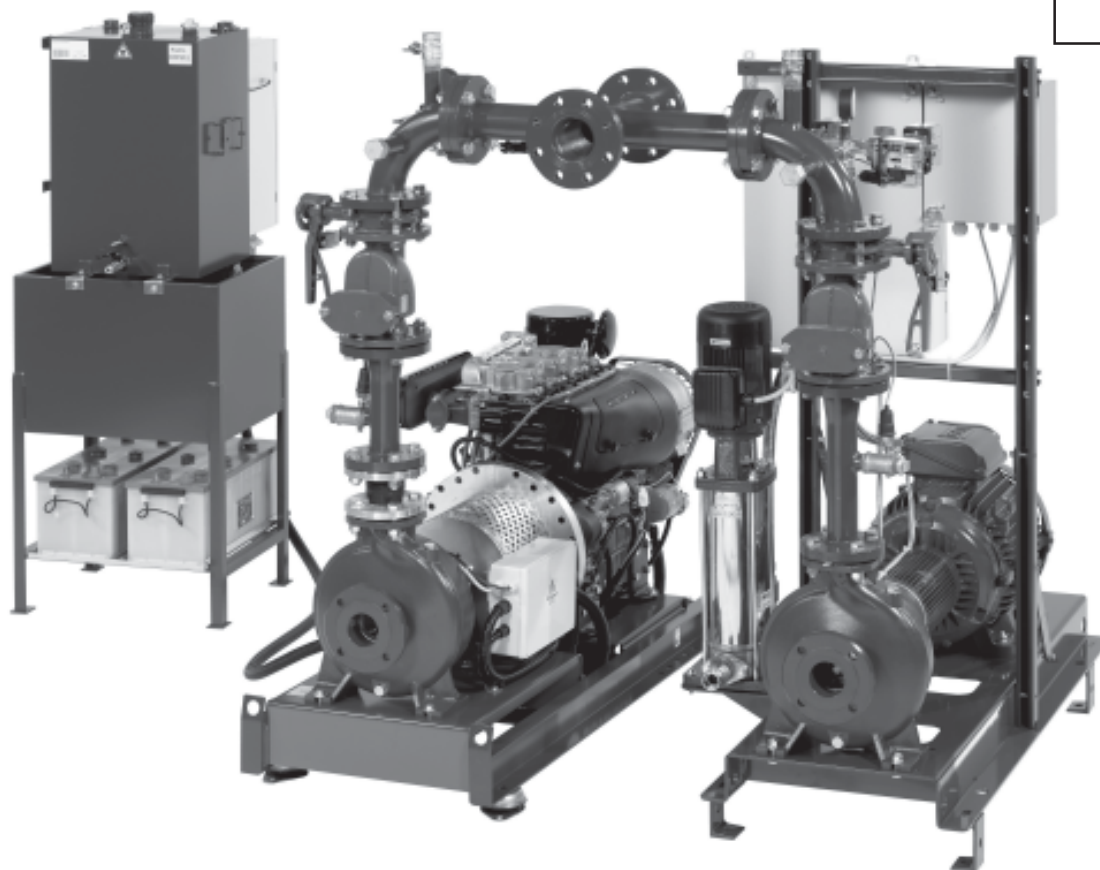


50 Hz



FHF - SHF GEM Series

FIRE-FIGHTING MODULES EN 12845 WITH HORIZONTAL
CENTRIFUGAL FHF AND SHF SERIES ELECTRIC AND DIESEL ENGINE PUMPS

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FIRE-FIGHTING MODULES EN 12845 SERIES GEM 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).

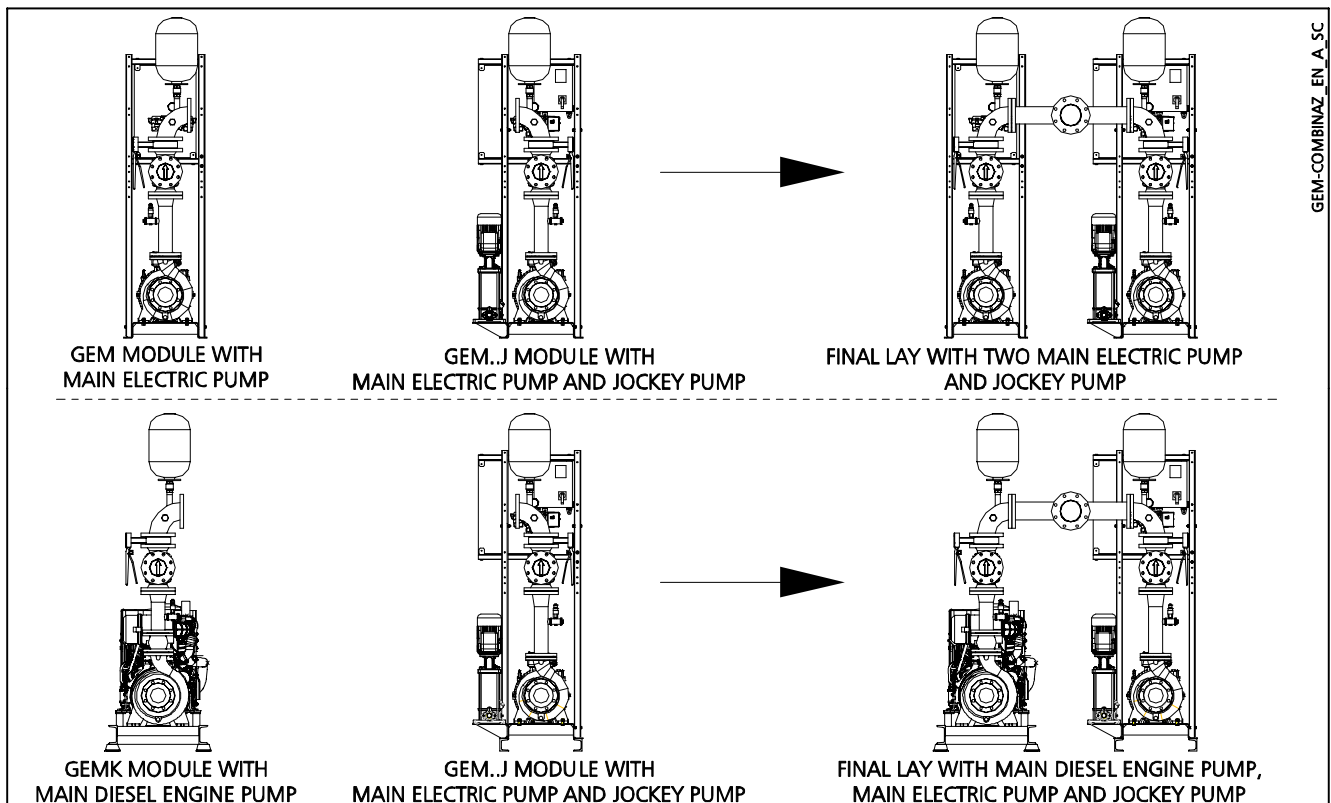
If modules are combined, the water supplies described in EN12845 can be obtained for the fire-fighting system in question. These water supplies can be single, superior, duplicated or combined. Fire-fighting sets are generally fitted with two main service pumps, one backing up the other. The choice of 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.



FIRE-FIGHTING MODULES EN 12845 SERIES GEM GENERAL INTRODUCTION – PRODUCT DESCRIPTION

The base module is completed with the following main components:

- 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 90° threaded or flanged curve.
- Single base to which the service pump is fitted.
- Control panel bracket.

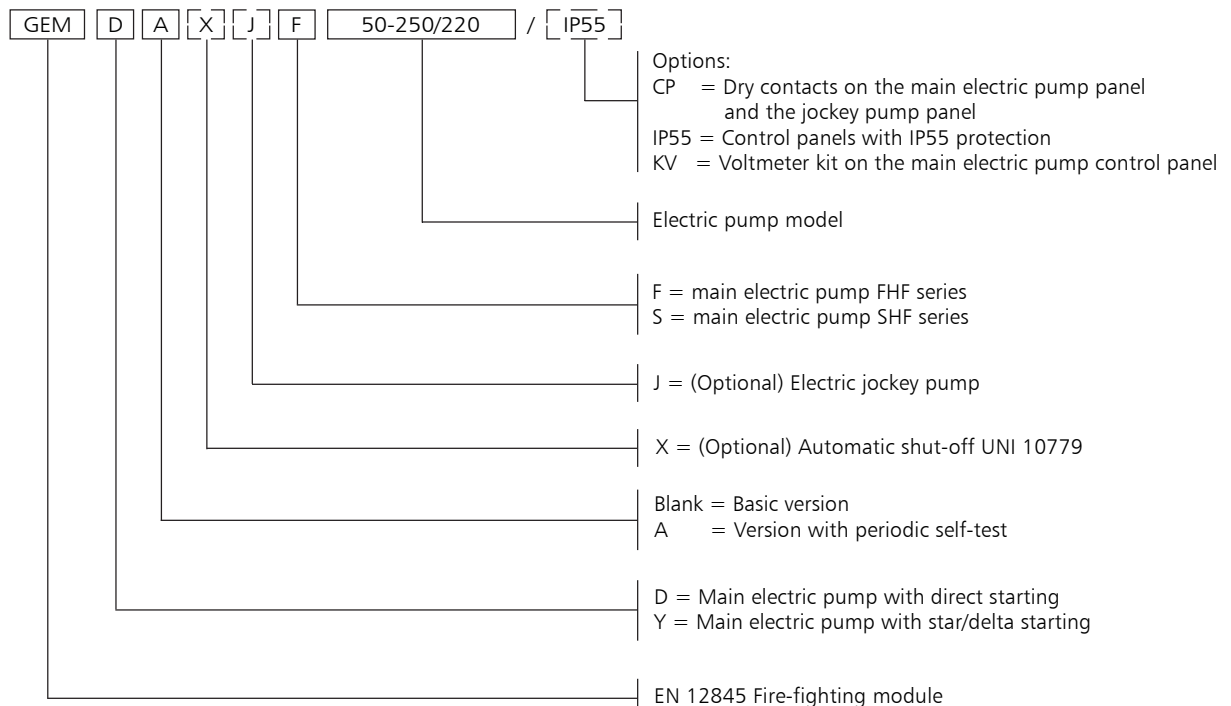
To complete the pump modules as required by the standard and to combine the various modules, the following accessories are available :

- Threaded connector kit comprising a flexible coupling and a crosshead stub pipe.
- Flanged connector kit comprising a flanged crosshead stub pipe.
- Suction kit.
- Flow meter kit.
- Priming tank.
- Priming tank accessory kit.
- Electric jockey pump kit.
- QAL12845.
- Multi-QAL 12845 kit.
- GSM module kit.
- Q-2RILS 485 control panel.
- Dry-running safety kit.
- Diaphragm tanks.
- Set of spare parts for diesel engines.
- Kit of universal brackets for control panels.

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

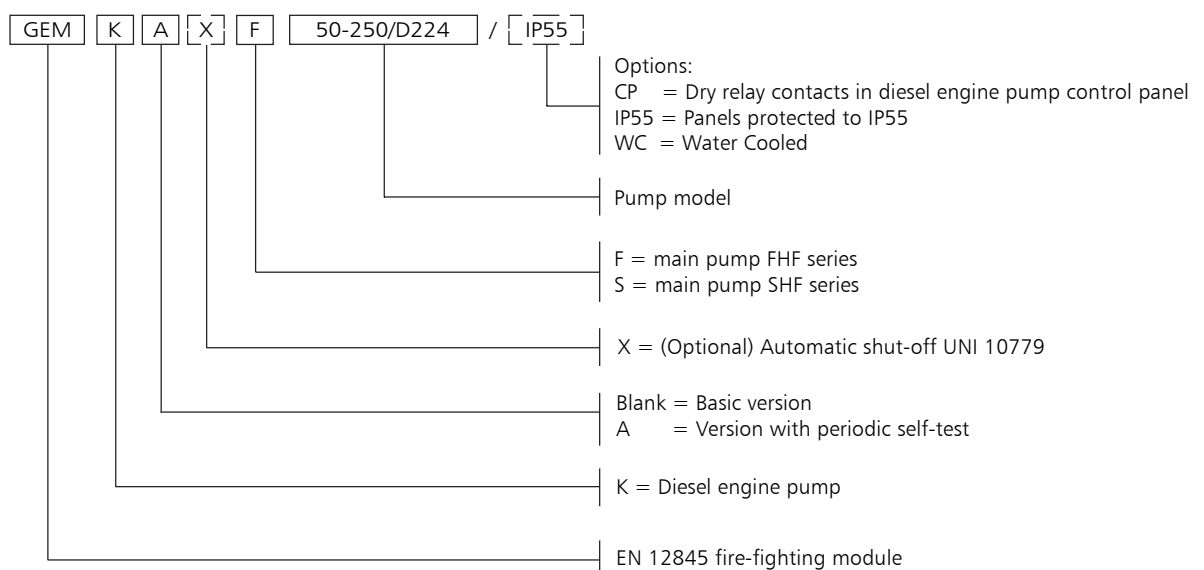
EN 12845 MODULE WITH MAIN ELECTRIC PUMP



EXAMPLES:

- GEMYS80-250/450: EN12845 fire-fighting module comprising a series SHF model 80-250/450 main electric pump, with Star/Delta starting, basic version.
- GEMDAJF40-200/75: EN12845 fire-fighting module comprising a series FHF model 40-250/75 main electric pump, with direct starting, version with periodic self-test; also includes the electric jockey pump.
- GEMDAXF65-250/300: EN12845 fire-fighting module comprising a series FHF model 65-250/300 main electric pump, with direct starting, version with periodic self-test and automatic shut-off as per UNI 10779.

EN 12845 MODULE WITH MAIN DIESEL ENGINE PUMP



EXAMPLES:

- GEMKF40-200/D209: EN12845 fire-fighting module comprising an FHF model 40-250/D209 diesel engine pump, basic version.
- GEMKXS80-250/D237: EN12845 fire-fighting module comprising an SHF model 80-250/D237 diesel engine pump, version with automatic shut-off as per UNI 10779.
- GEMKAXF65-250/D241: EN12845 fire-fighting module comprising an FHF model 65-250/D241 diesel engine pump, version with periodic self-test and automatic shut-off as per UNI 10779.

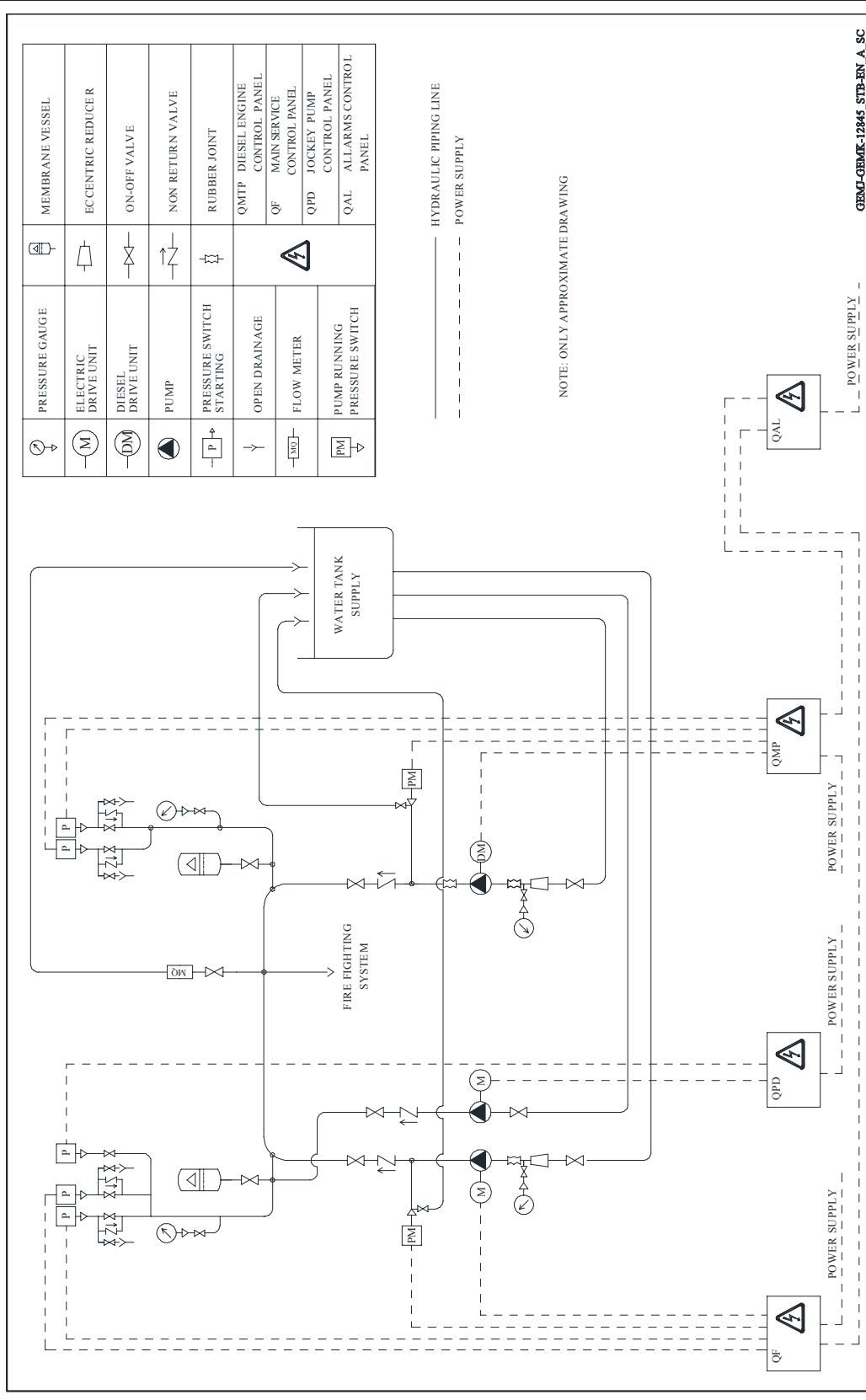
REFERENCE REGULATIONS

- 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.

8

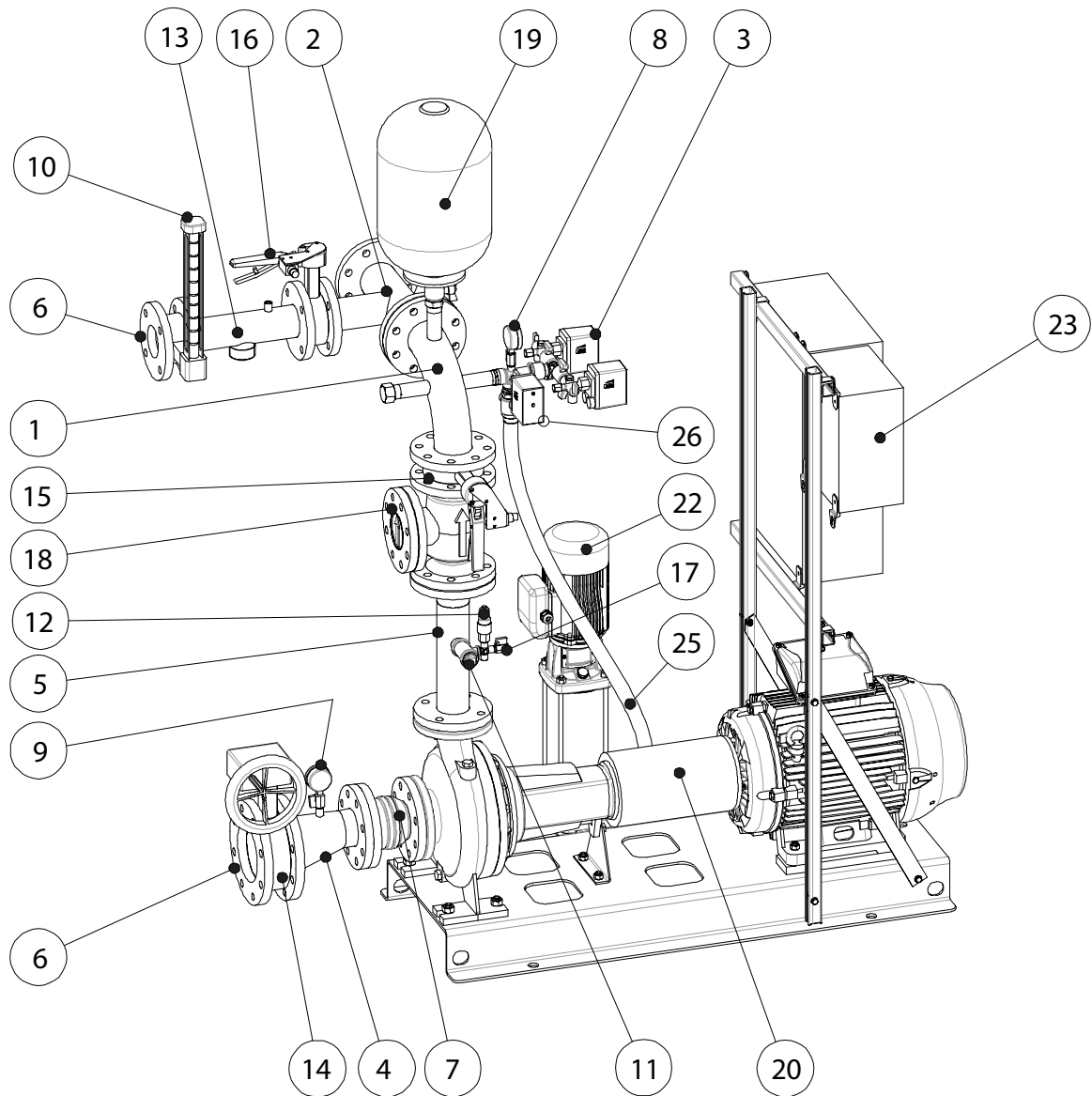


FUNCTIONAL DIAGRAM FOR POSITIVE SUCTION HEAD INSTALLATIONS OF AN ELECTRIC PUMP MODULE WITH JOCKEY PUMP (GEM..) COMBINED WITH AN ELECTRIC PUMP MODULE (GEM)



FIRE-FIGHTING MODULES EN 12845 SERIES GEM..J MECHANICAL CONFIGURATION

INTRODUCTION



GEMJ_CONFIG_MECC_A_SC

N. REF.	DESCRIPTION
1	Elbow on discharge
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 **	Expansion joint on suction side
8	Pressure gauge
9	Vacuum pressure gauge
10 **	Flow meter
11	Connection from priming tank
12	Pressure switch

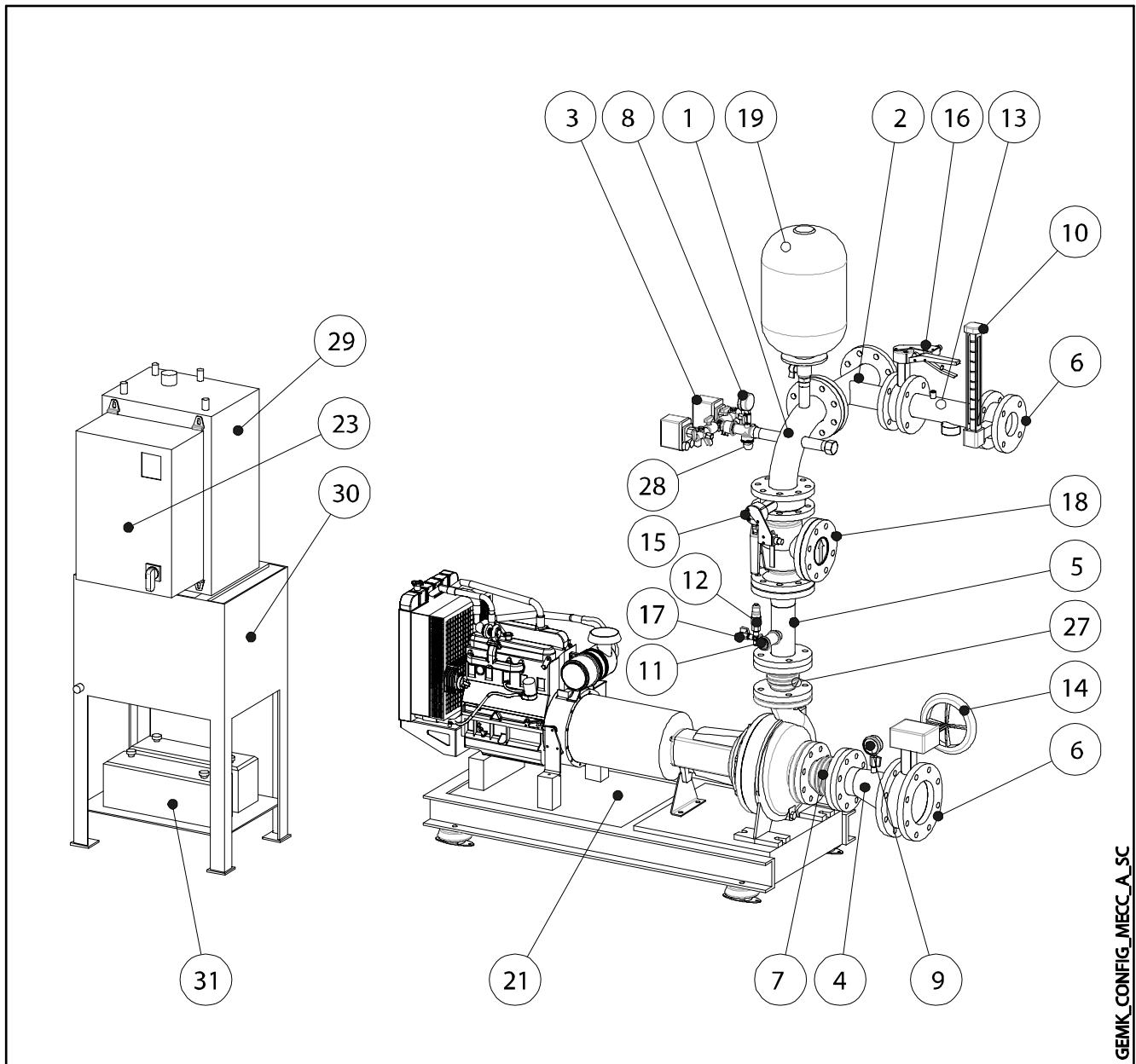
N. REF.	DESCRIPTION
13 **	Upstream pipe of flow meter
14 **	On/off butterfly valve on suction side *
15	On/off valve on delivery side
16 **	On/off valve for flow meter
17	Test valve for checking the seal of the check valves
18	Check valve
19 **	Membrane tank
20	Main electric pump
22	Jockey pump
23	Control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

* Mandatory in case of positive suction head installation

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

gemj-comp_en_c_tp

FIRE-FIGHTING MODULES EN 12845 SERIES GEMK MECHANICAL CONFIGURATION



GEMK_CONFIG_MECC_A_SC

N. REF.	DESCRIPTION
1	Elbow on discharge
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 **	Expansion 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. REF.	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 for checking the seal of the check valves
18	Check valve
19 **	Membrane tank
21	Main diesel engine pump
23	Control panel
27	Expansion joint on delivery side
28	Connection for jockey pump delivery
29	Diesel engine pump tank
30	Additional basin for fuel spill collection
31	Starting batteries

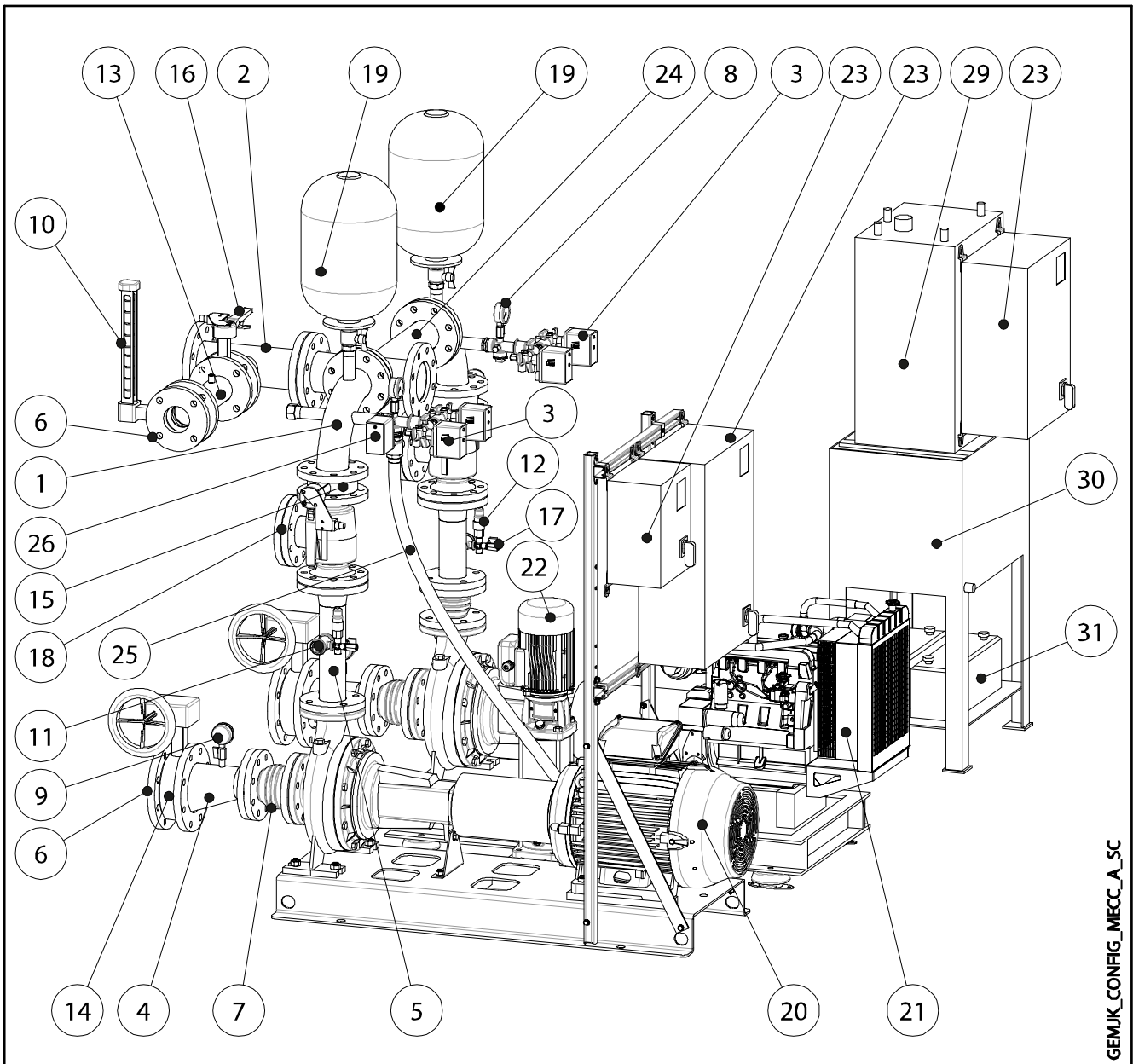
* Mandatory in case of positive suction head installation

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

gemk-comp_en_c_tp

FIRE-FIGHTING MODULES EN 12845 SERIES GEM..J+GEMK MECHANICAL CONFIGURATION

INTRODUCTION



GEMJK_CONFIG_MECC_A_SC

N. REF.	DESCRIPTION
1	Elbow on discharge
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 **	Expansion joint on suction side
8	Pressure gauge
9 **	Vacuum pressur 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 *
15	On/off valve on delivery side

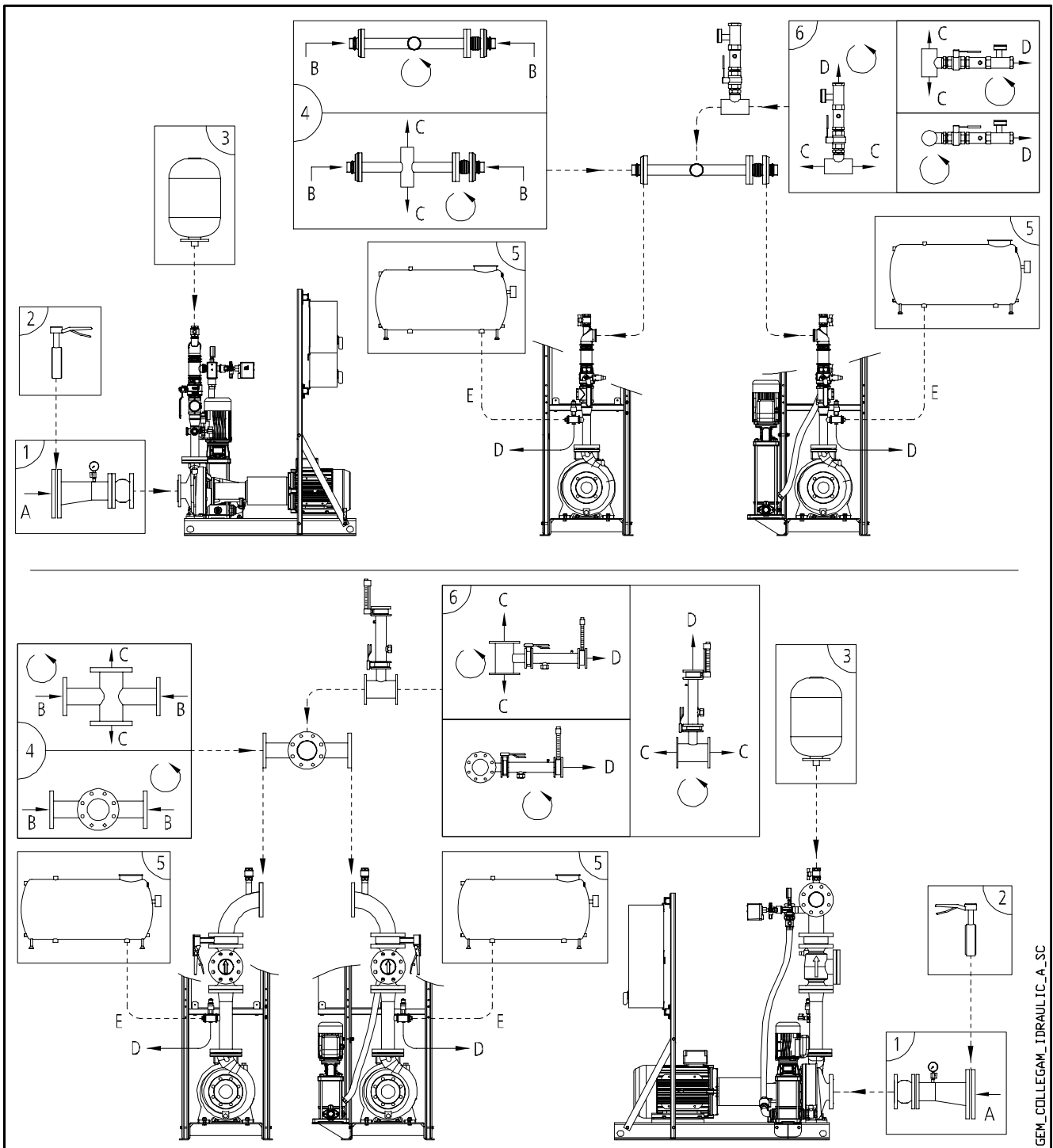
N. REF.	DESCRIPTION
16 **	On/off valve for flow meter
17	Test valve for checking the seal of the check valves
18	Check valve
19 **	Membrane tank
20	Main electric pump
21	Main diesel engine pump
22	Jockey pump
23	Control panels
24 **	Joining kit
25	Jockey pump delivery
26	Jockey pump pressure switch
29	Diesel engine pump tank
30	Additional basin for fuel spill collection
31	Starting batteries

* Mandatory in case of positive suction head installation

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

gemjk-comp_en_c_tp

HYDRAULIC CONNECTIONS FOR EN 12845 FIRE-FIGHTING MODULES



GEM_COLLEGAM_IDRAULIC_A_SC

N°	DESCRIPTION	N°	DESCRIPTION
1	Suction side kit *	A	Pump water supply
2	On/off valve kit (mandatory in case of positive suction head installation)	B	Connection from pumps
3	Membrane tank	C	To trunk main
4	Joining kit *	D	Drain or connection to priming tank
5	Priming tank and priming tank kit * (optional in case of suction lift installation)	E	Connection from priming tank
6	Flow meter kit *		

* See single instruction manuals

gem_collegam_idraulic_en_c_tc

FIRE-FIGHTING MODULES EN 12845 SERIES GEM PUMP CHARACTERISTICS

FHF32, 40, 50, 65, 80, 100, 125 PUMP SERIES

- Single impeller cast iron horizontal centrifugal pump and shaft made of AISI 316L stainless steel. End suction and radial discharge ports.
- Impeller: made of AISI 316L stainless steel laser technology welded, for sizes 32, 40, 50, 65-125, or cast iron for sizes 65-160, 65-200, 65-250, 80, 100, 125.
- Hydraulic sizes and nominal diameter DN of intake and delivery ports according to EN 733 (ex DIN 24255).
- Flanges according to EN 1092-2 (ex UNI 2236) and DIN 2532.
- Motor
 - **electric:** motor-pump coupling with bracket, support, flexible coupling with spacer. Standard supplied IE2 or IE3 three-phase surface motors greater than or equal to 0.75 kW. Electrical performance levels according to EN 60034-1. "Back pull out" design, impeller, bracket and motor can be extracted without disconnecting the pump body from the pipes.
 - **diesel:** motor-pump coupling with 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 EN12845.
- For other characteristics, consult the relative dedicated technical catalogue.



SHF32, 40, 50, 65, 80 PUMP SERIES

- Single impeller horizontal centrifugal pump with pump body and shaft made of AISI 316L stainless steel. End suction and radial discharge ports.
- Closed impeller made of AISI 316L stainless steel laser technology welded (for sizes 25, 32, 40, 50, 65-160/75 and 65-160/110A) or AISI CF8M cast stainless steel.
- Hydraulic sizes and nominal diameter DN of intake and delivery ports according to EN 733 (ex DIN 24255).
- Flanges according to EN 1092-1 (ex UNI 2236).
- Motor
 - **electric:** motor-pump coupling with bracket, support, flexible coupling with spacer. Standard supplied IE2 or IE3 three-phase surface motors greater than or equal to 0.75 kW. Electrical performance levels according to EN 60034-1. "Back pull out" design, impeller, bracket and motor can be extracted without disconnecting the pump body from the pipes.
 - **diesel:** motor-pump coupling with 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 EN12845.
- For other characteristics, consult the relative dedicated technical catalogue.



1SV SERIES ELECTRIC PUMPS (JOCKEY PUMP)

- Mechanical seal according to EN 12756 (ex DIN 24960) and ISO 3069.
- Trouble-free servicing. No special tools required for assembly or disassembly.
- For other characteristics, consult the relative dedicated technical catalogue.



OTHER VERSIONS

As well as the basic GEMD (direct start-up) and GEMY (star triangle start-up) versions, the following versions are also available:

- **GEM..A** With periodic self-test function

There is a self-test circuit including a weekly clock on the control panel of each electric service pump. For the time and date pre-set, the pump is started up and kept functioning for 1 minute. During this interval the check circuit checks that the pressure in the re-circulation circuit closes the pressure switch contact of the pump which is running. In the case of irregularities, 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.

- **GEM..X** With automatic shut-off (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 self-test and automatic shut-off versions are available for each type of GEMD.., GEMY.. start-up, and in combination between them (See identification codes page).

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 radiative 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 radiative 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. 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.

To calculate the cross-section of piping longer than 10 metres, take the cross-section of the exhaust pipe outlet, multiply by the length of the piping and divide by 8. Use as few curves as possible (max. 6) and ensure they have a wide radius.

MAIN COMPONENTS

FIRE-FIGHTING ELECTRIC PUMP MODULE (GEM..)

The electric service pump module comprises the following:

- Series FH or SH Lowara normalised centrifugal service pump according to EN 733, with IE2/IE3 motors according to regulation (EC) n° 640/2009. Series FH standard pump body and cast-iron impeller (bronze impeller available on request) or series SH pump body and AISI 316 stainless steel impeller. 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 FH/SH 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 the 100 and 125 models of FH 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.
- Inspectable 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 handwheel 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 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). 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 galvanised metal curve. For diameters greater than 2" there is a painted iron flanged 90° curve (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:

- Series FH or SH Lowara centrifugal service pump, normalised according to EN 733, with IE2/IE3 motors according to regulation (EC) n° 640/2009. Series FH standard pump body and cast-iron impeller (bronze impeller available on request) or series SH pump body and AISI 316 stainless steel impeller. 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 1SV version T 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 FH/SH service pumps up to and including 55 kW, the service and jockey control panels are housed on the support fixed to the base of the electric pump. For higher power ratings, the control panel are floor-mounted and supplied with 5 m of cable. Control panel support in epoxy powder painted steel.
- For the 100 and 125 models of FH pumps up to and including 55 kW, the service and jockey control panels are supplied with 5 m of cable and are either wall-mounted or fixed to optional brackets. For higher power ratings, the control panels are floor-mounted and supplied with 5 m of cable.
- 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 drain.
- Inspectable 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 handwheel 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.
- 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, 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 intervene also when the relative on/off valve is closed.
- Limit to supply: 2" diameter female galvanised metal curve. For diameters greater than 2" there is a painted iron flanged 90° curve (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 FH or SH centrifugal service pump normalised according to EN 733. Series FH standard pump body and cast-iron impeller (bronze impeller available on request) or series SH pump body and AISI 316 stainless steel impeller.
- 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.
- Inspectable 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 handwheel 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 galvanised metal curve. For diameters greater than 2" a painted iron flanged 90° curve is available (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

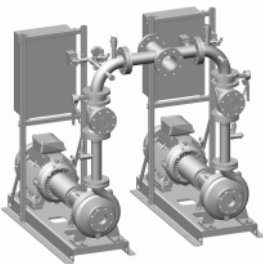
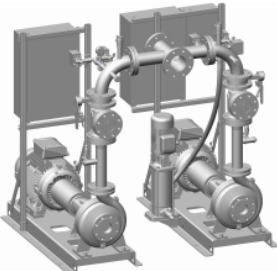
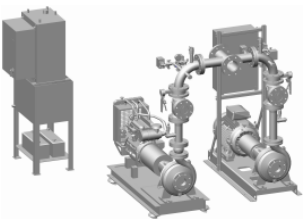
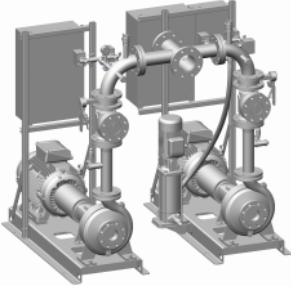
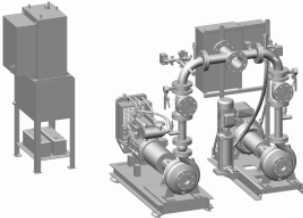
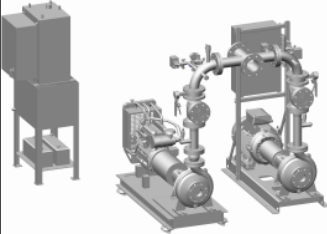
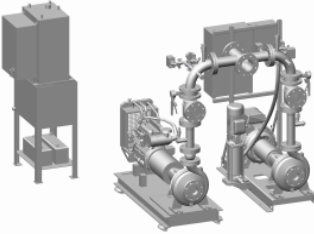
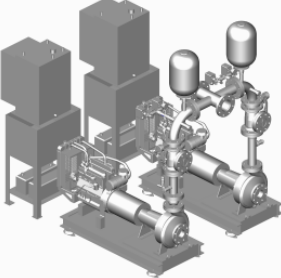
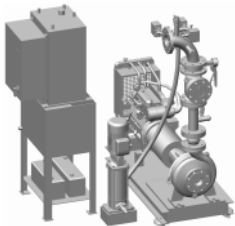
Lowara manufactures the single modules according to UNI EN 12845 separately in order to combine them according to system requirements. By combining the modules, in fact, the water supply specifications described in EN 12845 can be obtained. These water supplies can be single, superior, duplicated or 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:

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

ACCESSORIES AVAILABLE ON REQUEST

- **SUCTION LIFT OR POSITIVE SUCTION HEAD KIT**
- **FLOW METER KIT**
- **PRIMING TANK**
- **PRIMING TANK ACCESSORIES KIT**
- **ELECTRIC JOCKEY PUMP 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**

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).

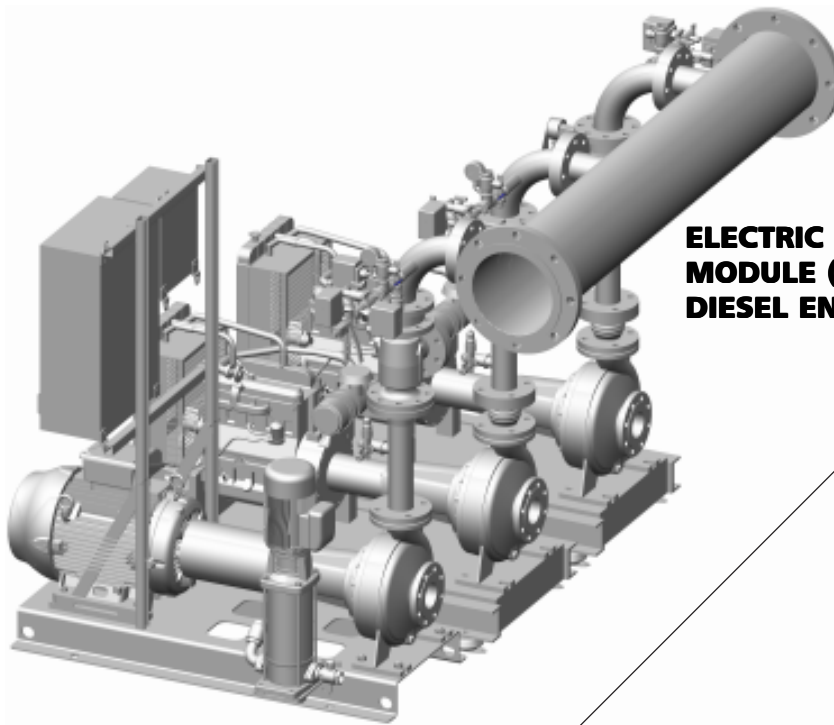
EN12845 states that the water pressure should not exceed 12 bar (point 8.2.1).

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.

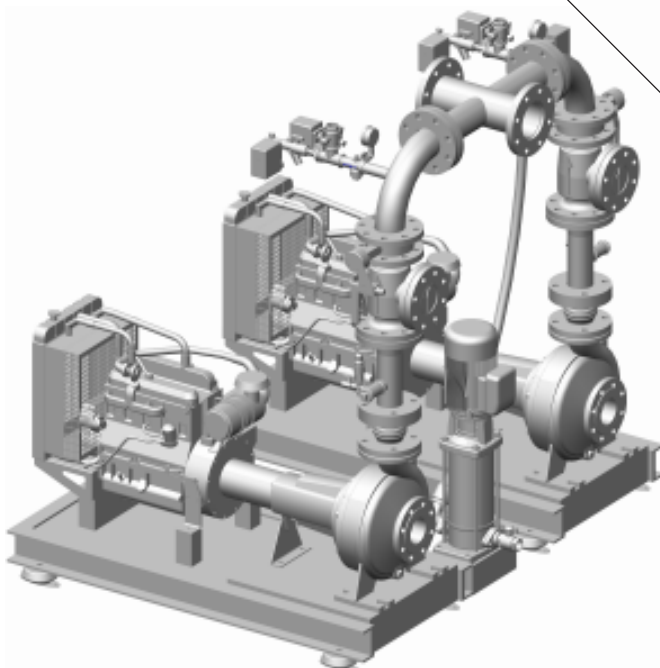
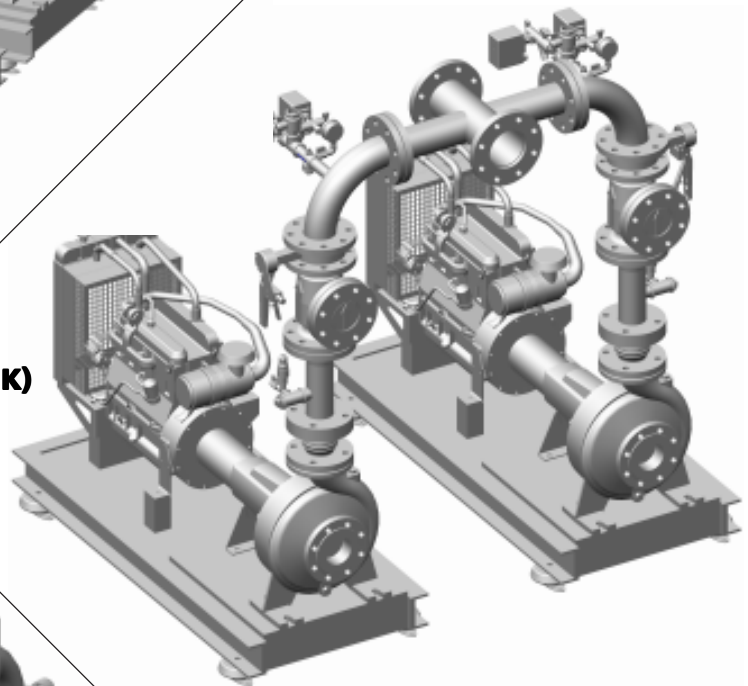
The catalogue also contains GEM modules with service pump closing heads of up to 150 metres, suitable for such installations.

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



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

**DIESEL ENGINE PUMP MODULE (GEMK)
COMBINED WITH ANOTHER DIESEL
ENGINE PUMP MODULE (GEMK)**



**TWO DIESEL ENGINE PUMP MODULES
(GEMK) COMBINED WITH A JOCKEY
PUMP KIT**

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.
- Keyboard for indicating electric voltage presence, correct phase sequence (three phase power supply), start-up request, pump functioning and no start-up, through LED lamps, lamp test button and starting and stopping buttons, according to EN12845 section 10.8.6.

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 panel

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, 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.
- RS232 connector for communication port.
- Cable glands.
- Wiring diagram.

The panel 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.

Single-phase 1x230V standard power supply.

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:

- Non-automatic operating mode.
- Controller fault.
- Motor running.
- No start.
- General alarm.
- Fuel reserve.
- Two configurable alarms.

Note: In the CP alternative, the dry relay contacts **ARE NOT** in addition to those available in the standard version.

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.

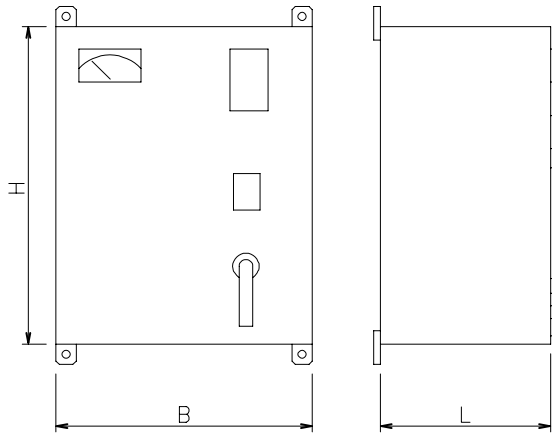
For modules with floor-mounted panels, the electric panels are shipped together with the set in a separate pack and supplied with 5 metre long connecting cables (longer lengths available upon request). The paths must be prepared and the cables installed by the fitter.



Diesel engine pump panel

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

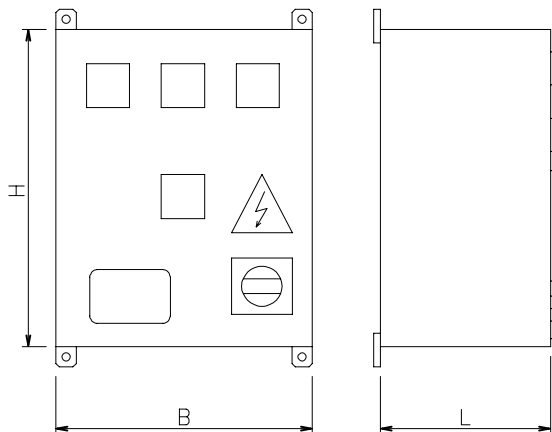
IP55: same dimensions as standard panels IP54

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Power over 55 kW: floor cupboard

QE-ELP_B_DD

JOCKEY PUMP PANEL

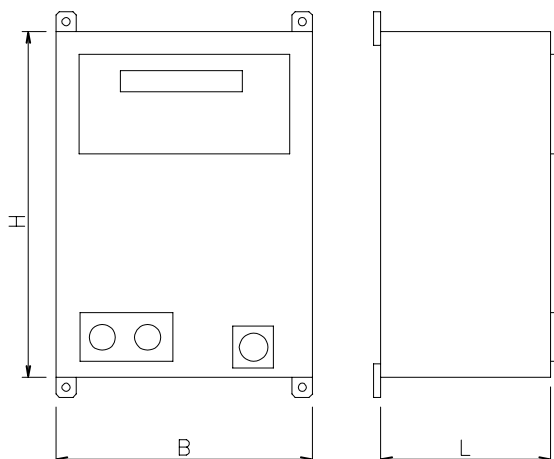


PROTECTION CLASS	B	L	H
IP55	250	160	300

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QE-PIL_A_DD

DIESEL ENGINE PUMP PANEL



PROTECTION CLASS	B	L	H
IP54	350	200	500

IP55: same dimensions as standard panels IP54

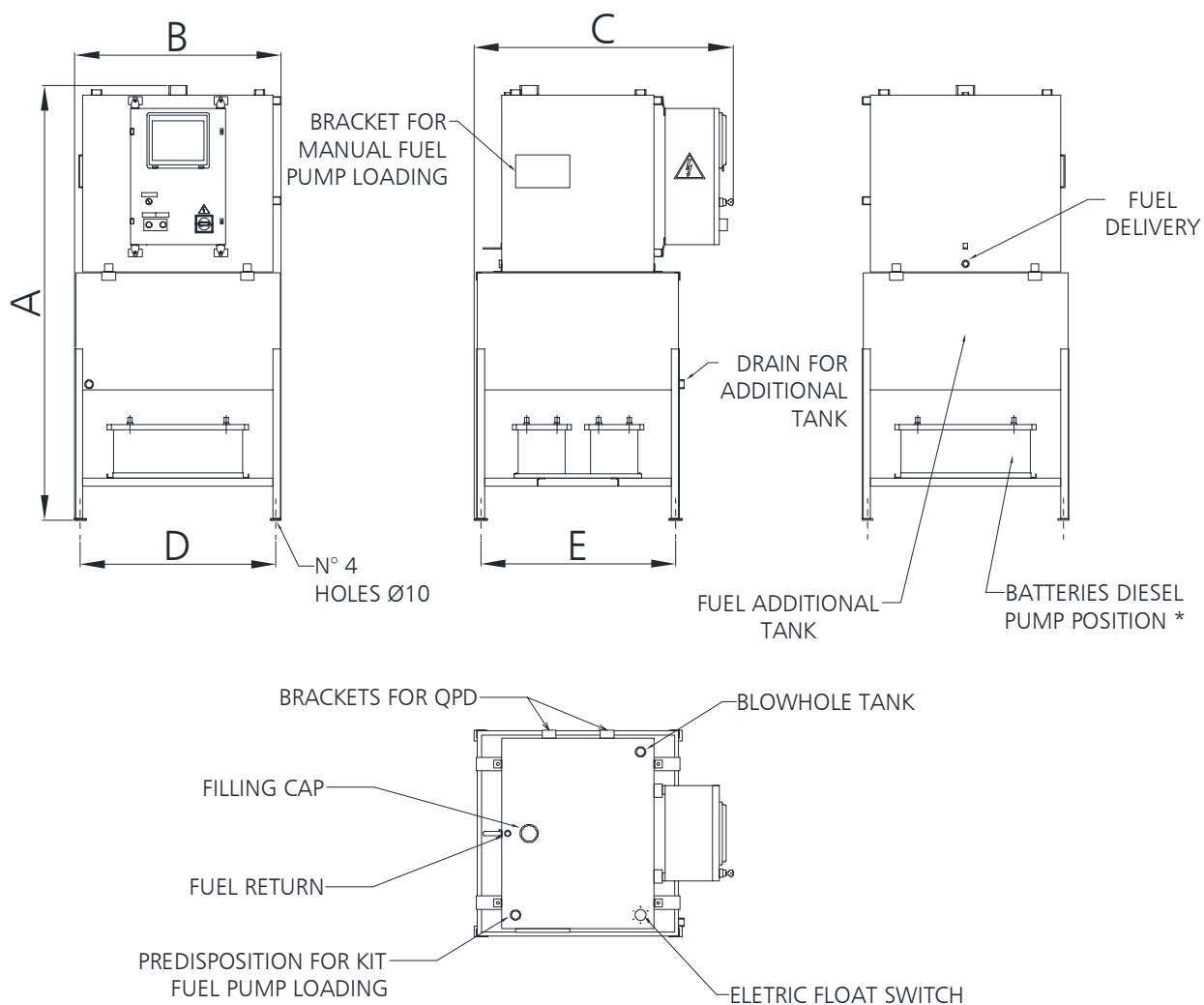
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QE-MTP-EN_A_DD

* The control panels are included in the supply.

EN 12845 DIESEL ENGINE PUMP TANKS DIMENSIONS AND CAPACITY

INTRODUCTION



capacity (l)	A	B	C	D	E
65	1580	570	660	522	366
130	1620	760	660	720	376
240	1620	760	953	720	717
370	1620	760	1050	730	640

* 370 l version: n°4 batteries on floor

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EN 12845 DIESEL ENGINE PUMP MODULE TANKS TANK AND BATTERY COMBINATIONS

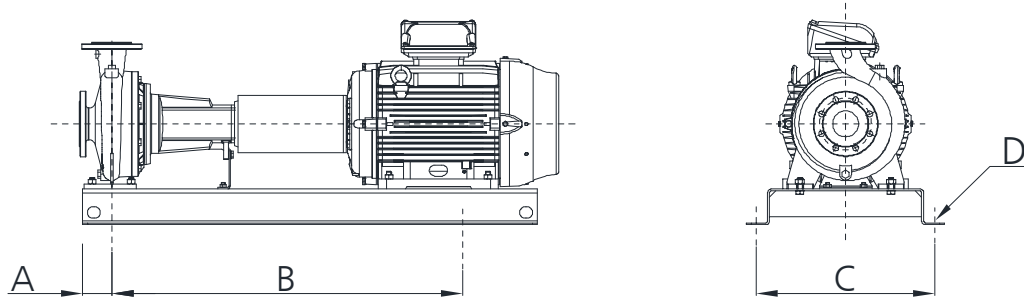
PUMP	TANK CAPACITY (l)	BATTERIES	
		CURRENT (Ah)	QUANTITY
FHF32-125/D119	65	44	2
FHF32-125/D136	65	44	2
FHF32-160/D150	65	44	2
FHF32-160/D164	65	44	2
FHF32-200/D188	65	44	2
FHF32-200/D204	65	44	2
FHF40-125/D112	65	44	2
FHF40-125/D122	65	44	2
FHF40-125/D143	65	44	2
FHF40-160/D159	65	44	2
FHF40-160/D171	65	44	2
FHF40-200/D190	65	50	2
FHF40-200/D209	65	50	2
FHF40-250/D218	65	70	2
FHF40-250/D233	65	100	2
FHF40-250/D251	65	100	2
FHF50-125/D119	65	44	2
FHF50-125/D130	65	44	2
FHF50-125/D139	65	44	2
FHF50-160/D158	65	50	2
FHF50-160/D174	65	50	2
FHF50-200/D197	65	70	2
FHF50-200/D209	65	100	2
FHF50-250/D224	65	100	2
FHF50-250/D237	65	160	2
FHF50-250/D250	65	160	2
FHF65-125/D121	65	44	2
FHF65-125/D129	65	50	2
FHF65-125/D140	65	70	2
FHF65-160/D161	65	70	2
FHF65-160/D168	65	100	2
FHF65-160/D178	65	100	2
FHF65-200/D187	65	100	2
FHF65-200/D198	65	160	2
FHF65-200/D210	65	160	2
FHF65-250/D220	65	160	2
FHF65-250/D241	65	160	2
FHF65-250/D258	130	160	2
FHF80-160/D163	65	100	2
FHF80-160/D173	65	160	2
FHF80-200/D189	65	160	2
FHF80-200/D207	65	160	2
FHF80-250/D225	130	160	2
FHF80-250/D238	130	160	2
FHF80-250/D256	130	160	2
FHF100-160/D150	65	100	2
FHF100-160/D165	65	160	2
FHF100-160/D185	65	160	2
FHF100-200/D168	65	160	2
FHF100-200/D192	65	160	2
FHF100-200/D203	130	160	2
FHF100-200/D213	130	160	2
FHF100-250/D200	65	160	2
FHF100-250/D221	130	160	2
FHF100-250/D235	130	160	2
FHF100-250/D254	240	160	2
FHF100-250/D267	240	160	2
FHF125-200/D180	65	160	2
FHF125-200/D206	130	160	2
FHF125-200/D216	130	160	2
FHF125-270/D224	240	160	2
FHF125-270/D237	240	160	2
FHF125-270/D253	370	185	4
FHF125-270/D266	370	185	4

PUMP	TANK CAPACITY (l)	BATTERIES	
		CURRENT (Ah)	QUANTITY
SHF32-125/D119	65	44	2
SHF32-125/D136	65	44	2
SHF32-160/D150	65	44	2
SHF32-160/D164	65	44	2
SHF32-200/D188	65	44	2
SHF32-200/D204	65	44	2
SHF32-250/D222	65	50	2
SHF32-250/D242	65	50	2
SHF32-250/D256	65	70	2
SHF40-125/D112	65	44	2
SHF40-125/D122	65	44	2
SHF40-125/D143	65	44	2
SHF40-160/D159	65	44	2
SHF40-160/D171	65	44	2
SHF40-200/D190	65	50	2
SHF40-200/D209	65	50	2
SHF40-250/D218	65	70	2
SHF40-250/D233	65	100	2
SHF40-250/D251	65	100	2
SHF50-125/D119	65	44	2
SHF50-125/D130	65	44	2
SHF50-125/D139	65	44	2
SHF50-160/D158	65	50	2
SHF50-160/D174	65	50	2
SHF50-200/D197	65	70	2
SHF50-200/D209	65	100	2
SHF50-250/D224	65	100	2
SHF50-250/D237	65	160	2
SHF50-250/D250	65	160	2
SHF65-160/D119	65	44	2
SHF65-160/D129	65	50	2
SHF65-160/D137	65	70	2
SHF65-160/D168	65	70	2
SHF65-160/D177	65	100	2
SHF65-200/D192	65	100	2
SHF65-200/D203	65	160	2
SHF65-200/D215	65	160	2
SHF65-250/D240	65	160	2
SHF65-250/D255	130	160	2
SHF80-160/D169	65	100	2
SHF80-160/D177	65	100	2
SHF80-160/D186	65	160	2
SHF80-200/D198	65	160	2
SHF80-200/D215	65	160	2
SHF80-200/D226	130	160	2
SHF80-250/D237	130	160	2
SHF80-250/D252	130	160	2
SHF80-250/D270	240	160	2

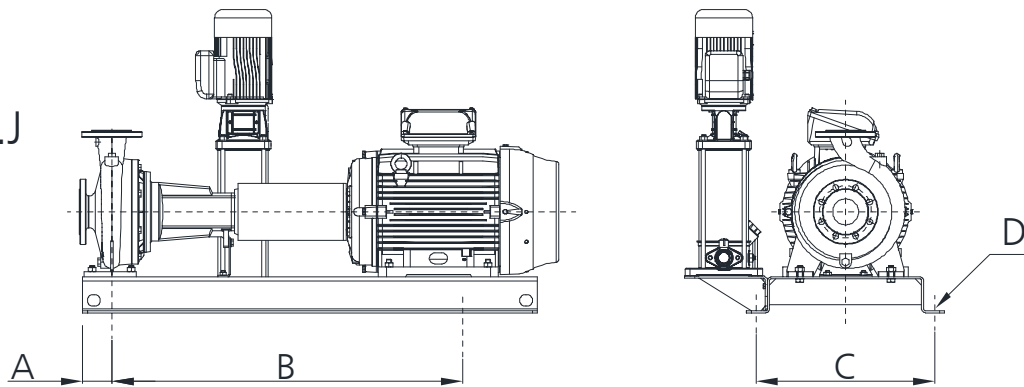
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EN 12845 FIRE-FIGHTING MODULES GEM SERIES INSTALLATION CENTRE POINTS

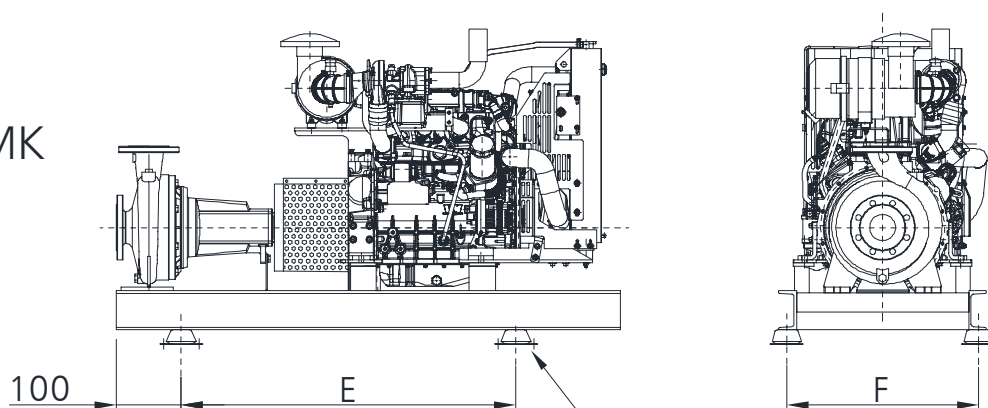
GEM

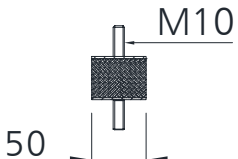
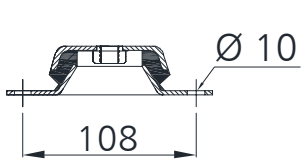
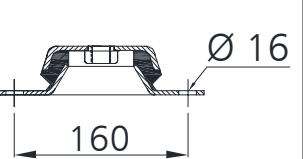


GEM..J



GEMK



TYPE 1	TYPE 2	TYPE 3
		

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EN 12845 FIRE-FIGHTING MODULES GEM SERIES INSTALLATION CENTRE POINTS

GEM - GEMJ - GEMK	A	B	C	D FOR SCREWS	E	F	TYPE
FHF32-125/07/D119	80	610	320	M16	650	450	1
FHF32-125/11/D136	80	610	320	M16	650	450	1
FHF32-160/15/D150	80	690	350	M16	600	450	1
FHF32-160/22/D164	80	690	350	M16	600	450	1
FHF32-200/30/D188	80	690	350	M16	600	450	1
FHF32-200/40/D204	80	690	350	M16	600	450	1
FHF40-125/11/D112	80	690	350	M16	650	450	1
FHF40-125/15/D122	80	690	350	M16	650	450	1
FHF40-125/22/D143	80	690	350	M16	650	450	1
FHF40-160/30/D159	80	690	350	M16	600	450	1
FHF40-160/40/D171	80	690	350	M16	600	450	1
FHF40-200/55/D190	100	770	400	M20	650	450	1
FHF40-200/75/D209	100	770	400	M20	700	450	1
FHF40-250/110A/D218	100	970	490	M20	650	450	1
FHF40-250/110/D233	100	970	490	M20	850	520	2
FHF40-250/150/D251	100	970	490	M20	850	520	2
FHF50-125/22/D119	100	690	350	M16	650	450	1
FHF50-125/30/D130	100	690	350	M16	650	450	1
FHF50-125/40/D139	100	690	350	M16	650	450	1
FHF50-160/55/D158	100	770	400	M20	650	450	1
FHF50-160/75/D174	100	770	400	M20	700	450	1
FHF50-200/110A/D197	100	870	440	M20	700	450	1
FHF50-200/110/D209	100	870	440	M20	900	520	2
FHF50-250/150/D224	100	970	490	M20	850	520	2
FHF50-250/185/D237	100	970	490	M20	1000	520	2
FHF50-250/220/D250	100	970	490	M20	1000	520	2
FHF65-125/40/D121	100	675	350	M16	600	450	1
FHF65-125/55/D129	100	755	400	M20	650	450	1
FHF65-125/75/D140	100	755	400	M20	700	450	1
FHF65-160/110A/D161	100	970	490	M20	650	450	1
FHF65-160/110/D168	100	970	490	M20	850	520	2
FHF65-160/150/D178	100	970	490	M20	850	520	2
FHF65-200/150/D187	100	970	490	M20	850	520	2
FHF65-200/185/D198	100	970	490	M20	1000	520	2
FHF65-200/220/D210	100	970	490	M20	1000	520	2
FHF65-250/220/D220	100	955	490	M20	1050	520	2
FHF65-250/300/D241	100	1080	550	M24	1150	590	2
FHF65-250/370/D258	100	1080	550	M24	1150	590	2
FHF80-160/150/D163	125	970	490	M20	800	520	2
FHF80-160/185/D173	125	970	490	M20	850	520	2
FHF80-200/220/D189	125	970	490	M20	1000	520	2
FHF80-200/300/D207	125	1095	550	M24	1150	590	2
FHF80-250/370/D225	125	1080	550	M24	1100	590	2
FHF80-250/450/D238	125	1080	550	M24	1100	590	2
FHF80-250/550/D256	125	1240	600	M24	1200	590	2
FHF100-160/185/D150	125	960	500	M20	850	520	2
FHF100-160/220/D165	125	960	500	M20	1000	520	2
FHF100-160/300/D185	125	1090	610	M20	1100	590	2
FHF100-200/185/D168	125	960	500	M20	1000	520	2
FHF100-200/300/D192	125	1090	610	M20	1100	590	2
FHF100-200/370/D203	125	1090	610	M20	1100	590	2
FHF100-200/450/D213	125	1090	610	M24	1100	590	2
FHF100-250/300/D200	140	1090	610	M20	1100	590	2
FHF100-250/450/D221	140	1090	610	M20	1100	590	2
FHF100-250/550/D235	140	1090	610	M24	1200	590	2
FHF100-250/750/D254	140	1220	680	M24	1400	650	3
FHF100-250/900/D267	140	1220	680	M24	1400	650	3
FHF125-200/300/D180	140	1090	610	M20	1100	590	2
FHF125-200/450/D206	140	1090	610	M24	1150	590	2
FHF125-200/550/D216	140	1220	680	M24	1250	590	2
FHF125-270/750/D223	140	1310	700	M20	1400	650	3
FHF125-270/900/D237	140	1310	700	M20	1400	650	3
FHF125-270/1100/D253	140	1310	820	M20	1600	800	3
FHF125-270/1320/D266	140	1310	820	M20	1600	800	3
SHF32-125/07/D119	80	610	320	M16	700	450	1
SHF32-125/11/D136	80	610	320	M16	700	450	1
SHF32-160/15/D150	80	690	350	M16	700	450	1
SHF32-160/22/D164	80	690	350	M16	700	450	1
SHF32-200/30/D188	80	690	350	M16	650	450	1
SHF32-200/40/D204	80	690	350	M16	650	450	1
SHF32-250/55/D222	100	855	440	M20	650	450	1
SHF32-250/75/D242	100	855	440	M20	700	450	1
SHF32-250/110/D256	100	970	490	M20	700	450	1
SHF40-125/11/D112	80	690	350	M16	700	450	1
SHF40-125/15/D122	80	690	350	M16	700	450	1
SHF40-125/22/D143	80	690	350	M16	700	450	1
SHF40-160/30/D159	80	690	350	M16	700	450	1
SHF40-160/40/D171	80	690	350	M16	700	450	1
SHF40-200/55/D190	100	770	400	M20	700	450	1
SHF40-200/75/D209	100	770	400	M20	750	450	1
SHF40-250/110A/D218	100	970	490	M20	700	450	1
SHF40-250/110/D233	100	970	490	M20	900	520	2
SHF40-250/150/D251	100	970	490	M20	900	520	2
SHF50-125/22/D119	100	690	350	M16	700	450	1
SHF50-125/30/D130	100	690	350	M16	700	450	1
SHF50-125/40/D139	100	690	350	M16	700	450	1
SHF50-160/55/D158	100	770	400	M20	700	450	1
SHF50-160/75/D174	100	770	400	M20	750	450	1
SHF50-200/110A/D197	100	870	440	M20	750	450	1
SHF50-200/110/D209	100	870	440	M20	950	520	2
SHF50-250/150/D224	100	970	490	M20	900	520	2
SHF50-250/185/D237	100	970	490	M20	1050	520	2
SHF50-250/220/D250	100	970	490	M20	1050	520	2
SHF65-160/40/D119	100	755	400	M20	700	450	1
SHF65-160/55/D129	100	755	400	M20	700	450	1
SHF65-160/75/D137	100	755	400	M20	800	450	1
SHF65-160/110A/D168	100	970	490	M20	800	450	1
SHF65-160/110/D177	100	970	490	M20	1000	520	2
SHF65-200/150/D192	100	970	490	M20	950	520	2
SHF65-200/185/D203	100	970	490	M20	1050	520	2
SHF65-200/220/D215	100	970	490	M20	1050	520	2
SHF65-250/300/D240	100	1080	550	M24	1250	590	2
SHF65-250/370/D255	100	1080	550	M24	1250	590	2
SHF80-160/110/D169	125	970	490	M20	950	520	2
SHF80-160/150/D177	125	970	490	M20	950	520	2
SHF80-160/185/D186	125	970	490	M20	1050	520	2
SHF80-200/220/D198	125	970	490	M20	1050	520	2
SHF80-200/300/D215	125	1095	550	M24	1250	590	2
SHF80-200/370/D226	125	1095	550	M24	1250	590	2
SHF80-250/450/D237	125	1080	550	M24	1250	590	2
SHF80-250/550/D252	125	1240	600	M24	1350	590	2
SHF80-250/750/D270	125	1410	670	M24	1550	650	3

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EN 12845 FIRE-FIGHTING MODULES GEM SERIES 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).

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.

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 according to the risk class for precalculated systems followed by the respective pressure value. This value does not refer to pump performance but is net of the pressure drop on the pump discharge line, to the discharge manifold flange. 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 1,5 m (limit value).

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

The values taken in the fields that are not in grey indicate booster set performance levels in areas outside the limits of the standard and must not be used to choose the set.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM CHOICE AND SELECTION

Selection Method

Referring to EN 12845, after identifying the risk classes of the activity to protect and performing the precalculation method, the flow and head values required for the fire-fighting system can be obtained.
This data is used as follows:

1. Choice of the type and number of modules, service pumps and relative type of motor/engine (two pumps, one electric and the other driven by a diesel engine).
2. Installation conditions (e.g.. suction lift: see performance levels for suction lift installation).
3. Determination of service flow e.g.: 1100 l/min risk class OH3.

TYPE FHF..		PUMP	RATED POWER kW	RISK CLASS												
				OH2n						OH3n						
				Q = DELIVERY												
ELECTRIC PUMP				l/min 0	600	700	725	850	1000	1100	1200	1300	1350	1400	1500	1600
				m3/h 0	36	42	44	51	60	66	72	78	81	84	90	96
H = TOTAL HEAD METRES COLUMN OF WATER																

4. Determining the head – e.g.: 35 m

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			OH2n						OH3n						
			Q = DELIVERY												
			l/min 0	600	700	725	850	1000	1100	1200	1300	1350	1400	1500	1600
			m3/h 0	36	42	44	51	60	66	72	78	81	84	90	96
H = TOTAL HEAD METRES COLUMN OF WATER															
50-125/22	50-125/D119	1 x 2,2	16,8	13,7	12,3	11,8	9,5	6,2	3,7	0,9					
50-125/30	50-125/D130	1 x 3	19,9	17,5	16,1	15,8	13,6	10,5	8,0	5,3	2,3				
50-125/40	50-125/D139	1 x 4	24,3	21,8	20,6	20,2	18,3	15,3	13,1	10,5	7,7	6,2	4,6		
50-160/55	50-160/D158	1 x 5,5	31,8	29,3	27,7	27,3	24,8	21,1	18,2	15,0	11,4	9,5	7,6		
50-160/75	50-160/D174	1 x 7,5	39,8	36,6	35,2	34,8	32,5	29,1	26,5	23,5	20,2	18,5	16,7	12,7	
50-200/110A	50-200/D197	1 x 11	50,6	45,6	43,4	42,8	39,5	34,8	31,2	27,3	23,1	20,9	18,6		
50-200/110	50-200/D209	1 x 11	58,0	52,6	50,5	49,9	46,7	42,1	38,6	34,7	30,4	28,1	25,7	20,7	

As can be seen, the required flow value enters the operating area in accordance with the standard, and the value of the corresponding head enters the field in grey.

From the example shown above, we can identify the **GEM firefighting pressure module** that satisfies the request. The model is pump 50-200/110 providing a head of 38,6 m.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM 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.

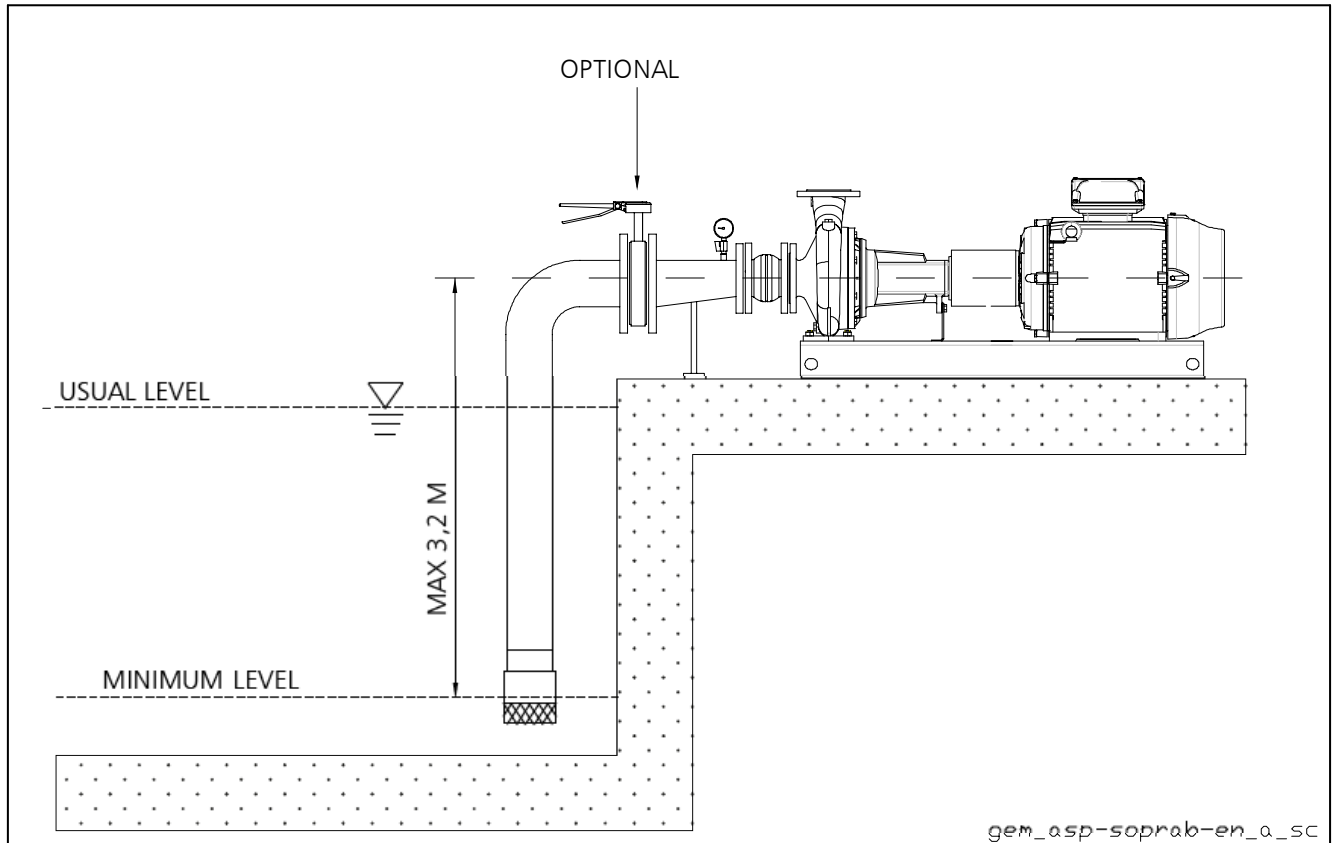


Fig. 1 suction lift installation diagram

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.

For this risk class, the rated flow is 1100 L/min (Qn), while the maximum requested flow is 1350 l/min (Qm). 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 rated flow (1100 l/min) and the pressure required for the system (e.g.: 35 m), the pump is selected according to the tables on page 54-55, making sure the performance rating lies inside the area shown in grey.

The pump that satisfies the required work point is FHF50-200/110.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM 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 55 which in this case is 4,6 m at the maximum requested flow.

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

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

Where

10,33 atmospheric pressure

3,2 geodetic difference in level

ΣH_{ct} suction pressure drop (valves, pipes, elbows...)

The value of ΣH_{ct} considers the pressure drops of the suction kit, inclusive of vibration-proof joint, reduction cone and on-off valve (H_c), 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 111.

This value is 0,16 m.

After entering it in the formula, we will have:

$$\Sigma H_{ct} = 0,16 + X$$

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:

$$10,33 + (-3,2) - \Sigma H_{ct} = 4,6 + 1$$

$$10,33 + (-3,2) - 0,16 - X = 4,6 + 1 \text{ which makes}$$

$$X = 1,37 \text{ m}$$

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.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM 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: Q_n : 1100 l/min $H = 35$ m
 The selected pump is FHF50-200/110

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 55 which in this case is 2,9 m **at the rated flow**.

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

The value of H_c at the rated required flow of the selected pump can be found in the diagram on page 111. This value is 0,12 m.

After entering it in the formula, we will have:

$$\sum H_{ct} = 0,12 + X$$

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:

$$10,33 + (-3,2) - \sum H_{ct} = 2,9 + 1$$

$$10,33 + (-3,2) - 0,12 - X = 2,9 + 1 \text{ which makes}$$

$$X = 3,11 \text{ m}$$

Value of the total drops to consider on the suction piping

Taking the pressure value of the selected set, the value corresponds to 38,6 m at the rated flow.

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

$$H = 38,6 - 0,12 - 3,11 = \mathbf{35,4 \text{ m} > 35 \text{ m}}$$
 which is the pressure required for the system

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

FIRE-FIGHTING MODULES EN 12845 SERIES GEM 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.

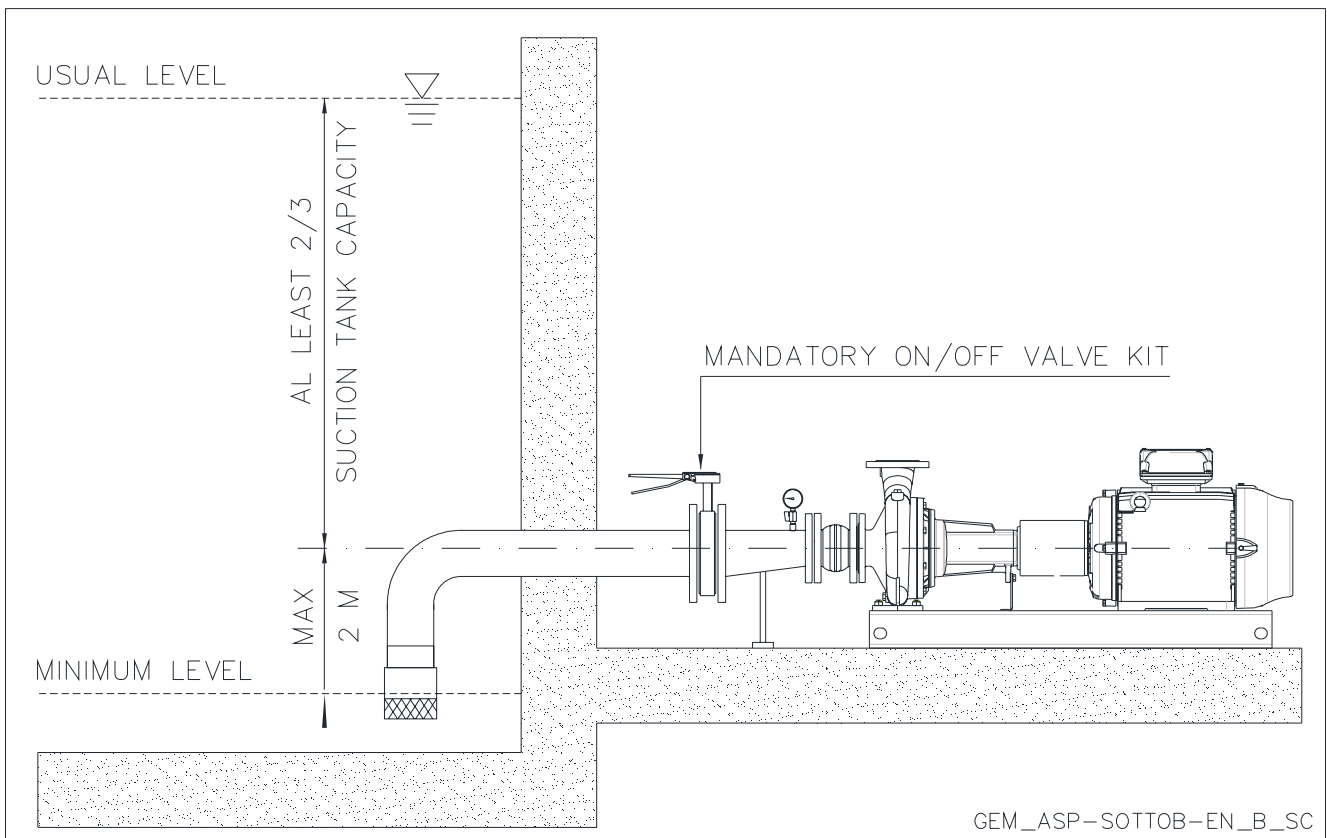


Fig. 2 positive suction head installation diagram

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 rated flow is 1100 l/min (Q_n), while the maximum requested flow is 1350 l/min (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.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM CHOICE AND SELECTION - POSITIVE SUCTION HEAD INSTALLATION

Being aware of the rated flow (1100 l/min) and the pressure required for the system (e.g.: 35 m), the pump is selected according to the tables on page 44-45, making sure the performance rating lies inside the area shown in grey. The pump that satisfies the required work point is FHF50-200/110.

At this point, the installation conditions (positive suction head) 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 55 which in this case is 4,6 m at the maximum requested flow.

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

$$NPSH_d = 10,33 + (0) - \Sigma H_{ct}$$

Where

10,33 atmospheric pressure

0 geodetic difference in level

ΣH_{ct} suction pressure drop (valves, pipes, elbows...)

The value of ΣH_{ct} considers the pressure drops of the suction kit, inclusive of vibration-proof joint, reduction cone and on-off valve (H_c), 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 117.

This value is 0,32 m.

