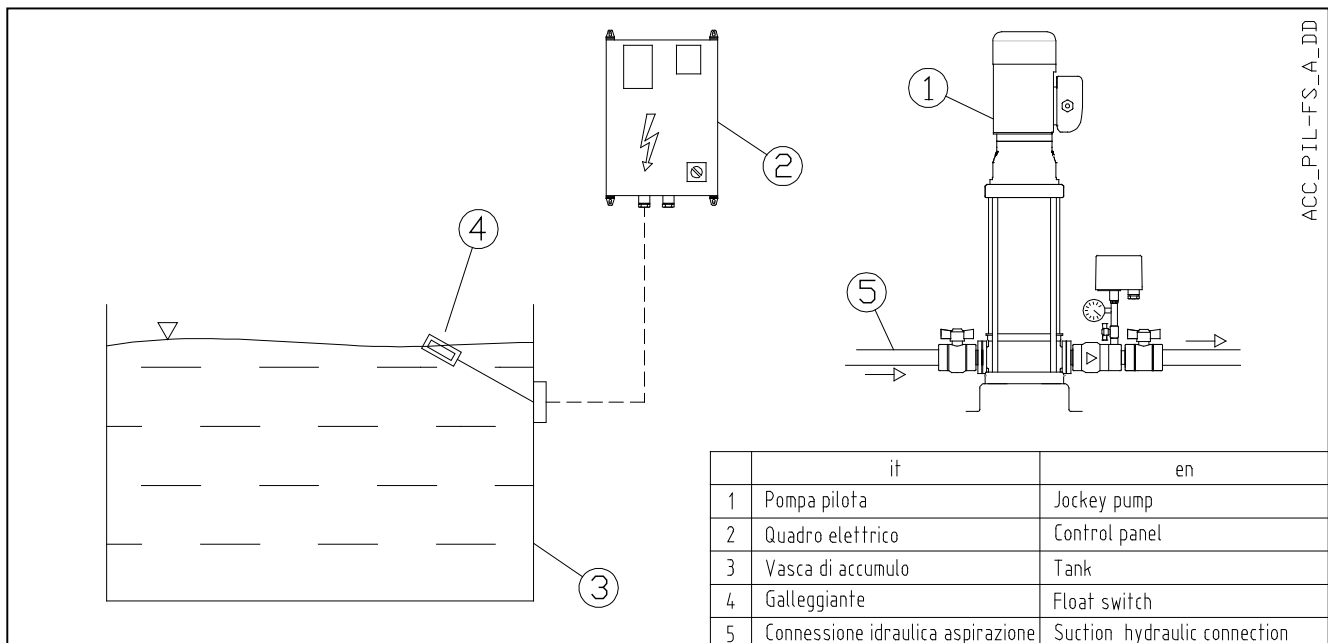
PROTECTION SYSTEMS AGAINST DRY RUNNING FOR THE ELECTRIC JOCKEY PUMP

To avoid damaging the jockey pump, protection systems must be used to prevent it from dry running. The electric panel is fitted out for connection to a float switch or a minimum pressure switch. An optional level control module (available on request) allows three electrode probes to be connected in order to adjust sensitivity according to water hardness.

The individual characteristics of the three protection systems for the jockey pump are shown below.

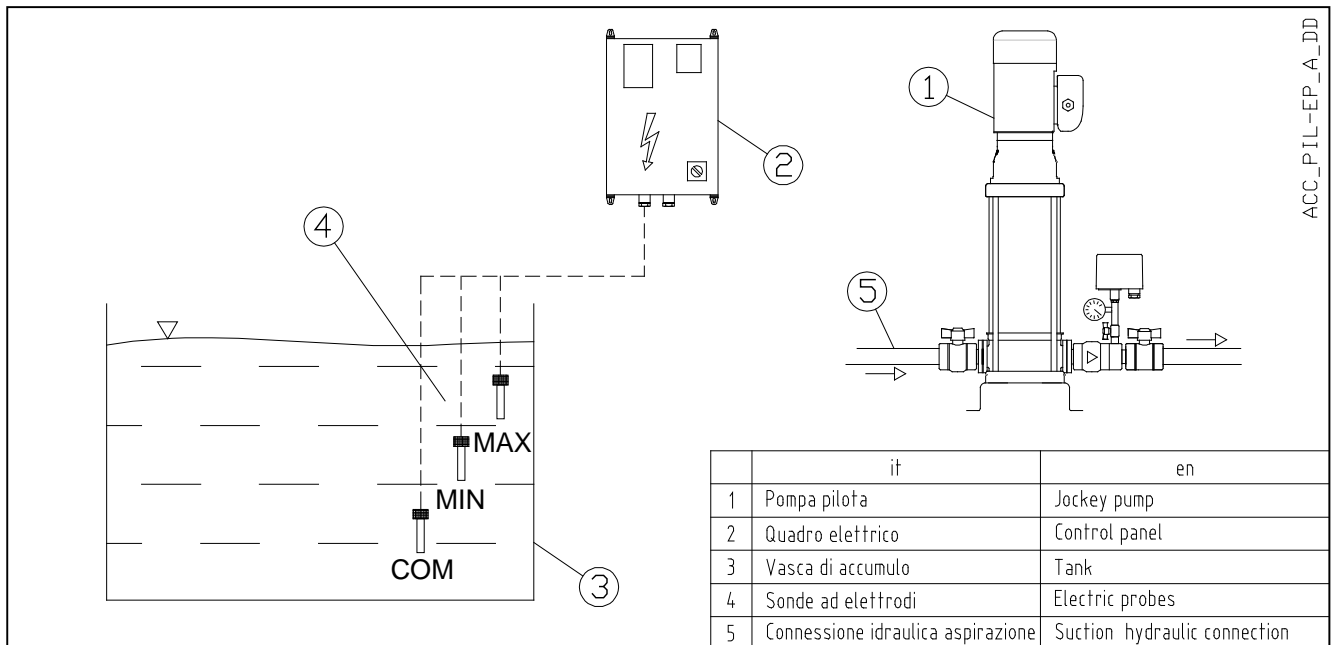
FLOAT SWITCH PROTECTION

The system with float switches is used in suction lift or positive suction head installations with water supplies from storage tanks (basins). A float switch immersed in the basin is connected to the electric panel of the jockey pump. If there is no water, the float switch opens the electrical contact and the pump stops.



