



GEM Series

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

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GENERAL INTRODUCTION – PRODUCT DESCRIPTION

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

In accordance with the above standards, the pump set includes all the main components, connected and assembled at the factory.

The configuration of the pump set always comprises the pump and varies according to the required type of motor or engine (electric or diesel).

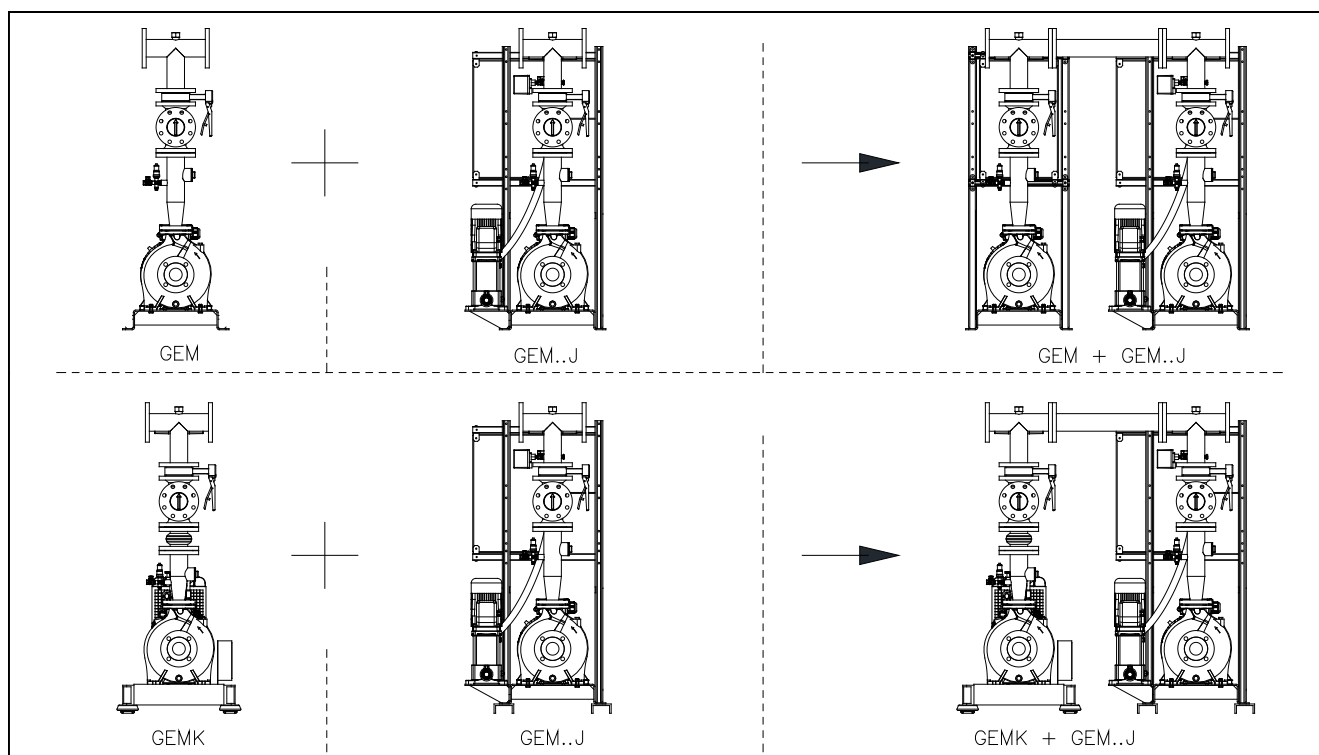
If more pump set are combined, the water supplies described in EN12845 can be obtained for the fire-fighting system. These water supplies can be single, superior, duplicated or combined.

Generally are provided two main service pumps, one backing up the other. The diameter of the connection pipe is chosen considering only one operating pump, while the second one serves as a backup (10.2 EN 12845). The choice of electric 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 means that for most installations are always expected at least one diesel pump backing up the main electric pump.

The GEM modular fire-fighting sets are composed of:

- 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 pump set can be combined to have the configuration required for the fire-fighting system water supply.



GEM-COMBINAZ_C_SC

GENERAL INTRODUCTION – PRODUCT DESCRIPTION

The basic pump set is completed with the following components:

FEATURE	GEM	GEM..J	GEMK
Duty pump Lowara series NSCC	•	•	
Jockey pump e-SV series fixed to the base of the duty pump		•	
Duty pump Lowara series NSC powered by diesel motor			•
Main pump control panel fixed on the structure on the pump set, where possible.***	•	•	
Motor pump control panel			•
Diesel motor with motor-pump coupling via flexible coupling, continuous operation at full load with a regular rated power in accordance with ISO 3046.			•
Diesel motor shutdown device with electric control.			•
Batteries and diesel motor starting circuit including electrical connection cables.			•
Fuel tank for diesel motor complete with float, reserve signal switch.			•
Main pump delivery hydraulic connection including valves, piping system, minimum pump flow line, pressure gauge, start pressure and pump running switches, connection for priming arrangement, generic connections.	•	•	
Main pump delivery hydraulic connection including valves, anti-vibration joint, piping system, minimum pump flow line, pressure gauge, start pressure and pump running switches, connection for priming arrangement, generic connections.			•
Hydraulic connection of the jockey pump including valves, start pressure switch and piping system.		•	

*** For more details see dimensional tables.

12845_descr-comp-en_b_tm

To complete the fire-fighting pump set, as required by the standard, the following accessories are available :

- Joining pipe kit
- Suction side kit
- Flow meter kit
- Priming tank
- Electric jockey pump kit
- Micro kit for on/off valve
- Monitoring kit for on/off valves
- Electrical alarms panel FF128AL
- GSM module kit
- Protection systems against dry-running
- Diaphragm tank kit
- Flanges
- Additional diesel collector basin kit
- Diesel engine spare parts kit
- Diesel discharge valve kit

To obtain a pump set composed by:

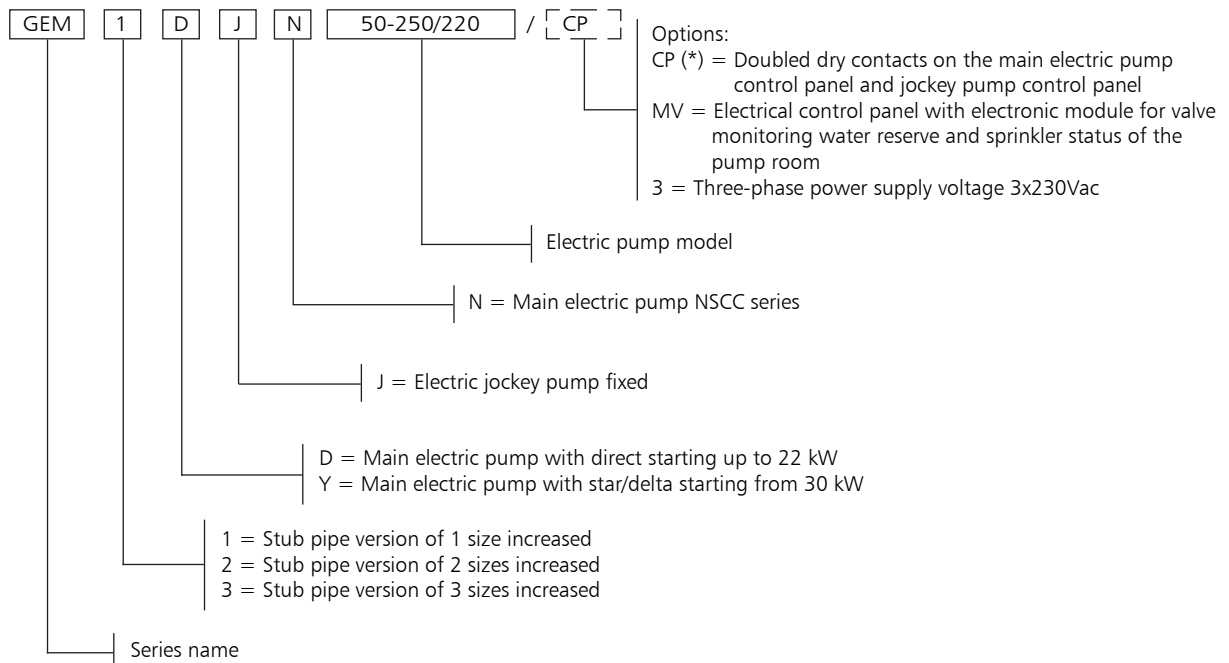
main electric pump + jockey electric pump + backup diesel engine pump

you have to select:

- 1 main electric pump with jockey pump set (GEM..J)
- 1 diesel engine pump set (GEMK..)
- connector kit

IDENTIFICATION CODE

EN 12845 PUMP SET WITH MAIN ELECTRIC PUMP



(*) Control panel ready for connection of monitoring valves

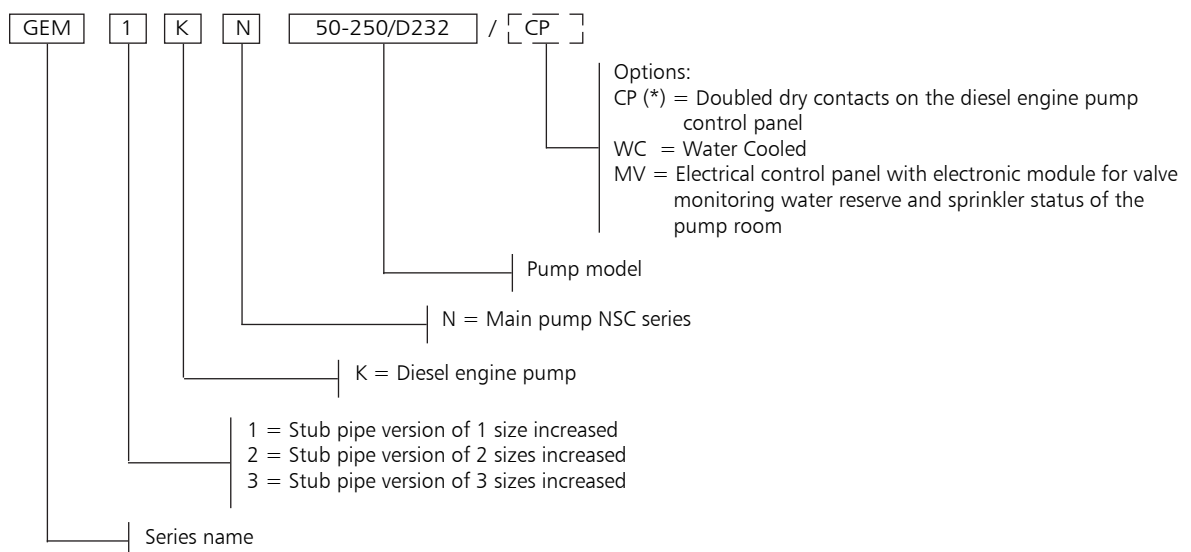
EXAMPLES:

GEM1YN80-250/450: version GEM1 fire-fighting pump set, comprising a main electric pump NSCC series model 80-250/450, with star/delta starting.