After entering it in the formula, we will have:

$$\Sigma H_{ct} = 0,32 + X$$

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:

$$10,33 + (0) - \Sigma H_{ct} = 4,6 + 1$$

$$10,33 + (0) - 0,32 - X = 4,6 + 1 \text{ which makes}$$

$$X = 4,41 \text{ m}$$

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.

FIRE-FIGHTING MODULES EN 12845 SERIES GEM CHOICE AND SELECTION - POSITIVE SUCTION HEAD INSTALLATION

Checking performance of the selected GEM module 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: Q_n 1100 l/min $H = 35$ m
 The selected pump is FHF50-200/110

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

$$NPSH_d \geq NPSH_r + 1$$

$$NPSH_d = 10,33 + (0) - \Sigma H_{ct}$$

$NPSH_r$ can be deduced from the table on page 55 which in this case is 2,9 m **at the rated flow**.

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

The value of H_c at the rated required flow of the selected pump can be found in the diagram on page 117. This value is 0,22 m.

After entering it in the formula, we will have:

$$\Sigma H_{ct} = 0,22 + X$$

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:

$$10,33 + (0) - \Sigma H_{ct} = 2,9 + 1$$

$$10,33 + (0) - 0,22 - X = 2,9 + 1 \text{ which makes}$$

$$X = 6,21 \text{ m}$$

Value of the total drops to consider on the suction piping

Taking the pressure value of the GEM module, the value corresponds to 38,6 m at the rated flow.

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

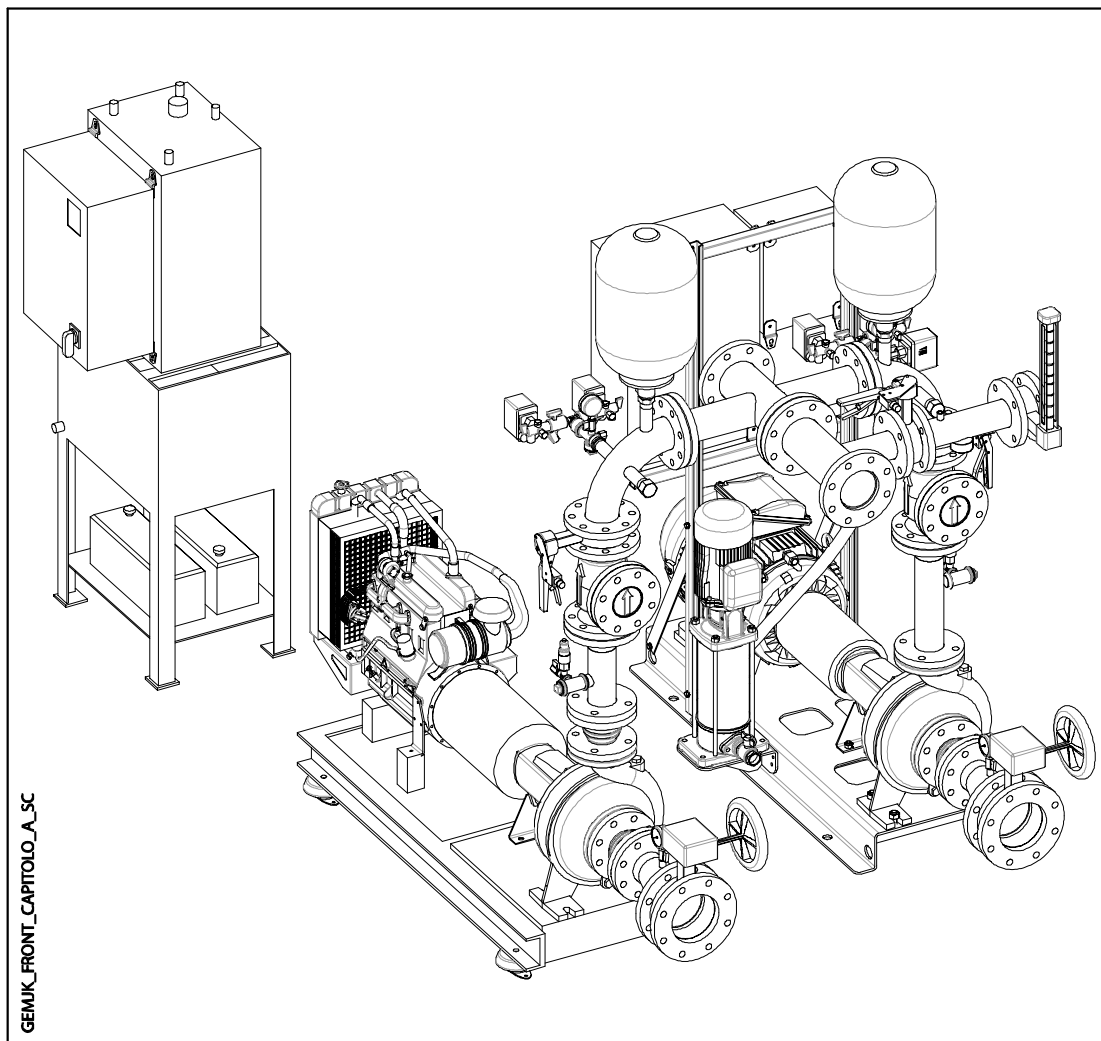
$$H = 38,6 - 0,22 - 6,21 = \mathbf{32,17 \text{ m} < 35 \text{ m}}$$
 which is the pressure required for the system.

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 35,17 m which satisfies the relation.

Single and combined modules, FHF series

EN 12845 firefighting with horizontal centrifugal pumps series FHF

50 Hz



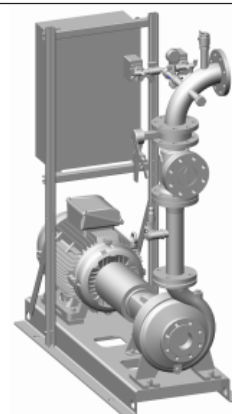
FHF MODULES

FHF 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.

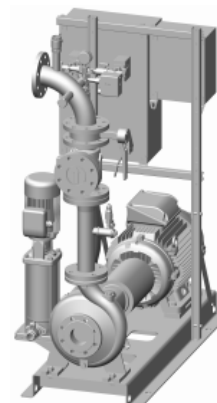
GEM.. MODULE

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



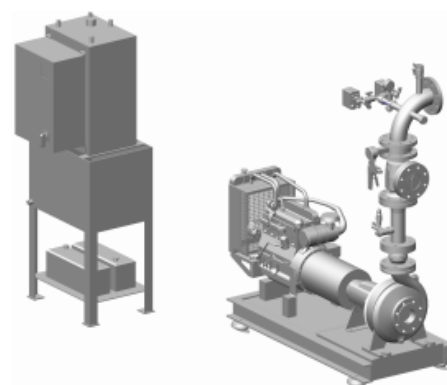
GEM..J MODULE

- Single electric service pump module with centrifugal pump and cast-iron body, FHF series, with series 1SV multi-stage vertical jockey pump on-board.



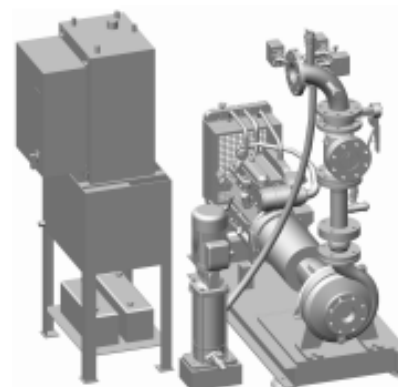
GEMK.. MODULE

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



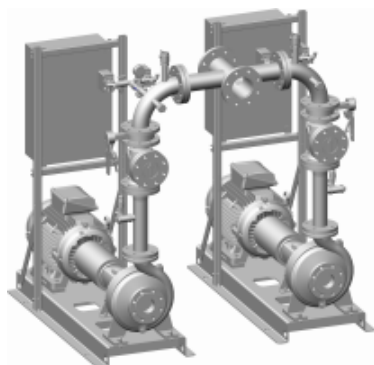
GEMK.. MODULE AND ELECTRIC JOCKEY PUMP

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



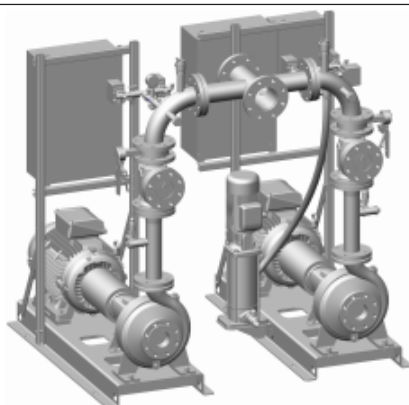
FHF COMBINED MODULES

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.



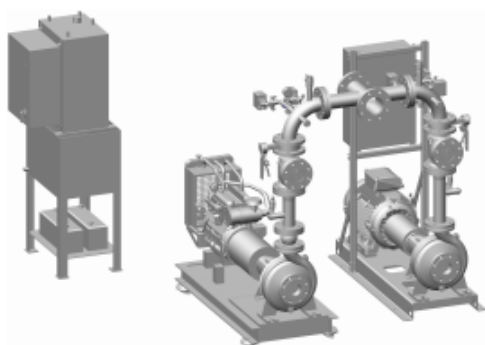
GEM..+GEM.. MODULES

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



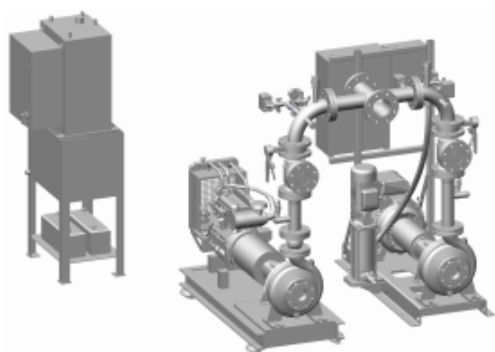
GEMJ..+GEM.. MODULES

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

EN 12845 FIRE-FIGHTING MODULES SERIES GEM..F32-F80 SERVICE PUMP – JOCKEY PUMP COMBINATIONS

SERVICE PUMP		JOCKEY PUMP									
ELECTRIC PUMP	TYPE FHF..	1SV 07	1SV 08	1SV 09	1SV 10	1SV 11	1SV 12	1SV 13	1SV 15	1SV 17	1SV 19
	PUMP										
32-125/07	32-125/D119	•									
32-125/11	32-125/D136		•								
32-160/15	32-160/D150		•								
32-160/22	32-160/D164			•							
32-200/30	32-200/D188					•					
32-200/40	32-200/D204						•				
40-125/11	40-125/D112	•									
40-125/15	40-125/D122		•								
40-125/22	40-125/D143		•								
40-160/30	40-160/D159			•							
40-160/40	40-160/D171				•						
40-200/55	40-200/D190					•					
40-200/75	40-200/D209						•				
40-250/110A	40-250/D218							•			
40-250/110	40-250/D233								•		
40-250/150	40-250/D251									•	
50-125/22	50-125/D119	•									
50-125/30	50-125/D130		•								
50-125/40	50-125/D139		•								
50-160/55	50-160/D158			•							
50-160/75	50-160/D174				•						
50-200/110A	50-200/D197						•				
50-200/110	50-200/D209						•				
50-250/150	50-250/D224								•		
50-250/185	50-250/D237								•		
50-250/220	50-250/D250									•	
65-125/40	65-125/D121	•									
65-125/55	65-125/D129		•								
65-125/75	65-125/D140		•								
65-160/110A	65-160/D161			•							
65-160/110	65-160/D168				•						
65-160/150	65-160/D178				•						
65-200/150	65-200/D187					•					
65-200/185	65-200/D198						•				
65-200/220	65-200/D210						•				
65-250/220	65-250/D220							•			
65-250/300	65-250/D241								•		
65-250/370	65-250/D258									•	
80-160/150	80-160/D163			•							
80-160/185	80-160/D173				•						
80-200/220	80-200/D189					•					
80-200/300	80-200/D207						•				
80-250/370	80-250/D225								•		
80-250/450	80-250/D238								•		
80-250/550	80-250/D256									•	

12845-FHF32-80_ap-en_b_tc

EN 12845 FIRE-FIGHTING MODULES SERIES GEM..F100-F125

SERVICE PUMP – JOCKEY PUMP COMBINATIONS

SERVICE PUMP		JOCKEY PUMP									
ELECTRIC PUMP	TYPE FHF..	1SV 07	1SV 08	1SV 09	1SV 10	1SV 11	1SV 12	1SV 13	1SV 15	1SV 17	1SV 19
	PUMP										
100-160/185	100-160/D150		•								
100-160/220	100-160/D165			•							
100-160/300	100-160/D185					•					
100-200/185	100-200/D168				•						
100-200/300	100-200/D192					•					
100-200/370	100-200/D203						•				
100-200/450	100-200/D213							•			
100-250/300	100-250/D200						•				
100-250/450	100-250/D221								•		
100-250/550	100-250/D235								•		
100-250/750	100-250/D254									•	
100-250/900	100-250/D267										•
125-200/300	125-200/D180			•							
125-200/450	125-200/D206					•					
125-200/550	125-200/D216						•				
125-270/750	125-270/D224							•			
125-270/900	125-270/D237								•		
125-270/1100	125-270/D253									•	
125-270/1320	125-270/D266										•

12845-FHF100-125_ap-en_b_tc

EN 12845 FIRE-FIGHTING MODULES GEM..F SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz (JOCKEY PUMP)

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

Prestazioni conformi alle norme ISO 9906 - Annex A.

EN12845_pp_1sv-2p50-en_a_th

EN 12845 FIRE-FIGHTING MODULES GEM..F32 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF..	PUMP	RATED POWER kW	RISK CLASS												
			LHn												
			Q = DELIVERY												
			l/min 0	100	150	200	225	250	275	300	375	400	425	450	500
ELECTRIC PUMP			m ³ /h 0	6	9	12	14	15	17	18	23	24	26	27	30
H = TOTAL HEAD METRES COLUMN OF WATER															
32-125/07	32-125/D119	1 x 0,75	16,9	15,6	14,1	12,1	10,9	9,6	8,1	6,6					
32-125/11	32-125/D136	1 x 1,1	21,9	20,5	19,1	17,2	16,1	14,9	13,5	12,1	7,1	5,2			
32-160/15	32-160/D150	1 x 1,5	27,3	25,6	24,0	21,8	20,5	19,0	17,4	15,6	9,5	7,2			
32-160/22	32-160/D164	1 x 2,2	34,7	33,1	31,5	29,3	27,9	26,5	24,9	23,2	17,3	15,0	12,7	10,2	
32-200/30	32-200/D188	1 x 3	44,2	41,3	39,3	36,8	35,3	33,7	32,0	30,1	23,4	20,8	18,0	15,0	
32-200/40	32-200/D204	1 x 4	54,4	51,7	49,5	46,8	45,2	43,5	41,7	39,7	33,2	30,8	28,2	25,6	20,0

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf32-2p50-en_a_th

LHn = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..F32 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF..	PUMP	RATED POWER kW	RISK CLASS												
			LHn												
			Q = DELIVERY												
			l/min 0	100	150	200	225	250	275	300	375	400	425	450	500
ELECTRIC PUMP			m ³ /h 0	6	9	12	14	15	17	18	23	24	26	27	30
H = TOTAL HEAD METRES COLUMN OF WATER															
32-125/07	32-125/D119	1 x 0,75	16,9	15,6	14,1	12,1	10,9	9,6	8,1	6,6					
32-125/11	32-125/D136	1 x 1,1	21,9	20,5	19,1	17,2	16,1	14,9	13,5	12,1	7,1	5,2			
32-160/15	32-160/D150	1 x 1,5	27,3	25,6	24,0	21,8	20,5	19,0	17,4	15,6	9,5	7,2			
32-160/22	32-160/D164	1 x 2,2	34,7	33,1	31,5	29,3	27,9	26,5	24,9	23,2	17,3	15,0	12,7	10,2	
32-200/30	32-200/D188	1 x 3	44,2	41,3	39,3	36,8	35,3	33,7	32,0	30,1	23,4	20,8	18,0	15,0	
32-200/40	32-200/D204	1 x 4	54,4	51,7	49,5	46,8	45,2	43,5	41,7	39,7	33,2	30,8	28,2	25,6	20,0

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf32-2p50-en_a_th

LHn = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR FHF 32 SERIES PUMP

TYPE FHF..	PUMP	RATED POWER kW	RISK CLASS												
			LHn												
			Q = DELIVERY												
			l/min 0	100	150	200	225	250	275	300	350	375	400	450	500
ELECTRIC PUMP			m ³ /h 0	6	9	12	14	15	17	18	21	23	24	27	30
NPSHr [METRES COLUMN OF WATER]															
32-125/07	32-125/D119	1 x 0,75			1,6	1,6	1,7	1,8	2,0	2,2					
32-125/11	32-125/D136	1 x 1,1			1,6	1,6	1,7	1,8	2,0	2,2	2,9	3,4	4,0		
32-160/15	32-160/D150	1 x 1,5			2,2	2,4	2,5	2,7	2,8	3,0	3,6	3,9	4,4		
32-160/22	32-160/D164	1 x 2,2			2,2	2,4	2,5	2,7	2,8	3,0	3,6	3,9	4,4	5,9	
32-200/30	32-200/D188	1 x 3			2,7	2,9	3,1	3,3	3,5	3,8	4,3	4,6	4,9	5,5	
32-200/40	32-200/D204	1 x 4			2,7	2,9	3,1	3,3	3,5	3,8	4,3	4,6	4,9	5,5	6,2

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf32-2p50_NPSHr-en_a_th

LHn = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Check that NPSHd ≥ NPSHr+1m is satisfied

EN 12845 FIRE-FIGHTING MODULES GEM..F40 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
			OH1n	Q = DELIVERY												
				l/min 0	300	350	375	540	600	700	725	750	800	900	1000	1100
				m3/h 0	18	21	23	32	36	42	44	45	48	54	60	66
			H = TOTAL HEAD METRES COLUMN OF WATER													
40-125/11	40-125/D112	1 x 1,1	13,9	11,3	10,0	9,3	3,4	0,7								
40-125/15	40-125/D122	1 x 1,5	18,0	15,3	14,0	13,3	7,4	4,7								
40-125/22	40-125/D143	1 x 2,2	25,3	21,8	20,5	19,8	14,0	11,4	6,4	5,0	3,6	0,6				
40-160/30	40-160/D159	1 x 3	31,6	28,1	26,8	26,0	19,5	16,5	10,8	9,2	7,6					
40-160/40	40-160/D171	1 x 4	38,3	35,1	33,7	32,9	26,5	23,6	18,1	16,5	15,0	11,7				
40-200/55	40-200/D190	1 x 5,5	46,4	42,7	41,2	40,4	33,1	29,7	23,3	21,5	19,6					
40-200/75	40-200/D209	1 x 7,5	57,5	53,1	51,6	50,7	43,8	40,7	34,8	33,2	31,5	28,0				
40-250/110A	40-250/D218	1 x 11	63,6	57,8	56,2	55,2	47,8	44,5	38,2	36,5	34,8	31,1				
40-250/110	40-250/D233	1 x 11	71,7	66,0	64,3	63,4	55,7	52,3	45,8	44,0	42,1	38,3				
40-250/150	40-250/D251	1 x 15	85,0	78,6	76,9	76,0	68,4	65,0	58,6	56,8	55,0	51,1	42,6			

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf40-2p50-en_a_th

OHn = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

FHF MODULES

EN 12845 FIRE-FIGHTING MODULES GEM..F40 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
			OH1n	Q = DELIVERY												
				l/min 0	300	350	375	540	600	700	725	750	800	900	1000	1100
				m3/h 0	18	21	23	32	36	42	44	45	48	54	60	66
			H = TOTAL HEAD METRES COLUMN OF WATER													
40-125/11	40-125/D112	1 x 1,1	13,9	11,3	10,0	9,3	3,4	0,7								
40-125/15	40-125/D122	1 x 1,5	18,0	15,3	14,0	13,3	7,4	4,7								
40-125/22	40-125/D143	1 x 2,2	25,3	21,8	20,5	19,8	14,0	11,4	6,4	5,0	3,6	0,6				
40-160/30	40-160/D159	1 x 3	31,6	28,1	26,8	26,0	19,5	16,5	10,8	9,2	7,6					
40-160/40	40-160/D171	1 x 4	38,3	35,1	33,7	32,9	26,5	23,6	18,1	16,5	15,0	11,7				
40-200/55	40-200/D190	1 x 5,5	46,4	42,7	41,2	40,4	33,1	29,7	23,3	21,5	19,6					
40-200/75	40-200/D209	1 x 7,5	57,5	53,1	51,6	50,7	43,8	40,7	34,8	33,2	31,5	28,0				
40-250/110A	40-250/D218	1 x 11	63,6	57,8	56,2	55,2	47,8	44,5	38,2	36,5	34,8	31,1				
40-250/110	40-250/D233	1 x 11	71,7	66,0	64,3	63,4	55,7	52,3	45,8	44,0	42,1	38,3				
40-250/150	40-250/D251	1 x 15	85,0	78,6	76,9	76,0	68,4	65,0	58,6	56,8	55,0	51,1	42,6			

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf40-2p50-en_a_th

OHn = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR FHF 40 SERIES PUMP

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS														
			OH1n	OH1m	Q = DELIVERY												
					l/min 0	300	350	375	540	600	700	725	750	800	900	1000	1100
					m³/h 0	18	21	23	32	36	42	44	45	48	54	60	66
			NPSHr [METRES COLUMN OF WATER]														
40-125/11	40-125/D112	1 x 1,1		1,8	1,9	1,9	2,4	2,7									
40-125/15	40-125/D122	1 x 1,5		1,8	1,9	1,9	2,4	2,7	3,7								
40-125/22	40-125/D143	1 x 2,2		1,8	1,9	1,9	2,4	2,7	3,7	4,1	4,6	6,3					
40-160/30	40-160/D159	1 x 3		1,9	1,9	1,9	2,4	2,9	4,1	4,5	5,0						
40-160/40	40-160/D171	1 x 4		1,9	1,9	1,9	2,4	2,9	4,1	4,5	5,0	6,2					
40-200/55	40-200/D190	1 x 5,5		2,0	2,1	2,2	2,9	3,4	4,5	4,9	5,3						
40-200/75	40-200/D209	1 x 7,5		2,0	2,1	2,2	2,9	3,4	4,5	4,9	5,3	6,3					
40-250/110A	40-250/D218	1 x 11		1,0	1,1	1,2	1,6	1,7	2,1	2,2	2,3	2,6					
40-250/110	40-250/D233	1 x 11		1,0	1,1	1,2	1,6	1,7	2,1	2,2	2,3	2,6					
40-250/150	40-250/D251	1 x 15		1,0	1,1	1,2	1,6	1,7	2,1	2,2	2,3	2,6	3,5				

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf40-2p50_NPSHr-en_a_th

OHn, OHm = class of risk value referred to the required rated and maximum capacity (Tab.6 para 7.3.1 EN12845)

Check that $NPSH_d \geq NPSH_r + 1m$ is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F50 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS											
				OH2n						OH3n					
				Q = DELIVERY											
				l/min 0	600	700	725	850	1000	1100	1200	1300	1350	1400	1500
			m3/h 0	36	42	44	51	60	66	72	78	81	84	90	96
H = TOTAL HEAD METRES COLUMN OF WATER															
50-125/22	50-125/D119	1 x 2,2	16,8	13,7	12,3	11,8	9,5	6,2	3,7	0,9					
50-125/30	50-125/D130	1 x 3	19,9	17,5	16,1	15,8	13,6	10,5	8,0	5,3	2,3				
50-125/40	50-125/D139	1 x 4	24,3	21,8	20,6	20,2	18,3	15,3	13,1	10,5	7,7	6,2	4,6		
50-160/55	50-160/D158	1 x 5,5	31,8	29,3	27,7	27,3	24,8	21,1	18,2	15,0	11,4	9,5	7,6		
50-160/75	50-160/D174	1 x 7,5	39,8	36,6	35,2	34,8	32,5	29,1	26,5	23,5	20,2	18,5	16,7	12,7	
50-200/110A	50-200/D197	1 x 11	50,6	45,6	43,4	42,8	39,5	34,8	31,2	27,3	23,1	20,9	18,6		
50-200/110	50-200/D209	1 x 11	58,0	52,6	50,5	49,9	46,7	42,1	38,6	34,7	30,4	28,1	25,7	20,7	
50-250/150	50-250/D224	1 x 15	68,1	62,8	60,9	60,4	57,3	52,6	48,8	44,4	39,4	36,7	33,8		
50-250/185	50-250/D237	1 x 18,5	76,5	71,7	70,0	69,5	66,6	62,3	58,8	54,7	50,0	47,4	44,7	38,6	
50-250/220	50-250/D250	1 x 22	86,0	81,2	79,5	79,0	76,1	71,7	68,1	64,0	59,4	56,8	54,1	48,1	41,4

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf50-2p50-en_a_th

OH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..F50 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS											
				OH2n		OH3n									
				Q = DELIVERY											
				l/min 0	600	700	725	850	1000	1100	1200	1300	1350	1400	1500
			m3/h 0	36	42	44	51	60	66	72	78	81	84	90	96
H = TOTAL HEAD METRES COLUMN OF WATER															
50-125/22	50-125/D119	1 x 2,2	16,8	13,7	12,3	11,8	9,5	6,2	3,7	0,9					
50-125/30	50-125/D130	1 x 3	19,9	17,5	16,1	15,8	13,6	10,5	8,0	5,3	2,3				
50-125/40	50-125/D139	1 x 4	24,3	21,8	20,6	20,2	18,3	15,3	13,1	10,5	7,7	6,2	4,6		
50-160/55	50-160/D158	1 x 5,5	31,8	29,3	27,7	27,3	24,8	21,1	18,2	15,0	11,4	9,5	7,6		
50-160/75	50-160/D174	1 x 7,5	39,8	36,6	35,2	34,8	32,5	29,1	26,5	23,5	20,2	18,5	16,7	12,7	
50-200/110A	50-200/D197	1 x 11	50,6	45,6	43,4	42,8	39,5	34,8	31,2	27,3	23,1	20,9	18,6		
50-200/110	50-200/D209	1 x 11	58,0	52,6	50,5	49,9	46,7	42,1	38,6	34,7	30,4	28,1	25,7	20,7	
50-250/150	50-250/D224	1 x 15	68,1	62,8	60,9	60,4	57,3	52,6	48,8	44,4	39,4	36,7	33,8		
50-250/185	50-250/D237	1 x 18,5	76,5	71,7	70,0	69,5	66,6	62,3	58,8	54,7	50,0	47,4	44,7	38,6	
50-250/220	50-250/D250	1 x 22	86,0	81,3	79,5	79,0	76,1	71,7	68,2	64,1	59,5	56,9	54,2	48,2	41,6

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf50-2p50-en_a_th

OH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR SERIES FHF 50 PUMP

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			OH2n				OH2m		OH3n		OH3m				
			Q = DELIVERY												
			l/min 0	600	700	725	850	1000	1100	1200	1300	1350	1400	1500	1600
			m³/h 0	36	42	44	51	60	66	72	78	81	84	90	96
			NPSHr [METRES COLUMN OF WATER]												
50-125/22	50-125/D119	1 x 2,2		2,1	2,3	2,3	2,6	3,1	3,5	3,9					
50-125/30	50-125/D130	1 x 3		2,1	2,3	2,3	2,6	3,1	3,5	3,9	4,4				
50-125/40	50-125/D139	1 x 4		2,1	2,3	2,3	2,6	3,1	3,5	3,9	4,4	4,7	5,0		
50-160/55	50-160/D158	1 x 5,5		1,9	2,1	2,2	2,5	2,9	3,2	3,6	4,2	4,6	5,1		
50-160/75	50-160/D174	1 x 7,5		1,9	2,1	2,2	2,5	2,9	3,2	3,6	4,2	4,6	5,1	6,5	
50-200/110A	50-200/D197	1 x 11		1,8	1,9	2,0	2,2	2,6	2,9	3,4	4,1	4,6	5,1		
50-200/110	50-200/D209	1 x 11		1,8	1,9	2,0	2,2	2,6	2,9	3,4	4,1	4,6	5,1	6,7	
50-250/150	50-250/D224	1 x 15		1,5	1,7	1,7	2,0	2,4	2,7	3,1	3,6	3,9	4,2		
50-250/185	50-250/D237	1 x 18,5		1,5	1,7	1,7	2,0	2,4	2,7	3,1	3,6	3,9	4,2	5,1	
50-250/220	50-250/D250	1 x 22		1,5	1,7	1,7	2,0	2,4	2,7	3,1	3,6	3,9	4,2	5,1	6,4

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf50-2p50_NPSHr-en_a_th

OH_n, OH_m = class of risk value referred to the required rated and maximum capacity (Tab.6 para 7.3.1 EN12845)

Check that NPSH_d ≥ NPSH_r+1m is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F65 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
			OH3n						OH4n							
			Q = DELIVERY													
			l/min 0	800	900	1000	1100	1200	1350	1400	1500	1800	2000	2100	2300	
			m3/h 0	48	54	60	66	72	81	84	90	108	120	126	138	
H = TOTAL HEAD METRES COLUMN OF WATER																
65-125/40	65-125/D121	1 x 4	19,1	15,6	14,6	13,5	12,3	10,9	8,7	7,9	6,2					
65-125/55	65-125/D129	1 x 5,5	22,7	19,6	18,8	17,8	16,7	15,5	13,5	12,7	11,2	5,7				
65-125/75	65-125/D140	1 x 7,5	27,1	24,3	23,5	22,7	21,7	20,7	18,9	18,2	16,8	12,0	8,1			
65-160/110A	65-160/D161	1 x 11	32,7		29,2	28,3	27,2	26,0	23,9	23,2	21,6	15,9	11,5	9,0		
65-160/110	65-160/D168	1 x 11	35,9		32,5	31,5	30,5	29,4	27,4	26,7	25,2	19,8	15,6	13,3		
65-160/150	65-160/D178	1 x 15	41,9		38,9	38,1	37,1	36,1	34,2	33,6	32,2	27,2	23,2	21,1	16,3	
65-200/150	65-200/D187	1 x 15	45,2		43,4	42,3	41,1	39,7	37,3	36,4	34,6	28,4	23,8	21,3		
65-200/185	65-200/D198	1 x 18,5	51,6		50,2	49,2	48,2	47,0	44,9	44,1	42,4	36,5	31,8	29,2		
65-200/220	65-200/D210	1 x 22	59,1		57,2	56,3	55,3	54,2	52,1	51,4	49,8	44,1	39,6	37,1	31,6	
65-250/220	65-250/D220	1 x 22	62,8		60,6	59,4	58,0	56,4	53,5	52,5	50,2	42,1	35,7	32,1		
65-250/300	65-250/D241	1 x 30	76,4		75,0	73,9	72,6	71,1	68,5	67,5	65,4	57,8	51,6	48,2	40,6	
65-250/370	65-250/D258	1 x 37	90,8		89,9	89,0	88,0	86,7	84,5	83,7	81,8	74,8	68,8	65,4	57,7	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf65-2p50-en_a_th

OH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

FHF MODULES

EN 12845 FIRE-FIGHTING MODULES GEM..F65 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			OH3n						OH4n						
			Q = DELIVERY												
			l/min 0	800	900	1000	1100	1200	1350	1400	1500	1800	2000	2100	2300
			m3/h 0	48	54	60	66	72	81	84	90	108	120	126	138
H = TOTAL HEAD METRES COLUMN OF WATER															
65-125/40	65-125/D121	1 x 4	19,1	15,6	14,6	13,5	12,3	10,9	8,7	7,9	6,2				
65-125/55	65-125/D129	1 x 5,5	22,7	19,6	18,8	17,8	16,7	15,5	13,5	12,7	11,2	5,7			
65-125/75	65-125/D140	1 x 7,5	27,1	24,3	23,5	22,7	21,7	20,7	18,9	18,2	16,8	12,0	8,1		
65-160/110A	65-160/D161	1 x 11	32,7		29,2	28,3	27,2	26,0	23,9	23,2	21,6	15,9	11,5	9,0	
65-160/110	65-160/D168	1 x 11	35,9		32,5	31,5	30,5	29,4	27,4	26,7	25,2	19,8	15,6	13,3	
65-160/150	65-160/D178	1 x 15	41,9		38,9	38,1	37,1	36,1	34,2	33,6	32,2	27,2	23,2	21,1	16,3
65-200/150	65-200/D187	1 x 15	45,2		43,4	42,3	41,1	39,7	37,3	36,4	34,6	28,4	23,8	21,3	
65-200/185	65-200/D198	1 x 18,5	51,6		50,2	49,2	48,2	47,0	44,9	44,1	42,4	36,5	31,8	29,2	
65-200/220	65-200/D210	1 x 22	59,1		57,2	56,3	55,3	54,2	52,1	51,4	49,8	44,1	39,6	37,1	31,6
65-250/220	65-250/D220	1 x 22	62,8		60,6	59,4	58,0	56,4	53,5	52,5	50,2	42,1	35,7	32,1	
65-250/300	65-250/D241	1 x 30	76,4		75,0	73,9	72,6	71,1	68,5	67,5	65,4	57,8	51,6	48,2	40,6
65-250/370	65-250/D258	1 x 37	90,8		89,9	89,0	88,0	86,7	84,5	83,7	81,8	74,8	68,8	65,4	57,7

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf65-2p50-en_a_th

OH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR SERIES FHF 65 PUMP

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			OH3n			OH3m			OH4n			OH4m			
			Q = DELIVERY												
PUMP		NPSHr [METRES COLUMN OF WATER]													
		m³/h 0													
65-125/40	65-125/D121	1 x 4		1,0	1,2	1,3	1,6	1,9	2,4	2,6	3,1				
65-125/55	65-125/D129	1 x 5,5		1,0	1,2	1,3	1,6	1,9	2,4	2,6	3,1	5,1			
65-125/75	65-125/D140	1 x 7,5		1,0	1,2	1,3	1,6	1,9	2,4	2,6	3,1	5,1	7,0		
65-160/110A	65-160/D161	1 x 11			2,4	2,4	2,5	2,6	2,9	2,9	3,2	4,2	5,3	6,0	
65-160/110	65-160/D168	1 x 11			2,3	2,4	2,5	2,7	2,8	2,9	3,1	3,7	4,4	4,9	
65-160/150	65-160/D178	1 x 15			2,3	2,4	2,5	2,7	2,8	2,9	3,1	3,7	4,4	4,9	6,6
65-200/150	65-200/D187	1 x 15			1,8	1,9	2,0	2,1	2,3	2,4	2,6	3,4	4,5	5,3	
65-200/185	65-200/D198	1 x 18,5			1,8	1,9	2,0	2,1	2,3	2,4	2,6	3,4	4,3	4,9	
65-200/220	65-200/D210	1 x 22			1,8	1,9	2,0	2,1	2,3	2,4	2,6	3,4	4,3	4,9	6,6
65-250/220	65-250/D220	1 x 22			1,7	2,0	2,2	2,5	2,9	3,1	3,4	4,3	5,0	5,4	
65-250/300	65-250/D241	1 x 30			1,7	2,0	2,2	2,5	2,9	3,1	3,4	4,3	5,0	5,4	6,2
65-250/370	65-250/D258	1 x 37			1,7	2,0	2,2	2,5	2,9	3,1	3,4	4,3	5,0	5,4	6,2

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf65-2p50_NPSHr-en_a_th

OH_n, OH_m = class of risk value referred to the required rated and maximum capacity (Tab.6 para 7.3.1 EN12845)

Check that NPSH_d ≥ NPSH_r+1m is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F80 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS												
				OH4n						HH1n						
				Q = DELIVERY												
				l/min 0	1500	1650	1800	2050	2100	2200	2300	2600	3216	3500	3600	3650
				m3/h 0	90	99	108	123	126	132	138	156	193	210	216	219
H = TOTAL HEAD METRES COLUMN OF WATER																
80-160/150	80-160/D163	1 x 15	32,9	30,2	29,1	27,8	25,4	24,9	23,8	22,7	18,8	9,4	4,4			
80-160/185	80-160/D173	1 x 18,5	39,0	35,6	34,5	33,4	31,2	30,7	29,7	28,6	25,1	16,2	11,3	9,5	8,5	
80-200/220	80-200/D189	1 x 22	48,0	44,7	43,4	41,8	39,0	38,3	37,0	35,6	30,9	19,2	12,8			
80-200/300	80-200/D207	1 x 30	59,9	56,9	55,8	54,4	51,9	51,3	50,1	48,9	44,7	34,2	28,5	26,4	25,3	
80-250/370	80-250/D225	1 x 37	70,8	67,3	65,8	63,9	60,4	59,6	57,9	56,1	50,1	34,7	26,1			
80-250/450	80-250/D238	1 x 45	80,0	78,0	76,5	74,8	71,5	70,8	69,2	67,6	62,0	47,5	39,6	36,5		
80-250/550	80-250/D256	1 x 55	88,9	89,9	88,8	87,5	84,8	84,2	82,9	81,5	76,7	64,0	56,7	54,0	52,6	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf80-2p50-en_a_th

OH_n, HH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1, Tab.7 para 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

FHF MODULES

EN 12845 FIRE-FIGHTING MODULES GEM..F80 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS												
				OH4n						HH1n						
				Q = DELIVERY												
				l/min 0	1500	1650	1800	2050	2100	2200	2300	2600	3216	3500	3600	3650
				m3/h 0	90	99	108	123	126	132	138	156	193	210	216	219
H = TOTAL HEAD METRES COLUMN OF WATER																
80-160/150	80-160/D163	1 x 15		32,9	30,2	29,1	27,8	25,4	24,9	23,8	22,7	18,8	9,4	4,4		
80-160/185	80-160/D173	1 x 18,5		39,0	35,6	34,5	33,4	31,2	30,7	29,7	28,6	25,1	16,2	11,3	9,5	8,5
80-200/220	80-200/D189	1 x 22		48,0	44,7	43,4	41,8	39,0	38,3	37,0	35,6	30,9	19,2	12,8		
80-200/300	80-200/D207	1 x 30		59,9	56,9	55,8	54,4	51,9	51,3	50,1	48,9	44,7	34,2	28,5	26,4	25,3
80-250/370	80-250/D225	1 x 37		70,8	67,3	65,8	63,9	60,4	59,6	57,9	56,1	50,1	34,7	26,1		
80-250/450	80-250/D238	1 x 45		80,0	78,0	76,5	74,8	71,5	70,8	69,2	67,6	62,0	47,5	39,6	36,5	
80-250/550	80-250/D256	1 x 55		88,9	89,9	88,8	87,5	84,8	84,2	82,9	81,5	76,7	64,0	56,7	54,0	52,6

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf80-2p50-en_a_th

OH_n, HH_n = class of risk value referred to the required rated capacity (Tab.6 para 7.3.1, Tab.7 para 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR SERIES FHF 80 PUMP

TYPE FHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
			OH4n				OH4m				HH1n				HH1m	
			Q = DELIVERY													
			l/min 0	1500	1650	1800	2050	2100	2200	2300	2600	3216	3500	3600	3650	
			m³/h 0	90	99	108	123	126	132	138	156	193	210	216	219	
			NPSHr [METRES COLUMN OF WATER]													
80-160/150	80-160/D163	1 x 15		3,7	3,8	3,9	4,0	4,1	4,2	4,2	4,5	5,4	6,2			
80-160/185	80-160/D173	1 x 18,5		3,7	3,8	3,9	4,0	4,1	4,2	4,2	4,5	5,4	6,2	6,5	6,8	
80-200/220	80-200/D189	1 x 22		2,8	3,0	3,1	3,3	3,4	3,5	3,6	3,9	5,1	6,3			
80-200/300	80-200/D207	1 x 30		2,8	3,0	3,1	3,3	3,4	3,5	3,6	3,9	5,1	6,3	6,9	7,3	
80-250/370	80-250/D225	1 x 37		3,0	3,1	3,3	3,6	3,6	3,8	3,9	4,4	6,0	7,4			
80-250/450	80-250/D238	1 x 45		2,4	2,6	2,7	3,0	3,1	3,2	3,3	3,8	4,9	5,5	5,7		
80-250/550	80-250/D256	1 x 55		2,4	2,6	2,7	3,0	3,1	3,2	3,3	3,8	4,9	5,5	5,7	5,8	

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf80-2p50_NPSHr-en_a_th

OH_n, OH_m, HH_n, HH_m = class of risk value referred to the required rated and maximum capacity (Tab.6 para 7.3.1, Tab.7 para 7.3.2 EN12845)

Check that NPSH_d ≥ NPSH_r+1m is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F100 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF..		RATED POWER	RISK CLASS																
							HH1n	HH2n	HH3n	HH4n									
			Q = DELIVERY																
ELECTRIC PUMP	PUMP	kW	l/min 0	1333	1500	1667	2300	2900	3050	3216	3800	4066	4266	4333	5000	5166	5316	5500	6000
			m3/h 0	80	90	100	138	174	183	193	228	244	256	260	300	310	319	330	360
H = TOTAL HEAD METRES COLUMN OF WATER																			
100-160/185	100-160/D150	1 x 18,5	26,7	26,0	25,6	25,2	22,9	19,9	19,0	18,0	13,9	11,8	10,2	9,6	3,5	1,8			
100-160/220	100-160/D165	1 x 22	33,0	32,2	31,7	31,2	28,7	25,3	24,4	23,3	18,8	16,6	14,8	14,2	7,6	5,9	4,2	2,2	
100-160/300	100-160/D185	1 x 30	42,3	41,2	40,8	40,3	37,8	34,6	33,6	32,5	28,2	26,0	24,2	23,6	16,9	15,1	13,5	11,4	5,3
100-200/185	100-200/D168	1 x 18,5	36,3		33,5	32,7	28,6	23,5	22,0	20,3	13,5	10,1	7,4	6,4					
100-200/300	100-200/D192	1 x 30	49,0		47,5	46,9	43,7	39,5	38,3	36,8	31,0	28,0	25,5	24,7	15,5	12,9			
100-200/370	100-200/D203	1 x 37	56,0		54,6	54,0	51,0	46,9	45,8	44,4	38,7	35,8	33,4	32,6	23,7	21,2	18,9	16,0	
100-200/450	100-200/D213	1 x 45	61,0		60,0	59,5	57,1	53,6	52,6	51,4	46,3	43,7	41,5	40,7	32,3	29,9	27,7	24,8	
100-250/300	100-250/D200	1 x 30	54,6			52,1	47,7	41,8	40,0	37,9	29,3	24,8	21,2	19,9	5,9				
100-250/450	100-250/D221	1 x 45	68,8			66,9	63,5	58,7	57,2	55,4	48,1	44,2	41,0	39,9	27,2	23,6	20,3	15,9	
100-250/550	100-250/D235	1 x 55	78,5			76,9	74,0	69,8	68,5	66,9	60,2	56,6	53,6	52,6	40,6	37,2	34,0	29,8	
TYPE FHF..		RATED POWER	RISK CLASS																
							HH4n	HH5n	HH6n										
			Q = DELIVERY																
ELECTRIC PUMP	PUMP	kW	l/min 0	1667	2500	3800	4150	4550	4700	4800	5000	5316	5500	6000	6366	6416	6500	6716	6750
			m3/h 0	100	150	228	249	273	282	288	300	319	330	360	382	385	390	403	405
H = TOTAL HEAD METRES COLUMN OF WATER																			
100-250/750	100-250/D254	1 x 75	91,7	90,5	86,9	75,9	71,7	66,1	63,7	62,1	58,7	52,9	49,3	38,3	29,3	28,0			
100-250/900	100-250/D267	1 x 90	102,9	101,6	98,2	87,5	83,4	77,9	75,6	74,0	70,7	64,9	61,3	50,5	41,5	40,2	38,0	32,0	31,1

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf100-2p50-en_b_th

HHn = class of risk value referred to the required rated capacity (Tab.7 par. 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure these drops, added to the difference in level (max 3,2mt), are less than 4,5mt

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..F100 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF..		RATED POWER	RISK CLASS																
			HH1n HH2n HH3n HH4n																
			Q = DELIVERY																
ELECTRIC PUMP	PUMP	kW	l/min 0	1333	1500	1667	2300	2900	3050	3216	3800	4066	4266	4333	5000	5166	5316	5500	6000
			m3/h 0	80	90	100	138	174	183	193	228	244	256	260	300	310	319	330	360
H = TOTAL HEAD METRES COLUMN OF WATER																			
100-160/185	100-160/D150	1 x 18,5	26,7	26,0	25,6	25,2	22,9	19,9	19,0	18,0	13,9	11,8	10,2	9,6	3,5	1,8			
100-160/220	100-160/D165	1 x 22	33,0	32,2	31,7	31,2	28,7	25,3	24,4	23,3	18,8	16,6	14,8	14,2	7,6	5,9	4,2	2,2	
100-160/300	100-160/D185	1 x 30	42,3	41,2	40,8	40,3	37,8	34,6	33,6	32,5	28,2	26,0	24,2	23,6	16,9	15,1	13,5	11,4	5,3
100-200/185	100-200/D168	1 x 18,5	36,3		33,5	32,7	28,6	23,5	22,0	20,3	13,5	10,1	7,4	6,4					
100-200/300	100-200/D192	1 x 30	49,0		47,5	46,9	43,7	39,5	38,3	36,8	31,0	28,0	25,5	24,7	15,5	12,9			
100-200/370	100-200/D203	1 x 37	56,0		54,6	54,0	51,0	46,9	45,8	44,4	38,7	35,8	33,4	32,6	23,7	21,2	18,9	16,0	
100-200/450	100-200/D213	1 x 45	61,0		60,0	59,5	57,1	53,6	52,6	51,4	46,3	43,7	41,5	40,7	32,3	29,9	27,7	24,8	
100-250/300	100-250/D200	1 x 30	54,6			52,1	47,7	41,8	40,0	37,9	29,3	24,8	21,2	19,9	5,9				
100-250/450	100-250/D221	1 x 45	68,8			66,9	63,5	58,7	57,2	55,4	48,1	44,2	41,0	39,9	27,2	23,6	20,3	15,9	
100-250/550	100-250/D235	1 x 55	78,5			76,9	74,0	69,8	68,5	66,9	60,2	56,6	53,6	52,6	40,6	37,2	34,0	29,8	

TYPE FHF..		RATED POWER	RISK CLASS																
			HH4n HH5n HH6n																
			Q = DELIVERY																
ELECTRIC PUMP	PUMP	kW	l/min 0	1667	2500	3800	4150	4550	4700	4800	5000	5316	5500	6000	6366	6416	6500	6716	6750
			m3/h 0	100	150	228	249	273	282	288	300	319	330	360	382	385	390	403	405
H = TOTAL HEAD METRES COLUMN OF WATER																			
100-250/750	100-250/D254	1 x 75	91,7	90,5	86,9	75,9	71,7	66,1	63,7	62,1	58,7	52,9	49,3	38,3	29,3	28,0			
100-250/900	100-250/D267	1 x 90	102,9	101,6	98,2	87,5	83,4	77,9	75,6	74,0	70,7	64,9	61,3	50,5	41,5	40,2	38,0	32,0	31,1

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf100-2p50-en_b_th

HHn = class of risk value referred to the required rated capacity (Tab.7 par. 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4,5mt

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR SERIES FHF 100 PUMP

TYPE FHF..		RATED POWER	RISK CLASS																
			HH1n		HH2n		HH3n		HH1m		HH4n		HH2m		HH3m		HH4m		
ELECTRIC PUMP	PUMP	kW	Q = DELIVERY																
			l/min 0	1333	1500	1667	2300	2900	3050	3216	3800	4066	4266	4333	5000	5166	5316	5500	6000
			m3/h 0	80	90	100	138	174	183	193	228	244	256	260	300	310	319	330	360
NPSHr [METRES COLUMN OF WATER]																			
100-160/185	100-160/D150	1 x 18,5		6,3	6,4	6,6	7,3	8,0	8,2	8,4	9,2	9,5	9,8	9,9	11,0	11,4			
100-160/220	100-160/D165	1 x 22		5,0	5,2	5,4	6,2	6,9	7,0	7,2	7,9	8,3	8,5	8,6	9,6	9,9	10,3	10,7	
100-160/300	100-160/D185	1 x 30		5,0	5,2	5,4	6,2	6,9	7,0	7,2	7,9	8,3	8,5	8,6	9,6	9,9	10,3	10,7	12,8
100-200/185	100-200/D168	1 x 18,5			4,2	4,2	4,6	5,6	6,0	6,5	9,2	11,1	12,8	13,5					
100-200/300	100-200/D192	1 x 30			3,1	3,1	3,3	3,5	3,6	3,7	4,2	4,6	4,9	5,1	7,0	7,7			
100-200/370	100-200/D203	1 x 37			3,1	3,1	3,3	3,5	3,6	3,7	4,2	4,6	4,9	5,1	7,0	7,7	8,4	9,5	
100-200/450	100-200/D213	1 x 45			3,1	3,1	3,3	3,5	3,6	3,7	4,2	4,6	4,9	5,1	7,0	7,7	8,4	9,5	
100-250/300	100-250/D200	1 x 30				4,7	5,0	5,3	5,4	5,4	5,7	5,8	5,9	6,0	6,3				
100-250/450	100-250/D221	1 x 45				4,6	4,7	4,7	4,8	4,8	4,8	4,9	4,9	4,9	5,1	5,2	5,2	5,3	
100-250/550	100-250/D235	1 x 55				4,6	4,7	4,7	4,8	4,8	4,8	4,9	4,9	4,9	5,1	5,2	5,2	5,3	
TYPE FHF..		RATED POWER	RISK CLASS																
			HH4n		HH5n		HH6n		HH4m		HH5m		HH6m						
ELECTRIC PUMP	PUMP	kW	Q = DELIVERY																
			l/min 0	1667	2500	3800	4150	4550	4700	4800	5000	5316	5500	6000	6366	6416	6500	6716	6750
			m3/h 0	100	150	228	249	273	282	288	300	319	330	360	382	385	390	403	405
NPSHr [METRES COLUMN OF WATER]																			
100-250/750	100-250/D254	1 x 75		4,6	4,7	4,8	4,9	5,0	5,0	5,0	5,1	5,2	5,3	5,8	6,6	6,7			
100-250/900	100-250/D267	1 x 90		4,6	4,7	4,8	4,9	5,0	5,0	5,0	5,1	5,2	5,3	5,8	6,6	6,7	6,9	7,8	7,9

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-fhf100-2p50_NPSHr-en_a_th

HHn, HHm = class of risk value referred to the required rated and maximum capacity (Tab.7 para 7.3.2 EN12845)

Check that $NPSH_d \geq NPSH_r + 1m$ is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F125 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE FHF..		RATED POWER	RISK CLASS																			
			HH6n HH7n HH8n HH9n HH10n																			
			Q = DELIVERY																			
			l/min 0	2000	2500	4800	4850	5700	6000	6400	6716	6783	7500	7983	8400	8667	8966	9333	9583	10000	10333	10833
ELECTRIC PUMP	PUM	kW	m3/h 0	120	150	288	291	342	360	384	403	407	450	479	504	520	538	560	575	600	620	650
H = TOTAL HEAD METRES COLUMN OF WATER																						
125-200/300	125-200/D180	1 x 30	32,8	29,8	28,4	19,8	19,6	15,8	14,4	12,6	11,2	10,9	7,6									
125-200/450	125-200/D206	1 x 45	47,2	44,8	43,5	34,8	34,6	30,3	28,6	26,4	24,5	24,1	19,7	16,6	13,9	12,1						
125-200/550	125-200/D216	1 x 55	57,4	55,1	54,0	45,6	45,4	41,0	39,3	36,8	34,8	34,3	29,3	25,6	22,3	20,0	17,4	14,1				
125-270/750	125-270/D224	1 x 75	65,1		63,7	56,0	55,8	51,5	49,8	47,3	45,3	44,8	39,8	36,1	32,7	30,5	27,9	24,6	22,3			
125-270/900	125-270/D237	1 x 90	75,3		73,6	67,0	66,8	62,8	61,1	58,8	56,8	56,3	51,2	47,4	43,8	41,4	38,5	34,8	32,2	27,5		
125-270/1100	125-270/D253	1 x 110	88,2		85,4	79,2	79,0	75,1	73,5	71,2	69,2	68,8	63,5	59,5	55,7	53,0	49,9	45,8	42,8	37,6	33,1	
125-270/1320	125-270/D266	1 x 132	97,5		94,8	88,6	88,4	84,7	83,2	81,1	79,2	78,8	74,0	70,3	66,8	64,5	61,7	58,0	55,4	50,7	46,8	40,5

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-fhf125-2p50-en_b_th

HHn = class of risk value referred to the required rated capacity (Tab.7 par. 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure these drops, added to the difference in level (max 3,2mt), are less than 4,5mt

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..F125 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE FHF..		RATED POWER	RISK CLASS																			
			Q = DELIVERY																			
ELECTRIC PUMP	PUMP	kW	l/min 0	2000	2500	4800	4850	5700	6000	6400	6716	6783	7500	7983	8400	8667	8966	9333	9583	10000	10333	10833
			m3/h 0	120	150	288	291	342	360	384	403	407	450	479	504	520	538	560	575	600	620	650
H = TOTAL HEAD METRES COLUMN OF WATER																						
125-200/300	125-200/D180	1 x 30	32,8	29,8	28,4	19,8	19,6	15,8	14,4	12,6	11,2	10,9	7,6									
125-200/450	125-200/D206	1 x 45	47,2	44,8	43,5	34,8	34,6	30,3	28,6	26,4	24,5	24,1	19,7	16,6	13,9	12,1						
125-200/550	125-200/D216	1 x 55	57,4	55,1	54,0	45,6	45,4	41,0	39,3	36,8	34,8	34,3	29,3	25,6	22,3	20,0	17,4	14,1				
125-270/750	125-270/D224	1 x 75	65,1		63,7	56,0	55,8	51,5	49,8	47,3	45,3	44,8	39,8	36,1	32,7	30,5	27,9	24,6	22,3			
125-270/900	125-270/D237	1 x 90	75,3		73,6	67,0	66,8	62,8	61,1	58,8	56,8	56,3	51,2	47,4	43,8	41,4	38,5	34,8	32,2	27,5		
125-270/1100	125-270/D253	1 x 110	88,2		85,4	79,2	79,0	75,1	73,5	71,2	69,2	68,8	63,5	59,5	55,7	53,0	49,9	45,8	42,8	37,6	33,1	
125-270/1320	125-270/D266	1 x 132	97,5		94,8	88,6	88,4	84,7	83,2	81,1	79,2	78,8	74,0	70,3	66,8	64,5	61,7	58,0	55,4	50,7	46,8	40,5

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-fhf125-2p50-en_b_th

HHn = class of risk value referred to the required rated capacity (Tab.7 par. 7.3.2 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4,5mt

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES FHF 125

TYPE		RATED	RISK CLASS																			
			HH6n	HH7n	HH8n	HH9n	HH10n	HH6m	HH7m	HH8m	HH9m	HH10m										
			Q = DELIVERY																			
FHF..	PUMP	POWER	l/min 0	2000	2500	4800	4850	5700	6000	6400	6716	6783	7500	7983	8400	8667	8966	9333	9583	10000	10333	10833
ELECTRIC PUMP		kW	m³/h 0	120	150	288	291	342	360	384	403	407	450	479	504	520	538	560	575	600	620	650
			NPSHr [METRES COLUMN OF WATER]																			
125-200/300	125-200/D180	1 x 30		6,5	6,8	8,5	8,5	9,1	9,3	9,6	9,9	9,9	10,4									
125-200/450	125-200/D206	1 x 45		6,1	6,2	7,1	7,1	7,6	7,7	8,0	8,3	8,3	8,9	9,5	10,0	10,4						
125-200/550	125-200/D216	1 x 55		6,1	6,2	7,1	7,1	7,6	7,7	8,0	8,3	8,3	8,9	9,5	10,0	10,4	10,8	11,5				
125-270/750	125-270/D224	1 x 75			7,8	8,3	8,3	8,5	8,6	8,7	8,8	8,9	9,3	9,7	10,1	10,5	11,1	11,9	12,7			
125-270/900	125-270/D237	1 x 90			6,0	6,9	6,9	7,2	7,3	7,5	7,7	7,7	8,1	8,4	8,8	9,0	9,4	9,9	10,4	11,4		
125-270/1100	125-270/D253	1 x 110			6,0	6,9	6,9	7,2	7,3	7,5	7,7	7,7	8,1	8,4	8,8	9,0	9,4	9,9	10,4	11,4	12,5	
125-270/1320	125-270/D266	1 x 132			6,0	6,9	6,9	7,2	7,3	7,5	7,7	7,7	8,1	8,4	8,8	9,0	9,4	9,9	10,4	11,4	12,5	14,8

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1pg-st-fhf125-2p50-NPSHr-en_a_th

HHn, HHm = class of risk value referred to the required rated and maximum capacity (Tab.7 para 7.3.2 EN12845)

Check that NPSHd ≥ NPSHr+1m is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..F32-F80 SERIES

ELECTRICAL DATA TABLE AT 50 Hz

SERVICE PUMP 3 X 400 V				ELECTRIC JOCKEY PUMP			CURRENT (*) ABSORBED SET								
							1x230	3x400					3x400 + 1x230		
TYPE FHF..		NOMINAL POWER				3x400V	GEMK	GEM	GEM..J	GEM	GEM..J	KIT PIL	GEM +	GEM..J	
ELECTRIC PUMP	PUMP	Pn kW	In A	TYPE	Pn kW	In A	A	A	A	+ GEM A	+ GEM A	+ GEMK A	GEMK A	+ GEMK A	
32-125/07	32-125/D119	0,75	1,70	1SV 07	0,37	1,35	3	1,7	3,1	3,4	4,8	4,4	4,7	6,1	
32-125/11	32-125/D136	1,1	2,39	1SV 08	0,55	1,48	3	2,4	3,9	4,8	6,3	4,5	5,4	6,9	
32-160/15	32-160/D150	1,5	3,02	1SV 08	0,55	1,48	3	3,0	4,5	6,0	7,5	4,5	6,0	7,5	
32-160/22	32-160/D164	2,2	4,64	1SV 09	0,55	1,48	3	4,6	6,1	9,3	10,8	4,5	7,6	9,1	
32-200/30	32-200/D188	3	5,91	1SV 11	0,55	1,48	3	5,9	7,4	11,8	13,3	4,5	8,9	10,4	
32-200/40	32-200/D204	4	7,51	1SV 12	0,75	1,70	3	7,5	9,2	15,0	16,7	4,7	10,5	12,2	
40-125/11	40-125/D112	1,1	2,39	1SV 07	0,37	1,35	3	2,4	3,7	4,8	6,1	4,4	5,4	6,7	
40-125/15	40-125/D122	1,5	3,02	1SV 08	0,55	1,48	3	3,0	4,5	6,0	7,5	4,5	6,0	7,5	
40-125/22	40-125/D143	2,2	4,64	1SV 08	0,55	1,48	3	4,6	6,1	9,3	10,8	4,5	7,6	9,1	
40-160/30	40-160/D159	3	5,91	1SV 09	0,55	1,48	3	5,9	7,4	11,8	13,3	4,5	8,9	10,4	
40-160/40	40-160/D171	4	7,51	1SV 10	0,55	1,48	3	7,5	9,0	15,0	16,5	4,5	10,5	12,0	
40-200/55	40-200/D190	5,5	10,80	1SV 11	0,55	1,48	3	10,8	12,3	21,6	23,1	4,5	13,8	15,3	
40-200/75	40-200/D209	7,5	14,00	1SV 12	0,75	1,70	3	14,0	15,7	28,0	29,7	4,7	17,0	18,7	
40-250/110A	40-250/D218	11	19,90	1SV 13	0,75	1,70	3	19,9	21,6	39,8	41,5	4,7	22,9	24,6	
40-250/110	40-250/D233	11	19,90	1SV 15	0,75	1,70	3	19,9	21,6	39,8	41,5	4,7	22,9	24,6	
40-250/150	40-250/D251	15	26,00	1SV 17	1,1	2,39	3	26,0	28,4	52,0	54,4	5,4	29,0	31,4	
50-125/22	50-125/D119	2,2	4,64	1SV 07	0,37	1,35	3	4,6	6,0	9,3	10,6	4,4	7,6	9,0	
50-125/30	50-125/D130	3	5,91	1SV 08	0,55	1,48	3	5,9	7,4	11,8	13,3	4,5	8,9	10,4	
50-125/40	50-125/D139	4	7,51	1SV 08	0,55	1,48	3	7,5	9,0	15,0	16,5	4,5	10,5	12,0	
50-160/55	50-160/D158	5,5	10,80	1SV 09	0,55	1,48	3	10,8	12,3	21,6	23,1	4,5	13,8	15,3	
50-160/75	50-160/D174	7,5	14,00	1SV 10	0,55	1,48	3	14,0	15,5	28,0	29,5	4,5	17,0	18,5	
50-200/110A	50-200/D197	11	19,90	1SV 12	0,75	1,70	3	19,9	21,6	39,8	41,5	4,7	22,9	24,6	
50-200/110	50-200/D209	11	19,90	1SV 12	0,75	1,70	3	19,9	21,6	39,8	41,5	4,7	22,9	24,6	
50-250/150	50-250/D224	15	26,00	1SV 15	0,75	1,70	3	26,0	27,7	52,0	53,7	4,7	29,0	30,7	
50-250/185	50-250/D237	18,5	33,20	1SV 15	0,75	1,70	3	33,2	34,9	66,4	68,1	4,7	36,2	37,9	
50-250/220	50-250/D250	22	39,10	1SV 17	1,1	2,39	3	39,1	41,5	78,2	80,6	5,4	42,1	44,5	
65-125/40	65-125/D121	4	7,51	1SV 07	0,37	1,35	3	7,5	8,9	15,0	16,4	4,4	10,5	11,9	
65-125/55	65-125/D129	5,5	10,80	1SV 08	0,55	1,48	3	10,8	12,3	21,6	23,1	4,5	13,8	15,3	
65-125/75	65-125/D140	7,5	14,00	1SV 08	0,55	1,48	3	14,0	15,5	28,0	29,5	4,5	17,0	18,5	
65-160/110A	65-160/D161	11	19,90	1SV 09	0,55	1,48	3	19,9	21,4	39,8	41,3	4,5	22,9	24,4	
65-160/110	65-160/D168	11	19,90	1SV 10	0,55	1,48	3	19,9	21,4	39,8	41,3	4,5	22,9	24,4	
65-160/150	65-160/D178	15	26,00	1SV 10	0,55	1,48	3	26,0	27,5	52,0	53,5	4,5	29,0	30,5	
65-200/150	65-200/D187	15	26,00	1SV 11	0,55	1,48	3	26,0	27,5	52,0	53,5	4,5	29,0	30,5	
65-200/185	65-200/D198	18,5	33,20	1SV 12	0,75	1,70	3	33,2	34,9	66,4	68,1	4,7	36,2	37,9	
65-200/220	65-200/D210	22	39,10	1SV 12	0,75	1,70	3	39,1	40,8	78,2	79,9	4,7	42,1	43,8	
65-250/220	65-250/D220	22	39,10	1SV 13	0,75	1,70	3	39,1	40,8	78,2	79,9	4,7	42,1	43,8	
65-250/300	65-250/D241	30	53,60	1SV 15	0,75	1,70	3	53,6	55,3	107,2	108,9	4,7	56,6	58,3	
65-250/370	65-250/D258	37	65,80	1SV 17	1,1	2,39	3	65,8	68,2	131,6	134,0	5,4	68,8	71,2	
80-160/150	80-160/D163	15	26,00	1SV 09	0,55	1,48	3	26,0	27,5	52,0	53,5	4,5	29,0	30,5	
80-160/185	80-160/D173	18,5	33,20	1SV 10	0,55	1,48	3	33,2	34,7	66,4	67,9	4,5	36,2	37,7	
80-200/220	80-200/D189	22	39,10	1SV 11	0,55	1,48	3	39,1	40,6	78,2	79,7	4,5	42,1	43,6	
80-200/300	80-200/D207	30	53,60	1SV 12	0,75	1,70	3	53,6	55,3	107,2	108,9	4,7	56,6	58,3	
80-250/370	80-250/D225	37	65,80	1SV 15	0,75	1,70	3	65,8	67,5	131,6	133,3	4,7	68,8	70,5	
80-250/450	80-250/D238	45	78,00	1SV 15	0,75	1,70	3	78,0	79,7	156,0	157,7	4,7	81,0	82,7	
80-250/550	80-250/D256	55	95,00	1SV 17	1,1	2,39	3	95,0	97,4	190,0	192,4	5,4	98,0	100,4	

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

MOD_EN-FHF_2p50-en_a_te

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 sinle phase power supply 1x230Vac

EN 12845 FIRE-FIGHTING MODULES GEM..F100-F125 SERIES

ELECTRICAL DATA TABLE AT 50 Hz

SERVICE PUMP 3 X 400 V				ELECTRIC JOCKEY PUMP			CURRENT (*) ABSORBED SET							
							1x230	3x400				3x400 + 1x230		
TYPE FHF..		NOMINAL POWER				3x400V	GEMK	GEM	GEM..J	GEM + GEM	GEM..J + GEM	KIT PIL + GEMK	GEM + GEMK	GEM..J + GEMK
ELECTRIC PUMP	PUMP	Pn kW	In A											
				TYPE	Pn kW	In A	A	A	A	A	A	A	A	A
100-160/185	100-160/D150	18,5	33,2	1SV 08	0,55	1,48	3	33,2	34,7	66,4	67,9	4,5	36,2	37,7
100-160/220	100-160/D165	22	39,1	1SV 09	0,55	1,48	3	39,1	40,6	78,2	79,7	4,5	42,1	43,6
100-160/300	100-160/D185	30	53,6	1SV 11	0,55	1,48	3	53,6	55,1	107,2	108,7	4,5	56,6	58,1
100-200/185	100-200/D168	18,5	33,2	1SV 10	0,55	1,48	3	33,2	34,7	66,4	67,9	4,5	36,2	37,7
100-200/300	100-200/D192	30	53,6	1SV 11	0,55	1,48	3	53,6	55,1	107,2	108,7	4,5	56,6	58,1
100-200/370	100-200/D203	37	65,8	1SV 12	0,75	1,7	3	65,8	67,5	131,6	133,3	4,7	68,8	70,5
100-200/450	100-200/D213	45	78,0	1SV 13	0,75	1,7	3	78,0	79,7	156,0	157,7	4,7	81,0	82,7
100-250/300	100-250/D200	30	53,6	1SV 12	0,75	1,7	3	53,6	55,3	107,2	108,9	4,7	56,6	58,3
100-250/450	100-250/D221	45	78,0	1SV 15	0,75	1,7	3	78,0	79,7	156,0	157,7	4,7	81,0	82,7
100-250/550	100-250/D235	55	95,0	1SV 15	0,75	1,7	3	95,0	96,7	190,0	191,7	4,7	98,0	99,7
100-250/750	100-250/D254	75	129,0	1SV 17	1,1	2,39	3	129,0	131,4	258,0	260,4	5,4	132,0	134,4
100-250/900	100-250/D267	90	154,0	1SV 19	1,1	2,39	3	154,0	156,4	308,0	310,4	5,4	157,0	159,4
125-200/300	125-200/D180	30	53,6	1SV 09	0,55	1,48	3	53,6	55,1	107,2	108,7	4,5	56,6	58,1
125-200/450	125-200/D206	45	78,0	1SV 11	0,55	1,48	3	78,0	79,5	156,0	157,5	4,5	81,0	82,5
125-200/550	125-200/D216	55	95,0	1SV 12	0,75	1,7	3	95,0	96,7	190,0	191,7	4,7	98,0	99,7
125-270/750	125-270/D224	75	129,0	1SV 13	0,75	1,7	3	129,0	130,7	258,0	259,7	4,7	132,0	133,7
125-270/900	125-270/D237	90	154,0	1SV 15	0,75	1,7	3	154,0	155,7	308,0	309,7	4,7	157,0	158,7
125-270/1100	125-270/D253	110	188,0	1SV 17	1,1	2,39	4,5	188,0	190,4	376,0	378,4	6,9	192,5	194,9
125-270/1320	125-270/D266	132	223,0	1SV 19	1,1	2,39	4,5	223,0	225,4	446,0	448,4	6,9	227,5	229,9

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

MOD_EN-FHF100_2p50-en_a_te

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 sinle phase power supply 1x230Vac

**EN 12845
fire-fighting
pressure
module**

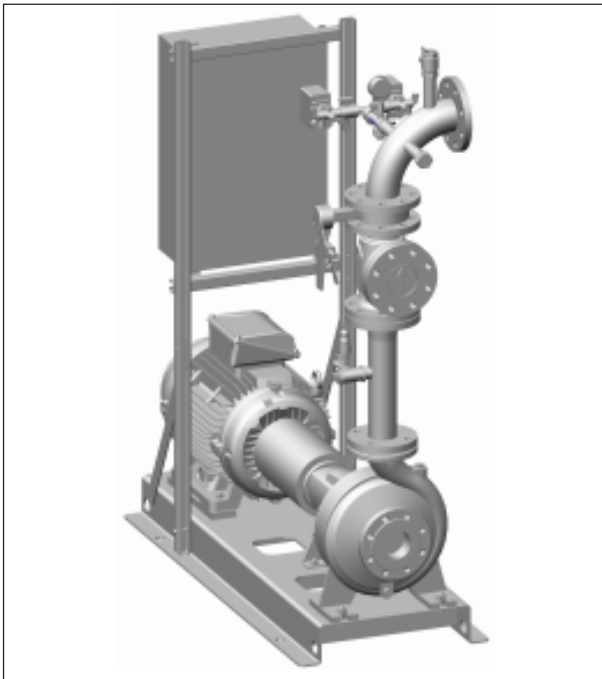
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..F
series
Single electric
service pump module**

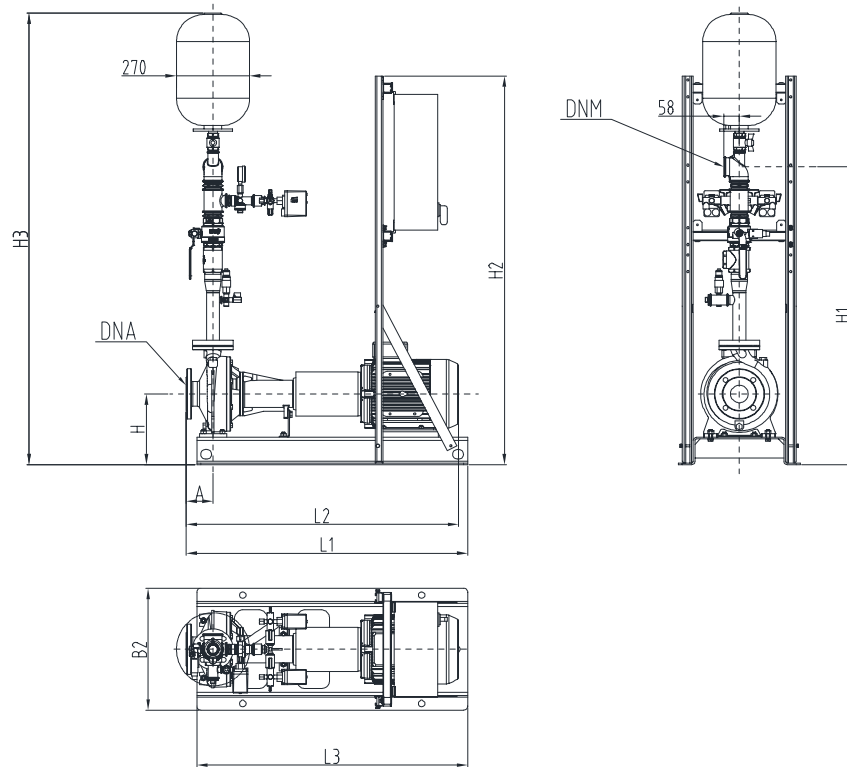


SPECIFICATIONS

- **Flow:** up to 650 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 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 132 kW.
- **Horizontal electric service pump:**
 - FHF series (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

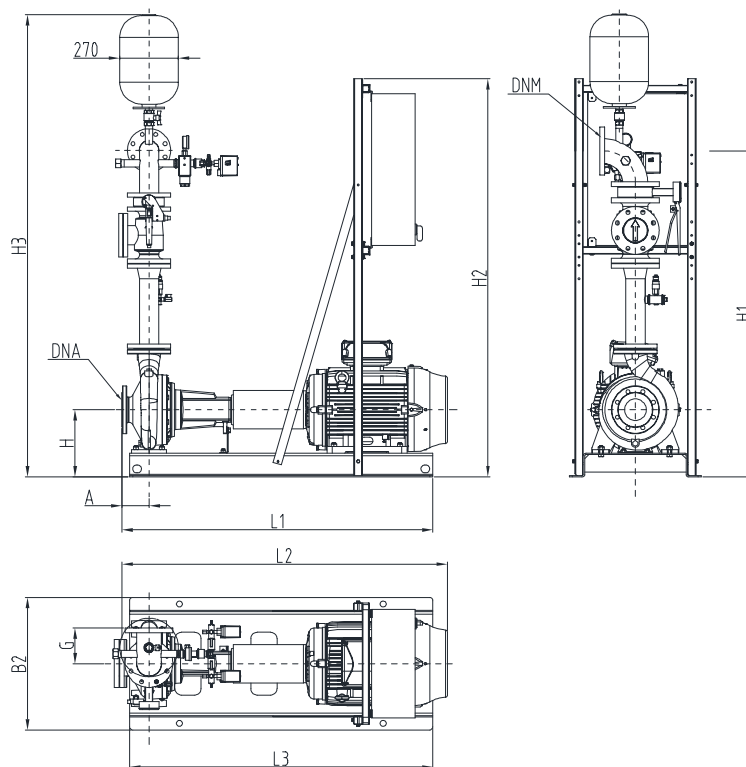
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F32-F80 SERIES

1



GEM10-FIL_B_DD

2



GEM10-FLG_B_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F32-F80 SERIES

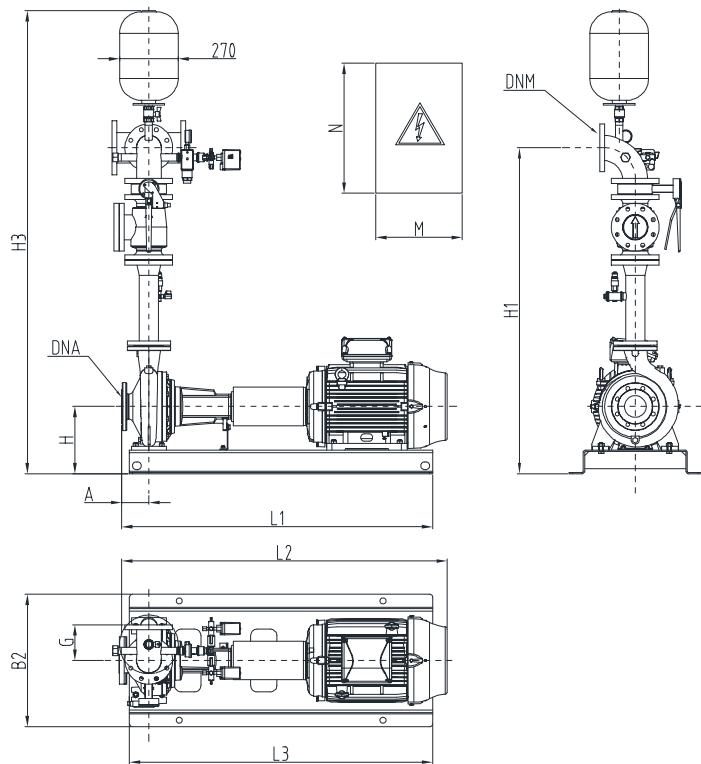
GEM	DRW N°	DNA	DNM	A	B2	G	H	H1	H2	H3	L1	L2	L3
FHF32-125/07	1	50	Rp 2"	80	360	/	212	1017	1236	1587	820	845	800
FHF32-125/11	1	50	Rp 2"	80	360	/	212	1017	1236	1587	820	845	800
FHF32-160/15	1	50	Rp 2"	80	390	/	232	1057	1236	1627	920	889	900
FHF32-160/22	1	50	Rp 2"	80	390	/	232	1057	1236	1627	920	889	900
FHF32-200/30	1	50	Rp 2"	80	390	/	260	1105	1236	1675	920	920	900
FHF32-200/40	1	50	Rp 2"	80	390	/	260	1105	1236	1675	920	923	900
FHF40-125/11	1	65	Rp 2"	80	360	/	212	1010	1236	1580	920	845	900
FHF40-125/15	1	65	Rp 2"	80	390	/	212	1010	1236	1580	920	889	900
FHF40-125/22	1	65	Rp 2"	80	390	/	212	1010	1236	1580	920	889	900
FHF40-160/30	1	65	Rp 2"	80	390	/	232	1050	1236	1620	920	920	900
FHF40-160/40	1	65	Rp 2"	80	390	/	232	1050	1236	1620	920	923	900
FHF40-200/55	1	65	Rp 2"	100	450	/	260	1098	1436	1668	1040	1007	1000
FHF40-200/75	1	65	Rp 2"	100	450	/	260	1098	1436	1668	1040	1007	1000
FHF40-250/110A	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
FHF40-250/110	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
FHF40-250/150	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
FHF50-125/22	2	65	65	100	390	185	232	1217	1236	1847	940	909	900
FHF50-125/30	2	65	65	100	390	185	232	1217	1236	1847	940	940	900
FHF50-125/40	2	65	65	100	390	185	232	1217	1236	1847	940	943	900
FHF50-160/55	2	65	65	100	450	185	260	1265	1436	1895	1040	1007	1000
FHF50-160/75	2	65	65	100	450	185	260	1265	1436	1895	1040	1007	1000
FHF50-200/110A	2	65	65	100	490	185	260	1285	1436	1915	1160	1164	1120
FHF50-200/110	2	65	65	100	490	185	260	1285	1436	1915	1160	1164	1120
FHF50-250/150	2	65	65	100	540	185	280	1330	1436	1960	1275	1164	1250
FHF50-250/185	2	65	65	100	540	185	280	1330	1436	1960	1275	1164	1250
FHF50-250/220	2	65	65	100	540	185	280	1330	1436	1960	1275	1224	1250
FHF65-125/40	2	80	80	100	390	215	260	1333	1436	1963	925	943	900
FHF65-125/55	2	80	80	100	450	215	260	1333	1436	1963	1025	1007	1000
FHF65-125/75	2	80	80	100	450	215	260	1333	1436	1963	1025	1007	1000
FHF65-160/110A	2	80	80	100	540	215	260	1353	1436	1983	1275	1164	1250
FHF65-160/110	2	80	80	100	540	215	260	1353	1436	1983	1275	1164	1250
FHF65-160/150	2	80	80	100	540	215	260	1353	1436	1983	1275	1164	1250
FHF65-200/150	2	80	80	100	540	215	280	1398	1436	2028	1275	1164	1250
FHF65-200/185	2	80	80	100	540	215	280	1398	1436	2028	1275	1164	1250
FHF65-200/220	2	80	80	100	540	215	280	1398	1436	2028	1275	1224	1250
FHF65-250/220	2	80	80	100	540	215	310	1453	1436	2083	1260	1334	1250
FHF65-250/300	2	80	80	100	610	215	310	1453	1836	2083	1410	1477	1400
FHF65-250/370	2	80	80	100	610	215	310	1453	1836	2083	1410	1477	1400
FHF80-160/150	2	100	100	125	540	165	280	1418	1436	2048	1300	1189	1250
FHF80-160/185	2	100	100	125	540	165	280	1418	1436	2048	1300	1189	1250
FHF80-200/220	2	100	100	125	540	165	280	1443	1436	2073	1300	1359	1250
FHF80-200/300	2	100	100	125	610	165	310	1473	1836	2103	1450	1502	1400
FHF80-250/370	2	100	100	125	610	165	310	1503	1836	2133	1435	1502	1400
FHF80-250/450	2	100	100	125	610	165	365	1558	1836	2188	1435	1591	1400
FHF80-250/550	2	100	100	125	660	165	390	1583	1837	2213	1635	1700	1600

Dimensions in mm. Tolerance ± 10 mm.

gem10-en_fh_f_a_td

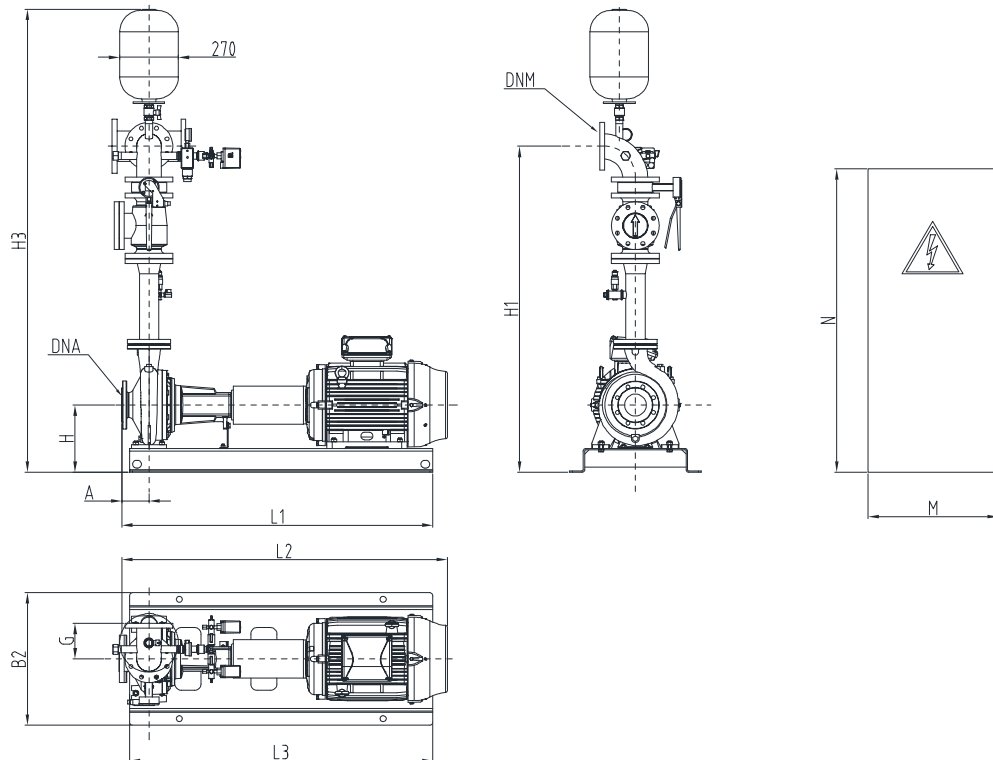
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F100-F125 SERIES

1



GEM10-FHF100-M_B_DD

2



GEM10-FHF100-P_B_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F100-F125 SERIES

GEM	DRW N°	DNA	DNM	A	B2	G	H	H1	H3	L1	L2	L3	M	N
FHF100-160/185	1	125	125	125	550	200	298	1600	2230	1305	1391	1270	400	600
FHF100-160/220	1	125	125	125	550	200	298	1600	2230	1305	1440	1270	400	600
FHF100-160/300	1	125	125	125	650	200	318	1620	2250	1485	1560	1450	500	700
FHF100-200/185	1	125	125	125	550	200	273	1575	2205	1305	1391	1270	400	600
FHF100-200/300	1	125	125	140	650	200	293	1595	2225	1500	1560	1450	500	700
FHF100-200/370	1	125	125	140	650	200	293	1595	2225	1500	1560	1450	500	700
FHF100-200/450	1	125	125	140	670	200	318	1620	2250	1500	1595	1450	600	800
FHF100-250/300	1	125	125	140	650	200	318	1620	2250	1500	1575	1450	500	700
FHF100-250/450	1	125	125	140	650	200	318	1620	2250	1500	1610	1450	600	800
FHF100-250/550	1	125	125	140	670	200	343	1645	2275	1500	1715	1450	600	800
FHF100-250/750	2	125	125	140	740	200	373	1675	2305	1620	1790	1570	600	1500
FHF100-250/900	2	125	125	140	740	200	373	1675	2305	1620	1790	1570	600	1500
FHF125-200/300	1	150	150	140	650	245	343	1794	2424	1500	1635	1450	500	700
FHF125-200/450	1	150	150	140	670	245	343	1794	2424	1500	1670	1450	600	800
FHF125-200/550	1	150	150	140	720	245	343	1794	2424	1620	1775	1570	600	800
FHF125-270/750	2	150	150	140	750	245	423	1914	2544	1750	1850	1700	600	1500
FHF125-270/900	2	150	150	140	750	245	423	1914	2544	1750	1850	1700	600	1500
FHF125-270/1100	2	150	150	140	870	245	478	1969	2599	1750	1990	1700	800	1700
FHF125-270/1320	2	150	150	140	870	245	478	1969	2599	1750	1990	1700	800	1700

Dimensions in mm. Tolerance ± 10 mm.

gem10_fhf100-en_a_td

Up to 55 kW, wall-mounted electric control panels 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

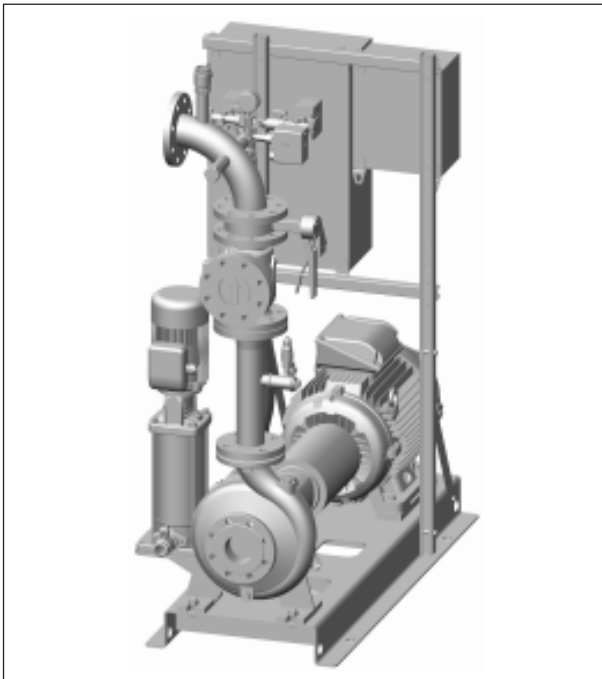
CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..J..F
series**