ELECTRODE PROBE PROTECTION

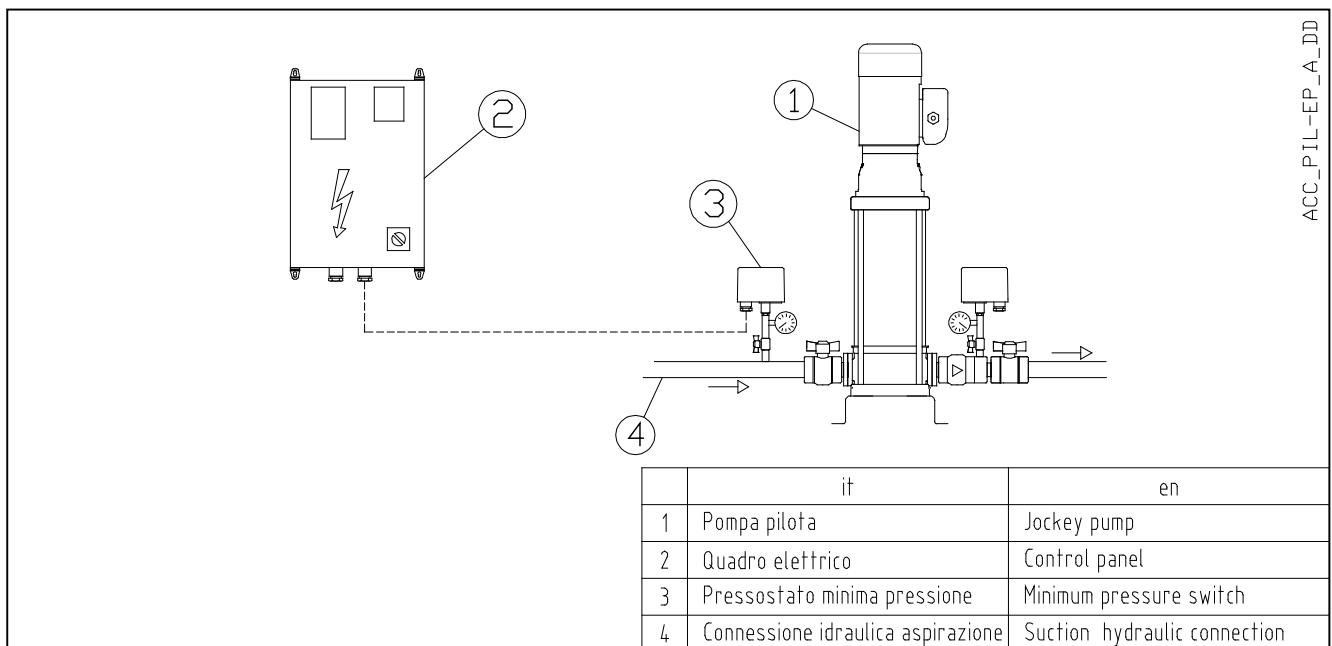
The system with electrode probes is used in suction lift or positive suction head installations with water supplies from storage tanks (basins). A set of three probes is connected directly to the electronic module (24V), also called level relay, which must be installed in the electric panel. With the three electrodes immersed in the water, the relay on the electronic board closes the contact and allows the pumps to start. If there is no water, the control circuit opens the electrical contact and the jockey pump stops.



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MINIMUM PRESSURE SWITCH PROTECTION

The system with minimum pressure switch is used for water supplies from pressurised networks. The pressure switch is connected to the electric panel of the jockey pump. If there is no water, the pressure switch opens the electrical contact and the pump stops.



ACC_PIL-EP_A_DD

ACCESSORIES

DIAPHRAGM TANKS

The GEM pressure modules are fitted out to hold 24-litre diaphragm tanks, one for each pump. A 1" ball valve, suitable for connecting the tank, is also supplied with the module. Larger tanks can also be connected to the same ball valve. For proper sizing of the tank, please refer to the technical annex.

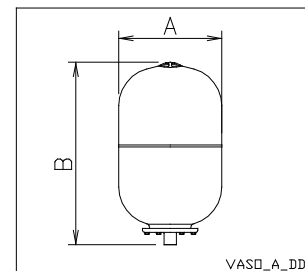
Kits featuring the following accessories are available on request:

- diaphragm tank.
- instructions sheet.
- packing.

DIAPHRAGM TANK KITS

Volume Litres	PN bar	DIMENSIONS (mm)		Materials	
		ø A	B	Diaphragm	Tank
24	8	270	470	EPDM	Painted steel
24	10	270	470	EPDM	Painted steel
24	16	270	470	EPDM	Painted steel

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COUNTERFLANGE KIT

Counterflange coupling kits made of galvanised or stainless steel are available on request.

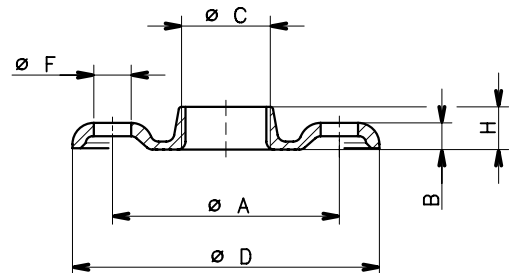
The counterflange kits are equipped with:

- 2 flanges
- gasket and hardware

THREADED COUNTERFLANGES

KIT TYPE	DN	ø C	DIMENSIONS (mm)				HOLES			PN
			ø A	B	ø D	H	ø F	N°		
2"	50	Rp 2	125	16	165	24	18	4	25	
2" 1/2	65	Rp 2 1/2	145	16	185	23	18	4	16	
3"	80	Rp 3	160	17	200	27	18	8	16	

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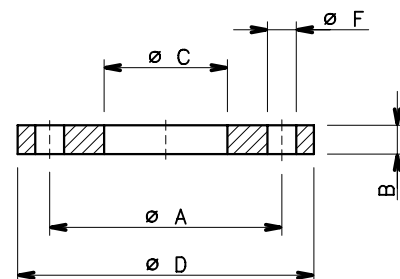


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WELD-ON COUNTERFLANGES

KIT TYPE	DN	ø C	DIMENSIONS (mm)				HOLES			PN
			ø A	B	ø D	ø F	N°			
2"	50	61	125	19	165	18	4	16		
2"1/2	65	77	145	20	185	18	4	16		
3"	80	90	160	20	200	18	8	16		
4"	100	116	180	22	220	18	8	16		
5"	125	141,5	210	22	250	18	8	16		
6"	150	170,5	240	24	285	22	8	16		
8"	200	221,5	295	26	340	22	12	16		
10"	250	276,5	355	29	405	26	12	16		
12"	300	327,5	410	32	460	26	12	16		

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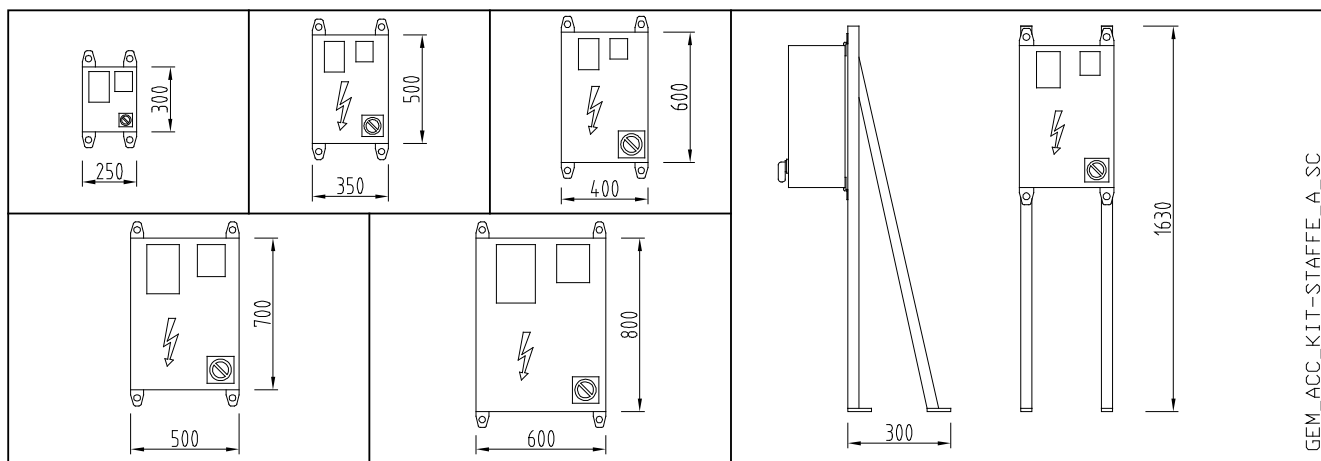