GEM2DJN40-200/75X: version GEM2 fire-fighting pump set, comprising a main electric pump NSCC series model 40-200/75X, with direct starting and electric jockey pump fixed on the pump set base.

GEM3YN65-250/300: version GEM3 fire-fighting pump set, comprising a main electric pump NSCC series model 65-250/300, with star/delta starting.

EN 12845 PUMP SET WITH MAIN DIESEL ENGINE PUMP



(*) Control panel ready for connection of monitoring valves

EXAMPLES:

GEM1KN40-200/D199: version GEM1 fire-fighting pump set comprising an NSC diesel engine pump model 40-200/D199.

GEM2KN80-250/D241/WC: version GEM2 fire-fighting pump set comprising an NSC diesel engine pump model 80-250/D241, water cooled engine.

GEM3KN65-250/D243: version GEM3 fire-fighting pump set comprising an NSC diesel engine pump model 65-250/D243.

GEM PUMP SET VERSION

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

With version GEM2, for example, the diameter DN of the components after the diverging pipe is equal to DN+2 to the diameter of the delivery outlet of the pump.

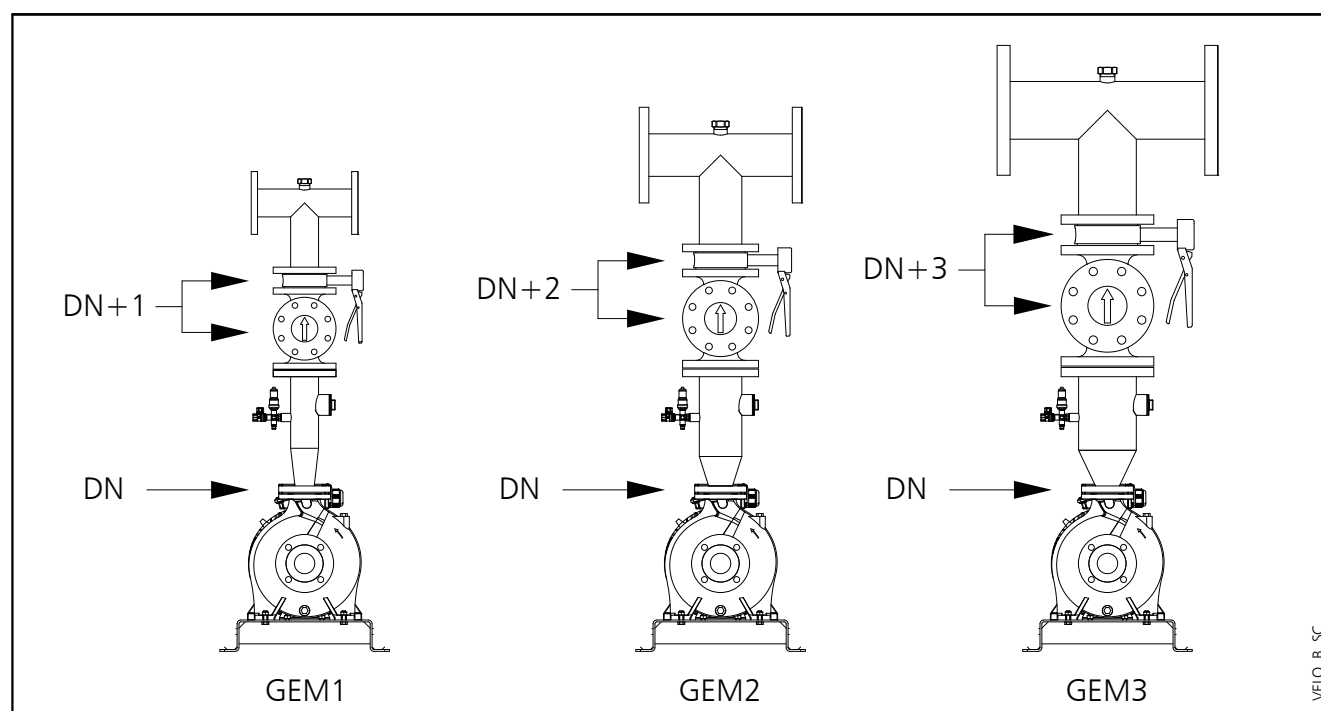
Example:

GEM2YN50-250/300 Pump set:

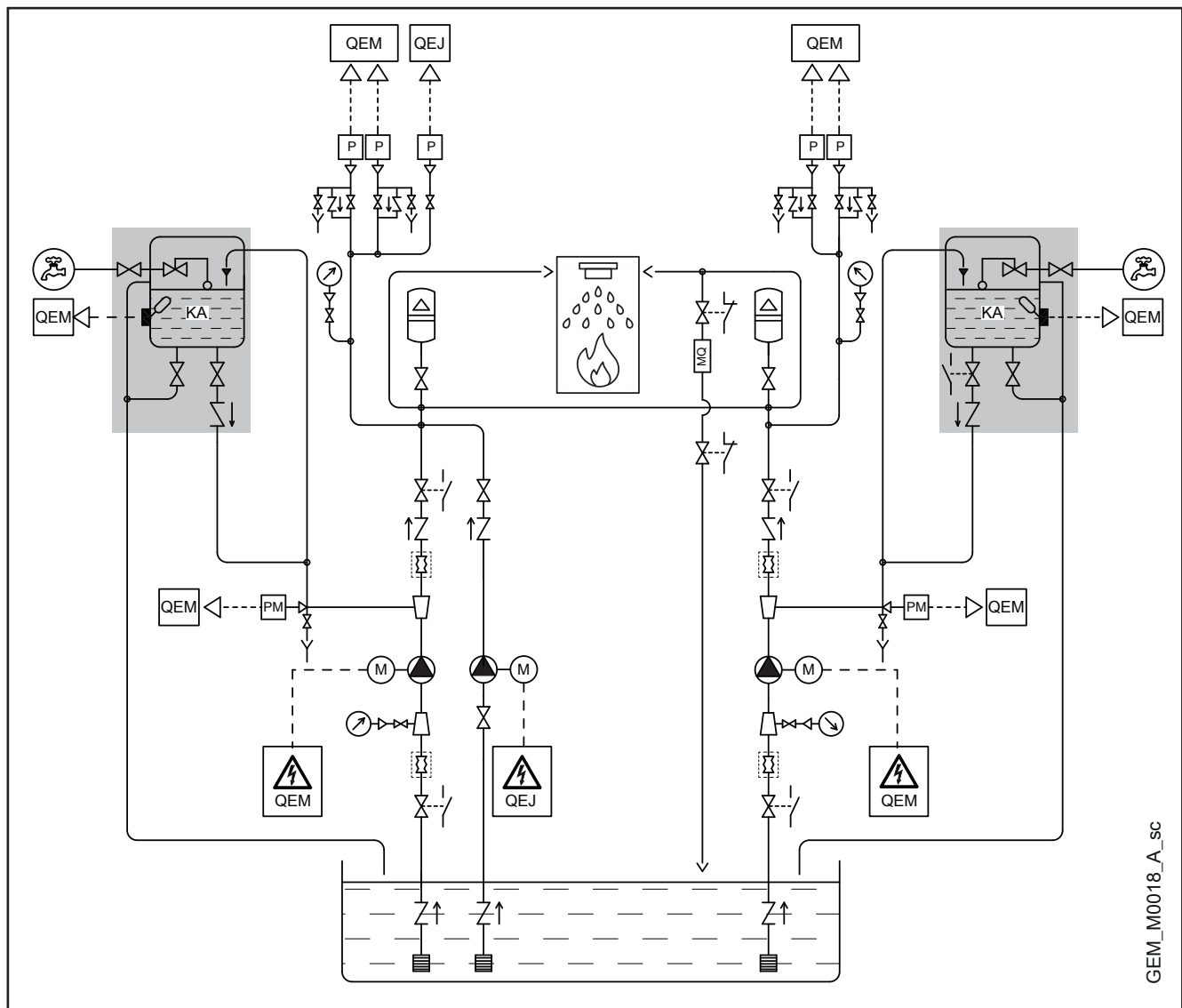
diameter of delivery outlet of the pump is DN50, diameter of on/off butterfly valve and non-return valve are DN80.

GEM3KN65-250/D243 Pump set:

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

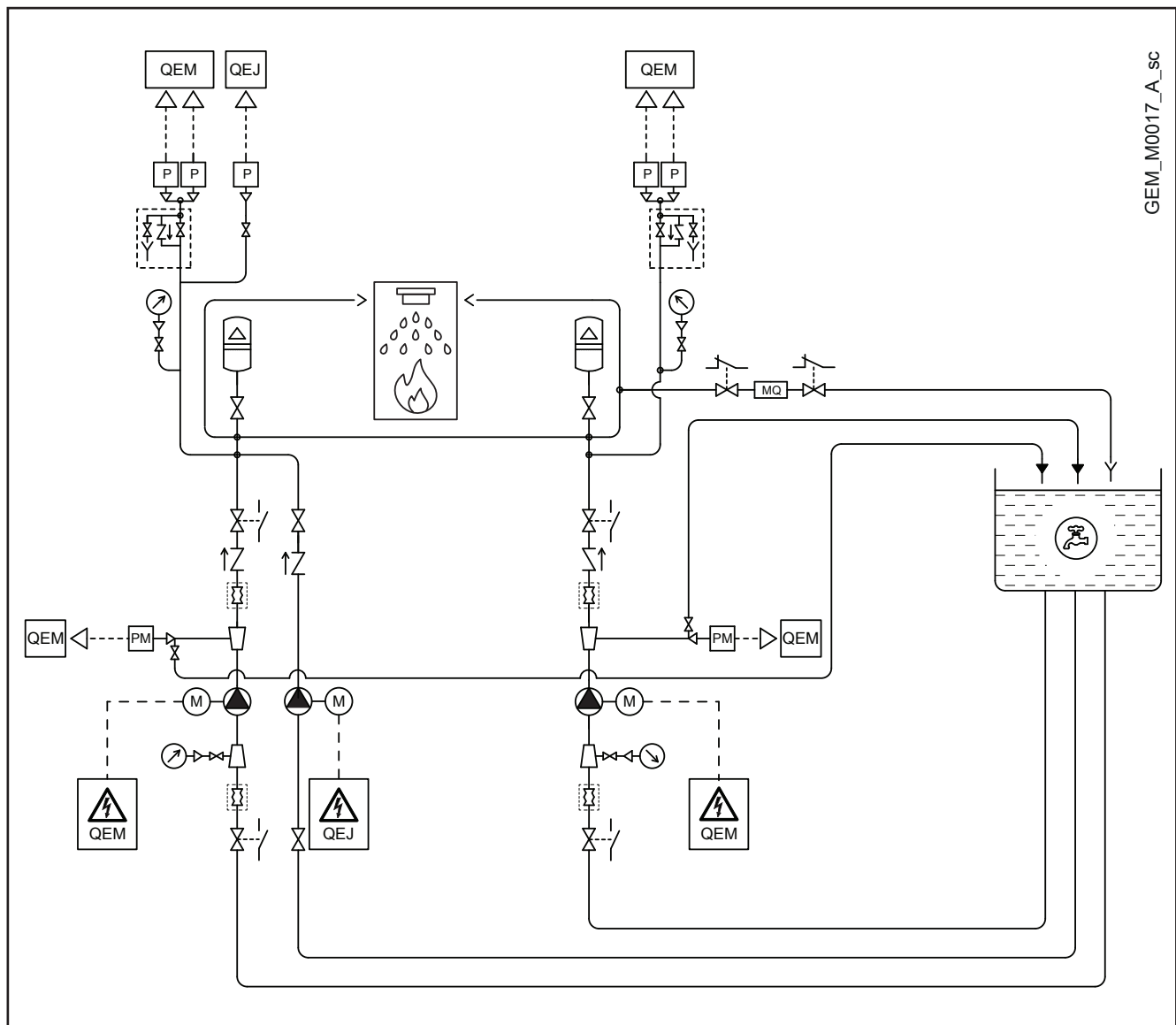


FUNCTIONAL DIAGRAM FOR SUCTION LIFT INSTALLATIONS



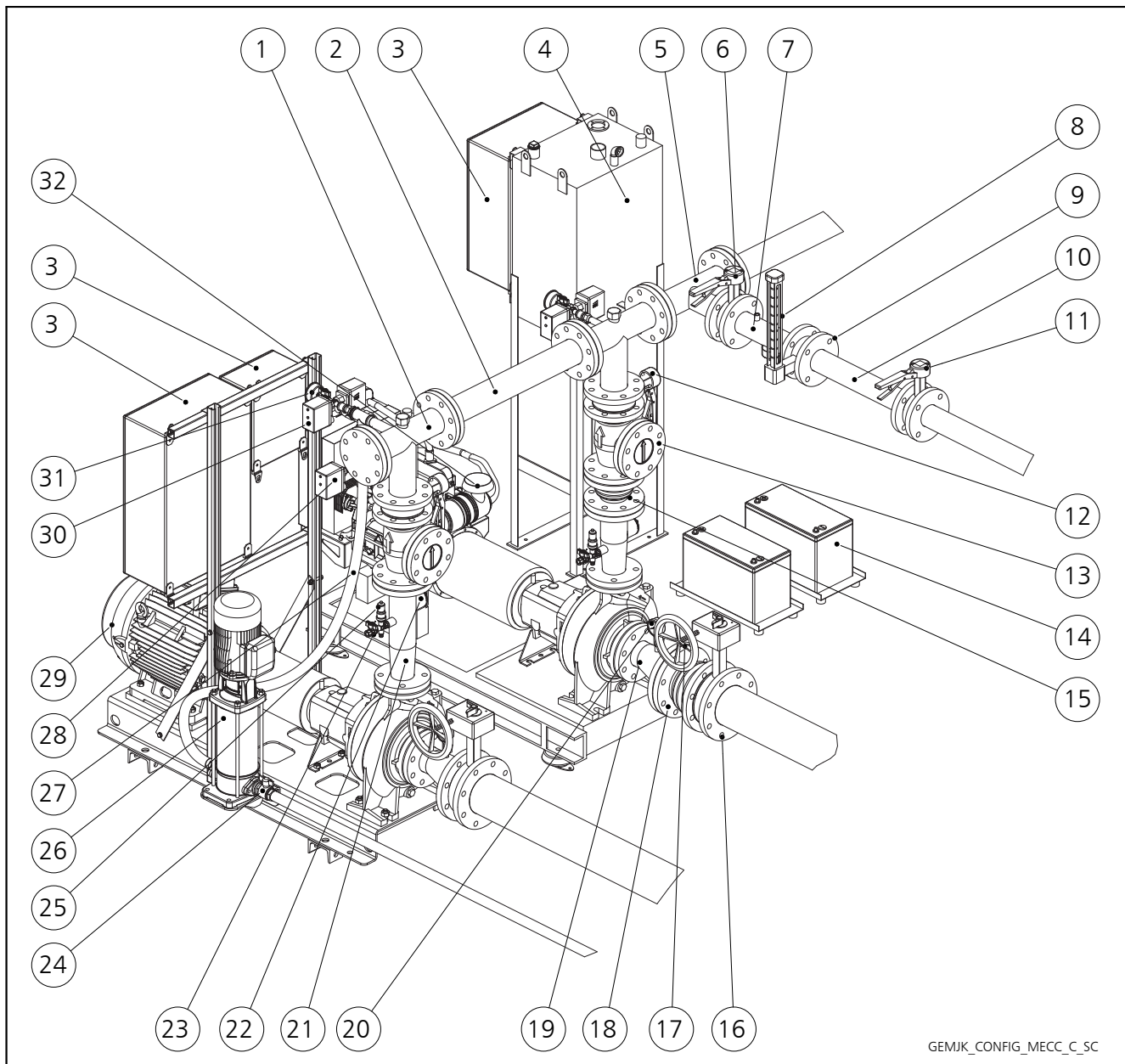
Symbol	Description	Symbol	Description
...	Electric connection		Service pump control panel
	Filter		Eccentric reducer
	Water supply source		Water drain
	Antivibration joint, GEMK		Closed discharge pump flow line water drain
	Float switch	—	Pipingsystem
KA	Priming tank kit		Float valve
	Pressure gauge		Onoff valve
	Flow meter		Check valve
	Pump motor		Valve monitored, open position OK
	Pump		Valve monitored, closed position OK
	Pump running pressure switch		Diaphragm tank
	Start pressure switch		Firefighting system
	Jockey pump control panel	—	—

FUNCTIONAL DIAGRAM FOR SUCTION HEAD INSTALLATIONS



Symbol	Description	Symbol	Description
...	Electric connection		Service pump control panel
	Filter		Eccentric reducer
	Water supply source		Water drain
	Antivibration joint, GEMK		Closed discharge pump flow line water drain
	Float switch	—	Pipingsystem
KA	Priming tank kit		Float valve
	Pressure gauge		Onoff valve
	Flow meter		Check valve
	Pump motor		Valve monitored, open position OK
	Pump		Valve monitored, closed position OK
	Pump running pressure switch		Diaphragm tank
	Start pressure switch		Firefighting system
	Jockey pump control panel	—	—

MECHANICAL CONFIGURATION GEM..J SERIES PUMP SET



GEMJK_CONFIG_MECC_C_SC

N. REF.	DESCRIZIONE
1	Manifold
2 *	Joining kit
3	Control panel
4	Diesel engine pump tank
5 *	Tee connection
6 *	Upstream on/off valve for flow meter
7 *	Upstream pipe of flow meter
8 *	Flow meter
9 *	Weld flange
10	Downstream pipe of flow meter ****
11	Regulation valve for flow meter ****
12	On/off valve on delivery side
13	Check valve
14	Starting batteries
15	Expansion joint on delivery side
16 *	Weld flange

N. REF.	DESCRIZIONE
17 *	On/off valve on suction side ***
18 *	Expansion joint on suction side **
19 *	Eccentric cone on suction side
20 *	Vacuum pressur gauge
21	Eccentric cone on delivery side
22	Connection from priming tank
23	Test valve for checking the seal of the check valves
24	On/off valve on suction side of jockey pump
25	Pressure switch
26	Jockey pump
27	Jockey pump delivery
28	Jockey pump pressure switch
29	Main electric pump
30	Two start-up pressure switches
31	Pressure gauge
32	Main diesel engine pump