**Single electric service pump module,
with jockey pump on board**

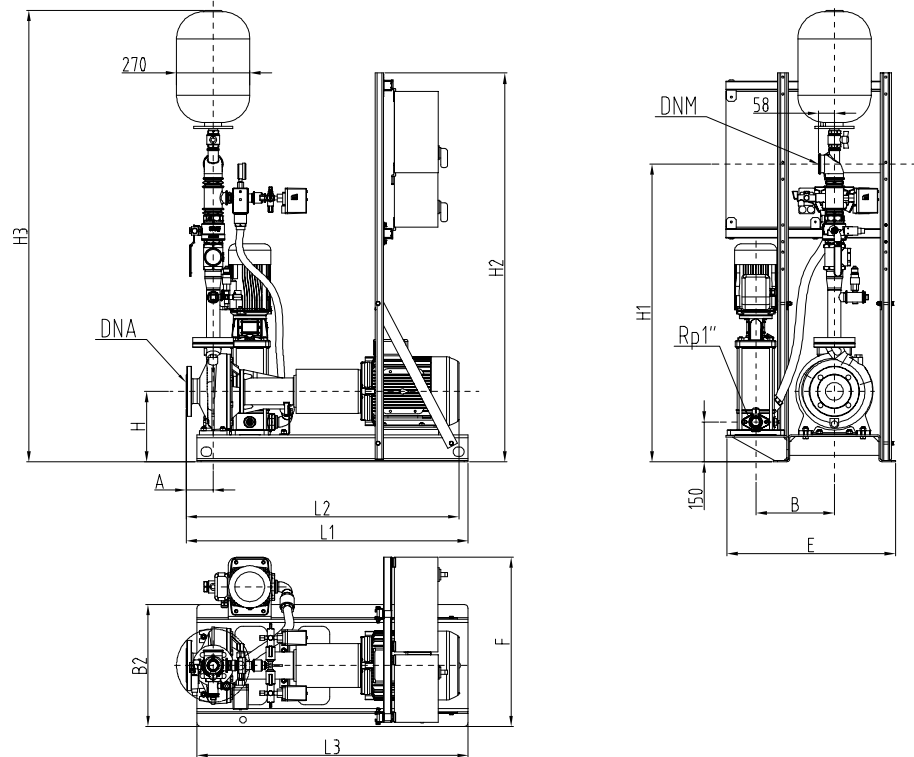


SPECIFICATIONS

- **Flow:** up to 650 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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:**
 - FHF series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

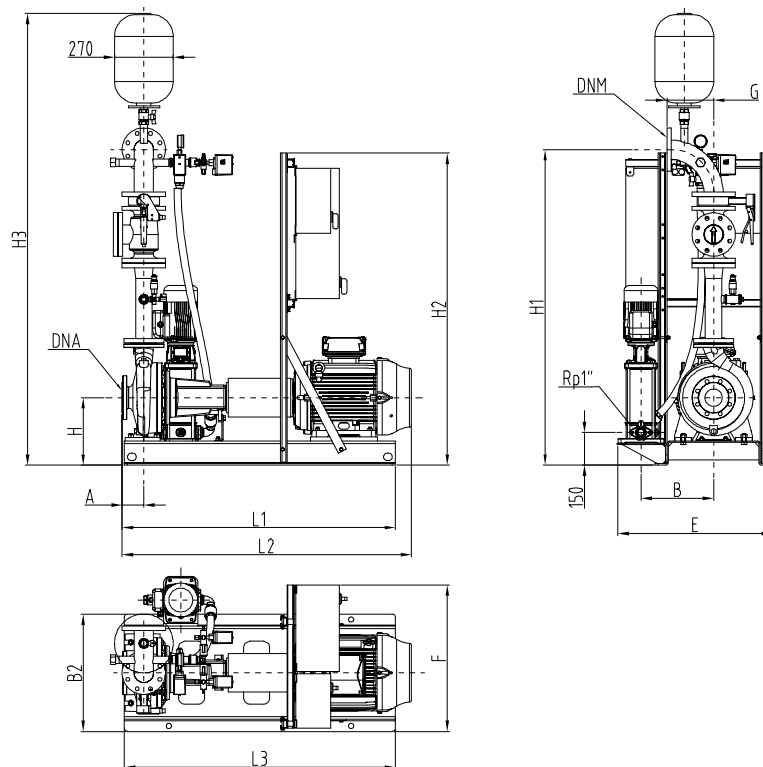
**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...J..F32-F80 SERIES**

1



GEM11-FIL_A_DD

2



GEM11-FLG_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...F32-F80 SERIES

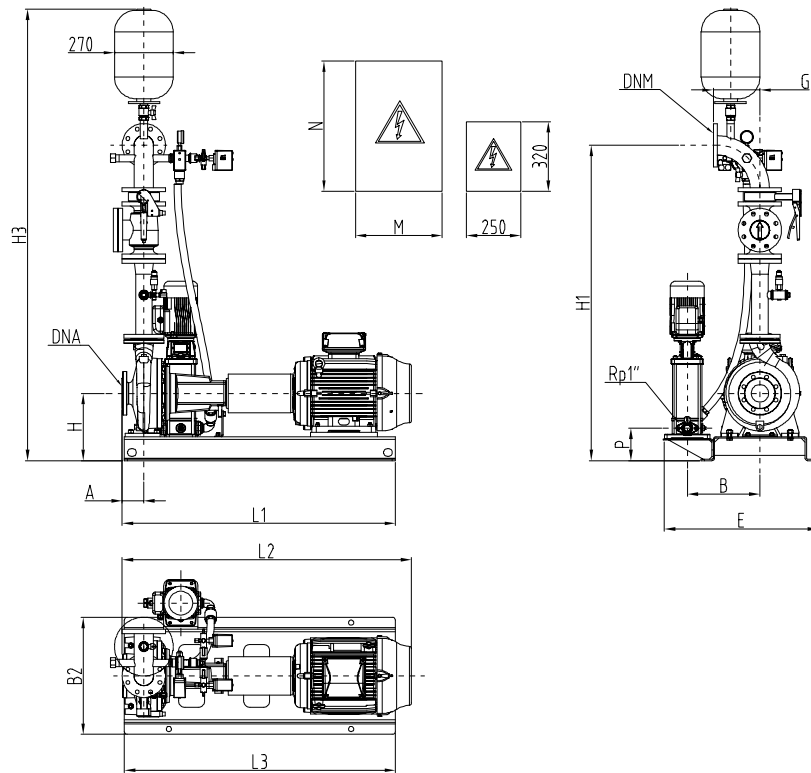
GEMJ	DRW N°	DNA	DNM	A	B	B2	E	F	G	H	H1	H2	H3	L1	L2	L3
FHF32-125/07	1	50	Rp 2"	80	255	360	545	610	/	212	1017	1236	1587	820	845	800
FHF32-125/11	1	50	Rp 2"	80	255	360	545	610	/	212	1017	1236	1587	820	845	800
FHF32-160/15	1	50	Rp 2"	80	270	390	575	610	/	232	1057	1236	1627	920	889	900
FHF32-160/22	1	50	Rp 2"	80	270	390	575	610	/	232	1057	1236	1627	920	889	900
FHF32-200/30	1	50	Rp 2"	80	270	390	575	610	/	260	1105	1236	1675	920	920	900
FHF32-200/40	1	50	Rp 2"	80	270	390	575	610	/	260	1105	1236	1675	920	923	900
FHF40-125/11	1	65	Rp 2"	80	270	360	560	610	/	212	1010	1236	1580	920	845	900
FHF40-125/15	1	65	Rp 2"	80	270	390	575	610	/	212	1010	1236	1580	920	889	900
FHF40-125/22	1	65	Rp 2"	80	270	390	575	610	/	212	1010	1236	1580	920	889	900
FHF40-160/30	1	65	Rp 2"	80	270	390	575	610	/	232	1050	1236	1620	920	920	900
FHF40-160/40	1	65	Rp 2"	80	270	390	575	610	/	232	1050	1236	1620	920	923	900
FHF40-200/55	1	65	Rp 2"	100	290	450	625	610	/	260	1098	1436	1668	1040	1007	1000
FHF40-200/75	1	65	Rp 2"	100	290	450	625	610	/	260	1098	1436	1668	1040	1007	1000
FHF40-250/110A	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
FHF40-250/110	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
FHF40-250/150	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
FHF50-125/22	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	909	900
FHF50-125/30	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	940	900
FHF50-125/40	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	943	900
FHF50-160/55	2	65	65	100	290	450	625	610	185	260	1265	1436	1895	1040	1007	1000
FHF50-160/75	2	65	65	100	290	450	625	610	185	260	1265	1436	1895	1040	1007	1000
FHF50-200/110A	2	65	65	100	310	490	665	660	185	260	1285	1436	1915	1160	1164	1120
FHF50-200/110	2	65	65	100	310	490	665	660	185	260	1285	1436	1915	1160	1164	1120
FHF50-250/150	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1164	1250
FHF50-250/185	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1164	1250
FHF50-250/220	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1224	1250
FHF65-125/40	2	80	80	100	270	390	575	610	215	260	1333	1436	1963	925	943	900
FHF65-125/55	2	80	80	100	290	450	625	610	215	260	1333	1436	1963	1025	1007	1000
FHF65-125/75	2	80	80	100	290	450	625	610	215	260	1333	1436	1963	1025	1007	1000
FHF65-160/110A	2	80	80	100	335	540	715	660	215	260	1353	1436	1983	1275	1164	1250
FHF65-160/110	2	80	80	100	335	540	715	660	215	260	1353	1436	1983	1275	1164	1250
FHF65-160/150	2	80	80	100	335	540	715	660	215	260	1353	1436	1983	1275	1164	1250
FHF65-200/150	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1164	1250
FHF65-200/185	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1164	1250
FHF65-200/220	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1224	1250
FHF65-250/220	2	80	80	100	335	540	715	660	215	310	1453	1436	2083	1260	1334	1250
FHF65-250/300	2	80	80	100	360	610	775	560	215	310	1453	1836	2083	1410	1477	1400
FHF65-250/370	2	80	80	100	360	610	775	560	215	310	1453	1836	2083	1410	1477	1400
FHF80-160/150	2	100	100	125	335	540	715	660	165	280	1418	1436	2048	1300	1189	1250
FHF80-160/185	2	100	100	125	335	540	715	660	165	280	1418	1436	2048	1300	1189	1250
FHF80-200/220	2	100	100	125	335	540	715	660	165	280	1443	1436	2073	1300	1359	1250
FHF80-200/300	2	100	100	125	360	610	775	560	165	310	1473	1836	2103	1450	1502	1400
FHF80-250/370	2	100	100	125	360	610	775	560	165	310	1503	1836	2133	1435	1502	1400
FHF80-250/450	2	100	100	125	360	610	775	600	165	365	1558	1836	2188	1435	1591	1400
FHF80-250/550	2	100	100	125	385	660	825	610	165	390	1583	1837	2213	1635	1700	1600

Dimensions in mm. Tolerance ± 10 mm.

gem11_fhf-en_a_td

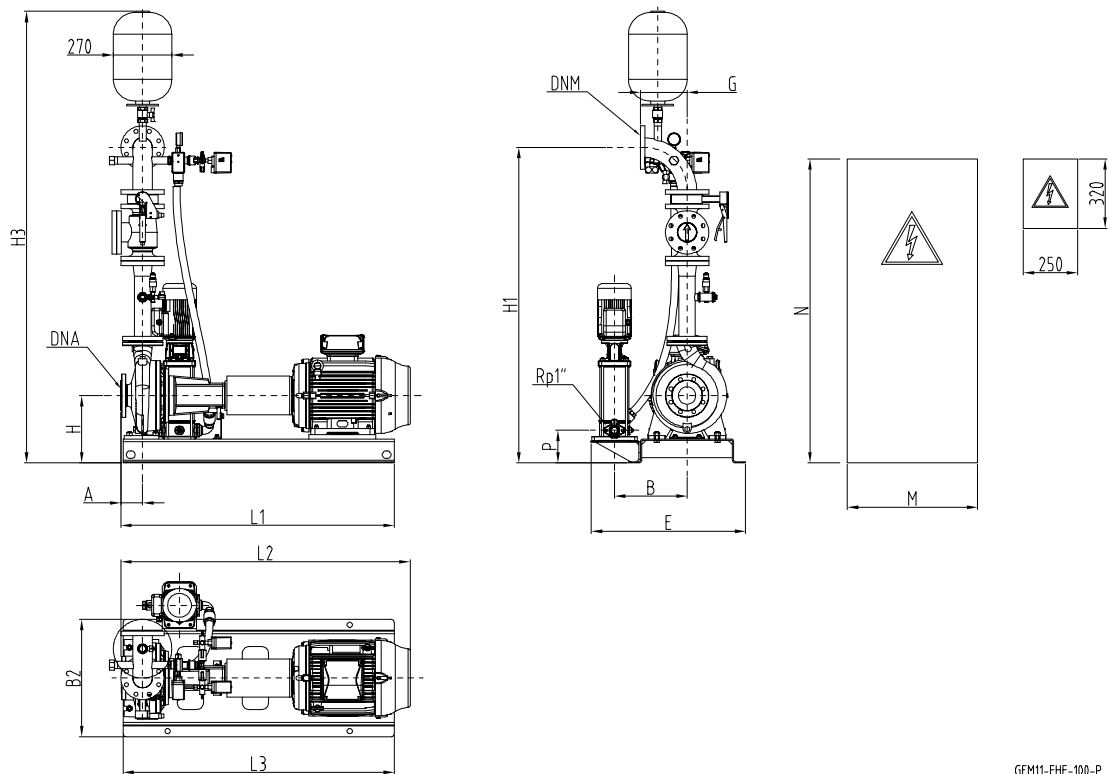
**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...F100-F125 SERIES**

1



GEM11-FHF100-M_A_DD

2



GEM11-FHF-100-P_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...J..F100-F125 SERIES

GEMJ	DRW N°	DNA	DNM	A	B	B2	E	G	H	H1	H3	L1	L2	L3	M	N	P
FHF100-160/185	1	125	125	125	335	550	715	200	298	1600	2230	1305	1391	1270	400	600	150
FHF100-160/220	1	125	125	125	335	550	715	200	298	1600	2230	1305	1440	1270	400	600	150
FHF100-160/300	1	125	125	125	335	650	715	200	318	1620	2250	1485	1560	1450	500	700	135
FHF100-200/185	1	125	125	125	360	550	775	200	273	1575	2205	1305	1391	1270	400	600	150
FHF100-200/300	1	125	125	140	360	650	775	200	293	1595	2225	1500	1560	1450	500	700	135
FHF100-200/370	1	125	125	140	360	650	775	200	293	1595	2225	1500	1560	1450	500	700	135
FHF100-200/450	1	125	125	140	385	670	825	200	318	1620	2250	1500	1595	1450	600	800	135
FHF100-250/300	1	125	125	140	340	650	725	200	318	1620	2250	1500	1575	1450	500	700	135
FHF100-250/450	1	125	125	140	340	650	725	200	318	1620	2250	1500	1610	1450	600	800	135
FHF100-250/550	1	125	125	140	305	670	735	200	343	1645	2275	1500	1715	1450	600	800	135
FHF100-250/750	2	125	125	140	340	740	725	200	373	1675	2305	1620	1790	1570	600	1500	135
FHF100-250/900	2	125	125	140	305	740	735	200	373	1675	2305	1620	1790	1570	600	1500	135
FHF125-200/300	1	150	150	140	305	650	735	245	343	1794	2424	1500	1635	1450	500	700	135
FHF125-200/450	1	150	150	140	305	670	755	245	343	1794	2424	1500	1670	1450	600	800	135
FHF125-200/550	1	150	150	140	305	720	735	245	343	1794	2424	1620	1775	1570	600	800	135
FHF125-270/750	2	150	150	140	305	750	735	245	423	1914	2544	1750	1850	1700	600	1500	195
FHF125-270/900	2	150	150	140	305	750	755	245	423	1914	2544	1750	1850	1700	600	1500	195
FHF125-270/1100	2	150	150	140	340	870	825	245	478	1969	2599	1750	1990	1700	800	1700	215
FHF125-270/1320	2	150	150	140	340	870	825	245	478	1969	2599	1750	1990	1700	800	1700	215

Dimensions in mm. Tolerance ± 10 mm.

gem11_fhf100-en_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.

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

**EN 12845
fire-fighting
pressure
module**

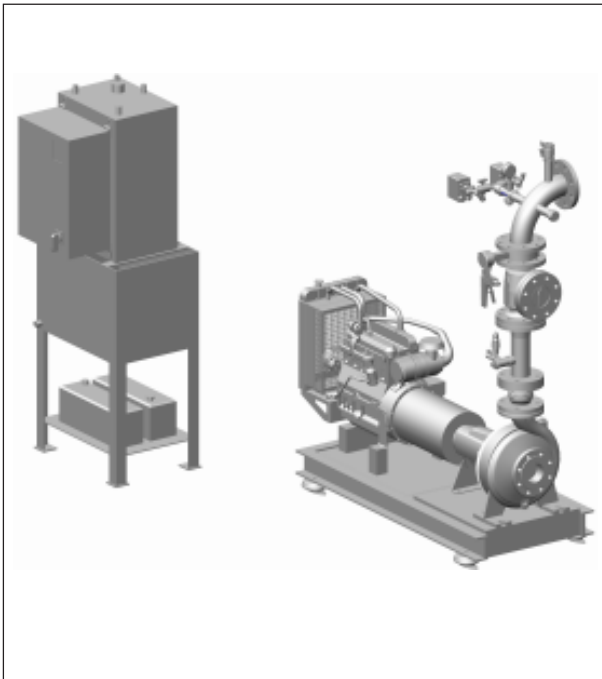
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEMK..F
series
Single diesel engine service
pump module**

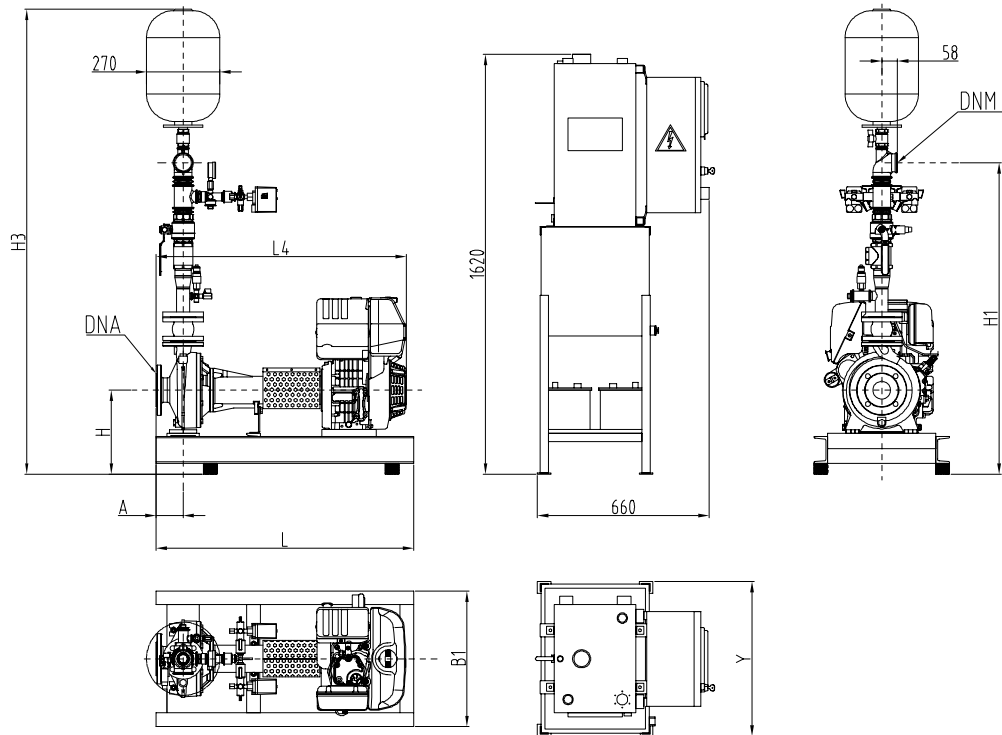


SPECIFICATIONS

- **Flow:** up to 650 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - 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:**
 - Diesel engine service pump IP54.
 - Diesel engine starting: from batteries.
- **Maximum power:**
 - Diesel engine service pump 177,3 kW.
- **Horizontal diesel engine service pump:**
 - FHF series.
- **Maximum operating pressure:** 12 bar.

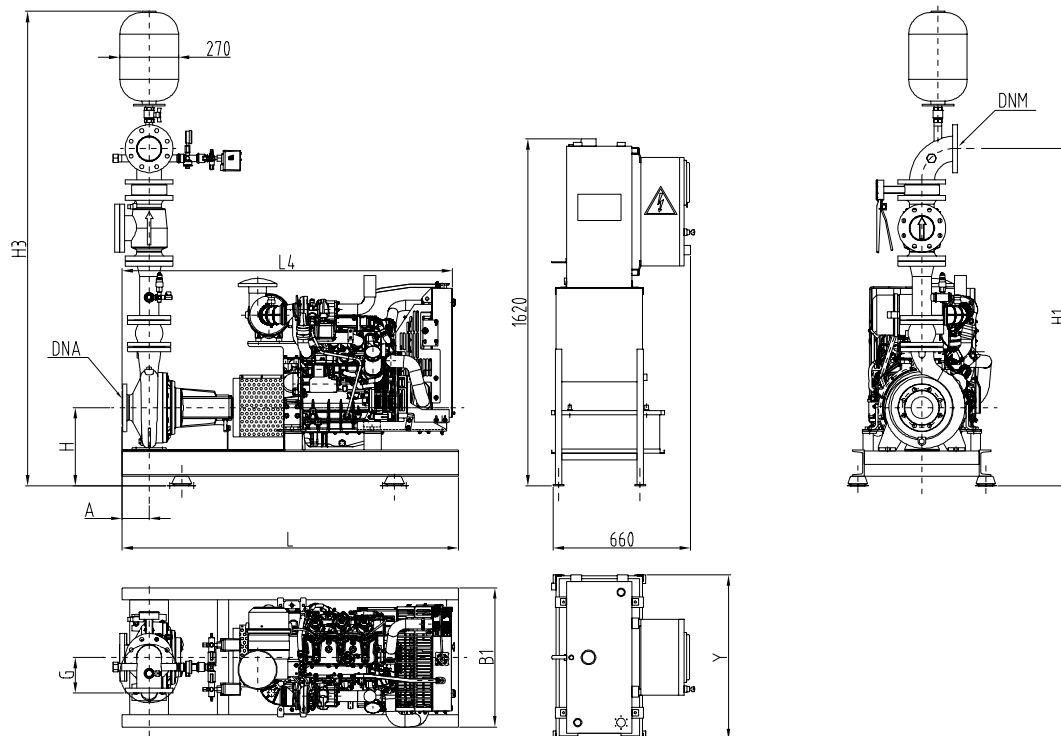
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F32-F80 SERIES

1



GEM000-FIL_A_DD

2



GEM000-FLG_A_DD

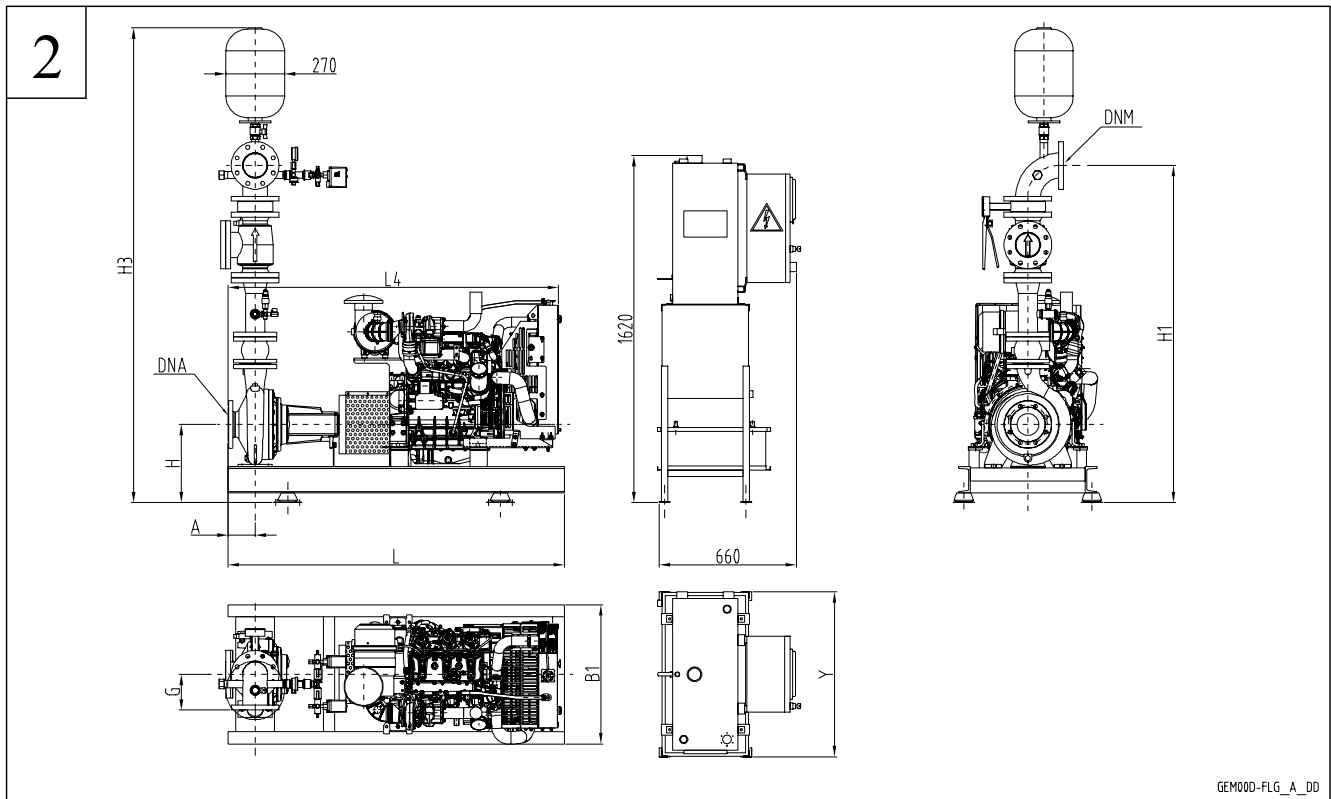
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F32-F80 SERIES

GEMK	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
FHF32-125/D119	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	570
FHF32-125/D136	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	570
FHF32-160/D150	1	50	Rp 2"	80	500	/	282	1107	1677	950	885	570
FHF32-160/D164	1	50	Rp 2"	80	500	/	282	1107	1677	950	885	570
FHF32-200/D188	1	50	Rp 2"	80	500	/	260	1105	1675	950	885	570
FHF32-200/D204	1	50	Rp 2"	80	500	/	260	1105	1675	950	885	570
FHF40-125/D112	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	570
FHF40-125/D122	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	570
FHF40-125/D143	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	570
FHF40-160/D159	1	65	Rp 2"	80	500	/	282	1100	1670	950	885	570
FHF40-160/D171	1	65	Rp 2"	80	500	/	282	1100	1670	950	885	570
FHF40-200/D190	1	65	Rp 2"	100	500	/	310	1148	1718	950	921	570
FHF40-200/D209	1	65	Rp 2"	100	500	/	310	1148	1718	950	923	570
FHF40-250/D218	1	65	Rp 2"	100	500	/	280	1163	1733	950	997	570
FHF40-250/D233	1	65	Rp 2"	100	570	/	330	1213	1783	1250	1187	570
FHF40-250/D251	1	65	Rp 2"	100	570	/	330	1213	1783	1250	1187	570
FHF50-125/D119	2	65	65	100	500	185	282	1267	1897	950	905	570
FHF50-125/D130	2	65	65	100	500	185	282	1267	1897	950	905	570
FHF50-125/D139	2	65	65	100	500	185	282	1267	1897	950	905	570
FHF50-160/D158	2	65	65	100	500	185	310	1315	1945	950	921	570
FHF50-160/D174	2	65	65	100	500	185	310	1315	1945	950	923	570
FHF50-200/D197	2	65	65	100	500	185	310	1335	1965	950	997	570
FHF50-200/D209	2	65	65	100	570	185	360	1385	2015	1250	1187	570
FHF50-250/D224	2	65	65	100	570	185	330	1380	2010	1250	1187	570
FHF50-250/D237	2	65	65	100	570	185	380	1430	2060	1250	1307	570
FHF50-250/D250	2	65	65	100	570	185	380	1430	2060	1250	1307	570
FHF65-125/D121	2	80	80	100	500	215	310	1383	2013	950	905	570
FHF65-125/D129	2	80	80	100	500	215	310	1383	2013	950	921	570
FHF65-125/D140	2	80	80	100	500	215	310	1383	2013	950	997	570
FHF65-160/D161	2	80	80	100	500	215	310	1403	2033	950	997	570
FHF65-160/D168	2	80	80	100	570	215	360	1453	2083	1250	1187	570
FHF65-160/D178	2	80	80	100	570	215	360	1453	2083	1250	1187	570
FHF65-200/D187	2	80	80	100	570	215	330	1448	2078	1250	1187	570
FHF65-200/D198	2	80	80	100	570	215	380	1498	2128	1250	1307	570
FHF65-200/D210	2	80	80	100	570	215	380	1498	2128	1250	1307	570
FHF65-250/D220	2	80	80	100	570	215	360	1503	2133	1250	1417	570
FHF65-250/D241	2	80	80	100	640	215	360	1503	2133	1550	1527	570
FHF65-250/D258	2	80	80	100	640	215	360	1503	2133	1550	1527	760
FHF80-160/D163	2	100	100	125	570	165	330	1468	2098	1250	1212	570
FHF80-160/D173	2	100	100	125	570	165	380	1518	2148	1250	1332	570
FHF80-200/D189	2	100	100	125	570	165	380	1543	2173	1250	1442	570
FHF80-200/D207	2	100	100	125	640	165	360	1523	2153	1550	1552	570
FHF80-250/D225	2	100	100	125	640	165	360	1553	2183	1550	1552	760
FHF80-250/D238	2	100	100	125	640	165	365	1558	2188	1550	1552	760
FHF80-250/D256	2	100	100	125	640	165	390	1583	2213	1550	1703	760

Dimensions in mm. Tolerance ± 10 mm.

gemk00d_fhf-en_a_td

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F100-F125 SERIES



GEMK	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
FHF100-160/D150	2	125	125	125	570	200	348	1650	2280	1250	1322	570
FHF100-160/D165	2	125	125	125	570	200	398	1700	2330	1250	1442	570
FHF100-160/D185	2	125	125	125	640	200	368	1670	2300	1550	1552	570
FHF100-200/D168	2	125	125	125	570	200	373	1675	2305	1250	1442	570
FHF100-200/D192	2	125	125	140	640	200	343	1645	2275	1550	1552	570
FHF100-200/D203	2	125	125	140	640	200	343	1645	2275	1550	1552	760
FHF100-200/D213	2	125	125	140	640	200	368	1670	2300	1550	1552	760
FHF100-250/D200	2	125	125	140	640	200	368	1670	2300	1550	1567	570
FHF100-250/D221	2	125	125	140	640	200	368	1670	2300	1550	1567	760
FHF100-250/D235	2	125	125	140	640	200	393	1695	2325	1550	1718	760
FHF100-250/D254	2	125	125	140	700	200	373	1675	2305	1750	2038	760
FHF100-250/D267	2	125	125	140	700	200	373	1675	2305	1750	2038	760
FHF125-200/D180	2	150	150	140	640	245	343	1794	2424	1550	1627	570
FHF125-200/D206	2	150	150	140	640	245	343	1794	2424	1550	1627	700
FHF125-200/D216	2	150	150	140	640	245	393	1844	2474	1550	1778	700
FHF125-270/D224	2	150	150	140	700	245	423	1914	2544	1750	2098	760
FHF125-270/D237	2	150	150	140	700	245	423	1914	2544	1750	2098	760
FHF125-270/D253	2	150	150	140	850	245	478	1969	2599	2300	2038	760
FHF125-270/D266	2	150	150	140	850	245	478	1969	2599	2300	2038	760

Dimensions in mm. Tolerance ± 10 mm.

gemk00d_fhf100-en_a_td

**EN 12845
fire-fighting
pressure
module**

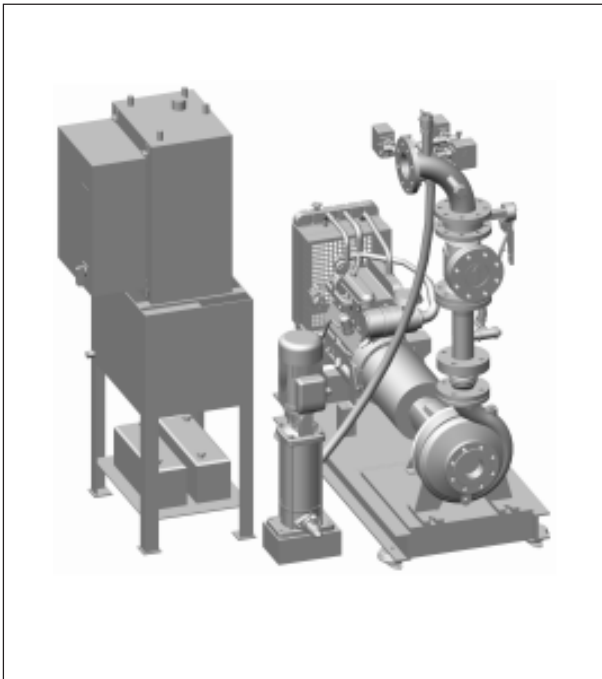
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

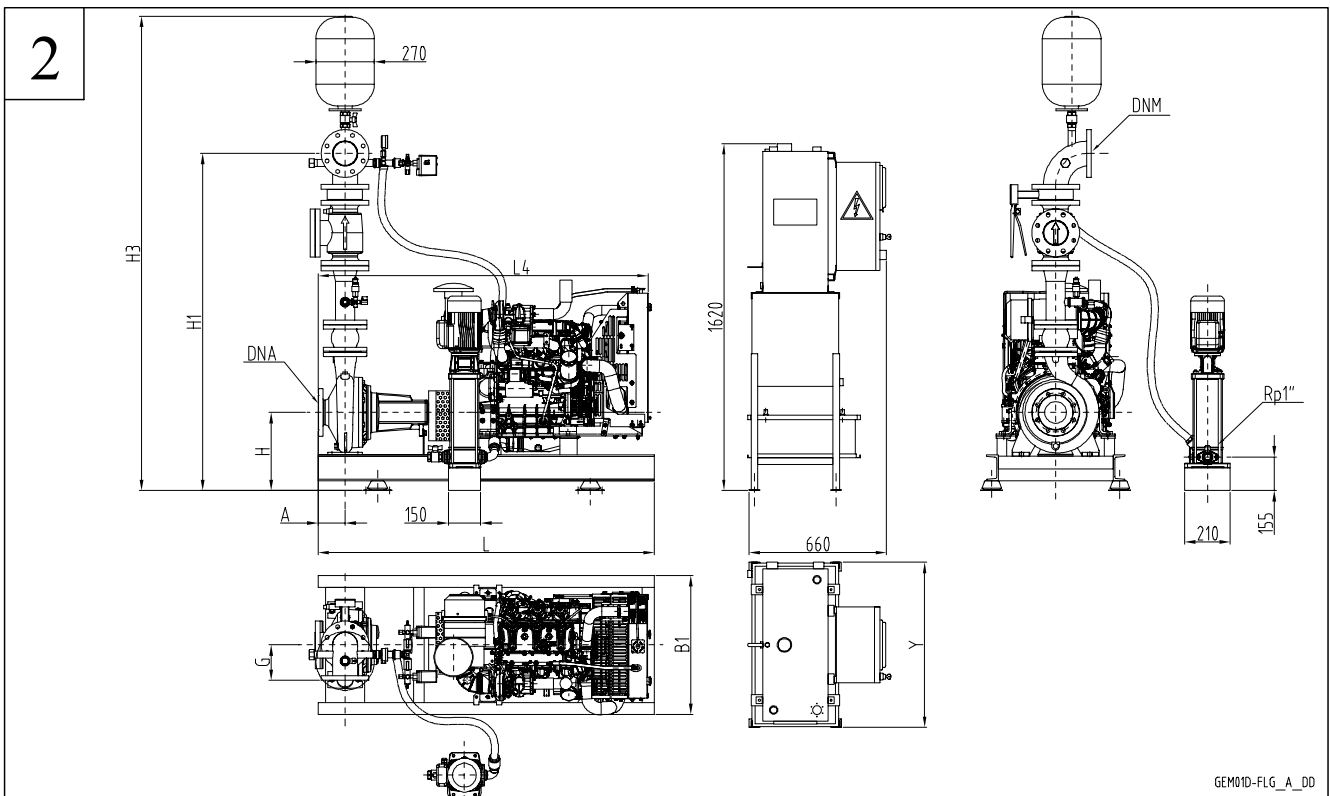
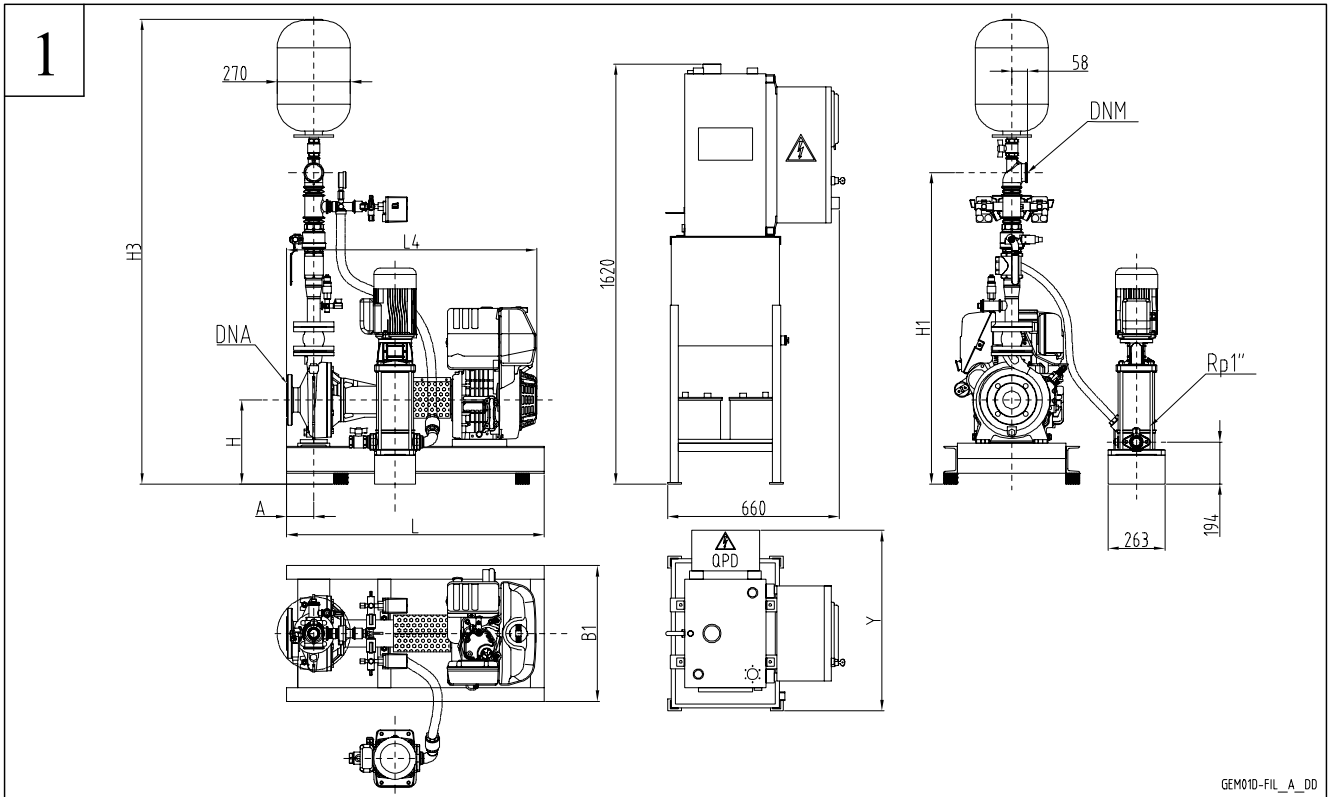
**GEMK..F series + JOCKEY KIT
Single diesel engine service pump module,
with electric jockey pump kit**



SPECIFICATIONS

- **Flow:** up to 650 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Diesel engine service pump 1 x 230 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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 177,3 kW.
- **Horizontal diesel engine service pump:**
 - FHF series.
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F32-F80 SERIES + JOCKEY KIT



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F32-F80 SERIES + JOCKEY KIT

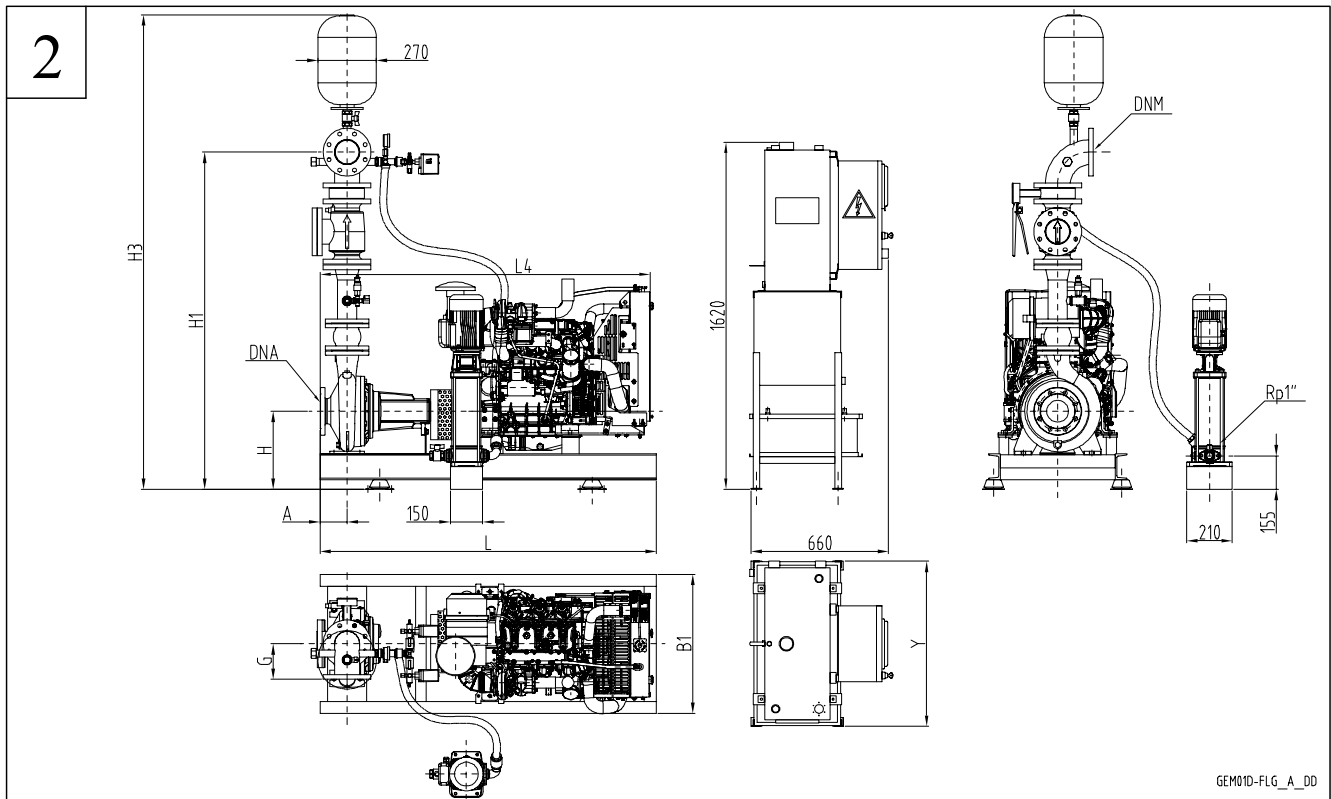
GEMK + KIT PIL.	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
FHF32-125/D119	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	720
FHF32-125/D136	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	720
FHF32-160/D150	1	50	Rp 2"	80	500	/	282	1107	1677	950	885	720
FHF32-160/D164	1	50	Rp 2"	80	500	/	282	1107	1677	950	885	720
FHF32-200/D188	1	50	Rp 2"	80	500	/	260	1105	1675	950	885	720
FHF32-200/D204	1	50	Rp 2"	80	500	/	260	1105	1675	950	885	720
FHF40-125/D112	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	720
FHF40-125/D122	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	720
FHF40-125/D143	1	65	Rp 2"	80	500	/	262	1060	1630	950	885	720
FHF40-160/D159	1	65	Rp 2"	80	500	/	282	1100	1670	950	885	720
FHF40-160/D171	1	65	Rp 2"	80	500	/	282	1100	1670	950	885	720
FHF40-200/D190	1	65	Rp 2"	100	500	/	310	1148	1718	950	921	720
FHF40-200/D209	1	65	Rp 2"	100	500	/	310	1148	1718	950	923	720
FHF40-250/D218	1	65	Rp 2"	100	500	/	280	1163	1733	950	997	720
FHF40-250/D233	1	65	Rp 2"	100	570	/	330	1213	1783	1250	1187	720
FHF40-250/D251	1	65	Rp 2"	100	570	/	330	1213	1783	1250	1187	720
FHF50-125/D119	2	65	65	100	500	185	282	1267	1897	950	905	720
FHF50-125/D130	2	65	65	100	500	185	282	1267	1897	950	905	720
FHF50-125/D139	2	65	65	100	500	185	282	1267	1897	950	905	720
FHF50-160/D158	2	65	65	100	500	185	310	1315	1945	950	921	720
FHF50-160/D174	2	65	65	100	500	185	310	1315	1945	950	923	720
FHF50-200/D197	2	65	65	100	500	185	310	1335	1965	950	997	720
FHF50-200/D209	2	65	65	100	570	185	360	1385	2015	1250	1187	720
FHF50-250/D224	2	65	65	100	570	185	330	1380	2010	1250	1187	720
FHF50-250/D237	2	65	65	100	570	185	380	1430	2060	1250	1307	720
FHF50-250/D250	2	65	65	100	570	185	380	1430	2060	1250	1307	720
FHF65-125/D121	2	80	80	100	500	215	310	1383	2013	950	905	720
FHF65-125/D129	2	80	80	100	500	215	310	1383	2013	950	921	720
FHF65-125/D140	2	80	80	100	500	215	310	1383	2013	950	997	720
FHF65-160/D161	2	80	80	100	500	215	310	1403	2033	950	997	720
FHF65-160/D168	2	80	80	100	570	215	360	1453	2083	1250	1187	720
FHF65-160/D178	2	80	80	100	570	215	360	1453	2083	1250	1187	720
FHF65-200/D187	2	80	80	100	570	215	330	1448	2078	1250	1187	720
FHF65-200/D198	2	80	80	100	570	215	380	1498	2128	1250	1307	720
FHF65-200/D210	2	80	80	100	570	215	380	1498	2128	1250	1307	720
FHF65-250/D220	2	80	80	100	570	215	360	1503	2133	1250	1417	720
FHF65-250/D241	2	80	80	100	640	215	360	1503	2133	1550	1527	720
FHF65-250/D258	2	80	80	100	640	215	360	1503	2133	1550	1527	910
FHF80-160/D163	2	100	100	125	570	165	330	1468	2098	1250	1212	720
FHF80-160/D173	2	100	100	125	570	165	380	1518	2148	1250	1332	720
FHF80-200/D189	2	100	100	125	570	165	380	1543	2173	1250	1442	720
FHF80-200/D207	2	100	100	125	640	165	360	1523	2153	1550	1552	720
FHF80-250/D225	2	100	100	125	640	165	360	1553	2183	1550	1552	910
FHF80-250/D238	2	100	100	125	640	165	365	1558	2188	1550	1552	910
FHF80-250/D256	2	100	100	125	640	165	390	1583	2213	1550	1703	910

Dimensions in mm. Tolerance ± 10 mm.

gemk01d_fhf-en_a_td

Fix the jockey pump control panel to the diesel engine tank.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..F100-F125 SERIES + JOCKEY KIT



GEMK + KIT PIL.	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
FHF100-160/D150	2	125	125	125	570	200	348	1650	2280	1250	1322	720
FHF100-160/D165	2	125	125	125	570	200	398	1700	2330	1250	1442	720
FHF100-160/D185	2	125	125	125	640	200	368	1670	2300	1550	1552	720
FHF100-200/D168	2	125	125	125	570	200	373	1675	2305	1250	1442	720
FHF100-200/D192	2	125	125	140	640	200	343	1645	2275	1550	1552	720
FHF100-200/D203	2	125	125	140	640	200	343	1645	2275	1550	1552	910
FHF100-200/D213	2	125	125	140	640	200	368	1670	2300	1550	1552	910
FHF100-250/D200	2	125	125	140	640	200	368	1670	2300	1550	1567	720
FHF100-250/D221	2	125	125	140	640	200	368	1670	2300	1550	1567	910
FHF100-250/D235	2	125	125	140	640	200	393	1695	2325	1550	1718	910
FHF100-250/D254	2	125	125	140	700	200	373	1675	2305	1750	2038	910
FHF100-250/D267	2	125	125	140	700	200	373	1675	2305	1750	2038	910
FHF125-200/D180	2	150	150	140	640	245	343	1794	2424	1550	1627	720
FHF125-200/D206	2	150	150	140	640	245	343	1794	2424	1550	1627	850
FHF125-200/D216	2	150	150	140	640	245	393	1844	2474	1550	1778	850
FHF125-270/D224	2	150	150	140	700	245	423	1914	2544	1750	2098	910
FHF125-270/D237	2	150	150	140	700	245	423	1914	2544	1750	2098	910
FHF125-270/D253	2	150	150	140	850	245	478	1969	2599	2300	2038	910
FHF125-270/D266	2	150	150	140	850	245	478	1969	2599	2300	2038	910

Dimensions in mm. Tolerance ± 10 mm.

gemk01d_fh100-en_a_td

Fix the jockey pump control panel to the diesel engine tank.

**EN 12845
fire-fighting
pressure
module**

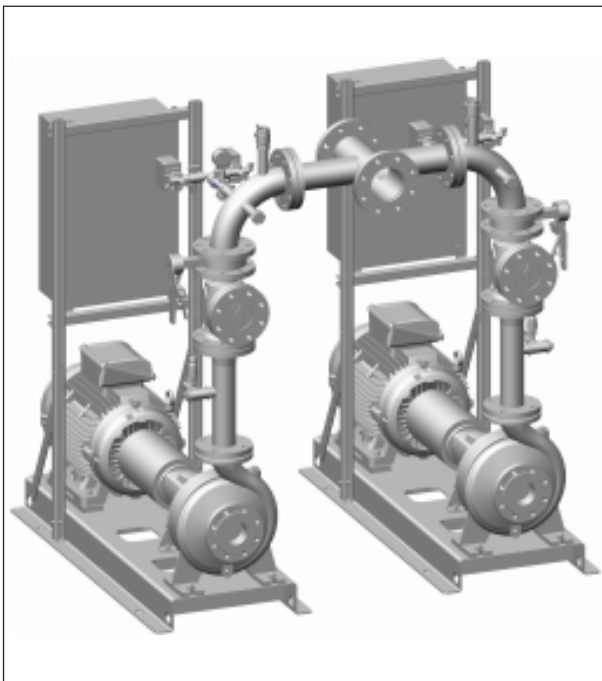
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..F+GEM..F
Series**

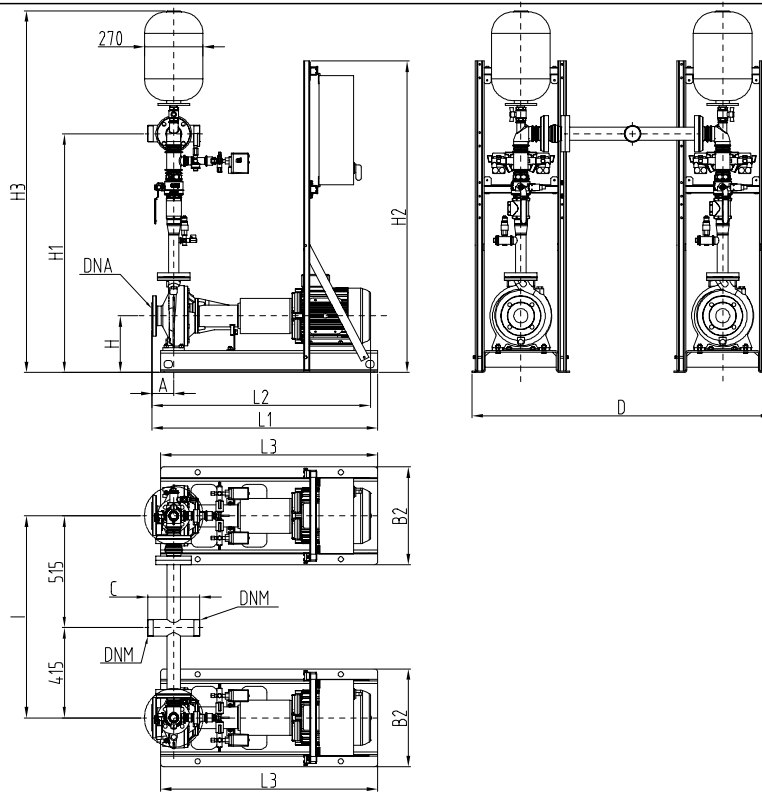


SPECIFICATIONS

- **Flow:** up to 1300 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pumps 3 x 400 Vac $\pm$ 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 132 kW.
- **Horizontal electric service pumps:**
 - FHF series (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

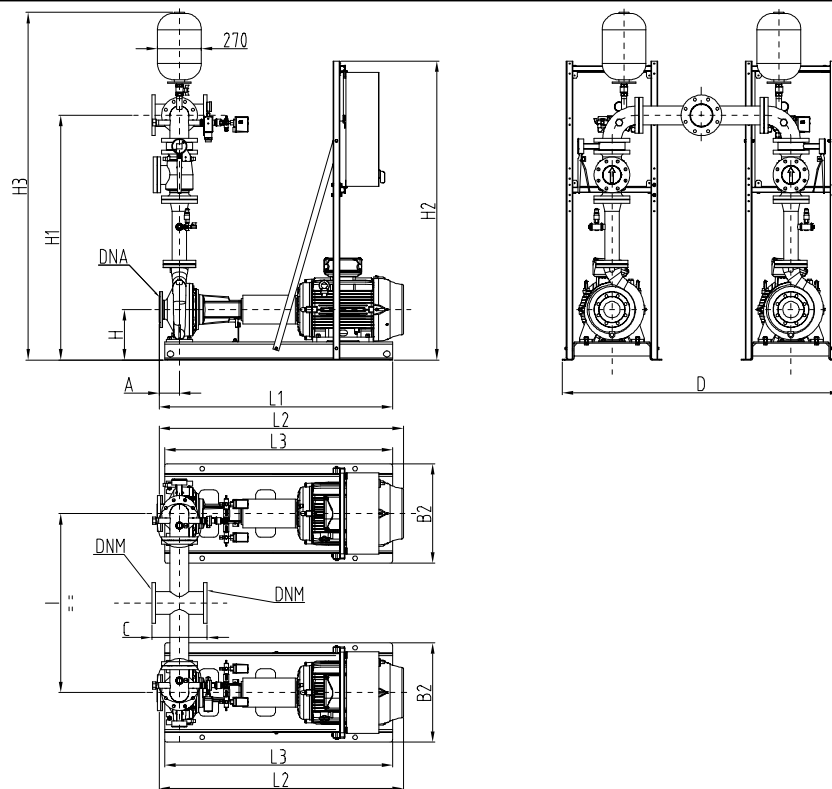
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F32-F80 + GEM..F32-F80 SERIES

1



GEM20-FIL_A_DD

2



GEM20-FLG_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F32-F80 + GEM..F32-F80 SERIES

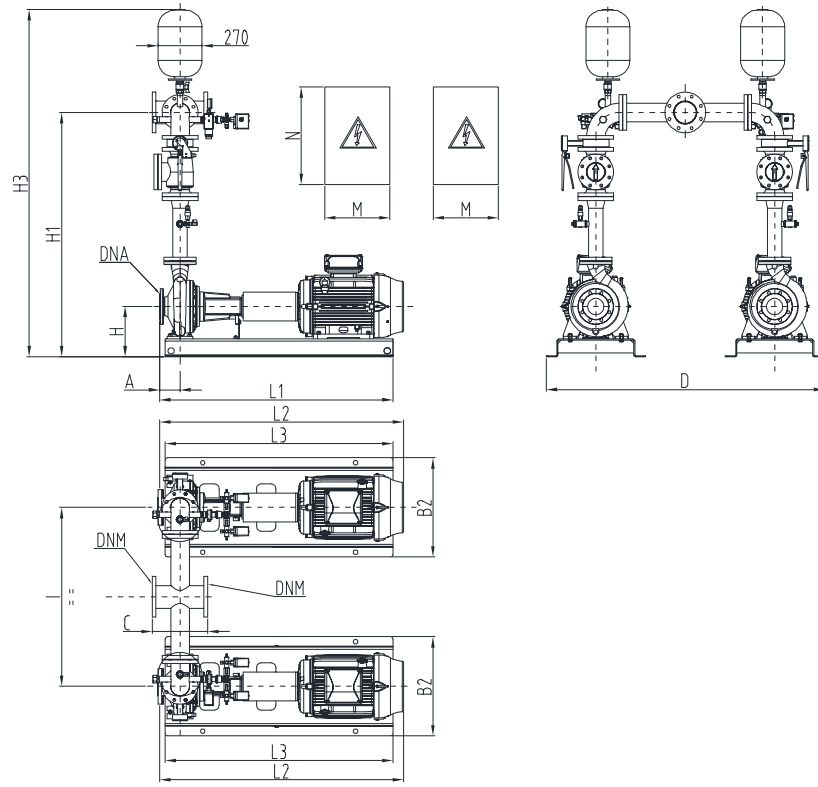
GEM+GEM	DRW N°	DNA	DNM	A	B2	C	D	H	H1	H2	H3	I	L1	L2	L3
FHF32-125/07	1	50	R 2"1/2	80	360	240	1290	212	1017	1236	1587	930	820	845	800
FHF32-125/11	1	50	R 2"1/2	80	360	240	1290	212	1017	1236	1587	930	820	845	800
FHF32-160/15	1	50	R 2"1/2	80	390	240	1320	232	1057	1236	1627	930	920	889	900
FHF32-160/22	1	50	R 2"1/2	80	390	240	1320	232	1057	1236	1627	930	920	889	900
FHF32-200/30	1	50	R 2"1/2	80	390	240	1320	260	1105	1236	1675	930	920	920	900
FHF32-200/40	1	50	R 2"1/2	80	390	240	1320	260	1105	1236	1675	930	920	923	900
FHF40-125/11	1	65	R 2"1/2	80	360	240	1290	212	1010	1236	1580	930	920	845	900
FHF40-125/15	1	65	R 2"1/2	80	390	240	1320	212	1010	1236	1580	930	920	889	900
FHF40-125/22	1	65	R 2"1/2	80	390	240	1320	212	1010	1236	1580	930	920	889	900
FHF40-160/30	1	65	R 2"1/2	80	390	240	1320	232	1050	1236	1620	930	920	920	900
FHF40-160/40	1	65	R 2"1/2	80	390	240	1320	232	1050	1236	1620	930	920	923	900
FHF40-200/55	1	65	R 2"1/2	100	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
FHF40-200/75	1	65	R 2"1/2	100	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
FHF40-250/110A	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF40-250/110	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF40-250/150	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF50-125/22	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	909	900
FHF50-125/30	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	940	900
FHF50-125/40	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	943	900
FHF50-160/55	2	65	80	100	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
FHF50-160/75	2	65	80	100	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
FHF50-200/110A	2	65	80	100	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
FHF50-200/110	2	65	80	100	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
FHF50-250/150	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
FHF50-250/185	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
FHF50-250/220	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1224	1250
FHF65-125/40	2	80	100	100	390	340	1380	260	1333	1436	1963	990	925	943	900
FHF65-125/55	2	80	100	100	450	340	1440	260	1333	1436	1963	990	1025	1007	1000
FHF65-125/75	2	80	100	100	450	340	1440	260	1333	1436	1963	990	1025	1007	1000
FHF65-160/110A	2	80	100	100	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-160/110	2	80	100	100	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-160/150	2	80	100	100	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-200/150	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
FHF65-200/185	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
FHF65-200/220	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1224	1250
FHF65-250/220	2	80	100	100	540	340	1530	310	1453	1436	2083	990	1260	1334	1250
FHF65-250/300	2	80	100	100	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
FHF65-250/370	2	80	100	100	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
FHF80-160/150	2	100	125	125	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
FHF80-160/185	2	100	125	125	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
FHF80-200/220	2	100	125	125	540	340	1640	280	1443	1436	2073	1100	1300	1359	1250
FHF80-200/300	2	100	125	125	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
FHF80-250/370	2	100	125	125	610	340	1710	310	1503	1836	2133	1100	1435	1502	1400
FHF80-250/450	2	100	125	125	610	340	1710	365	1558	1836	2188	1100	1435	1591	1400
FHF80-250/550	2	100	125	125	660	340	1760	390	1583	1837	2213	1100	1635	1700	1600

Dimensions in mm. Tolerance ± 10 mm.

gem20_fhf-en_a_td

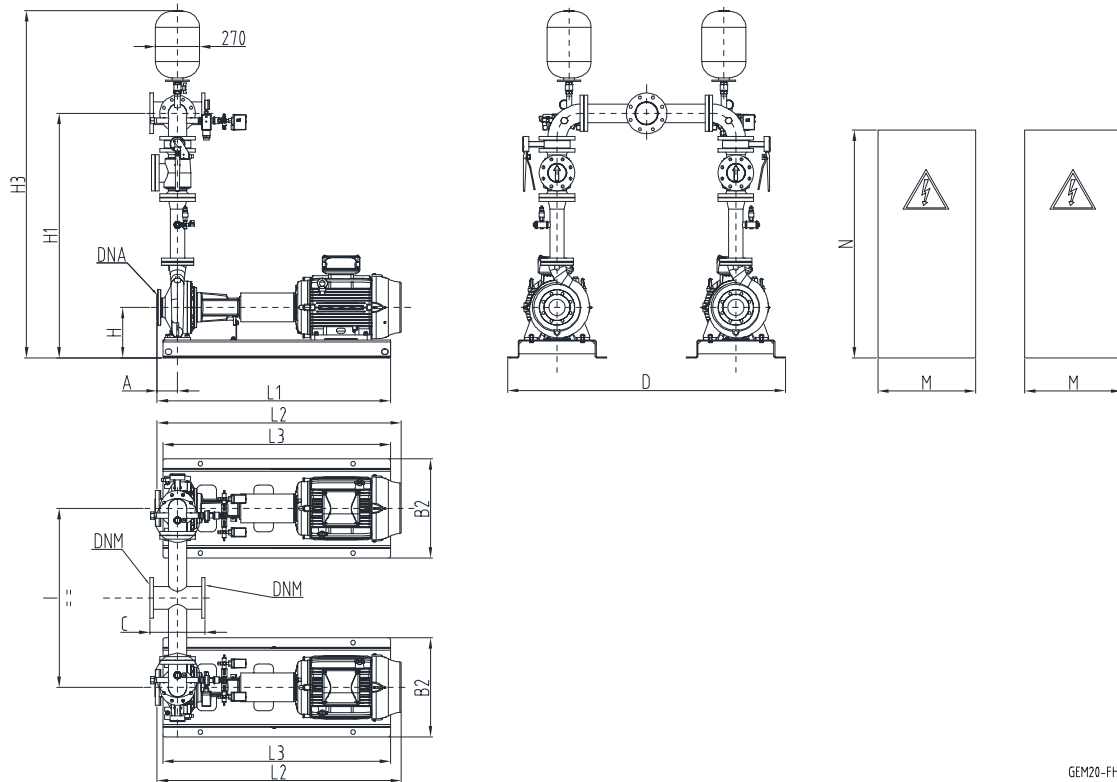
**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..F100-F125 + GEM..F100-F125 SERIES**

1



GEM20-FHF-100-M_B_DD

2



GEM20-FHF-100-P_B_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F100-F125 + GEM..F100-F125 SERIES

GEM+GEM	DRW N°	DNA	DNM	A	B2	C	D	H	H1	H3	I	L1	L2	L3	M	N
FHF100-160/185	1	125	150	125	550	380	1650	298	1600	2230	1100	1305	1391	1270	400	600
FHF100-160/220	1	125	150	125	550	380	1650	298	1600	2230	1100	1305	1440	1270	400	600
FHF100-160/300	1	125	200	125	650	380	1750	318	1620	2250	1100	1485	1560	1450	500	700
FHF100-200/185	1	125	150	125	550	380	1650	273	1575	2205	1100	1305	1391	1270	400	600
FHF100-200/300	1	125	150	140	650	380	1750	293	1595	2225	1100	1500	1560	1450	500	700
FHF100-200/370	1	125	150	140	650	380	1750	293	1595	2225	1100	1500	1560	1450	500	700
FHF100-200/450	1	125	200	140	670	380	1770	318	1620	2250	1100	1500	1595	1450	600	800
FHF100-250/300	1	125	150	140	650	380	1750	318	1620	2250	1100	1500	1575	1450	500	700
FHF100-250/450	1	125	200	140	650	380	1750	318	1620	2250	1100	1500	1610	1450	600	800
FHF100-250/550	1	125	200	140	670	380	1770	343	1645	2275	1100	1500	1715	1450	600	800
FHF100-250/750	2	125	200	140	740	380	1840	373	1675	2305	1100	1620	1790	1570	600	1500
FHF100-250/900	2	125	200	140	740	380	1840	373	1675	2305	1100	1620	1790	1570	600	1500
FHF125-200/300	1	150	200	140	650	380	1850	343	1794	2424	1200	1500	1635	1450	500	700
FHF125-200/450	1	150	200	140	670	380	1870	343	1794	2424	1200	1500	1670	1450	600	800
FHF125-200/550	1	150	200	140	720	380	1920	343	1794	2424	1200	1620	1775	1570	600	800
FHF125-270/750	2	150	250	140	750	440	1950	423	1914	2544	1200	1750	1850	1700	600	1500
FHF125-270/900	2	150	250	140	750	440	1950	423	1914	2544	1200	1750	1850	1700	600	1500
FHF125-270/1100	2	150	250	140	870	440	2070	478	1969	2599	1200	1750	1990	1700	800	1700
FHF125-270/1320	2	150	250	140	870	440	2070	478	1969	2599	1200	1750	1990	1700	800	1700

Dimensions in mm. Tolerance ± 10 mm.

gem20_fhf100-en_a_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**

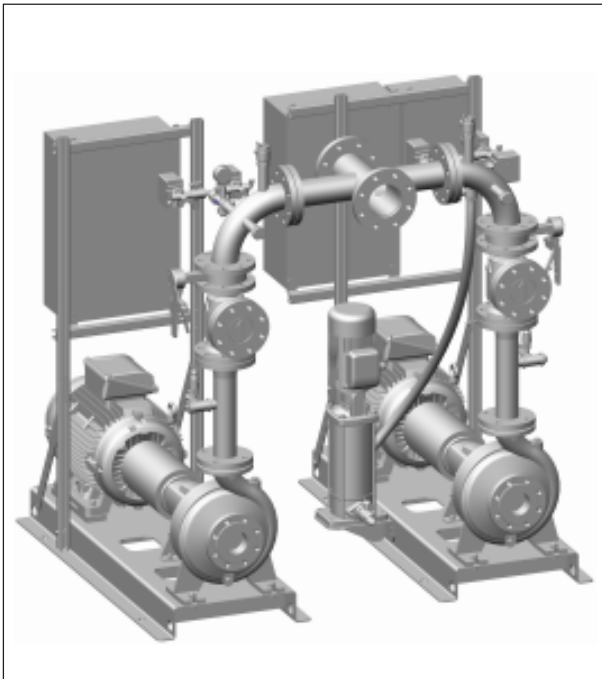
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..J..F+GEM..F
Series**

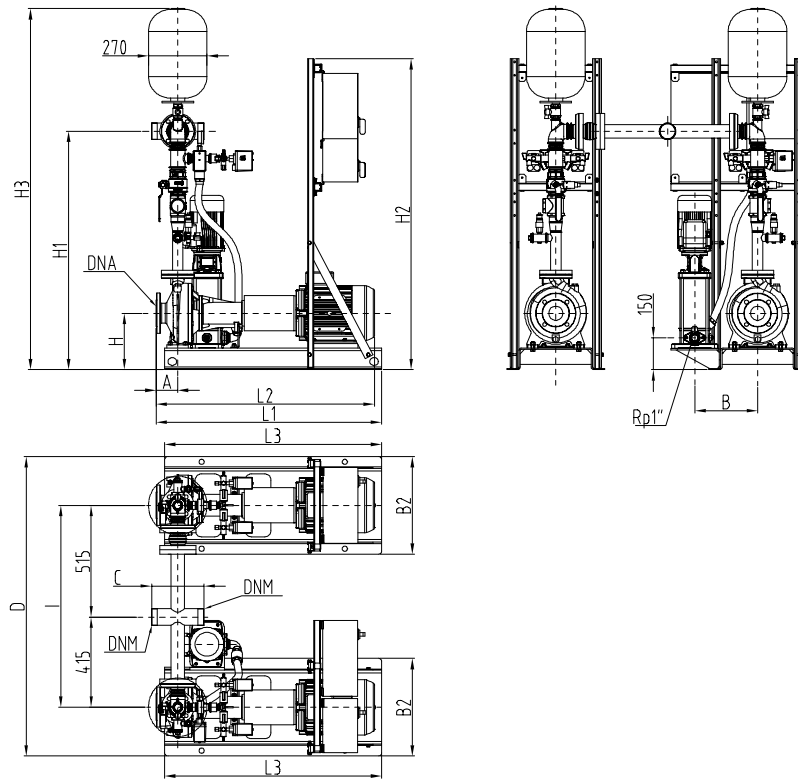


SPECIFICATIONS

- **Flow:** up to 1300 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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:**
 - FHF series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

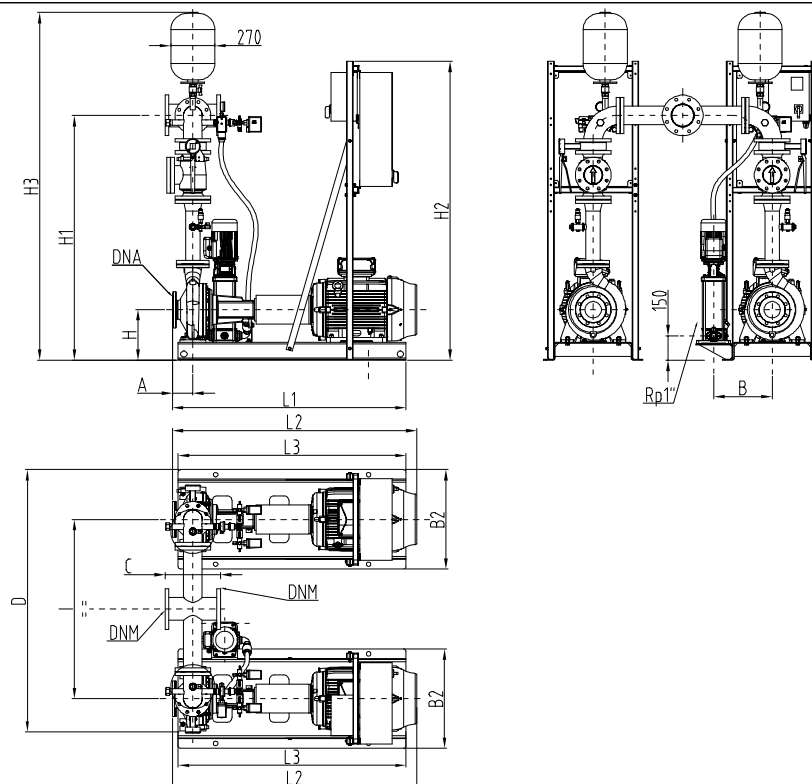
**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..J..F32-F80 + GEM..F32-F80 SERIES**

1



GEM21-FIL_A_DD

2



GEM21-FLG_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...F32-F80 + GEM..F32-F80 SERIES

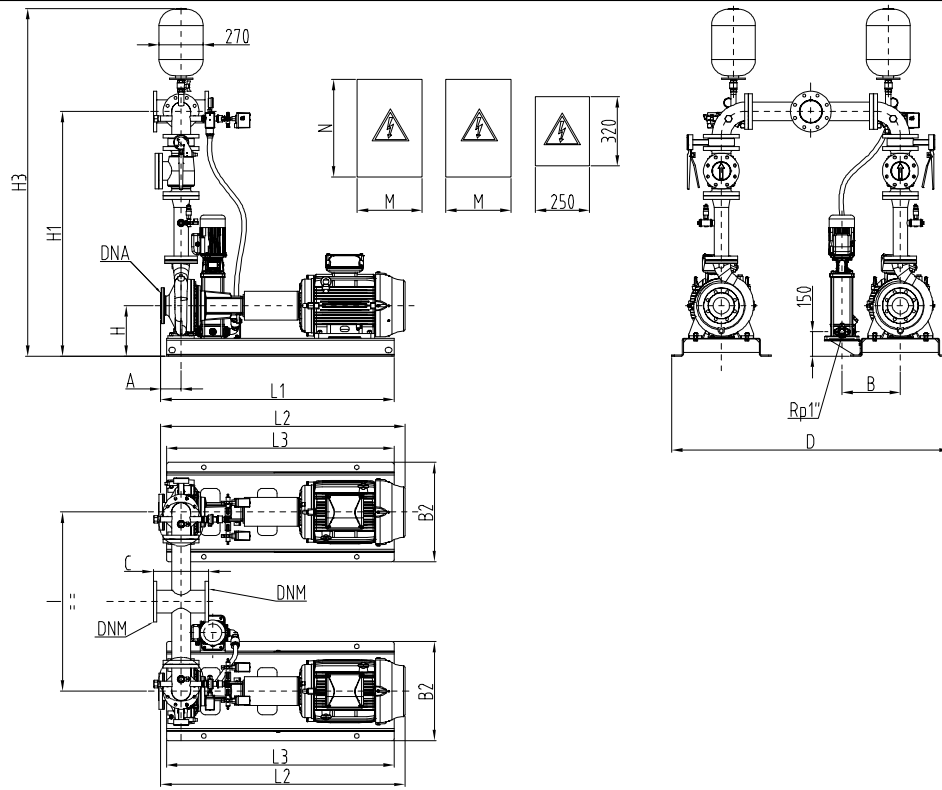
GEMJ+GEM	DRW N°	DNA	DNM	A	B	B2	C	D	H	H1	H2	H3	I	L1	L2	L3
FHF32-125/07	1	50	R 2"1/2	80	255	360	240	1290	212	1017	1236	1587	930	820	845	800
FHF32-125/11	1	50	R 2"1/2	80	255	360	240	1290	212	1017	1236	1587	930	820	845	800
FHF32-160/15	1	50	R 2"1/2	80	270	390	240	1320	232	1057	1236	1627	930	920	889	900
FHF32-160/22	1	50	R 2"1/2	80	270	390	240	1320	232	1057	1236	1627	930	920	889	900
FHF32-200/30	1	50	R 2"1/2	80	270	390	240	1320	260	1105	1236	1675	930	920	920	900
FHF32-200/40	1	50	R 2"1/2	80	270	390	240	1320	260	1105	1236	1675	930	920	923	900
FHF40-125/11	1	65	R 2"1/2	80	270	360	240	1290	212	1010	1236	1580	930	920	845	900
FHF40-125/15	1	65	R 2"1/2	80	270	390	240	1320	212	1010	1236	1580	930	920	889	900
FHF40-125/22	1	65	R 2"1/2	80	270	390	240	1320	212	1010	1236	1580	930	920	889	900
FHF40-160/30	1	65	R 2"1/2	80	270	390	240	1320	232	1050	1236	1620	930	920	920	900
FHF40-160/40	1	65	R 2"1/2	80	270	390	240	1320	232	1050	1236	1620	930	920	923	900
FHF40-200/55	1	65	R 2"1/2	100	290	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
FHF40-200/75	1	65	R 2"1/2	100	290	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
FHF40-250/110A	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF40-250/110	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF40-250/150	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
FHF50-125/22	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	909	900
FHF50-125/30	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	940	900
FHF50-125/40	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	943	900
FHF50-160/55	2	65	80	100	290	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
FHF50-160/75	2	65	80	100	290	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
FHF50-200/110A	2	65	80	100	310	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
FHF50-200/110	2	65	80	100	310	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
FHF50-250/150	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
FHF50-250/185	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
FHF50-250/220	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1224	1250
FHF65-125/40	2	80	100	100	270	390	340	1380	260	1333	1436	1963	990	925	943	900
FHF65-125/55	2	80	100	100	290	450	340	1440	260	1333	1436	1963	990	1025	1007	1000
FHF65-125/75	2	80	100	100	290	450	340	1440	260	1333	1436	1963	990	1025	1007	1000
FHF65-160/110A	2	80	100	100	335	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-160/110	2	80	100	100	335	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-160/150	2	80	100	100	335	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
FHF65-200/150	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
FHF65-200/185	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
FHF65-200/220	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1224	1250
FHF65-250/220	2	80	100	100	335	540	340	1530	310	1453	1436	2083	990	1260	1334	1250
FHF65-250/300	2	80	100	100	360	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
FHF65-250/370	2	80	100	100	360	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
FHF80-160/150	2	100	125	125	335	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
FHF80-160/185	2	100	125	125	335	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
FHF80-200/220	2	100	125	125	335	540	340	1640	280	1443	1436	2073	1100	1300	1359	1250
FHF80-200/300	2	100	125	125	360	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
FHF80-250/370	2	100	125	125	360	610	340	1710	310	1503	1836	2133	1100	1435	1502	1400
FHF80-250/450	2	100	125	125	360	610	340	1710	365	1558	1836	2188	1100	1435	1591	1400
FHF80-250/550	2	100	125	125	385	660	340	1760	390	1583	1837	2213	1100	1635	1700	1600

Dimensions in mm. Tolerance ± 10 mm.

gem21_fhf-en_a_td

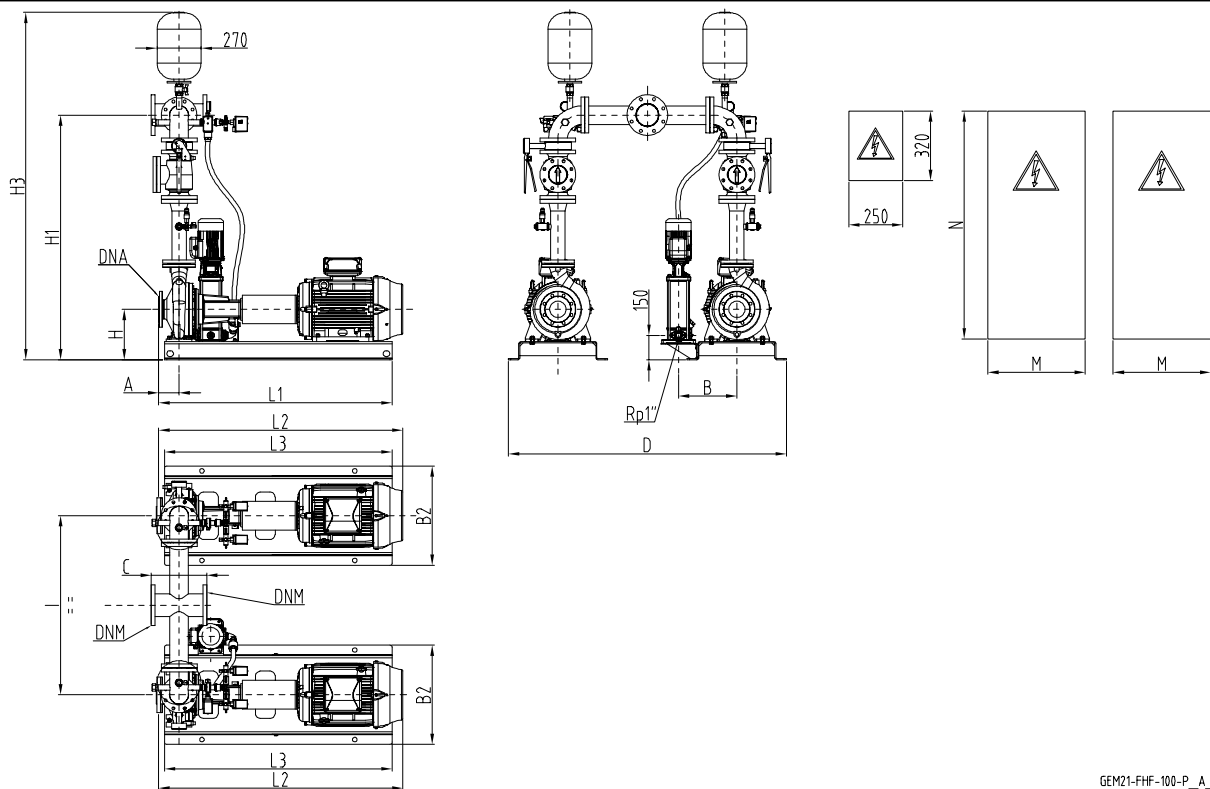
**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..J..F100-F125 + GEM..F100-F125 SERIES**

1



GEM21-FHF-100-M_A_D0

2



GEM21-FHF-100-P_A_D0

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...F100-F125 + GEM..F100-F125 SERIES

GEMJ+GEM	DRW N°	DNA	DNM	A	B	B2	C	D	H	H1	H3	I	L1	L2	L3	M	N	P
FHF100-160/185	1	125	150	125	340	550	380	1650	298	1600	2230	1100	1305	1391	1270	400	600	150
FHF100-160/220	1	125	150	125	340	550	380	1650	298	1600	2230	1100	1305	1440	1270	400	600	150
FHF100-160/300	1	125	200	125	305	650	380	1750	318	1620	2250	1100	1485	1560	1450	500	700	135
FHF100-200/185	1	125	150	125	340	550	380	1650	273	1575	2205	1100	1305	1391	1270	400	600	150
FHF100-200/300	1	125	150	140	305	650	380	1750	293	1595	2225	1100	1500	1560	1450	500	700	135
FHF100-200/370	1	125	150	140	305	650	380	1750	293	1595	2225	1100	1500	1560	1450	500	700	135
FHF100-200/450	1	125	200	140	305	670	380	1770	318	1620	2250	1100	1500	1595	1450	600	800	135
FHF100-250/300	1	125	150	140	305	650	380	1750	318	1620	2250	1100	1500	1575	1450	500	700	135
FHF100-250/450	1	125	200	140	305	650	380	1750	318	1620	2250	1100	1500	1610	1450	600	800	135
FHF100-250/550	1	125	200	140	305	670	380	1770	343	1645	2275	1100	1500	1715	1450	600	800	135
FHF100-250/750	2	125	200	140	340	740	380	1840	373	1675	2305	1100	1620	1790	1570	600	1500	135
FHF100-250/900	2	125	200	140	340	740	380	1840	373	1675	2305	1100	1620	1790	1570	600	1500	135
FHF125-200/300	1	150	200	140	305	650	380	1850	343	1794	2424	1200	1500	1635	1450	500	700	135
FHF125-200/450	1	150	200	140	305	670	380	1870	343	1794	2424	1200	1500	1670	1450	600	800	135
FHF125-200/550	1	150	200	140	340	720	380	1920	343	1794	2424	1200	1620	1775	1570	600	800	135
FHF125-270/750	2	150	250	140	350	750	440	1950	423	1914	2544	1200	1750	1850	1700	600	1500	195
FHF125-270/900	2	150	250	140	350	750	440	1950	423	1914	2544	1200	1750	1850	1700	600	1500	195
FHF125-270/1100	2	150	250	140	410	870	440	2070	478	1969	2599	1200	1750	1990	1700	800	1700	215
FHF125-270/1320	2	150	250	140	410	870	440	2070	478	1969	2599	1200	1750	1990	1700	800	1700	215

Dimensions in mm. Tolerance ± 10 mm.

gem21_fhf100-en_a_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**

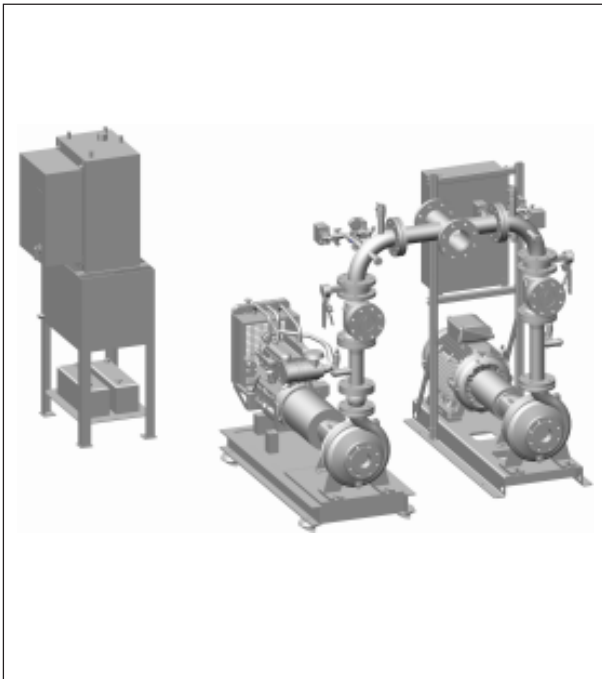
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