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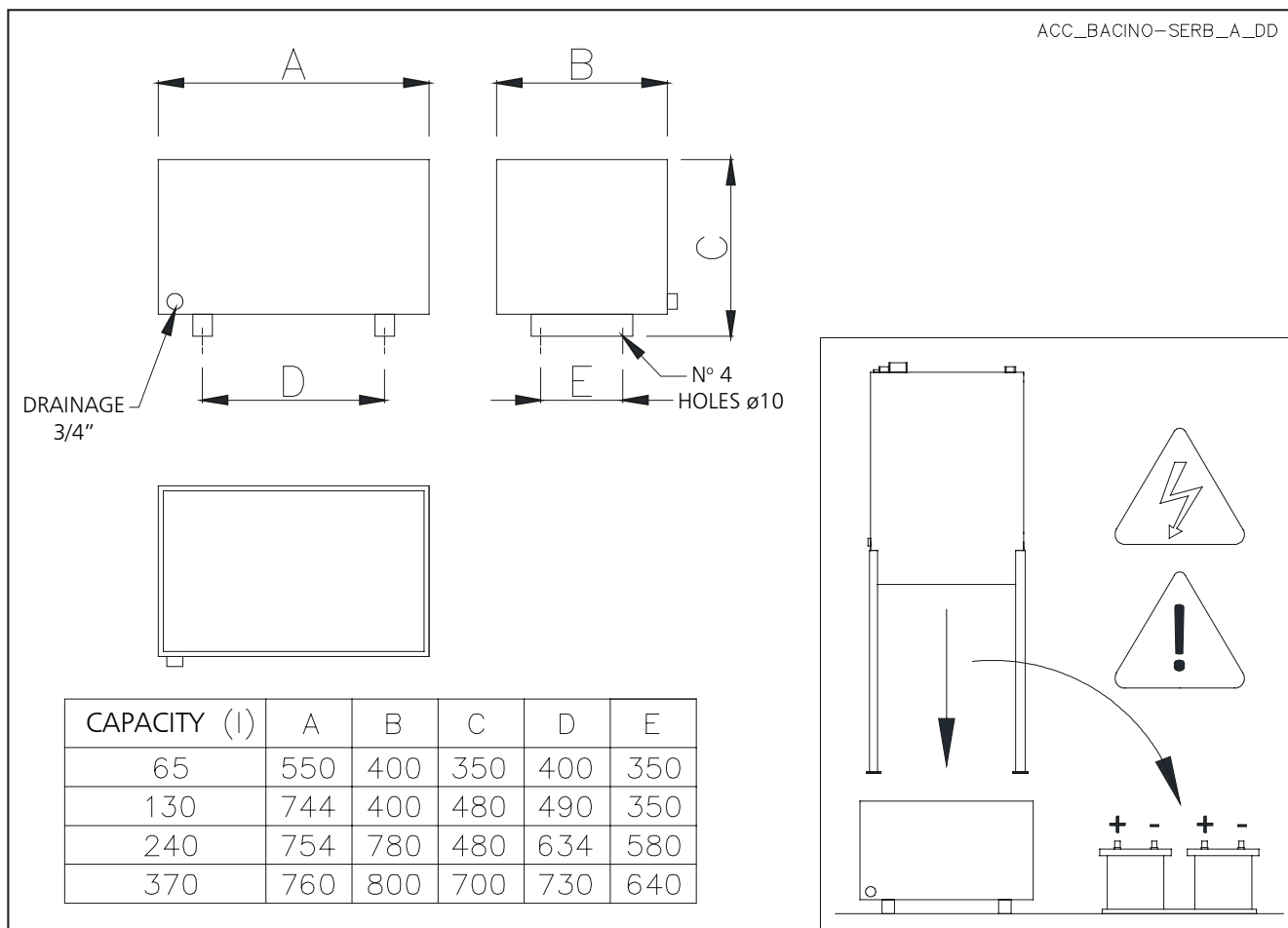
KIT OF UNIVERSAL BRACKETS FOR CONTROL PANELS

The electric control panels are supplied separately with 5 m of cable and can be mounted on the wall or on special brackets to secure to the floor.

A kit comprising two universal brackets and relative hardware for fixing the electric jockey pump panels and the electric service pump panels up to 55 kW is available on request. The electric control panels over 55 kW are freestanding cabinets.



ADDITIONAL DIESEL COLLECTOR BASIN KIT



ACCESSORIES

DIESEL ENGINE SPARE PARTS KIT

EN 12845 at point 10.9.12 specifies that diesel engines must be provided with a series of tools as recommended by the engine manufacturer. In addition to these items it must be also provided with a set of spare parts.




Diesel engine spare parts kit contains:

- two transmission belt (if utilised).
- two filters with gaskets for fuel.
- two filters with gaskets for motor oil.
- a complete series of motor connections, gaskets and flexible pipes.
- two injector nozzles

DIESEL DISCHARGE VALVE KIT

Diesel discharge valve kit contains an on/off ball valve which allows the discharge of the tank.

ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
	1"	002679402	1" FF PN30, NICKEL-PLATED BRASS
	1"	002675155	1" MF PN40, NICKEL-PLATED BRASS
	1"1/4	R02661422	1"1/4 FF PN30, NICKEL-PLATED BRASS
	1"1/4	R02661318	1"1/4 MF PN30, NICKEL-PLATED BRASS
	1"1/2	R02661427	1"1/2 FF PN30, NICKEL-PLATED BRASS
	1"1/2	002675369	1"1/2 MF PN25, NICKEL-PLATED BRASS
	2"	R02661424	2" FF PN25, NICKEL-PLATED BRASS
	2"	002679408	2" MF PN25, NICKEL-PLATED BRASS
	DN50	002674052	DN50 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN65	002674053	DN65 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN80	002674054	DN80 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN100	002674055	DN100 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN125	002674056	DN125 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN125	002675926	DN125 PN16, CAST-IRON, WAFER TYPE WITH TURN GEARBOX
	DN150	002674057	DN150 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN200	002674058	DN200 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN200	002674015	DN200 PN16, CAST-IRON, WAFER TYPE WITHOUT HANDLE
	DN250	002674059	DN250 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN300	002674060	DN300 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN50	109897860	DN50 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN65	109897870	DN65 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN80	109897880	DN80 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN100	109897890	DN100 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN125	002674088	DN125 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN125	002674174	DN125 PN16, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN125	109897900	DN125 PN16, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN150	002674089	DN150 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN150	002674175	DN150 PN16, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN150	109897910	DN150 PN16, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN200	002674176	DN200 PN10, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN200	109897920	DN200 PN10, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN200	002674290	DN200 PN16, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN200	109897990	DN200 PN16, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN250	002674177	DN250 PN10, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN250	109897930	DN250 PN10, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN250	002674291	DN250 PN16, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN250	109897980	DN250 PN16, CAST-IRON, LUG TYPE WITH HANDWHEEL
	DN300	002674178	DN300 PN10, CAST-IRON, LUG TYPE WITHOUT HANDLE
	DN300	109897940	DN300 PN10, CAST-IRON, LUG TYPE WITH HANDWHEEL
DN350	002674179	DN350 PN10, CAST-IRON, LUG TYPE WITHOUT HANDLE	
DN350	109897950	DN350 PN10, CAST-IRON, LUG TYPE WITH HANDWHEEL	
DN400	002674305	DN400 PN10, CAST-IRON, LUG TYPE WITHOUT HANDLE	
DN400	109897960	DN400 PN10, CAST-IRON, LUG TYPE WITH HANDWHEEL	