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

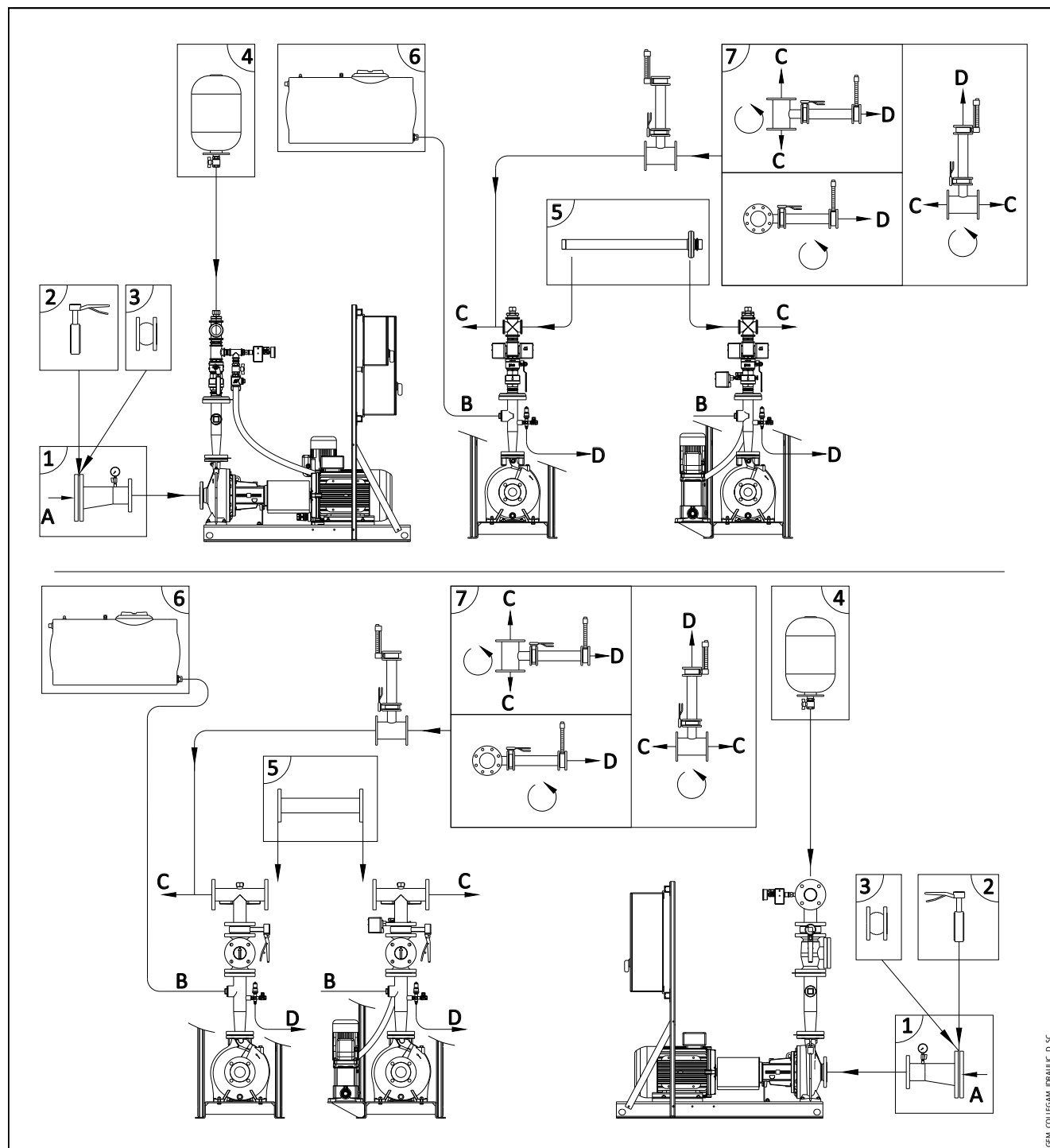
** Mandatory in case of diesel engine

*** Mandatory in case of positive suction head installation

**** Installation to be done by the customer

gemjk-comp_en_f_tp

HYDRAULIC CONNECTIONS



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

* See single instruction manuals

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PUMP CHARACTERISTICS

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

- Centrifugal electric pumps with single-stage axial suction, with flanged axial suction, flanged radial discharge and horizontal shaft.
- The pumps are equipped with mechanical interchangeable seals and have been designed with "back pull-out" configuration (you can remove impeller, hub and engine without disconnecting the pump body from the piping system).
- Dimensions of connection in accordance with EN 733
- Flanges according to EN 1092-2 and EN 1092-1
- Motor-pump coupling by hub, support, flexible joint with spacer.
- Diesel engines: motor-pump coupling with flexible joint, continuous operation in full-load mode with continuous rated power in conformity with ISO 3046, direct transmission, standard direct air or water cooling. Other characteristics in compliance with EN12845.
- For other characteristics, consult the relative dedicated technical catalogue.



1SV SERIES ELECTRIC PUMPS (JOCKEY PUMP)

- SV pump is a vertical multistage pump, not self-priming, coupled with standard motor.
- Suction and delivery outlets in line, body and flange in AISI 304.
- For other characteristics, consult the relative dedicated technical catalogue.



ADDITIONAL FEATURES

GEM standard pressure pump set has the following features:

PERIODIC AUTOTEST

The control panel of the jockey pump features, as standard, an electronic card with display including the autotest function. Only if enabled, at a pre-set time and day the pump is started up and kept running for 1 minute. During this interval, the control circuit checks if the pressure in the re-circulation circuit closes the contact of the pressure switch. In case of anomalies, the relative auxiliary autotest alarm relay available for remote signaling is activated and memorized.

The EN12845 Standard does not provide for the presence of an autotest circuit but asks for periodic checks to be carried out by the user, hence the periodic autotest function cannot substitute the above checks.

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 functions of autotest and automatic shut-off are available as standard for each GEM pump set. Functions are disabled in factory settings and must be activated by the end user.

For the installation and characteristics of the fire-fighting room, consult the relevant instruction manuals.

JOINING PIPE KITS

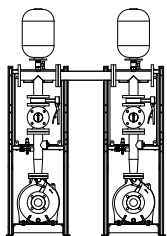
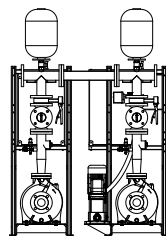
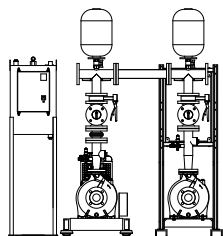
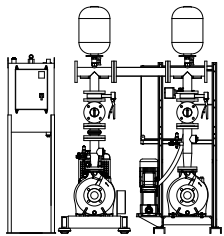
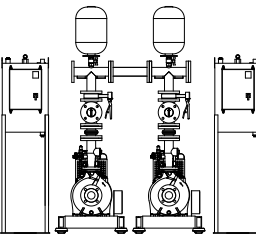
Lowara manufactures the GEM fire-fighting pump set separately, in order to combine them according to system requirements. By combining the pump set, in fact, the water supply specifications described in EN 12845 can be obtained. These water supplies can be single, superior, duplicated or combined.

Fire-fighting pump set 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 pump set can be combined through **joining kits** in order to reproduce the required water supply configuration for the fire-fighting system.

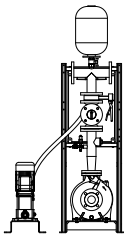
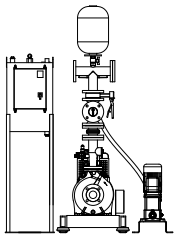
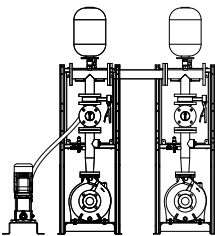
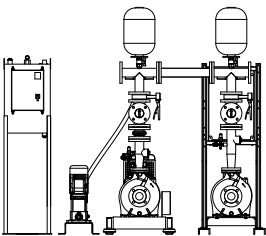
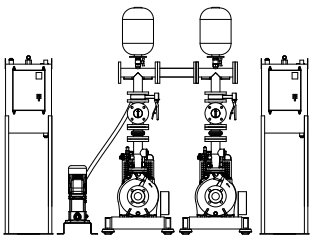
For dimension tables and combinations, see the accessories section.

Examples of multi-pump set layouts:

POSSIBLE LAYOUTS WITH JOINING KIT	GEM ELECTRIC PUMP SET	GEM..J ELECTRIC PUMP SET WITH JOKEY PUMP	GEMK DIESEL ENGINE PUMP SET
GEM ELECTRIC PUMP SET			
GEMK DIESEL ENGINE PUMP SET			

POSSIBLE LAYOUTS WITH JOCKEY PUMP KIT

For single or combined modules, except for the GEMJ series, it is possible to add a JOCKEY PUMP KIT, as in the examples below:

SINGLE MODULE + JOCKEY PUMP KIT			
COMBINED MODULES + JOCKEY PUMP KIT			

gem_nsc_joining_kits_b_en

ELECTRIC SERVICE PUMP CONTROL PANEL GEM, GEMJ SERIES PUMP SET

Painted metal casing (IP 55) complete with:

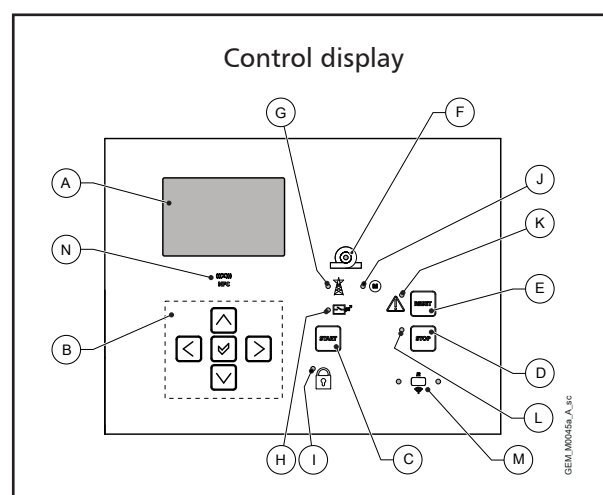
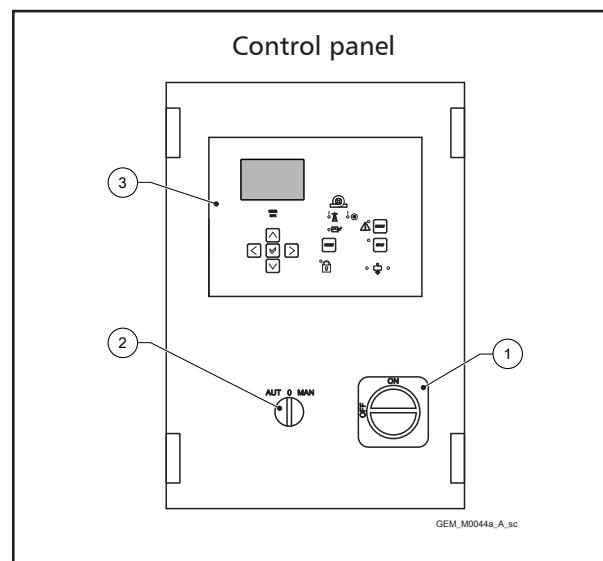
1. Main door-lock switch.
2. "MAN - AUT - 0" selector with extractable key only in automatic position.
3. Electronic board FF128EP with:
 - A. Display for indicating power supply and motor electric voltage, events and alarms history, pressure switch and input/output state, current date and time, if enabled, automatic shutdown and autotest state.
 - B. Navigation and setup buttons
 - C. Manual START button
 - D. Manual STOP button
 - E. RESET button

Pump Led:

- F. pump running
- G. power supply status
- H. START request
- I. automatic mode disabled
- J. engine status
- K. alarm
- L. Manual STOP enabled

The electronic board is composed by:

- Optical interface (M) for programming and event download
- NFC (N) type wireless interface for programming and downloading events
- RS-485 communication interface with ModBus RTU protocol
- Built-in ambient temperature sensor type NTC



Available as accessories: expansion bus up to a maximum of 2 slots for optional RS 485, Ethernet, GSM and valves monitoring.

Inside the control panel:

- Transformer for auxiliary circuits and comand electronic board FF128EP.
- Fuse holder and fuses for power and auxiliary circuits
- Depending on the model, 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).
- Current transformer
- Dry contacts (AC1 8A 250Vac, AC15 1,5A 250Vac) of:
 - no-phase/no-line
 - start failure
 - pump running
 - pump on demand

For the fixing dimensions of the electrical control panel, refer to the manuals of the GEM, GEMJ pump set.

ELECTRIC SERVICE PUMP CONTROL PANEL

OPTIONS

Option MV

Inside the control panel, an electronic module for monitoring the open/closed state of the valves, water reserve and sprinkler status of the pump room.

The monitoring kits of the following on-off valve can be connected:

- Suction of the GEM pump set
- Discharge of the GEM pump set
- Flow meter kit
- Priming kit

Option CP

Dry contacts for checking the status of the electric panel (in addition to the contacts already provided):

- No-phase/no-line
- Start failure
- Pump running
- Pump on demand

Inputs for micro-monitoring connection of shut-off valves are included.