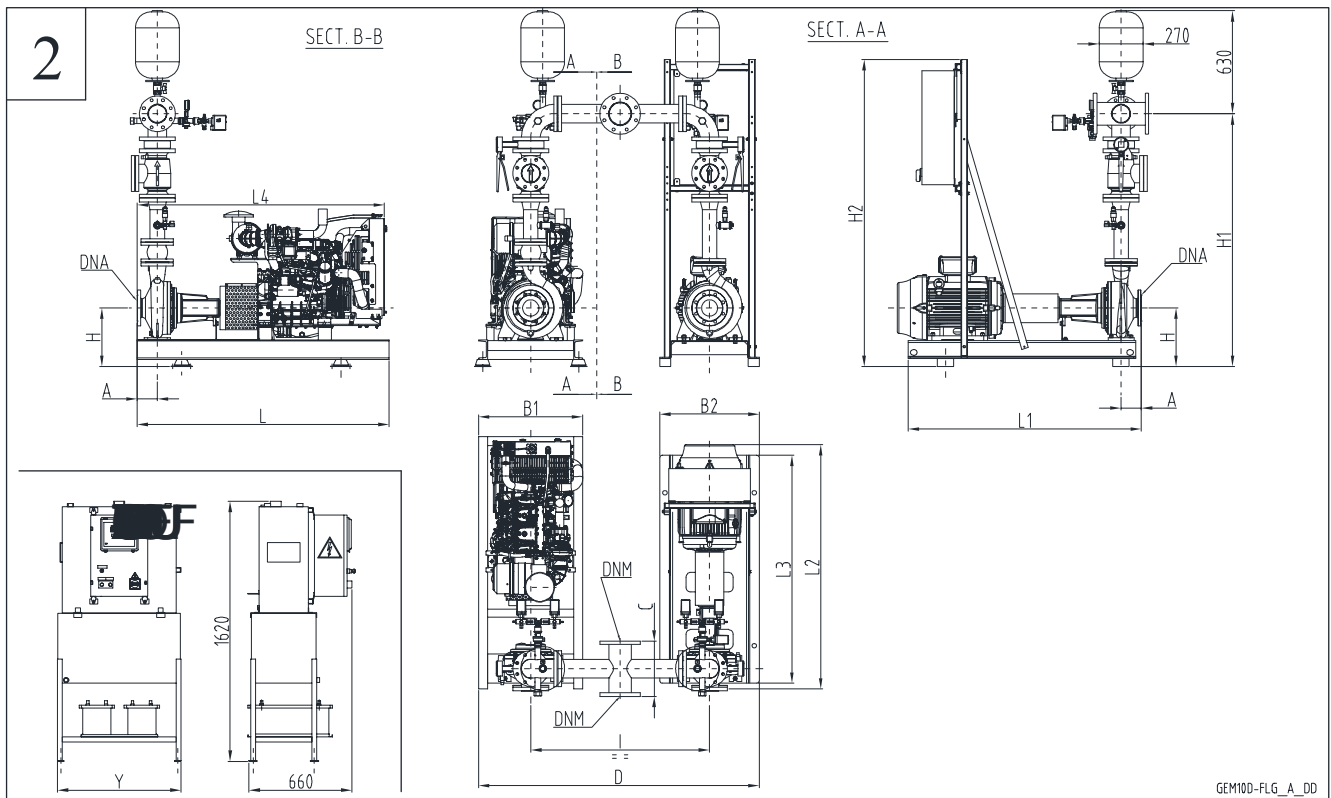
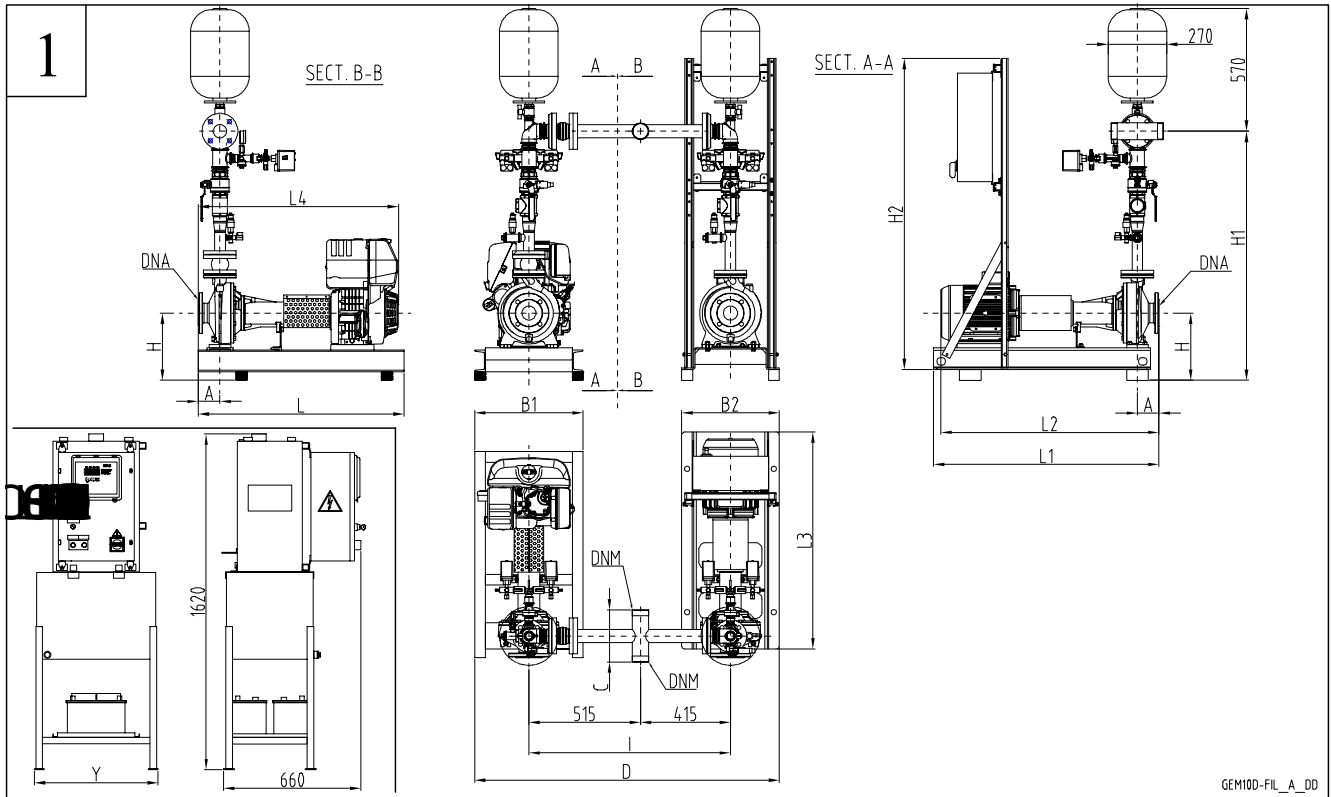
**GEM..F+GEMK..F
Series**



SPECIFICATIONS

- **Flow:** up to 1300 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pumps 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 132 kW.
 - Diesel engine service pump 177,3 kW.
- **Horizontal electric service pumps:**
 - FHF series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - FHF series.
- **Maximum operating pressure:** 12 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..F32-F80 + GEMK..F32-F80 SERIES**



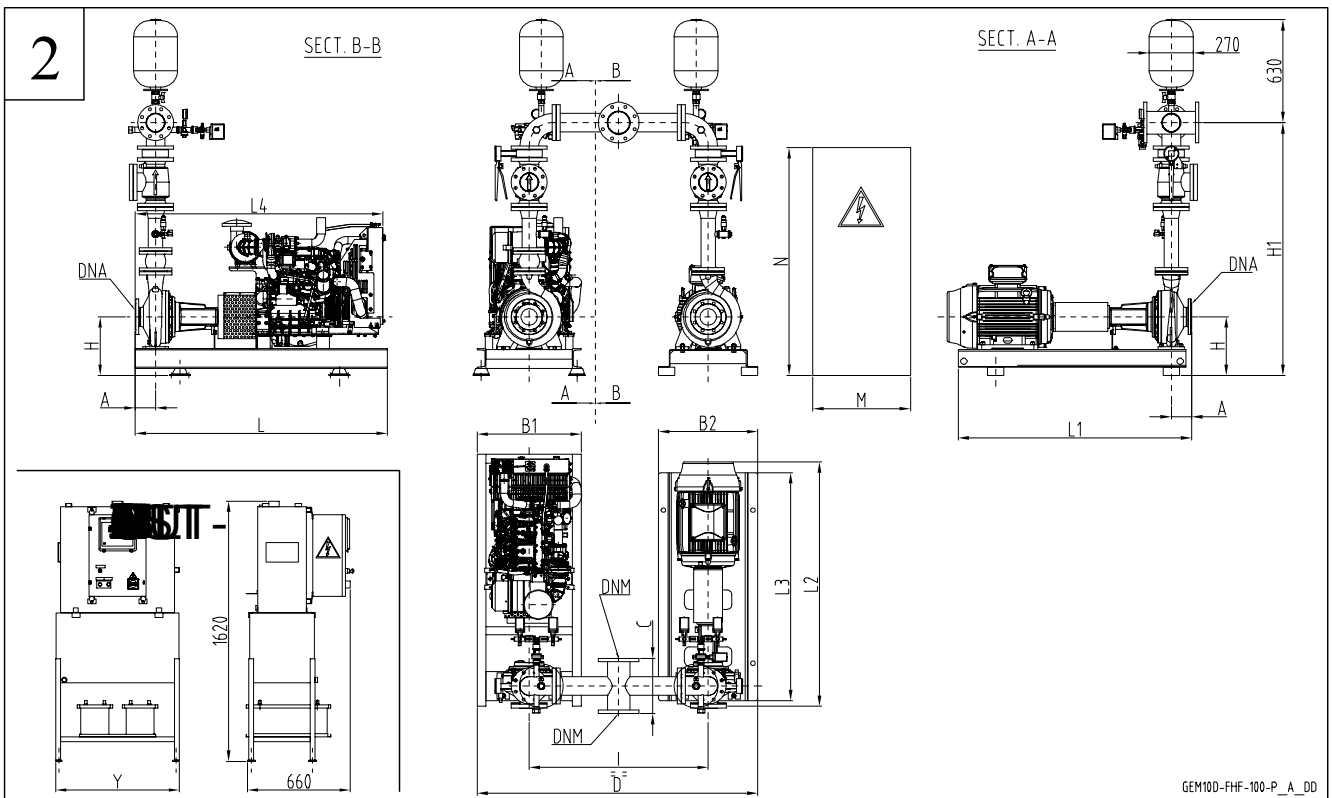
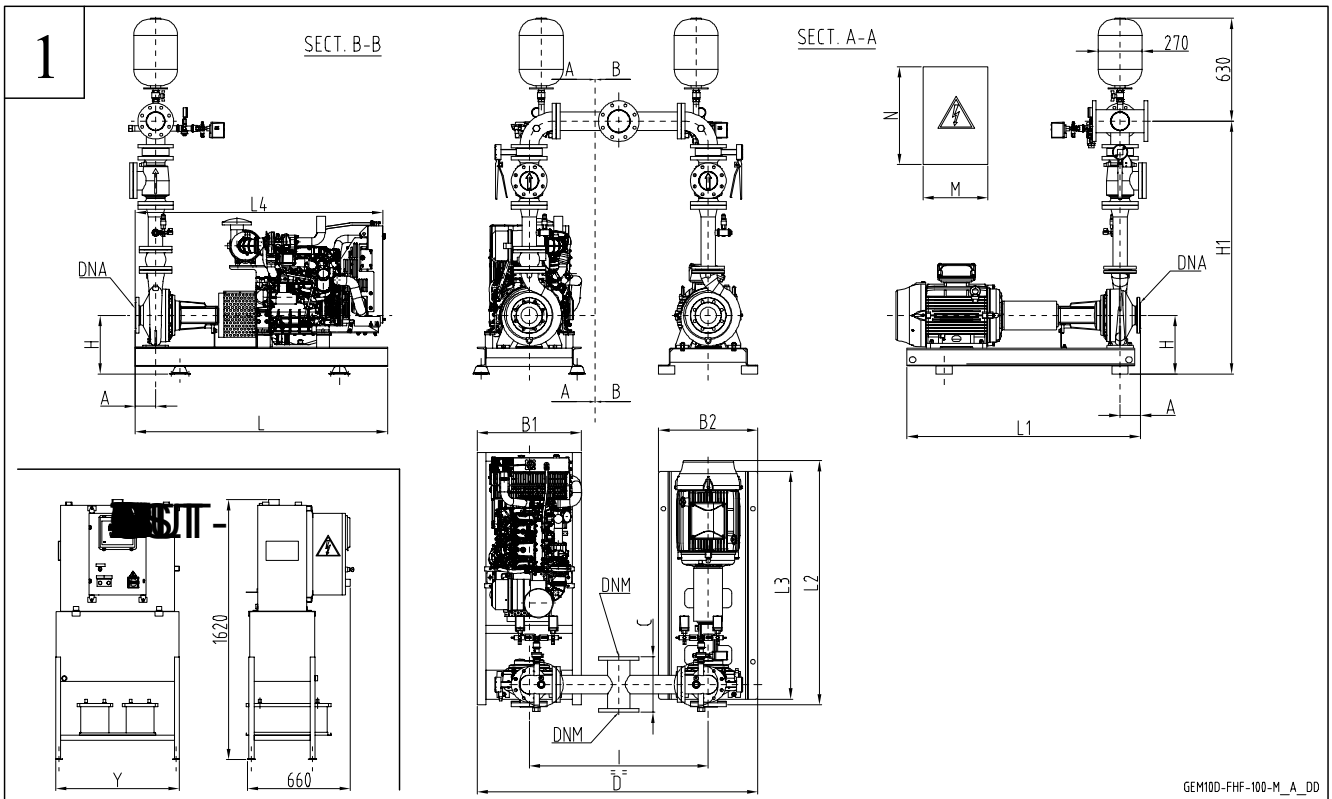
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F32-F80 + GEMK..F32-F80 SERIES

GEM + GEMK	DRW N°	DNA	DNM	A	B1	B2	C	D	H	H1	H2	I	L	L1	L2	L3	L4	Y
FHF32-125/07/D119	1	50	R 2"1/2	80	500	360	240	1360	262	1067	1286	930	950	820	845	800	885	570
FHF32-125/11/D136	1	50	R 2"1/2	80	500	360	240	1360	262	1067	1286	930	950	820	845	800	885	570
FHF32-160/15/D150	1	50	R 2"1/2	80	500	390	240	1375	282	1107	1286	930	950	920	889	900	885	570
FHF32-160/22/D164	1	50	R 2"1/2	80	500	390	240	1375	282	1107	1286	930	950	920	889	900	885	570
FHF32-200/30/D188	1	50	R 2"1/2	80	500	390	240	1375	260	1105	1236	930	950	920	920	900	885	570
FHF32-200/40/D204	1	50	R 2"1/2	80	500	390	240	1375	260	1105	1236	930	950	920	923	900	885	570
FHF40-125/11/D112	1	65	R 2"1/2	80	500	360	240	1360	262	1060	1286	930	950	920	845	900	885	570
FHF40-125/15/D122	1	65	R 2"1/2	80	500	390	240	1375	262	1060	1286	930	950	920	889	900	885	570
FHF40-125/22/D143	1	65	R 2"1/2	80	500	390	240	1375	262	1060	1286	930	950	920	889	900	885	570
FHF40-160/30/D159	1	65	R 2"1/2	80	500	390	240	1375	282	1100	1286	930	950	920	920	900	885	570
FHF40-160/40/D171	1	65	R 2"1/2	80	500	390	240	1375	282	1100	1286	930	950	920	923	900	885	570
FHF40-200/55/D190	1	65	R 2"1/2	100	500	450	240	1405	310	1148	1486	930	950	1040	1007	1000	921	570
FHF40-200/75/D209	1	65	R 2"1/2	100	500	450	240	1405	310	1148	1486	930	950	1040	1007	1000	923	570
FHF40-250/110A/D218	1	65	R 2"1/2	100	500	540	240	1450	280	1163	1436	930	950	1275	1164	1250	997	570
FHF40-250/110/D233	1	65	R 2"1/2	100	570	540	240	1485	330	1213	1486	930	1250	1275	1164	1250	1187	570
FHF40-250/150/D251	1	65	R 2"1/2	100	570	540	240	1485	330	1213	1486	930	1250	1275	1164	1250	1187	570
FHF50-125/22/D119	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	909	900	905	570
FHF50-125/30/D130	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	940	900	905	570
FHF50-125/40/D139	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	943	900	905	570
FHF50-160/55/D158	2	65	80	100	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	921	570
FHF50-160/75/D174	2	65	80	100	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	570
FHF50-200/110A/D197	2	65	80	100	500	490	340	1485	310	1335	1486	990	950	1160	1164	1120	997	570
FHF50-200/110/D209	2	65	80	100	570	490	340	1520	360	1385	1536	990	1250	1160	1164	1120	1187	570
FHF50-250/150/D224	2	65	80	100	570	540	340	1545	330	1380	1486	990	1250	1275	1164	1250	1187	570
FHF50-250/185/D237	2	65	80	100	570	540	340	1545	380	1430	1536	990	1250	1275	1164	1250	1307	570
FHF50-250/220/D250	2	65	80	100	570	540	340	1545	380	1430	1536	990	1250	1275	1224	1250	1307	570
FHF65-125/40/D121	2	80	100	100	500	390	340	1435	310	1383	1486	990	950	925	943	900	905	570
FHF65-125/55/D129	2	80	100	100	500	450	340	1465	310	1383	1486	990	950	1025	1007	1000	921	570
FHF65-125/75/D140	2	80	100	100	500	450	340	1465	310	1383	1486	990	950	1025	1007	1000	997	570
FHF65-160/110A/D161	2	80	100	100	500	540	340	1510	310	1403	1486	990	950	1275	1164	1250	997	570
FHF65-160/110/D168	2	80	100	100	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	570
FHF65-160/150/D178	2	80	100	100	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	570
FHF65-200/150/D187	2	80	100	100	570	540	340	1545	330	1448	1486	990	1250	1275	1164	1250	1187	570
FHF65-200/185/D198	2	80	100	100	570	540	340	1545	380	1498	1536	990	1250	1275	1164	1250	1307	570
FHF65-200/220/D210	2	80	100	100	570	540	340	1545	380	1498	1536	990	1250	1275	1224	1250	1307	570
FHF65-250/220/D220	2	80	100	100	570	540	340	1545	360	1503	1486	990	1250	1260	1334	1250	1417	570
FHF65-250/300/D241	2	80	100	100	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	570
FHF65-250/370/D258	2	80	100	100	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	760
FHF80-160/150/D163	2	100	125	125	570	540	340	1655	330	1468	1486	1100	1250	1300	1189	1250	1212	570
FHF80-160/185/D173	2	100	125	125	570	540	340	1655	380	1518	1536	1100	1250	1300	1189	1250	1332	570
FHF80-200/220/D189	2	100	125	125	570	540	340	1655	380	1543	1536	1100	1250	1300	1359	1250	1442	570
FHF80-200/300/D207	2	100	125	125	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	570
FHF80-250/370/D225	2	100	125	125	640	610	340	1725	360	1553	1886	1100	1550	1435	1502	1400	1552	760
FHF80-250/450/D238	2	100	125	125	640	610	340	1725	365	1558	1836	1100	1550	1435	1591	1400	1552	760
FHF80-250/550/D256	2	100	125	125	640	660	340	1750	390	1583	1837	1100	1550	1635	1700	1600	1703	760

Dimensions in mm. Tolerance ± 10 mm.

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**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..F100-F125 + GEMK..F100-F125 SERIES**



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..F100-F125 + GEMK..F100-F125 SERIES

GEM + GEMK	DRW N°	DNA	DNM	A	B1	B2	C	D	H	H1	I	L	L1	L2	L3	L4	M	N	Y
FHF100-160/185/D150	1	125	150	125	570	550	380	1660	348	1650	1100	1250	1635	1391	1600	1322	400	600	570
FHF100-160/220/D165	1	125	150	125	570	550	380	1660	398	1700	1100	1250	1635	1440	1600	1442	400	600	570
FHF100-160/300/D185	1	125	200	125	640	650	380	1745	368	1670	1100	1550	1635	1560	1600	1552	500	700	570
FHF100-200/185/D168	1	125	150	125	570	550	380	1660	373	1675	1100	1250	1635	1391	1600	1442	400	600	570
FHF100-200/300/D192	1	125	150	140	640	650	380	1745	343	1645	1100	1550	1650	1560	1600	1552	500	700	570
FHF100-200/370/D203	1	125	150	140	640	650	380	1745	343	1645	1100	1550	1650	1560	1600	1552	500	700	760
FHF100-200/450/D213	1	125	200	140	640	670	380	1755	368	1670	1100	1550	1650	1595	1600	1552	600	800	760
FHF100-250/300/D200	1	125	150	140	640	650	380	1745	368	1670	1100	1550	1650	1575	1600	1567	500	700	570
FHF100-250/450/D221	1	125	200	140	640	650	380	1745	368	1670	1100	1550	1650	1610	1600	1567	600	800	760
FHF100-250/550/D235	1	125	200	140	640	670	380	1755	393	1695	1100	1550	1650	1715	1600	1718	600	800	760
FHF100-250/750/D254	2	125	200	140	700	740	380	1820	373	1675	1100	1750	1650	1790	1600	2038	600	1500	760
FHF100-250/900/D267	2	125	200	140	700	740	380	1820	373	1675	1100	1750	1650	1790	1600	2038	600	1500	760
FHF125-200/300/D180	1	150	200	140	640	650	380	1845	343	1794	1200	1550	1650	1635	1600	1627	500	700	570
FHF125-200/450/D206	1	150	200	140	640	670	380	1855	343	1794	1200	1550	1650	1670	1600	1627	600	800	700
FHF125-200/550/D216	1	150	200	140	640	720	380	1880	393	1844	1200	1550	1650	1775	1600	1778	600	800	700
FHF125-270/750/D223	2	150	250	140	700	750	440	1925	423	1914	1200	1750	1650	1850	1600	2098	600	1500	760
FHF125-270/900/D237	2	150	250	140	700	750	440	1925	423	1914	1200	1750	1650	1850	1600	2098	600	1500	760
FHF125-270/1100/D253	2	150	250	140	850	870	440	2060	478	1969	1200	2300	1650	1990	1600	2038	800	1700	760
FHF125-270/1320/D266	2	150	250	140	850	870	440	2060	478	1969	1200	2300	1650	1990	1600	2038	800	1700	760

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.

Fix the jockey pump control panel to the diesel engine tank.

EN 12845 fire-fighting pressure module

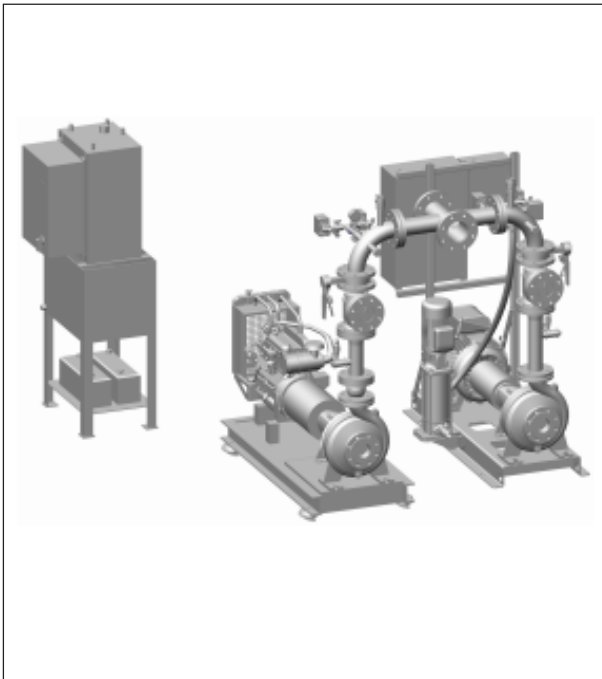
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

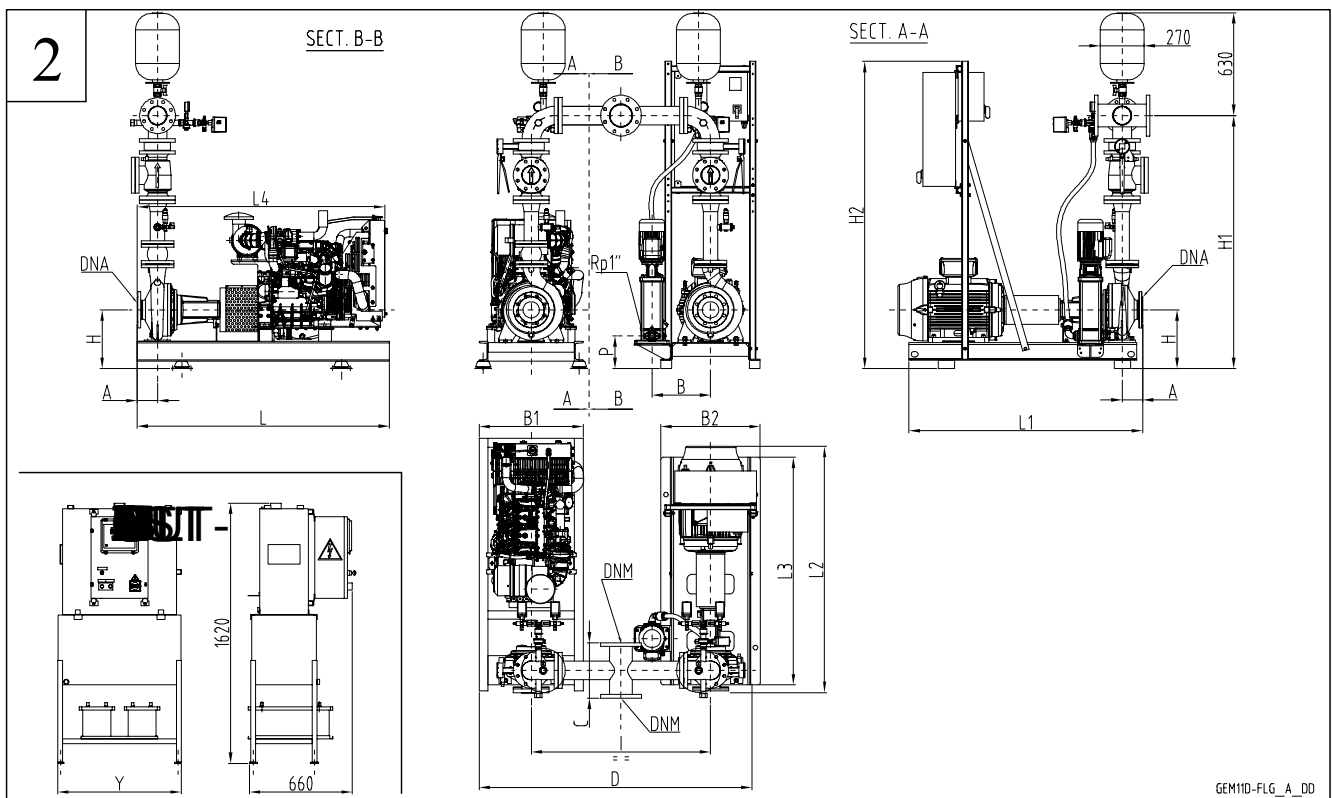
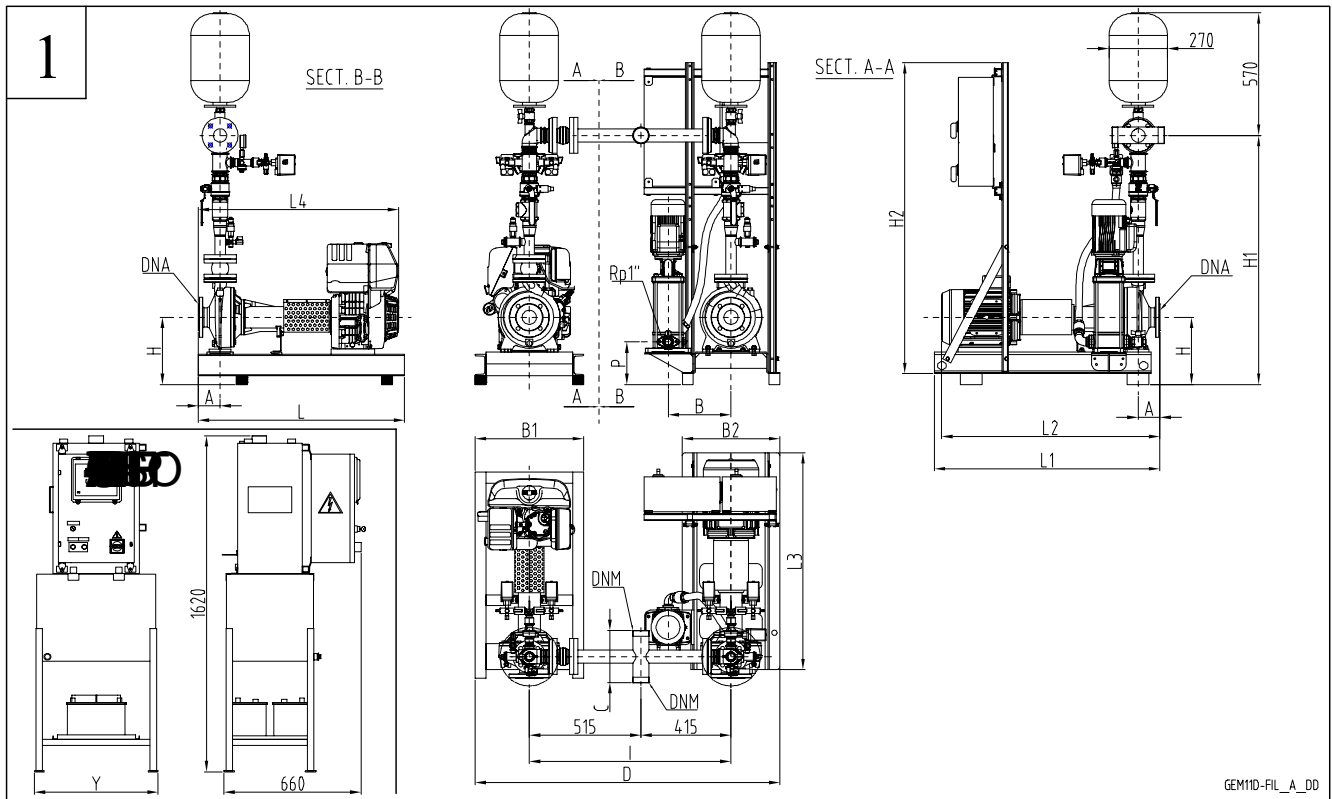
GEM..J..F+GEMK..F Series



SPECIFICATIONS

- **Flow:** up to 1300 m³/h.
- **Head:** up to 103 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm 10\%$.
 - Diesel engine service pump 1 x 230 Vac $\pm 10\%$.
 - Jockey pump 3 x 400 Vac $\pm 10\%$.
- **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 pump 132 kW.
 - Diesel engine service pump 177,3 kW.
- **Horizontal electric service pump:**
 - FHF series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - FHF series.
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...F32-F80 + GEMK..F32-F80 SERIES**



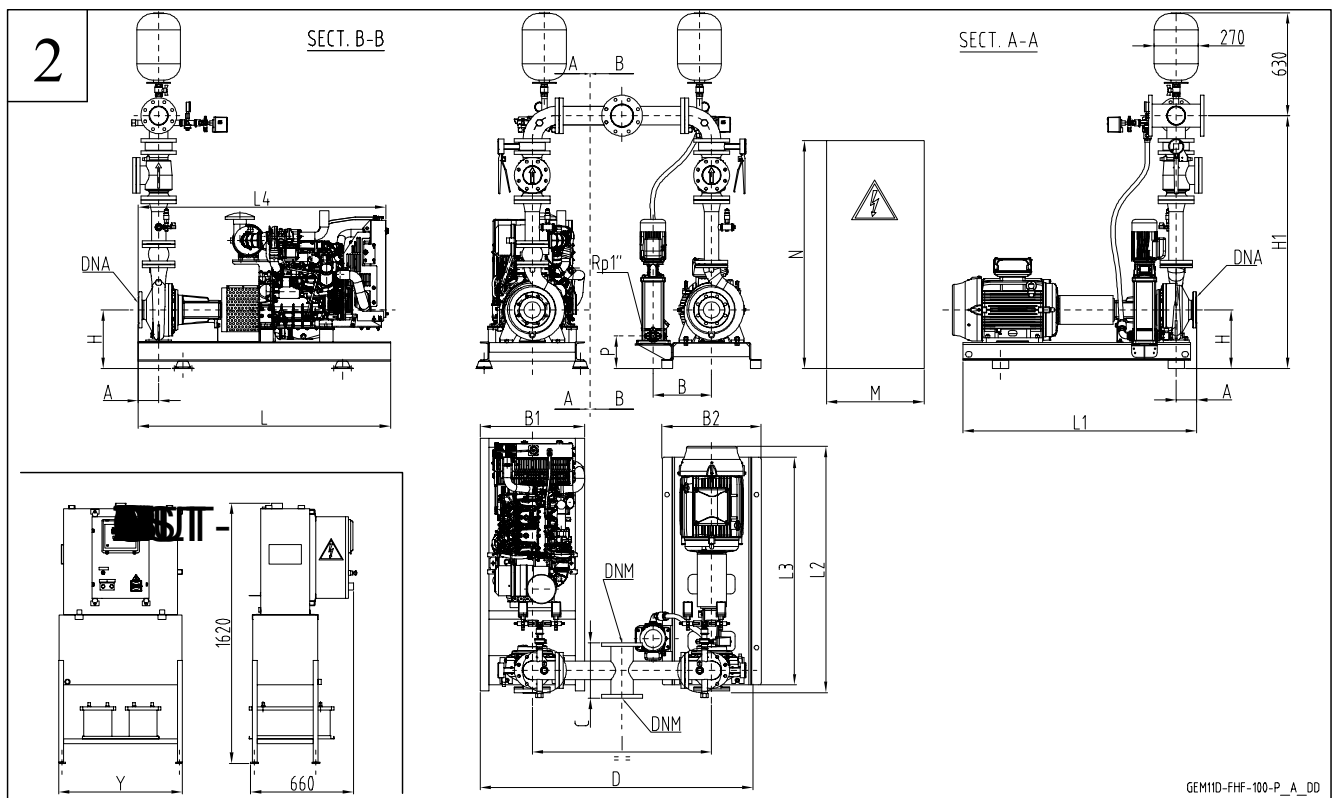
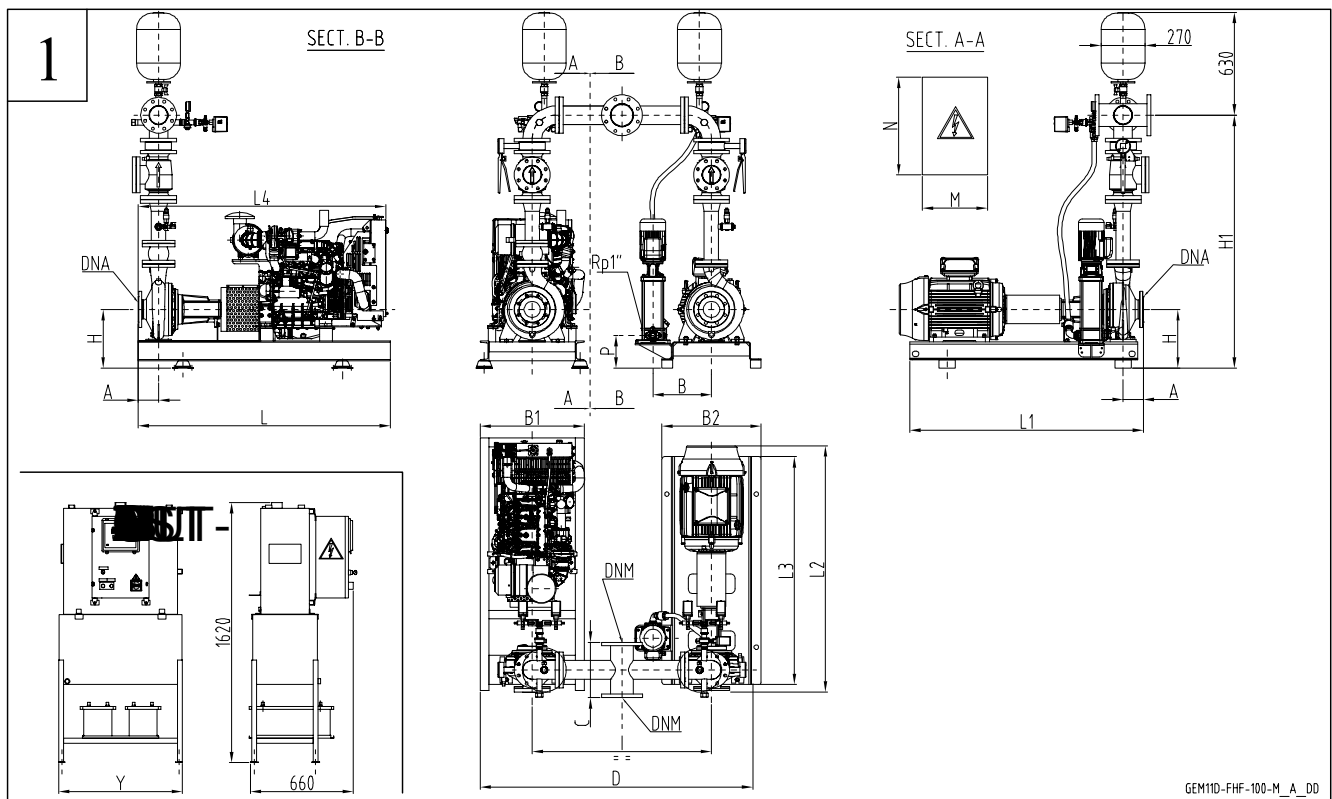
EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..J..F32-F80 + GEMK..F32-F80 SERIES

GEMJ + GEMK	DRW N°	DNA	DNM	A	B	B1	B2	C	D	H	H1	H2	I	L	L1	L2	L3	L4	Y	P
FHF32-125/07/D119	1	50	R 2"1/2	80	255	500	360	240	1360	262	1067	1286	930	950	820	845	800	885	720	200
FHF32-125/11/D136	1	50	R 2"1/2	80	255	500	360	240	1360	262	1067	1286	930	950	820	845	800	885	720	200
FHF32-160/15/D150	1	50	R 2"1/2	80	270	500	390	240	1375	282	1107	1286	930	950	920	889	900	885	720	200
FHF32-160/22/D164	1	50	R 2"1/2	80	270	500	390	240	1375	282	1107	1286	930	950	920	889	900	885	720	200
FHF32-200/30/D188	1	50	R 2"1/2	80	270	500	390	240	1375	260	1105	1236	930	950	920	920	900	885	720	150
FHF32-200/40/D204	1	50	R 2"1/2	80	270	500	390	240	1375	260	1105	1236	930	950	920	923	900	885	720	150
FHF40-125/11/D112	1	65	R 2"1/2	80	270	500	360	240	1360	262	1060	1286	930	950	920	845	900	885	720	200
FHF40-125/15/D122	1	65	R 2"1/2	80	270	500	390	240	1375	262	1060	1286	930	950	920	889	900	885	720	200
FHF40-125/22/D143	1	65	R 2"1/2	80	270	500	390	240	1375	262	1060	1286	930	950	920	889	900	885	720	200
FHF40-160/30/D159	1	65	R 2"1/2	80	270	500	390	240	1375	282	1100	1286	930	950	920	920	900	885	720	200
FHF40-160/40/D171	1	65	R 2"1/2	80	270	500	390	240	1375	282	1100	1286	930	950	920	923	900	885	720	200
FHF40-200/55/D190	1	65	R 2"1/2	100	290	500	450	240	1405	310	1148	1486	930	950	1040	1007	1000	921	720	200
FHF40-200/75/D209	1	65	R 2"1/2	100	290	500	450	240	1405	310	1148	1486	930	950	1040	1007	1000	923	720	200
FHF40-250/110A/D218	1	65	R 2"1/2	100	335	500	540	240	1450	280	1163	1436	930	950	1275	1164	1250	997	720	150
FHF40-250/110/D233	1	65	R 2"1/2	100	335	570	540	240	1485	330	1213	1486	930	1250	1275	1164	1250	1187	720	200
FHF40-250/150/D251	1	65	R 2"1/2	100	335	570	540	240	1485	330	1213	1486	930	1250	1275	1164	1250	1187	720	200
FHF50-125/22/D119	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	909	900	905	720	200
FHF50-125/30/D130	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	940	900	905	720	200
FHF50-125/40/D139	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	943	900	905	720	200
FHF50-160/55/D158	2	65	80	100	290	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	921	720	200
FHF50-160/75/D174	2	65	80	100	290	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	720	200
FHF50-200/110A/D197	2	65	80	100	310	500	490	340	1485	310	1335	1486	990	950	1160	1164	1120	997	720	200
FHF50-200/110/D209	2	65	80	100	310	570	490	340	1520	360	1385	1536	990	1250	1160	1164	1120	1187	720	250
FHF50-250/150/D224	2	65	80	100	335	570	540	340	1545	330	1380	1486	990	1250	1275	1164	1250	1187	720	200
FHF50-250/185/D237	2	65	80	100	335	570	540	340	1545	380	1430	1536	990	1250	1275	1164	1250	1307	720	250
FHF50-250/220/D250	2	65	80	100	335	570	540	340	1545	380	1430	1536	990	1250	1275	1224	1250	1307	720	250
FHF65-125/40/D121	2	80	100	100	270	500	390	340	1435	310	1383	1486	990	950	925	943	900	905	720	200
FHF65-125/55/D129	2	80	100	100	290	500	450	340	1465	310	1383	1486	990	950	1025	1007	1000	921	720	200
FHF65-125/75/D140	2	80	100	100	290	500	450	340	1465	310	1383	1486	990	950	1025	1007	1000	997	720	200
FHF65-160/110A/D161	2	80	100	100	335	500	540	340	1510	310	1403	1486	990	950	1275	1164	1250	997	720	200
FHF65-160/110/D168	2	80	100	100	335	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	720	250
FHF65-160/150/D178	2	80	100	100	335	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	720	250
FHF65-200/150/D187	2	80	100	100	335	570	540	340	1545	330	1448	1486	990	1250	1275	1164	1250	1187	720	200
FHF65-200/185/D198	2	80	100	100	335	570	540	340	1545	380	1498	1536	990	1250	1275	1164	1250	1307	720	250
FHF65-200/220/D210	2	80	100	100	335	570	540	340	1545	380	1498	1536	990	1250	1275	1224	1250	1307	720	250
FHF65-250/220/D220	2	80	100	100	335	570	540	340	1545	360	1503	1486	990	1250	1260	1334	1250	1417	720	200
FHF65-250/300/D241	2	80	100	100	360	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	720	200
FHF65-250/370/D258	2	80	100	100	360	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	910	200
FHF80-160/150/D163	2	100	125	125	335	570	540	340	1655	330	1468	1486	1100	1250	1300	1189	1250	1212	720	200
FHF80-160/185/D173	2	100	125	125	335	570	540	340	1655	380	1518	1536	1100	1250	1300	1189	1250	1332	720	250
FHF80-200/220/D189	2	100	125	125	335	570	540	340	1655	380	1543	1536	1100	1250	1300	1359	1250	1442	720	250
FHF80-200/300/D207	2	100	125	125	360	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	720	200
FHF80-250/370/D225	2	100	125	125	360	640	610	340	1725	360	1553	1886	1100	1550	1435	1502	1400	1552	910	200
FHF80-250/450/D238	2	100	125	125	360	640	610	340	1725	365	1558	1836	1100	1550	1435	1591	1400	1552	910	150
FHF80-250/550/D256	2	100	125	125	385	640	660	340	1750	390	1583	1837	1100	1550	1635	1700	1600	1703	910	150

Dimensions in mm. Tolerance ± 10 mm.

gemk11d_fhf-en_a_td

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...F100-F125 + GEMK..F100-F125 SERIES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..J..F100-F125 + GEMK..F100-F125 SERIES

GEMJ + GEMK	DRW N°	DNA	DNM	A	B	B1	B2	C	D	H	H1	I	L	L1	L2	L3	L4	M	N	P	Y
FHF100-160/185/D150	1	125	150	125	340	570	550	380	1660	348	1650	1100	1250	1635	1391	1600	1322	400	600	200	570
FHF100-160/220/D165	1	125	150	125	340	570	550	380	1660	398	1700	1100	1250	1635	1440	1600	1442	400	600	250	570
FHF100-160/300/D185	1	125	200	125	305	640	650	380	1745	368	1670	1100	1550	1635	1560	1600	1552	500	700	185	570
FHF100-200/185/D168	1	125	150	125	340	570	550	380	1660	373	1675	1100	1250	1635	1391	1600	1442	400	600	250	570
FHF100-200/300/D192	1	125	150	140	305	640	650	380	1745	343	1645	1100	1550	1650	1560	1600	1552	500	700	185	570
FHF100-200/370/D203	1	125	150	140	305	640	650	380	1745	343	1645	1100	1550	1650	1560	1600	1552	500	700	185	760
FHF100-200/450/D213	1	125	200	140	305	640	670	380	1755	368	1670	1100	1550	1650	1595	1600	1552	600	800	185	760
FHF100-250/300/D200	1	125	150	140	305	640	650	380	1745	368	1670	1100	1550	1650	1575	1600	1567	500	700	185	570
FHF100-250/450/D221	1	125	200	140	305	640	650	380	1745	368	1670	1100	1550	1650	1610	1600	1567	600	800	185	760
FHF100-250/550/D235	1	125	200	140	305	640	670	380	1755	393	1695	1100	1550	1650	1715	1600	1718	600	800	185	760
FHF100-250/750/D254	2	125	200	140	340	700	740	380	1820	373	1675	1100	1750	1650	1790	1600	2038	600	1500	135	760
FHF100-250/900/D267	2	125	200	140	340	700	740	380	1820	373	1675	1100	1750	1650	1790	1600	2038	600	1500	135	760
FHF125-200/300/D180	1	150	200	140	305	640	650	380	1845	343	1794	1200	1550	1650	1635	1600	1627	500	700	135	570
FHF125-200/450/D206	1	150	200	140	305	640	670	380	1855	343	1794	1200	1550	1650	1670	1600	1627	600	800	135	700
FHF125-200/550/D216	1	150	200	140	340	640	720	380	1880	393	1844	1200	1550	1650	1775	1600	1778	600	800	185	700
FHF125-270/750/D223	2	150	250	140	350	700	750	440	1925	423	1914	1200	1750	1650	1850	1600	2098	600	1500	195	760
FHF125-270/900/D237	2	150	250	140	350	700	750	440	1925	423	1914	1200	1750	1650	1850	1600	2098	600	1500	195	760
FHF125-270/1100/D253	2	150	250	140	410	850	870	440	2060	478	1969	1200	2300	1650	1990	1600	2038	800	1700	215	760
FHF125-270/1320/D266	2	150	250	140	410	850	870	440	2060	478	1969	1200	2300	1650	1990	1600	2038	800	1700	215	760

Dimensions in mm. Tolerance ± 10 mm.

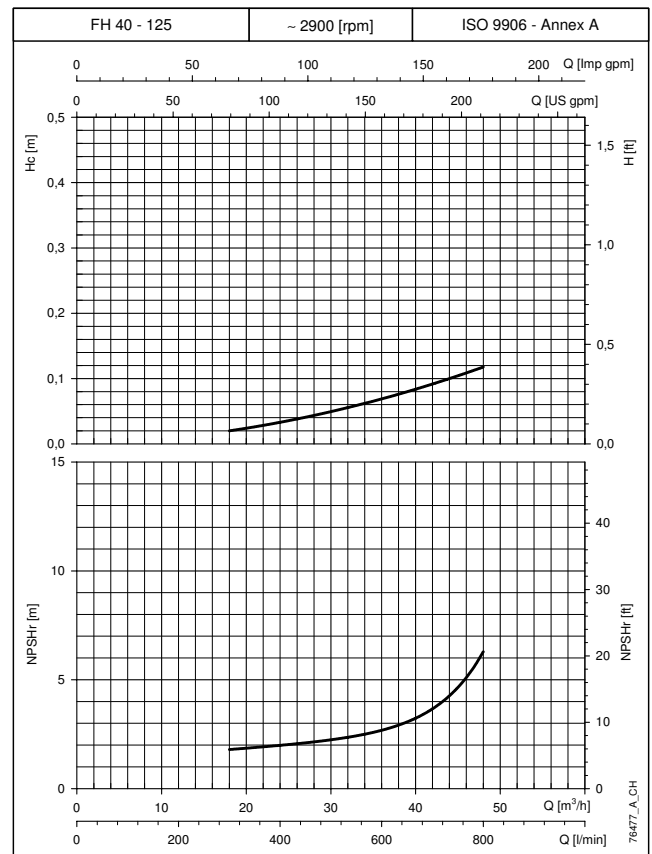
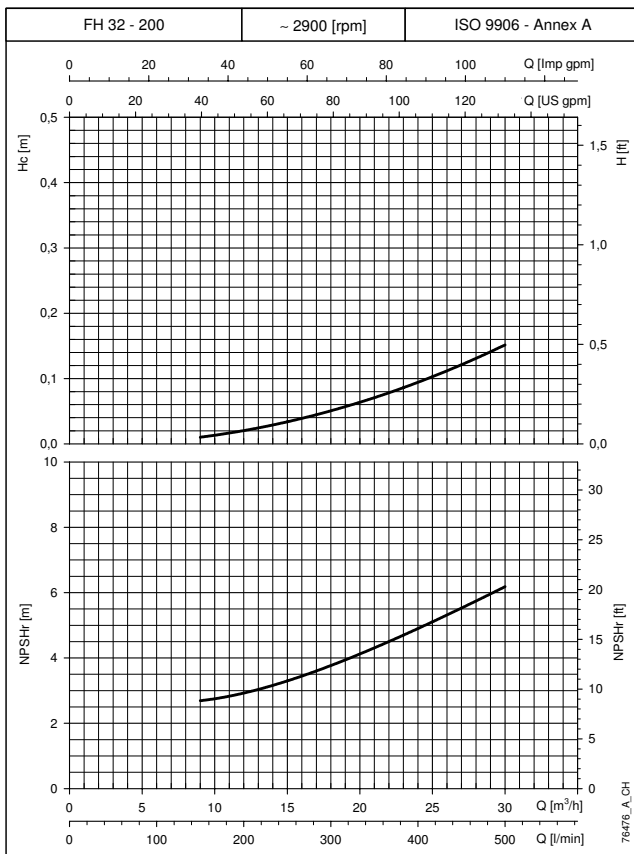
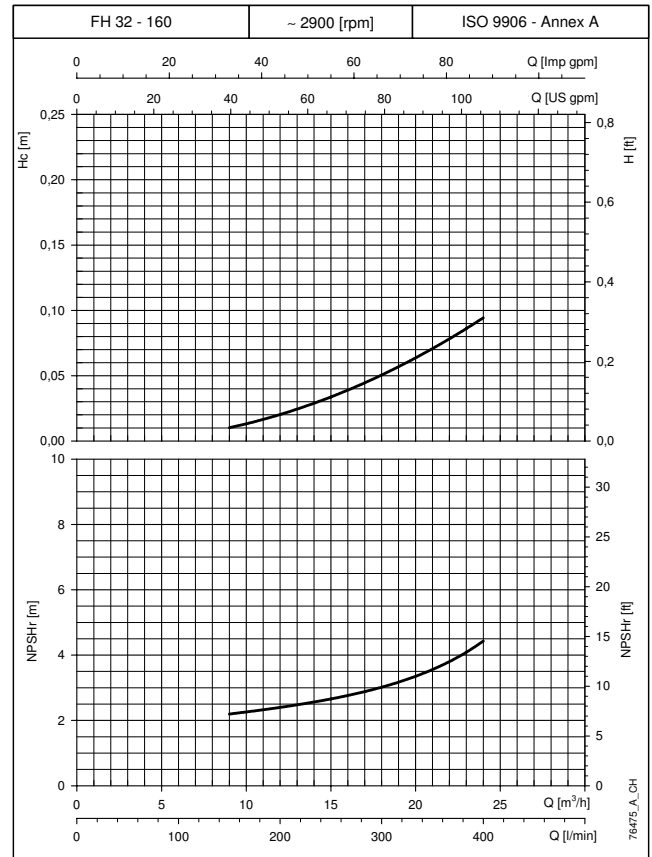
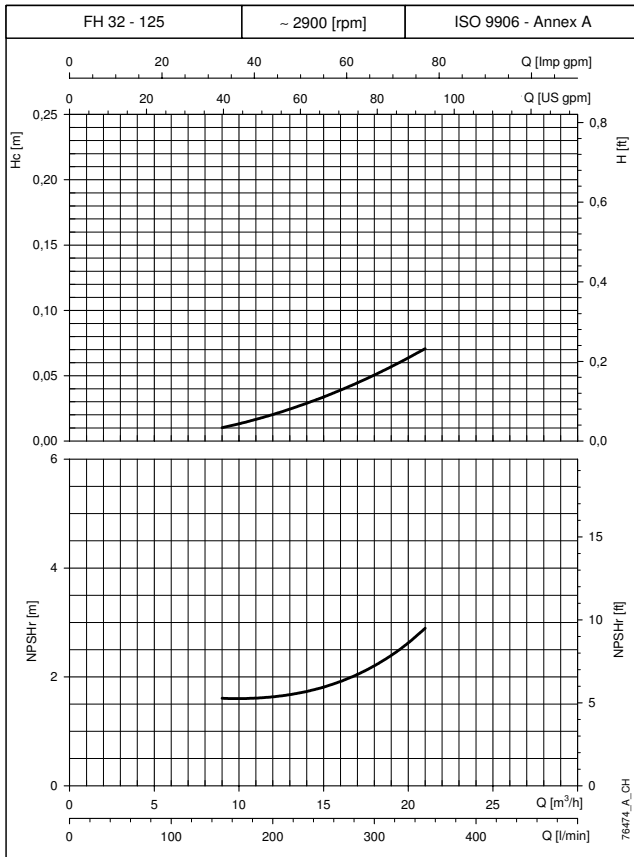
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Up to 55 kW, wall-mounted electric control panel for service pump, 1 support bracket kit available on request.

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

Fix the jockey pump control panel to the diesel engine tank

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

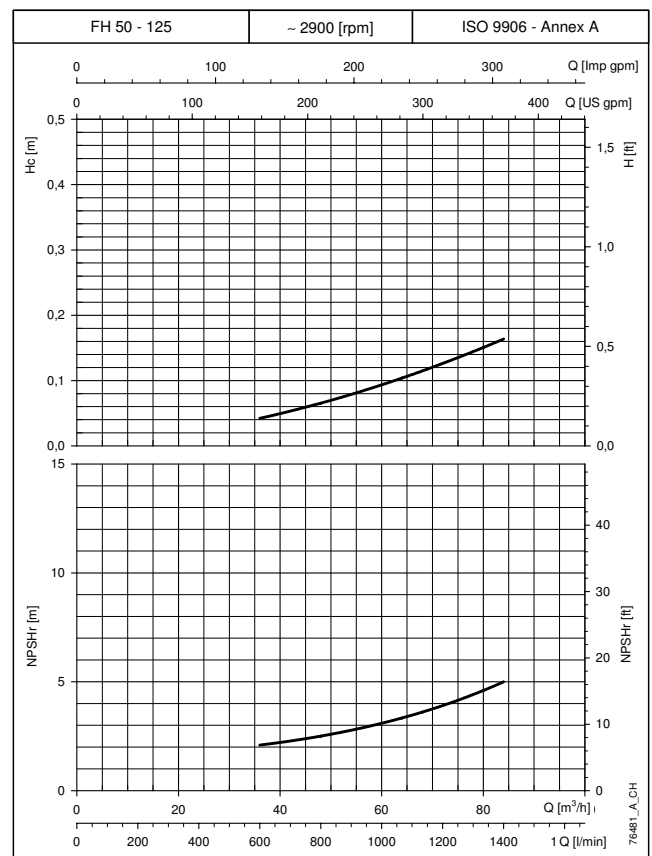
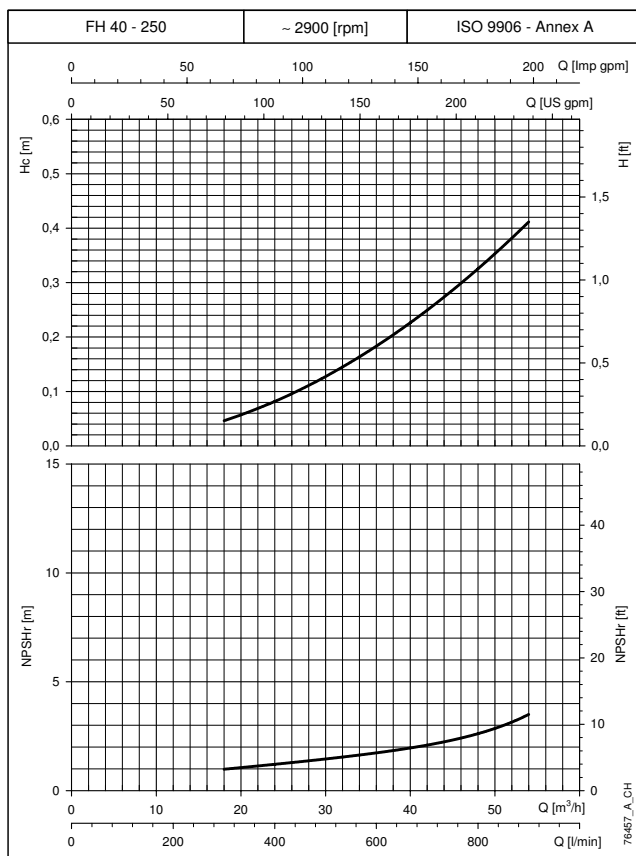
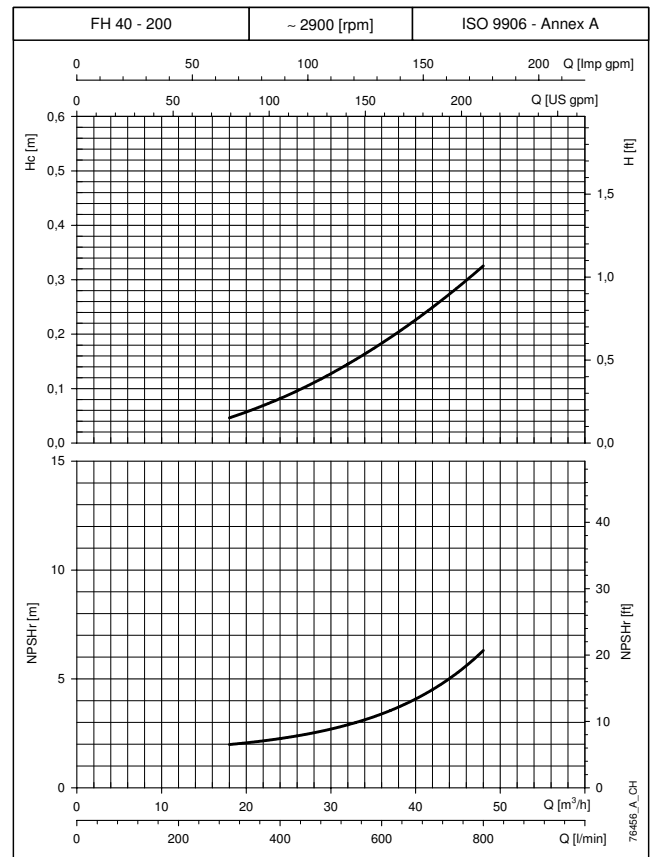
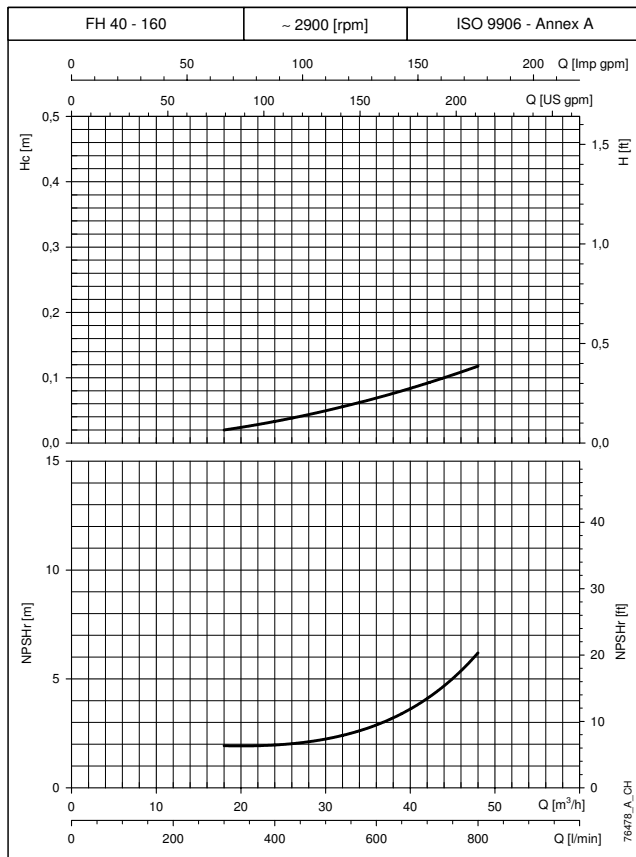


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

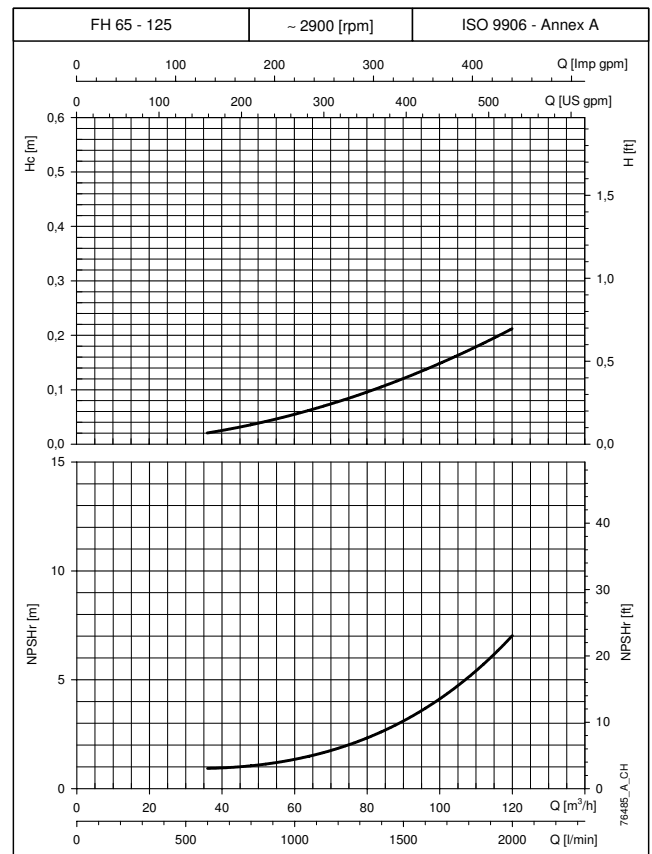
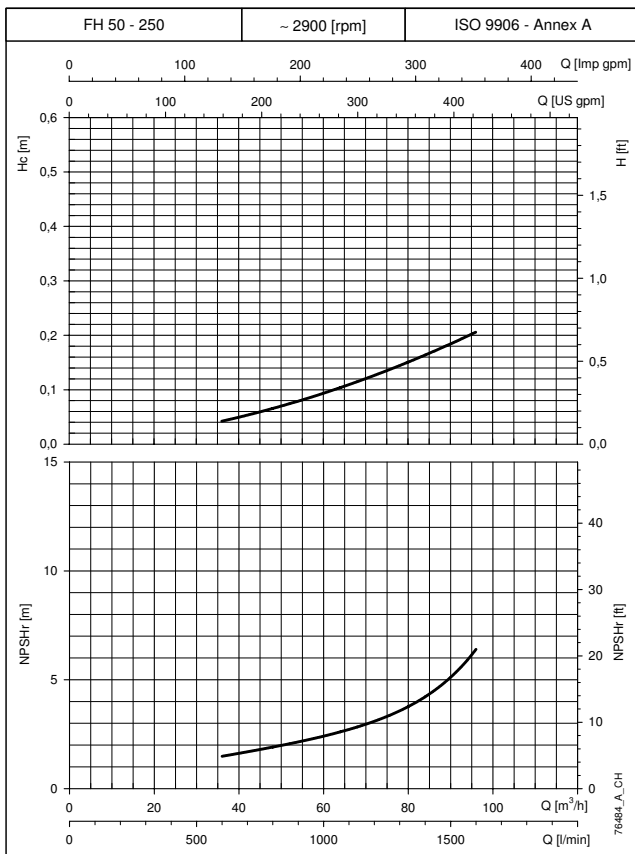
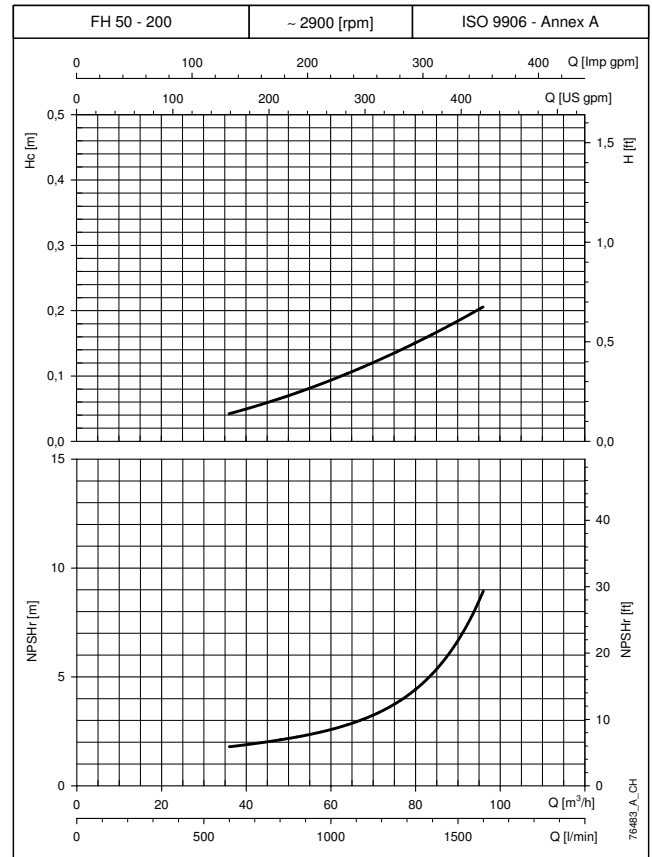
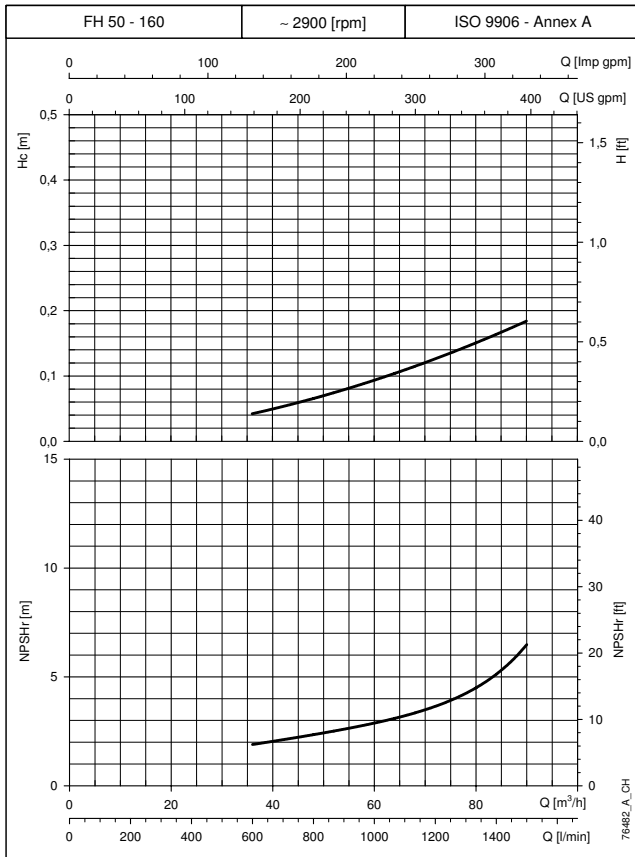


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

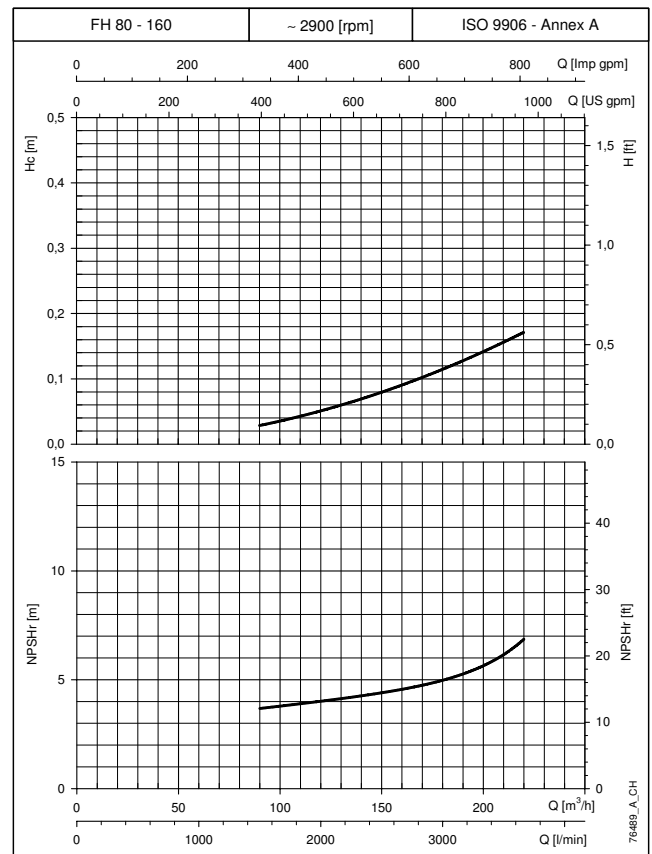
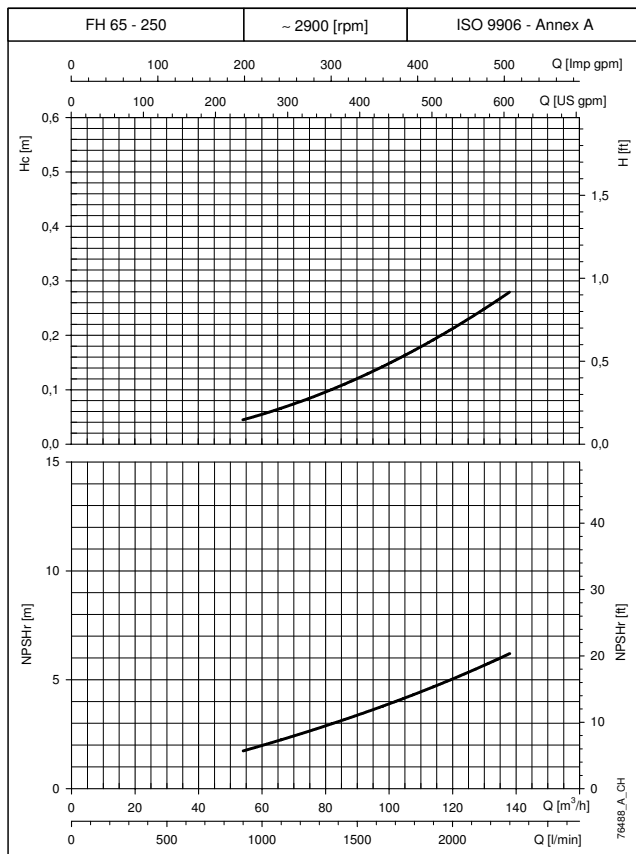
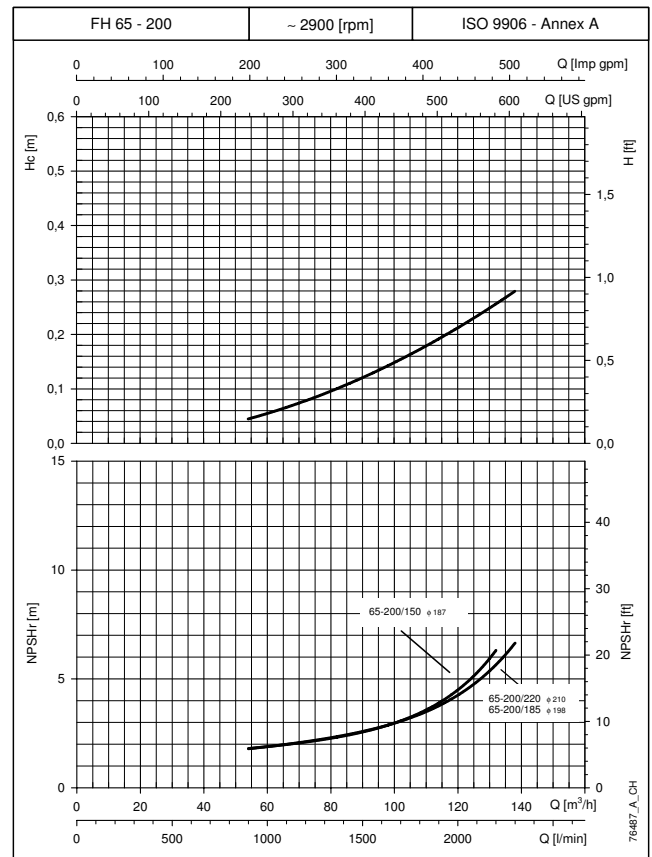
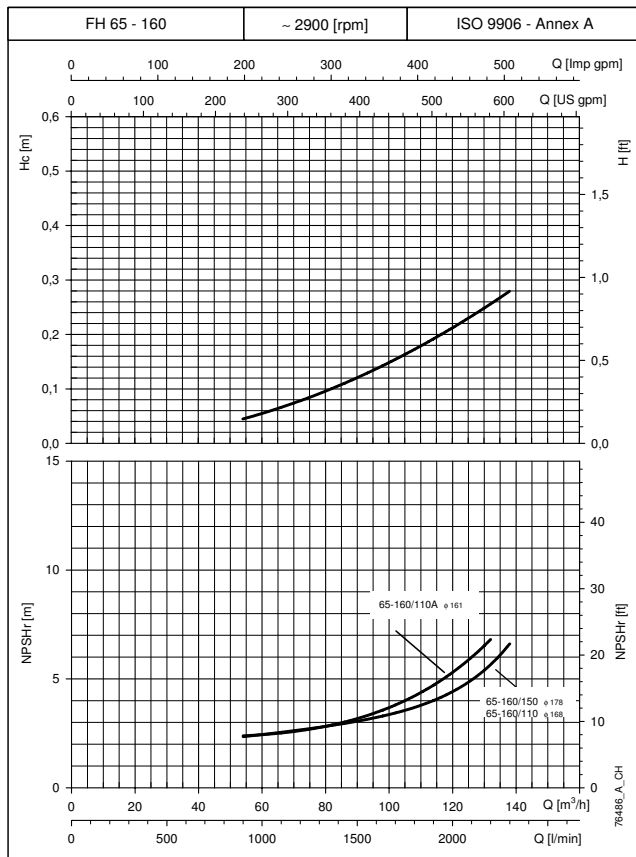


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

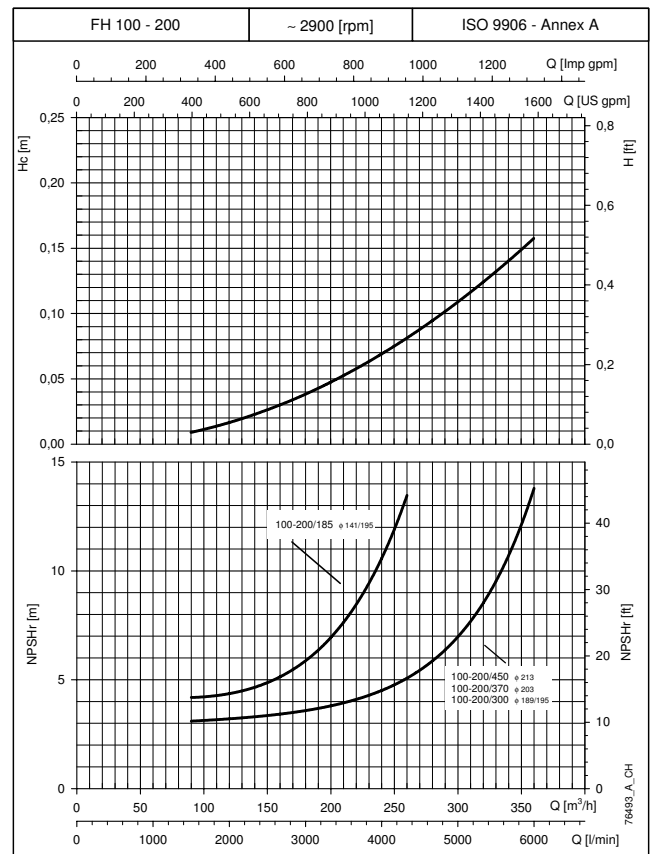
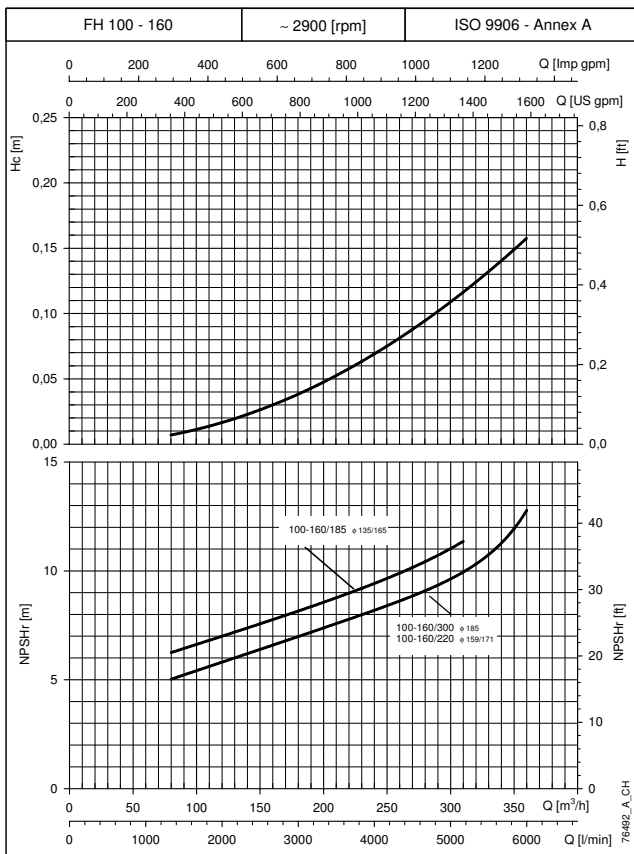
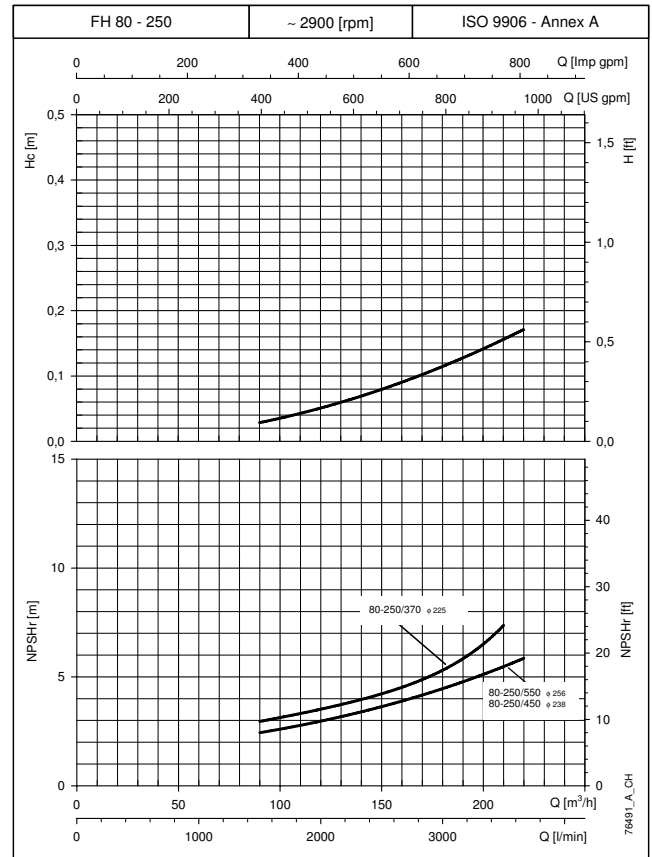
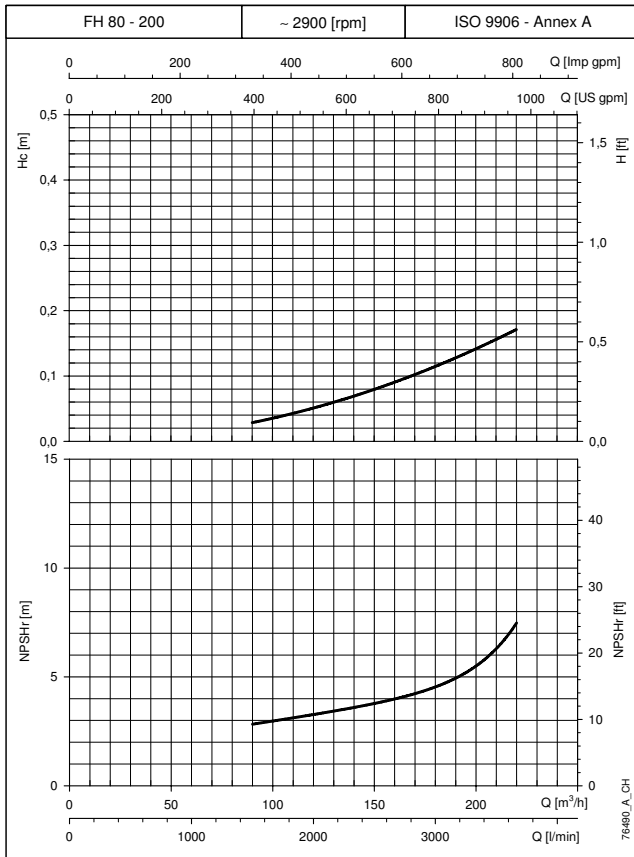


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

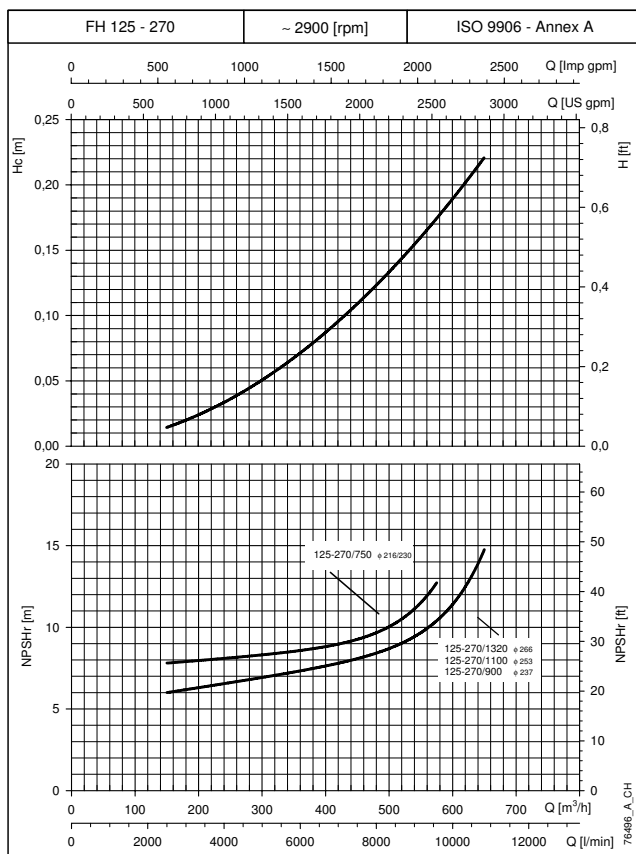
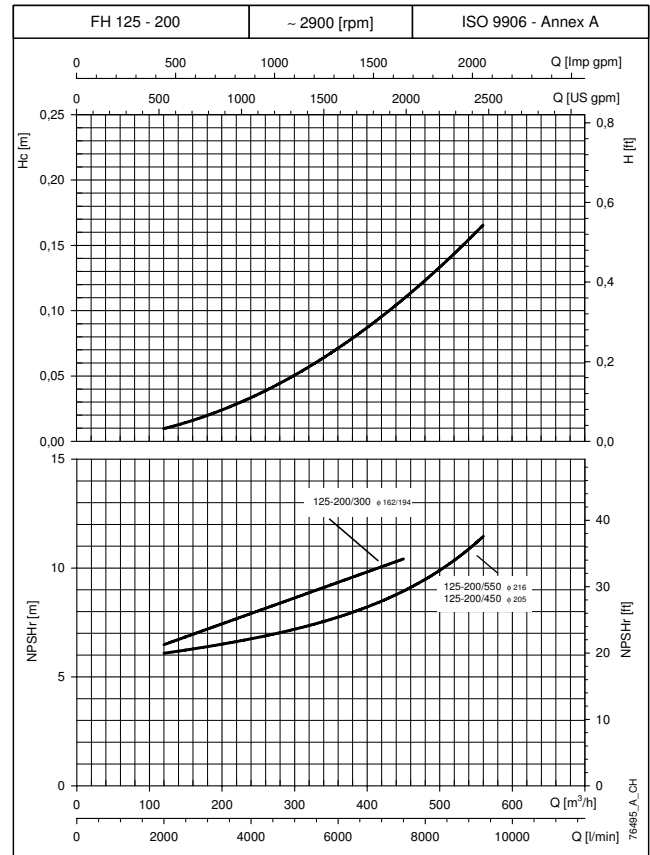
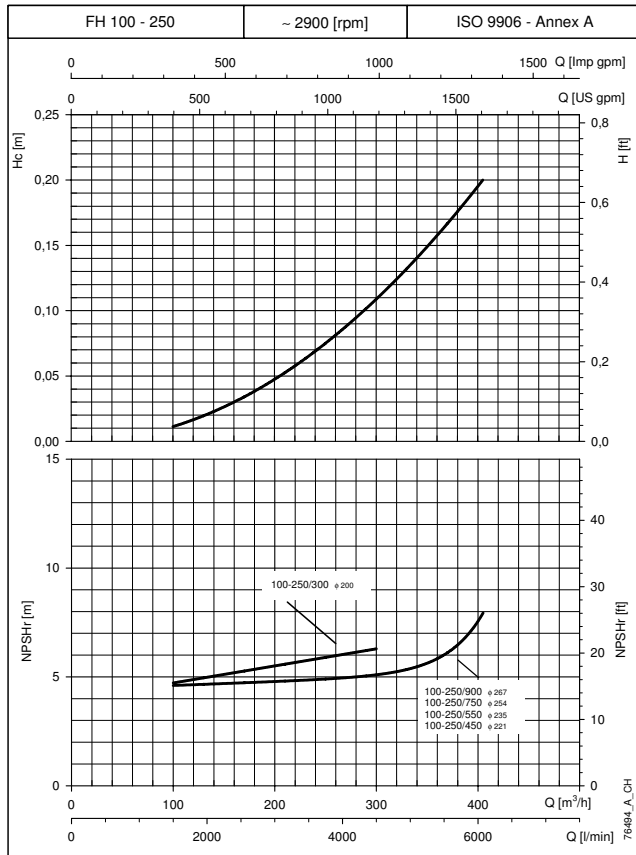


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

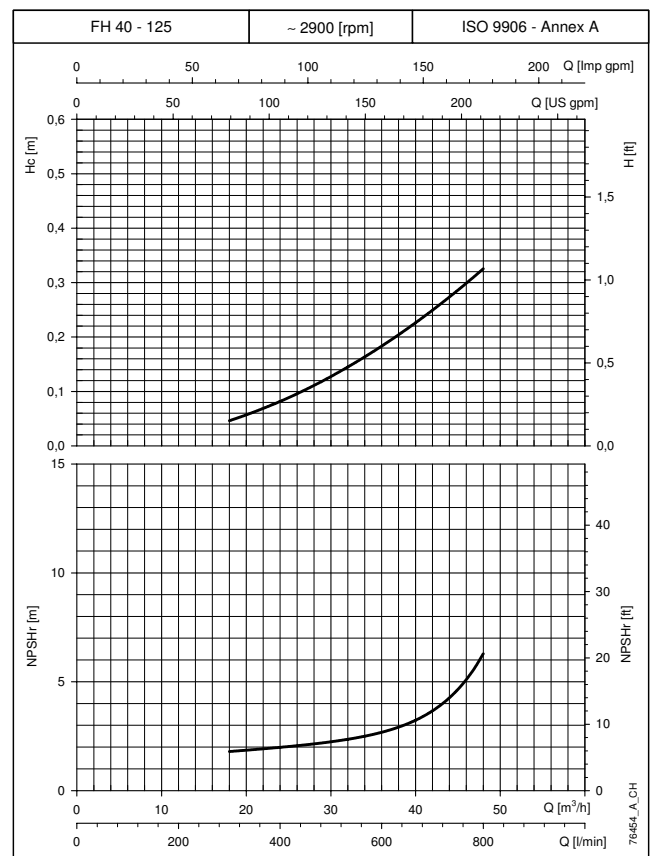
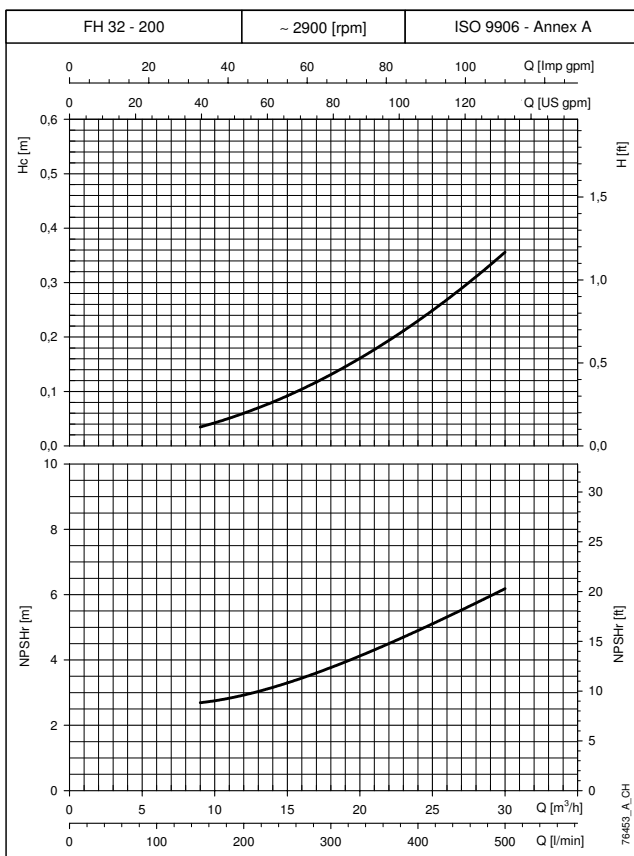
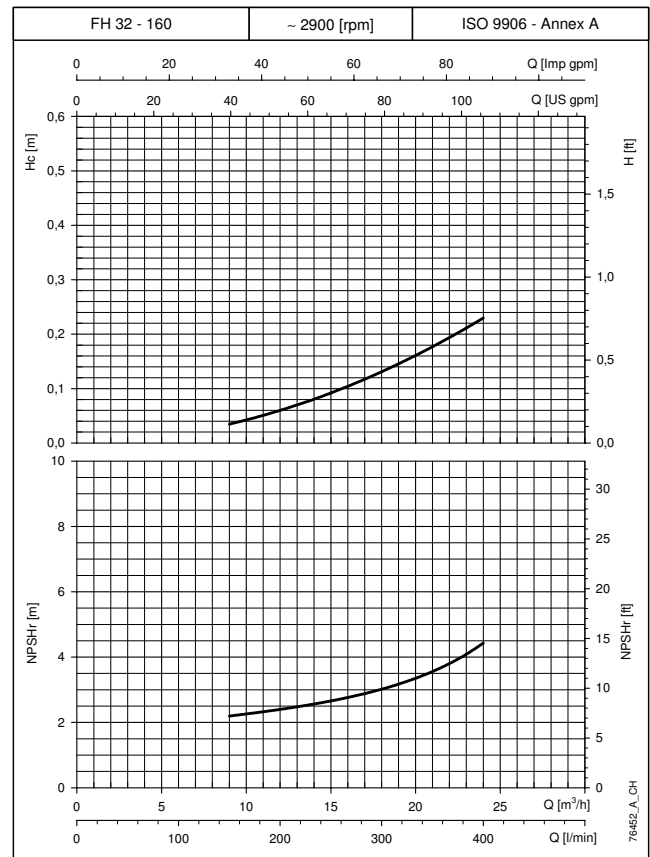
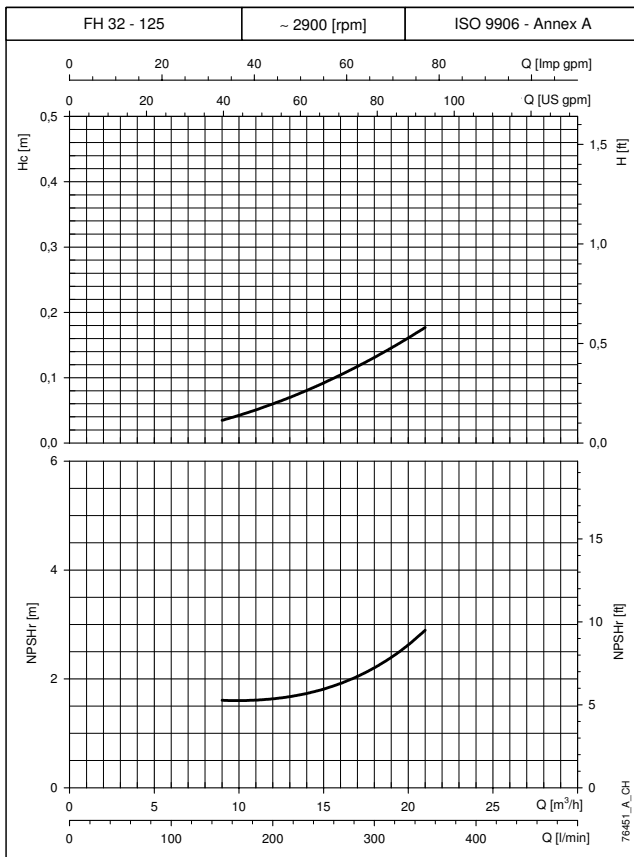


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The $NPSH_r$ 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.