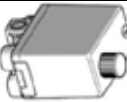



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ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Limit switch micro kit for on/off valves 		109399620	MONITORING KIT H, FOR ON/OFF BALL VALVE 1", OPEN STATUS
		109399630	MONITORING KIT J, FOR ON/OFF BALL VALVE 1"1/4, OPEN STATUS
		109399640	MONITORING KIT K, FOR ON/OFF BALL VALVE 1"1/2, OPEN STATUS
		109399650	MONITORING KIT A, FOR ON/OFF BALL VALVE 2", OPEN STATUS
		109399660	MONITORING KIT D, FOR ON/OFF BALL VALVE 1", CLOSED STATUS
		109399670	MONITORING KIT E, FOR ON/OFF BALL VALVE 1"1/4, CLOSED STATUS
		109399680	MONITORING KIT F, FOR ON/OFF BALL VALVE 1"1/2, CLOSED STATUS
		109399690	MONITORING KIT G, FOR ON/OFF BALL VALVE 2", CLOSED CHIUSO
		109399700	MONITORING KIT B, FOR ON/OFF BUTTERFLY VALVE WITH HANDLE, DIAMETERS DN50-100, OPEN AND CLOSED STATUS
		109399710	MONITORING KIT C, FOR ON/OFF BUTTERFLY VALVE WITH HANDWHEEL, DIAMETERS DN125-450, OPEN AND CLOSED STATUS
Handwheel for butterfly valve 	DN100	002676800	ADAPTER DN100, WITH HANDWHEEL
	DN125	002676800	ADAPTER DN125, WITH HANDWHEEL
	DN150	002676800	ADAPTER DN150, WITH HANDWHEEL
	DN200	002676800	ADAPTER DN200, WITH HANDWHEEL
	DN250	002676802	ADAPTER DN250, WITH HANDWHEEL
	DN300	002676804	ADAPTER DN300, WITH HANDWHEEL
	DN350	002676806	ADAPTER DN350, WITH HANDWHEEL
	DN400	002676806	ADAPTER DN400, WITH HANDWHEEL
	DN100	002675980	ADAPTER DN100, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN125	002675980	ADAPTER DN125, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN150	002675980	ADAPTER DN150, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN200	002675980	ADAPTER DN200, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN250	002675982	ADAPTER DN250, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN300	002675983	ADAPTER DN300, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN350	002675984	ADAPTER DN350, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
	DN400	002675984	ADAPTER DN400, WITH HANDWHEEL AND LIMIT SWITCH MICRO KIT
Non return valve 	1"	002675029	1" MF PN25 THREADED, SUCTION MALE, BRASS
	1"1/4	002675036	1"1/4 MF PN25 THREADED, SUCTION MALE, BRASS
	1"1/2	002675043	1"1/2 MF PN25 THREADED, SUCTION MALE, BRASS
	2"	002675032	2" MF PN40 THREADED, SUCTION MALE, BRASS
Clapet non return valve 	2"	002676013	2" FF PN16 THREADED, INSPECTION COVER, NICKEL-PLATED BRASS
	DN65	002676022	DN65 PN16 FLANGED, INSPECTION COVER, CAST-IRON
	DN80	002676023	DN80 PN16 FLANGED, INSPECTION COVER, CAST-IRON
	DN100	002676024	DN100 PN16 FLANGED, INSPECTION COVER, CAST-IRON
	DN125	002676025	DN125 PN16 FLANGED, INSPECTION COVER, CAST-IRON
	DN150	002676026	DN150 PN16 FLANGED, INSPECTION COVER, CAST-IRON
Hydro tube 	24lt	106110560	24 LITRE- 8 BAR, CONNECTION 1", GALVANIZED STEEL FLANGE
	24lt	106111180	24 LITRE-10 BAR, CONNECTION 1", GALVANIZED STEEL FLANGE
	24lt	106111190	24 LITRE-16 BAR, CONNECTION 1", GALVANIZED STEEL FLANGE
Pressure gauge 	1/4"	002110146	PRESSURE GAUGE 0-10 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN
		002110147	PRESSURE GAUGE 0-16 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN
		002110148	PRESSURE GAUGE 0-25 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN

accessories2_d_ta

ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
Pressure switch 	1/4"	002161370	PRESSURE SWITCH XMA 1-6 BAR, BRASS CONNECTION
		002161371	PRESSURE SWITCH XMA 1,3-12 BAR, BRASS CONNECTION
		002161372	PRESSURE SWITCH XMA 3,5-2 5BAR, BRASS CONNECTION
Pressure switch pump running 	1/4"	002161353	PRESSURE SWITCH PUMP RUNNING
		002161501	RUBBER PROTECTIVE CUP FOR PRESSURE SWITCH PUMP RUNNING
Two module joint 		109422480	THREAD JOINT GEM2/N32 GEM1/N40
		109422490	FLANGED JOINT GEM2/N40
		109422500	FLANGED JOINT GEM1/N50
		109422510	FLANGED JOINT GEM2/N50 GEM1/N65
		109422520	FLANGED JOINT GEM2/N65
		109422530	FLANGED JOINT GEM1/N80
		109422540	FLANGED JOINT GEM3/N65
		109422550	FLANGED JOINT GEM2/N80 GEM1/N100
		109422560	FLANGED JOINT GEM3/N80 GEM2/N100
		109422570	FLANGED JOINT GEM1/N125
Suction reducer 		156446000	FLANGED REDUCER FLANG. 20° DN32/PN16 X DN40/PN16 PAINTED STEEL
		156446010	FLANGED REDUCER FLANG. 20° DN32/PN16 X DN50/PN16 PAINTED STEEL
		156446020	FLANGED REDUCER FLANG. 20° DN32/PN16 X DN65/PN16 PAINTED STEEL
		156446030	FLANGED REDUCER FLANG. 20° DN32/PN16 X DN80/PN16 PAINTED STEEL
		156446040	FLANGED REDUCER FLANG. 20° DN40/PN16 X DN50/PN16 PAINTED STEEL
		156446050	FLANGED REDUCER FLANG. 20° DN40/PN16 X DN65/PN16 PAINTED STEEL
		156446060	FLANGED REDUCER FLANG. 20° DN40/PN16 X DN80/PN16 PAINTED STEEL
		156446070	FLANGED REDUCER FLANG. 20° DN40/PN16 X DN100/PN16 PAINTED STEEL
		156446080	FLANGED REDUCER FLANG. 20° DN50/PN16 X DN65/PN16 PAINTED STEEL
		156446090	FLANGED REDUCER FLANG. 20° DN50/PN16 X DN80/PN16 PAINTED STEEL
		156447000	FLANGED REDUCER FLANG. 20° DN50/PN16 X DN100/PN16 PAINTED STEEL
		156447010	FLANGED REDUCER FLANG. 20° DN50/PN16 X DN125/PN16 PAINTED STEEL
		156447020	FLANGED REDUCER FLANG. 20° DN65/PN16 X DN80/PN16 PAINTED STEEL
		156447030	FLANGED REDUCER FLANG. 20° DN65/PN16 X DN100/PN16 PAINTED STEEL
		156447040	FLANGED REDUCER FLANG. 20° DN65/PN16 X DN125/PN16 PAINTED STEEL
		156447050	FLANGED REDUCER FLANG. 20° DN65/PN16 X DN150/PN16 PAINTED STEEL
		156447060	FLANGED REDUCER FLANG. 20° DN80/PN16 X DN100/PN16 PAINTED STEEL
		156447070	FLANGED REDUCER FLANG. 20° DN80/PN16 X DN125/PN16 PAINTED STEEL
		156447080	FLANGED REDUCER FLANG. 20° DN80/PN16 X DN150/PN16 PAINTED STEEL
		156447090	FLANGED REDUCER FLANG. 20° DN80/PN16 X DN200/PN10 PAINTED STEEL
		156448000	FLANGED REDUCER FLANG. 20° DN100/PN16 X DN125/PN16 PAINTED STEEL
		156448010	FLANGED REDUCER FLANG. 20° DN100/PN16 X DN150/PN16 PAINTED STEEL
		156448020	FLANGED REDUCER FLANG. 20° DN100/PN16 X DN200/PN10 PAINTED STEEL
		156448030	FLANGED REDUCER FLANG. 20° DN100/PN16 X DN250/PN10 PAINTED STEEL
		156448040	FLANGED REDUCER FLANG. 20° DN125/PN16 X DN150/PN16 PAINTED STEEL
		156448050	FLANGED REDUCER FLANG. 20° DN125/PN16 X DN200/PN10 PAINTED STEEL
		156448060	FLANGED REDUCER FLANG. 20° DN125/PN16 X DN250/PN10 PAINTED STEEL
		156448070	FLANGED REDUCER FLANG. 20° DN125/PN16 X DN300/PN10 PAINTED STEEL
		156448080	FLANGED REDUCER FLANG. 20° DN150/PN16 X DN200/PN10 PAINTED STEEL
		156448090	FLANGED REDUCER FLANG. 20° DN150/PN16 X DN250/PN10 PAINTED STEEL
156449000	FLANGED REDUCER FLANG. 20° DN150/PN16 X DN300/PN10 PAINTED STEEL		
156449010	FLANGED REDUCER FLANG. 20° DN150/PN16 X DN350/PN10 PAINTED STEEL		
156449020	FLANGED REDUCER FLANG. 20° DN150/PN16 X DN400/PN10 PAINTED STEEL		