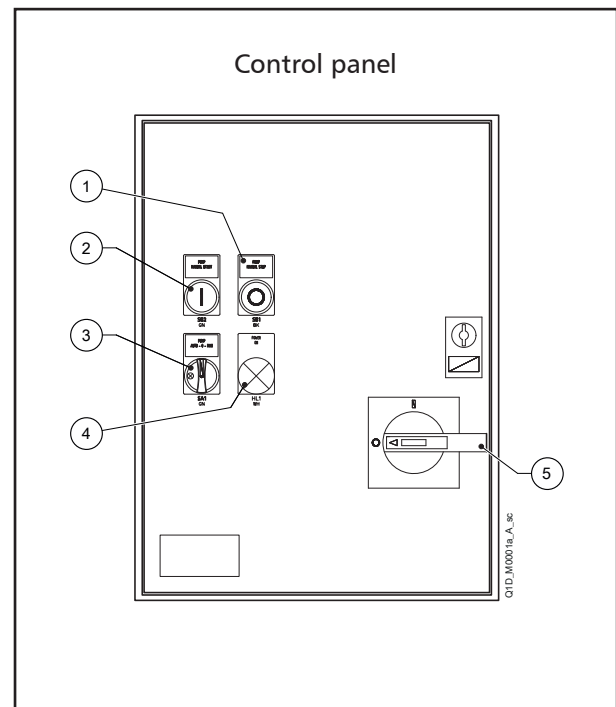
CONTROL PANEL OF THE ELECTRIC JOCKEY PUMP

Painted metal casing (IP 55) complete with:

1. Manual motor stop button
2. Manual motor start button
3. 3-position selector switch: automatic, lockout, manual mode
4. Mains supply voltage LED
5. Door lock main switch

Inside:

- Thermal magnetic switch to protect the motor from overloads
- 24 V transformer for auxiliary circuits
- Fuse holder and fuses for power and auxiliary circuits
- Line contactor
- Free contacts for pump running and thermal block notification
- Arrangement for the connection of a protection device against the lack of liquid, such as float or a probe module, or a minimum pressure device (available as accessories).



For the fixing dimensions of the electrical control panel, refer to the manuals of the GEM, GEMJ pump set.

OPTIONS

Option TP

Internal timer for delayed shutdown of the jockey electric pump.

Option CP

Dry contacts for checking the status of the electric panel (in addition to the contacts already provided):

- Pump running
- Thermal block notification

CONTROL PANEL OF THE SERVICE PUMP GEMK SERIES PUMP SET

Painted metal casing (IP 55) complete with:

1. "MAN - AUT - 0" selector switch with key removable only in the automatic position
2. Emergency battery start button 1
3. Emergency battery start button 2
4. Main door-lock switch.
5. FF128DP Electronic board with:
 - A. Display for indicating the electrical parameters of power supply and diesel motor, events and alarms history, pressure switch and input/output state, current date and time, if enabled, automatic shutdown and autotest state.
 - B. Navigation and setup buttons
 - C. Manual START button from battery 1
 - D. Manual STOP button
 - E. RESET button
 - F. Manual START test button

Pump Led:

- G. Pump running
- H. Battery status and selection
- I. Automatic mode disabled
- J. Manual STOP enabled
- K. Alarm RESET
- L. Manual START test enabled

The electronic board is composed by:

- Optical interface (M) for programming and event download
- NFC (N) type wireless interface for programming and downloading events
- RS-485 communication interface with ModBus RTU protocol

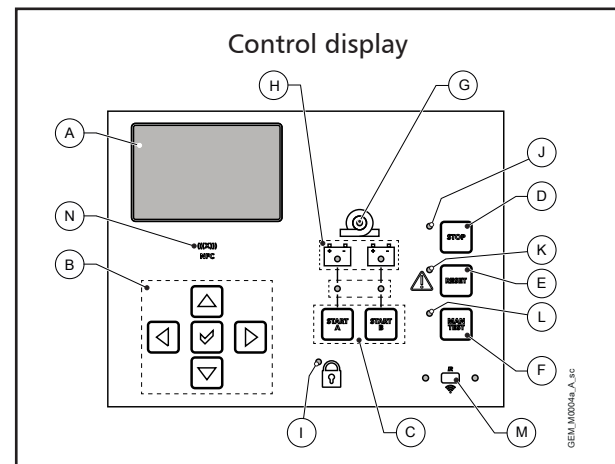
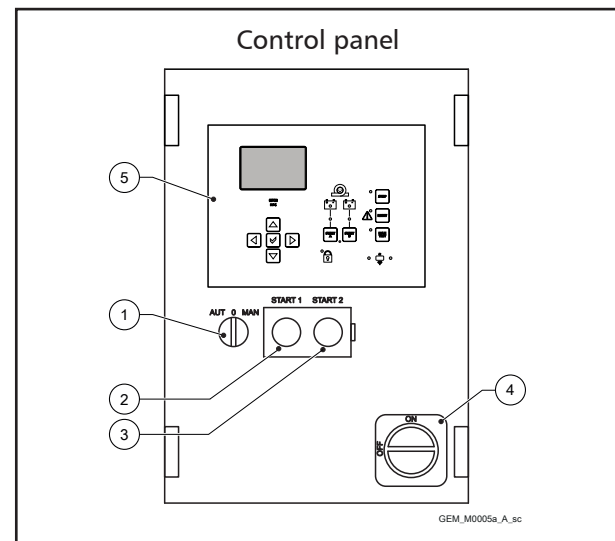
Built-in ambient temperature sensor type NTC

Available as accessories: expansion bus up to a maximum of 2 slots for optional RS 485, Ethernet, GSM modules and valves monitoring.

Inside the control panel:

- Fuse holder and fuses for power and auxiliary circuits
- Pair of battery charger 12Vdc or 24Vdc
- Auxiliary relays
- Circuits for powering motor space heaters
- Dry contacts (AC1 8A 250Vac, AC15 1,5A 250Vac) of:
 - non-automatic operating mode
 - start failure
 - motor running
 - general alarm
 - controller fault

For the fixing dimensions of the electrical control panel, refer to the manuals of the pump set.



OPTIONS

Option MV

Inside the control panel, an electronic module for monitoring the open/closed state of the valves, water reserve and sprinkler status of the pump room. The monitoring kits of the following on-off valve can be connected:

- Suction of the GEM pump set
- Discharge of the GEM pump set
- Flow meter kit
- Priming kit

Option CP

Dry contacts for checking the status of the electric panel (in addition to the contacts already provided):

- Automatic mode disabled
- Failure to start
- Motor running
- General alarm
- Controller fault

Inputs for micro-monitoring connection of shut-off valves are included.

Each GEM pump set is supplied factory assembled, calibrated and tested.

For pump set with floor-mounted control panels, the panels are shipped together with the set in a separate pack and supplied with 5 m long connecting cables (longer lengths available upon request).

INSTALLATION CHOICE AND SELECTION

Criteria for choosing the fire-fighting pump set

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 pump set 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 pump set are normally designed so that every service pump can satisfy the following requirements:

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

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

Suction conditions of the booster set

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

$$NPSH_d \geq NPSH_r + 1 \text{ [m]}$$

Where: NPSH_d is defined available.

NPSH_r 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 NPSH_d 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 pump set indicate the flow values at T-shaped delivery pipe. This value does not refer to pump performance but is net of the pressure drop on the pump discharge line. This field is shown in grey and the selection must be made here, where performance levels comply with the reference standard EN12845 which considers the following conditions:

- Maximum water speed in the service pump discharge piping 6 m/sec
- $NPSH_d \geq NPSH_r + 1$ at the maximum flow required

SUCTION LIFT INSTALLATION

EN12845 standard 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.

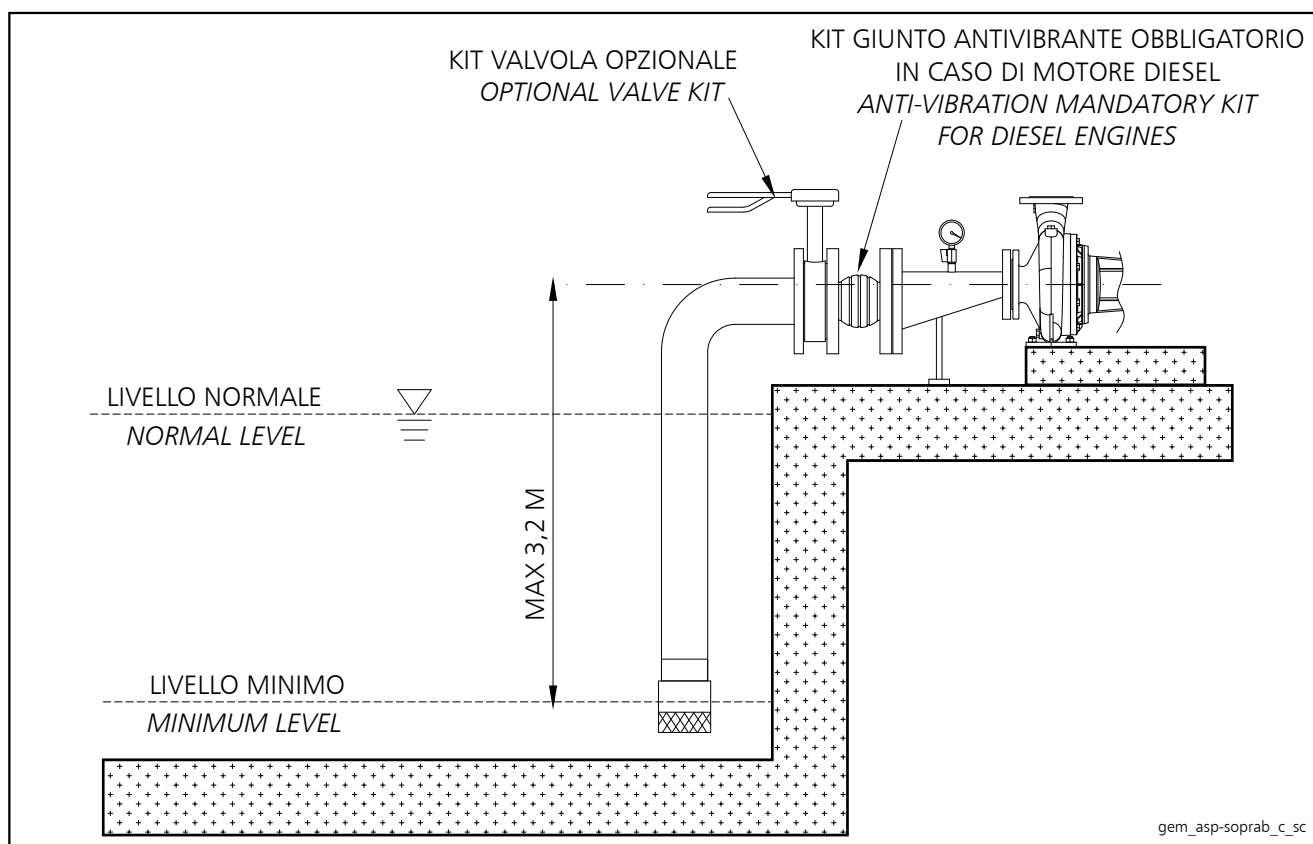


Fig. 1 suction lift installation diagram

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 pump set, 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:

The maximum requested flow is 76 m³/h. Being in a suction lift condition, the most difficult situation is considered as having the maximum difference in water level of 3,2 m, as indicated in the standard.