H_c : Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

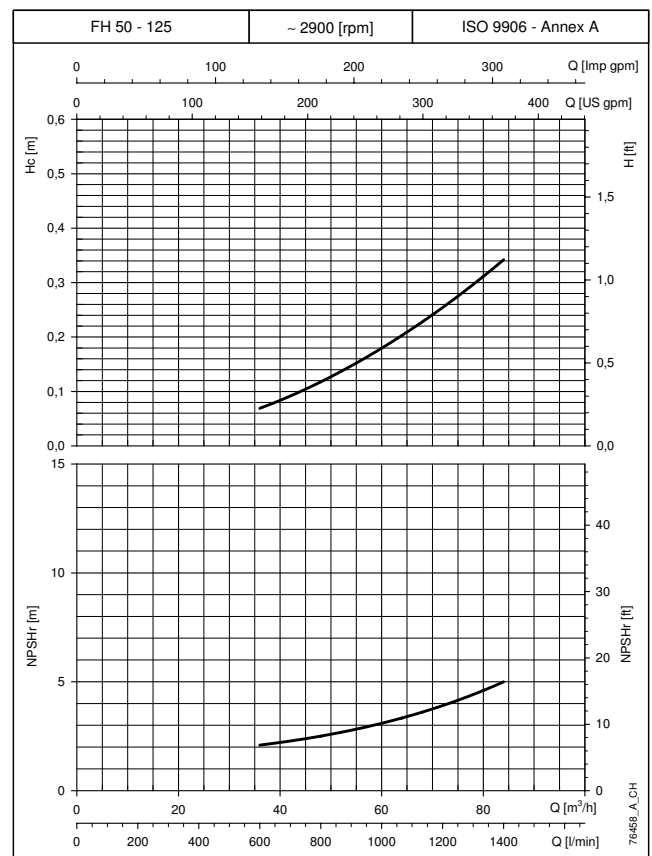
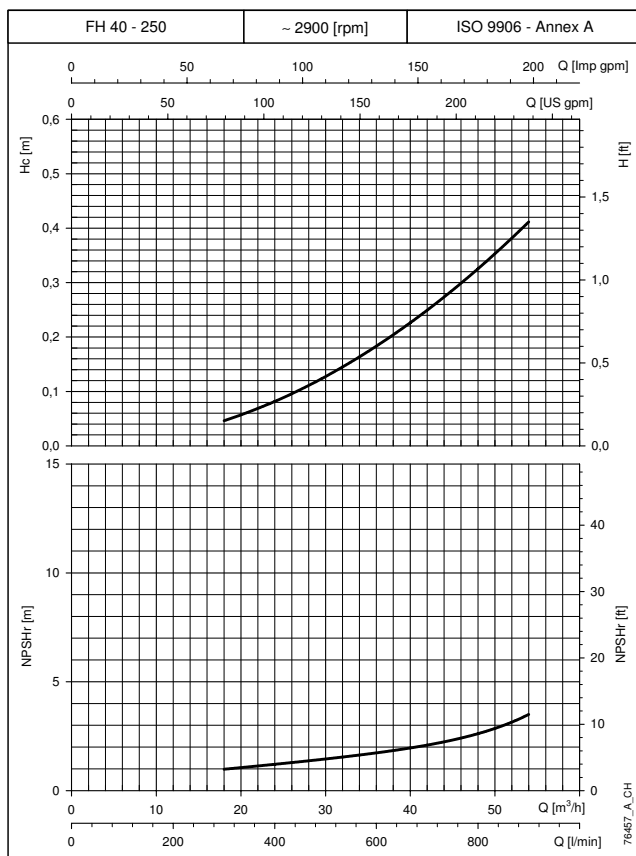
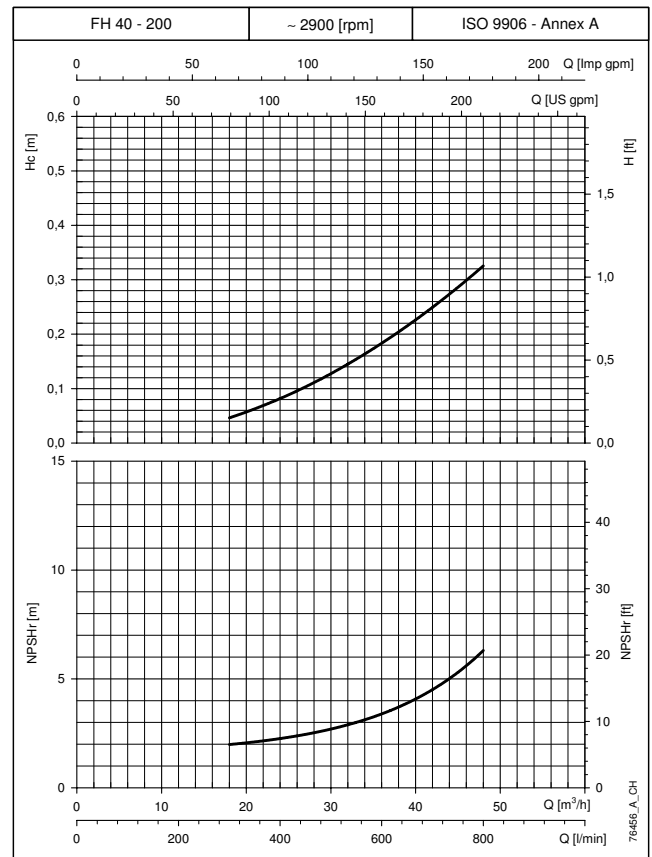
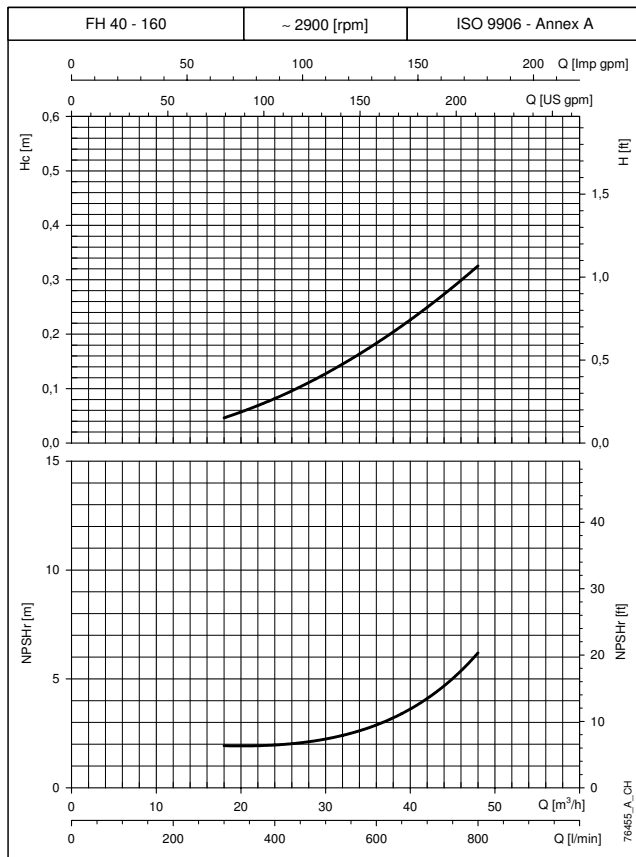


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

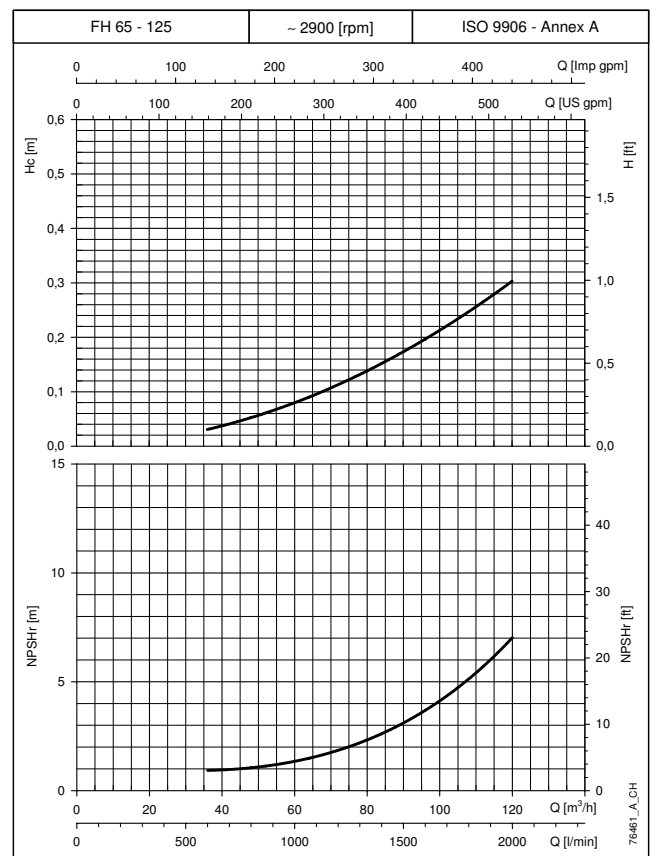
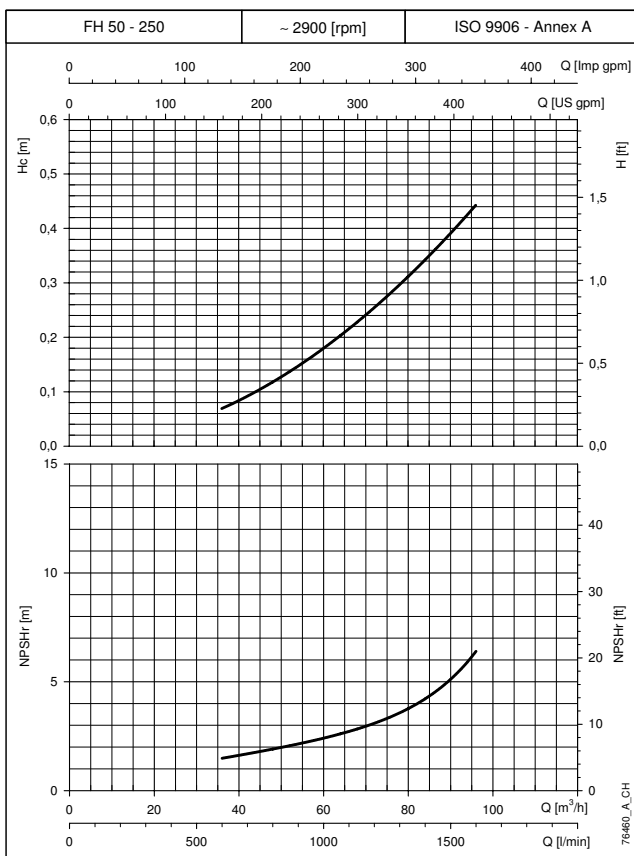
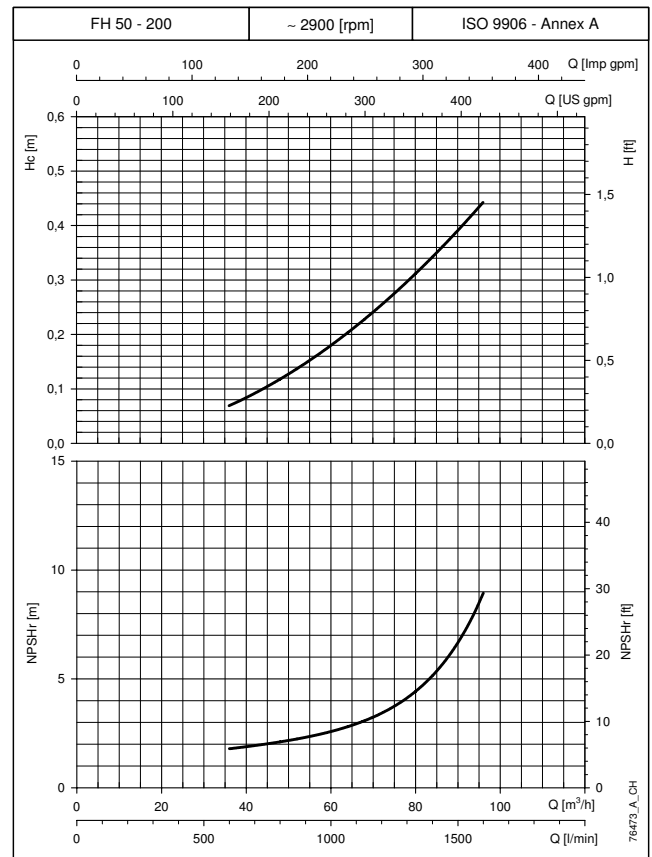
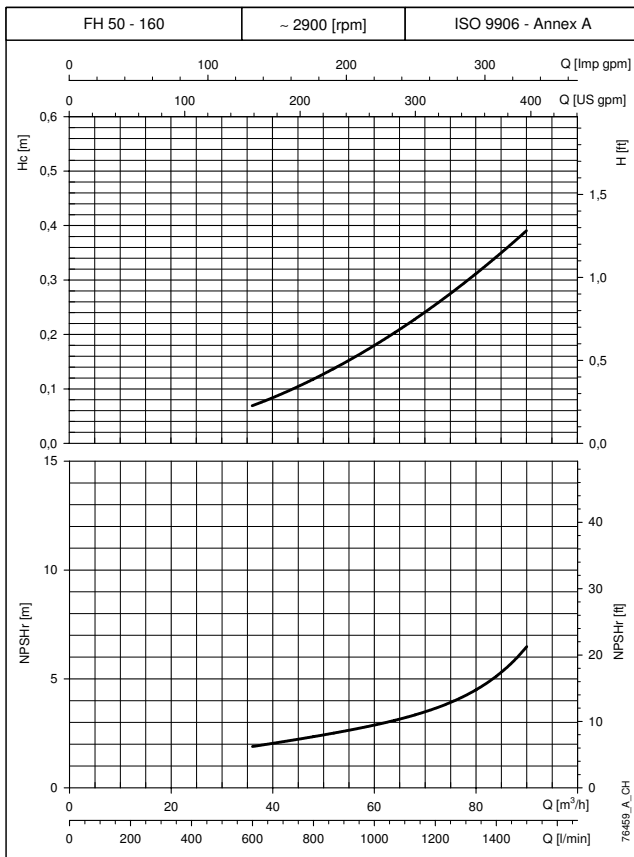


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

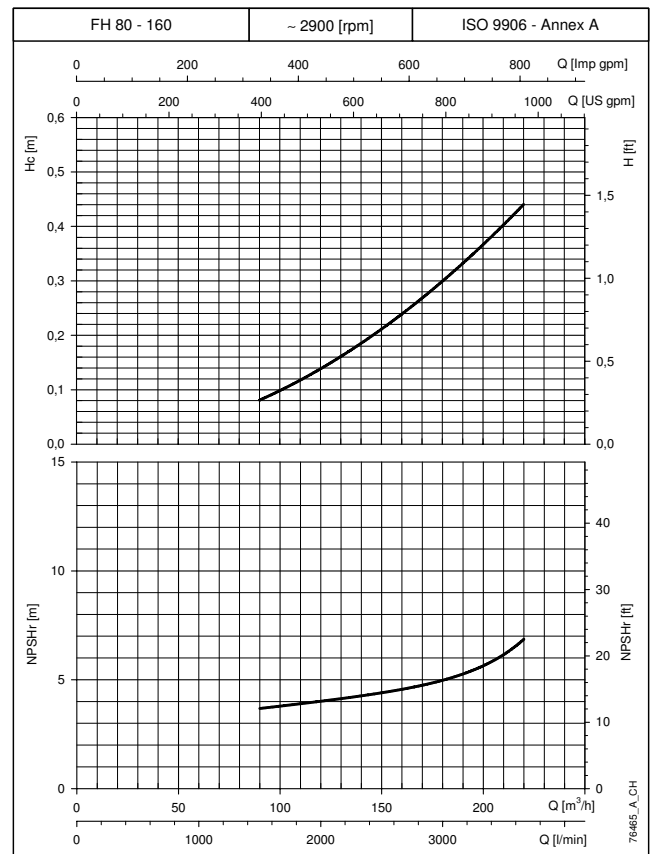
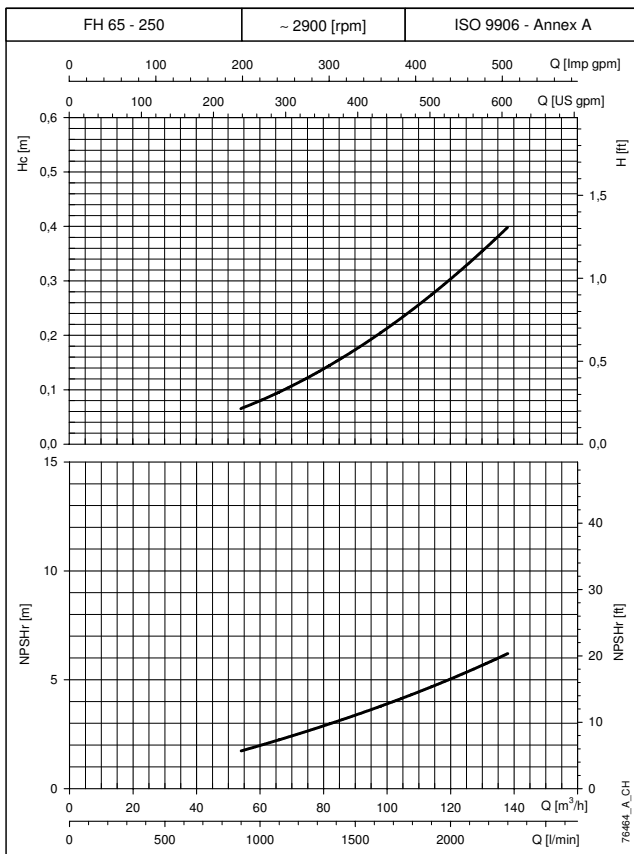
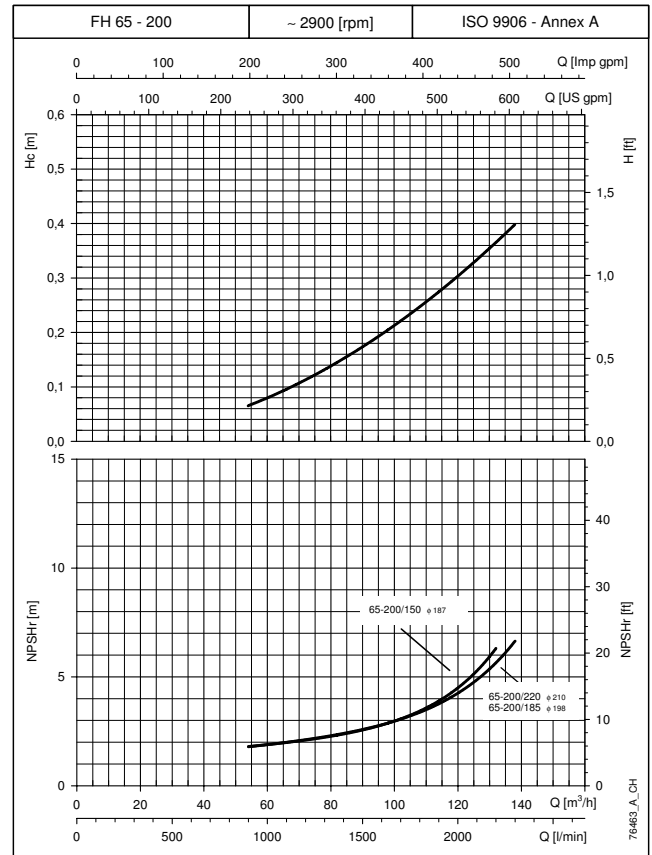
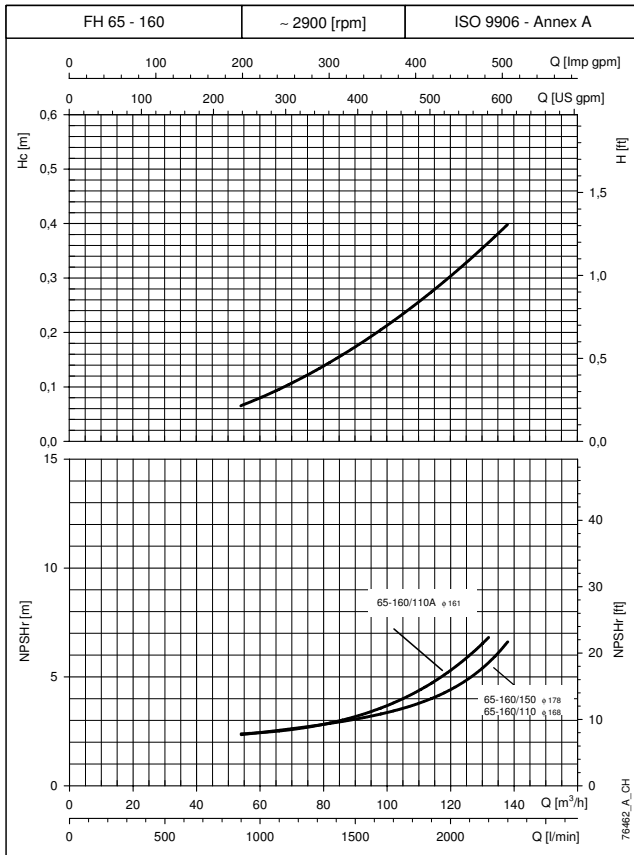


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

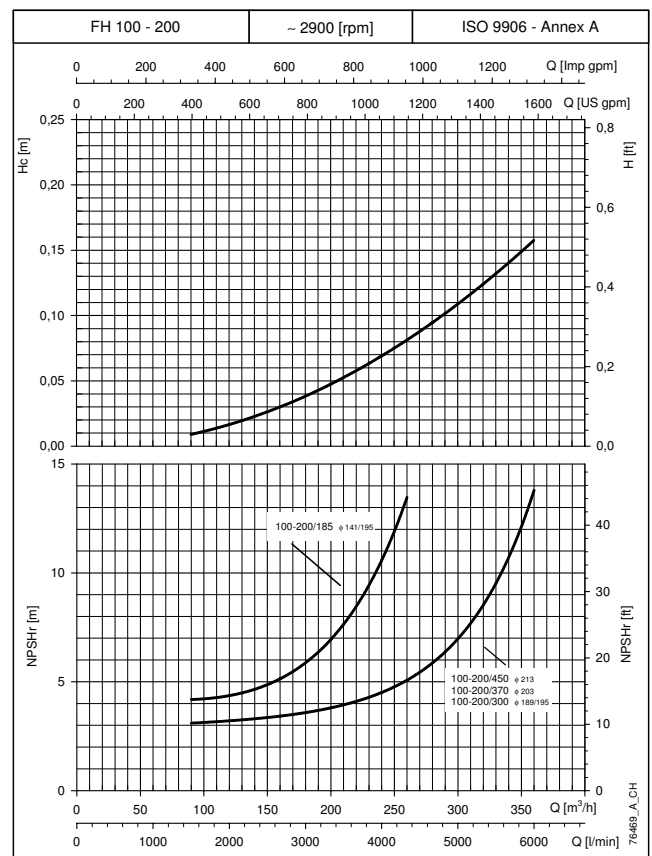
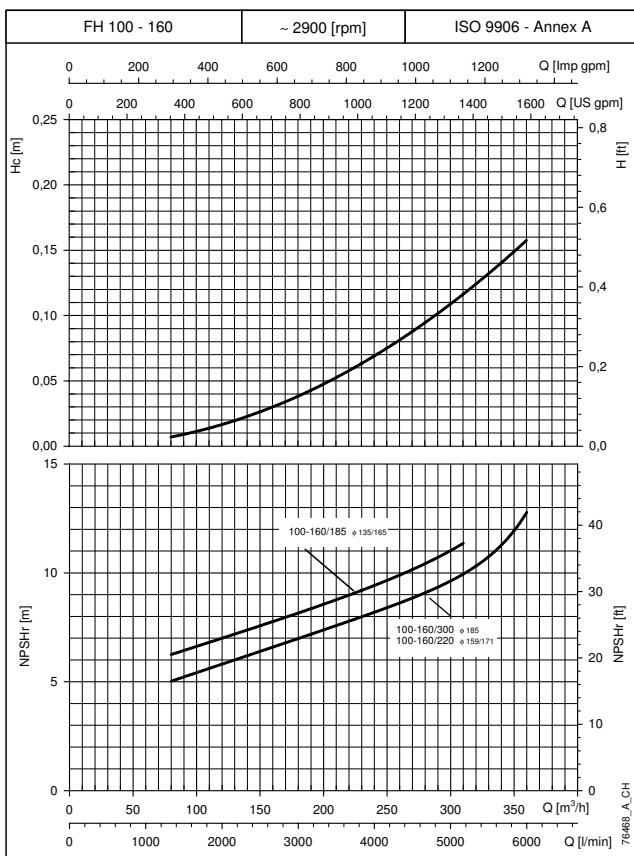
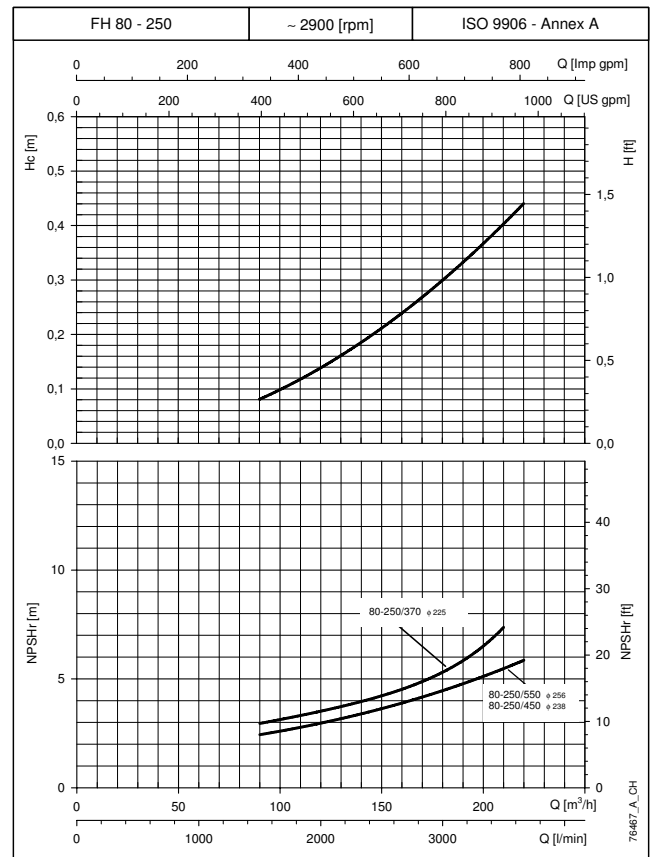
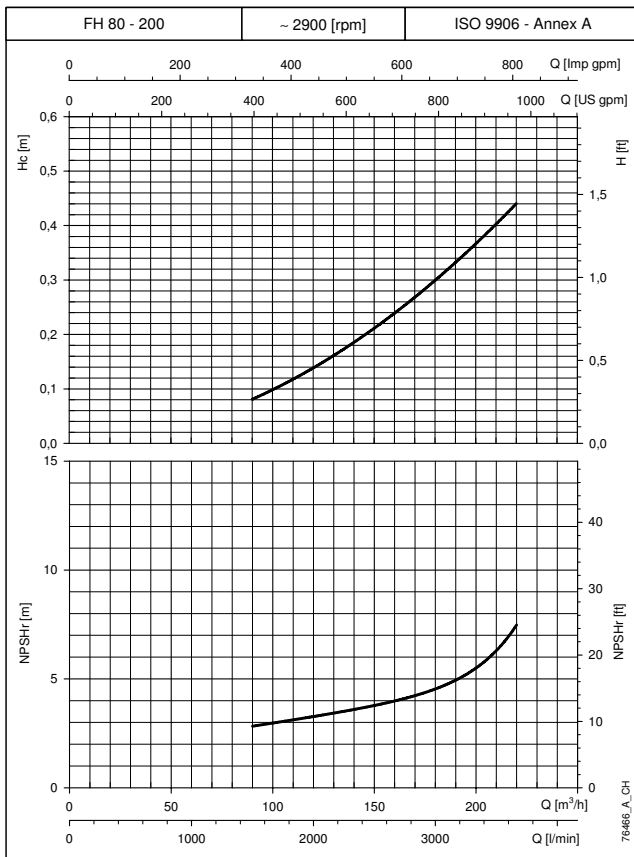


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

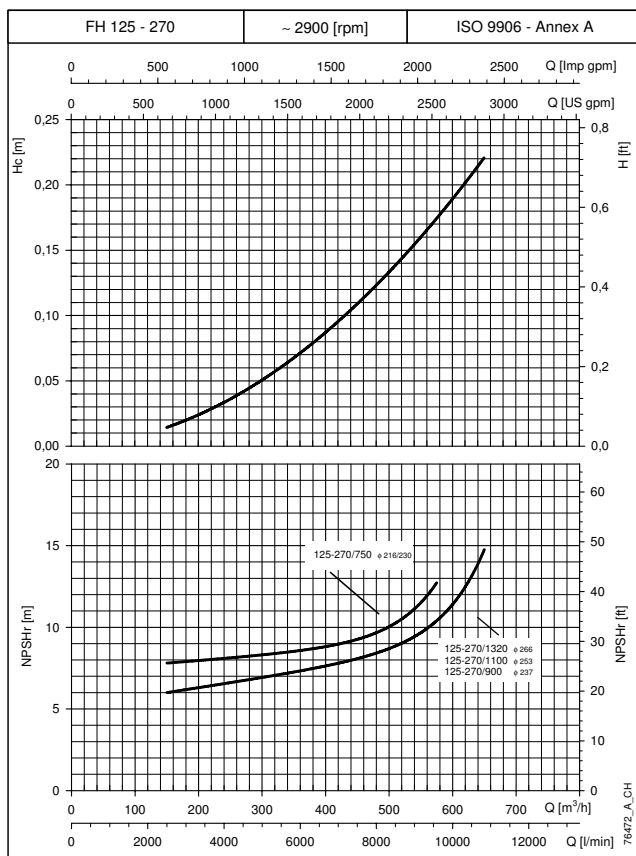
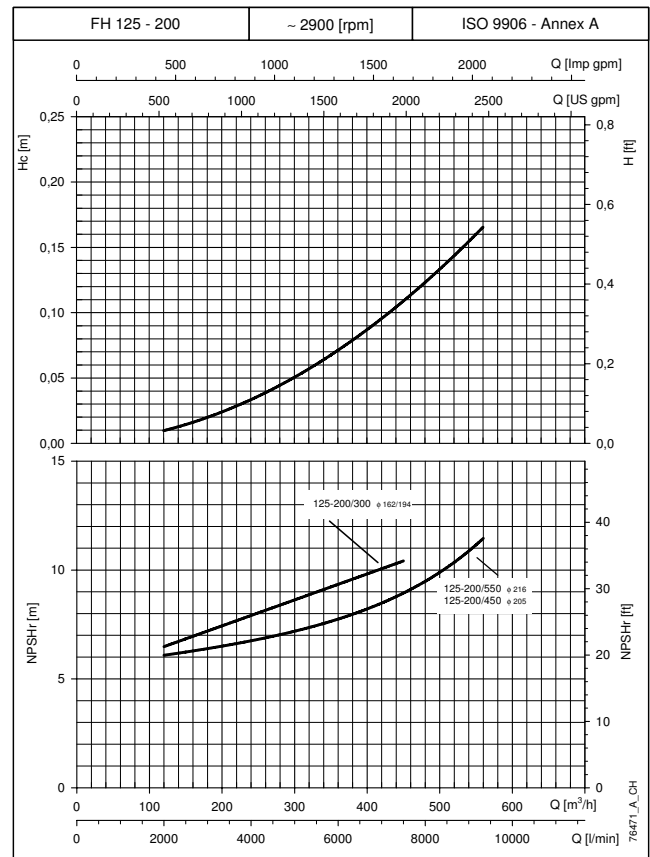
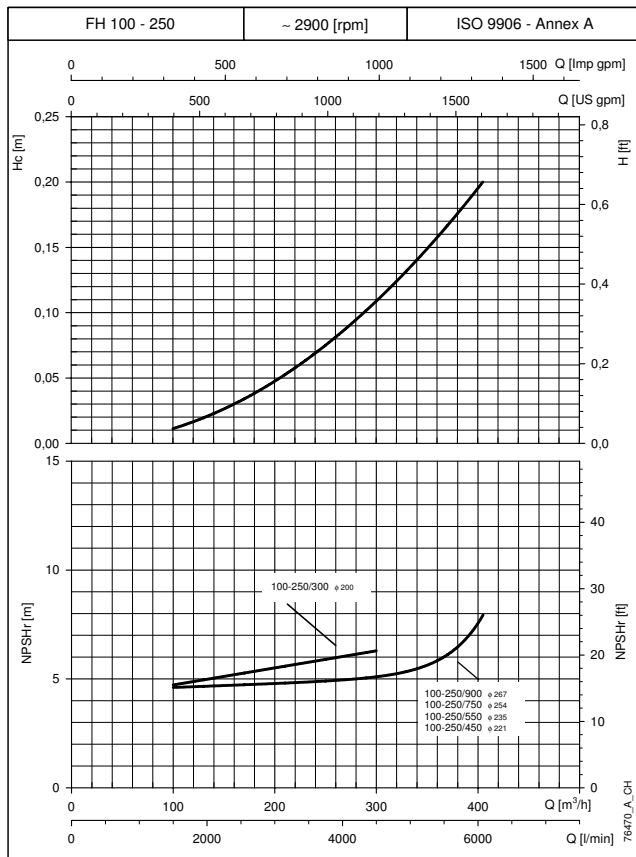


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..F SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT



These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

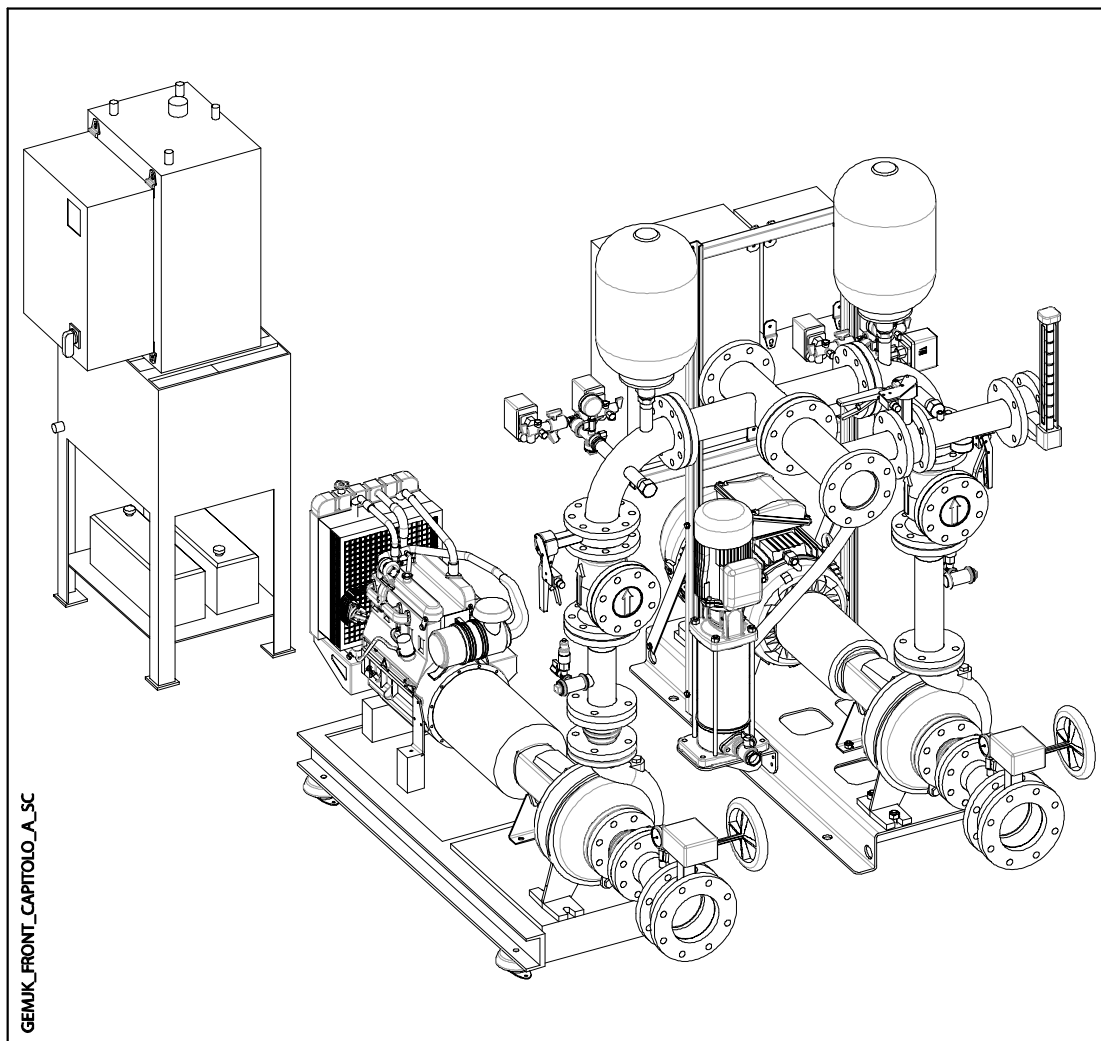
The NPSHr values required for the service pump were obtained in the laboratory. When using them for EN 12845 fire-fighting systems, increase the value by 1 m.

H_c: Pressure drop curve in suction kit.

Single and combined modules SHF series

EN 12845 firefighting modules with horizontal centrifugal pumps series SHF

50 Hz



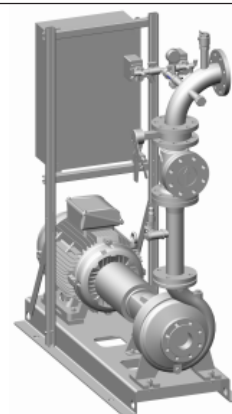
SHF MODULES

SHF 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.

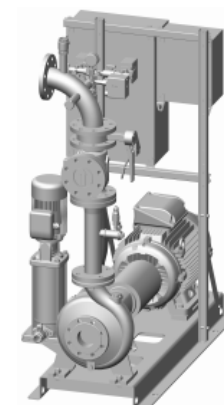
GEM.. SERIES MODULE

- Single electric service pump module with horizontal centrifugal pump and stainless steel pump body, SHF series.



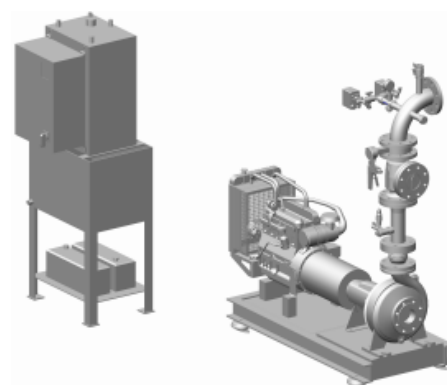
GEM..J SERIES MODULE

- Single electric service pump module with centrifugal pump and stainless steel pump body, SHF series, with series 1SV multi-stage vertical jockey pump on-board.



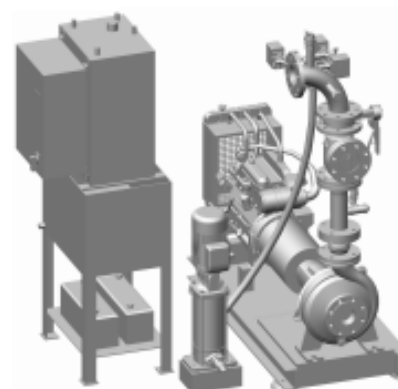
GEMK.. SERIES MODULE

- Single diesel engine service pump module with horizontal centrifugal pump and stainless steel pump body, SHF series.



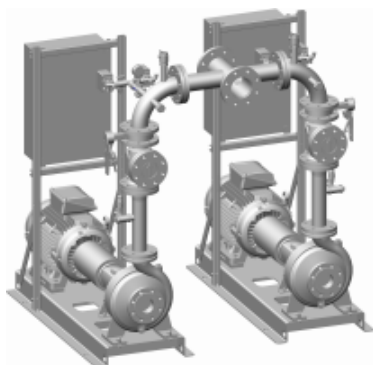
GEMK.. SERIES MODULE AND ELECTRIC JOCKEY PUMP

- Single diesel engine service pump module with horizontal centrifugal pump and stainless steel pump body, SHF series, with series 1SV multi-stage vertical jockey pump, **not on-board**, supplied as an accessory kit.



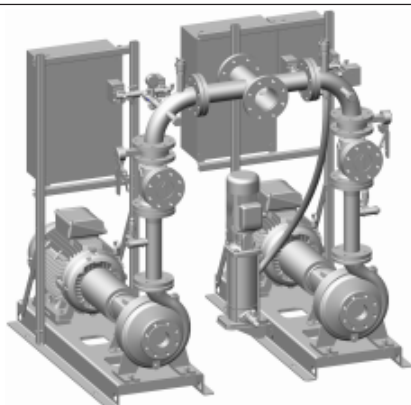
SHF COMBINED MODULES

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.



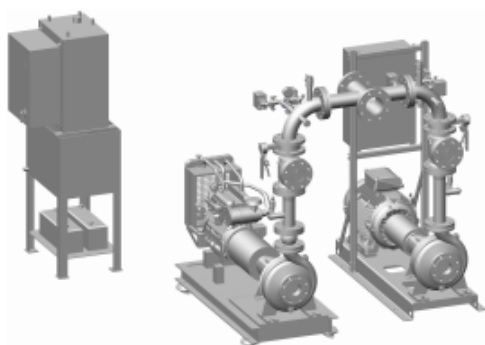
GEM..+GEM.. SERIES MODULES

- Combined modules comprising two electric service pump modules with horizontal centrifugal pumps and stainless steel pump body, SHF series.



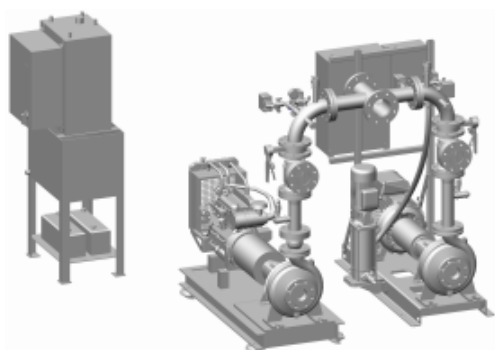
GEMJ..+GEM.. SERIES MODULES

- Combined modules comprising two electric service pump modules with horizontal centrifugal pumps and stainless steel pump body, SHF series, with series 1SV multi-stage vertical jockey pump on-board.



GEM..+GEMK.. SERIES MODULES

- Combined modules comprising an electric service pump module and a diesel engine service pump module with horizontal centrifugal pumps and stainless steel pump body, SHF series.



GEMJ..+GEMK.. SERIES MODULES

- Combined modules comprising an electric service pump module and a diesel engine service pump module with horizontal centrifugal pumps and stainless steel pump body, SHF series, with series 1SV multi-stage vertical jockey pump on-board the electric pump.

EN 12845 FIRE-FIGHTING MODULES GEM..S SERIES

SERVICE PUMP – JOCKEY PUMP COMBINATIONS

SERVICE PUMP		JOCKEY PUMP									
ELECTRIC PUMP	TYPE SHF	1SV 07	1SV 08	1SV 09	1SV 10	1SV 11	1SV 12	1SV 13	1SV 15	1SV 17	1SV 19
	PUMP										
32-125/07	32-125/D119	•									
32-125/11	32-125/D136		•								
32-160/15	32-160/D150		•								
32-160/22	32-160/D164			•							
32-200/30	32-200/D188					•					
32-200/40	32-200/D204						•				
32-250/55	32-250/D222						•				
32-250/75	32-250/D242								•		
32-250/110	32-250/D256									•	
40-125/11	40-125/D112	•									
40-125/15	40-125/D122	•									
40-125/22	40-125/D143		•								
40-160/30	40-160/D159			•							
40-160/40	40-160/D171				•						
40-200/55	40-200/D190					•					
40-200/75	40-200/D209						•				
40-250/110A	40-250/D218							•			
40-250/110	40-250/D233								•		
40-250/150	40-250/D251									•	
50-125/22	50-125/D119	•									
50-125/30	50-125/D130		•								
50-125/40	50-125/D139		•								
50-160/55	50-160/D158			•							
50-160/75	50-160/D174				•						
50-200/110A	50-200/D197						•				
50-200/110	50-200/D209						•				
50-250/150	50-250/D224								•		
50-250/185	50-250/D237								•		
50-250/220	50-250/D250									•	
65-160/40	65-160/D119		•								
65-160/55	65-160/D129		•								
65-160/75	65-160/D137		•								
65-160/110A	65-160/D168				•						
65-160/110	65-160/D177				•						
65-200/150	65-200/D192						•				
65-200/185	65-200/D203						•				
65-200/220	65-200/D215								•		
65-250/300	65-250/D240									•	
65-250/370	65-250/D255									•	
80-160/110	80-160/D169			•							
80-160/150	80-160/D177				•						
80-160/185	80-160/D186					•					
80-200/220	80-200/D198						•				
80-200/300	80-200/D215							•			
80-200/370	80-200/D226								•		
80-250/450	80-250/D237								•		
80-250/550	80-250/D252									•	
80-250/750	80-250/D270										•

12845-SHF_ap-en_c_tc

EN 12845 FIRE-FIGHTING MODULES GEM..S SERIES

HYDRAULIC PERFORMANCE TABLE AT 50 Hz (JOCKEY PUMP)

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

Prestazioni conformi alle norme ISO 9906 - Annex A.

EN12845_pp_1sv-2p50-en_a_th

EN 12845 FIRE-FIGHTING MODULES GEM..S32 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS													
				LH													
					Q = DELIVERY												
					l/min 0	150	180	200	225	300	350	375	400	416	425	450	540
			m³/h 0	9	11	12	14	18	21	23	24	25	26	27	32		
H = TOTAL HEAD METRES COLUMN OF WATER																	
32-125/07	32-125/D119	1 x 0,75	16,7	14,0	12,9	12,1	11,0	7,6	5,1	3,7	1,9						
32-125/11	32-125/D136	1 x 1,1	21,6	19,0	17,9	17,0	15,9	12,3	9,6	8,1	6,2						
32-160/15	32-160/D150	1 x 1,5	27,6	24,2	22,9	21,8	20,5	16,3	13,0	11,3	9,1						
32-160/22	32-160/D164	1 x 2,2	35,0	32,0	30,9	29,9	28,7	24,7	21,5	19,7	17,5	16,1	15,2	13,1			
32-200/30	32-200/D188	1 x 3	43,8	38,1	36,4	35,1	33,4	28,0	23,9	21,6	18,8	17,1					
32-200/40	32-200/D204	1 x 4	53,6	48,6	47,1	45,9	44,4	39,3	35,1	32,8	29,9	28,1	27,0	24,1			
32-250/55	32-250/D222	1 x 5,5	61,7	56,3	54,6	53,2	51,6	46,0	41,7	39,3	36,4						
32-250/75	32-250/D242	1 x 7,5	74,1	68,4	66,7	65,3	63,6	58,1	53,8	51,4	48,6	46,9	45,8				
32-250/110	32-250/D256	1 x 11	86,3	79,8	77,9	76,5	74,7	69,0	64,7	62,3	59,5	57,8	56,7	54,0			

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-shf32-2p50-en_b_th

LHn = risk class value referred to the required rated capacity (Tab. 6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2 m), are less than 4.5 m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..S32 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			LH												
			Q = DELIVERY												
			l/min 0	150	180	200	225	300	350	375	400	416	425	450	540
PUMP			m³/h 0	9	11	12	14	18	21	23	24	25	26	27	32
H = TOTAL HEAD METRES COLUMN OF WATER															
32-125/07	32-125/D119	1 x 0,75	16,7	14,0	12,9	12,1	11,0	7,6	5,1	3,7	1,9				
32-125/11	32-125/D136	1 x 1,1	21,6	19,0	17,9	17,0	15,9	12,3	9,6	8,1	6,2				
32-160/15	32-160/D150	1 x 1,5	27,6	24,2	22,9	21,8	20,5	16,3	13,0	11,3	9,1				
32-160/22	32-160/D164	1 x 2,2	35,0	32,0	30,9	29,9	28,7	24,7	21,5	19,7	17,5	16,1	15,2	13,1	
32-200/30	32-200/D188	1 x 3	43,8	38,1	36,4	35,1	33,4	28,0	23,9	21,6	18,8	17,1			
32-200/40	32-200/D204	1 x 4	53,6	48,6	47,1	45,9	44,4	39,3	35,1	32,8	29,9	28,1	27,0	24,1	
32-250/55	32-250/D222	1 x 5,5	61,7	56,3	54,6	53,2	51,6	46,0	41,7	39,3	36,4				
32-250/75	32-250/D242	1 x 7,5	74,1	68,4	66,7	65,3	63,6	58,1	53,8	51,4	48,6	46,9	45,8		
32-250/110	32-250/D256	1 x 11	86,3	79,8	77,9	76,5	74,7	69,0	64,7	62,3	59,5	57,8	56,7	54,0	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-shf32-2p50-en_b_th

LHn = risk class value referred to the required rated capacity (Tab. 6 para 7.3.1 EN12845).

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5 m.

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES SHF 32

TYPE SHF..	PUMP	RATED POWER kW	RISK CLASS												
			LH												
			Q = DELIVERY												
			l/min 0	150	180	200	225	300	350	375	400	416	425	450	540
ELECTRIC PUMP			m ³ /h 0	9	11	12	14	18	21	23	24	25	26	27	32
NPSH _r [METRES COLUMN OF WATER]															
32-125/07	32-125/D119	1 x 0,75		1,0	1,0	1,1	1,2	1,6	2,1	2,3	2,7				
32-125/11	32-125/D136	1 x 1,1		1,0	1,0	1,1	1,2	1,6	2,1	2,3	2,7				
32-160/15	32-160/D150	1 x 1,5		1,5	1,6	1,7	1,9	2,5	3,0	3,2	3,5				
32-160/22	32-160/D164	1 x 2,2		1,2	1,4	1,5	1,6	2,2	2,8	3,3	3,8	4,2	4,4	5,2	
32-200/30	32-200/D188	1 x 3		1,7	1,8	1,9	2,1	2,8	3,7	4,3	5,2	5,8			
32-200/40	32-200/D204	1 x 4		1,6	1,8	2,0	2,2	2,8	3,4	3,9	4,6	5,1	5,5	6,9	
32-250/55	32-250/D222	1 x 5,5		2,8	3,2	3,5	3,8	5,1	6,2	6,9	7,7				
32-250/75	32-250/D242	1 x 7,5		2,7	3,0	3,2	3,5	4,5	5,3	5,8	6,3	6,6	6,9		
32-250/110	32-250/D256	1 x 11		2,7	3,0	3,2	3,5	4,5	5,3	5,8	6,3	6,6	6,9	7,5	

The declared NPSH values were obtained in the laboratory and refer to a single service pump.

12845_1p-shf32-2p50_NPSH-en_b_th

LH_n = risk class value referred to the required rated capacity (Tab. 6 para 7.3.1 EN12845).

Check that NPSH_d ≥ NPSH_r+1m is satisfied.

EN 12845 FIRE-FIGHTING MODULES GEM..S40 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS														
			OH1n	Q = DELIVERY													
				l/min 0	300	375	540	640	677	700	725	750	800	833	850	1000	
				m3/h 0	18	23	32	38	41	42	44	45	48	50	51	60	
PUMP		H = TOTAL HEAD METRES COLUMN OF WATER															
40-125/11	40-125/D112	1 x 1,1	13,9	11,3	10,0	9,3	3,4	0,7									
40-125/15	40-125/D122	1 x 1,5	18,0	15,3	14,0	13,3	7,4	4,7									
40-125/22	40-125/D143	1 x 2,2	25,3	21,8	20,5	19,8	14,0	11,4	6,4	5,0	3,6	0,6					
40-160/30	40-160/D159	1 x 3	31,6	28,1	26,8	26,0	19,5	16,5	10,8	9,2	7,6						
40-160/40	40-160/D171	1 x 4	38,3	35,1	33,7	32,9	26,5	23,6	18,1	16,5	15,0	11,7					
40-200/55	40-200/D190	1 x 5,5	46,4	42,7	41,2	40,4	33,1	29,7	23,3	21,5	19,6						
40-200/75	40-200/D209	1 x 7,5	57,5	53,1	51,6	50,7	43,8	40,7	34,8	33,2	31,5	28,0					
40-250/110A	40-250/D218	1 x 11	63,6	57,8	56,2	55,2	47,8	44,5	38,2	36,5	34,8	31,1					
40-250/110	40-250/D233	1 x 11	71,7	66,0	64,3	63,4	55,7	52,3	45,8	44,0	42,1	38,3					
40-250/150	40-250/D251	1 x 15	85,0	78,6	76,9	76,0	68,4	65,0	58,6	56,8	55,0	51,1	42,6				

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-shf40-2p50-en_b_th

OH_n = risk class value referred to the required rated capacity (Tab. 6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2 m), are less than 4.5 m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..S40 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

SHF MODULES

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS														
			OH _{1n}	Q = DELIVERY													
				l/min 0	300	375	540	640	677	700	725	750	800	833	850	1000	
				m3/h 0	18	23	32	38	41	42	44	45	48	50	51	60	
PUMP		H = TOTAL HEAD METRES COLUMN OF WATER															
40-125/11	40-125/D112	1 x 1,1	13,9	11,3	10,0	9,3	3,4	0,7									
40-125/15	40-125/D122	1 x 1,5	18,0	15,3	14,0	13,3	7,4	4,7									
40-125/22	40-125/D143	1 x 2,2	25,3	21,8	20,5	19,8	14,0	11,4	6,4	5,0	3,6	0,6					
40-160/30	40-160/D159	1 x 3	31,6	28,1	26,8	26,0	19,5	16,5	10,8	9,2	7,6						
40-160/40	40-160/D171	1 x 4	38,3	35,1	33,7	32,9	26,5	23,6	18,1	16,5	15,0	11,7					
40-200/55	40-200/D190	1 x 5,5	46,4	42,7	41,2	40,4	33,1	29,7	23,3	21,5	19,6						
40-200/75	40-200/D209	1 x 7,5	57,5	53,1	51,6	50,7	43,8	40,7	34,8	33,2	31,5	28,0					
40-250/110A	40-250/D218	1 x 11	63,6	57,8	56,2	55,2	47,8	44,5	38,2	36,5	34,8	31,1					
40-250/110	40-250/D233	1 x 11	71,7	66,0	64,3	63,4	55,7	52,3	45,8	44,0	42,1	38,3					
40-250/150	40-250/D251	1 x 15	85,0	78,6	76,9	76,0	68,4	65,0	58,6	56,8	55,0	51,1	42,6				

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-shf40-2p50-en_b_th

OH_n = risk class value referred to the required rated capacity (Tab. 6 para 7.3.1 EN12845).

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5 m.

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES SHF 40

TYPE SHF..		RATED POWER kW	RISK CLASS													
			OH _{1n}		OH _{1m}		Q = DELIVERY									
			l/min 0	300	375	540	640	677	700	725	750	800	833	850	1000	
			m ³ /h 0	18	23	32	38	41	42	44	45	48	50	51	60	
ELECTRIC PUMP		PUMP	NPSH _r [METRES COLUMN OF WATER]													
40-125/11	40-125/D112	1 x 1,1		0,7	1,0	1,5	2,0									
40-125/15	40-125/D122	1 x 1,5		0,7	1,0	1,5	2,0	2,3	2,5							
40-125/22	40-125/D143	1 x 2,2		0,7	1,0	1,5	2,0	2,3	2,5	2,8	3,1					
40-160/30	40-160/D159	1 x 3		1,1	1,4	2,1	2,6	2,9	3,2	3,5	3,8					
40-160/40	40-160/D171	1 x 4		1,1	1,4	2,1	2,6	2,9	3,2	3,5	3,8	4,9				
40-200/55	40-200/D190	1 x 5,5		1,4	1,8	2,7	3,4	3,7	3,9	4,2	4,5	5,4				
40-200/75	40-200/D209	1 x 7,5		1,4	1,8	2,7	3,4	3,7	3,9	4,2	4,5	5,4	6,4			
40-250/110A	40-250/D218	1 x 11		1,4	1,4	1,7	3,0	4,1	5,0							
40-250/110	40-250/D233	1 x 11		1,3	1,4	1,6	1,8	1,9								
40-250/150	40-250/D251	1 x 15		1,3	1,4	1,6	1,8	1,9	2,1	2,2	2,5	3,3	4,3	5,0		

The declared NPSH values were obtained in the laboratory and refer to a single service pump.

12845_1p-shf40-2p50_NPSHr-en_b_th

OH_n, OH_m = risk class value referred to the required rated and maximum capacity (Tab. 6 para 7.3.1 EN12845).

Check that NPSH_d ≥ NPSH_r+1m is satisfied at the maximum requested capacity.

EN 12845 FIRE-FIGHTING MODULES GEM..S50 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
					OH2n			OH3n								
			Q = DELIVERY													
			l/min 0	600	680	725	1000	1100	1200	1300	1350	1380	1400	1450	1500	
			m3/h 0	36	41	44	60	66	72	78	81	83	84	87	90	
H = TOTAL HEAD METRES COLUMN OF WATER																
50-125/22	50-125/D119	1 x 2,2	17,2	13,2	12,0	11,3	5,9	3,6	1,2							
50-125/30	50-125/D130	1 x 3	21,7	17,4	16,1	15,3	9,8	7,6	5,2	2,8						
50-125/40	50-125/D139	1 x 4	25,6	21,8	20,6	19,8	14,4	12,1	9,8	7,3	6,0	5,3	4,7			
50-160/55	50-160/D158	1 x 5,5	34,0	29,3	27,8	26,9	20,4	17,5	14,4	11,1	9,4	8,3	7,6			
50-160/75	50-160/D174	1 x 7,5	40,7	36,1	34,7	33,9	27,6	24,7	21,6	18,1	16,3	15,2	14,4	12,5	10,4	
50-200/110A	50-200/D197	1 x 11	34,0	29,3	27,8	26,9	20,4	17,5	14,4	11,1	9,4	8,3	7,6			
50-200/110	50-200/D209	1 x 11	40,7	36,1	34,7	33,9	27,6	24,7	21,6	18,1	16,3	15,2	14,4	12,5		
50-250/150	50-250/D224	1 x 15	70,3	65,5	64,0	63,0	54,6	50,4	45,4	39,6						
50-250/185	50-250/D237	1 x 18,5	80,1	73,8	72,1	71,1	62,8	58,7	54,1	48,9	46,0	44,2				
50-250/220	50-250/D250	1 x 22	88,9	83,2	81,6	80,6	72,3	68,4	64,0	59,1	56,4	54,7	53,6	50,6		

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-shf50-2p50-en_a_th

OH_n = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..S50 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS												
			OH2n		OH3n										
			Q = DELIVERY												
		l/min 0	600	680	725	1000	1100	1200	1300	1350	1380	1400	1450	1500	
		m3/h 0	36	41	44	60	66	72	78	81	83	84	87	90	
		H = TOTAL HEAD METRES COLUMN OF WATER													
50-125/22	50-125/D119	1 x 2,2	17,2	13,2	12,0	11,3	5,9	3,6	1,2						
50-125/30	50-125/D130	1 x 3	21,7	17,4	16,1	15,3	9,8	7,6	5,2	2,8					
50-125/40	50-125/D139	1 x 4	25,6	21,8	20,6	19,8	14,4	12,1	9,8	7,3	6,0	5,3	4,7		
50-160/55	50-160/D158	1 x 5,5	34,0	29,3	27,8	26,9	20,4	17,5	14,4	11,1	9,4	8,3	7,6		
50-160/75	50-160/D174	1 x 7,5	40,7	36,1	34,7	33,9	27,6	24,7	21,6	18,1	16,3	15,2	14,4	12,5	10,4
50-200/110A	50-200/D197	1 x 11	34,0	29,3	27,8	26,9	20,4	17,5	14,4	11,1	9,4	8,3	7,6		
50-200/110	50-200/D209	1 x 11	40,7	36,1	34,7	33,9	27,6	24,7	21,6	18,1	16,3	15,2	14,4	12,5	
50-250/150	50-250/D224	1 x 15	70,3	65,5	64,0	63,0	54,6	50,4	45,4	39,6					
50-250/185	50-250/D237	1 x 18,5	80,1	73,8	72,1	71,1	62,8	58,7	54,1	48,9	46,0	44,2			
50-250/220	50-250/D250	1 x 22	88,9	83,2	81,6	80,6	72,3	68,4	64,0	59,1	56,4	54,7	53,6	50,6	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-shf50-2p50-en_a_th

OH_n = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES SHF 50

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS																	
			OH2n	OH2m	OH3n	OH3m														
							Q = DELIVERY													
							l/min 0	600	680	725	1000	1100	1200	1300	1350	1380	1400	1450	1500	
				m³/h 0	36	41	44	60	66	72	78	81	83	84	87	90				
				NPSHr [METRES COLUMN OF WATER]																
50-125/22	50-125/D119	1 x 2,2		1,6	1,8	1,9	2,8	3,4	4,3											
50-125/30	50-125/D130	1 x 3		1,6	1,8	1,9	2,7	3,1	3,7	4,6										
50-125/40	50-125/D139	1 x 4		1,6	1,8	1,9	2,7	3,1	3,7	4,6	5,2	5,7	6,0							
50-160/55	50-160/D158	1 x 5,5		2,0	2,1	2,1	2,8	3,2	3,7	4,7	5,4	5,9	6,3							
50-160/75	50-160/D174	1 x 7,5		1,9	2,1	2,2	2,8	3,1	3,6	4,3	4,9	5,3	5,6	6,5	7,6					
50-200/110A	50-200/D197	1 x 11		2,0	2,1	2,1	2,8	3,2	4,0	5,2	6,1	6,7	7,2							
50-200/110	50-200/D209	1 x 11		1,9	2,1	2,2	2,8	3,2	3,7	4,7	5,4	5,9	6,3	7,5						
50-250/150	50-250/D224	1 x 15		1,6	1,7	1,8	2,3	2,7	3,3	4,8										
50-250/185	50-250/D237	1 x 18,5		1,5	1,7	1,8	2,4	2,7	3,1	3,7	4,1	4,4								
50-250/220	50-250/D250	1 x 22		1,5	1,7	1,8	2,4	2,7	3,1	3,7	4,1	4,4	4,7	5,4						

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-shf50-2p50_NPSHr-en_a_th

OH_n, OH_m = risk class value referred to the required rated and maximum capacity (Tab.6 para 7.3.1 EN12845)

Check that NPSH_d ≥ NPSH_r+1m is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES GEM..S65 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS												
				OH3n						OH4n						
				Q = DELIVERY												
				l/min 0	800	900	1000	1100	1350	1500	1800	1900	2000	2050	2100	2200
			m3/h 0	48	54	60	66	81	90	108	114	120	123	126	132	
H = TOTAL HEAD METRES COLUMN OF WATER																
65-160/40	65-160/D119	1 x 4	19,6	15,9	14,9	13,8	12,6	9,4	7,3	2,9						
65-160/55	65-160/D129	1 x 5,5	24,2	20,5	19,5	18,4	17,2	13,9	11,7	7,0	5,4					
65-160/75	65-160/D137	1 x 7,5	28,2	25,1	24,2	23,1	22,0	18,8	16,7	12,0	10,4	8,7				
65-160/110A	65-160/D168	1 x 11	38,2	34,3	33,0	31,5	29,8	25,2	22,0	15,2	12,9					
65-160/110	65-160/D177	1 x 11	42,9	39,7	38,4	36,9	35,3	30,6	27,4	20,5	18,1	15,6				
65-200/150	65-200/D192	1 x 15	53,0		47,5	45,9	44,1	38,9	35,3	27,1	24,1					
65-200/185	65-200/D203	1 x 18,5	60,2		55,2	53,6	51,9	46,9	43,4	35,5	32,6	29,5				
65-200/220	65-200/D215	1 x 22	68,0		63,0	61,6	60,0	55,2	51,9	44,3	41,5	38,5	37,0	35,5		
65-250/300	65-250/D240	1 x 30	83,7			80,2	78,9	74,9	71,9	64,4	61,4	58,3	56,6	54,9		
65-250/370	65-250/D255	1 x 37	96,7			93,6	92,2	88,0	84,9	77,4	74,6	71,7	70,1	68,5	65,2	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-shf65-2p50-en_a_th

OHn = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..S65 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS											
				OH3n						OH4n					
				Q = DELIVERY											
				l/min 0	800	900	1000	1100	1350	1500	1800	1900	2000	2050	2100
			m3/h 0	48	54	60	66	81	90	108	114	120	123	126	132
H = TOTAL HEAD METRES COLUMN OF WATER															
65-160/40	65-160/D119	1 x 4	19,6	15,9	14,9	13,8	12,6	9,4	7,3	2,9					
65-160/55	65-160/D129	1 x 5,5	24,2	20,5	19,5	18,4	17,2	13,9	11,7	7,0	5,4				
65-160/75	65-160/D137	1 x 7,5	28,2	25,1	24,2	23,1	22,0	18,8	16,7	12,0	10,4	8,7			
65-160/110A	65-160/D168	1 x 11	38,2	34,3	33,0	31,5	29,8	25,2	22,0	15,2	12,9				
65-160/110	65-160/D177	1 x 11	42,9	39,7	38,4	36,9	35,3	30,6	27,4	20,5	18,1	15,6			
65-200/150	65-200/D192	1 x 15	53,0		47,5	45,9	44,1	38,9	35,3	27,1	24,1				
65-200/185	65-200/D203	1 x 18,5	60,2		55,2	53,6	51,9	46,9	43,4	35,5	32,6	29,5			
65-200/220	65-200/D215	1 x 22	68,0		63,0	61,6	60,0	55,2	51,9	44,3	41,5	38,5	37,0	35,5	
65-250/300	65-250/D240	1 x 30	83,7			80,2	78,9	74,9	71,9	64,4	61,4	58,3	56,6	54,9	
65-250/370	65-250/D255	1 x 37	96,7			93,6	92,2	88,0	84,9	77,4	74,6	71,7	70,1	68,5	65,2

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-shf65-2p50-en_a_th

OHn = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES SHF 65

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS												
				OH3n				OH3m		OH4n				OH4m		
				Q = DELIVERY												
				l/min 0	800	900	1000	1100	1350	1400	1500	1800	1900	2000	2100	2200
			m³/h 0	48	54	60	66	81	84	90	108	114	120	126	132	
NPSHr [METRES COLUMN OF WATER]																
65-160/40	65-160/D119	1 x 4		1,9	1,8	1,9	1,9	2,5	2,7	3,3	7,4					
65-160/55	65-160/D129	1 x 5,5		1,9	1,9	1,9	1,9	2,4	2,6	3,1	5,4	6,6				
65-160/75	65-160/D137	1 x 7,5		1,9	1,9	1,9	1,9	2,4	2,6	3,1	5,4	6,6	8,0			
65-160/110A	65-160/D168	1 x 11		1,3	1,4	1,6	1,7	2,1	2,1	2,4	3,5	4,2				
65-160/110	65-160/D177	1 x 11		1,3	1,4	1,6	1,7	2,1	2,1	2,4	3,5	4,2	5,2			
65-200/150	65-200/D192	1 x 15			1,7	1,7	1,6	1,7	1,7	1,9	4,1	6,4				
65-200/185	65-200/D203	1 x 18,5			1,7	1,7	1,6	1,7	1,7	1,9	3,0	3,9	5,3			
65-200/220	65-200/D215	1 x 22			1,7	1,7	1,6	1,7	1,7	1,9	3,0	3,9	5,3	7,5		
65-250/300	65-250/D240	1 x 30				1,3	1,3	1,4	1,5	1,7	3,2	4,1	5,4	7,0		
65-250/370	65-250/D255	1 x 37				1,3	1,3	1,3	1,4	1,6	2,9	3,7	4,8	6,2	8,1	

The declared NPSH values were obtained in the laboratory and refer to a single service pump

OHn, OHm = risk class value referred to the required rated and maximum capacity (Tab.6 para 7.3.1 EN12845)

Check that $NPSHd \geq NPSHr + 1m$ is satisfied at the maximum requested capacity

12845_1p-shf65-2p50_NPSHr-en_a_th

EN 12845 FIRE-FIGHTING MODULES GEM..S80 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (SUCTION LIFT)

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS											
				OH4n				HH1n							
				Q = DELIVERY											
				l/min 0	1200	1500	1800	2100	2300	3216	3300	3500	3600	3700	3800
			m3/h 0	72	90	108	126	138	193	198	210	216	222	228	240
H = TOTAL HEAD METRES COLUMN OF WATER															
80-160/110	80-160/D169	1 x 11	33,0	30,9	28,6	25,7	22,2	19,7	6,2	4,8					
80-160/150	80-160/D177	1 x 15	39,5	37,8	35,6	32,7	29,4	26,9	13,2	11,8	8,4				
80-160/185	80-160/D186	1 x 18,5	46,4	44,7	42,6	39,8	36,6	34,2	20,7	19,3	15,9	14,1	12,4		
80-200/220	80-200/D198	1 x 22	51,9		48,5	45,8	42,5	40,1	26,7	25,3	21,9	20,2			
80-200/300	80-200/D215	1 x 30	62,2		59,7	57,1	53,9	51,5	37,8	36,4	32,9	31,1	29,3	27,4	
80-200/370	80-200/D226	1 x 37	69,8	69,9	68,1	65,7	62,8	60,5	47,2	45,7	42,2	40,4	38,5	36,6	32,7
80-250/450	80-250/D237	1 x 45	82,2		79,1	76,2	72,6	69,8	53,3	51,5	47,0	44,6			
80-250/550	80-250/D252	1 x 55	93,9		91,9	89,2	85,9	83,2	67,7	66,0	61,8	59,6	57,3		
80-250/750	80-250/D270	1 x 75	109,7		108,6	106,0	102,7	100,2	85,0	83,3	79,2	77,0	74,8	72,5	

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-sp-shf80-2p50-en_a_th

OHn = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure that these drops, added to the difference in level (max. 3.2m), are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

EN 12845 FIRE-FIGHTING MODULES GEM..S80 SERIES HYDRAULIC PERFORMANCE TABLE AT 50 HZ (POSITIVE SUCTION HEAD)

SHF MODULES

TYPE SHF.. ELECTRIC PUMP		PUMP	RATED POWER kW	RISK CLASS												
				OH4n					HH1n							
				Q = DELIVERY												
				l/min 0	1200	1500	1800	2100	2300	3216	3300	3500	3600	3700	3800	4000
			m3/h 0	72	90	108	126	138	193	198	210	216	222	228	240	
H = TOTAL HEAD METRES COLUMN OF WATER																
80-160/110	80-160/D169	1 x 11	33,0	30,9	28,6	25,7	22,2	19,7	6,2	4,8						
80-160/150	80-160/D177	1 x 15	39,5	37,8	35,6	32,7	29,4	26,9	13,2	11,8	8,4					
80-160/185	80-160/D186	1 x 18,5	46,4	44,7	42,6	39,8	36,6	34,2	20,7	19,3	15,9	14,1	12,4			
80-200/220	80-200/D198	1 x 22	51,9		48,5	45,8	42,5	40,1	26,7	25,3	21,9	20,2				
80-200/300	80-200/D215	1 x 30	62,2		59,7	57,1	53,9	51,5	37,8	36,4	32,9	31,1	29,3	27,4		
80-200/370	80-200/D226	1 x 37	69,8	69,9	68,1	65,7	62,8	60,5	47,2	45,7	42,2	40,4	38,5	36,6	32,7	
80-250/450	80-250/D237	1 x 45	82,2		79,1	76,2	72,6	69,8	53,3	51,5	47,0	44,6				
80-250/550	80-250/D252	1 x 55	93,9		91,9	89,2	85,9	83,2	67,7	66,0	61,8	59,6	57,3			
80-250/750	80-250/D270	1 x 75	109,7		108,6	106,0	102,7	100,2	85,0	83,3	79,2	77,0	74,8	72,5		

Performance levels relative to set with 1 service pump running and compliant with ISO 9906 - Annex A.

12845_1pg-st-shf80-2p50-en_a_th

OHn = risk class value referred to the required rated capacity (Tab.6 para 7.3.1 EN12845)

Inlet pressure drops must be deducted. Make sure these drops are less than 4.5m

The values shown identify performance levels according to the reference standard EN12845.