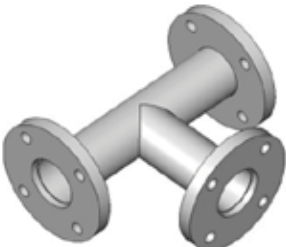

accessories3-en_d_ta

ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Nipple 	1"	002671855	1", GALVANISED STEEL
	1"1/4	002671856	1"1/4, GALVANISED STEEL
	1"1/2	002671857	1"1/2, GALVANISED STEEL
	2"	002671858	2", GALVANISED STEEL
Anti-vibration joint 	DN32	R02521006	DN32 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN40	R02521008	DN40 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN50	R02521010	DN50 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN65	R02521012	DN65 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN80	R02521014	DN80 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN100	R02521016	DN100 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN125	R02521018	DN125 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN150	R02521020	DN150 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN200	R02521022	DN200 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN250	R02521024	DN250 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
	DN300	R02521026	DN300 ANTI-VIBRATION JOINT, PN16, GALVANISED STEEL FLANGE
Threaded elbow 	1"	002670655	1" MF, GALVANISED STEEL
	1"1/4	002670656	1"1/4 MF, GALVANISED STEEL
	1"1/2	002670657	1"1/2 MF, GALVANISED STEEL
	2"	002670658	2" MF, GALVANISED STEEL
	1"	002670505	1" FF, GALVANISED STEEL
	1"1/4	R02671434	1"1/4 FF, GALVANISED STEEL
	1"1/2	002670557	1"1/2 FF, GALVANISED STEEL
	2"	002670558	2" FF, GALVANISED STEEL
	Flanged elbow 	DN40	156407800
DN50		156407810	DN50, ELBOW 5D, 90° PN16, PAINTED STEEL
DN65		156407820	DN65, ELBOW 5D, 90° PN16, PAINTED STEEL
DN80		156407830	DN80, ELBOW 5D, 90° PN16, PAINTED STEEL
DN100		156407840	DN100, ELBOW 3D, 90° PN16, PAINTED STEEL
DN125		156407850	DN125, ELBOW 3D, 90° PN16, PAINTED STEEL
DN150		156407860	DN150, ELBOW 3D, 90° PN16, PAINTED STEEL
DN200		156407871	DN200, ELBOW3D, 180° PN16, PAINTED STEEL
Flanged-Threaded tee 		156406041	FLANGED TEE DN65 - R1"1/2 - DN65, PN16, VRN PAINTED STEEL
		156406051	FLANGED TEE DN65 - R2" - DN65, PN16, VRN PAINTED STEEL
		156406070	FLANGED TEE DN80 - R1"1/2 - DN80, PN16, VRN PAINTED STEEL
		156406082	FLANGED TEE DN80 - R2" - DN80, PN16, VRN PAINTED STEEL
		156406110	FLANGED TEE DN100 - R1"1/2 - DN100, PN16, VRN PAINTED STEEL
		156406121	FLANGED TEE DN100 - R2" - DN100, PN16, VRN PAINTED STEEL
		156406160	FLANGED TEE DN125 - R1"1/2 - DN125, PN16, VRN PAINTED STEEL
		156406171	FLANGED TEE DN125 - R2" - DN125, PN16, VRN PAINTED STEEL



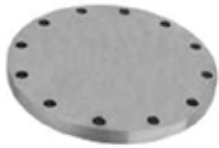

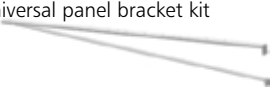
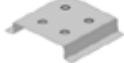
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ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
		156406060	FLANGED TEE DN65 - DN65 - DN65, PN16, VRN PAINTED STEEL
		156406090	FLANGED TEE DN80 - DN65 - DN80, PN16, PAINTED STEEL
		156406101	FLANGED TEE DN80 - DN80 - DN80, PN16, PAINTED STEEL
		156406131	FLANGED TEE DN100 - DN65 - DN100, PN16, PAINTED STEEL
		156406141	FLANGED TEE DN100 - DN80 - DN100, PN16, PAINTED STEEL
		156406151	FLANGED TEE DN100 - DN100 - DN100, PN16, PAINTED STEEL
		156406180	FLANGED TEE DN125 - DN65 - DN125, PN16, PAINTED STEEL
		156406191	FLANGED TEE DN125 - DN80 - DN125, PN16, PAINTED STEEL
		156406201	FLANGED TEE DN125 - DN100 - DN125, PN16, PAINTED STEEL
		156406210	FLANGED TEE DN125 - DN125 - DN125, PN16, PAINTED STEEL
		156406231	FLANGED TEE DN150 - DN65 - DN150, PN16, PAINTED STEEL
		156406251	FLANGED TEE DN150 - DN80 - DN150, PN16, PAINTED STEEL
		156406261	FLANGED TEE DN150 - DN100 - DN150, PN16, PAINTED STEEL
		156406270	FLANGED TEE DN150 - DN125 - DN150, PN16, PAINTED STEEL
		156406280	FLANGED TEE DN150 - DN150 - DN150, PN16, PAINTED STEEL
		156406321	FLANGED TEE DN200 - DN80 - DN200, PN16, PAINTED STEEL
		156406331	FLANGED TEE DN200 - DN100 - DN200, PN16, PAINTED STEEL
		156406341	FLANGED TEE DN200 - DN125 - DN200, PN16, PAINTED STEEL
		156406351	FLANGED TEE DN200 - DN150 - DN200, PN16, PAINTED STEEL
		156406361	FLANGED TEE DN200 - DN200 - DN200, PN16, PAINTED STEEL
		156406400	FLANGED TEE DN250 - DN80 - DN250, PN16, PAINTED STEEL
		156406410	FLANGED TEE DN250 - DN100 - DN250, PN16, PAINTED STEEL
		156406421	FLANGED TEE DN250 - DN125 - DN250, PN16, PAINTED STEEL
		156406431	FLANGED TEE DN250 - DN150 - DN250, PN16, PAINTED STEEL
		156406441	FLANGED TEE DN250 - DN200 - DN250 PAINTED STEEL
		156406450	FLANGED TEE DN250 - DN250 - DN250, PN16, PAINTED STEEL
		156406481	FLANGED TEE DN300 - DN250 - DN300, PN16, PAINTED STEEL
		DN50	R02680106
DN65		R02680108	DN65, WELD FLANGE PN16, GALVANISED STEEL
DN80		R02680110	DN80, WELD FLANGE PN16, GALVANISED STEEL
DN100		R02680112	DN100, WELD FLANGE PN16, GALVANISED STEEL
DN125		002684087	DN125, WELD FLANGE PN16, GALVANISED STEEL
DN150		002684088	DN150, WELD FLANGE PN16, GALVANISED STEEL
DN200		002684096	DN200, WELD FLANGE PN10, GALVANISED STEEL
DN200		002684090	DN200, WELD FLANGE PN16, GALVANISED STEEL
DN250		R02681174	DN250, WELD FLANGE PN10, GALVANISED STEEL
DN250		002684055	DN250, WELD FLANGE PN16, GALVANISED STEEL
DN300		R02681176	DN300, WELD FLANGE PN10, GALVANISED STEEL
DN300		002684056	DN300, WELD FLANGE PN16, GALVANISED STEEL
DN350		002684004	DN350, WELD FLANGE PN10, GALVANISED STEEL
DN350		002684057	DN350, WELD FLANGE PN16, GALVANISED STEEL
DN400		002684005	DN400, WELD FLANGE PN10, GALVANISED STEEL
DN400		002684058	DN400, WELD FLANGE PN16, GALVANISED STEEL
DN450		002684006	DN450, WELD FLANGE PN10, GALVANISED STEEL