Being aware that the maximum requested flow is 76 m³/h, the pressure required for the system e.g. 35 m and considering to have a pump set with diesel engine (GEM..K), the pump set is selected according to the tables on [pag. 28-34](#) or drawings on [pag. 75-97](#), making sure that the pump set performance is higher than the working point required by the system.

The pump set that satisfies the required working point is GEM1K and the pump is NSC50-200/D201.

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 83](#) which in this case is 3,8 m at the maximum requested flow 76 m³/h.

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 (since the pump set is GEM1K with diesel engine pump), reduction cone, as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

For the required flow (see table on [page 105](#)), a DN65xDN125 suction cone is selected.

The value of H_c (of the antivibration joint kit DN125) at the maximum required flow of the selected pump, can be found in the diagram on [page 100](#). This value is 0.06 m.

After entering it in the formula, we will have:

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

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

Hence:

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

$$10.33 + (-3.2) - \Sigma H_{ct} = 3.8 + 1$$

$$10.33 + (-3.2) - 0.06 - X = 3.8 + 1 \text{ which make so}$$

$$X = 2.27 \text{ m}$$

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 optimize suction conditions.

SUCTION LIFT INSTALLATION

Checking performance of the set at rated flow.

The performance of the GEM1K pump set must now be checked in the installation conditions of the example used up until now.

Taking the pressure value of the selected pump set, the value corresponds to 44,5 m at the rated flow.

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

$H = 44,5 - (0.06 + 2.27) + (- 3.2) = \mathbf{39,0\ m} > \mathbf{35\ m}$ which is the pressure required for the system.

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

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.

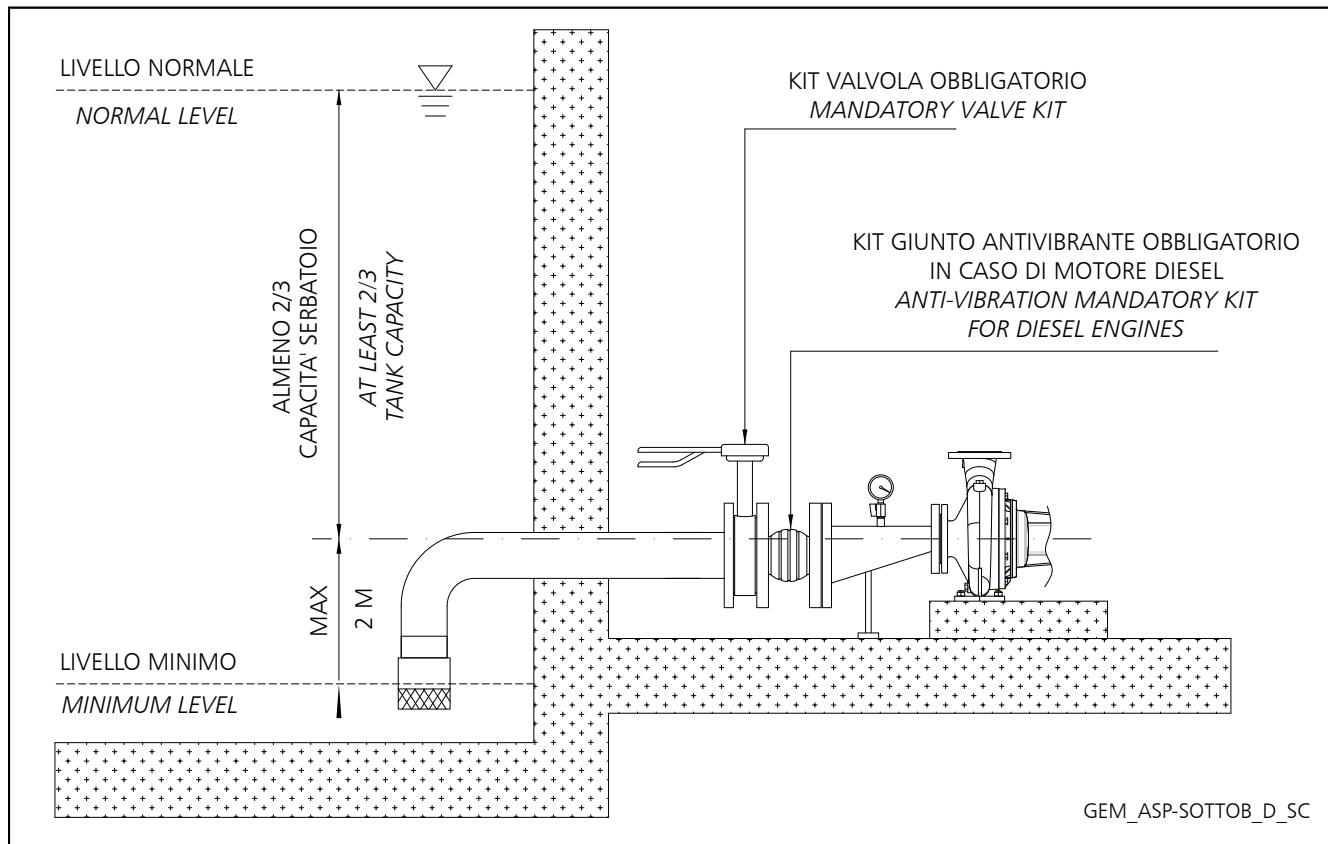


Fig. 2 positive suction head installation diagram

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.

$$\text{NPSH}_d \geq \text{NPSH}_r + 1$$

When selecting the type of pump to use for the pump set, 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:

The maximum requested flow is 76 m³/h (Q_m).

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

POSITIVE SUCTION HEAD INSTALLATION

Knowing the maximum flow rate required 76 m³/h, the head needed for the system eg. 35 m and considering to have a pump set with diesel engine (GEM..K), the group is selected according to the tables on [pag. 28-34](#) or the graphs on [pag. 75-97](#), verifying that the performance of the pump set is higher than the work point required by the system.

The version of the pump set that satisfies the required work point is GEM1K and the pump is NSC50-200/D201. At this point, the installation conditions (positive suction head) must be checked at the maximum required flow rate.

Starting from the usual relation given by the standard, $NPSH_d \geq NPSH_r + 1$, the following values are replaced:

$NPSH_r$ can be deduced from the table on [pag.83](#) which in this case is 3.8m **at the maximum flow**.

By replacing we will have (water temperature about 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 reduction cone, vibration-proof joint (since the group is GEM1K with diesel engine service pump) and on-off valve H_c (mandatory for positive suction head installation), as well as the pressure drops relative to all the suction piping, foot valve, elbows, etc...

For the required flow (see table on [pag. 105](#)), a DN65xDN125 suction cone is selected.

The value of H_c (of the vibration-proof joint DN125 and of the on-off valve DN125) at the maximum required flow of the selected pump, can be found in the diagram on [pag.99-100](#). The values found are 0,06+0,072=0,13 m. After entering it in the formula, we will have:

$$\Sigma H_{ct} = 0.13 + X$$

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:

$$10.33 + (0) - \Sigma H_{ct} = 3.8 + 1$$

$$10.33 + (0) - 0.13 - X = 3.8 + 1 \text{ which makes}$$

$$X = 5.4 \text{ m}$$

Consider the maximum value of total drops to on the inlet piping, in order to respect the conditions of the standard. The analyzed case was deliberately tested in neutral suction conditions which does not give benefits and does not optimize suction.

The designer must check and set the values to obtain the most efficient suction condition possible.

POSITIVE SUCTION HEAD INSTALLATION

Checking performance of the selected GEM pump set at maximum requested flow.

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

Taking the pressure value of the GEM1K pump set, the value corresponds to 44,5 m at the rated flow.

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

$H = 44,5 - 0,13 - 5,4 = \mathbf{39\ m} > \mathbf{35\ m}$ which is the pressure required for the system.

The value obtained satisfies the performance levels required for the system.

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC32

GEM		PN kW	Impeller Ø mm	Q=DELIVERY															
TYPE	NSCC			l/s 0 m3/h 0	1,9 7,0	2,8 10,0	3,6 13,0	4,4 16,0	5,3 19,0	6,1 22,0	6,9 25,0	7,8 28,0	8,6 31,0	9,4 34,0	10,3 37,0	11,1 40,0	11,9 43,0	12,3 44,4	
H = TOTAL HEAD METRES COLUMN OF WATER																			
2	32-125	1,5	123	17,9		17,6	16,8	15,6	14,1	12,2	10,0	7,4	4,3						
2	32-125	2,2	133	22,7		22,6	22,1	21,2	20,1	18,6	16,9	14,7	12,1	9,1	5,7	1,7			
2	32-125	3	145	27,7		28,3	27,8	27,0	25,9	24,5	22,8	20,8	18,4	15,7	12,5	9,0	5,1	3,1	
				l/s 0 m3/h 0	1,9 7,0	2,8 10,0	3,6 13,0	4,4 16,0	5,3 19,0	6,1 22,0	6,9 25,0	7,8 28,0	8,6 31,0	9,4 34,0	10,3 37,0	11,1 40,0	11,9 43,0	12,2 43,8	
2	32-160	2,2	132	22,5	22,3	21,8	21,1	20,0	18,5	16,4	13,8	10,4	6,2						
2	32-160	3	150	29,3		29,2	28,6	27,6	26,3	24,6	22,4	19,7	16,5	12,7	8,2				
2	32-160	4	160,5	34,4		34,7	34,3	33,6	32,4	30,9	28,8	26,3	23,2	19,7	15,6	11,1			
2	32-160	5,5	171	40,5		40,6	40,3	39,6	38,6	37,3	35,4	33,1	30,3	27,0	23,1	18,7	13,7	12,3	
				l/s 0 m3/h 0	1,9 7,0	2,5 9,0	3,1 11,0	3,6 13,0	4,2 15,0	4,7 17,0	5,3 19,0	5,8 21,0	6,4 23,0	6,9 25,0	7,5 27,0	8,1 29,0	8,6 31,0	10,8 38,8	
2	32-200	3	150	30,6	30,4	30,0	29,4	28,6	27,4	26,0	24,2	22,1	19,4	16,3	12,6	8,3			
2	32-200	4	171	40,2		39,7	39,3	38,7	37,9	37,0	35,7	34,2	32,3	30,1	27,3	24,1	20,2		
2	32-200	5,5	186	48,9		48,2	47,8	47,3	46,5	45,6	44,5	43,1	41,5	39,5	37,2	34,4	31,2		
2	32-200	7,5	198	58,2	58,6	58,1	57,5	56,6	55,6	54,4	53,1	51,5	49,7	47,7	45,3	42,6	39,4	21,0	
				l/s 0 m3/h 0	2,8 10,0	3,3 12,0	3,9 14,0	4,4 16,0	5,0 18,0	5,6 20,0	6,1 22,0	6,7 24,0	7,2 26,0	7,8 28,0	8,3 30,0	8,9 32,0	9,4 34,0	11,0 39,8	
2	32-250	7,5	208	53,3		51,6	50,4	48,9	47,1	44,9	42,2	39,0	35,1	30,3	24,4				
2	32-250	11	226,5	66,8			64,6	63,3	61,8	60,2	58,3	56,1	53,4	50,0	45,8	40,5	33,9		
2	32-250	11	239	76,0			73,9	72,4	70,8	69,1	67,1	64,9	62,4	59,4	55,8	51,5	46,2		
2	32-250	15	259	92,5				89,9	89,2	88,3	87,2	85,7	83,8	81,3	78,1	74,1	69,1	47,3	