NPSH REQUIRED FOR PUMP SERIES SHF 80

TYPE SHF.. ELECTRIC PUMP		RATED POWER kW	RISK CLASS													
			OH4n		OH4m	HH1n		HH1m		Q = DELIVERY						
			l/min 0	1200	1500	1800	2100	2300	3216	3300	3500	3600	3700	3800	4000	
			m³/h 0	72	90	108	126	138	193	198	210	216	222	228	240	
NPSHr [METRES COLUMN OF WATER]																
80-160/110	80-160/D169	1 x 11		2,3	2,5	2,7	3,0	3,2	5,9	6,5						
80-160/150	80-160/D177	1 x 15		2,3	2,5	2,7	2,9	3,0	4,3	4,6	5,5					
80-160/185	80-160/D186	1 x 18,5		2,3	2,5	2,7	2,9	3,0	4,3	4,6	5,5	6,1	6,8			
80-200/220	80-200/D198	1 x 22			2,2	2,4	2,7	2,8	3,9	4,1	4,6	4,9				
80-200/300	80-200/D215	1 x 30			2,2	2,4	2,6	2,8	3,7	3,8	4,2	4,4	4,7	5,0		
80-200/370	80-200/D226	1 x 37		2,0	2,2	2,4	2,6	2,8	3,7	3,8	4,2	4,4	4,7	5,0	6,0	
80-250/450	80-250/D237	1 x 45			1,9	2,2	2,4	2,6	3,6	3,7	4,2	4,6				
80-250/550	80-250/D252	1 x 55			1,9	2,2	2,4	2,6	3,6	3,7	4,2	4,6	5,1			
80-250/750	80-250/D270	1 x 75			1,9	2,2	2,4	2,6	3,6	3,7	4,2	4,6	5,1	6,0		

The declared NPSH values were obtained in the laboratory and refer to a single service pump

12845_1p-shf80-2p50_NPSHr-en_a_th

OHn, OHm, HHn, HHm = risk class value referred to the required rated and maximum capacity (Tab.6 para 7.3.1, Tab.7 para 7.3.2 EN12845)

Check that $NPSH_d \geq NPSH_r + 1m$ is satisfied at the maximum requested capacity

EN 12845 FIRE-FIGHTING MODULES SERIES GEM..S32-S80

ELECTRICAL DATA TABLE AT 50 Hz

SERVICE PUMP 3 X 400 V				ELECTRIC JOCKEY PUMP			CURRENT (*) ABSORBED SET								
							1x230	3x400					3x400 + 1x230		
TYPE SHF..		NOMINAL POWER		TYPE	Pn kW	In A	3x400V	GEMK	GEM	GEM..J	GEM + GEM A	GEM..J + GEM A	KIT PIL + GEMK A	GEM + GEMK A	GEM..J + GEMK A
ELECTRIC PUMP	PUMP	Pn kW	In A												
32-125/07	32-125/D119	0,75	1,7	1SV 07	0,37	1,35		3	1,7	3,05	3,4	4,75	4,35	4,7	6,05
32-125/11	32-125/D136	1,1	2,39	1SV 08	0,55	1,48		3	2,39	3,87	4,78	6,26	4,48	5,39	6,87
32-160/15	32-160/D150	1,5	3,02	1SV 08	0,55	1,48		3	3,02	4,5	6,04	7,52	4,48	6,02	7,5
32-160/22	32-160/D164	2,2	4,64	1SV 09	0,55	1,48		3	4,64	6,12	9,28	10,76	4,48	7,64	9,1
32-200/30	32-200/D188	3	5,91	1SV 11	0,55	1,48		3	5,91	7,39	11,82	13,3	4,48	8,91	10,4
32-200/40	32-200/D204	4	7,51	1SV 12	0,75	1,7		3	7,51	9,21	15,02	16,72	4,7	10,51	12,2
32-250/55	32-250/D222	5,5	10,8	1SV 12	0,75	1,7		3	10,8	12,5	21,6	23,3	4,7	13,8	15,5
32-250/75	32-250/D242	7,5	14	1SV 15	0,75	1,7		3	14	15,7	28	29,7	4,7	17	18,7
32-250/110	32-250/D256	11	19,9	1SV 17	1,1	2,39		3	19,9	22,29	39,8	42,19	5,39	22,9	25,3
40-125/11	40-125/D112	1,1	2,39	1SV 07	0,37	1,35		3	2,39	3,74	4,78	6,13	4,35	5,39	6,74
40-125/15	40-125/D122	1,5	3,02	1SV 07	0,37	1,35		3	3,02	4,37	6,04	7,39	4,35	6,02	7,37
40-125/22	40-125/D143	2,2	4,64	1SV 08	0,55	1,48		3	4,64	6,12	9,28	10,76	4,48	7,64	9,1
40-160/30	40-160/D159	3	5,91	1SV 09	0,55	1,48		3	5,91	7,39	11,82	13,3	4,48	8,91	10,4
40-160/40	40-160/D171	4	7,51	1SV 10	0,55	1,48		3	7,51	8,99	15,02	16,5	4,48	10,5	12,0
40-200/55	40-200/D190	5,5	10,8	1SV 11	0,55	1,48		3	10,8	12,28	21,6	23,08	4,48	13,8	15,3
40-200/75	40-200/D209	7,5	14	1SV 12	0,75	1,7		3	14	15,7	28	29,7	4,7	17,0	18,7
40-250/110A	40-250/D218	11	19,9	1SV 13	0,75	1,7		3	19,9	21,6	39,8	41,5	4,7	22,9	24,6
40-250/110	40-250/D233	11	19,9	1SV 15	0,75	1,7		3	19,9	21,6	39,8	41,5	4,7	22,9	24,6
40-250/150	40-250/D251	15	26	1SV 17	1,1	2,39		3	26	28,39	52	54,39	5,39	29	31,4
50-125/22	50-125/D119	2,2	4,64	1SV 07	0,37	1,35		3	4,64	5,99	9,28	10,63	4,35	7,64	9,0
50-125/30	50-125/D130	3	5,91	1SV 08	0,55	1,48		3	5,91	7,39	11,82	13,3	4,48	8,91	10,4
50-125/40	50-125/D139	4	7,51	1SV 08	0,55	1,48		3	7,51	8,99	15,02	16,5	4,48	10,5	12,0
50-160/55	50-160/D158	5,5	10,8	1SV 09	0,55	1,48		3	10,8	12,28	21,6	23,08	4,48	13,8	15,3
50-160/75	50-160/D174	7,5	14	1SV 10	0,55	1,48		3	14	15,48	28	29,48	4,48	17	18,5
50-200/110A	50-200/D197	11	19,9	1SV 12	0,75	1,7		3	19,9	21,6	39,8	41,5	4,7	22,9	24,6
50-200/110	50-200/D209	11	19,9	1SV 12	0,75	1,7		3	19,9	21,6	39,8	41,5	4,7	22,9	24,6
50-250/150	50-250/D224	15	26	1SV 15	0,75	1,7		3	26	27,7	52	53,7	4,7	29	30,7
50-250/185	50-250/D237	18,5	33,2	1SV 15	0,75	1,7		3	33,2	34,9	66,4	68,1	4,7	36,2	37,9
50-250/220	50-250/D250	22	39,1	1SV 17	1,1	2,39		3	39,1	41,49	78,2	80,59	5,39	42,1	44,5
65-160/40	65-160/D119	4	7,51	1SV 08	0,55	1,48		3	7,51	8,99	15,02	16,5	4,48	10,51	12,0
65-160/55	65-160/D129	5,5	10,8	1SV 08	0,55	1,48		3	10,8	12,28	21,6	23,08	4,48	13,8	15,3
65-160/75	65-160/D137	7,5	14	1SV 08	0,55	1,48		3	14	15,48	28	29,48	4,48	17	18,5
65-160/110A	65-160/D168	11	19,9	1SV 10	0,55	1,48		3	19,9	21,38	39,8	41,28	4,48	22,9	24,4
65-160/110	65-160/D177	11	19,9	1SV 10	0,55	1,48		3	19,9	21,38	39,8	41,28	4,48	22,9	24,4
65-200/150	65-200/D192	15	26	1SV 12	0,75	1,7		3	26	27,7	52	53,7	4,7	29	30,7
65-200/185	65-200/D203	18,5	33,2	1SV 12	0,75	1,7		3	33,2	34,9	66,4	68,1	4,7	36,2	37,9
65-200/220	65-200/D215	22	39,1	1SV 15	0,75	1,7		3	39,1	40,8	78,2	79,9	4,7	42,1	43,8
65-250/300	65-250/D240	30	53,6	1SV 17	1,1	2,39		3	53,6	55,99	107,2	109,6	5,39	56,6	59,0
65-250/370	65-250/D255	37	65,8	1SV 17	1,1	2,39		3	65,8	68,19	131,6	134	5,39	68,8	71,2
80-160/110	80-160/D169	11	19,9	1SV 09	0,55	1,48		3	19,9	21,38	39,8	41,28	4,48	22,9	24,4
80-160/150	80-160/D177	15	26	1SV 10	0,55	1,48		3	26	27,48	52	53,48	4,48	29	30,5
80-160/185	80-160/D186	18,5	33,2	1SV 11	0,55	1,48		3	33,2	34,68	66,4	67,88	4,48	36,2	37,7
80-200/220	80-200/D198	22	39,1	1SV 12	0,75	1,7		3	39,1	40,8	78,2	79,9	4,7	42,1	43,8
80-200/300	80-200/D215	30	53,6	1SV 13	0,75	1,7		3	53,6	55,3	107,2	108,9	4,7	56,6	58,3
80-200/370	80-200/D226	37	65,8	1SV 15	0,75	1,7		3	65,8	67,5	131,6	133,3	4,7	68,8	70,5
80-250/450	80-250/D237	45	78	1SV 15	0,75	1,7		3	78	79,7	156	157,7	4,7	81	82,7
80-250/550	80-250/D252	55	95	1SV 17	1,1	2,39		3	95	97,39	190	192,4	5,39	98	100,4
80-250/750	80-250/D270	75	129	1SV 19	1,1	2,39		3	129	131,4	258	260,4	5,39	132	134,4

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

MOD_EN-SHF_2p50-en_a_te

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 sinle phase power supply 1x230Vac

**EN 12845
fire-fighting
pressure
module**

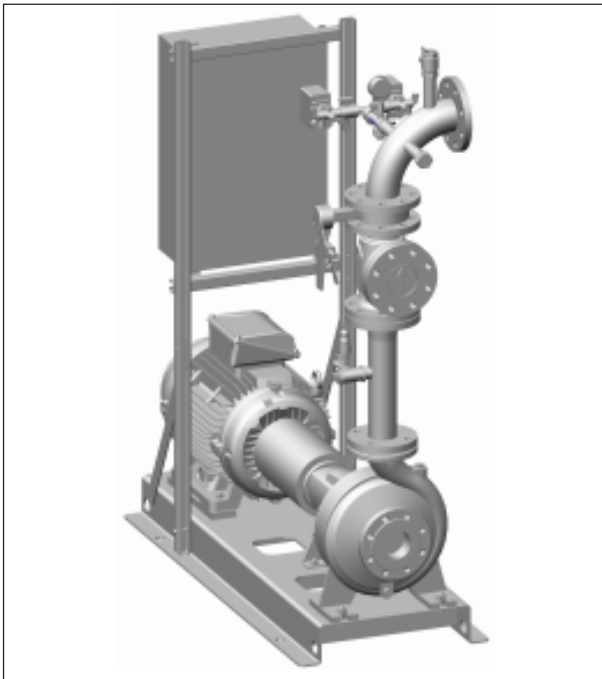
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..S
series
Single electric
service pump module**

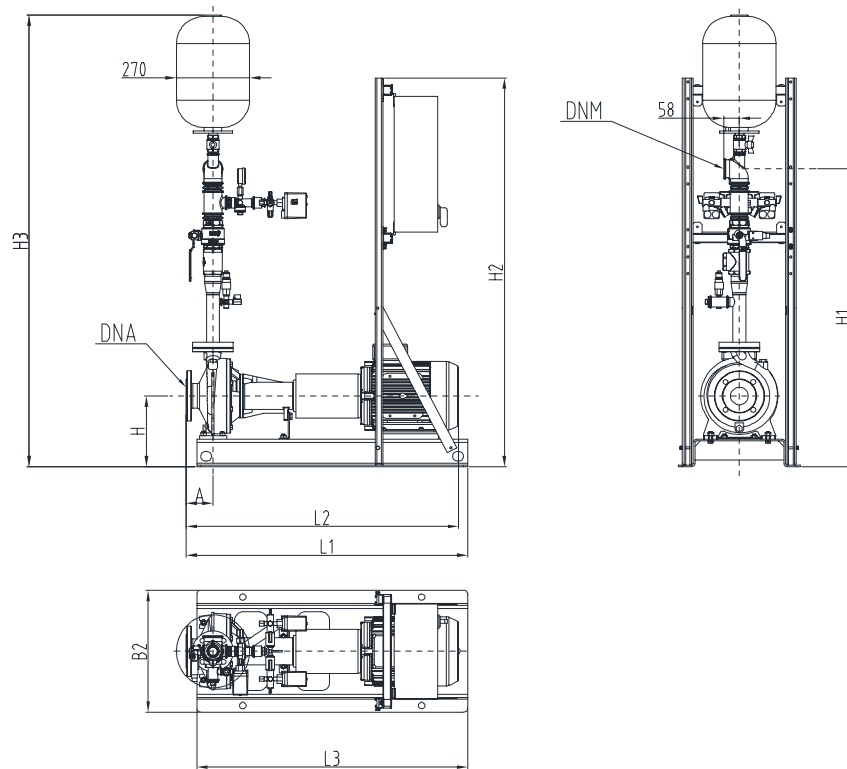


SPECIFICATIONS

- **Flow:** up to 220 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 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 75 kW.
- **Horizontal electric service pump:**
 - SHF series (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..S32-S80 SERIES**

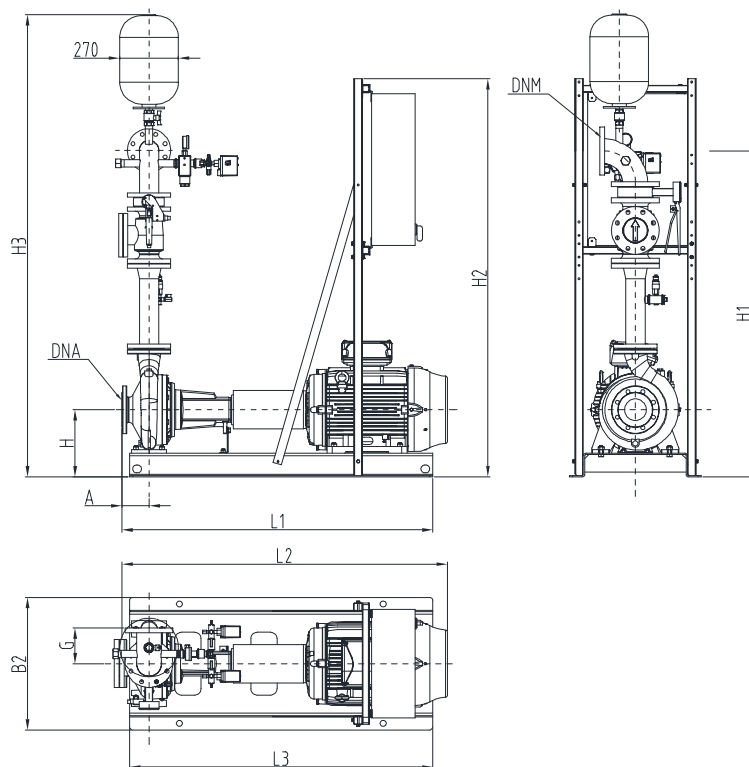
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GEM10-FIL_B_DD

SHF MODULES

2



GEM10-FLG_B_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..S32-S80 SERIES

GEM	DRW N°	DNA	DNM	A	B2	G	H	H1	H2	H3	L1	L2	L3
SHF32-125/07	1	50	Rp 2"	80	360	/	212	1017	1236	1587	820	845	800
SHF32-125/11	1	50	Rp 2"	80	360	/	212	1017	1236	1587	820	845	800
SHF32-160/15	1	50	Rp 2"	80	390	/	232	1057	1236	1627	920	889	900
SHF32-160/22	1	50	Rp 2"	80	390	/	232	1057	1236	1627	920	889	900
SHF32-200/30	1	50	Rp 2"	80	390	/	260	1105	1236	1675	920	920	900
SHF32-200/40	1	50	Rp 2"	80	390	/	260	1105	1236	1675	920	923	900
SHF32-250/55	1	50	Rp 2"	100	390	/	280	1170	1436	1740	1145	1007	1120
SHF32-250/75	1	50	Rp 2"	100	390	/	280	1170	1436	1740	1145	1007	1120
SHF32-250/110	1	50	Rp 2"	100	540	/	280	1170	1436	1740	1275	1164	1250
SHF40-125/11	1	65	Rp 2"	80	360	/	212	1010	1236	1580	920	845	900
SHF40-125/15	1	65	Rp 2"	80	390	/	212	1010	1236	1580	920	889	900
SHF40-125/22	1	65	Rp 2"	80	390	/	212	1010	1236	1580	920	889	900
SHF40-160/30	1	65	Rp 2"	80	390	/	232	1050	1236	1620	920	920	900
SHF40-160/40	1	65	Rp 2"	80	390	/	232	1050	1236	1620	920	923	900
SHF40-200/55	1	65	Rp 2"	100	450	/	260	1098	1436	1668	1040	1007	1000
SHF40-200/75	1	65	Rp 2"	100	450	/	260	1098	1436	1668	1040	1007	1000
SHF40-250/110A	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
SHF40-250/110	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
SHF40-250/150	1	65	Rp 2"	100	540	/	280	1163	1436	1733	1275	1164	1250
SHF50-125/22	2	65	65	100	390	185	232	1217	1236	1847	940	909	900
SHF50-125/30	2	65	65	100	390	185	232	1217	1236	1847	940	940	900
SHF50-125/40	2	65	65	100	390	185	232	1217	1236	1847	940	943	900
SHF50-160/55	2	65	65	100	450	185	260	1265	1436	1895	1040	1007	1000
SHF50-160/75	2	65	65	100	450	185	260	1265	1436	1895	1040	1007	1000
SHF50-200/110A	2	65	65	100	490	185	260	1285	1436	1915	1160	1164	1120
SHF50-200/110	2	65	65	100	490	185	260	1285	1436	1915	1160	1164	1120
SHF50-250/150	2	65	65	100	540	185	280	1330	1436	1960	1275	1164	1250
SHF50-250/185	2	65	65	100	540	185	280	1330	1436	1960	1275	1164	1250
SHF50-250/220	2	65	65	100	540	185	280	1330	1436	1960	1275	1224	1250
SHF65-160/40	2	80	80	100	450	215	260	1353	1436	1983	1025	943	1000
SHF65-160/55	2	80	80	100	450	215	260	1353	1436	1983	1025	1007	1000
SHF65-160/75	2	80	80	100	450	215	260	1353	1436	1983	1025	1007	1000
SHF65-160/110A	2	80	80	100	540	215	260	1353	1436	1983	1275	1164	1250
SHF65-160/110	2	80	80	100	540	215	260	1353	1436	1983	1275	1164	1250
SHF65-200/150	2	80	80	100	540	215	280	1398	1436	2028	1275	1164	1250
SHF65-200/185	2	80	80	100	540	215	280	1398	1436	2028	1275	1164	1250
SHF65-200/220	2	80	80	100	540	215	280	1398	1436	2028	1275	1224	1250
SHF65-250/300	2	80	80	100	610	215	310	1453	1836	2083	1410	1477	1400
SHF65-250/370	2	80	80	100	610	215	310	1453	1836	2083	1410	1477	1400
SHF80-160/110	2	100	100	125	540	165	280	1418	1436	2048	1300	1189	1250
SHF80-160/150	2	100	100	125	540	165	280	1418	1436	2048	1300	1189	1250
SHF80-160/185	2	100	100	125	540	165	280	1418	1436	2048	1300	1189	1250
SHF80-200/220	2	100	100	125	540	165	280	1443	1436	2073	1300	1359	1250
SHF80-200/300	2	100	100	125	610	165	310	1473	1836	2103	1450	1502	1400
SHF80-200/370	2	100	100	125	610	165	310	1473	1836	2103	1450	1502	1400
SHF80-250/450	2	100	100	125	610	165	365	1558	1836	2188	1435	1591	1400
SHF80-250/550	2	100	100	125	660	165	390	1583	1837	2213	1635	1700	1600
SHF80-250/750	ON REQUEST												

Dimensions in mm. Tolerance ± 10 mm.

gem10_shf-en_a_td

**EN 12845
fire-fighting
pressure
module**

MARKET SECTORS

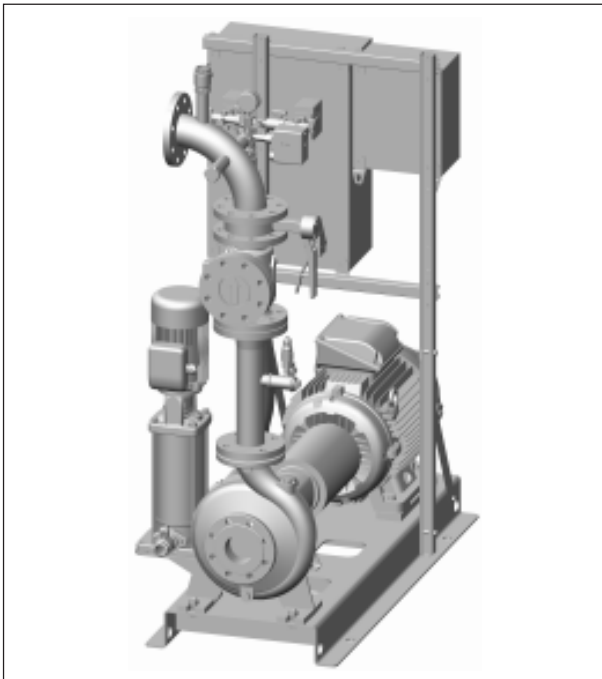
CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..J..S
series**

**Single electric service pump module,
with jockey pump on board**

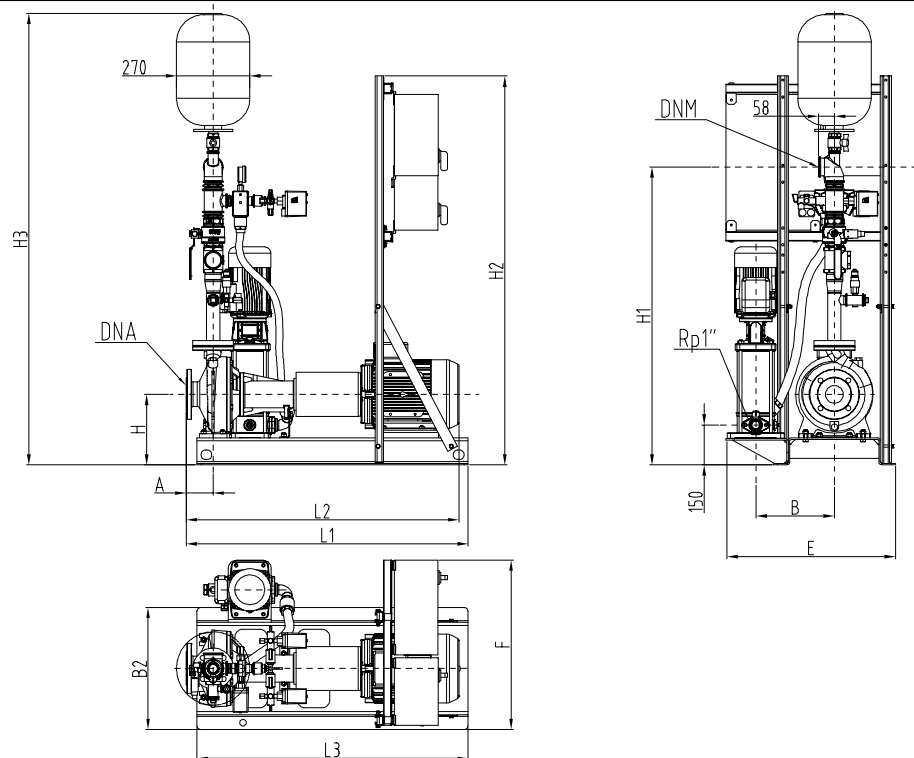


SPECIFICATIONS

- **Flow:** up to 220 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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 75 kW.
- **Horizontal electric service pump:**
 - SHF series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM...S32-S80 SERIES**

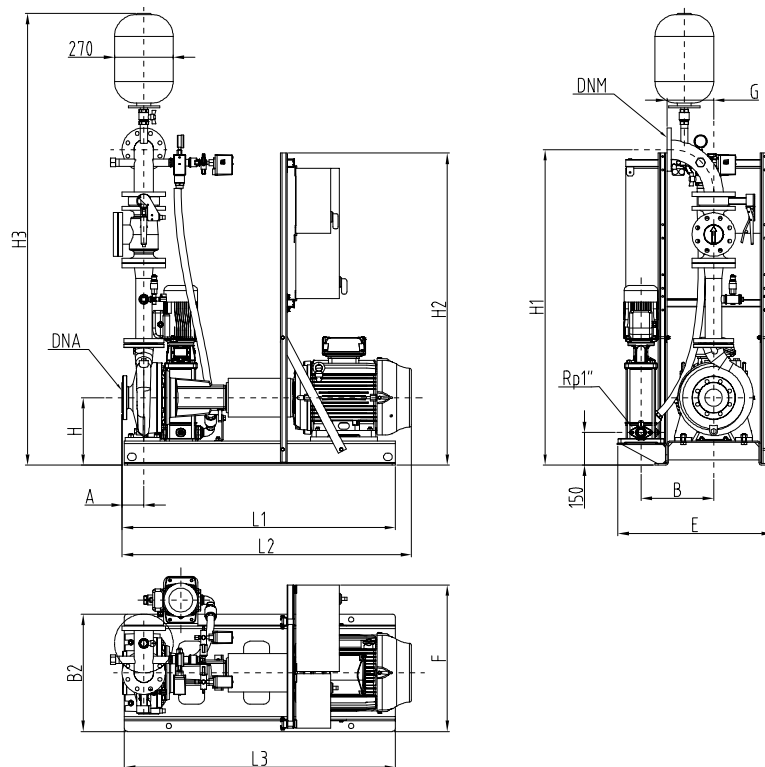
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GEM11-FIL_A_DD

SHF MODULES

2



GEM11-FLG_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...S32-S80 SERIES

GEMJ	DRW N°	DNA	DNM	A	B	B2	E	F	G	H	H1	H2	H3	L1	L2	L3
SHF32-125/07	1	50	Rp 2"	80	255	360	545	610	/	212	1017	1236	1587	820	845	800
SHF32-125/11	1	50	Rp 2"	80	255	360	545	610	/	212	1017	1236	1587	820	845	800
SHF32-160/15	1	50	Rp 2"	80	270	390	575	610	/	232	1057	1236	1627	920	889	900
SHF32-160/22	1	50	Rp 2"	80	270	390	575	610	/	232	1057	1236	1627	920	889	900
SHF32-200/30	1	50	Rp 2"	80	270	390	575	610	/	260	1105	1236	1675	920	920	900
SHF32-200/40	1	50	Rp 2"	80	270	390	575	610	/	260	1105	1236	1675	920	923	900
SHF32-250/55	1	50	Rp 2"	100	310	390	615	610	/	280	1170	1436	1740	1145	1007	1120
SHF32-250/75	1	50	Rp 2"	100	310	390	615	610	/	280	1170	1436	1740	1145	1007	1120
SHF32-250/110	1	50	Rp 2"	100	335	540	715	660	/	280	1170	1436	1740	1275	1164	1250
SHF40-125/11	1	65	Rp 2"	80	270	360	560	610	/	212	1010	1236	1580	920	845	900
SHF40-125/15	1	65	Rp 2"	80	270	390	575	610	/	212	1010	1236	1580	920	889	900
SHF40-125/22	1	65	Rp 2"	80	270	390	575	610	/	212	1010	1236	1580	920	889	900
SHF40-160/30	1	65	Rp 2"	80	270	390	575	610	/	232	1050	1236	1620	920	920	900
SHF40-160/40	1	65	Rp 2"	80	270	390	575	610	/	232	1050	1236	1620	920	923	900
SHF40-200/55	1	65	Rp 2"	100	290	450	625	610	/	260	1098	1436	1668	1040	1007	1000
SHF40-200/75	1	65	Rp 2"	100	290	450	625	610	/	260	1098	1436	1668	1040	1007	1000
SHF40-250/110A	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
SHF40-250/110	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
SHF40-250/150	1	65	Rp 2"	100	335	540	715	660	/	280	1163	1436	1733	1275	1164	1250
SHF50-125/22	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	909	900
SHF50-125/30	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	940	900
SHF50-125/40	2	65	65	100	270	390	575	610	185	232	1217	1236	1847	940	943	900
SHF50-160/55	2	65	65	100	290	450	625	610	185	260	1265	1436	1895	1040	1007	1000
SHF50-160/75	2	65	65	100	290	450	625	610	185	260	1265	1436	1895	1040	1007	1000
SHF50-200/110A	2	65	65	100	310	490	665	660	185	260	1285	1436	1915	1160	1164	1120
SHF50-200/110	2	65	65	100	310	490	665	660	185	260	1285	1436	1915	1160	1164	1120
SHF50-250/150	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1164	1250
SHF50-250/185	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1164	1250
SHF50-250/220	2	65	65	100	335	540	715	660	185	280	1330	1436	1960	1275	1224	1250
SHF65-160/40	2	80	80	100	290	450	625	610	215	260	1353	1436	1983	1025	943	1000
SHF65-160/55	2	80	80	100	290	450	625	610	215	260	1353	1436	1983	1025	1007	1000
SHF65-160/75	2	80	80	100	290	450	625	610	215	260	1353	1436	1983	1025	1007	1000
SHF65-160/110A	2	80	80	100	335	540	715	660	215	260	1353	1436	1983	1275	1164	1250
SHF65-160/110	2	80	80	100	335	540	715	660	215	260	1353	1436	1983	1275	1164	1250
SHF65-200/150	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1164	1250
SHF65-200/185	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1164	1250
SHF65-200/220	2	80	80	100	335	540	715	660	215	280	1398	1436	2028	1275	1224	1250
SHF65-250/300	2	80	80	100	360	610	775	560	215	310	1453	1836	2083	1410	1477	1400
SHF65-250/370	2	80	80	100	360	610	775	560	215	310	1453	1836	2083	1410	1477	1400
SHF80-160/110	2	100	100	125	335	540	715	660	165	280	1418	1436	2048	1300	1189	1250
SHF80-160/150	2	100	100	125	335	540	715	660	165	280	1418	1436	2048	1300	1189	1250
SHF80-160/185	2	100	100	125	335	540	715	660	165	280	1418	1436	2048	1300	1189	1250
SHF80-200/220	2	100	100	125	335	540	715	660	165	280	1443	1436	2073	1300	1359	1250
SHF80-200/300	2	100	100	125	360	610	775	560	165	310	1473	1836	2103	1450	1502	1400
SHF80-200/370	2	100	100	125	360	610	775	560	165	310	1473	1836	2103	1450	1502	1400
SHF80-250/450	2	100	100	125	360	610	775	600	165	365	1558	1836	2188	1435	1591	1400
SHF80-250/550	2	100	100	125	385	660	825	610	165	390	1583	1837	2213	1635	1700	1600
SHF80-250/750	ON REQUEST															

Dimensions in mm. Tolerance ± 10 mm.

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**EN 12845
fire-fighting
pressure
module**

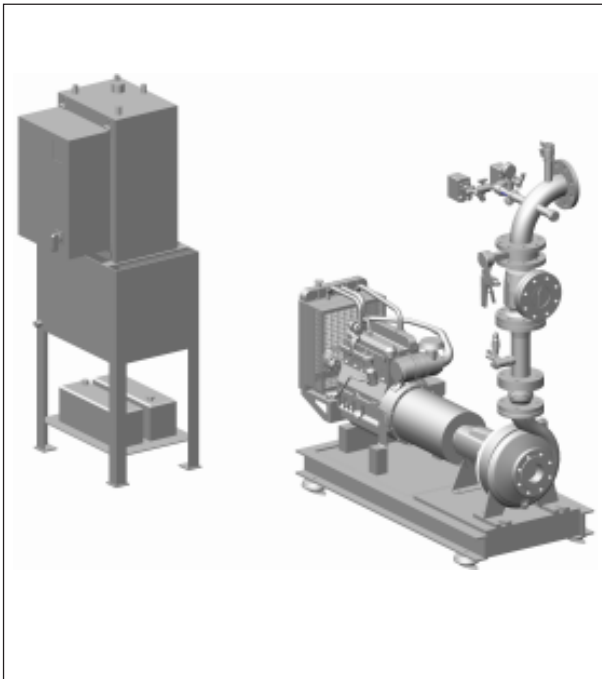
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

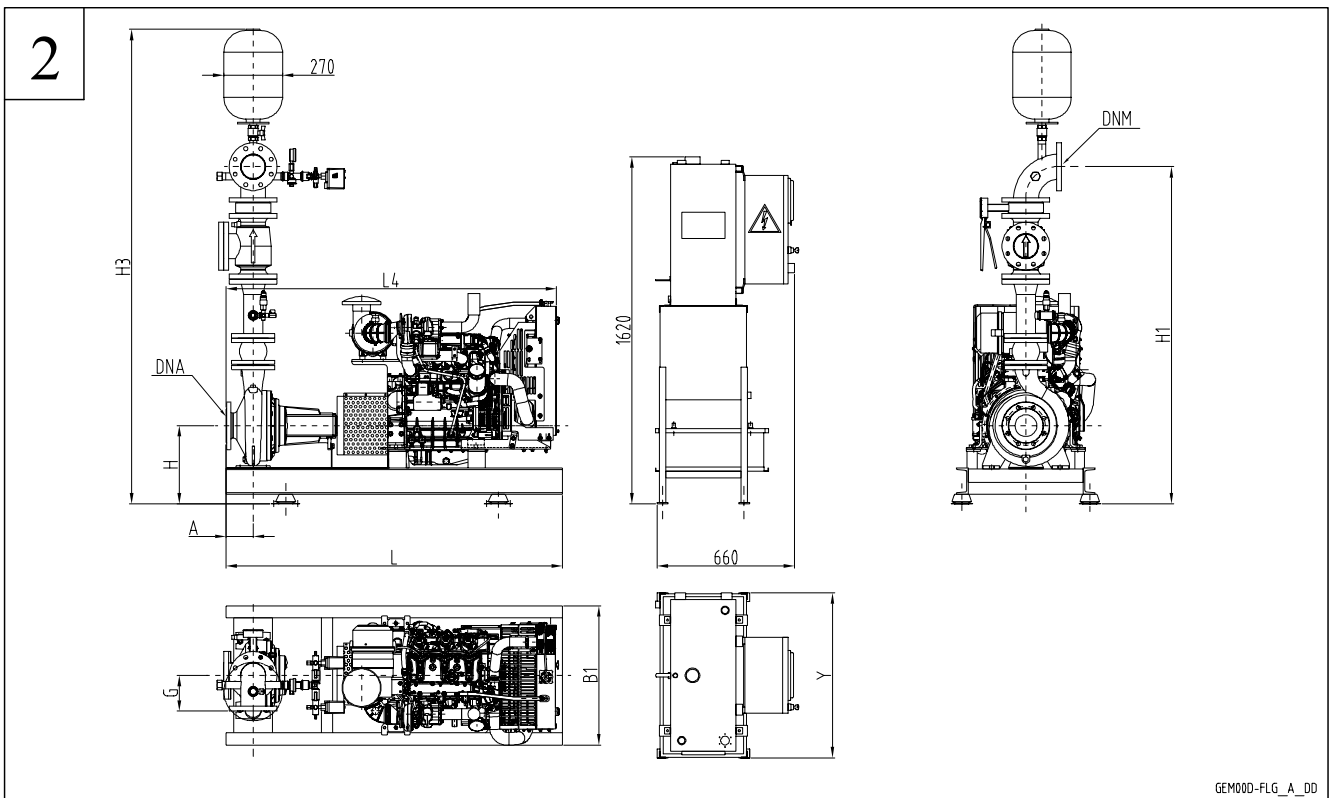
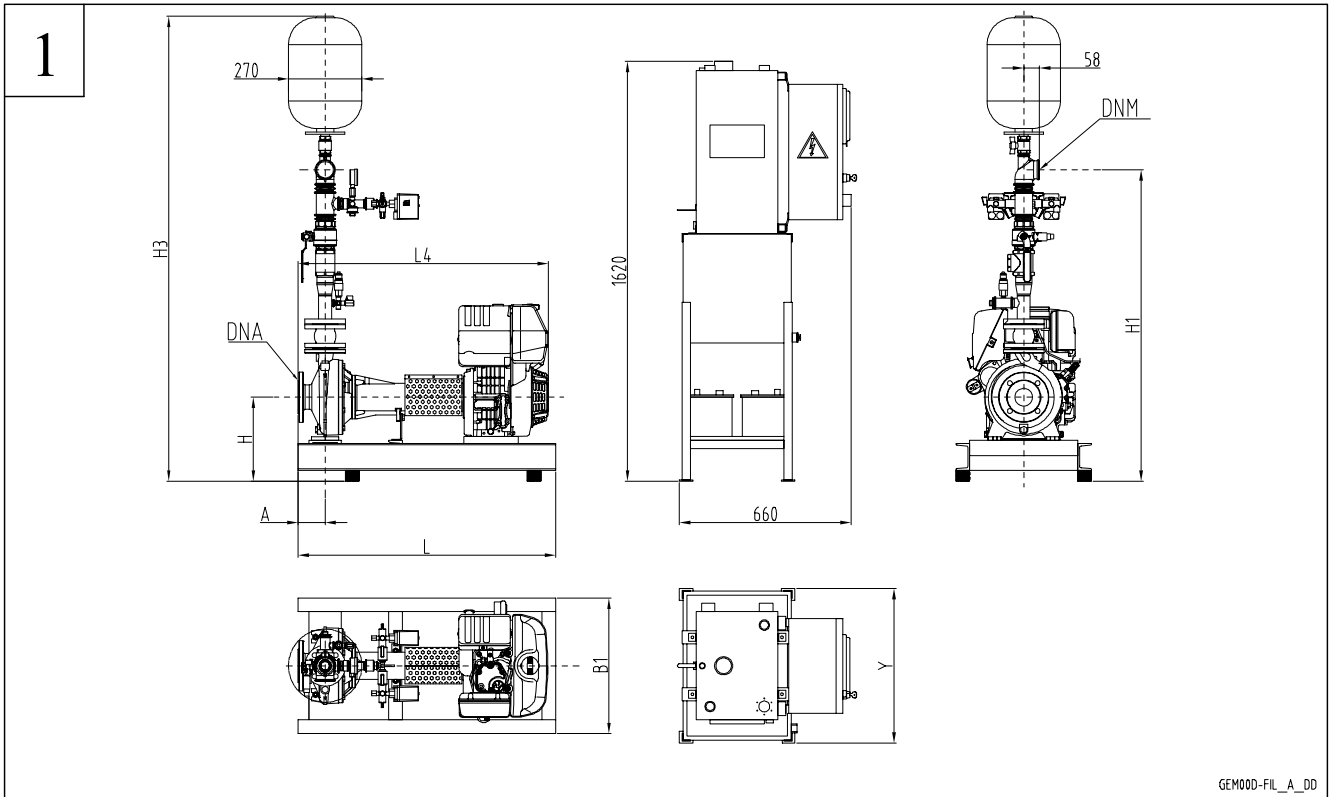
**GEMK..S
series
Single diesel engine service
pump module**



SPECIFICATIONS

- **Flow:** up to 220 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - 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:**
 - Diesel engine service pump IP54.
 - Diesel engine starting: from batteries.
- **Maximum power:**
 - Diesel engine service pump 177,3 kW.
- **Horizontal diesel engine service pump:**
 - SHF series.
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..S32-80 SERIES



EN 12845 FIRE-FIGHTING PRESSURE MODULES

GEMK..S32-80 SERIES

GEMK	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
SHF32-125/D119	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	570
SHF32-125/D136	1	50	Rp 2"	80	500	/	262	1067	1592	950	885	570
SHF32-160/D150	1	50	Rp 2"	80	500	/	282	1107	1632	950	885	570
SHF32-160/D164	1	50	Rp 2"	80	500	/	282	1107	1632	950	885	570
SHF32-200/D188	1	50	Rp 2"	80	500	/	260	1105	1630	950	885	570
SHF32-200/D204	1	50	Rp 2"	80	500	/	260	1105	1630	950	885	570
SHF32-250/D222	1	50	Rp 2"	100	500	/	280	1170	1695	950	923	570
SHF32-250/D242	1	50	Rp 2"	100	500	/	280	1170	1695	950	923	570
SHF32-250/D256	1	50	Rp 2"	100	500	/	280	1170	1695	950	997	570
SHF40-125/D112	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	570
SHF40-125/D122	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	570
SHF40-125/D143	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	570
SHF40-160/D159	1	65	Rp 2"	80	500	/	282	1100	1625	950	885	570
SHF40-160/D171	1	65	Rp 2"	80	500	/	282	1100	1625	950	885	570
SHF40-200/D190	1	65	Rp 2"	100	500	/	310	1148	1673	950	921	570
SHF40-200/D209	1	65	Rp 2"	100	500	/	310	1148	1673	950	923	570
SHF40-250/D218	1	65	Rp 2"	100	500	/	280	1163	1688	950	997	570
SHF40-250/D233	1	65	Rp 2"	100	570	/	330	1213	1738	1250	1187	570
SHF40-250/D251	1	65	Rp 2"	100	570	/	330	1213	1738	1250	1187	570
SHF50-125/D119	2	65	65	100	500	185	282	1267	1846	950	905	570
SHF50-125/D130	2	65	65	100	500	185	282	1267	1846	950	905	570
SHF50-125/D139	2	65	65	100	500	185	282	1267	1846	950	905	570
SHF50-160/D158	2	65	65	100	500	185	310	1315	1894	950	923	570
SHF50-160/D174	2	65	65	100	500	185	310	1315	1894	950	923	570
SHF50-200/D197	2	65	65	100	500	185	310	1335	1914	950	997	570
SHF50-200/D209	2	65	65	100	570	185	360	1385	1964	1250	1187	570
SHF50-250/D224	2	65	65	100	570	185	330	1380	1959	1250	1187	570
SHF50-250/D237	2	65	65	100	570	185	380	1430	2009	1250	1307	570
SHF50-250/D250	2	65	65	100	570	185	380	1430	2009	1250	1307	570
SHF65-160/D119	2	80	80	100	500	215	260	1353	1923	950	905	570
SHF65-160/D129	2	80	80	100	500	215	310	1403	1973	950	921	570
SHF65-160/D137	2	80	80	100	500	215	310	1403	1973	950	997	570
SHF65-160/D164	2	80	80	100	500	215	310	1403	1973	950	997	570
SHF65-160/D177	2	80	80	100	570	215	360	1453	2023	1250	1187	570
SHF65-200/D192	2	80	80	100	570	215	330	1448	2018	1250	1187	570
SHF65-200/D203	2	80	80	100	570	215	380	1498	2068	1250	1307	570
SHF65-200/D215	2	80	80	100	570	215	380	1498	2068	1250	1307	570
SHF65-250/D240	2	80	80	100	640	215	360	1503	2073	1550	1527	570
SHF65-250/D255	2	80	80	100	640	215	360	1503	2073	1550	1527	760
SHF80-160/D169	2	100	100	125	570	165	330	1468	2053	1250	1212	570
SHF80-160/D177	2	100	100	125	570	165	330	1468	2053	1250	1212	570
SHF80-160/D186	2	100	100	125	570	165	380	1518	2103	1250	1332	570
SHF80-200/D198	2	100	100	125	570	165	380	1543	2128	1250	1442	570
SHF80-200/D215	2	100	100	125	640	165	360	1523	2108	1550	1552	570
SHF80-200/D226	2	100	100	125	640	165	360	1523	2108	1550	1552	760
SHF80-250/D237	2	100	100	125	640	165	365	1558	2143	1550	1552	760
SHF80-250/D252	2	100	100	125	640	165	390	1583	2168	1550	1703	760
SHF80-250/D270	2	100	100	125	700	165	420	1613	2198	1750	2023	760

Dimensions in mm. Tolerance ± 10 mm.

gemk00d_shf-en_b_td

**EN 12845
fire-fighting
pressure
module**

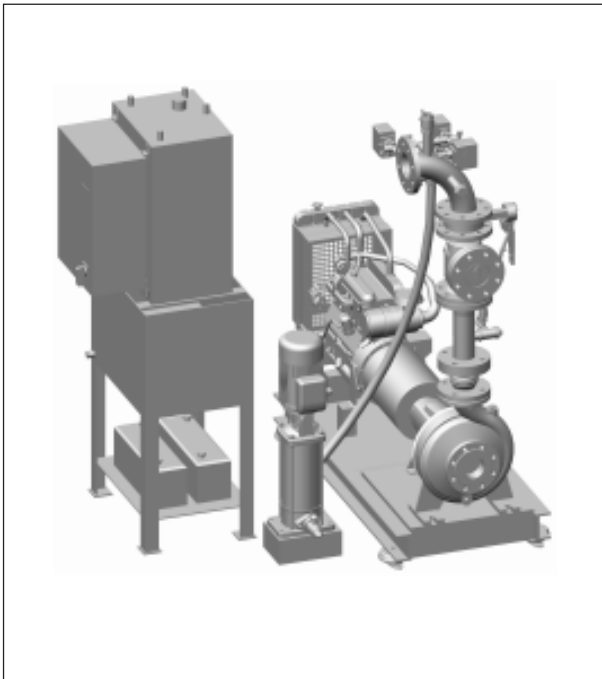
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

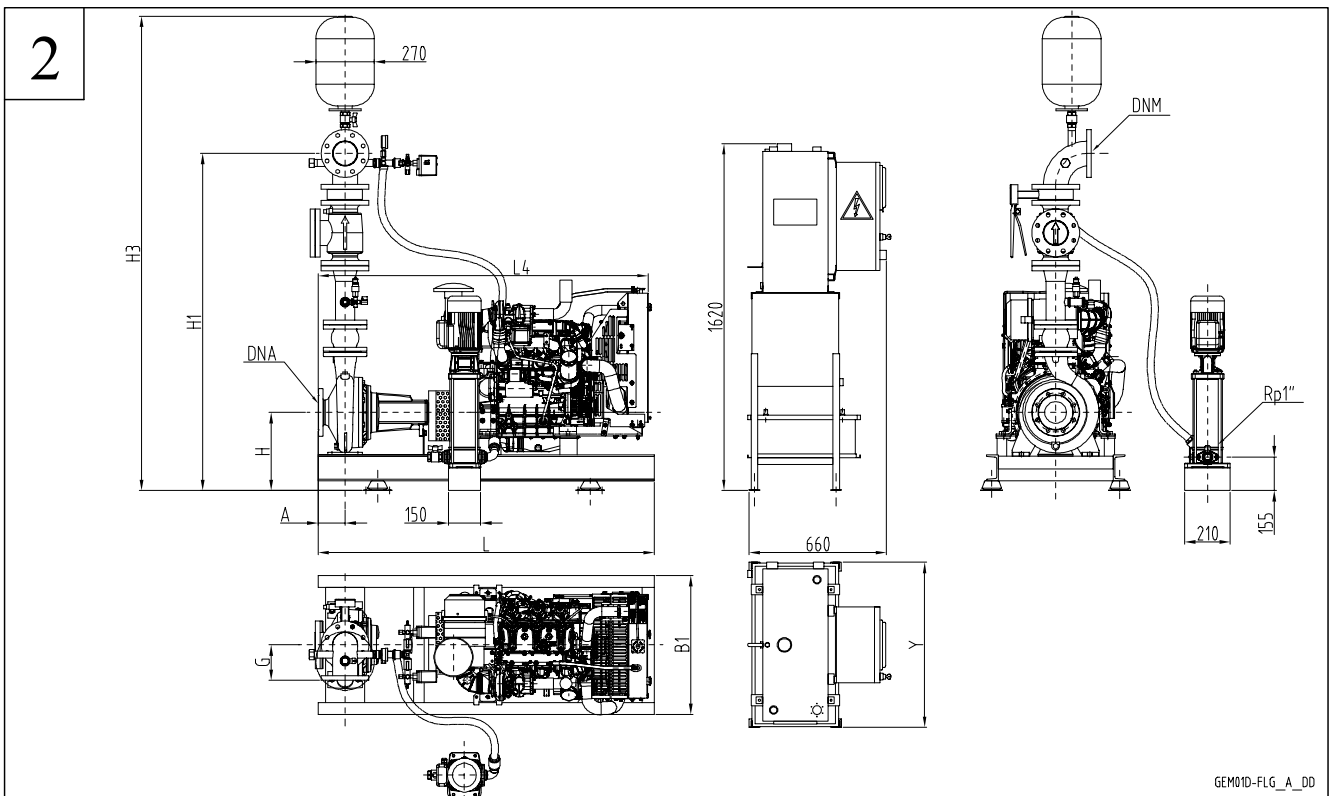
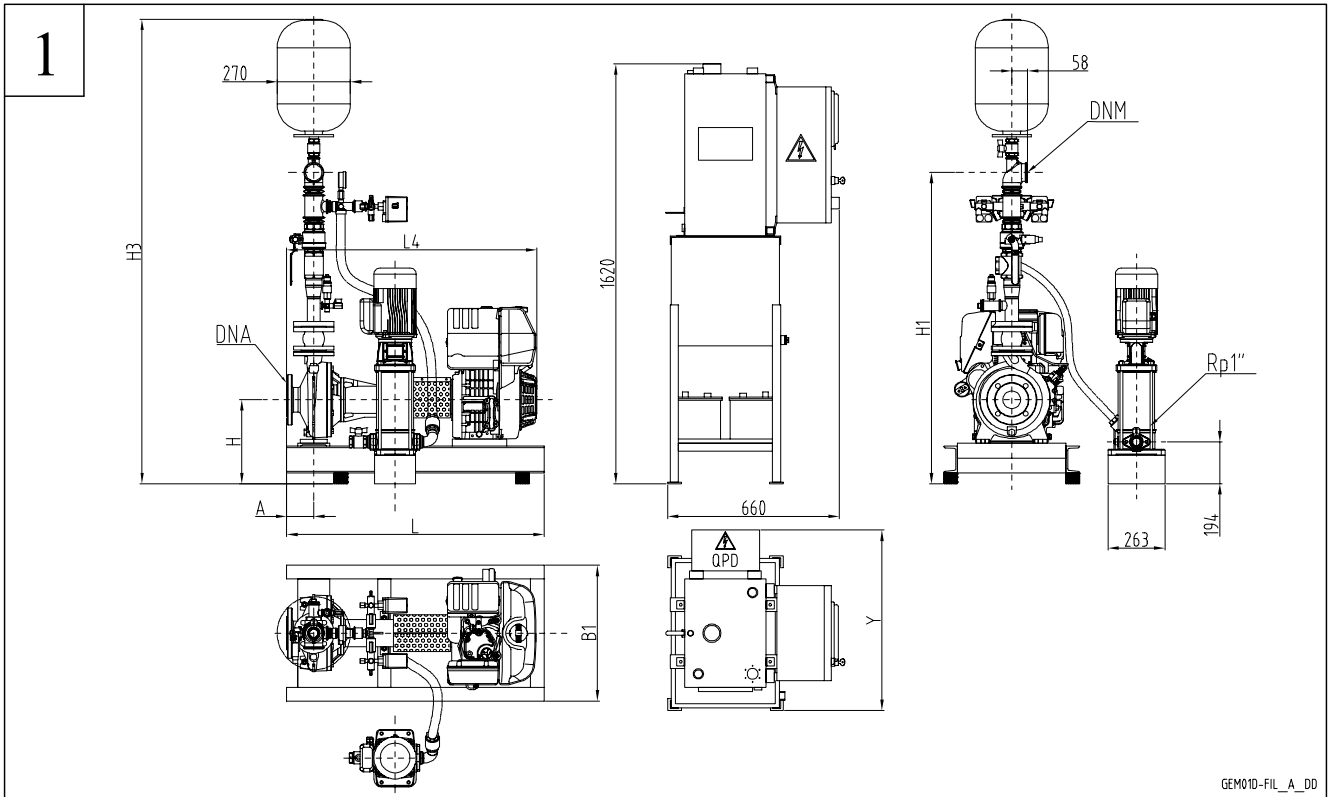
**GEMK..S series + JOCKEY KIT
Single diesel engine service pump module,
with electric jockey pump kit**



SPECIFICATIONS

- **Flow:** up to 220 m³/h.
- **Head:** up to 112m.
- **Control panel input voltage:**
 - Diesel engine service pump 1 x 230 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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 177,3 kW.
- **Horizontal diesel engine service pump:**
 - SHF series.
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..S32-S80 SERIES + JOCKEY KIT



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEMK..S32-S80 SERIES + JOCKEY KIT

GEMK + KIT PIL.	DRW N°	DNA	DNM	A	B1	G	H	H1	H3	L	L4	Y
SHF32-125/D119	1	50	Rp 2"	80	500	/	262	1067	1637	950	885	720
SHF32-125/D136	1	50	Rp 2"	80	500	/	262	1067	1592	950	885	720
SHF32-160/D150	1	50	Rp 2"	80	500	/	282	1107	1632	950	885	720
SHF32-160/D164	1	50	Rp 2"	80	500	/	282	1107	1632	950	885	720
SHF32-200/D188	1	50	Rp 2"	80	500	/	260	1105	1630	950	885	720
SHF32-200/D204	1	50	Rp 2"	80	500	/	260	1105	1630	950	885	720
SHF32-250/D222	1	50	Rp 2"	100	500	/	280	1170	1695	950	923	720
SHF32-250/D242	1	50	Rp 2"	100	500	/	280	1170	1695	950	923	720
SHF32-250/D256	1	50	Rp 2"	100	500	/	280	1170	1695	950	997	720
SHF40-125/D112	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	720
SHF40-125/D122	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	720
SHF40-125/D143	1	65	Rp 2"	80	500	/	262	1060	1585	950	885	720
SHF40-160/D159	1	65	Rp 2"	80	500	/	282	1100	1625	950	885	720
SHF40-160/D171	1	65	Rp 2"	80	500	/	282	1100	1625	950	885	720
SHF40-200/D190	1	65	Rp 2"	100	500	/	310	1148	1673	950	921	720
SHF40-200/D209	1	65	Rp 2"	100	500	/	310	1148	1673	950	923	720
SHF40-250/D218	1	65	Rp 2"	100	500	/	280	1163	1688	950	997	720
SHF40-250/D233	1	65	Rp 2"	100	570	/	330	1213	1738	1250	1187	720
SHF40-250/D251	1	65	Rp 2"	100	570	/	330	1213	1738	1250	1187	720
SHF50-125/D119	2	65	65	100	500	185	282	1267	1846	950	905	720
SHF50-125/D130	2	65	65	100	500	185	282	1267	1846	950	905	720
SHF50-125/D139	2	65	65	100	500	185	282	1267	1846	950	905	720
SHF50-160/D158	2	65	65	100	500	185	310	1315	1894	950	923	720
SHF50-160/D174	2	65	65	100	500	185	310	1315	1894	950	923	720
SHF50-200/D197	2	65	65	100	500	185	310	1335	1914	950	997	720
SHF50-200/D209	2	65	65	100	570	185	360	1385	1964	1250	1187	720
SHF50-250/D224	2	65	65	100	570	185	330	1380	1959	1250	1187	720
SHF50-250/D237	2	65	65	100	570	185	380	1430	2009	1250	1307	720
SHF50-250/D250	2	65	65	100	570	185	380	1430	2009	1250	1307	720
SHF65-160/D119	2	80	80	100	500	215	260	1353	1923	950	905	720
SHF65-160/D129	2	80	80	100	500	215	310	1403	1973	950	921	720
SHF65-160/D137	2	80	80	100	500	215	310	1403	1973	950	997	720
SHF65-160/D164	2	80	80	100	500	215	310	1403	1973	950	997	720
SHF65-160/D177	2	80	80	100	570	215	360	1453	2023	1250	1187	720
SHF65-200/D192	2	80	80	100	570	215	330	1448	2018	1250	1187	720
SHF65-200/D203	2	80	80	100	570	215	380	1498	2068	1250	1307	720
SHF65-200/D215	2	80	80	100	570	215	380	1498	2068	1250	1307	720
SHF65-250/D240	2	80	80	100	640	215	360	1503	2073	1550	1527	720
SHF65-250/D255	2	80	80	100	640	215	360	1503	2073	1550	1527	910
SHF80-160/D169	2	100	100	125	570	165	330	1468	2053	1250	1212	720
SHF80-160/D177	2	100	100	125	570	165	330	1468	2053	1250	1212	720
SHF80-160/D186	2	100	100	125	570	165	380	1518	2103	1250	1332	720
SHF80-200/D198	2	100	100	125	570	165	380	1543	2128	1250	1442	720
SHF80-200/D215	2	100	100	125	640	165	360	1523	2108	1550	1552	720
SHF80-200/D226	2	100	100	125	640	165	360	1523	2108	1550	1552	910
SHF80-250/D237	2	100	100	125	640	165	365	1558	2143	1550	1552	910
SHF80-250/D252	2	100	100	125	640	165	390	1583	2168	1550	1703	910
SHF80-250/D270	2	100	100	125	700	165	420	1613	2198	1750	2023	910

Dimensions in mm. Tolerance ± 10 mm.

gemk01d_shf-en_b_td

Fix the jockey pump control panel to the diesel engine tank.

**EN 12845
fire-fighting
pressure
module**

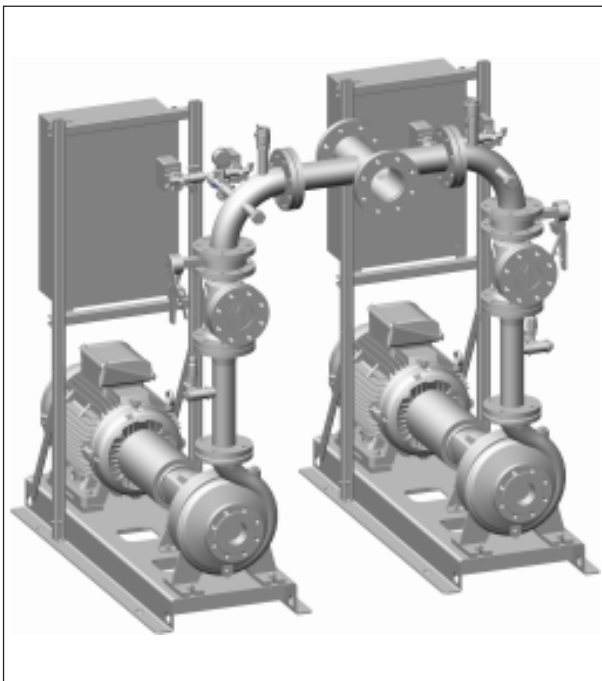
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

**GEM..S+GEM..S
Series**

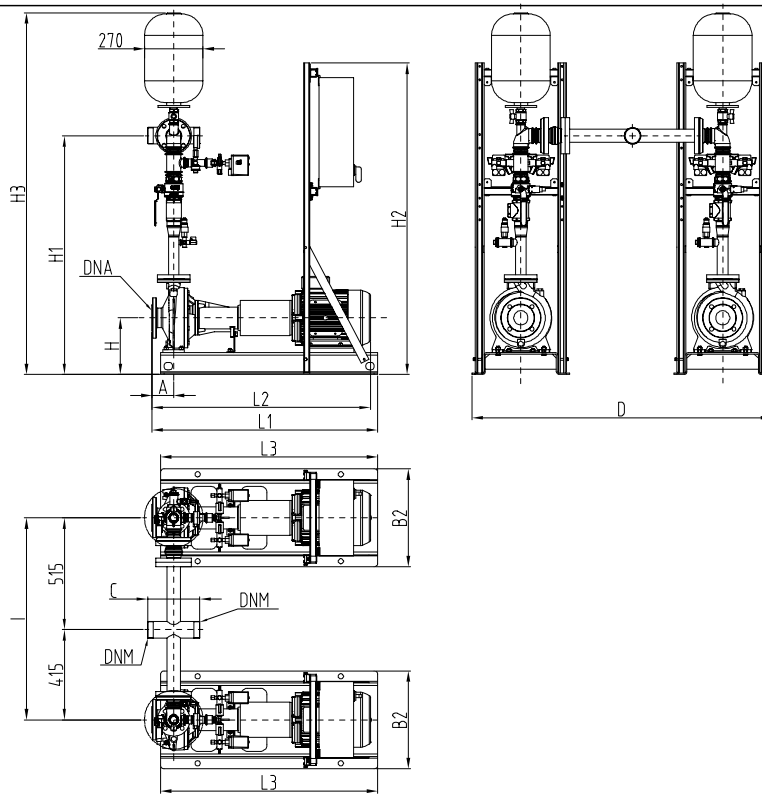


SPECIFICATIONS

- **Flow:** up to 440 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pumps 3 x 400 Vac $\pm$ 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 75 kW.
- **Horizontal electric service pumps:**
 - SHF series (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..S32-S80 + GEM..S32-S80 SERIES

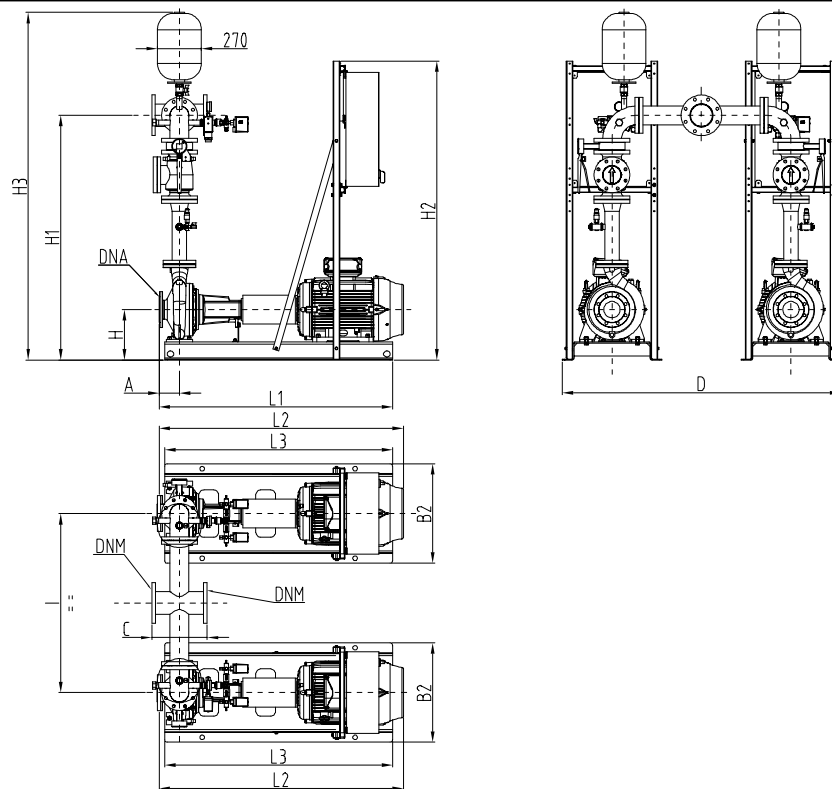
1



GEM20-FIL_A_DD

SHF MODULES

2



GEM20-FLG_A_DD

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..S32-S80 + GEM..S32-S80 SERIES

GEM+GEM	DRW N°	DNA	DNM	A	B2	C	D	H	H1	H2	H3	I	L1	L2	L3
SHF32-125/07	1	50	R 2"1/2	80	360	240	1290	212	1017	1236	1587	930	820	845	800
SHF32-125/11	1	50	R 2"1/2	80	360	240	1290	212	1017	1236	1587	930	820	845	800
SHF32-160/15	1	50	R 2"1/2	80	390	240	1320	232	1057	1236	1627	930	920	889	900
SHF32-160/22	1	50	R 2"1/2	80	390	240	1320	232	1057	1236	1627	930	920	889	900
SHF32-200/30	1	50	R 2"1/2	80	390	240	1320	260	1105	1236	1675	930	920	920	900
SHF32-200/40	1	50	R 2"1/2	80	390	240	1320	260	1105	1236	1675	930	920	923	900
SHF32-250/55	1	50	R 2"1/2	100	390	240	1320	280	1170	1436	1740	930	1145	1007	1120
SHF32-250/75	1	50	R 2"1/2	100	390	240	1320	280	1170	1436	1740	930	1145	1007	1120
SHF32-250/110	1	50	R 2"1/2	100	540	240	1470	280	1170	1436	1740	930	1275	1164	1250
SHF40-125/11	1	65	R 2"1/2	80	360	240	1290	212	1010	1236	1580	930	920	845	900
SHF40-125/15	1	65	R 2"1/2	80	390	240	1320	212	1010	1236	1580	930	920	889	900
SHF40-125/22	1	65	R 2"1/2	80	390	240	1320	212	1010	1236	1580	930	920	889	900
SHF40-160/30	1	65	R 2"1/2	80	390	240	1320	232	1050	1236	1620	930	920	920	900
SHF40-160/40	1	65	R 2"1/2	80	390	240	1320	232	1050	1236	1620	930	920	923	900
SHF40-200/55	1	65	R 2"1/2	100	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
SHF40-200/75	1	65	R 2"1/2	100	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
SHF40-250/110A	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF40-250/110	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF40-250/150	1	65	R 2"1/2	100	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF50-125/22	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	909	900
SHF50-125/30	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	940	900
SHF50-125/40	2	65	80	100	390	340	1380	232	1217	1236	1847	990	940	943	900
SHF50-160/55	2	65	80	100	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
SHF50-160/75	2	65	80	100	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
SHF50-200/110A	2	65	80	100	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
SHF50-200/110	2	65	80	100	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
SHF50-250/150	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
SHF50-250/185	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
SHF50-250/220	2	65	80	100	540	340	1530	280	1330	1436	1960	990	1275	1224	1250
SHF65-160/40	2	80	100	100	450	340	1440	260	1353	1436	1983	990	1025	943	1000
SHF65-160/55	2	80	100	100	450	340	1440	260	1353	1436	1983	990	1025	1007	1000
SHF65-160/75	2	80	100	100	450	340	1440	260	1353	1436	1983	990	1025	1007	1000
SHF65-160/110A	2	80	100	100	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
SHF65-160/110	2	80	100	100	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
SHF65-200/150	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
SHF65-200/185	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
SHF65-200/220	2	80	100	100	540	340	1530	280	1398	1436	2028	990	1275	1224	1250
SHF65-250/300	2	80	100	100	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
SHF65-250/370	2	80	100	100	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
SHF80-160/110	2	100	125	125	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-160/150	2	100	125	125	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-160/185	2	100	125	125	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-200/220	2	100	125	125	540	340	1640	280	1443	1436	2073	1100	1300	1359	1250
SHF80-200/300	2	100	125	125	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
SHF80-200/370	2	100	125	125	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
SHF80-250/450	2	100	125	125	610	340	1710	365	1558	1836	2188	1100	1435	1591	1400
SHF80-250/550	2	100	125	125	660	340	1760	390	1583	1837	2213	1100	1635	1700	1600
SHF80-250/750	ON REQUEST														

Dimensions in mm. Tolerance ± 10 mm.

gem20_shf-en_a_td

**EN 12845
fire-fighting
pressure
module**

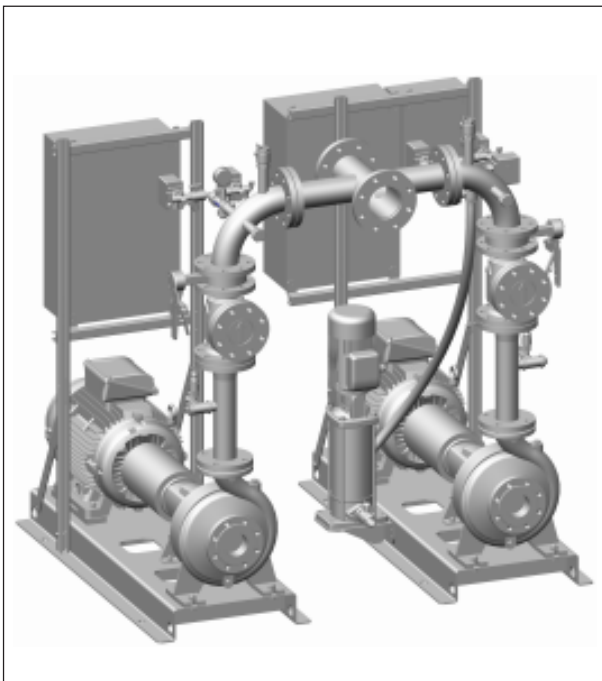
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

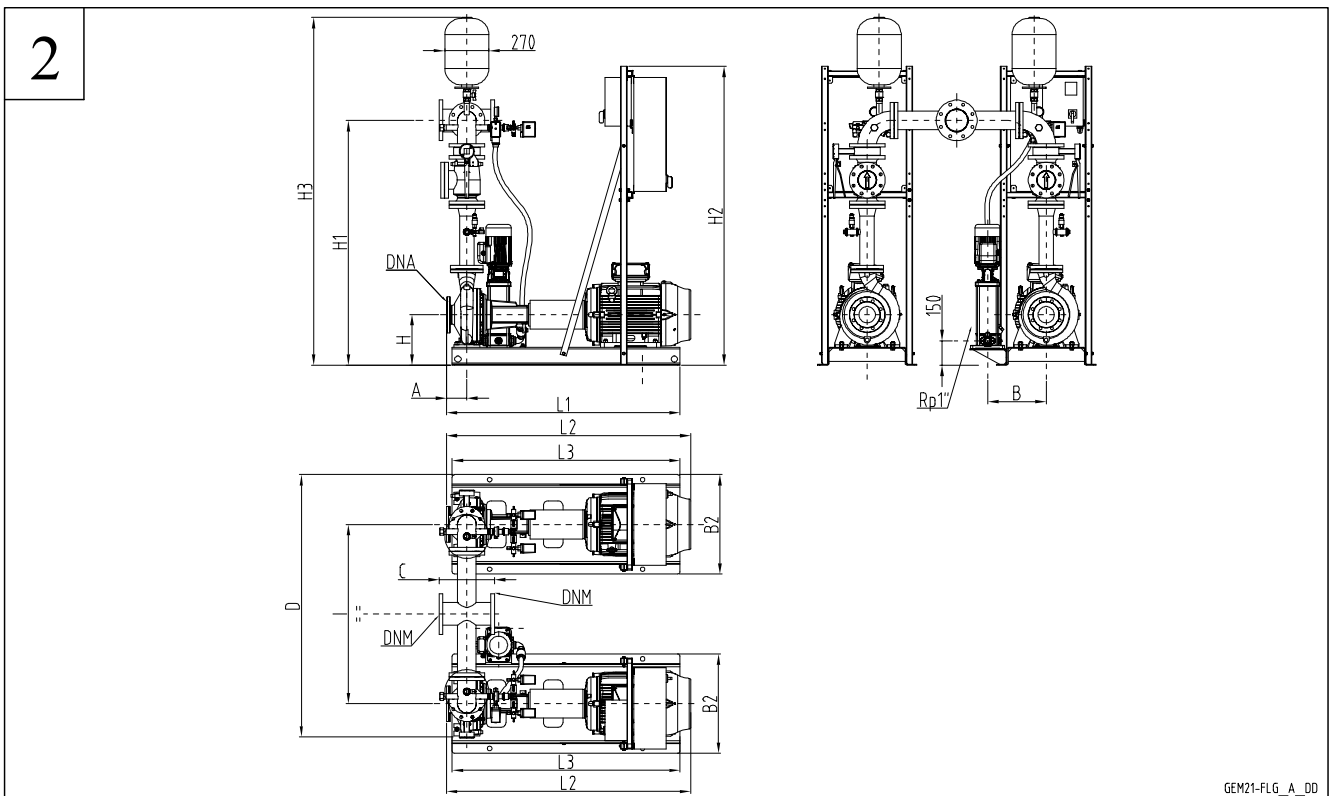
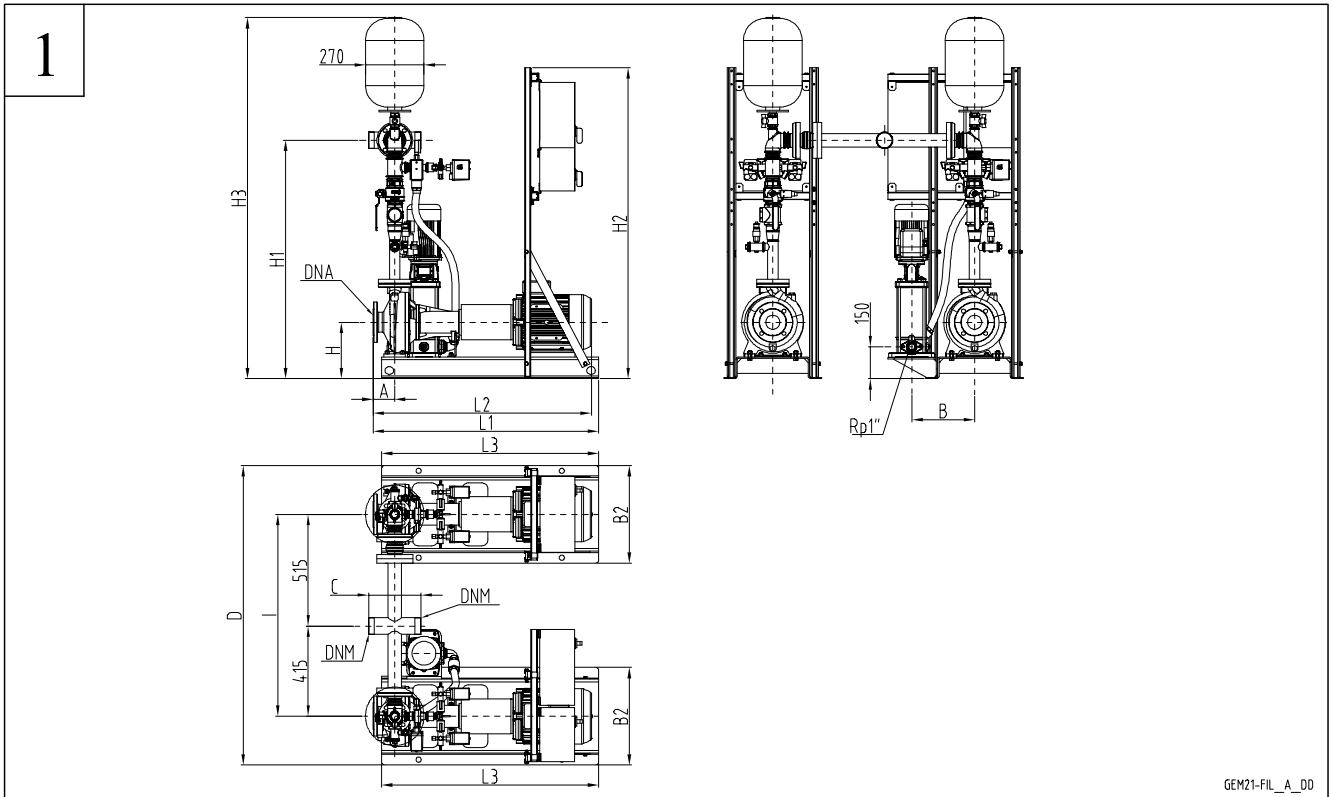
**GEM..J..S+GEM..S
Series**



SPECIFICATIONS

- **Flow:** up to 440 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm$ 10%.
 - Jockey pump 3 x 400 Vac $\pm$ 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 75 kW.
- **Horizontal electric service pump:**
 - SHF series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

**EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..J..S32-S80 + GEM..S32-S80 SERIES**



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...S32-S80 + GEM..S32-S80 SERIES

GEMJ+GEM	DRW N°	DNA	DNM	A	B	B2	C	D	H	H1	H2	H3	I	L1	L2	L3
SHF32-125/07	1	50	R 2"1/2	80	255	360	240	1290	212	1017	1236	1587	930	820	845	800
SHF32-125/11	1	50	R 2"1/2	80	255	360	240	1290	212	1017	1236	1587	930	820	845	800
SHF32-160/15	1	50	R 2"1/2	80	270	390	240	1320	232	1057	1236	1627	930	920	889	900
SHF32-160/22	1	50	R 2"1/2	80	270	390	240	1320	232	1057	1236	1627	930	920	889	900
SHF32-200/30	1	50	R 2"1/2	80	270	390	240	1320	260	1105	1236	1675	930	920	920	900
SHF32-200/40	1	50	R 2"1/2	80	270	390	240	1320	260	1105	1236	1675	930	920	923	900
SHF32-250/55	1	50	R 2"1/2	100	310	390	240	1320	280	1170	1436	1740	930	1145	1007	1120
SHF32-250/75	1	50	R 2"1/2	100	310	390	240	1320	280	1170	1436	1740	930	1145	1007	1120
SHF32-250/110	1	50	R 2"1/2	100	335	540	240	1470	280	1170	1436	1740	930	1275	1164	1250
SHF40-125/11	1	65	R 2"1/2	80	270	360	240	1290	212	1010	1236	1580	930	920	845	900
SHF40-125/15	1	65	R 2"1/2	80	270	390	240	1320	212	1010	1236	1580	930	920	889	900
SHF40-125/22	1	65	R 2"1/2	80	270	390	240	1320	212	1010	1236	1580	930	920	889	900
SHF40-160/30	1	65	R 2"1/2	80	270	390	240	1320	232	1050	1236	1620	930	920	920	900
SHF40-160/40	1	65	R 2"1/2	80	270	390	240	1320	232	1050	1236	1620	930	920	923	900
SHF40-200/55	1	65	R 2"1/2	100	290	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
SHF40-200/75	1	65	R 2"1/2	100	290	450	240	1380	260	1098	1436	1668	930	1040	1007	1000
SHF40-250/110A	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF40-250/110	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF40-250/150	1	65	R 2"1/2	100	335	540	240	1470	280	1163	1436	1733	930	1275	1164	1250
SHF50-125/22	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	909	900
SHF50-125/30	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	940	900
SHF50-125/40	2	65	80	100	270	390	340	1380	232	1217	1236	1847	990	940	943	900
SHF50-160/55	2	65	80	100	290	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
SHF50-160/75	2	65	80	100	290	450	340	1440	260	1265	1436	1895	990	1040	1007	1000
SHF50-200/110A	2	65	80	100	310	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
SHF50-200/110	2	65	80	100	310	490	340	1480	260	1285	1436	1915	990	1160	1164	1120
SHF50-250/150	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
SHF50-250/185	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1164	1250
SHF50-250/220	2	65	80	100	335	540	340	1530	280	1330	1436	1960	990	1275	1224	1250
SHF65-160/40	2	80	100	100	290	450	340	1440	260	1353	1436	1983	990	1025	943	1000
SHF65-160/55	2	80	100	100	290	450	340	1440	260	1353	1436	1983	990	1025	1007	1000
SHF65-160/75	2	80	100	100	290	450	340	1440	260	1353	1436	1983	990	1025	1007	1000
SHF65-160/110A	2	80	100	100	335	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
SHF65-160/110	2	80	100	100	335	540	340	1530	260	1353	1436	1983	990	1275	1164	1250
SHF65-200/150	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
SHF65-200/185	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1164	1250
SHF65-200/220	2	80	100	100	335	540	340	1530	280	1398	1436	2028	990	1275	1224	1250
SHF65-250/300	2	80	100	100	360	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
SHF65-250/370	2	80	100	100	360	610	340	1600	310	1453	1836	2083	990	1410	1477	1400
SHF80-160/110	2	100	125	125	335	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-160/150	2	100	125	125	335	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-160/185	2	100	125	125	335	540	340	1640	280	1418	1436	2048	1100	1300	1189	1250
SHF80-200/220	2	100	125	125	335	540	340	1640	280	1443	1436	2073	1100	1300	1359	1250
SHF80-200/300	2	100	125	125	360	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
SHF80-200/370	2	100	125	125	360	610	340	1710	310	1473	1836	2103	1100	1450	1502	1400
SHF80-250/450	2	100	125	125	360	610	340	1710	365	1558	1836	2188	1100	1435	1591	1400
SHF80-250/550	2	100	125	125	385	660	340	1760	390	1583	1837	2213	1100	1635	1700	1600
SHF80-250/750	ON REQUEST															

Dimensions in mm. Tolerance ± 10 mm.

gem21_shf-en_a_td

**EN 12845
fire-fighting
pressure
module**

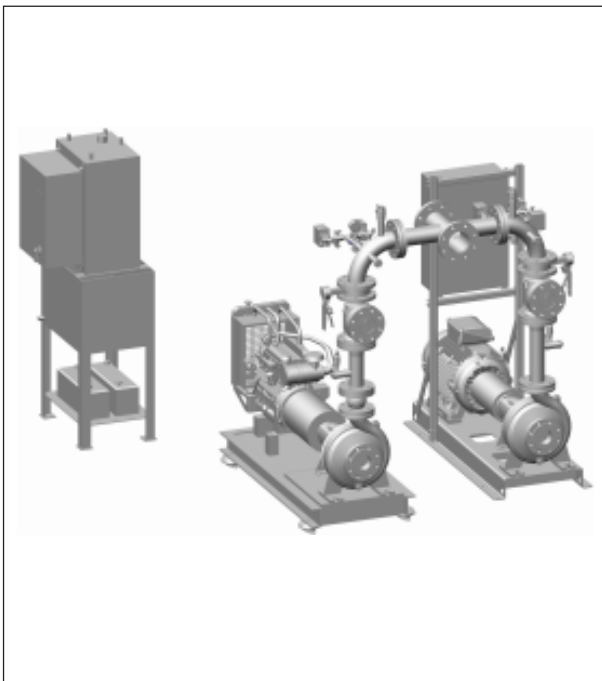
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

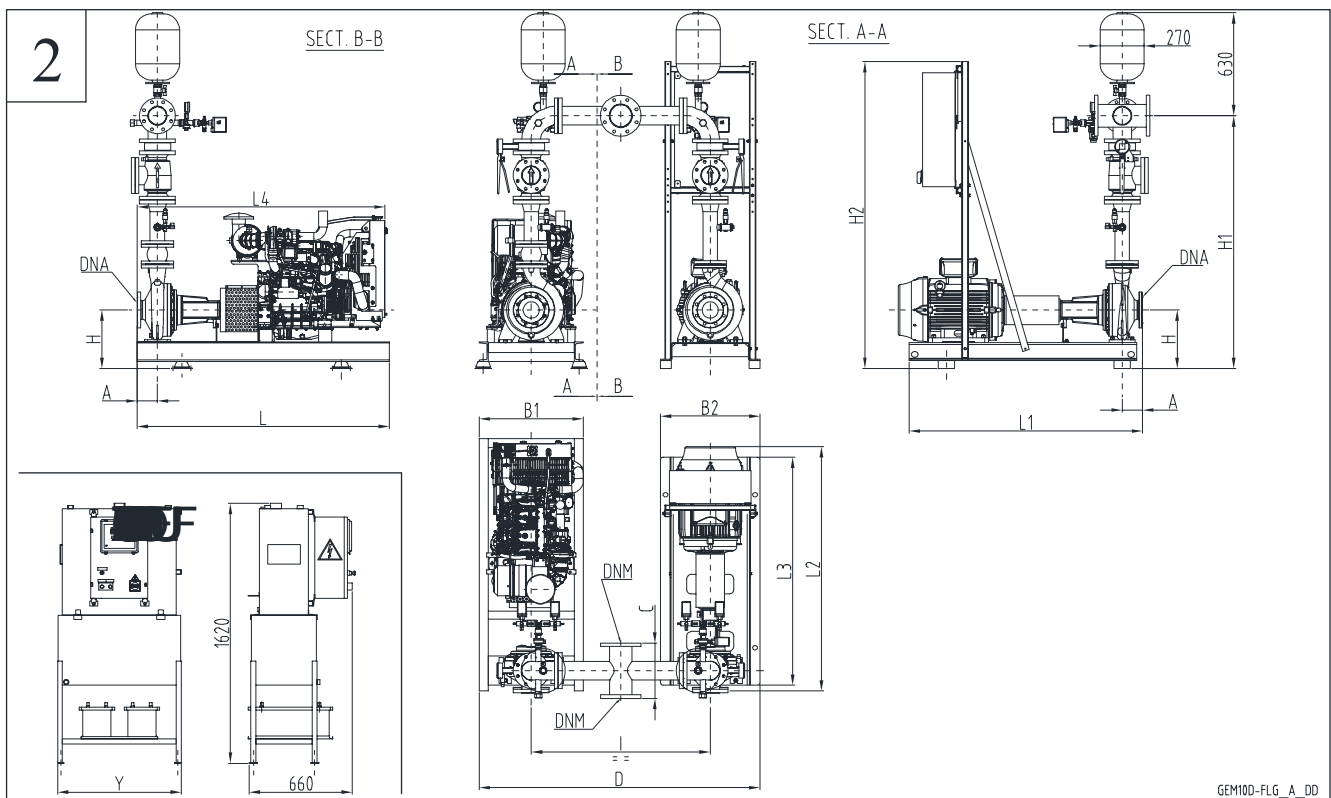
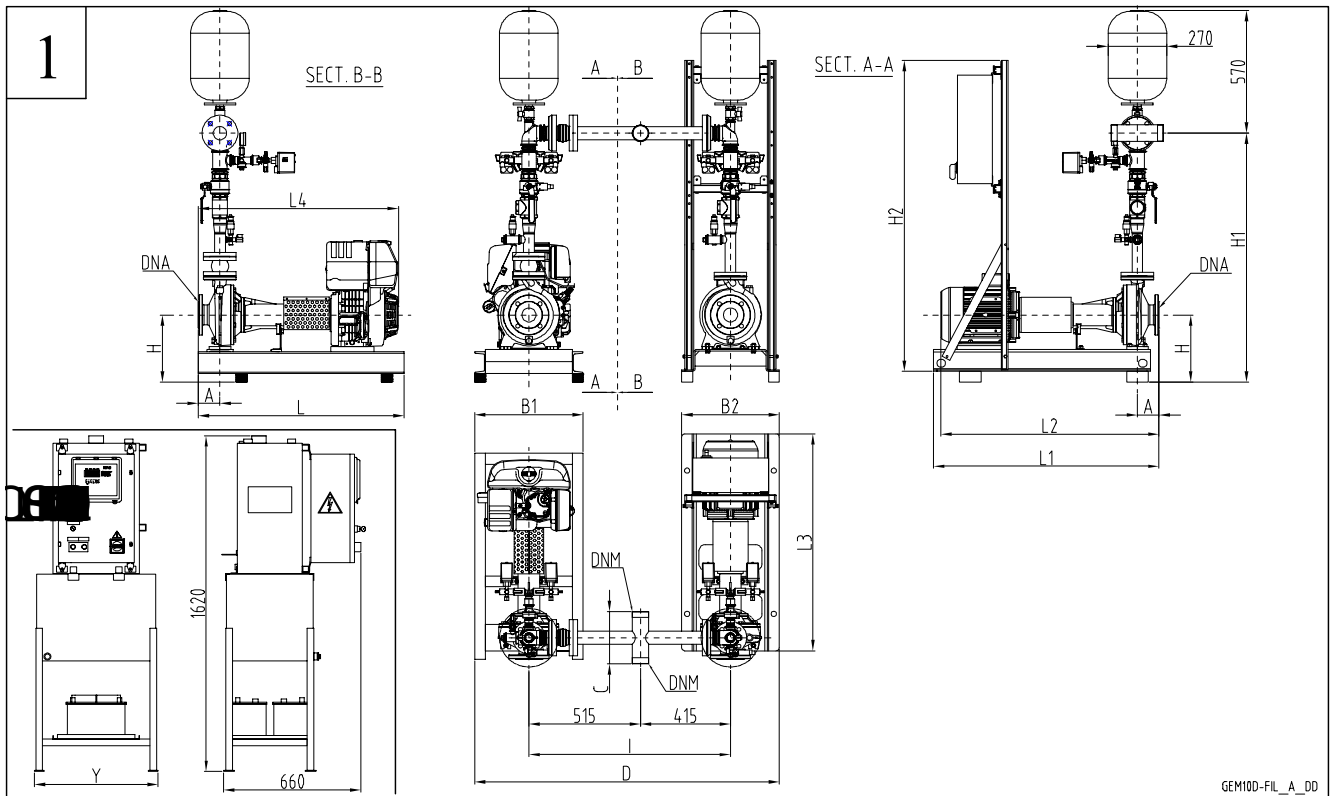
**GEM..S+GEMK..S
Series**



SPECIFICATIONS

- **Flow:** up to 440 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pumps 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 75 kW.
 - Diesel engine service pump 177,3 kW.
- **Horizontal electric service pumps:**
 - SHF series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - SHF series.
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES
GEM..S32-S80 + GEMK..S32-S80 SERIES



EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM..S32-S80 + GEMK..S32-S80 SERIES

GEM + GEMK	DRW N°	DNA	DNM	A	B1	B2	C	D	H	H1	H2	I	L	L1	L2	L3	L4	Y
SHF32-125/07/D119	1	50	R 2"1/2	80	500	360	240	1360	262	1176	1286	930	950	820	845	800	885	570
SHF32-125/11/D136	1	50	R 2"1/2	80	500	360	240	1360	262	1176	1286	930	950	820	845	800	885	570
SHF32-160/15/D150	1	50	R 2"1/2	80	500	390	240	1375	282	1216	1286	930	950	920	889	900	885	570
SHF32-160/22/D164	1	50	R 2"1/2	80	500	390	240	1375	282	1216	1286	930	950	920	889	900	885	570
SHF32-200/30/D188	1	50	R 2"1/2	80	500	390	240	1375	260	1214	1236	930	950	920	920	900	885	570
SHF32-200/40/D204	1	50	R 2"1/2	80	500	390	240	1375	260	1214	1236	930	950	920	923	900	885	570
SHF32-250/55/D222	1	50	R 2"1/2	100	500	390	240	1375	280	1279	1436	930	950	1145	1007	1120	923	570
SHF32-250/75/D242	1	50	R 2"1/2	100	500	390	240	1375	280	1279	1436	930	950	1145	1007	1120	923	570
SHF32-250/110/D256	1	50	R 2"1/2	100	500	540	240	1450	280	1279	1436	930	950	1275	1164	1250	997	570
SHF40-125/11/D112	1	65	R 2"1/2	80	500	360	240	1359	262	1169	1286	929	950	920	845	900	885	570
SHF40-125/15/D122	1	65	R 2"1/2	80	500	390	240	1374	262	1169	1286	929	950	920	889	900	885	570
SHF40-125/22/D143	1	65	R 2"1/2	80	500	390	240	1374	262	1169	1286	929	950	920	889	900	885	570
SHF40-160/30/D159	1	65	R 2"1/2	80	500	390	240	1374	282	1209	1286	929	950	920	920	900	885	570
SHF40-160/40/D171	1	65	R 2"1/2	80	500	390	240	1374	282	1209	1286	929	950	920	923	900	885	570
SHF40-200/55/D190	1	65	R 2"1/2	100	500	450	240	1404	310	1257	1486	929	950	1040	1007	1000	921	570
SHF40-200/75/D209	1	65	R 2"1/2	100	500	450	240	1404	310	1257	1486	929	950	1040	1007	1000	923	570
SHF40-250/110A/D218	1	65	R 2"1/2	100	500	540	240	1449	280	1272	1436	929	950	1275	1164	1250	997	570
SHF40-250/110/D233	1	65	R 2"1/2	100	570	540	240	1484	330	1322	1486	929	1250	1275	1164	1250	1187	570
SHF40-250/150/D251	1	65	R 2"1/2	100	570	540	240	1484	330	1322	1486	929	1250	1275	1164	1250	1187	570
SHF50-125/22/D119	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	909	900	905	570
SHF50-125/30/D130	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	940	900	905	570
SHF50-125/40/D139	2	65	80	100	500	390	340	1435	282	1267	1286	990	950	940	943	900	905	570
SHF50-160/55/D158	2	65	80	100	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	570
SHF50-160/75/D174	2	65	80	100	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	570
SHF50-200/110A/D197	2	65	80	100	500	490	340	1485	310	1335	1486	990	950	1160	1164	1120	997	570
SHF50-200/110/D209	2	65	80	100	570	490	340	1520	360	1385	1536	990	1250	1160	1164	1120	1187	570
SHF50-250/150/D224	2	65	80	100	570	540	340	1545	330	1380	1486	990	1250	1275	1164	1250	1187	570
SHF50-250/185/D237	2	65	80	100	570	540	340	1545	380	1430	1536	990	1250	1275	1164	1250	1307	570
SHF50-250/220/D250	2	65	80	100	570	540	340	1545	380	1430	1536	990	1250	1275	1224	1250	1307	570
SHF65-160/40/D119	2	80	100	100	500	450	340	1465	260	1353	1436	990	950	1025	943	1000	905	570
SHF65-160/55/D129	2	80	100	100	500	450	340	1465	310	1403	1486	990	950	1025	1007	1000	921	570
SHF65-160/75/D137	2	80	100	100	500	450	340	1465	310	1403	1486	990	950	1025	1007	1000	997	570
SHF65-160/110A/D164	2	80	100	100	500	540	340	1510	310	1403	1486	990	950	1275	1164	1250	997	570
SHF65-160/110/D177	2	80	100	100	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	570
SHF65-200/150/D192	2	80	100	100	570	540	340	1545	330	1448	1486	990	1250	1275	1164	1250	1187	570
SHF65-200/185/D203	2	80	100	100	570	540	340	1545	380	1498	1536	990	1250	1275	1164	1250	1307	570
SHF65-200/220/D215	2	80	100	100	570	540	340	1545	380	1498	1536	990	1250	1275	1224	1250	1307	570
SHF65-250/300/D240	2	80	100	100	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	570
SHF65-250/370/D255	2	80	100	100	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	760
SHF80-160/110/D169	2	100	125	125	570	540	340	1655	330	1468	1486	1100	1250	1300	1189	1250	1212	570
SHF80-160/150/D177	2	100	125	125	570	540	340	1655	330	1468	1486	1100	1250	1300	1189	1250	1212	570
SHF80-160/185/D186	2	100	125	125	570	540	340	1655	380	1518	1536	1100	1250	1300	1189	1250	1332	570
SHF80-200/220/D198	2	100	125	125	570	540	340	1655	380	1543	1536	1100	1250	1300	1359	1250	1442	570
SHF80-200/300/D215	2	100	125	125	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	570
SHF80-200/370/D226	2	100	125	125	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	760
SHF80-250/450/D237	2	100	125	125	640	610	340	1725	365	1558	1836	1100	1550	1435	1591	1400	1552	760
SHF80-250/550/D252	2	100	125	125	640	660	340	1750	390	1583	1837	1100	1550	1635	1700	1600	1703	760
SHF80-250/750/D270	ON REQUEST																	

Dimensions in mm. Tolerance ± 10 mm.

gemk10d_shf-en_a_td

**EN 12845
fire-fighting
pressure
module**

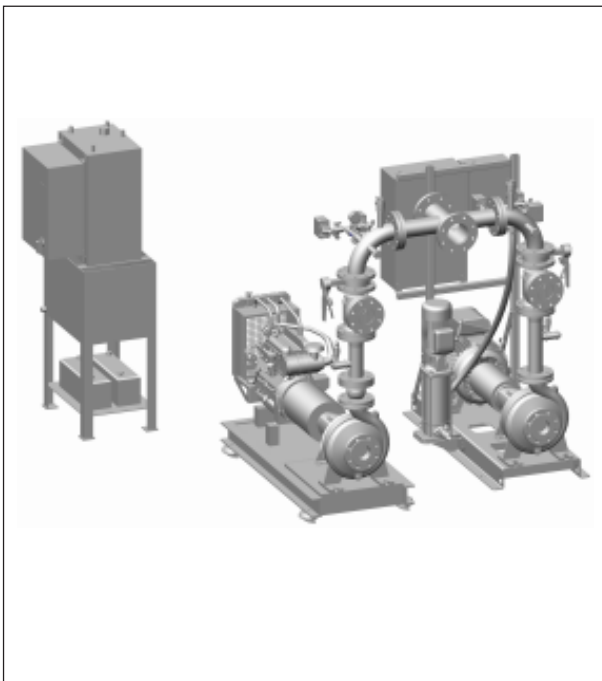
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

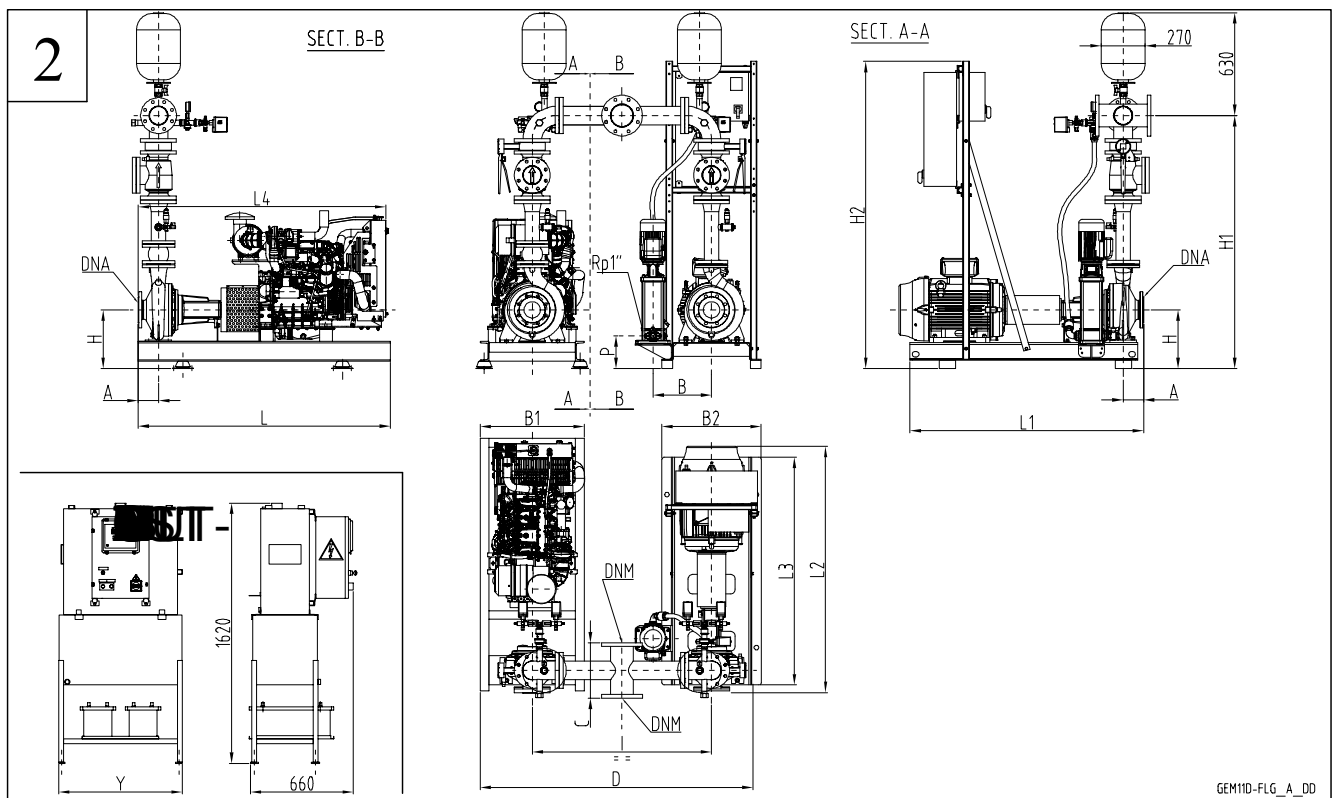
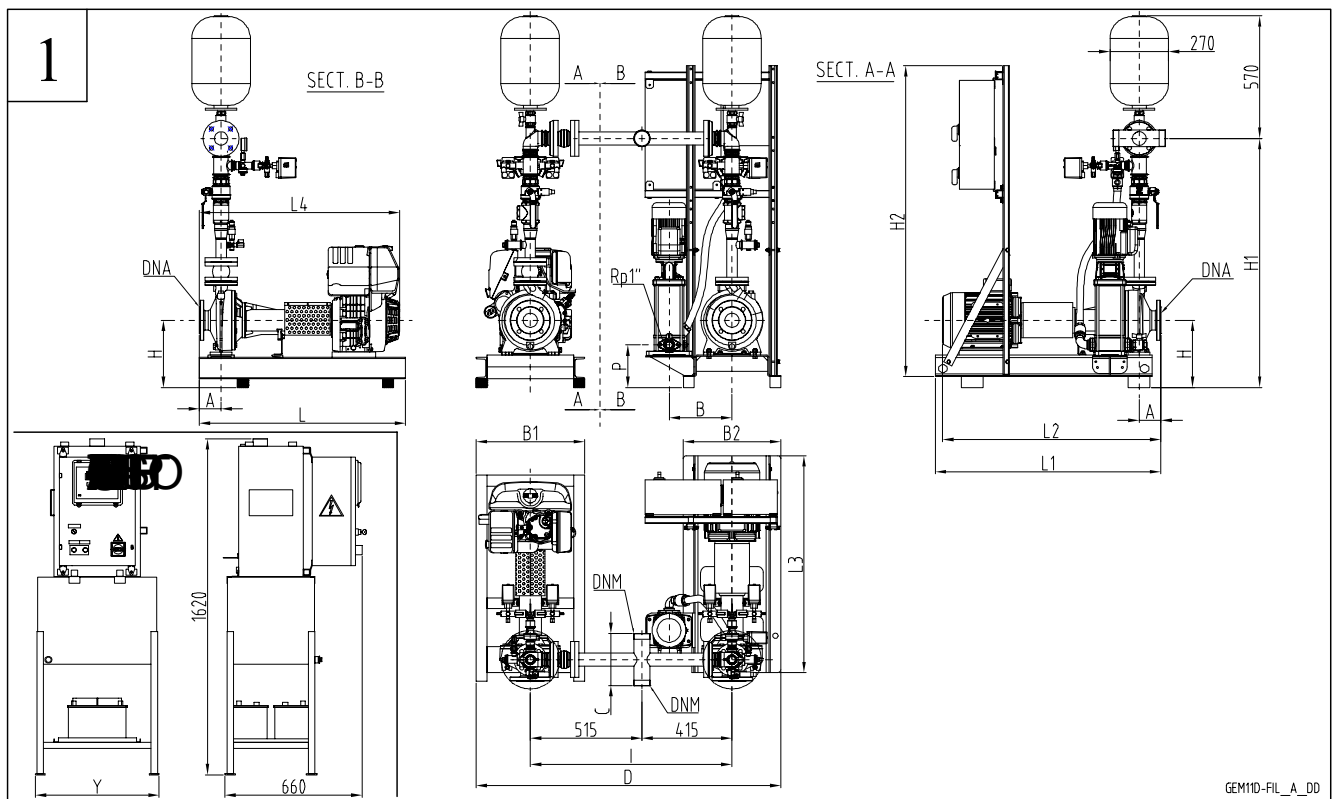
**GEM..J..S+GEMK..S
Series**



SPECIFICATIONS

- **Flow:** up to 440 m³/h.
- **Head:** up to 112 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm 10\%$.
 - Diesel engine service pump 1 x 230 Vac $\pm 10\%$.
 - Jockey pump 3 x 400 Vac $\pm 10\%$.
- **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 pump 75 kW.
 - Diesel engine service pump 177,3 kW.
- **Horizontal electric service pump:**
 - SHF series (motor protection grade IP55).
- **Horizontal diesel engine service pump:**
 - SHF series.
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 12 bar.