accessories5_d_ta

ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Threaded flange 	1"	002680102	Rp1" THREAD FEMALE PN25, GALVANISED STEEL
	1"1/4	002680103	Rp1"1/4 THREAD FEMALE PN25, GALVANISED STEEL
	1"1/2	002680104	Rp1"1/2 THREAD FEMALE PN25, GALVANISED STEEL
	2"	002680105	Rp2" THREAD FEMALE PN25, GALVANISED STEEL
	2"1/2	002680106	Rp2"1/2 THREAD FEMALE PN16, GALVANISED STEEL
	3"	002680108	Rp3" THREAD FEMALE PN16, GALVANISED STEEL
End flange  	DN50	R02680006	DN50, END FLANGE PN16, GALVANISED STEEL
	DN65	R02680008	DN65, END FLANGE PN16, GALVANISED STEEL
	DN80	R02680010	DN80, END FLANGE PN16, GALVANISED STEEL
	DN100	R02680012	DN100, END FLANGE PN16, GALVANISED STEEL
	DN125	R02680014	DN125, END FLANGE PN16, GALVANISED STEEL
	DN150	R02680016	DN150, END FLANGE PN16, GALVANISED STEEL
	DN200	R02680018	DN200, END FLANGE PN16, GALVANISED STEEL
	DN250	R02681074	DN250, END FLANGE PN10, GALVANISED STEEL
	DN250	002682053	DN250, END FLANGE PN16, GALVANISED STEEL
	DN300	R02681075	DN300, END FLANGE PN10, GALVANISED STEEL
	DN300	002682054	DN300, END FLANGE PN16, GALVANISED STEEL
	DN350	002682024	DN350, END FLANGE PN10, GALVANISED STEEL
	DN350	002682055	DN350, END FLANGE PN16, GALVANISED STEEL
	DN400	002682025	DN400, END FLANGE PN10, GALVANISED STEEL
	DN400	002682056	DN400, END FLANGE PN16, GALVANISED STEEL
DN450	002682026	DN450, END FLANGE PN10, GALVANISED STEEL	
Gasket for flange 	DN25	168061320	DN25, GASKET PN16
	DN32	168061330	DN32, GASKET PN16
	DN40	168061340	DN40, GASKET PN16
	DN50	168061350	DN50, GASKET PN16
	DN65	168061360	DN65, GASKET PN16
	DN80	168061370	DN80, GASKET PN16
	DN100	168061380	DN100, GASKET PN16
	DN125	168061390	DN125, GASKET PN16
	DN150	168061400	DN150, GASKET PN16
	DN200	002223922	DN200, GASKET PN10-16
	DN250	002223927	DN250, GASKET PN16
	DN300	002223932	DN300, GASKET PN16
	DN350	002223937	DN350, GASKET PN16
	DN400	002223942	DN400, GASKET PN16
	DN450	002223946	DN450, GASKET PN10
	DN450	002223947	DN450, GASKET PN16
Universal panel bracket kit 	H1630	109392030	UNIVERSAL PANEL BRACKET KIT (2 PIECES), WITH SCREWS, PAINTED STEEL
Jockey pump support 	H105	161409700	SUPPORT FOR JOCKEY PUMP SERIES 1-3SV 1-3VM 105MM HEIGHT, PAINTED STEEL



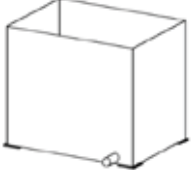

accessories6_d_ta

ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Main pump shim 		161409995	SHIM UPN100X50 (H100 E H50), PAINTED STEEL
Priming tank 	500LT	106226670	PRIMING TANK 500 LITRI, GALVANISED STEEL
Priming tank support 	H750	151408300	PRIMING TANK SUPPORT, HEIGHT 750MM, PAINTED STEEL
	H1000	151408310	PRIMING TANK SUPPORT, HEIGHT 1000MM, PAINTED STEEL
	H1500	151408320	PRIMING TANK SUPPORT, HEIGHT 1500MM, PAINTED STEEL
	H2000	151408330	PRIMING TANK SUPPORT, HEIGHT 2000MM, PAINTED STEEL
Flow meter 	1"	002110825	1" FLOW METER
	1"1/4	002110826	1"1/4 FLOW METER
	1"1/2	002110827	1"1/2 FLOW METER
	2"	002110828	2" FLOW METER
	DN65	002110829	DN65 FLOW METER
	DN80	002110830	DN80 FLOW METER
	DN125	002110805	DN125 FLOW METER
	DN150	002110806	DN150 FLOW METER
	DN200	002110807	DN200 FLOW METER
Jockey pump dry-running 		159260210	FLOAT SWITCH WITH PVC CABLE 1,5 METERS
		159260220	FLOAT SWITCH WITH PVC CABLE 5 METERS
		002161400	MINIMUM PRESURE SWITCH 0,1-0,5 BAR, RP1/4", IP44
		109898370	N° 1 PROBE UNIT (24V) + N° 3 ELECTRODES
		109890730	N° 3 ELECTRODES
Flexible hose 	1"	002542010	1" MF, L=500MM PN16, GALVANIZED STEEL SHEATH
		002542014	1" MF L=600MM PN16, GALVANIZED STEEL SHEATH
		002542004	1" MF, L=700MM PN16, GALVANIZED STEEL SHEATH
		002542019	1" MF, L=800MM PN16, GALVANIZED STEEL SHEATH
	1"1/4	002542040	1"1/4 MF L=700MM PN16, GALVANIZED STEEL SHEATH
		002542041	1"1/4 MF L=800MM PN16, GALVANIZED STEEL SHEATH
		002542042	1"1/4 MF L=900MM PN16, GALVANIZED STEEL SHEATH
		002542044	1"1/4 MF L=1000MM PN16, GALVANIZED STEEL SHEATH
	1"1/2	002542050	1"1/2 MF L=500MM PN16, GALVANIZED STEEL SHEATH
		002542054	1"1/2 MF L=800MM PN16, GALVANIZED STEEL SHEATH
	2"	002542069	2" MF L=500MM PN16, GALVANIZED STEEL SHEATH
		002542070	2" MF L=600MM PN16, GALVANIZED STEEL SHEATH
Fuel discharge valve 	1"	002675155	1" MF PN40, NICKEL-PLATED BRASS