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

12845_nsc32-2p50-en_b_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC40

GEM		PN kW	Impeller Ø mm	Q=DELIVERY															
TYPE	NSCC			l/s 0 m3/h 0	1,9 7,0	2,8 10,0	3,6 13,0	4,4 16,0	5,3 19,0	6,1 22,0	6,9 25,0	7,8 28,0	8,6 31,0	9,4 34,0	10,3 37,0	11,1 40,0	11,9 43,0	12,3 44,4	
H = TOTAL HEAD METRES COLUMN OF WATER																			
1	40-160	3	127	21,8	22,4	21,9	20,7	19,0	16,8	14,0	10,6	6,6							
2	40-160	3	127	21,8	22,8	22,7	22,1	21,1	19,7	17,8	15,5	12,7	9,4	5,6	1,3				
1	40-160	4	135	25,0		25,4	24,4	22,8	20,7	18,0	14,8	11,0							
2	40-160	4	135	25,0		26,2	25,7	24,9	23,6	21,9	19,7	17,1	14,1	10,6	6,6				
1	40-160	7,5	160	37,0		36,4	35,7	34,5	32,8	30,7	28,0	24,7							
2	40-160	7,5	160	37,0		37,2	37,0	36,5	35,7	34,5	32,9	30,9	28,4	25,7	22,7	19,4	16,0	12,2	
				l/s 0 m3/h 0	3,3 12,0	4,7 17,0	6,1 22,0	7,5 27,0	8,9 32,0	10,3 37,0	11,7 42,0	13,1 47,0	14,4 52,0	15,8 57,0	17,2 62,0	18,6 67,0	19,2 69,0	19,9 71,8	
1	40-200	5,5	158	32,0	31,8	31,0	29,5	27,3	24,2	19,9	14,2	6,8							
2	40-200	5,5	158	32,0	32,3	32,0	31,1	29,7	27,4	24,2	19,6	13,5	5,4						
1	40-200	7,5	174	41,3		40,7	39,4	37,6	35,0	31,5	27,0	21,0							
2	40-200	7,5	174	41,3		41,7	41,1	39,9	38,2	35,8	32,4	27,7	21,5	13,5	3,1				
1	40-200	11	184	44,6		44,5	43,3	41,7	39,6	36,8	32,9	27,5							
2	40-200	11	184	44,6		45,5	44,9	44,1	42,9	41,0	38,3	34,2	28,3	20,1	8,7				
1	40-200	11	199	56,1		55,9	54,9	53,5	51,5	49,0	45,7	41,5							
2	40-200	11	199	56,1		56,9	56,5	55,8	54,8	53,3	51,1	48,1	44,2	39,0	32,3	23,8	19,8	13,7	
				l/s 0 m3/h 0	4,2 15,0	5,3 19,0	6,4 23,0	7,5 27,0	8,6 31,0	9,7 35,0	10,8 39,0	11,9 43,0	13,1 47,0	14,2 51,0	15,3 55,0	16,4 59,0	17,5 63,0	20,1 72,5	
1	40-250	11	195	51,1		49,4	48,2	46,4	43,9	40,8	36,8	32,0	26,3						
2	40-250	11	195	51,1		50,7	49,9	48,7	47,0	44,6	41,5	37,7	33,0	27,5					
1	40-250	11	206	58,2		55,8	54,5	52,9	50,8	48,1	44,6	40,3	34,8						
2	40-250	11	206	58,2		57,0	56,3	55,3	53,9	51,9	49,3	45,9	41,5	35,9	29,0				
1	40-250	15	225	70,1			66,7	65,3	63,5	61,2	58,4	54,9	50,5						
2	40-250	15	225	70,1			68,5	67,7	66,6	65,1	63,1	60,5	57,2	53,0	47,6	41,1			
1	40-250	18,5	243	86,5			83,1	81,7	80,2	78,3	76,0	73,2	69,8						
2	40-250	18,5	243	86,5			84,8	84,1	83,3	82,1	80,7	78,9	76,5	73,5	69,6	64,8	58,7		
1	40-250	22	257,5	99,8				94,6	93,1	91,3	89,2	86,7	83,6						
2	40-250	22	257,5	99,8				97,0	96,2	95,2	93,9	92,3	90,3	87,7	84,5	80,4	75,4	58,4	

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

12845_nsc40-2p50-en_b_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC50

GEM		PN kW	Impeller Ø mm	Q=DELIVERY															
TYPE	NSCC			l/s 0 m3/h 0	5,3 19,0	7,5 27,0	9,7 35,0	11,9 43,0	14,2 51,0	16,4 59,0	18,6 67,0	20,8 75,0	23,1 83,0	25,3 91,0	27,5 99,0	29,7 107,0	31,9 115,0	34,1 122,9	
H = TOTAL HEAD METRES COLUMN OF WATER																			
1	50-200	11	163	32,3		32,4	31,7	30,3	28,1	25,2	21,4	16,7							
2	50-200	11	163	32,3		33,0	32,5	31,4	29,6	27,1	23,8	19,8	15,0	9,5					
1	50-200	11	172	39,2		39,4	38,7	37,2	35,0	31,8	27,8	22,9							
2	50-200	11	172	39,2		40,0	39,5	38,3	36,4	33,7	30,2	25,9	20,7	14,9	8,5				
1	50-200	15	195	50,8		50,8	50,1	48,9	46,9	44,1	40,4	35,9							
2	50-200	15	195	50,8		51,4	51,0	50,0	48,4	46,0	42,9	38,9	34,2	28,9	23,0	16,7	10,3		
1	50-200	18,5	201	58,6		57,5	56,6	55,4	53,7	51,5	48,6	45,1							
2	50-200	18,5	201	58,6		58,0	57,4	56,5	55,2	53,4	51,0	48,1	44,4	39,9	34,6	28,2	20,8	12,3	
				l/s 0 m3/h 0	5,0 18,0	7,2 26,0	9,4 34,0	11,7 42,0	13,9 50,0	16,1 58,0	18,3 66,0	20,6 74,0	22,8 82,0	25,0 90,0	27,2 98,0	29,4 106,0	31,7 114,0	35,1 126,3	
1	50-250	15	208	57,9		57,0	56,0	54,4	52,0	48,5	44,0	38,3							
2	50-250	15	208	57,9		57,6	56,8	55,5	53,4	50,4	46,4	41,3	35,1	28,0	20,2				
1	50-250	18,5	220	67,1		66,2	65,2	63,7	61,4	58,2	54,1	48,9							
2	50-250	18,5	220	67,1		66,7	66,0	64,8	62,8	60,1	56,4	51,8	46,0	39,1	31,0	21,6			
1	50-250	22	232	75,1		74,2	73,2	71,7	69,6	66,7	63,0	58,2							
2	50-250	22	232	75,1		74,7	74,0	72,8	71,1	68,6	65,3	61,1	55,8	49,3	41,6	32,5			
1	50-250	30	256	93,2		92,7	92,0	90,8	89,1	86,5	83,2	78,8							
2	50-250	30	256	93,2		93,2	92,8	91,9	90,5	88,4	85,5	81,8	77,1	71,4	64,6	56,6	47,5		
3	50-250	30	256	93,2		93,4	93,2	92,7	91,7	90,0	87,7	84,5	80,4	75,3	69,2	62,0	53,7	38,7	

Prestazioni idrauliche in conformità a ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_nsc50-2p50-en_b_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC65