EN 12845 FIRE-FIGHTING PRESSURE MODULES GEM...S32-S80 + GEMK...S32-S80 SERIES



EN 12845 FIRE-FIGHTING PRESSURE MODULES

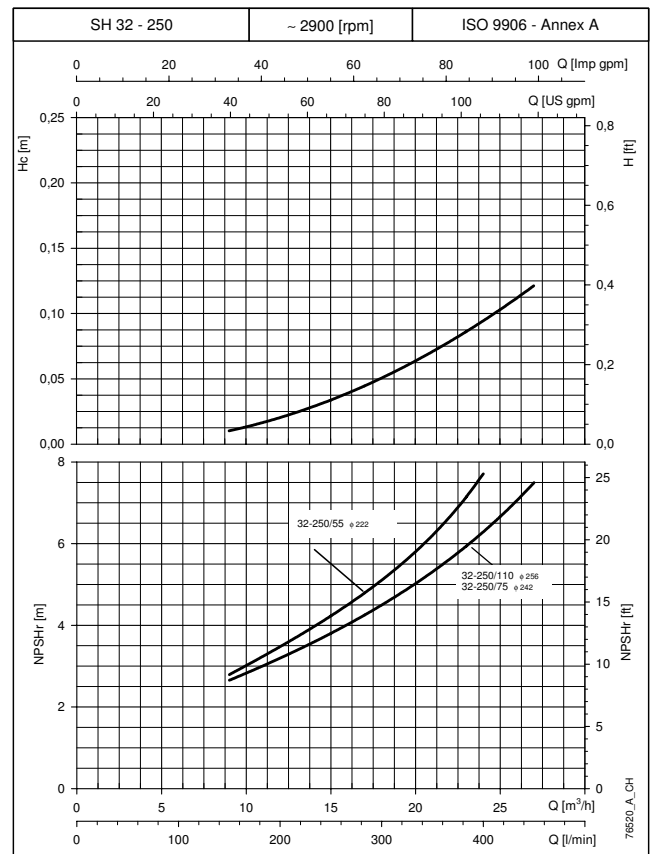
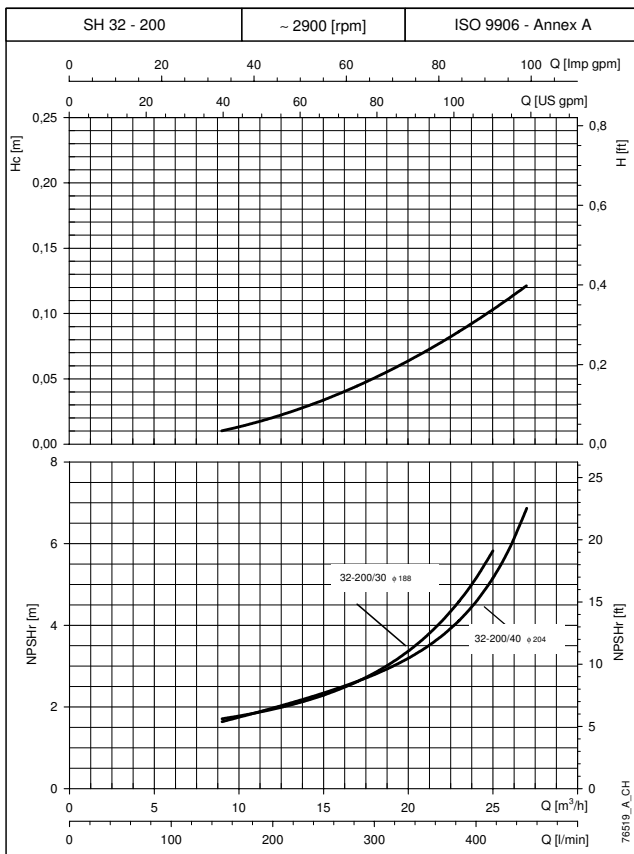
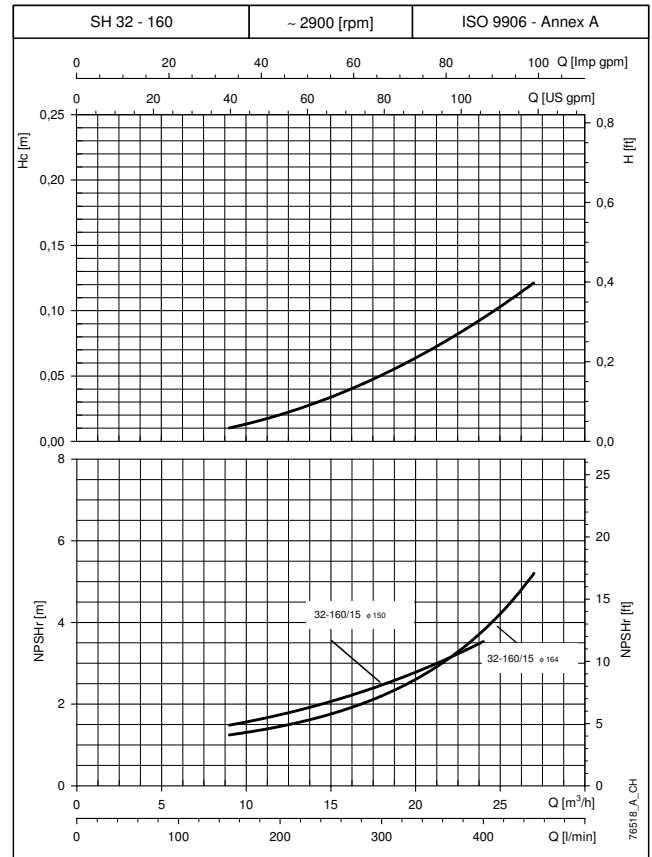
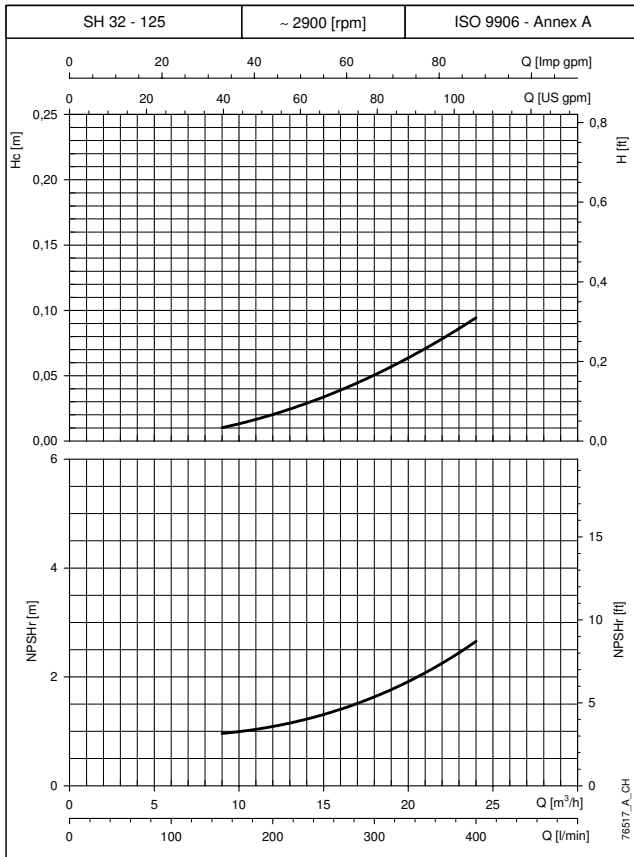
GEM..J..S32-S80 + GEMK..S32-S80 SERIES

GEMJ + GEMK	DRW N°	DNA	DNM	A	B	B1	B2	C	D	H	H1	H2	I	L	L1	L2	L3	L4	Y	P
SHF32-125/07/D119	1	50	R 2"1/2	80	255	500	360	240	1360	262	1176	1286	930	950	820	845	800	885	570	200
SHF32-125/11/D136	1	50	R 2"1/2	80	255	500	360	240	1360	262	1176	1286	930	950	820	845	800	885	570	200
SHF32-160/15/D150	1	50	R 2"1/2	80	270	500	390	240	1375	282	1216	1286	930	950	920	889	900	885	570	200
SHF32-160/22/D164	1	50	R 2"1/2	80	270	500	390	240	1375	282	1216	1286	930	950	920	889	900	885	570	200
SHF32-200/30/D188	1	50	R 2"1/2	80	270	500	390	240	1375	260	1214	1236	930	950	920	920	900	885	570	150
SHF32-200/40/D204	1	50	R 2"1/2	80	270	500	390	240	1375	260	1214	1236	930	950	920	923	900	885	570	150
SHF32-250/55/D222	1	50	R 2"1/2	100	310	500	390	240	1375	280	1279	1436	930	950	1145	1007	1120	923	570	150
SHF32-250/75/D242	1	50	R 2"1/2	100	310	500	390	240	1375	280	1279	1436	930	950	1145	1007	1120	923	570	150
SHF32-250/110/D256	1	50	R 2"1/2	100	335	500	540	240	1450	280	1279	1436	930	950	1275	1164	1250	997	570	150
SHF40-125/11/D112	1	65	R 2"1/2	80	270	500	360	240	1359	262	1169	1286	929	950	920	845	900	885	570	200
SHF40-125/15/D122	1	65	R 2"1/2	80	270	500	390	240	1374	262	1169	1286	929	950	920	889	900	885	570	200
SHF40-125/22/D143	1	65	R 2"1/2	80	270	500	390	240	1374	262	1169	1286	929	950	920	889	900	885	570	200
SHF40-160/30/D159	1	65	R 2"1/2	80	270	500	390	240	1374	282	1209	1286	929	950	920	920	900	885	570	200
SHF40-160/40/D171	1	65	R 2"1/2	80	270	500	390	240	1374	282	1209	1286	929	950	920	923	900	885	570	200
SHF40-200/55/D190	1	65	R 2"1/2	100	290	500	450	240	1404	310	1257	1486	929	950	1040	1007	1000	921	570	200
SHF40-200/75/D209	1	65	R 2"1/2	100	290	500	450	240	1404	310	1257	1486	929	950	1040	1007	1000	923	570	200
SHF40-250/110A/D218	1	65	R 2"1/2	100	335	500	540	240	1449	280	1272	1436	929	950	1275	1164	1250	997	570	150
SHF40-250/110/D233	1	65	R 2"1/2	100	335	570	540	240	1484	330	1322	1486	929	1250	1275	1164	1250	1187	570	200
SHF40-250/150/D251	1	65	R 2"1/2	100	335	570	540	240	1484	330	1322	1486	929	1250	1275	1164	1250	1187	570	200
SHF50-125/22/D119	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	909	900	905	570	200
SHF50-125/30/D130	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	940	900	905	570	200
SHF50-125/40/D139	2	65	80	100	270	500	390	340	1435	282	1267	1286	990	950	940	943	900	905	570	200
SHF50-160/55/D158	2	65	80	100	290	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	570	200
SHF50-160/75/D174	2	65	80	100	290	500	450	340	1465	310	1315	1486	990	950	1040	1007	1000	923	570	200
SHF50-200/110A/D197	2	65	80	100	310	500	490	340	1485	310	1335	1486	990	950	1160	1164	1120	997	570	200
SHF50-200/110/D209	2	65	80	100	310	570	490	340	1520	360	1385	1536	990	1250	1160	1164	1120	1187	570	250
SHF50-250/150/D224	2	65	80	100	335	570	540	340	1545	330	1380	1486	990	1250	1275	1164	1250	1187	570	200
SHF50-250/185/D237	2	65	80	100	335	570	540	340	1545	380	1430	1536	990	1250	1275	1164	1250	1307	570	250
SHF50-250/220/D250	2	65	80	100	335	570	540	340	1545	380	1430	1536	990	1250	1275	1224	1250	1307	570	250
SHF65-160/40/D119	2	80	100	100	290	500	450	340	1465	260	1353	1436	990	950	1025	943	1000	905	570	150
SHF65-160/55/D129	2	80	100	100	290	500	450	340	1465	310	1403	1486	990	950	1025	1007	1000	921	570	200
SHF65-160/75/D137	2	80	100	100	290	500	450	340	1465	310	1403	1486	990	950	1025	1007	1000	997	570	200
SHF65-160/110A/D164	2	80	100	100	335	500	540	340	1510	310	1403	1486	990	950	1275	1164	1250	997	570	200
SHF65-160/110/D177	2	80	100	100	335	570	540	340	1545	360	1453	1536	990	1250	1275	1164	1250	1187	570	250
SHF65-200/150/D192	2	80	100	100	335	570	540	340	1545	330	1448	1486	990	1250	1275	1164	1250	1187	570	200
SHF65-200/185/D203	2	80	100	100	335	570	540	340	1545	380	1498	1536	990	1250	1275	1164	1250	1307	570	250
SHF65-200/220/D215	2	80	100	100	335	570	540	340	1545	380	1498	1536	990	1250	1275	1224	1250	1307	570	250
SHF65-250/300/D240	2	80	100	100	360	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	570	200
SHF65-250/370/D255	2	80	100	100	360	640	610	340	1615	360	1503	1886	990	1550	1410	1477	1400	1527	760	200
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SHF80-160/150/D177	2	100	125	125	335	570	540	340	1655	330	1468	1486	1100	1250	1300	1189	1250	1212	570	200
SHF80-160/185/D186	2	100	125	125	335	570	540	340	1655	380	1518	1536	1100	1250	1300	1189	1250	1332	570	250
SHF80-200/220/D198	2	100	125	125	335	570	540	340	1655	380	1543	1536	1100	1250	1300	1359	1250	1442	570	250
SHF80-200/300/D215	2	100	125	125	360	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	570	200
SHF80-200/370/D226	2	100	125	125	360	640	610	340	1725	360	1523	1886	1100	1550	1450	1502	1400	1552	760	200
SHF80-250/450/D237	2	100	125	125	360	640	610	340	1725	365	1558	1836	1100	1550	1435	1591	1400	1552	760	150
SHF80-250/550/D252	2	100	125	125	385	640	660	340	1750	390	1583	1837	1100	1550	1635	1700	1600	1703	760	150
SHF80-250/750/D270	ON REQUEST																			

Dimensions in mm. Tolerance ± 10 mm.

gemk11d_shf-en_a_td

EN 12845 PRESSURE MODULES GEM..S SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

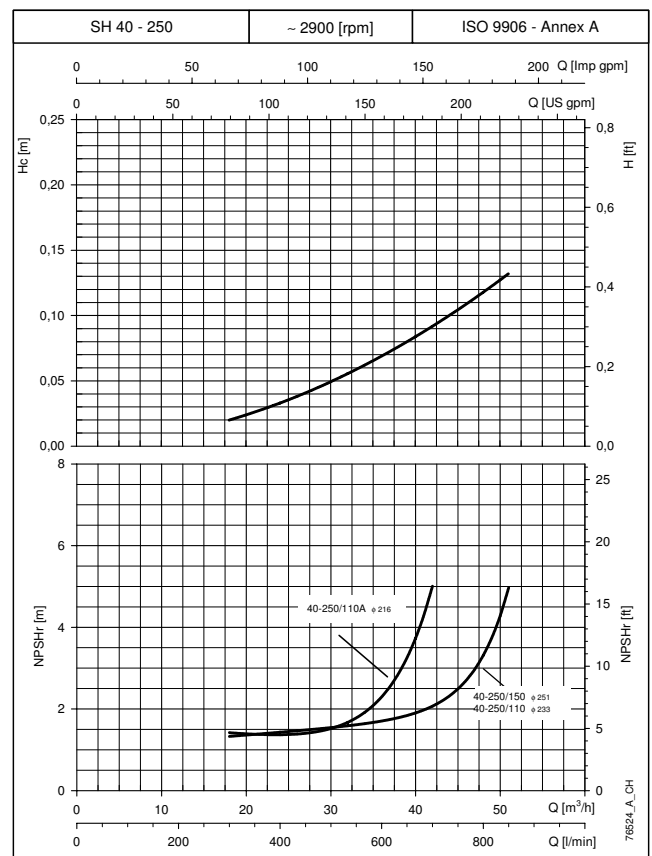
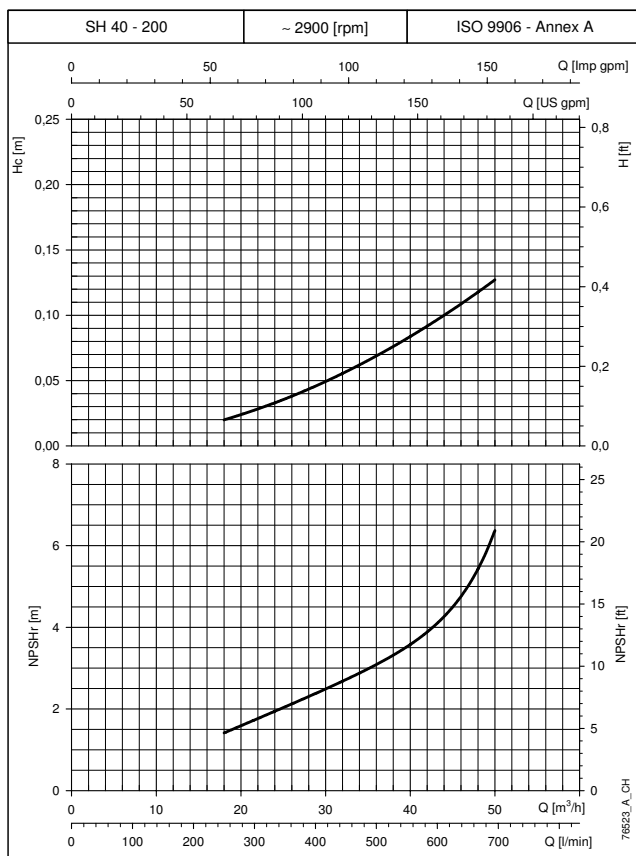
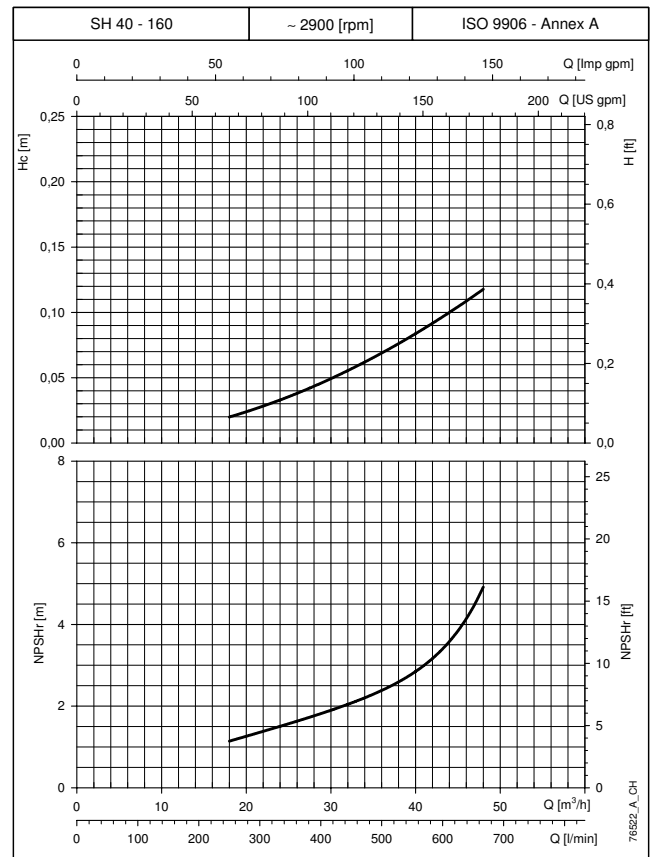
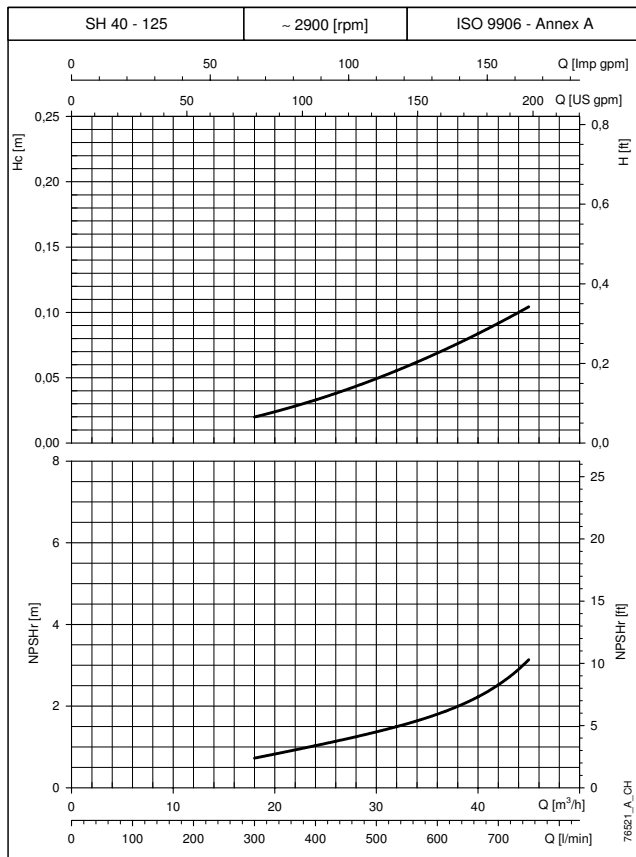


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The NPSH_r 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

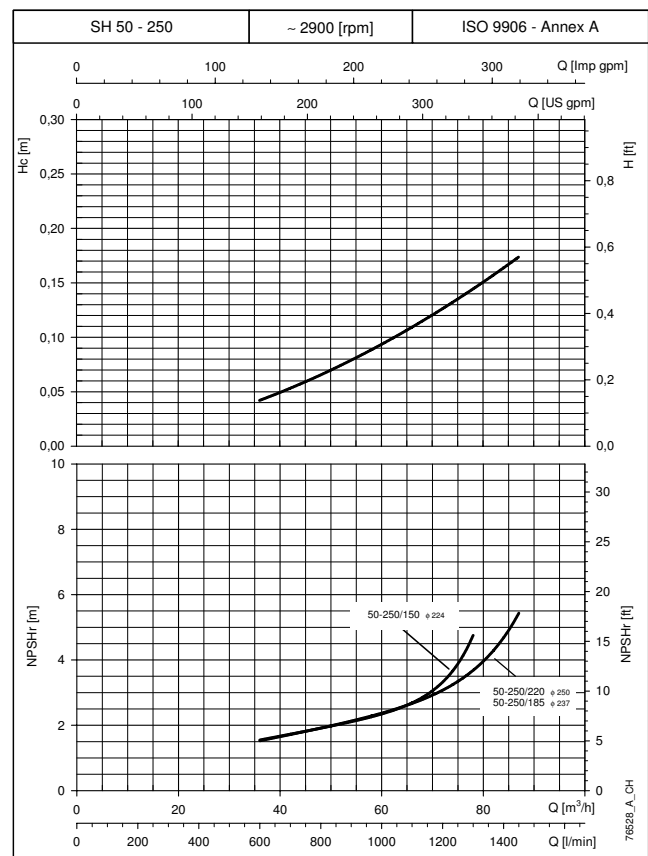
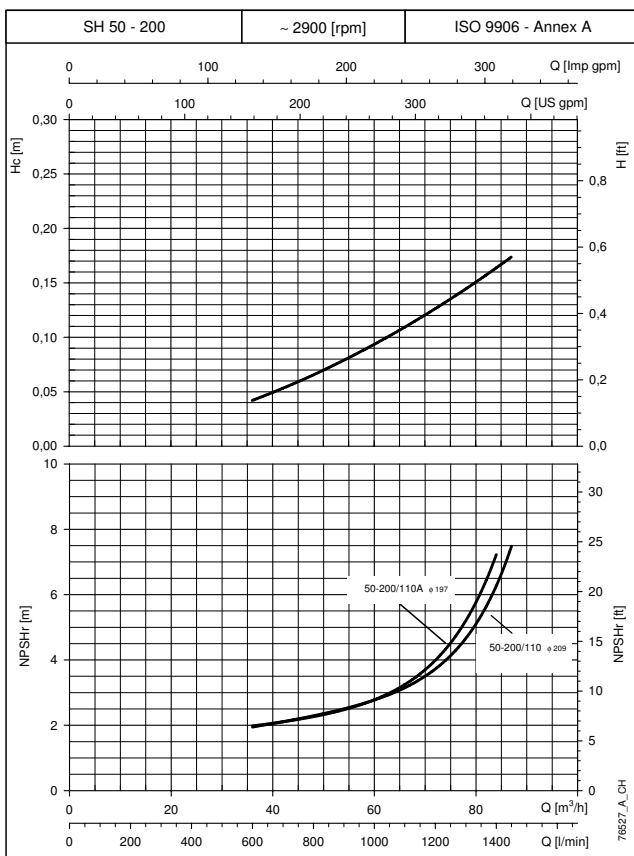
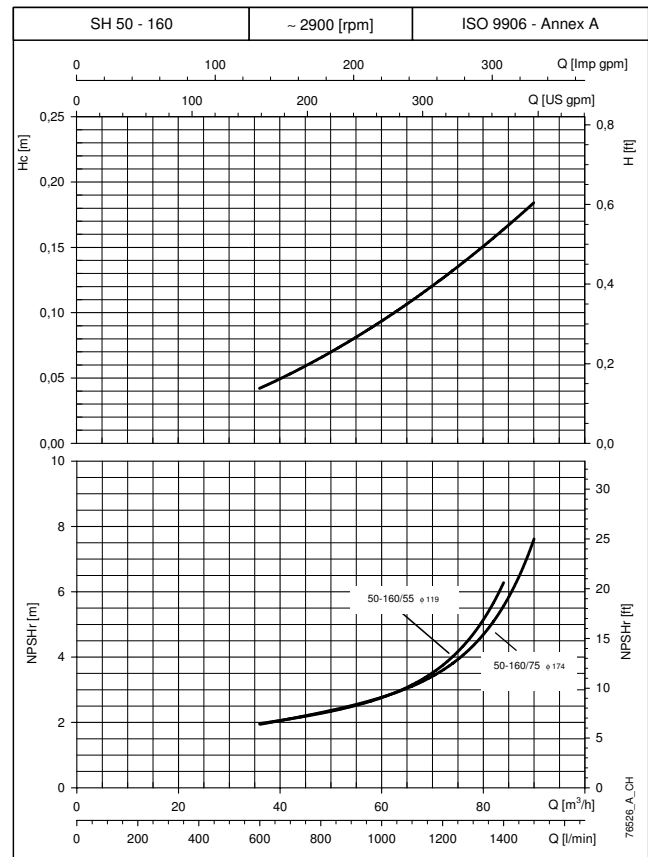
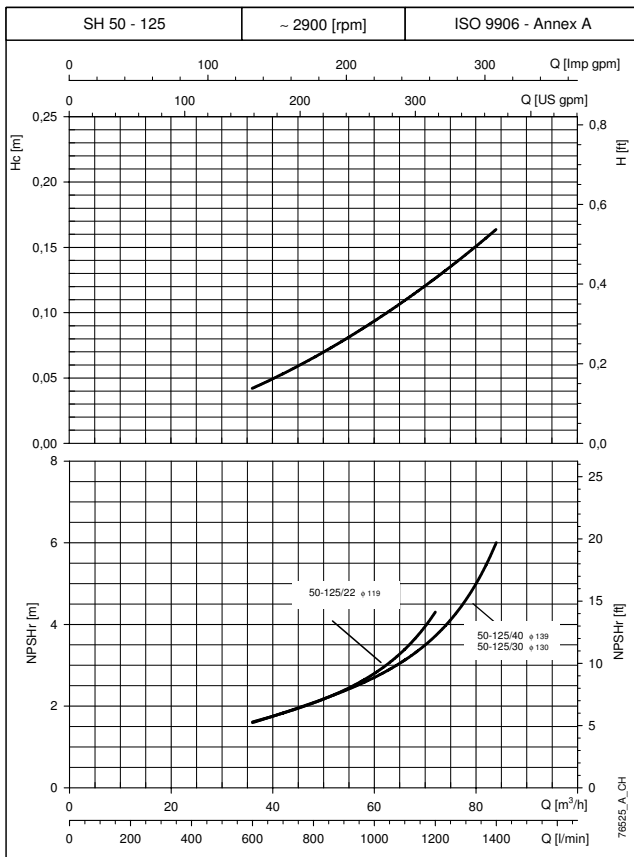


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EN 12845 PRESSURE MODULES GEM..S SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

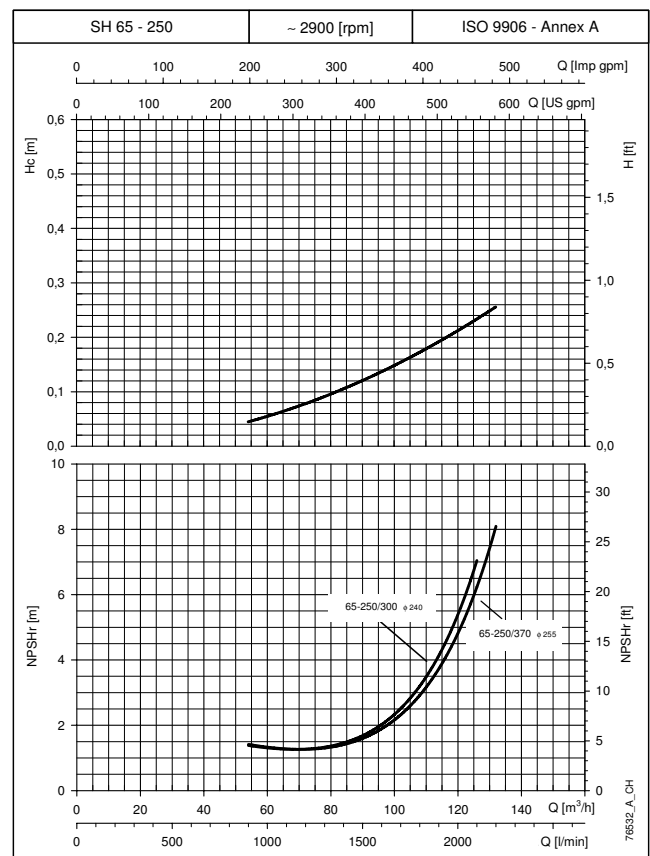
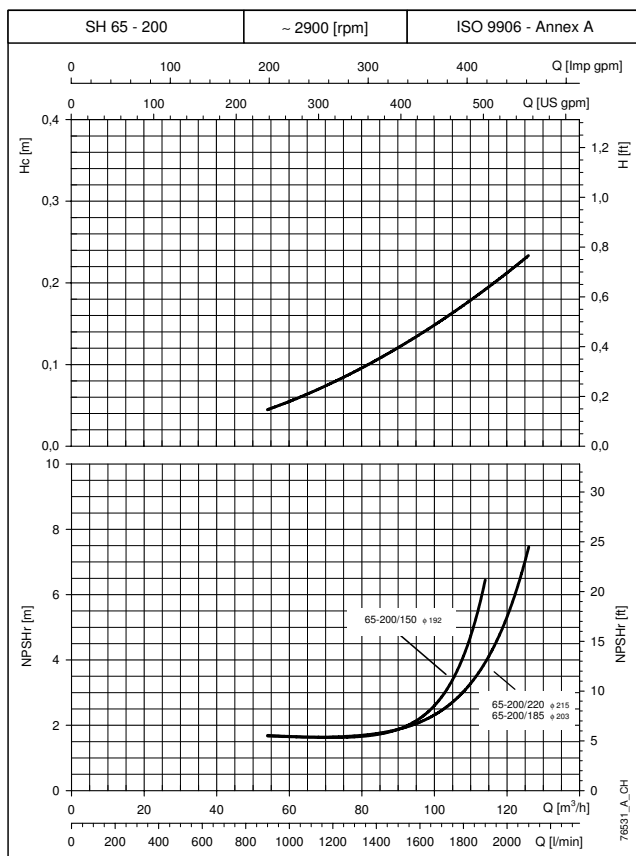
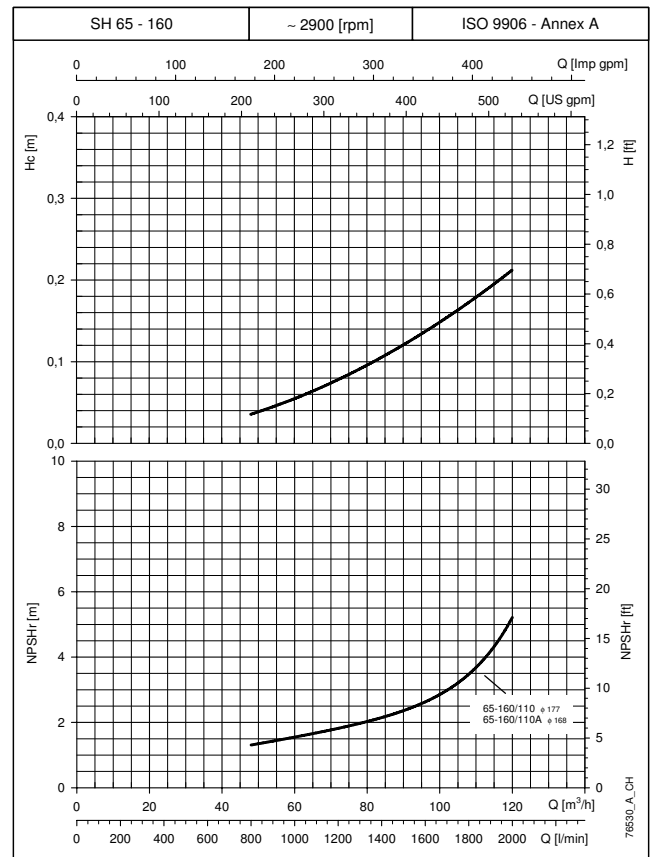
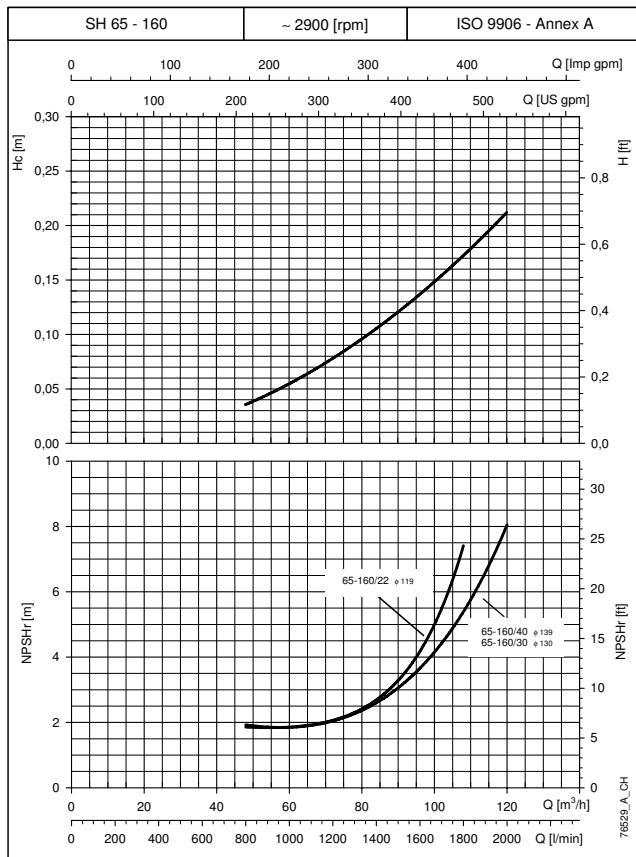


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H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

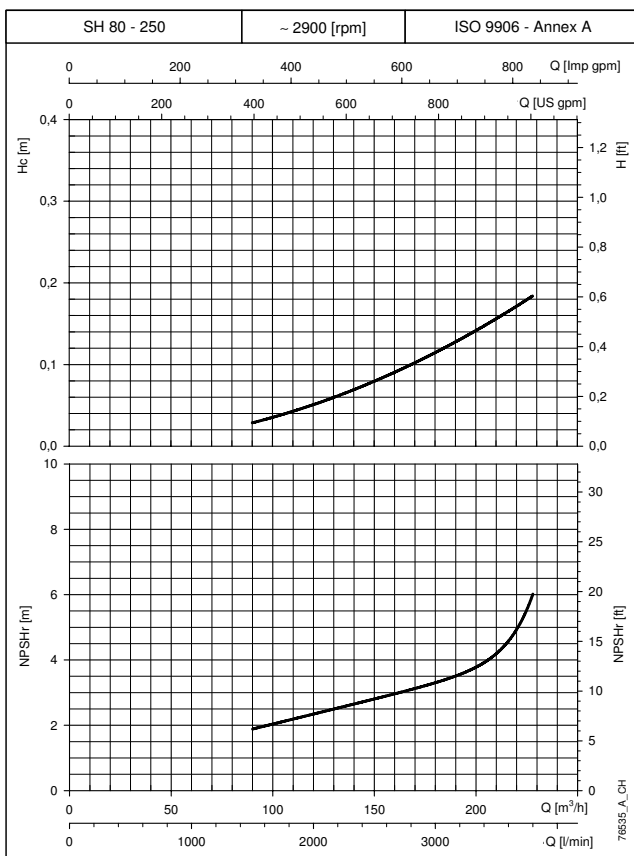
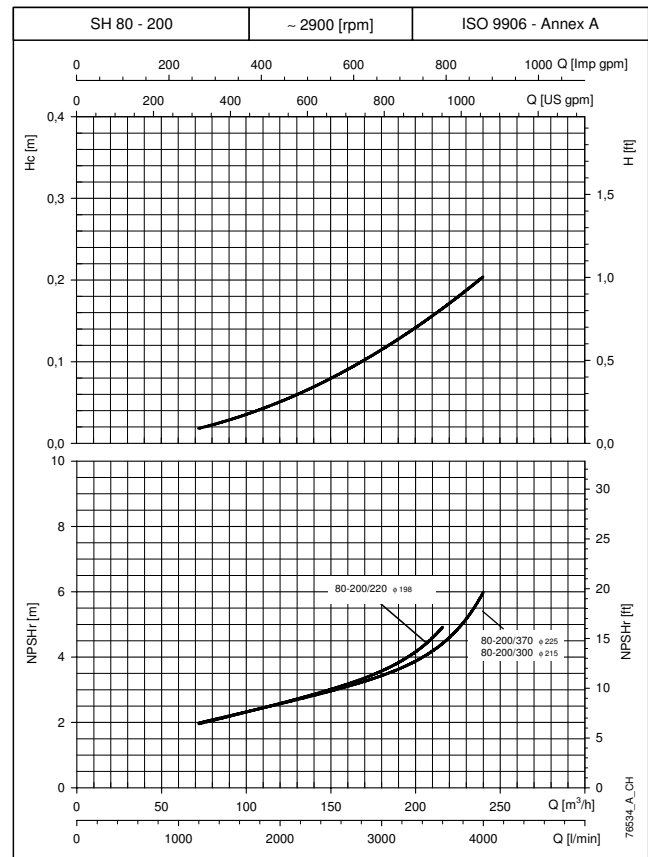
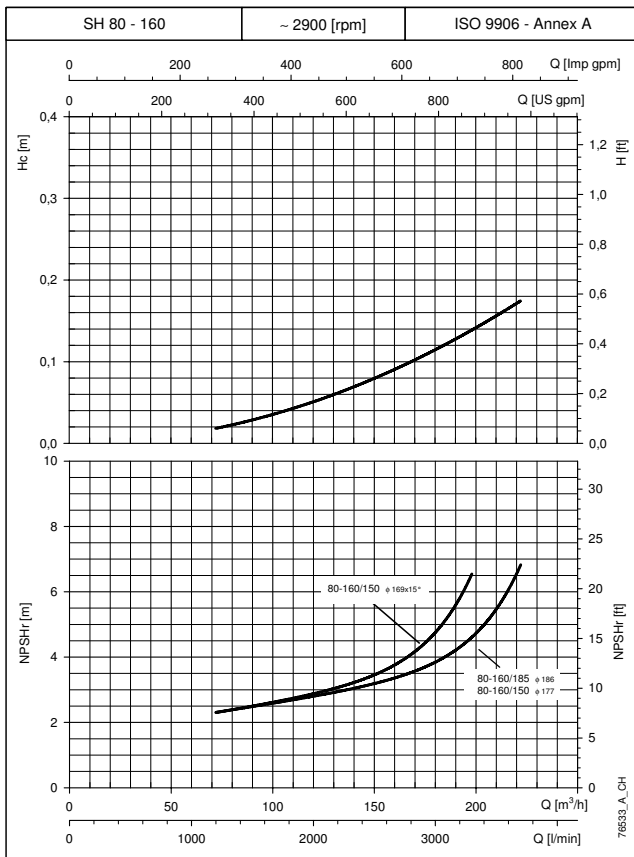


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EN 12845 PRESSURE MODULES GEM..S SERIES (SUCTION LIFT) H_c PRESSURE DROP CURVE IN SUCTION KIT

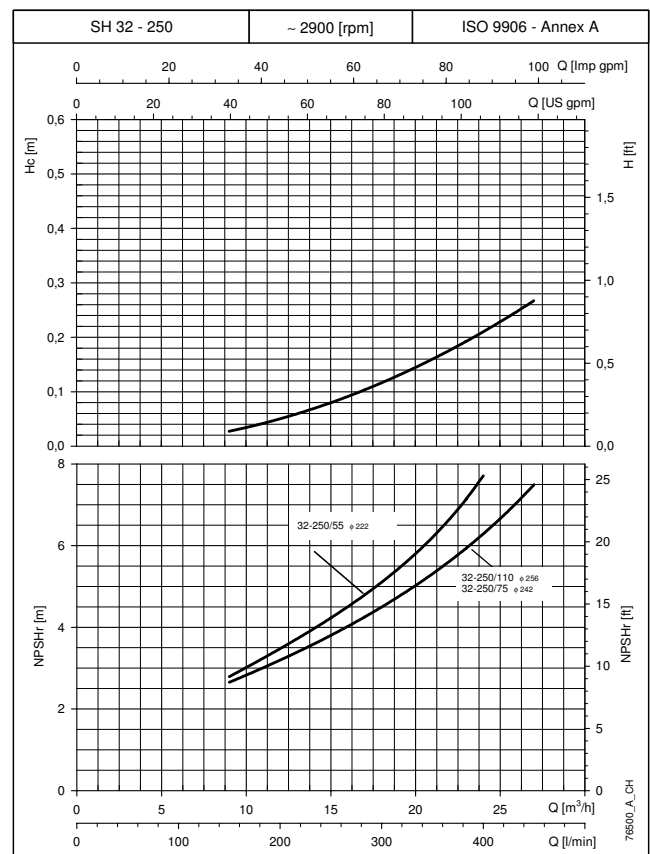
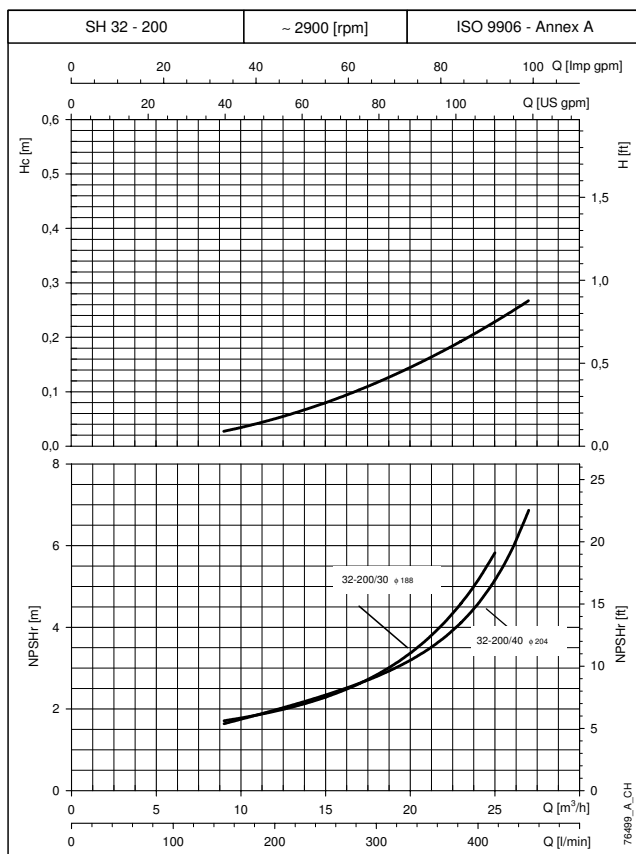
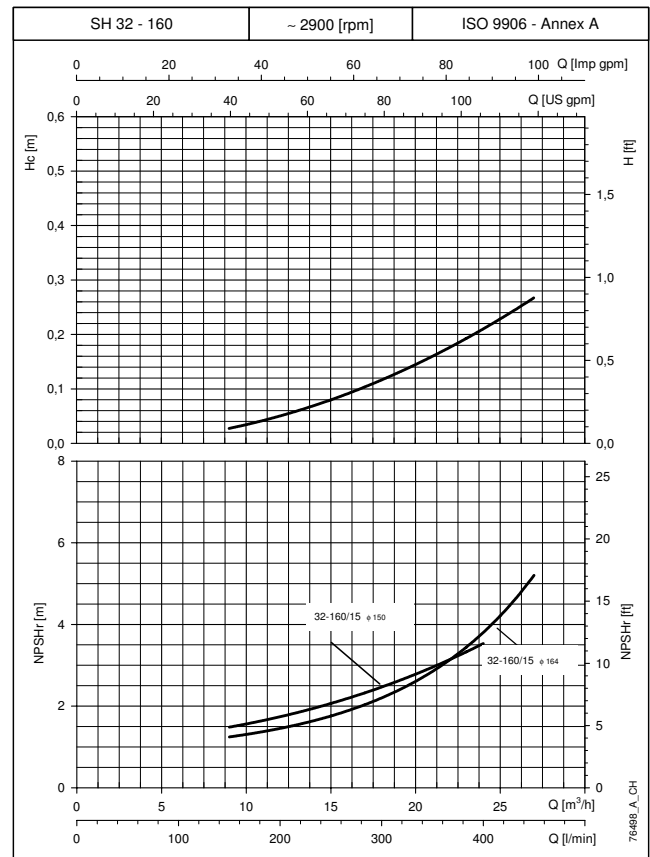
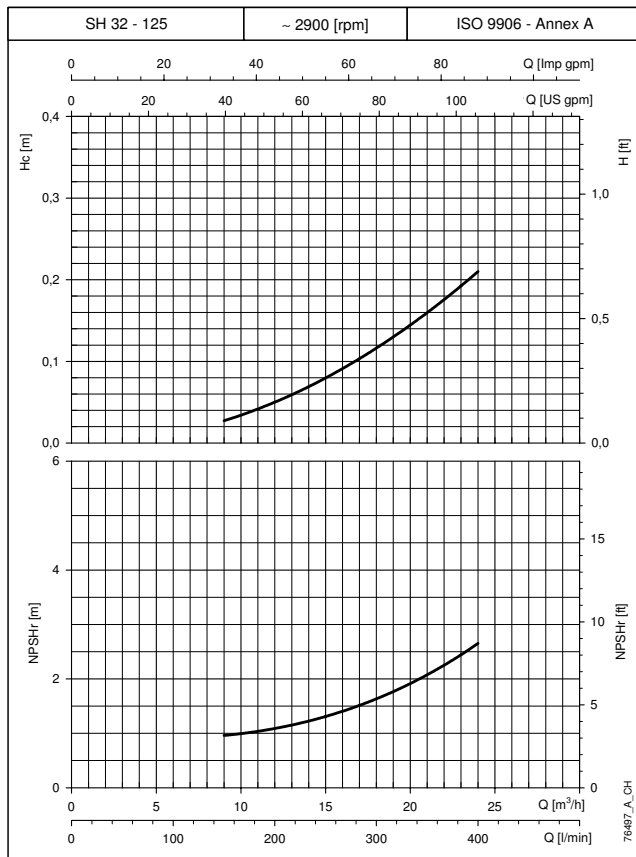


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

The $NPSH_r$ 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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

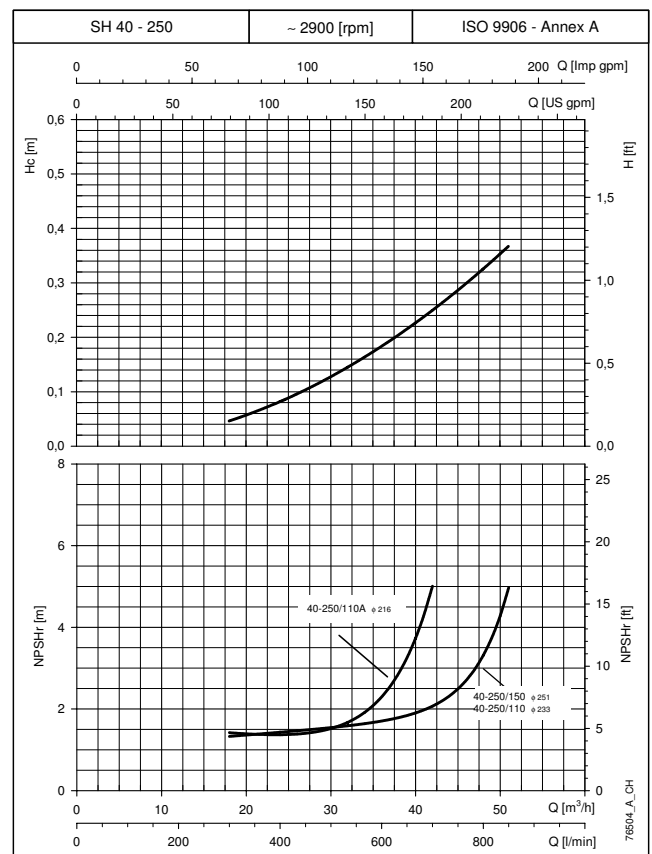
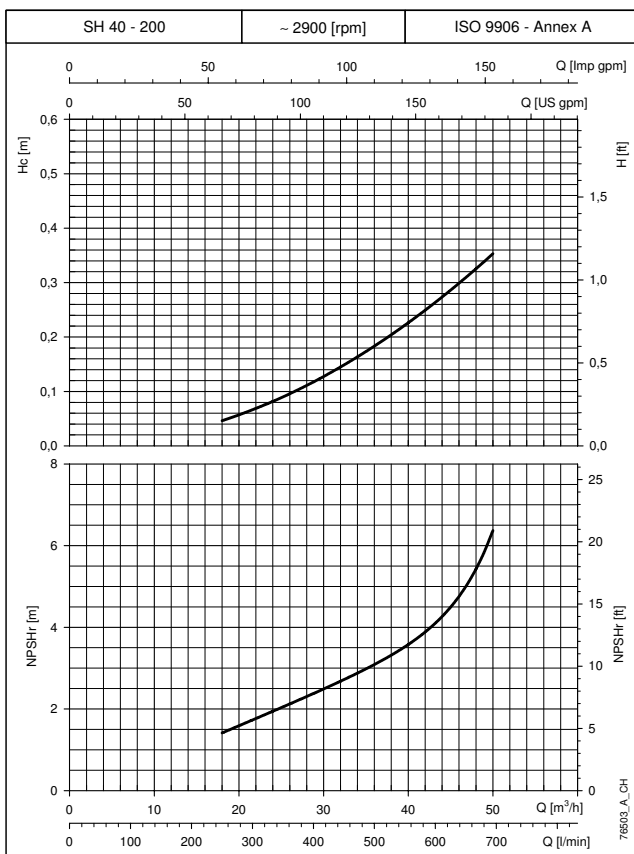
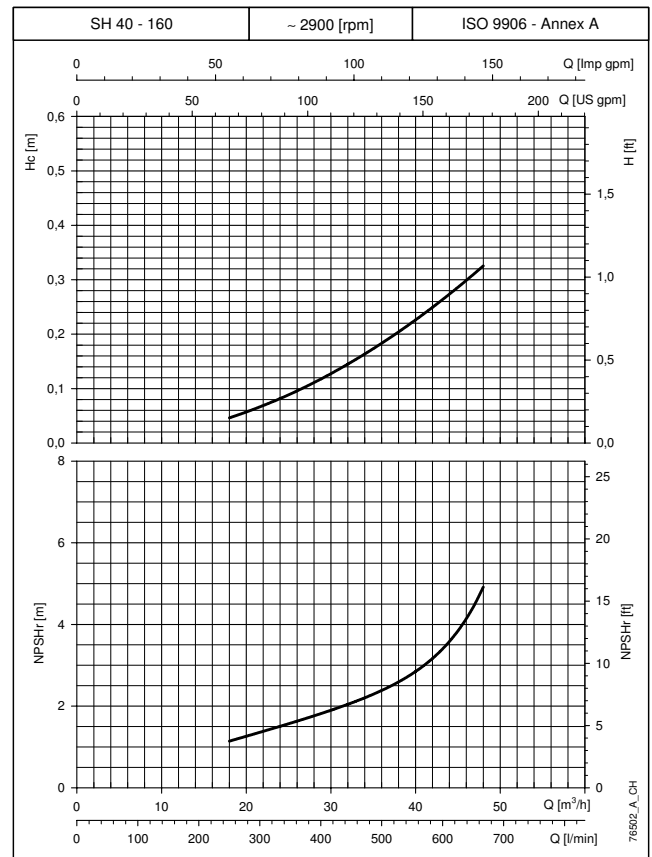
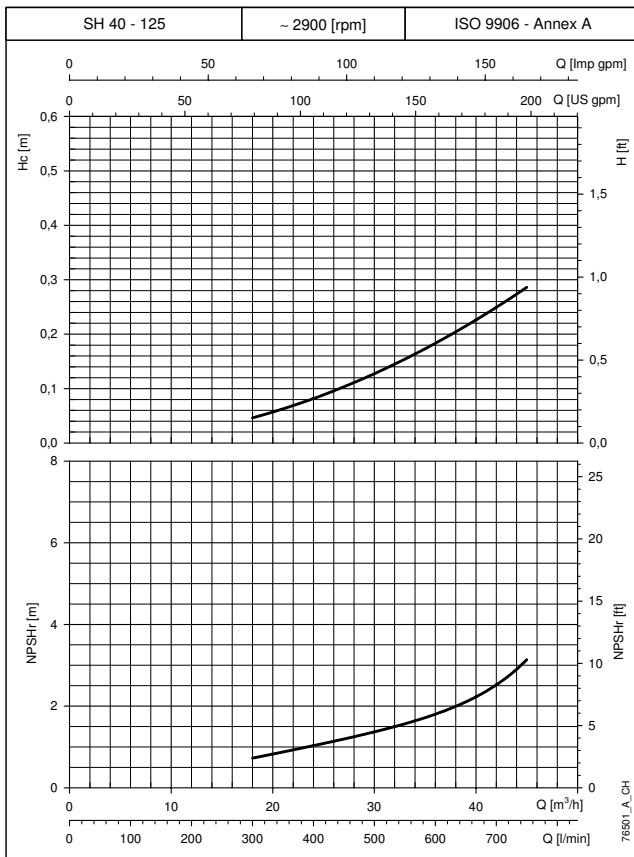


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

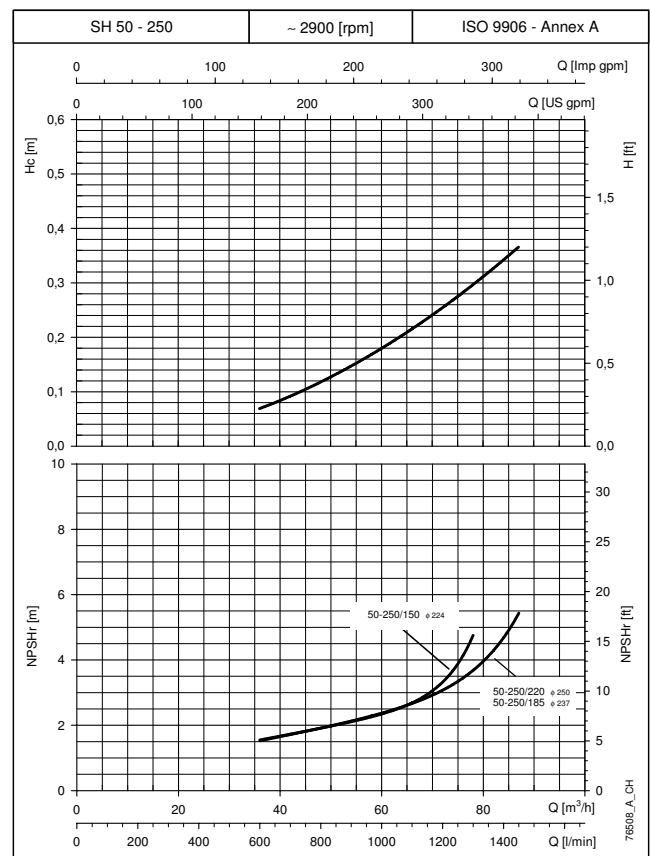
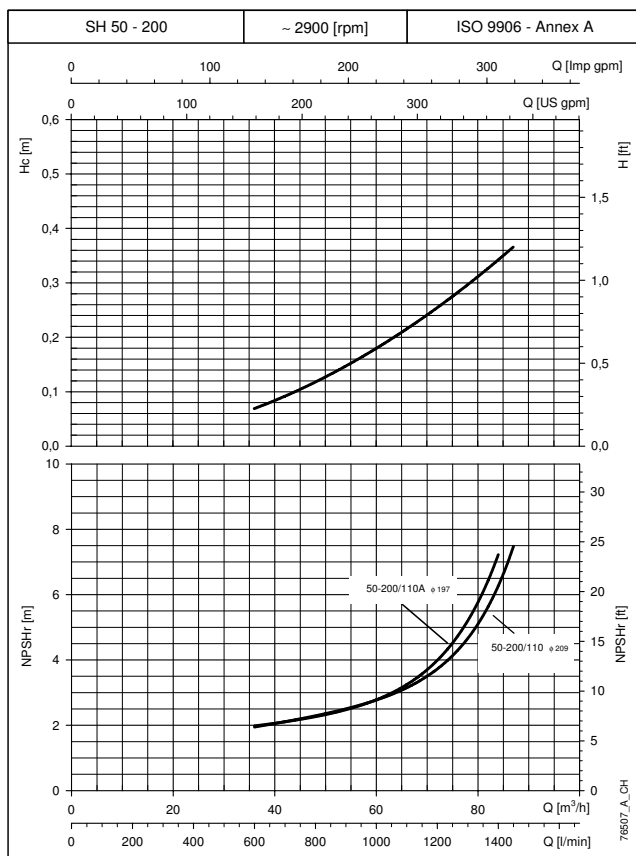
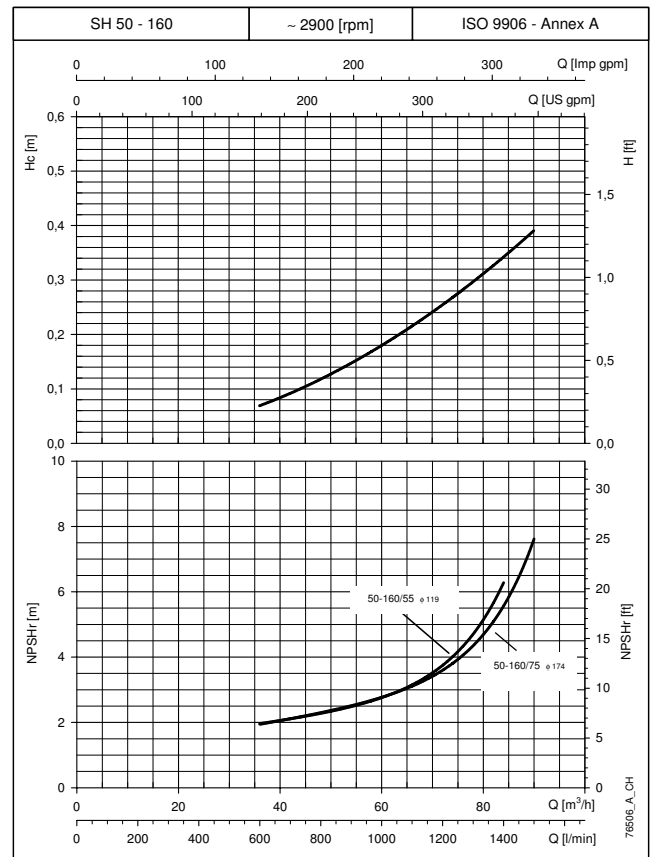
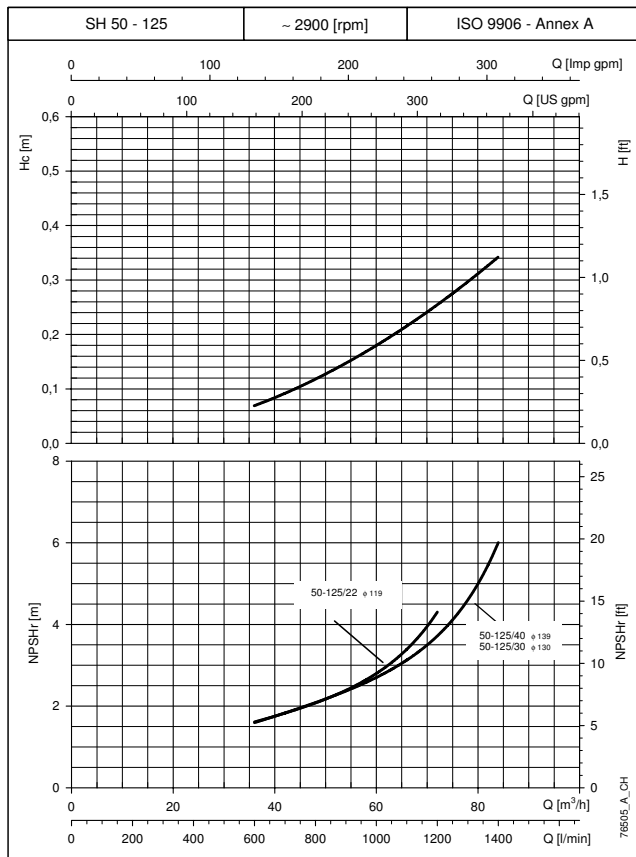


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

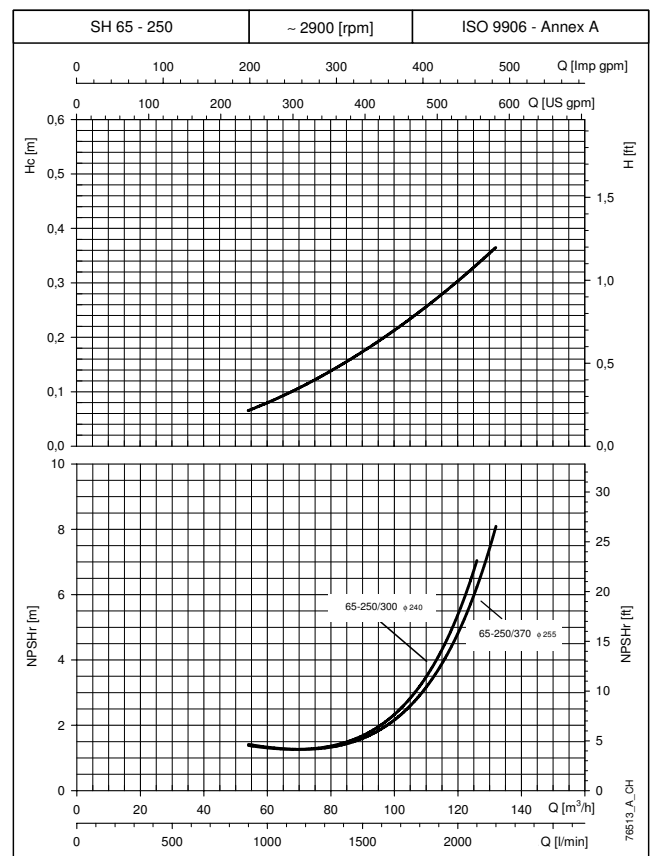
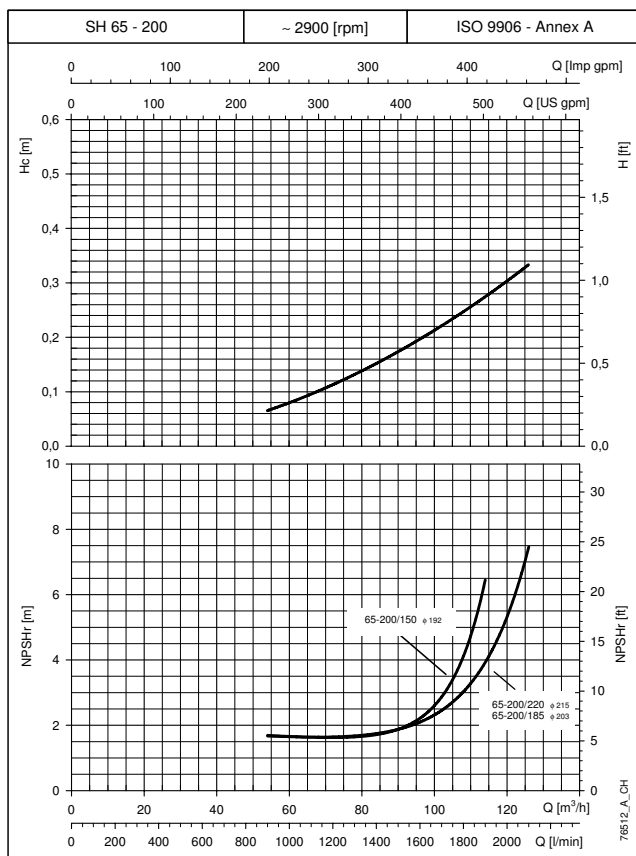
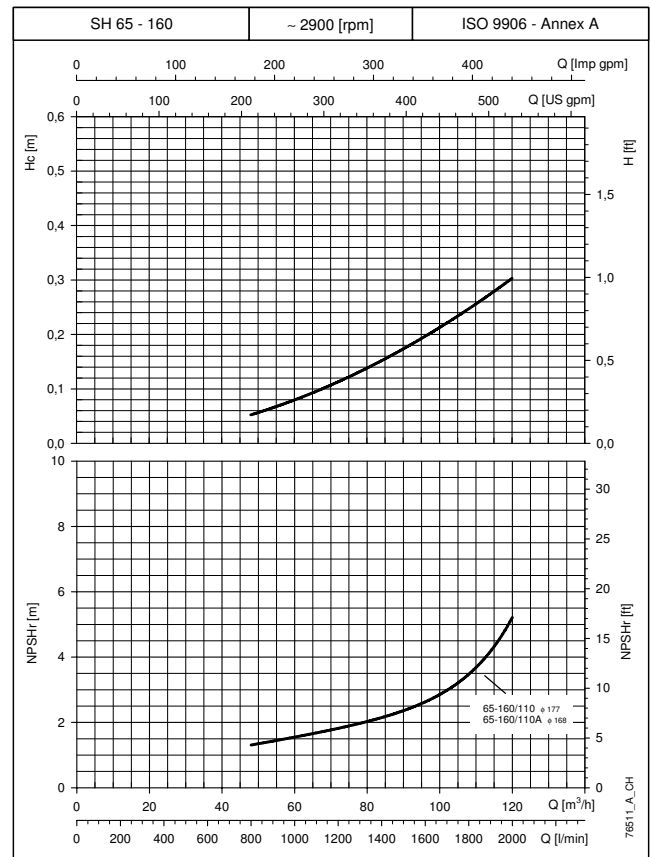
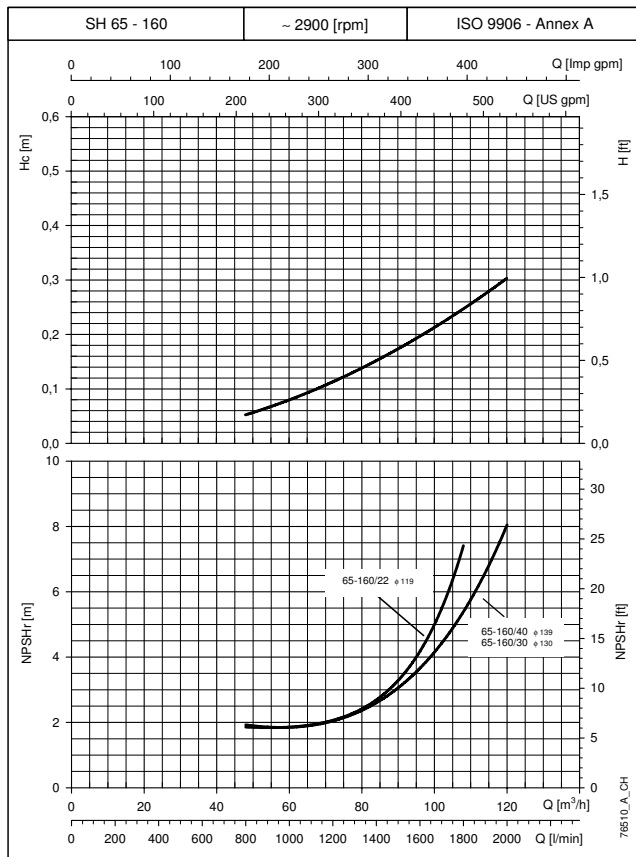


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT

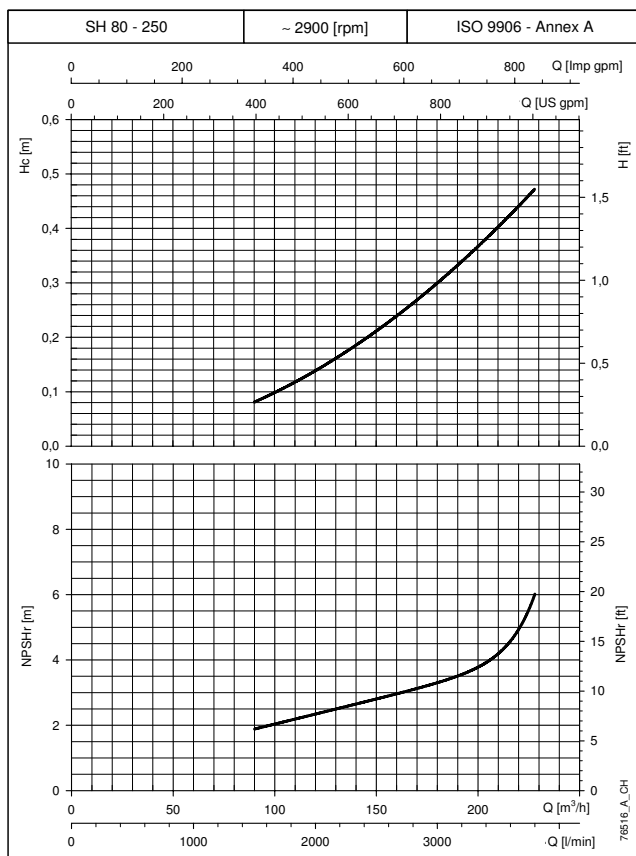
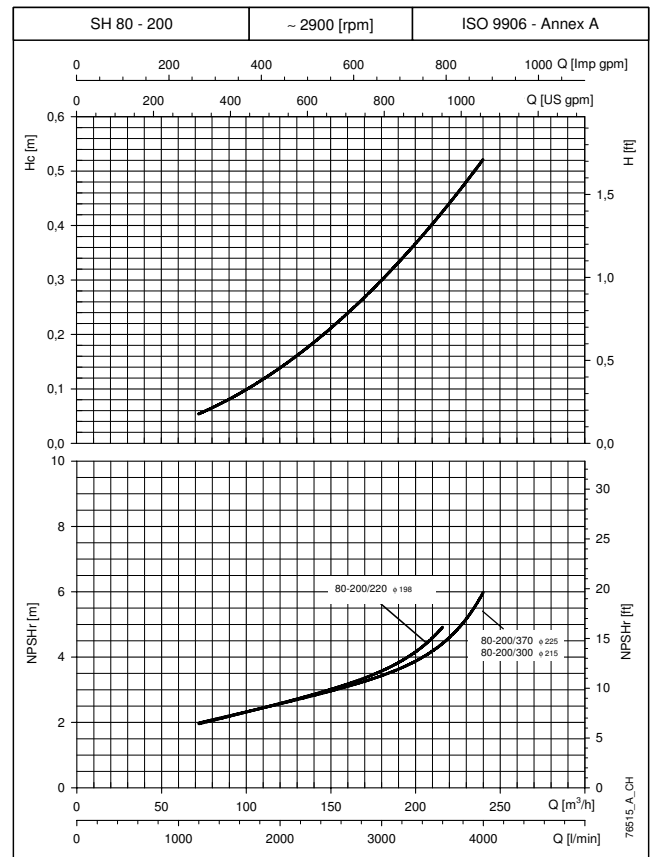
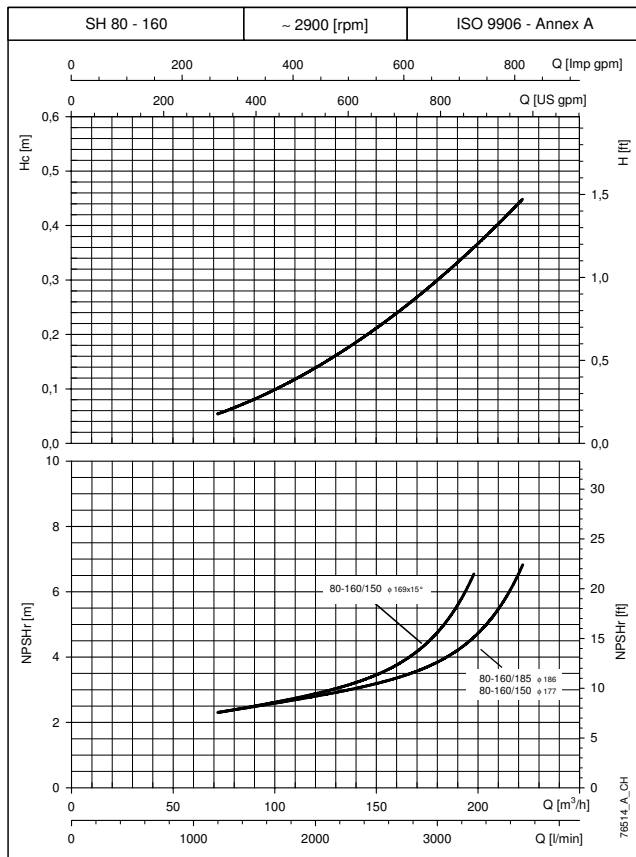


These performances are valid for liquids with density $\rho = 1.0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

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.

H_c: Pressure drop curve in suction kit.

EN 12845 PRESSURE MODULES GEM..S SERIES (POSITIVE SUCTION HEAD) H_c PRESSURE DROP CURVE IN SUCTION KIT



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 $NPSH_r$ 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.

H_c: Pressure drop curve in suction kit.

ACCESSORIES

ACCESSORIES FOR EN 12845 PRESSURE MODULE

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.

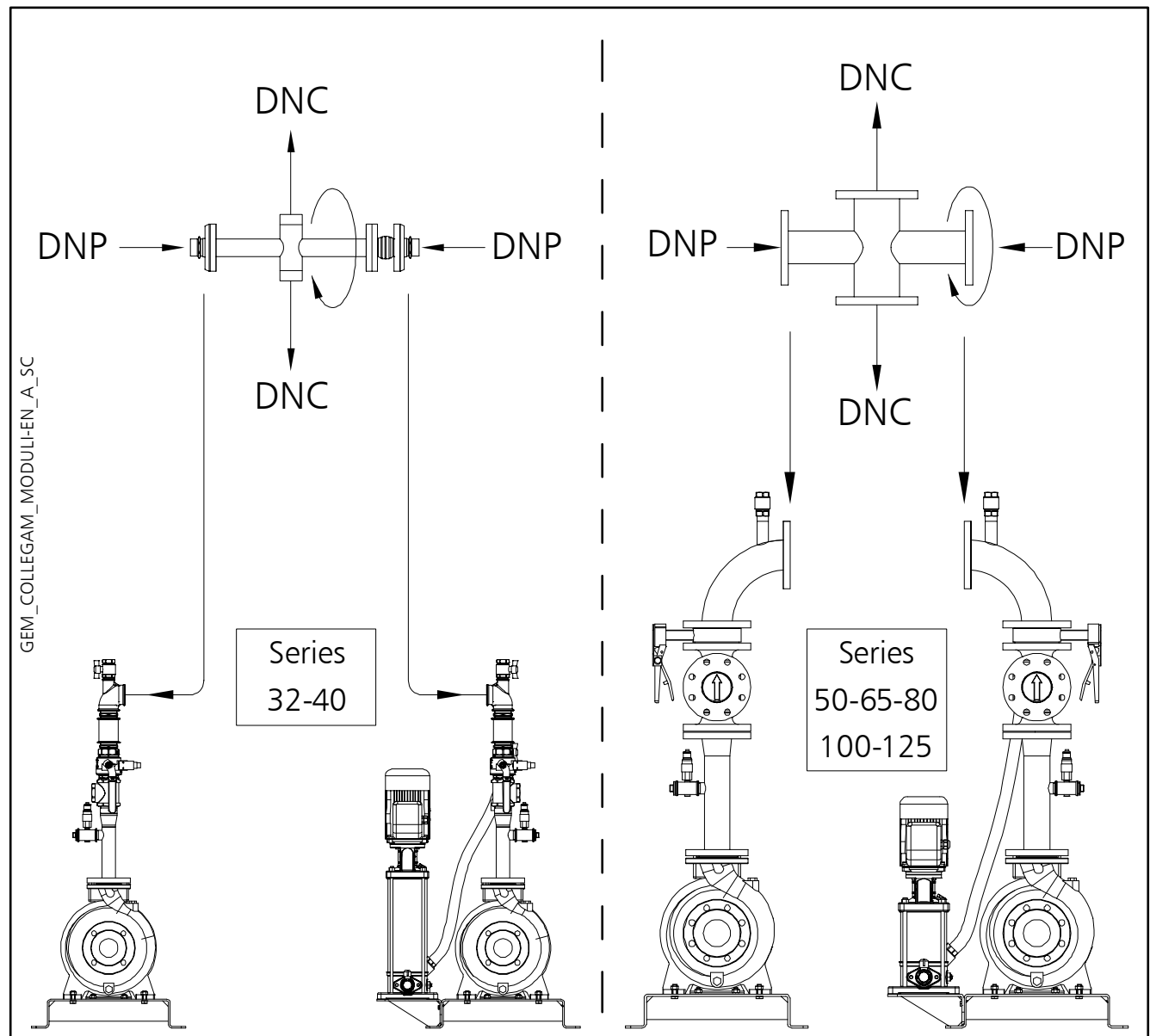
The connector kits act as hydraulic connections, are mounted between the two chosen modules and are sized for two running pumps; they are flexible and allow many different possibilities of connection to the system, to the flow meter, to the tanks and to all the other pipes.

They comprise a crosshead and include:

- two DNP connector for the two modules (threaded for series 32-40 pumps, flanged for series 50-65-80-100-125 pumps).

- two DNC outlets for the delivery connections (always flanged).

They can be rotated to obtain vertical or horizontal outlets, depending on requirements.