accessories7_d_ta

ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Hand pump fuel load 		183110960	Nº 1 HAND PUMP FUEL LOAD MT 0,7 DELIVERY HOSE Nº 1 FITTING FOR SUCTION HOSE
Kit sprinkler pump room 		109422800	Nº 2 SPRINKLER 1/2", K81 68°C, BRASS Nº 1 FLOW SWITCH 1" Nº 1 BALL VALVE MF 3/4", NICKEL-PLATED BRASS Nº 1 BALL VALVE FF 1", NICKEL-PLATED BRASS
Diesel collector basin 			
	65 LT	183300745	Diesel collector basin, 65 l tank.
	130 LT	183300746	Diesel collector basin, 130 l tank.
	240 LT	183300747	Diesel collector basin, 240 l tank.
	370 LT	183300748	Diesel collector basin, 370 l tank.
Diesel engine spare parts kit 			
	Air cooled engine	183300122	Spare parts kit LOMBARDINI 15LD350
		183300123	Spare parts kit LOMBARDINI 15LD440
		183300124	Spare parts kit LOMBARDINI 15LD500
		183300780	Spare parts kit LOMBARDINI 25LD425-2
		183300126	Spare parts kit LOMBARDINI 9LD625-2
		183300128	Spare parts kit LOMBARDINI 11LD626-3
		183300135	Spare parts kit VM D703E0.FRP
		183300135	Spare parts kit VM D703TE0.FRP
		183300136	Spare parts kit VM D754TPE2.FRP
		183300137	Spare parts kit VM D756IPE2.FRP
		183300781	Spare parts kit IVECO AIFO N67MNTF42.10
		183300781	Spare parts kit IVECO AIFO N67MNTF41.10
		183300781	Spare parts kit IVECO AIFO N67MNTF40.10
	Water cooled engine	183300135	Spare parts kit VM D703E0.F3S; Water cooled
		183300135	Spare parts kit VM D703TE0.F3S; Water cooled
		183300136	Spare parts kit VM D754TPE2.F3S; Water cooled
		183300137	Spare parts kit VM D756TPE2.F3S; Water cooled
		183300783	Spare parts kit CLARKE JU4H-NL54; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NL34; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NL54; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NL74; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NLR4; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NLM4; Water cooled
		183300784	Spare parts kit CLARKE JU6H-NL84; Water cooled
		183300781	Spare parts kit IVECO AIFO N67MNTF40.01 Water cooled
		183300782	Spare parts kit IVECO AIFO N60ENTF40.00; Water cooled

accessories8_d_ta

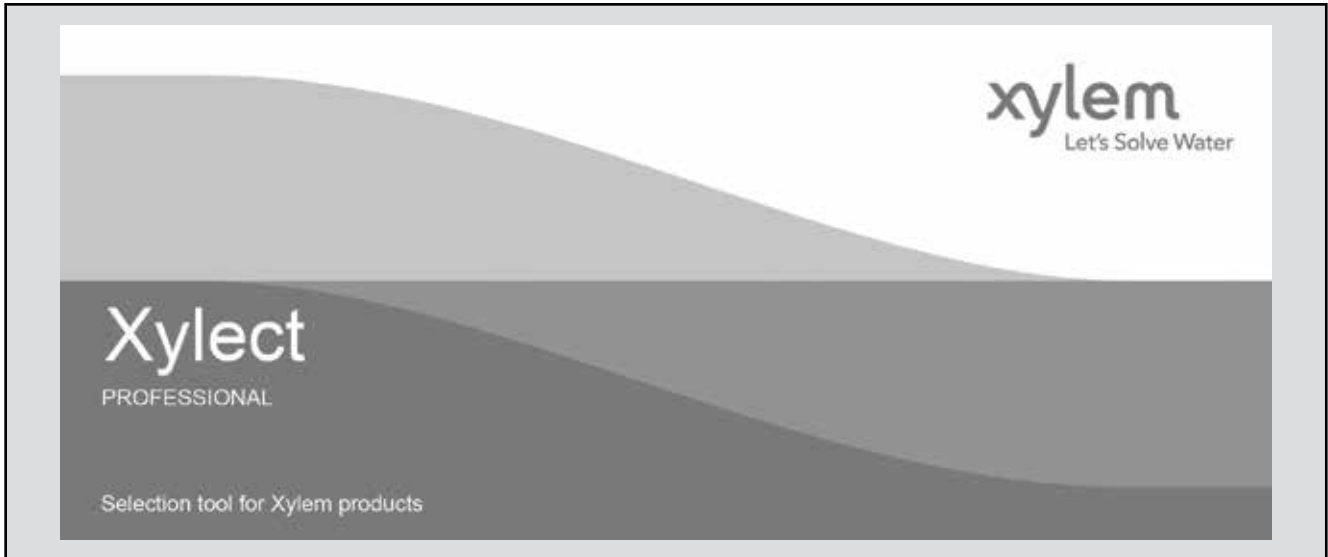
ACCESSORIES

MODEL	RIF.	CODE	DESCRIPTION
Electric pump control panel 	1,1kW	1086050100	Q1FD/11 DIRECT START-UP 3X400V 50/60HZ
	1,5kW	1086050200	Q1FD/15 DIRECT START-UP 3X400V 50/60HZ
	2,2kW	1086050300	Q1FD/22 DIRECT START-UP 3X400V 50/60HZ
	3kW	1086050400	Q1FD/30 DIRECT START-UP 3X400V 50/60HZ
	4kW	1086050500	Q1FD/40 DIRECT START-UP 3X400V 50/60HZ
	5,5kW	1086050600	Q1FD/55 DIRECT START-UP 3X400V 50/60HZ
	7,5kW	1086050700	Q1FD/75 DIRECT START-UP 3X400V 50/60HZ
	9,2kW	1086050800	Q1FD/92 DIRECT START-UP 3X400V 50/60HZ
	11kW	1086050900	Q1FD/110 DIRECT START-UP 3X400V 50/60HZ
	15kW	1086051000	Q1FD/150 DIRECT START-UP 3X400V 50/60HZ
	18,5kW	1086051100	Q1FD/185 DIRECT START-UP 3X400V 50/60HZ
	22kW	1086051200	Q1FD/220 DIRECT START-UP 3X400V 50/60HZ
	30kW	1086052300	Q1FY/300 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	37kW	1086052400	Q1FY/370 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	45kW	1086052500	Q1FY/450 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	55kW	1086052600	Q1FY/550 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	75kW	1086052700	Q1FY/750 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	90kW	1086052800	Q1FY/900 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	110kW	1086052900	Q1FY/1100 STAR/TRIANGLE START-UP 3X400V 50/60HZ
	132kW	1086053000	Q1FY/1320 STAR/TRIANGLE START-UP 3X400V 50/60HZ
160kW	1086053100	Q1FY/1600 STAR/TRIANGLE START-UP 3X400V 50/60HZ	
200kW	1086053200	Q1FY/2000 STAR/TRIANGLE START-UP 3X400V 50/60HZ	
Diesel engine pump control panel 		183300155	DIESEL ENGINE CONTROL PANEL EN 12845 1X230V 50/60HZ
		183300156	DIESEL ENGINE CONTROL PANEL EN 12845 1X230V 50/60HZ WITH DRY CONTACTS
Jockey pump control panel 	0,7kW	108297100	QPD10/07 03 4A Q.EL.230 50
	0,5kW	108357300	QPD10/05 03 1,6A Q.EL.400 50
	0,7kW	108357400	QPD10/07 03 2,5A Q.EL.400 50
	1,5kW	108357500	QPD10/15 03 4A Q.EL.400 50
	2,2kW	108357600	QPD10/22 03 6,3A Q.EL.400 50
	3kW	108357700	QPD10/30 03 10A Q.EL.400 50
	4kW	108357700	QPD10/40 03 10A Q.EL.400 50
	5,5kW	108357800	QPD10/55 03 12A Q.EL.400 50
	7,5kW	108357900	QPD10/75 03 16A Q.EL.400 50
	11kW	108358100	QPD10/110 03 25A Q.EL.400 50

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FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect™



Xylect™ is pump solution selection software with an extensive online database of product information across the entire Lowara range of pumps and related products, with multiple search options and helpful project management facilities. The system holds up-to-date product information on thousands of products and accessories.