EN 12845 PRESSURE MODULES GEM.. SERIES

TABLE OF COMBINATIONS FOR JOINING KITS

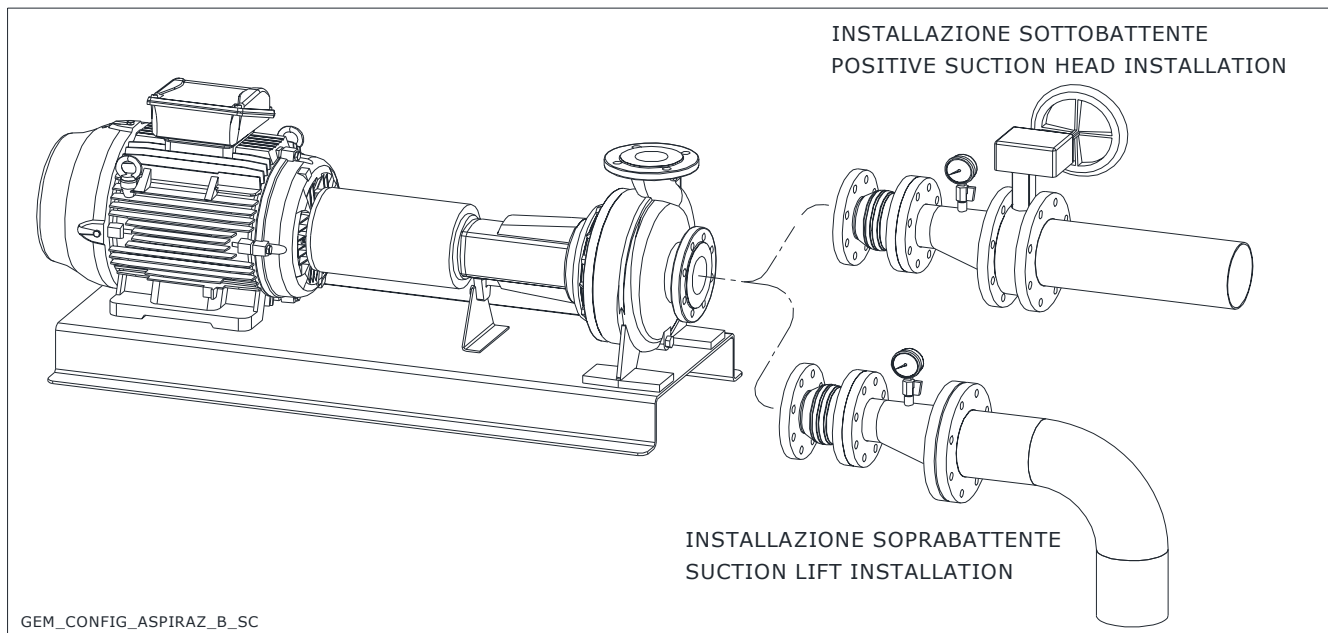
ELECTRIC PUMP	PUMP	KIT JOINING TYPE	DNP	DNC	ELECTRIC PUMP	PUMP	KIT JOINING TYPE	DNP	DNC
FHF32-125/07	FHF32-125/D119	DN50X DN65	50	65	FHF125-200/300	FHF125-200/D180	DN150X DN200	150	200
FHF32-125/11	FHF32-125/D136	DN50X DN65	50	65	FHF125-200/450	FHF125-200/D206	DN150X DN200	150	200
FHF32-160/15	FHF32-160/D150	DN50X DN65	50	65	FHF125-200/550	FHF125-200/D216	DN150X DN200	150	200
FHF32-160/22	FHF32-160/D164	DN50X DN65	50	65	FHF125-270/750	FHF125-270/D224	DN150X DN250	150	250
FHF32-200/30	FHF32-200/D188	DN50X DN65	50	65	FHF125-270/900	FHF125-270/D237	DN150X DN250	150	250
FHF32-200/40	FHF32-200/D204	DN50X DN65	50	65	FHF125-270/1100	FHF125-270/D253	DN150X DN250	150	250
FHF40-125/11	FHF40-125/D112	DN50X DN65	50	65	FHF125-270/1320	FHF125-270/D266	DN150X DN250	150	250
FHF40-125/15	FHF40-125/D122	DN50X DN65	50	65	SHF32-125/07	SHF32-125/D119	DN50X DN65	50	65
FHF40-125/22	FHF40-125/D143	DN50X DN65	50	65	SHF32-125/11	SHF32-125/D136	DN50X DN65	50	65
FHF40-160/30	FHF40-160/D159	DN50X DN65	50	65	SHF32-160/15	SHF32-160/D150	DN50X DN65	50	65
FHF40-160/40	FHF40-160/D171	DN50X DN65	50	65	SHF32-160/22	SHF32-160/D164	DN50X DN65	50	65
FHF40-200/55	FHF40-200/D190	DN50X DN65	50	65	SHF32-200/30	SHF32-200/D188	DN50X DN65	50	65
FHF40-200/75	FHF40-200/D209	DN50X DN65	50	65	SHF32-200/40	SHF32-200/D204	DN50X DN65	50	65
FHF40-250/110A	FHF40-250/D218	DN50X DN65	50	65	SHF32-250/55	SHF32-250/D222	DN50X DN65	50	65
FHF40-250/110	FHF40-250/D233	DN50X DN65	50	65	SHF32-250/75	SHF32-250/D242	DN50X DN65	50	65
FHF40-250/150	FHF40-250/D251	DN50X DN65	50	65	SHF32-250/110	SHF32-250/D256	DN50X DN65	50	65
FHF50-125/22	FHF50-125/D119	DN65X DN80	65	80	SHF40-125/11	SHF40-125/D112	DN50X DN65	50	65
FHF50-125/30	FHF50-125/D130	DN65X DN80	65	80	SHF40-125/15	SHF40-125/D122	DN50X DN65	50	65
FHF50-125/40	FHF50-125/D139	DN65X DN80	65	80	SHF40-125/22	SHF40-125/D143	DN50X DN65	50	65
FHF50-160/55	FHF50-160/D158	DN65X DN80	65	80	SHF40-160/30	SHF40-160/D159	DN50X DN65	50	65
FHF50-160/75	FHF50-160/D174	DN65X DN80	65	80	SHF40-160/40	SHF40-160/D171	DN50X DN65	50	65
FHF50-200/110A	FHF50-200/D197	DN65X DN80	65	80	SHF40-200/55	SHF40-200/D190	DN50X DN65	50	65
FHF50-200/110	FHF50-200/D209	DN65X DN80	65	80	SHF40-200/75	SHF40-200/D209	DN50X DN65	50	65
FHF50-250/150	FHF50-250/D224	DN65X DN80	65	80	SHF40-250/110A	SHF40-250/D218	DN50X DN65	50	65
FHF50-250/185	FHF50-250/D237	DN65X DN80	65	80	SHF40-250/110	SHF40-250/D233	DN50X DN65	50	65
FHF50-250/220	FHF50-250/D250	DN65X DN80	65	80	SHF40-250/150	SHF40-250/D251	DN50X DN65	50	65
FHF65-125/40	FHF65-125/D121	DN80X DN100	80	100	SHF50-125/22	SHF50-125/D119	DN65X DN80	65	80
FHF65-125/55	FHF65-125/D129	DN80X DN100	80	100	SHF50-125/30	SHF50-125/D130	DN65X DN80	65	80
FHF65-125/75	FHF65-125/D140	DN80X DN100	80	100	SHF50-125/40	SHF50-125/D139	DN65X DN80	65	80
FHF65-160/110A	FHF65-160/D161	DN80X DN100	80	100	SHF50-160/55	SHF50-160/D158	DN65X DN80	65	80
FHF65-160/110	FHF65-160/D168	DN80X DN100	80	100	SHF50-160/75	SHF50-160/D174	DN65X DN80	65	80
FHF65-160/150	FHF65-160/D178	DN80X DN100	80	100	SHF50-200/110A	SHF50-200/D197	DN65X DN80	65	80
FHF65-200/150	FHF65-200/D187	DN80X DN100	80	100	SHF50-200/110	SHF50-200/D209	DN65X DN80	65	80
FHF65-200/185	FHF65-200/D198	DN80X DN100	80	100	SHF50-250/150	SHF50-250/D224	DN65X DN80	65	80
FHF65-200/220	FHF65-200/D210	DN80X DN100	80	100	SHF50-250/185	SHF50-250/D237	DN65X DN80	65	80
FHF65-250/220	FHF65-250/D220	DN80X DN100	80	100	SHF50-250/220	SHF50-250/D250	DN65X DN80	65	80
FHF65-250/300	FHF65-250/D241	DN80X DN100	80	100	SHF65-160/40	SHF65-160/D119	DN80X DN100	80	100
FHF65-250/370	FHF65-250/D258	DN80X DN100	80	100	SHF65-160/55	SHF65-160/D129	DN80X DN100	80	100
FHF80-160/150	FHF80-160/D163	DN100X DN125	100	125	SHF65-160/75	SHF65-160/D137	DN80X DN100	80	100
FHF80-160/185	FHF80-160/D173	DN100X DN125	100	125	SHF65-160/110A	SHF65-160/D168	DN80X DN100	80	100
FHF80-200/220	FHF80-200/D189	DN100X DN125	100	125	SHF65-160/110	SHF65-160/D177	DN80X DN100	80	100
FHF80-200/300	FHF80-200/D207	DN100X DN125	100	125	SHF65-200/150	SHF65-200/D192	DN80X DN100	80	100
FHF80-250/370	FHF80-250/D225	DN100X DN125	100	125	SHF65-200/185	SHF65-200/D203	DN80X DN100	80	100
FHF80-250/450	FHF80-250/D238	DN100X DN125	100	125	SHF65-200/220	SHF65-200/D215	DN80X DN100	80	100
FHF80-250/550	FHF80-250/D256	DN100X DN125	100	125	SHF65-250/300	SHF65-250/D240	DN80X DN100	80	100
FHF100-160/185	FHF100-160/D150	DN125X DN150	125	150	SHF65-250/370	SHF65-250/D255	DN80X DN100	80	100
FHF100-160/220	FHF100-160/D165	DN125X DN150	125	150	SHF80-160/110	SHF80-160/D169	DN100X DN125	100	125
FHF100-160/300	FHF100-160/D185	DN125X DN200	125	200	SHF80-160/150	SHF80-160/D177	DN100X DN125	100	125
FHF100-200/185	FHF100-200/D168	DN125X DN150	125	150	SHF80-160/185	SHF80-160/D186	DN100X DN125	100	125
FHF100-200/300	FHF100-200/D192	DN125X DN150	125	150	SHF80-200/220	SHF80-200/D198	DN100X DN125	100	125
FHF100-200/370	FHF100-200/D203	DN125X DN150	125	150	SHF80-200/300	SHF80-200/D215	DN100X DN125	100	125
FHF100-200/450	FHF100-200/D213	DN125X DN200	125	200	SHF80-200/370	SHF80-200/D226	DN100X DN125	100	125
FHF100-250/300	FHF100-250/D200	DN125X DN150	125	150	SHF80-250/450	SHF80-250/D237	DN100X DN125	100	125
FHF100-250/450	FHF100-250/D221	DN125X DN200	125	200	SHF80-250/550	SHF80-250/D252	DN100X DN125	100	125
FHF100-250/550	FHF100-250/D235	DN125X DN200	125	200	SHF80-250/750	SHF80-250/D270	DN100X DN125	100	125
FHF100-250/750	FHF100-250/D254	DN125X DN200	125	200					
FHF100-250/900	FHF100-250/D267	DN125X DN200	125	200					

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ACCESSORIES FOR EN 12845 PRESSURE MODULES

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**.

The **Cone kit** is equipped with:

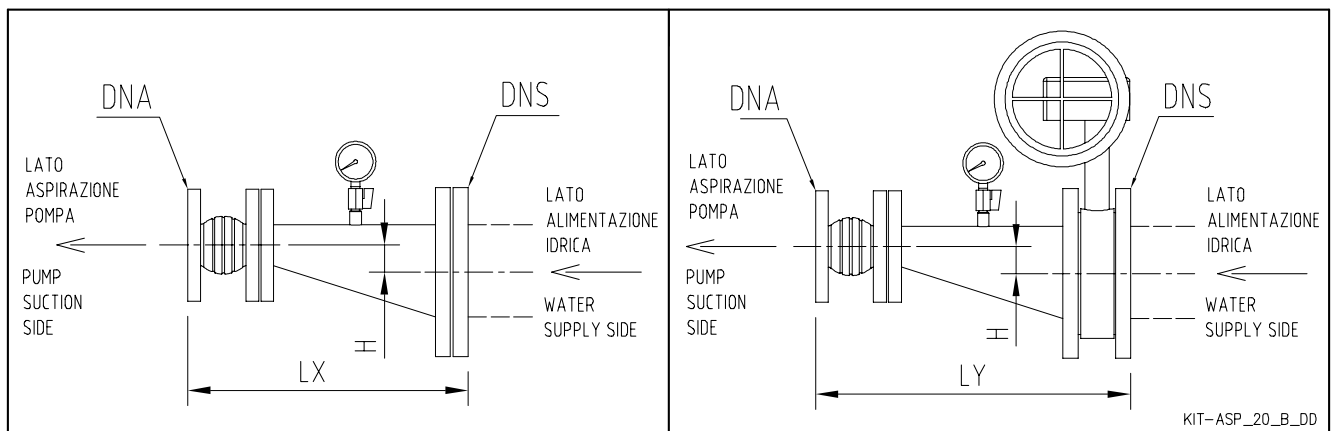
- Anti-vibration joint to attach to the pump inlet.
- Eccentric cone or flanged stub pipe.
- Vacuum pressure gauge with relative 1/4" shut-off valve.
- Welding flange.

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.
- Device for monitoring ON/OFF status included. Electrical connections by customer.
- (Valve lock kit available on request).

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

EN 12845 PRESSURE MODULES GEM.. SERIES SUCTION SIDE KIT DIMENSIONS TABLE



KIT-ASP_20_B_DD

SUCTION KIT TYPE	DIMENSIONS						
	DNS	PN	DNA	PN	H (mm)	LX	LY
50 X 32	50	16	32	16	9	243	283
50 X 40	50	16	40	16	6	243	283
65 X 32	65	16	32	16	17	269	312
65 X 40	65	16	40	16	14	255	298
65 X 50	65	16	50	16	8	266	309
80 X 32	80	16	32	16	23	304	347
80 X 40	80	16	40	16	20	288	331
80 X 50	80	16	50	16	14	266	309
80 X 65	80	16	65	16	6	277	320
100 X 40	100	16	40	16	33	362	411
100 X 50	100	16	50	16	27	340	389
100 X 65	100	16	65	16	19	307	356
100 X 80	100	16	80	16	13	296	345
125 X 50	125	16	50	16	40	410	463
125 X 65	125	16	65	16	32	377	430
125 X 80	125	16	80	16	25	357	410
125 X 100	125	16	100	16	13	303	356
150 X 65	150	16	65	16	46	460	513
150 X 80	150	16	80	16	40	440	493
150 X 100	150	16	100	16	27	377	430
150 X 125	150	16	125	16	14	355	408
200 X 80	200	10	80	16	65	579	636
200 X 100	200	10	100	16	52	516	573
200 X 125	200	10	125	16	40	482	539
200 X 150	200	10	150	16	25	415	472
250 X 100	250	10	100	16	79	672	737
250 X 125	250	10	125	16	67	637	702
250 X 150	250	10	150	16	52	570	635
300 X 125	300	10	125	16	92	774	849
300 X 150	300	10	150	16	78	707	782
350 X 150	350	10	150	16	94	798	873
400 X 150	400	10	150	16	119	946	1045

Dimensions in mm. Tolerance ± 10 mm.

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EN 12845 PRESSURE MODULES GEM..F32-F80 SERIES

SUCTION SIDE KIT DIMENSIONS TABLE

TYPE		POSITIVE SUCTION HEAD				SUCTION LIFT			
ELECTRIC PUMP	FHF PUMP	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE
32-125/07	32-125/D119	LH	65 X 50	-	-	LH	80 X 50	-	-
32-125/11	32-125/D136	LH	65 X 50	-	-	LH	80 X 50	-	-
32-160/15	32-160/D150	LH	65 X 50	-	-	LH	80 X 50	-	-
32-160/22	32-160/D164	LH	65 X 50	-	-	LH	80 X 50	-	-
32-200/30	32-200/D188	LH	65 X 50	-	-	LH	80 X 50	-	-
32-200/40	32-200/D204	LH	65 X 50	-	-	LH	80 X 50	-	-
40-125/11	40-125/D112	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-125/15	40-125/D122	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-125/22	40-125/D143	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-160/30	40-160/D159	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-160/40	40-160/D171	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-200/55	40-200/D190	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-200/75	40-200/D209	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/110A	40-250/D218	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/110	40-250/D233	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/150	40-250/D251	OH1	80 X 65	-	-	OH1	100 X 65	-	-
50-125/22	50-125/D119	OH2	100 X 65	-	-	OH2	125 X 65	-	-
50-125/30	50-125/D130	OH2	100 X 65	-	-	OH2	125 X 65	-	-
50-125/40	50-125/D139	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-160/55	50-160/D158	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-160/75	50-160/D174	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-200/110A	50-200/D197	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-200/110	50-200/D209	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-250/150	50-250/D224	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-250/185	50-250/D237	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-250/220	50-250/D250	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
65-125/40	65-125/D121	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-125/55	65-125/D129	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-125/75	65-125/D140	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-160/110A	65-160/D161	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-160/110	65-160/D168	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-160/150	65-160/D178	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-200/150	65-200/D187	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-200/185	65-200/D198	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-200/220	65-200/D210	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-250/220	65-250/D220	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-250/300	65-250/D241	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-250/370	65-250/D258	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
80-160/150	80-160/D163	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-160/185	80-160/D173	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-200/220	80-200/D189	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-200/300	80-200/D207	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/370	80-250/D225	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/450	80-250/D238	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/550	80-250/D256	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100

* For the risk classes refer to para 6, UNI EN12845.

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- the pumps must be chosen according to the performance levels indicated in Tab. 6 para 7.3.1, Tab.7 para 7.3.2 and the classes of risk.
- some pump models can satisfy the conditions of one or more classes of risk.
- always check the correct selection of the pump depending on the performance level of the set.

EN 12845 PRESSURE MODULES GEM..F100-F125 SERIES

SUCTION SIDE KIT DIMENSIONS TABLE

TYPE		POSITIVE SUCTION HEAD				SUCTION LIFT			
ELECTRIC PUMP	FHF PUMP	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE
100-160/185	100-160/D150	HH3	250 X 125	HH2	250 X 125	HH3	250 X 125	HH2	250 X 125
100-160/220	100-160/D165	HH4	250 X 125	HH3	250 X 125	HH3	300 X 125**	HH3	250 X 125
100-160/300	100-160/D185	HH4	250 X 125	HH3	250 X 125	HH3	300 X 125**	HH3	250 X 125
100-200/185	100-200/D168	HH3	250 X 125**	HH2	250 X 125**	HH3	250 X 125**	HH2	250 X 125**
100-200/300	100-200/D192	HH3	250 X 125**	HH2	250 X 125**	HH3	250 X 125**	HH2	250 X 125**
100-200/370	100-200/D203	HH4	250 X 125**	HH3	250 X 125**	HH3	300 X 125**	HH3	250 X 125**
100-200/450	100-200/D213	HH4	250 X 125	HH3	250 X 125	HH3	300 X 125**	HH3	250 X 125
100-250/300	100-250/D200	HH3	250 X 125	HH2	250 X 125	HH3	250 X 125	HH2	250 X 125
100-250/450	100-250/D221	HH4	250 X 125	HH3	250 X 125	HH3	300 X 125**	HH3	250 X 125
100-250/550	100-250/D235	HH4	250 X 125	HH3	250 X 125	HH3	300 X 125	HH3	250 X 125
100-250/750	100-250/D254	HH5	300 X 125	HH4	250 X 125	HH3	300 X 125	HH4	300 X 125
100-250/900	100-250/D267	HH6	300 X 125	HH5	300 X 125	HH3	300 X 125	HH5	300 X 125
125-200/300	125-200/D180	HH7	300 X 150	HH6	300 X 150	HH3	300 X 150	HH6	300 X 150
125-200/450	125-200/D206	HH9	300 X 150	HH8	300 X 150	HH3	400 X 150**	HH8	350 X 150**
125-200/550	125-200/D216	HH10	350 X 150**	HH9	300 X 150	HH3	400 X 150**	HH9	400 X 150**
125-270/750	125-270/D224	HH10	350 X 150	HH9	300 X 150	HH3	400 X 150	HH9	400 X 150
125-270/900	125-270/D237	HH10	350 X 150	HH9	300 X 150	HH3	400 X 150	HH9	400 X 150
125-270/1100	125-270/D253	HH10	350 X 150	HH9	300 X 150	HH3	400 X 150	HH9	400 X 150
125-270/1320	125-270/D266	HH10	350 X 150	HH9	300 X 150	HH3	400 X 150	HH9	400 X 150

* For the risk classes refer to para 6, UNI EN12845.

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- the pumps must be chosen according to the performance levels indicated in Tab. 6 para 7.3.1, Tab.7 para 7.3.2 and the classes of risk.
- some pump models can satisfy the conditions of one or more classes of risk.
- always check the correct selection of the pump depending on the performance level of the set.

** Insert the 50 mm minimal thickness under the GEN10 fire-fighting booster sets only.

EN 12845 PRESSURE MODULES GEM..S32-S80 SERIES

SUCTION SIDE KIT DIMENSIONS TABLE

TYPE		POSITIVE SUCTION HEAD				SUCTION LIFT			
ELECTRIC PUMP	FHF PUMP	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE	RISK CLASS *	SUCTION KIT TYPE
32-125/07	32-125/D119	LH	65 X 50	-	-	LH	80 X 50	-	-
32-125/11	32-125/D136	LH	65 X 50	-	-	LH	80 X 50	-	-
32-160/15	32-160/D150	LH	65 X 50	-	-	LH	80 X 50	-	-
32-160/22	32-160/D164	LH	65 X 50	-	-	LH	80 X 50	-	-
32-200/30	32-200/D188	LH	65 X 50	-	-	LH	80 X 50	-	-
32-200/40	32-200/D204	LH	65 X 50	-	-	LH	80 X 50	-	-
32-250/55	32-250/D222	LH	65 X 50	-	-	LH	80 X 50	-	-
32-250/75	32-250/D242	LH	65 X 50	-	-	LH	80 X 50	-	-
32-250/110	32-250/D256	LH	65 X 50	-	-	LH	80 X 50	-	-
40-125/11	40-125/D112	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-125/15	40-125/D122	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-125/22	40-125/D143	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-160/30	40-160/D159	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-160/40	40-160/D171	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-200/55	40-200/D190	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-200/75	40-200/D209	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/110A	40-250/D218	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/110	40-250/D233	OH1	80 X 65	-	-	OH1	100 X 65	-	-
40-250/150	40-250/D251	OH1	80 X 65	-	-	OH1	100 X 65	-	-
50-125/22	50-125/D119	OH2	100 X 65	-	-	OH2	125 X 65	-	-
50-125/30	50-125/D130	OH2	100 X 65	-	-	OH2	125 X 65	-	-
50-125/40	50-125/D139	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-160/55	50-160/D158	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-160/75	50-160/D174	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-200/110A	50-200/D197	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-200/110	50-200/D209	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-250/150	50-250/D224	OH2	100 X 65	-	-	OH2	125 X 65	-	-
50-250/185	50-250/D237	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
50-250/220	50-250/D250	OH3	125 X 65	OH2	100 X 65	OH3	150 X 65	OH2	125 X 65
65-160/40	65-160/D119	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-160/55	65-160/D129	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-160/75	65-160/D137	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-160/110A	65-160/D168	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-160/110	65-160/D177	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-200/150	65-200/D192	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-200/185	65-200/D203	OH3	125 X 80	-	-	OH3	150 X 80	-	-
65-200/220	65-200/D215	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-250/300	65-250/D240	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
65-250/370	65-250/D255	OH4	150 X 80	OH3	125 X 80	OH4	200 X 80	OH3	150 X 80
80-160/110	80-160/D169	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-160/150	80-160/D177	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-160/185	80-160/D186	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-200/220	80-200/D198	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-200/300	80-200/D215	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-200/370	80-200/D226	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/450	80-250/D237	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/550	80-250/D252	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100
80-250/750	80-250/D270	HH1	200 X 100	OH4	150 X 100	HH1	200 X 100	OH4	200 X 100

* For the risk classes refer to para 6, UNI EN12845.

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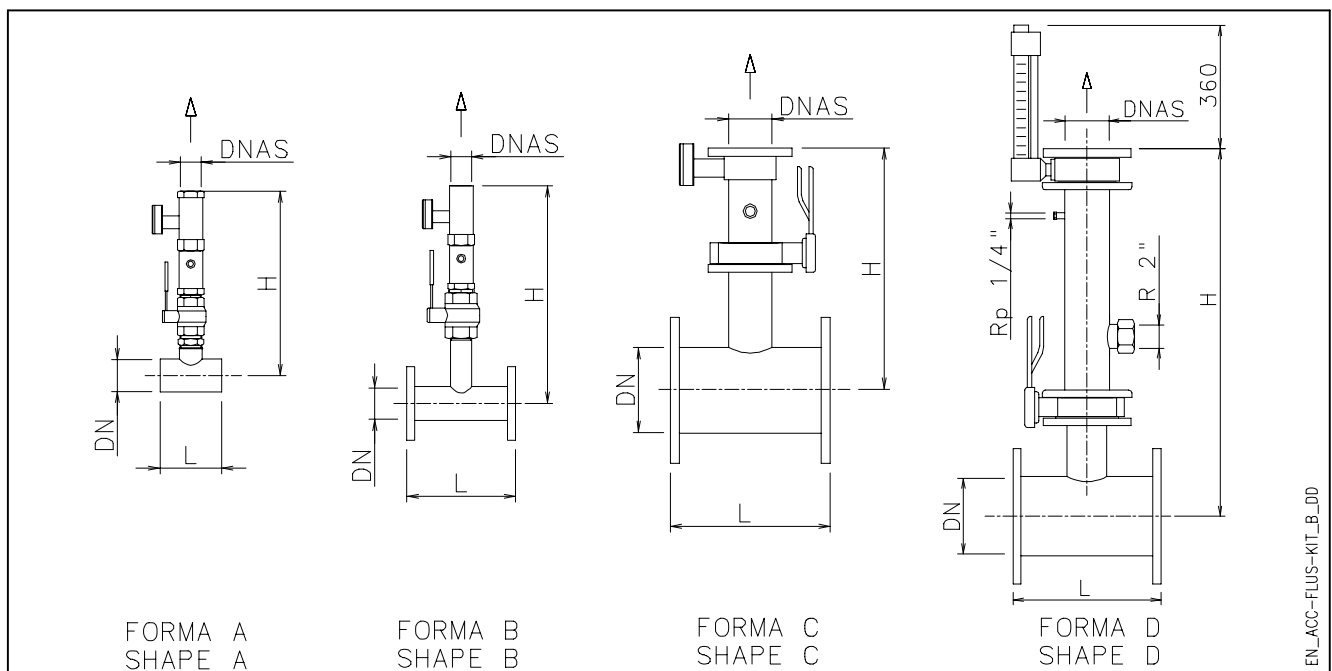
- the pumps must be chosen according to the performance levels indicated in Tab. 6 para 7.3.1, Tab.7 para 7.3.2 and the classes of risk.
- some pump models can satisfy the conditions of one or more classes of risk.
- always check the correct selection of the pump depending on the performance level of the set.

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. Device for monitoring ON/OFF status included. Electrical connections by customer. (Valve lock kit 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 or the connector kit. 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	DIMENSIONS (mm)					TYPE	DIMENSIONS (mm)				
	DN	DNAS	SHAPE	L	H		DN	DNAS	SHAPE	L	H
2" X 25P	50	25	A	105	610	100 X 80P	100	80	C	340	410
2" X 32P		32	A	105	635	100 X 125		125	D	340	945
2" X 40P		40	A	105	655	125 X 50P	125	50	B	300	760
2" X 50P		50	A	105	645	125 X 65P		65	C	340	425
2"1/2 X 25P	65	25	A	94	620	125 X 80P		80	C	340	425
2"1/2 X 32P		32	A	94	645	125 X 125		125	D	340	755
2"1/2 X 40P		40	A	104	660	125 X 150		150	D	340	1085
2"1/2 X 50P		50	A	122	655	150 X 65P	150	65	C	380	435
65 X 50P	65	50	B	340	745	150 X 80P		80	C	380	440
65 X 65P		65	C	340	390	150 X 125		125	D	380	770
65 X 80P		80	C	340	595	150 X 150		150	D	380	900
80 X 40P	80	40	B	300	745	150 X 200		200	D	380	1380
80 X 50P		50	B	300	735	200 X 80P	200	80	C	380	465
80 X 65P		65	C	340	400	200 X 125		125	D	380	795
80 X 80P		80	C	340	400	200 X 150		150	D	380	925
80 X 125		125	D	340	910	200 X 200		200	D	380	1170
100 X 40P	100	40	B	300	760	250 X 125	250	125	D	440	825
100 X 50P		50	B	300	750	250 X 150		150	D	440	950
100 X 65P		65	C	340	410	250 X 200		200	D	440	1195

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TABLE OF COMBINATIONS FOR FLOW METER KIT FHF SERIES MODULE/MODULES

TYPE SHF..		COMBINATION FLOW METER KIT		TYPE SHF..		COMBINATION FLOW METER KIT	
ELECTRIC PUMP	PUMP	GEM GEMJ GEMK GEMK+KIT JOCKEY	GEM+GEM GEM+GEMJ GEM+GEMK GEMJ+GEMK	ELECTRIC PUMP	PUMP	GEM GEMJ GEMK GEMK+KIT JOCKEY	GEM+GEM GEM+GEMJ GEM+GEMK GEMJ+GEMK
32-125/07	32-125/D119	2" X 25P	2"1/2 X 25P	65-200/150	65-200/D187	80 X 80P	100 X 80P
32-125/11	32-125/D136	2" X 32P	2"1/2 X 32P	65-200/185	65-200/D198	80 X 80P	100 X 80P
32-160/15	32-160/D150	2" X 32P	2"1/2 X 32P	65-200/220	65-200/D210	80 X 80P	100 X 80P
32-160/22	32-160/D164	2" X 32P	2"1/2 X 32P	65-250/220	65-250/D220	80 X 80P	100 X 80P
32-200/30	32-200/D188	2" X 32P	2"1/2 X 32P	65-250/300	65-250/D241	80 X 80P	100 X 80P
32-200/40	32-200/D204	2" X 32P	2"1/2 X 32P	65-250/370	65-250/D258	80 X 80P	100 X 80P
40-125/11	40-125/D112	2" X 40P	2"1/2 X 40P	80-160/150	80-160/D163	100 X 80P	125 X 80P
40-125/15	40-125/D122	2" X 40P	2"1/2 X 40P	80-160/185	80-160/D173	100 X 125	125 X 125
40-125/22	40-125/D143	2" X 50P	2"1/2 X 50P	80-200/220	80-200/D189	100 X 80P	125 X 80P
40-160/30	40-160/D159	2" X 40P	2"1/2 X 40P	80-200/300	80-200/D207	100 X 125	125 X 125
40-160/40	40-160/D171	2" X 50P	2"1/2 X 50P	80-250/370	80-250/D225	100 X 80P	125 X 80P
40-200/55	40-200/D190	2" X 40P	2"1/2 X 40P	80-250/450	80-250/D238	100 X 125	125 X 125
40-200/75	40-200/D209	2" X 50P	2"1/2 X 50P	80-250/550	80-250/D256	100 X 125	125 X 125
40-250/110A	40-250/D218	2" X 50P	2"1/2 X 50P	100-160/185	100-160/D150	125 X 125	150 X 125
40-250/110	40-250/D233	2" X 50P	2"1/2 X 50P	100-160/220	100-160/D165	125 X 125	150 X 125
40-250/150	40-250/D251	2" X 50P	2"1/2 X 50P	100-160/300	100-160/D185	125 X 150	200 X 150
50-125/22	50-125/D119	65 X 50P	80 X 50P	100-200/185	100-200/D168	125 X 125	150 X 125
50-125/30	50-125/D130	65 X 65P	80 X 65P	100-200/300	100-200/D192	125 X 125	150 X 125
50-125/40	50-125/D139	65 X 65P	80 X 65P	100-200/370	100-200/D203	125 X 125	150 X 125
50-160/55	50-160/D158	65 X 65P	80 X 65P	100-200/450	100-200/D213	125 X 125	200 X 125
50-160/75	50-160/D174	65 X 65P	80 X 65P	100-250/300	100-250/D200	125 X 125	150 X 125
50-200/110A	50-200/D197	65 X 65P	80 X 65P	100-250/450	100-250/D221	125 X 125	200 X 125
50-200/110	50-200/D209	65 X 65P	80 X 65P	100-250/550	100-250/D235	125 X 125	200 X 125
50-250/150	50-250/D224	65 X 65P	80 X 65P	100-250/750	100-250/D254	125 X 150	200 X 150
50-250/185	50-250/D237	65 X 65P	80 X 65P	100-250/900	100-250/D267	125 X 150	200 X 150
50-250/220	50-250/D250	65 X 65P	80 X 65P	125-200/300	125-200/D180	150 X 150	200 X 150
65-125/40	65-125/D121	80 X 65P	100 X 65P	125-200/450	125-200/D206	150 X 200	200 X 200
65-125/55	65-125/D129	80 X 65P	100 X 65P	125-200/550	125-200/D216	150 X 200	200 X 200
65-125/75	65-125/D140	80 X 65P	100 X 65P	125-270/750	125-270/D224	150 X 200	250 X 200
65-160/110A	65-160/D161	80 X 80P	100 X 80P	125-270/900	125-270/D237	150 X 200	250 X 200
65-160/110	65-160/D168	80 X 80P	100 X 80P	125-270/1100	125-270/D253	150 X 200	250 X 200
65-160/150	65-160/D178	80 X 80P	100 X 80P	125-270/1320	125-270/D266	150 X 200	250 X 200

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TABLE OF COMBINATIONS FOR FLOW METER KIT FHF SERIES MODULE/MODULES

TYPE SHF..		COMBINATION FLOW METER KIT		TYPE SHF..		COMBINATION FLOW METER KIT	
ELECTRIC PUMP	PUMP	GEM GEMJ GEMK GEMK+KIT JOCKEY	GEM+GEM GEM+GEMJ GEM+GEMK GEMJ+GEMK	ELECTRIC PUMP	PUMP	GEM GEMJ GEMK GEMK+KIT JOCKEY	GEM+GEM GEM+GEMJ GEM+GEMK GEMJ+GEMK
32-125/07	32-125/D119	2" X 32P	2"1/2 X 32P	50-200/110A	50-200/D197	65 X 65P	80 X 65P
32-125/11	32-125/D136	2" X 32P	2"1/2 X 32P	50-200/110	50-200/D209	65 X 65P	80 X 65P
32-160/15	32-160/D150	2" X 32P	2"1/2 X 32P	50-250/150	50-250/D224	65 X 65P	80 X 65P
32-160/22	32-160/D164	2" X 32P	2"1/2 X 32P	50-250/185	50-250/D237	65 X 65P	80 X 65P
32-200/30	32-200/D188	2" X 32P	2"1/2 X 32P	50-250/220	50-250/D250	65 X 65P	80 X 65P
32-200/40	32-200/D204	2" X 32P	2"1/2 X 32P	65-160/40	65-160/D119	80 X 65P	100 X 65P
32-250/55	32-250/D222	2" X 32P	2"1/2 X 32P	65-160/55	65-160/D129	80 X 65P	100 X 65P
32-250/75	32-250/D242	2" X 32P	2"1/2 X 32P	65-160/75	65-160/D137	80 X 65P	100 X 65P
32-250/110	32-250/D256	2" X 32P	2"1/2 X 32P	65-160/110A	65-160/D168	80 X 65P	100 X 65P
40-125/11	40-125/D112	2" X 40P	2"1/2 X 40P	65-160/110	65-160/D177	80 X 65P	100 X 65P
40-125/15	40-125/D122	2" X 40P	2"1/2 X 40P	65-200/150	65-200/D192	80 X 65P	100 X 65P
40-125/22	40-125/D143	2" X 40P	2"1/2 X 40P	65-200/185	65-200/D203	80 X 65P	100 X 65P
40-160/30	40-160/D159	2" X 40P	2"1/2 X 40P	65-200/220	65-200/D215	80 X 80P	100 X 80P
40-160/40	40-160/D171	2" X 50P	2"1/2 X 50P	65-250/300	65-250/D240	80 X 80P	100 X 80P
40-200/55	40-200/D190	2" X 50P	2"1/2 X 50P	65-250/370	65-250/D255	80 X 80P	100 X 80P
40-200/75	40-200/D209	2" X 50P	2"1/2 X 50P	80-160/110	80-160/D169	100 X 80P	125 X 80P
40-250/110A	40-250/D218	2" X 40P	2"1/2 X 40P	80-160/150	80-160/D177	100 X 80P	125 X 80P
40-250/110	40-250/D233	2" X 40P	2"1/2 X 40P	80-160/185	80-160/D186	100 X 125	125 X 125
40-250/150	40-250/D251	2" X 50P	2"1/2 X 50P	80-200/220	80-200/D198	100 X 125	125 X 125
50-125/22	50-125/D119	65 X 50P	80 X 50P	80-200/300	80-200/D215	100 X 125	125 X 125
50-125/30	50-125/D130	65 X 65P	80 X 65P	80-200/370	80-200/D226	100 X 125	125 X 125
50-125/40	50-125/D139	65 X 65P	80 X 65P	80-250/450	80-250/D237	100 X 125	125 X 125
50-160/55	50-160/D158	65 X 65P	80 X 65P	80-250/550	80-250/D252	100 X 125	125 X 125
50-160/75	50-160/D174	65 X 65P	80 X 65P	80-250/750	80-250/D270	100 X 125	125 X 125

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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.

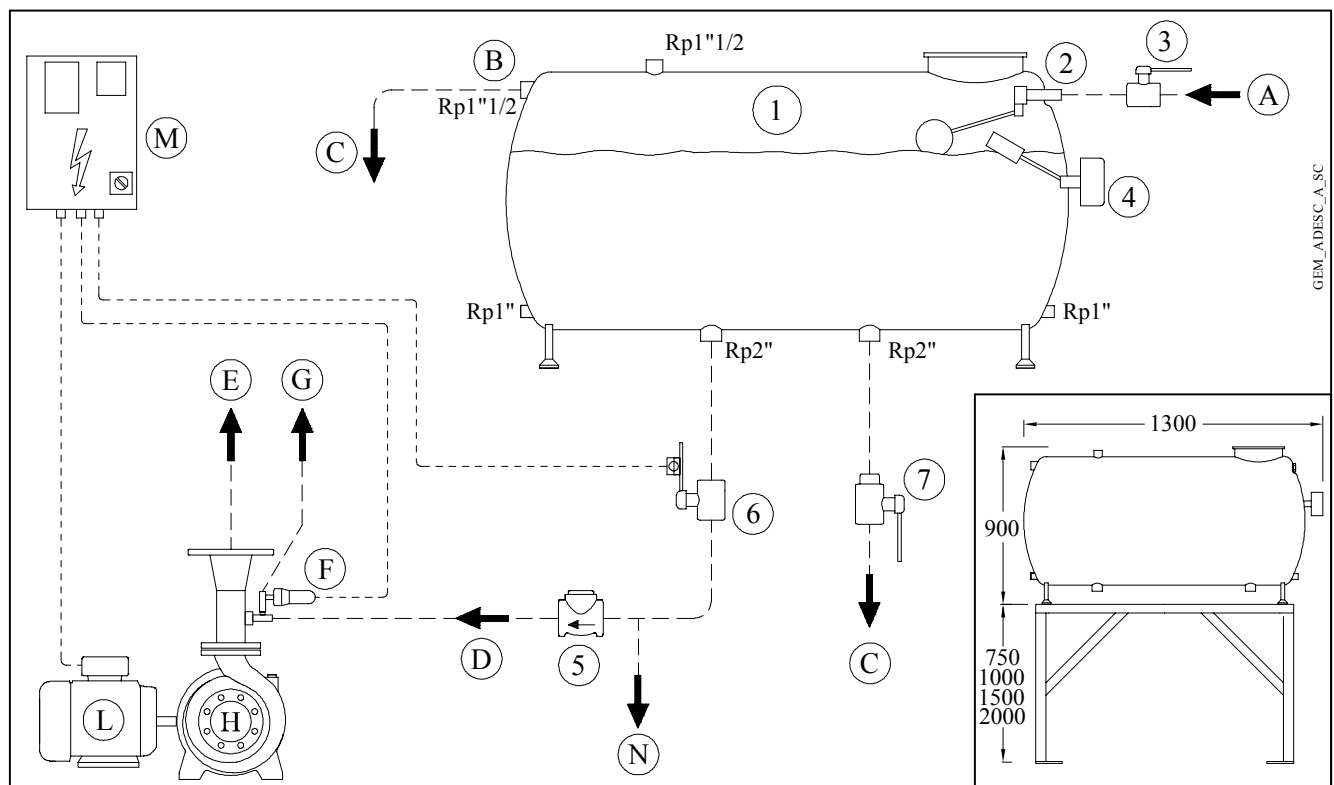
ACCESSORIES KIT FOR PRIMING TANK

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	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

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ELECTRIC JOCKEY PUMP KIT

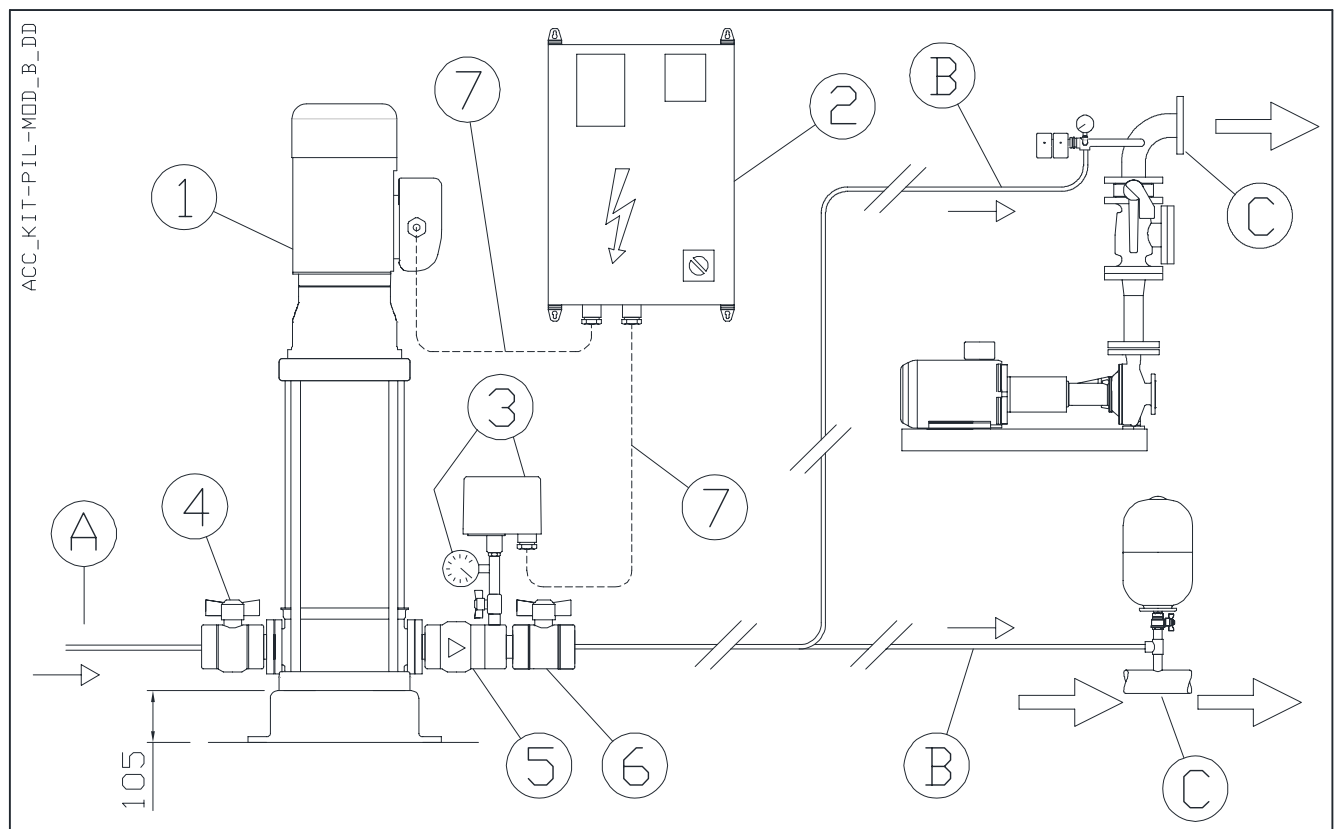
The jockey pump or compensation pump has the job of keeping the system under pressure and compensating for any small losses without the intervention of the service pumps. In fact, the jockey pump is commanded by an automatic shut-off panel.

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	Cavi elettrici, lunghezza 5 metri
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

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ACCESSORIES AVAILABLE ON REQUEST

• 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.

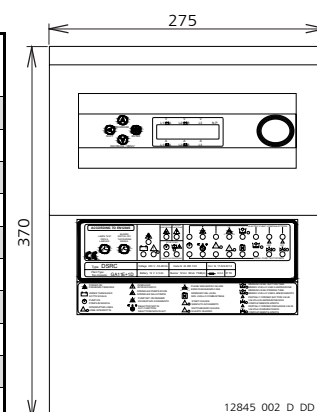
Fitted to transmit alarms for GSM or PC modules.

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	Hermetic lead
Rated battery voltage	12 Vcc
Rated battery capacity	2,3 Ah (uncharged 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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ACCESSORIES AVAILABLE ON REQUEST

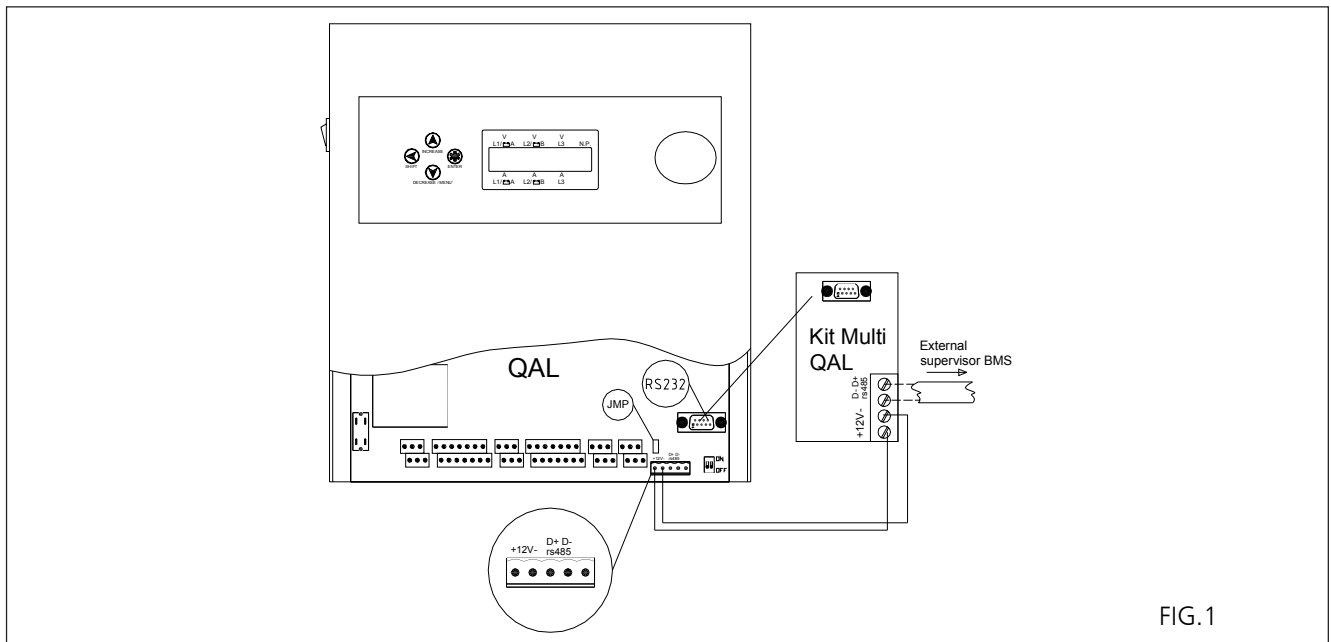
• MULTI-QAL 12845 KIT

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.

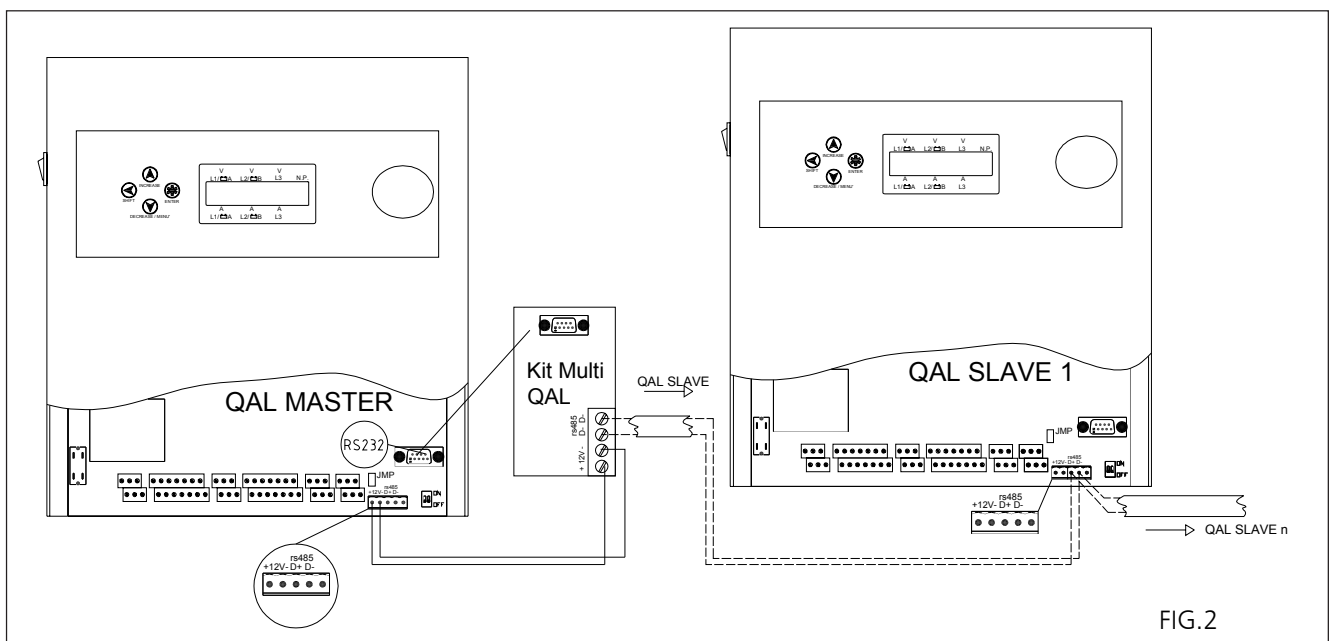
The communication and connection language between the QAL and the external supervisor is of the ModBus Standards RTU (9600/8/1/P) type and the connection is of the RS485 type. If more than one QAL is installed, the QAL connected to the electrical panels of the service pumps and auxiliary services, or 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 AVAILABLE ON REQUEST

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)

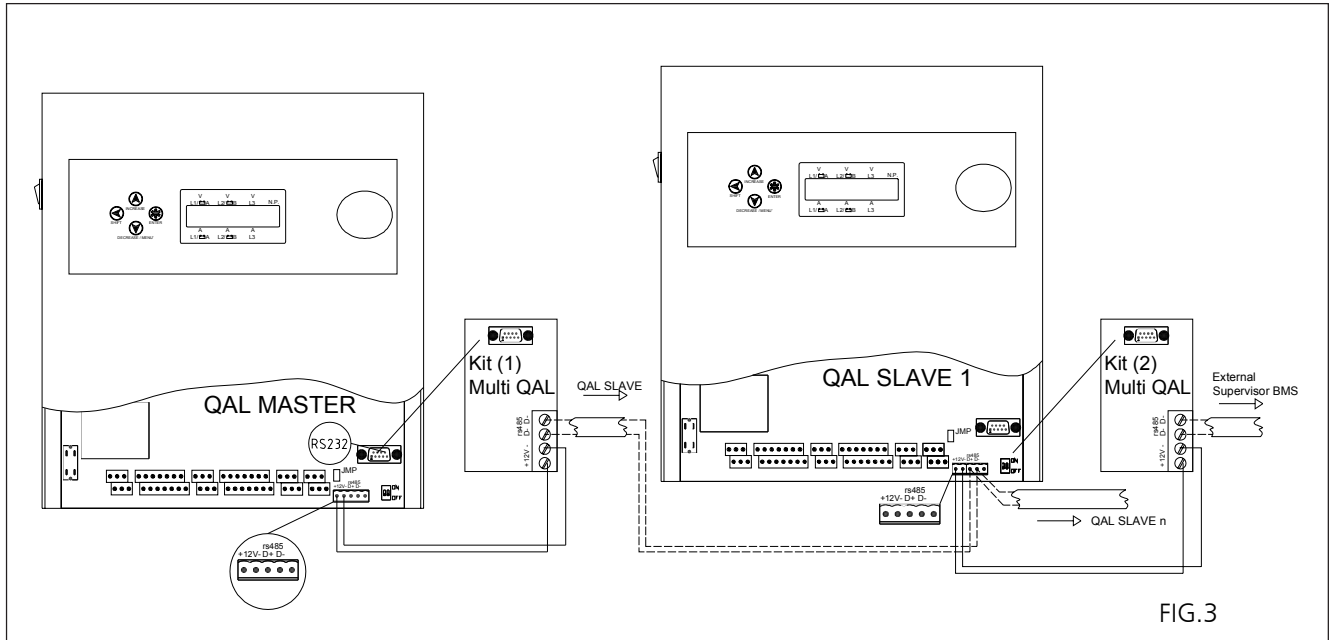


FIG.3

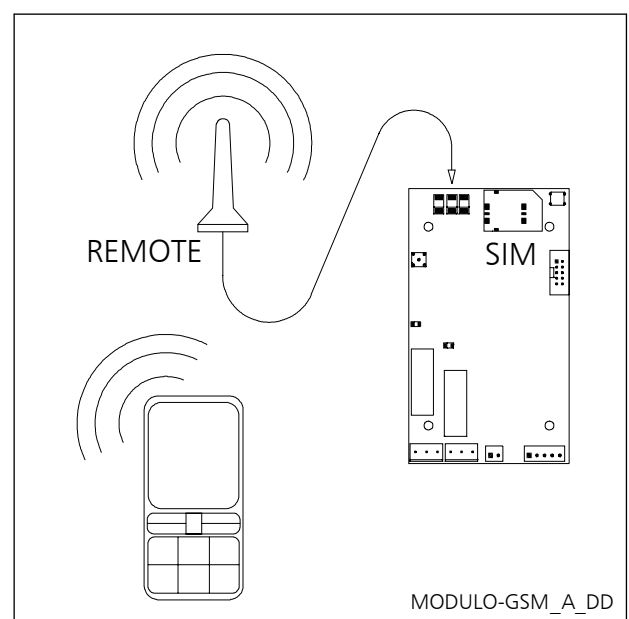
For other solutions, contact the technical assistance service.

• 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.



ACCESSORIES AVAILABLE ON REQUEST

• Q-2RILS 485 CONTROL PANEL

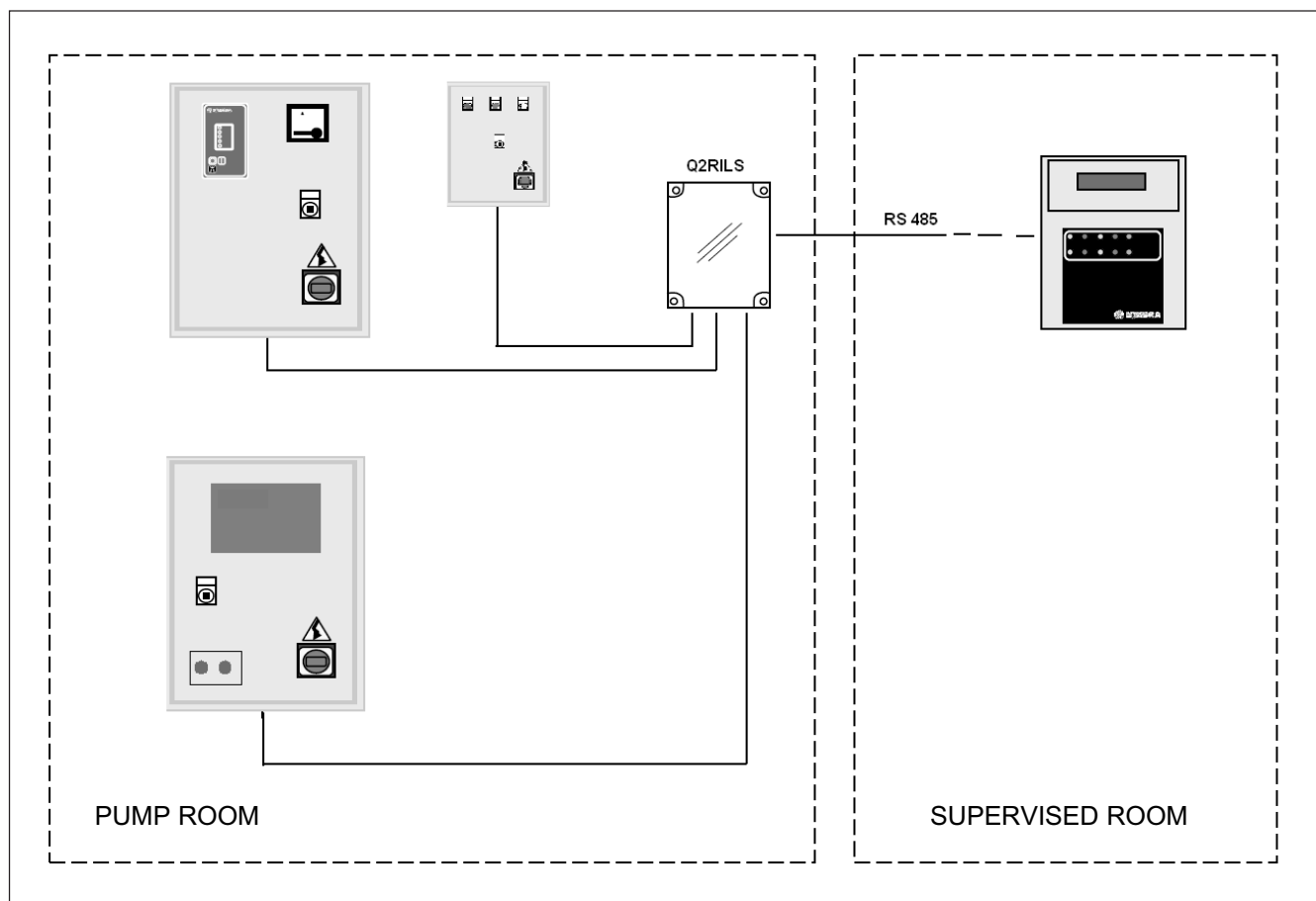
This is an accessory which converts the digital inputs in the room housing the Lowara pumping modules for EN12845 firefighting systems into ModBus-type 485 serial communications with two-pin wiring. Consistently with EN12845, the Q-2Rils 485 panel must be connected to the QAL 12845 alarms management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



ACCESSORIES AVAILABLE ON REQUEST

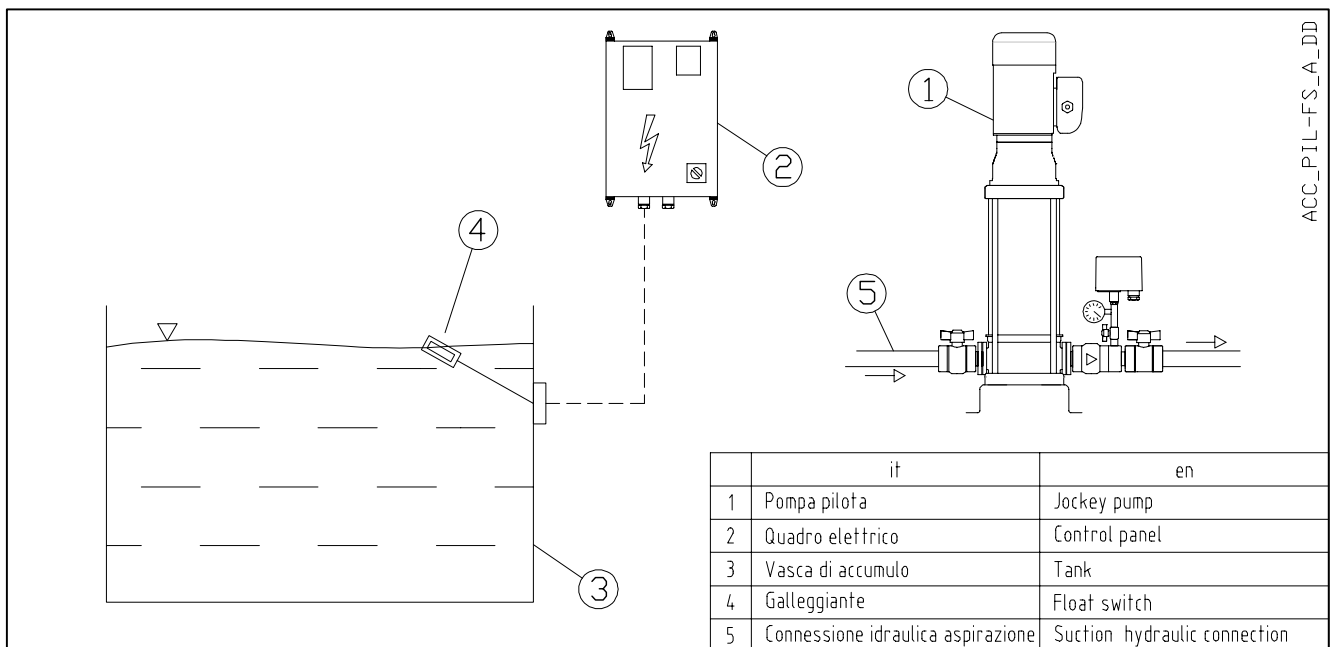
PROTECTION SYSTEMS AGAINST DRY RUNNING FOR THE ELECTRIC JOCKEY PUMP

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

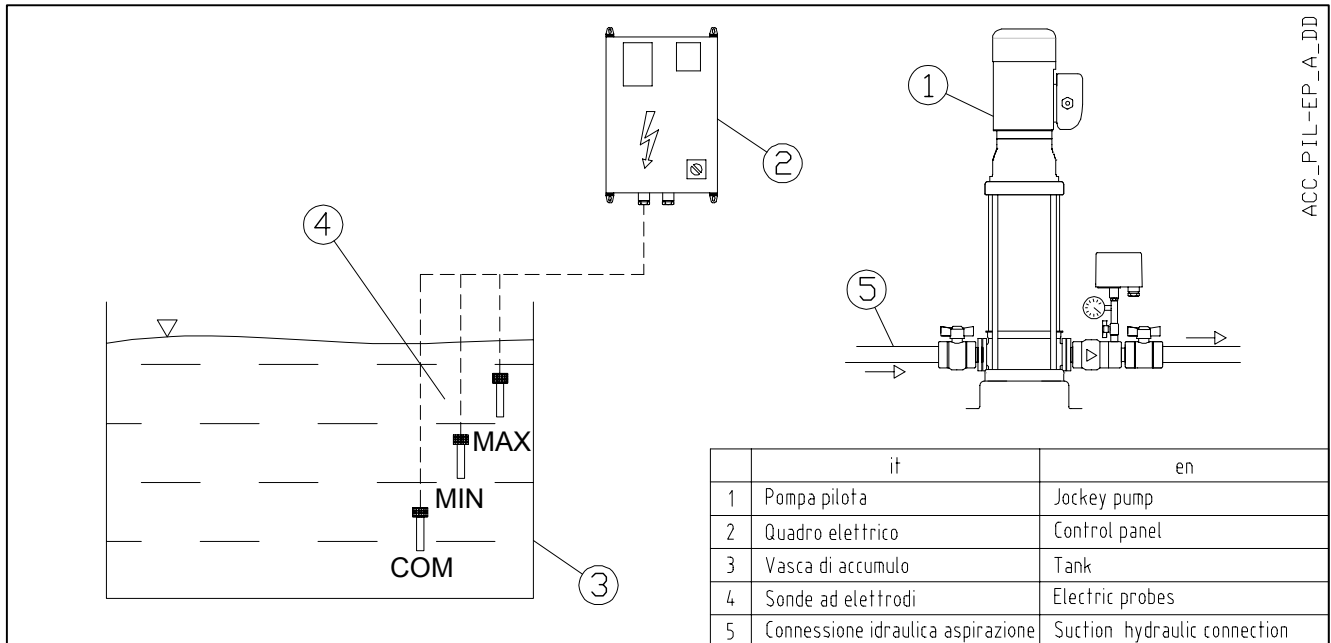
The system with float switches is used in suction lift or positive suction head installations with water supplies from storage tanks (basins). A float switch immersed in the basin is connected to the electric panel of the jockey pump. If there is no water, the float switch opens the electrical contact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



ACCESSORIES AVAILABLE ON REQUEST

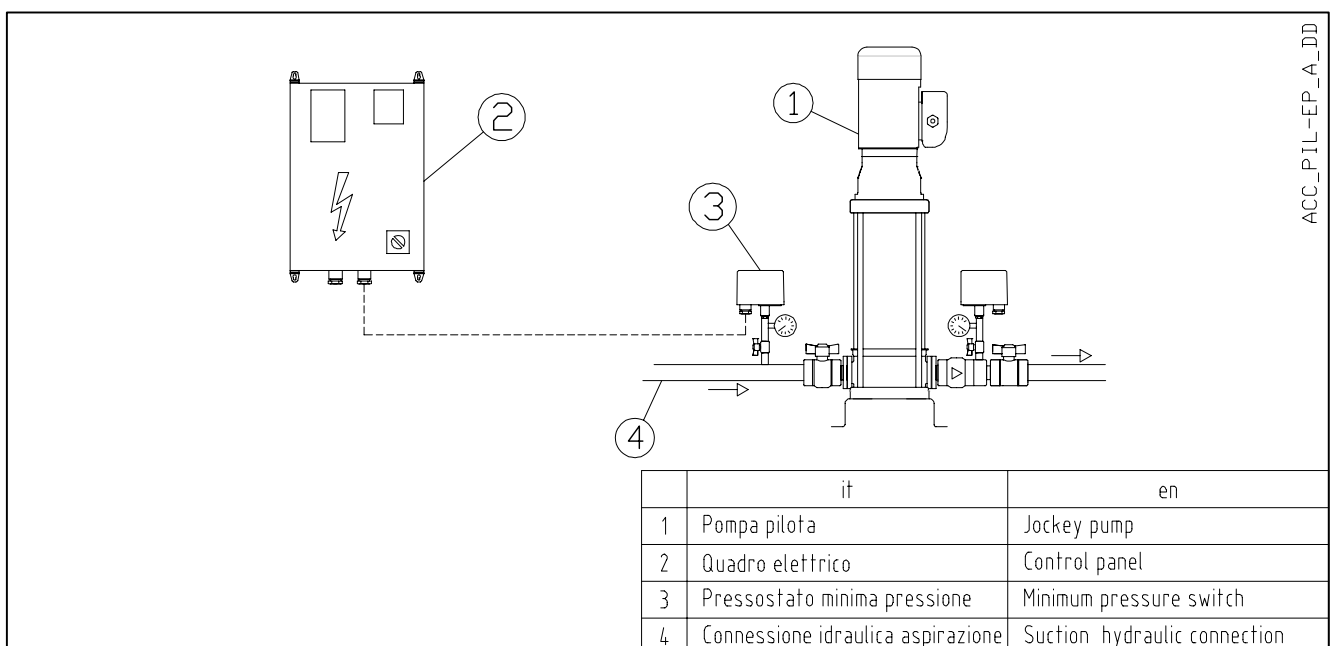
• ELECTRODE PROBE PROTECTION

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.



• 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.



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.

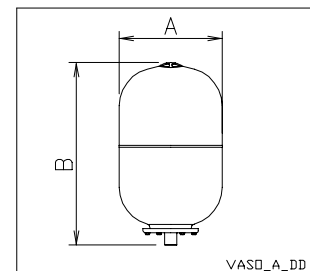
Kits featuring the following accessories **are available on request**:

- 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.

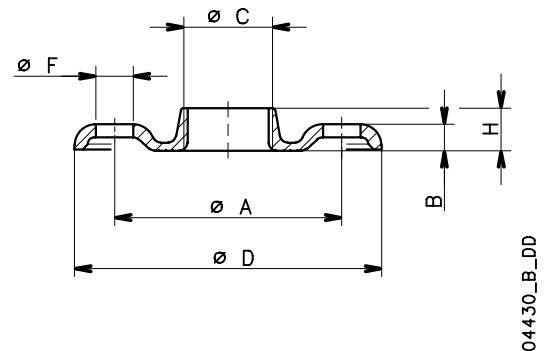
The counterflange kits are equipped with:

- 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" ½	65	Rp 2 ½	145	16	185	23	18	4	16
3"	80	Rp 3	160	17	200	27	18	8	16

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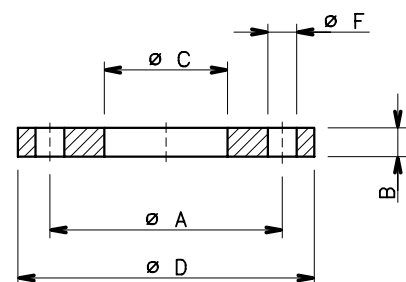


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WELD-ON COUNTERFLANGES

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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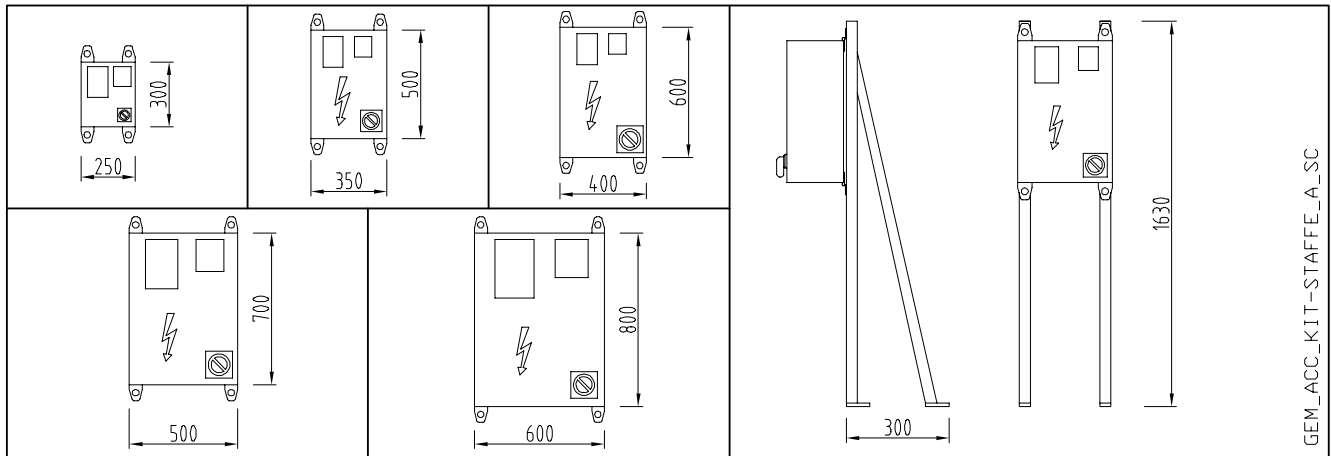


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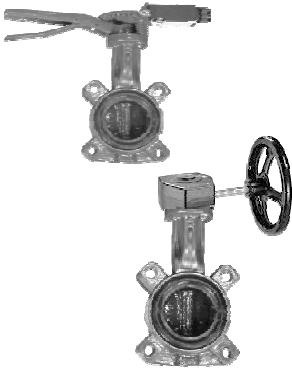
KIT OF UNIVERSAL BRACKETS FOR CONTROL PANELS

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 free-standing cabinets.



ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
Ball valve 	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"	002675190	2" FF PN25, NICKEL-PLATED BRASS
	2"	002679408	2" MF PN25, NICKEL-PLATED BRASS
Butterfly valve, WAFER type 	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
	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 TURN GEARBOX
	DN250	002674059	DN250 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
	DN300	002674060	DN300 PN16, CAST-IRON, WAFER TYPE WITH HANDLE
Butterfly valve, LUG type 	DN50	002674084	DN50 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN65	002674085	DN65 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN80	002674086	DN80 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN100	002674087	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 TURN GEARBOX
	DN150	002674089	DN150 PN16, CAST-IRON, LUG TYPE WITH HANDLE
	DN150	002674175	DN150 PN16, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN200	002674176	DN200 PN10, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN200	002674290	DN200 PN16, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN250	002674177	DN250 PN10, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN250	002674291	DN250 PN16, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN300	002674178	DN300 PN10, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN350	002674179	DN350 PN10, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
	DN400	002674305	DN400 PN10, CAST-IRON, LUG TYPE WITHOUT TURN GEARBOX
Valvola a farfalla con micro finecorsa 	DN50	109897860	DN50 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN65	109897870	DN65 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN80	109897880	DN80 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN100	109897890	DN100 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN125	109897900	DN125 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN150	109897910	DN150 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN200	109897920	DN200 PN10, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN200	109897990	DN200 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN250	109897930	DN250 PN10, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN250	109897980	DN250 PN16, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN300	109897940	DN300 PN10, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN350	109897950	DN350 PN10, CAST-IRON, LUG TYPE WITH MICRO SWITCH
	DN400	109897960	DN400 PN10, CAST-IRON, LUG TYPE WITH MICRO SWITCH

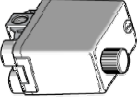
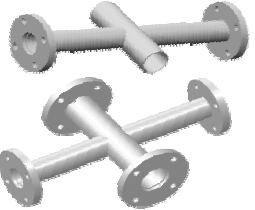
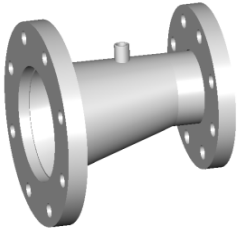
accessories1-en_c_ta

ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
	DN100	002675980	TURN GEARBOX DN100, WITH HANDWHEEL AND MICRO SWITCH
	DN125	002675980	TURN GEARBOX DN125, WITH HANDWHEEL AND MICRO SWITCH
	DN150	002675980	TURN GEARBOX DN150, WITH HANDWHEEL AND MICRO SWITCH
	DN200	002675981	TURN GEARBOX DN200, WITH HANDWHEEL AND MICRO SWITCH
	DN250	002675982	TURN GEARBOX DN250, WITH HANDWHEEL AND MICRO SWITCH
	DN300	002675983	TURN GEARBOX DN300, WITH HANDWHEEL AND MICRO SWITCH
	DN350	002675984	TURN GEARBOX DN350, WITH HANDWHEEL AND MICRO SWITCH
	DN400	002675984	TURN GEARBOX DN400, WITH HANDWHEEL AND MICRO SWITCH
	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
	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
	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
	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
	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
	1/4"	002542069	2" MF L=500MM PN16, GALVANIZED STEEL SHEATH
		002542070	2" MF L=600MM PN16, GALVANIZED STEEL SHEATH
		002110146	0-10 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN
		002110147	0-16 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN
		002110148	0-25 BAR, D63 BRASS R1/4", CASE IN ABS, WITH GLYCERIN

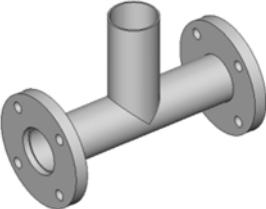
accessories2-en_c_ta

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
Flanged crosshead (joint) 		156492272	FLANGED CROSSHEAD DN50-R2"1/2-DN50-R2"1/2, PAINTED STEEL
		156493224	FLANGED CROSSHEAD DN65-DN80-DN65-DN80, PN16, PAINTED STEEL
		156494217	FLANGED CROSSHEAD DN80-DN100-DN80-DN100, PN16, PAINTED STEEL
		156495222	FLANGED CROSSHEAD DN100-DN125-DN100-DN125, PN16, PAINTED STEEL
		156496236	FLANGED CROSSHEAD DN125-DN150-DN125-DN150, PN16, PAINTED STEEL
		156497250	FLANGED CROSSHEAD DN125-DN200-DN125-DN200, PN16, PAINTED STEEL
		156497251	FLANGED CROSSHEAD DN150-DN200-DN150-DN200, PN16, PAINTED STEEL
		156498232	FLANGED CROSSHEAD DN150-DN250-DN150-DN250, PN16, PAINTED STEEL
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

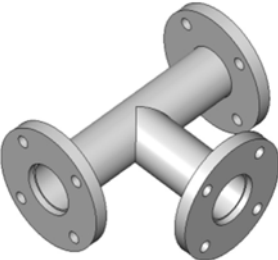
accessories3-en_c_ta

ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
	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
	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
	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
	DN40	156407800	DN40, ELBOW 5D, 90° PN16, PAINTED STEEL
	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, ELBOW 3D, 180° PN16, PAINTED STEEL
		156406041	FLANGED TEE DN65 - R1"1/2 - DN65, PN16, PAINTED STEEL
		156406051	FLANGED TEE DN65 - R2" - DN65, PN16, PAINTED STEEL
		156406070	FLANGED TEE DN80 - R1"1/2 - DN80, PN16, PAINTED STEEL
		156406082	FLANGED TEE DN80 - R2" - DN80, PN16, PAINTED STEEL
		156406110	FLANGED TEE DN100 - R1"1/2 - DN100, PN16, PAINTED STEEL
		156406121	FLANGED TEE DN100 - R2" - DN100, PN16, PAINTED STEEL
		156406160	FLANGED TEE DN125 - R1"1/2 - DN125, PN16, PAINTED STEEL
		156406171	FLANGED TEE DN125 - R2" - DN125, PN16, PAINTED STEEL

accessories4-en_b_ta

ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
		156406060	FLANGED TEE DN65 - DN65 - DN65, PN16, 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	DN50, WELD FLANGE PN16, GALVANISED STEEL
	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

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ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
	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
 	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
	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
	H1630	109392030	UNIVERSAL PANEL BRACKET KIT (2 PIECES), WITH SCREWS, PAINTED STEEL
	H105	161409700	SUPPORT FOR JOCKEY PUMP SERIES 1-3SV 1-3VM 105MM HEIGHT, PAINTED STEEL

accessories6-en_c_ta

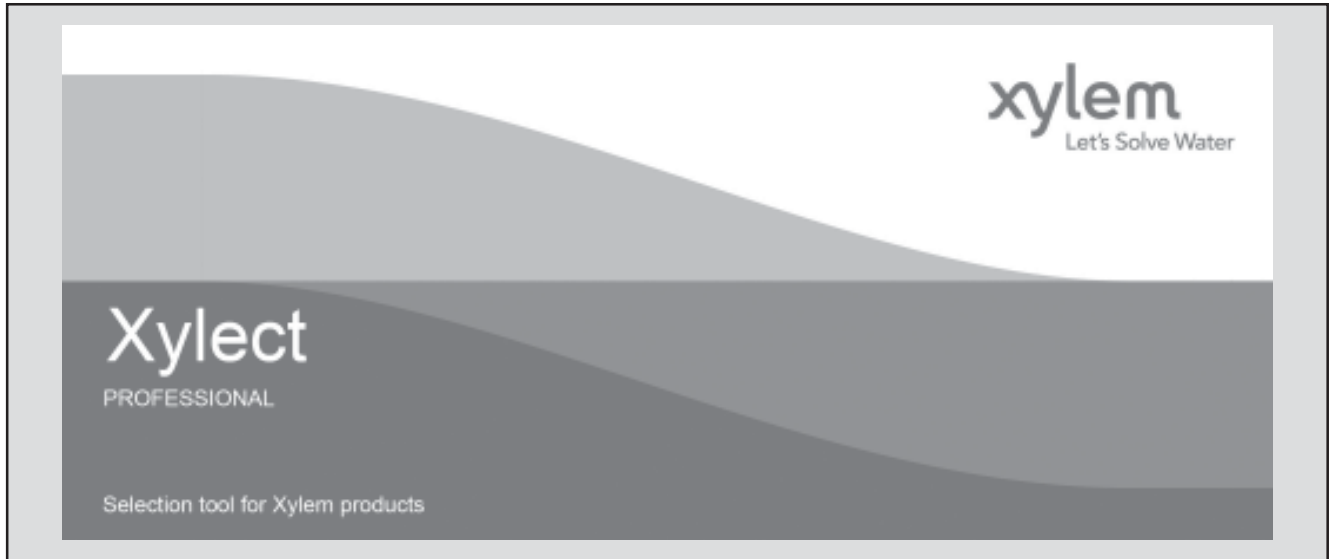
ACCESSORIES

MODEL	SIZE	CODE	DESCRIPTION
Main pump shim 		161409995	SHIM UPN100X50 (H100 E H50), PAINTED STEEL
Priming tank 	500LT	106226670	PRIMING TANK 500 LITERS, 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
Jockey pump dry-running protection 		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
Hand pump fuel load 		183110960	N° 1 HAND PUMP FUEL LOAD KIT SCREWS FOR FIXING ON FUEL TANK MT 0,7 DELIVERY HOSE N° 1 FITTING FOR SUCTION HOSE
Kit sprinkler pump room 		109422800	N° 2 SPRINKLER 1/2", K81 68°C, BRASS N° 1 FLOW SWITCH 1" N° 1 BALL VALVE MF 3/4", NICKEL-PLATED BRASS N° 1 BALL VALVE FF 1", NICKEL-PLATED BRASS
Kit micro switch for valves 		148994650	N° 1 MICRO SWITCH KIT SCREWS

accessories7-en_b_ta

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect™



Xylect™ is pump solution selection software with an extensive online database of product information across the entire Lowara, and Vogel 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.

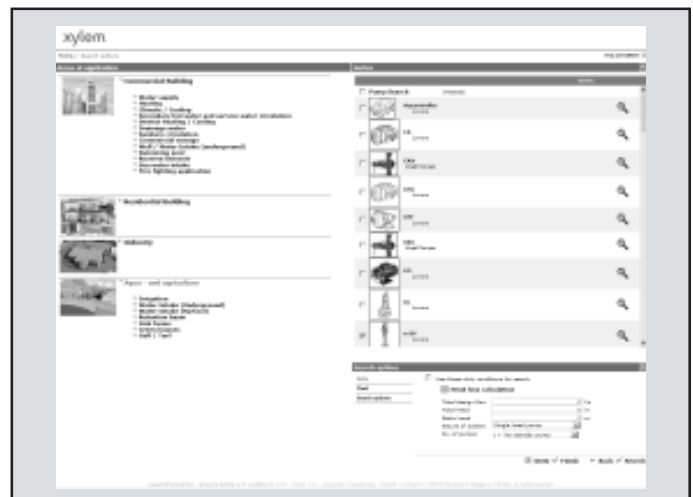
The possibility to search by applications and the detailed information output given makes it easy to make the optimal selection without having detailed knowledge about the Lowara and Vogel products.

The search can be made by:

- Application
- Product type
- Duty point

Xylect™ gives a detailed output:

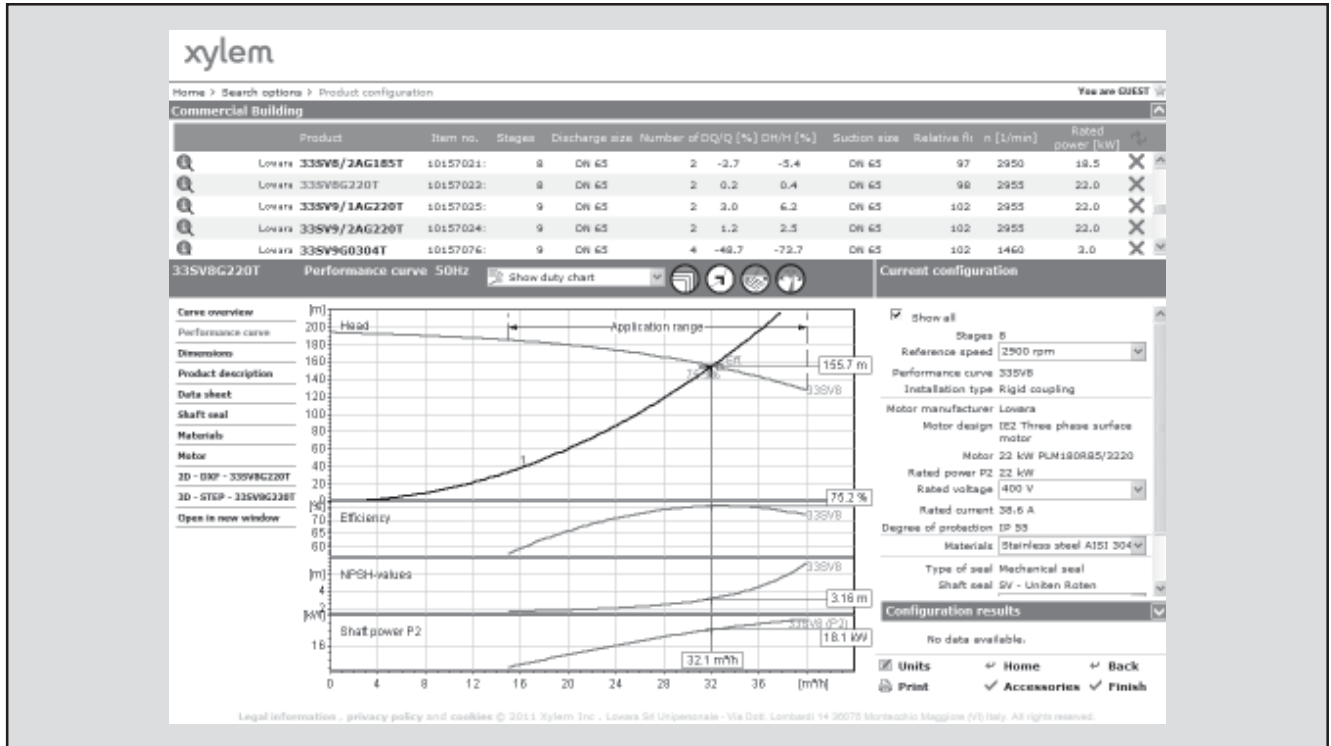
- List with search results
- Performance curves (flow, head, power, efficiency, NPSH)
- Motor data
- Dimensional drawings
- Options
- Data sheet printouts
- Document downloads incl dxf files



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

FURTHER PRODUCT SELECTION AND DOCUMENTATION

Xylect™



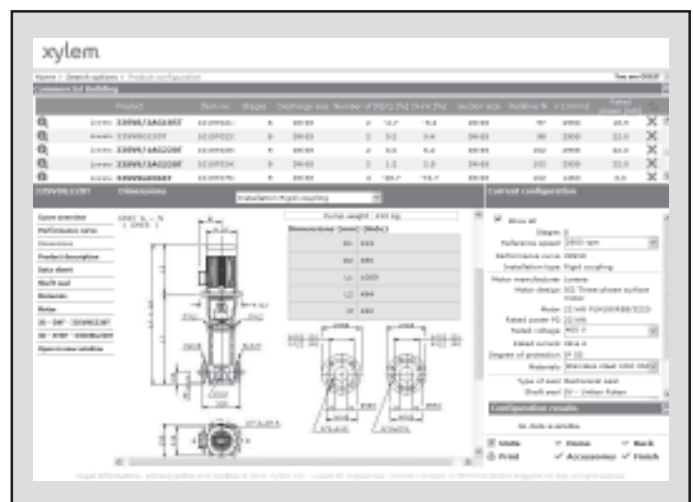
The detailed output makes it easy to select the optimal pump from the given alternatives.

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 has 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.



a **xylem** brand

ACCESSORIES

Xylem |'zīləm|

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

We're approximately 12,900 people 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 xyleminc.com.



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