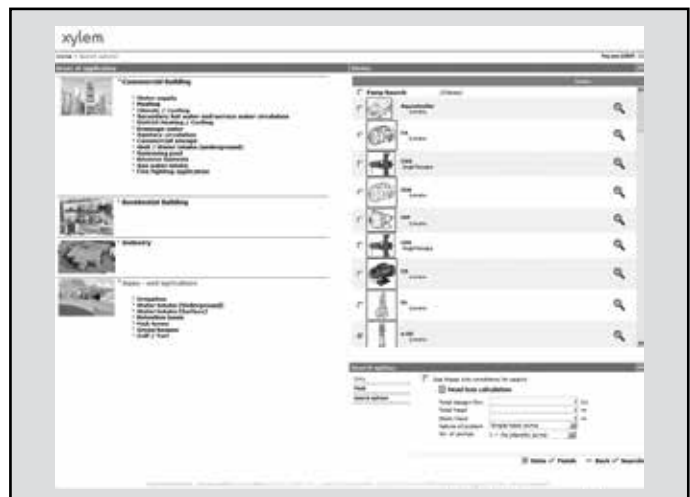
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara products.

The search can be made by:

- Application
- Product type
- Duty Point

Xylect™ gives a detailed output:

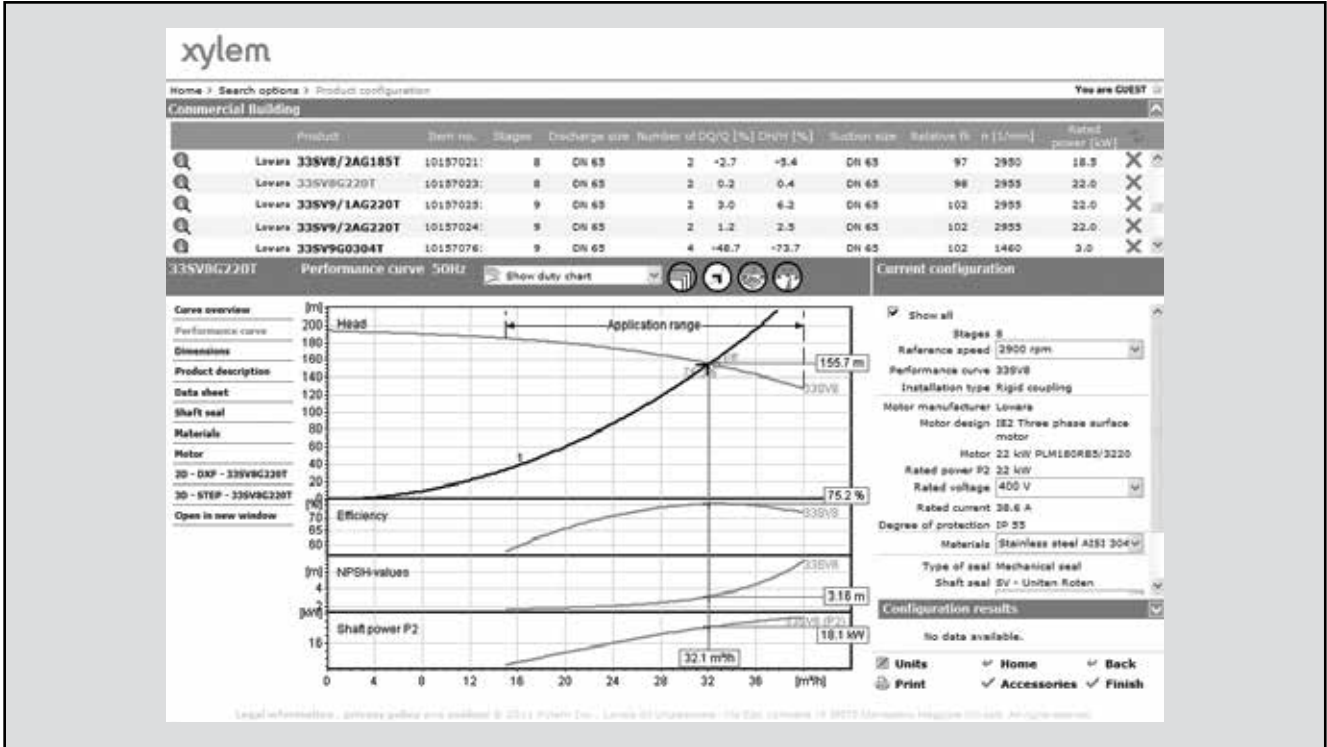
- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



The search by application guides users not familiar with the product range to the right choice.

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect™



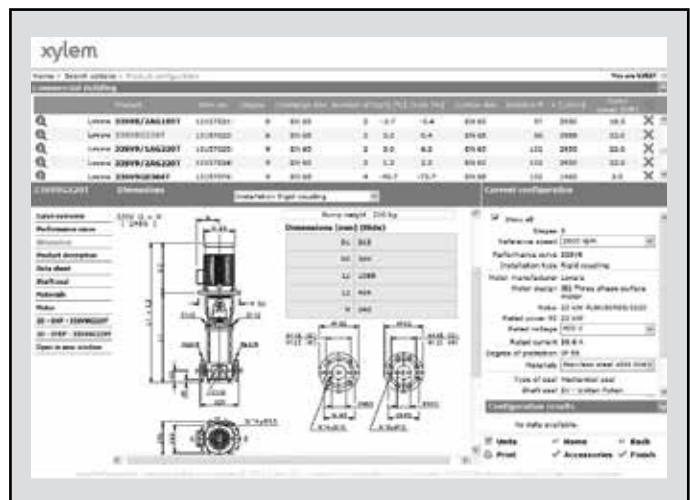
The detailed output makes it easy to select the optimal pump from the given alternatives.

The best way to work with Xylect™ is to create a personal account. This makes it possible to:

- Set own standard units
- Create and save projects
- Share projects with other Xylect™ users

Every user have a My Xylect space, where all projects are saved.

For more information about Xylect™ please contact our sales network or visit www.xylect.com.



Dimensional drawings appear on the screen and can be downloaded in dxf format.

ACCESSORIES

Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to xylem.com.



Legal head office
Xylem Water Solutions Italia Srl

Via Gioacchino Rossini 1/A
20020 - Lainate (MI) - Italy
Tel. (+39) 02 90358.1
Fax (+39) 02 9019990
www.xylemwatersolutions.com

For information and technical support
Xylem Service Italia Srl

Via Dottor Vittorio Lombardi 14
36075 - Montecchio Maggiore (VI) - Italy
Tel. (+39) 0444 707111
Fax (+39) 0444 491043
www.lowara.com

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