GEM		PN kW	Impeller Ø mm	Q=DELIVERY																
TYPE	NSCC			l/s 0 m3/h 0	6,9 25,0	11,1 40,0	15,3 55,0	19,4 70,0	23,6 85,0	27,8 100,0	31,9 115,0	36,1 130,0	40,3 145,0	44,4 160,0	48,6 175,0	52,8 190,0	56,9 205,0	59,8 215,3		
H = TOTAL HEAD METRES COLUMN OF WATER																				
1	65-160	7,5	145	27,1		25,5	23,5	20,7	16,9	12,4	7,1									
2	65-160	7,5	145	27,1		26,2	25,0	23,1	20,5	17,2	13,4	9,3	5,0							
1	65-160	11	151	29,8		28,5	26,6	23,9	20,4	16,1	11,0									
2	65-160	11	151	29,8		29,2	28,1	26,4	24,0	20,9	17,3	13,1	8,6	4,0						
1	65-160	11	162	33,4		32,0	30,2	27,6	24,3	20,1	15,1									
2	65-160	11	162	33,4		32,7	31,7	30,1	27,9	24,9	21,4	17,3	12,7	7,8	2,7					
1	65-160	15	176	41,3		40,0	38,4	36,1	33,1	29,3	24,7									
2	65-160	15	176	41,3		40,7	39,9	38,6	36,7	34,1	31,0	27,3	23,0	18,2	13,1	7,7	2,2			
3	65-160	15	176	41,3		40,9	40,4	39,5	38,0	36,1	33,6	30,7	27,2	23,3	19,2	14,9	10,5			
1	65-160	18,5	180	44,7		43,3	41,7	39,4	36,5	32,9	28,6									
2	65-160	18,5	180	44,7		44,0	43,2	41,8	40,0	37,7	34,9	31,4	27,5	23,0	18,1	12,6	6,8			
3	65-160	18,5	180	44,7		44,2	43,6	42,7	41,4	39,7	37,5	34,8	31,7	28,1	24,1	19,8	15,2	11,9		
				l/s 0 m3/h 0	6,7 24,0	10,6 38,0	14,4 52,0	18,3 66,0	22,2 80,0	26,1 94,0	30,0 108,0	33,9 122,0	37,8 136,0	41,7 150,0	45,6 164,0	49,4 178,0	53,3 192,0	55,5 199,9		
1	65-200	11	165	36,4	36,1	34,9	32,8	29,8	25,7	20,5	14,3	7,0								
2	65-200	11	165	36,4	36,2	35,5	34,1	31,9	28,8	24,8	19,8	14,0	7,5							
1	65-200	15	177	43,2		42,1	40,4	37,8	34,2	29,6	24,0	17,2								
2	65-200	15	177	43,2		42,7	41,7	40,0	37,4	33,9	29,6	24,3	18,2	11,4						
1	65-200	18,5	189	49,9		48,7	47,0	44,5	41,2	37,0	31,8	25,4								
2	65-200	18,5	189	49,9		49,3	48,3	46,7	44,4	41,3	37,3	32,5	26,7	19,9	12,1					
1	65-200	22	199	55,9		54,8	53,2	50,9	47,8	43,8	38,7	32,7								
2	65-200	22	199	55,9		55,4	54,5	53,1	50,9	48,1	44,4	39,7	34,1	27,5	19,9	11,3				
1	65-200	30	220	70,2		68,8	67,2	65,1	62,3	58,9	54,7	49,6								
2	65-200	30	220	70,2		69,4	68,5	67,2	65,5	63,2	60,3	56,6	52,2	46,9	40,5	33,0	24,1	18,5		
				l/s 0 m3/h 0	7,5 27,0	11,9 43,0	16,4 59,0	20,8 75,0	25,3 91,0	29,7 107,0	34,2 123,0	38,6 139,0	43,1 155,0	47,5 171,0	51,9 187,0	56,4 203,0	60,8 219,0	64,3 231,5		
1	65-250	22	195	51,0	53,5	52,4	50,0	46,4	41,9	36,3	29,5									
2	65-250	22	195	51,0	53,6	53,2	51,7	49,2	45,9	41,8	36,7	30,5	23,0	13,7						
1	65-250	30	215	63,7		65,4	63,1	59,7	55,5	50,2	44,0									
2	65-250	30	215	63,7	66,5	66,2	64,8	62,5	59,5	55,7	51,1	45,5	38,7	30,4						
1	65-250	37	229	73,3		75,9	73,9	70,8	66,8	62,0	56,2									
2	65-250	37	229	73,3		76,8	75,6	73,6	70,9	67,5	63,4	58,5	52,6	45,5	36,7	25,8				
1	65-250	45	243	83,7		86,5	84,6	81,7	77,9	73,5	68,2									
2	65-250	45	243	83,7		87,3	86,3	84,5	82,0	79,0	75,4	71,1	65,9	59,5	51,6	41,5				
3	65-250	45	243	83,7		87,6	86,9	85,5	83,6	81,2	78,4	74,9	70,7	65,3	58,5	49,7				
1	65-250	55	258	98,5		98,4	96,6	93,9	90,4	86,1	80,9									
2	65-250	55	258	98,5		99,2	98,3	96,7	94,5	91,6	88,1	83,8	78,6	72,4	65,1	56,4				
3	65-250	55	258	98,5		99,5	98,9	97,7	96,1	93,9	91,1	87,6	83,4	78,3	72,0	64,6	55,7	47,6		
				l/s 0 m3/h 0	6,4 23,0	11,4 41,0	16,4 59,0	21,4 77,0	26,4 95,0	31,4 113,0	36,4 131,0	41,4 149,0	46,4 167,0	51,4 185,0	56,4 203,0	61,4 221,0	66,4 239,0	71,8 258,4		
1	65-315	55	270	102,0		100,6	97,8	93,2	87,0	79,5										
2	65-315	55	270	102,0		101,4	99,5	96,1	91,3	85,6	78,9	71,1	61,2	47,4	26,8					
3	65-315	55	270	102,0		101,6	100,1	97,2	93,1	88,1	82,3	75,5	66,7	54,2	35,0					
1	65-315	75	298	126,1		124,6	122,0	118,0	112,4	105,4										
2	65-315	75	298	126,1		125,4	123,8	120,9	116,8	111,5	105,2	97,9	89,4	79,3	66,8					
3	65-315	75	298	126,1		125,6	124,4	122,0	118,5	114,0	108,6	102,3	94,9	86,1	74,9	60,1	39,7			
1	65-315	90	315	142,4		140,6	138,3	134,5	129,3	122,5										
2	65-315	90	315	142,4		141,3	140,0	137,5	133,7	128,6	122,5	115,3	107,0	97,6	86,5					
3	65-315	90	315	142,4		141,5	140,6	138,6	135,5	131,2	125,9	119,7	112,6	104,4	94,6	82,6	66,8	43,8		

Prestazioni idrauliche in conformità a ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_nsc65-2p50_b_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC80

GEM		PN kW	Impeller Ø mm	Q=DELIVERY														
TYPE	NSCC			l/s 0 m3/h 0	12,2 44,0	17,8 64,0	23,3 84,0	28,9 104,0	34,4 124,0	40,0 144,0	45,6 164,0	51,1 184,0	56,7 204,0	62,2 224,0	67,8 244,0	73,3 264,0	78,9 284,0	83,1 299,1
H = TOTAL HEAD METRES COLUMN OF WATER																		
1	80-160	11	144	26,8	26,2	24,7	22,5	19,8	16,6	13,0	9,0	4,6						
2	80-160	11	144	26,8	26,4	25,4	23,9	22,0	19,7	17,1	14,3	11,3	8,2	5,0				
1	80-160	15	158	33,4		31,4	29,6	27,2	24,3	20,8	16,8	12,2	7,2					
2	80-160	15	158	33,4		32,1	31,0	29,4	27,4	24,9	22,1	18,9	15,4	11,7	7,9	4,1		
1	80-160	18,5	168	38,0		36,1	34,4	32,2	29,3	25,8	21,7	17,0	11,9					
2	80-160	18,5	168	38,0		36,9	35,8	34,3	32,3	29,9	27,0	23,8	20,2	16,3	12,3	8,3		
1	80-160	22	177	42,3		40,5	38,9	36,8	34,1	30,8	27,0	22,5	17,6					
2	80-160	22	177	42,3		41,2	40,3	38,9	37,1	34,9	32,3	29,3	25,8	22,1	18,0	13,7	9,3	6,0
				l/s 0 m3/h 0	13,3 48,0	19,4 70,0	25,6 92,0	31,7 114,0	37,8 136,0	43,9 158,0	50,0 180,0	56,1 202,0	62,2 224,0	68,3 246,0	74,4 268,0	80,6 290,0	86,7 312,0	91,1 327,8
1	80-200	22	181	43,5		42,2	40,4	37,7	34,1	29,6	24,4	18,4						
2	80-200	22	181	43,5		43,1	42,0	40,3	37,8	34,6	30,8	26,5	22,0	17,5	13,3			
1	80-200	30	195	52,1		50,7	49,2	46,8	43,7	39,5	34,5	28,7						
2	80-200	30	195	52,1		51,6	50,8	49,4	47,3	44,5	41,0	36,8	32,0	26,9	21,6	16,3		
1	80-200	37	208	60,5		58,8	57,1	54,7	51,5	47,6	42,9	37,3						
2	80-200	37	208	60,5		59,7	58,7	57,2	55,2	52,6	49,3	45,4	40,9	35,8	30,3	24,3		
3	80-200	37	208	60,5		59,9	59,1	57,9	56,2	53,9	51,0	47,6	43,6	39,1	34,2	28,9		
1	80-200	45	219	67,8		66,2	64,7	62,5	59,7	56,0	51,6	46,2						
2	80-200	45	219	67,8		67,1	66,3	65,1	63,3	61,0	58,0	54,3	50,0	45,1	39,5	33,4		
3	80-200	45	219	67,8		67,3	66,8	65,8	64,3	62,3	59,7	56,5	52,8	48,4	43,5	38,0	32,1	27,7
				l/s 0 m3/h 0	13,9 50,0	19,7 71,0	25,6 92,0	31,4 113,0	37,2 134,0	43,1 155,0	48,9 176,0	54,7 197,0	60,6 218,0	66,4 239,0	72,2 260,0	78,1 281,0	83,9 302,0	91,3 328,8
1	80-250	37	214	65,0		64,2	62,0	59,1	55,4	51,0	45,8	39,9						
2	80-250	37	214	65,0		65,1	63,7	61,7	59,0	55,8	52,0	47,6	42,7	37,1	31,0			
1	80-250	45	227	73,9		73,6	71,9	69,4	66,0	61,7	56,5	50,5						
2	80-250	45	227	73,9		74,5	73,6	71,9	69,5	66,4	62,6	58,2	53,2	47,8	42,1	36,3		
1	80-250	55	241	83,5		83,6	81,9	79,5	76,3	72,2	67,3	61,5						
2	80-250	55	241	83,5		84,5	83,6	82,0	79,8	77,0	73,4	69,2	64,4	59,0	53,1	46,8	40,2	
1	80-250	75	259	98,8		97,1	95,7	93,6	90,8	87,3	82,9	77,7						
2	80-250	75	259	98,8		98,0	97,3	96,1	94,4	92,1	89,1	85,4	80,9	75,8	70,0	63,6	56,7	
3	80-250	75	259	98,8		98,2	97,7	96,8	95,4	93,4	90,7	87,5	83,5	78,9	73,7	68,0	61,7	53,2
				l/s 0 m3/h 0	10,6 38,0	17,8 64,0	25,0 90,0	32,2 116,0	39,4 142,0	46,7 168,0	53,9 194,0	61,1 220,0	68,3 246,0	75,6 272,0	82,8 298,0	90,0 324,0	97,2 350,0	105,4 379,3
1	80-316	90	280	110,7	110,0	109,3	107,8	105,2	101,3	95,9	88,8							
2	80-316	90	280	110,7	110,2	110,0	109,4	107,9	105,3	101,5	96,2	89,6	81,7	72,7	62,9			
3	80-316	90	280	110,7	110,2	110,2	109,7	108,6	106,4	103,0	98,3	92,3	85,0	76,8	67,7			
1	80-316	110	298	124,9		124,0	122,6	120,3	117,0	112,4	106,3							
2	80-316	110	298	124,9		124,7	124,2	123,0	121,0	118,0	113,8	108,2	101,4	93,0	83,3			
3	80-316	110	298	124,9		124,8	124,6	123,7	122,1	119,5	115,8	110,8	104,6	97,1	88,2	78,2		
1	80-316	132	310	135,0		133,6	132,4	130,5	127,6	123,5	118,1							
2	80-316	132	310	135,0		134,3	134,0	133,1	131,6	129,1	125,5	120,7	114,5	106,9	98,0			
3	80-316	132	310	135,0		134,5	134,4	133,8	132,7	130,6	127,5	123,3	117,8	111,0	102,9	93,5	83,0	
1	80-316	160	321	145,9		144,7	143,4	141,5	138,6	134,5	129,2							
2	80-316	160	321	145,8		145,4	145,0	144,1	142,6	140,1	136,7	132,1	126,2	119,1	110,7			
3	80-316	160	321	145,8		145,6	145,4	144,8	143,6	141,6	138,7	134,7	129,5	123,2	115,6	106,7	96,7	84,0

Prestazioni idrauliche in conformità a ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_nsc80-2p50_a_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..N100

GEM		PN kW	Impeller Ø mm	Q=DELIVERY															
TYPE	NSCC			l/s 0 m3/h 0	11,1 40,0	18,1 65,0	25,0 90,0	31,9 115,0	38,9 140,0	45,8 165,0	52,8 190,0	59,7 215,0	66,7 240,0	73,6 265,0	80,6 290,0	87,5 315,0	94,4 340,0	102,7 369,9	
H = TOTAL HEAD METRES COLUMN OF WATER																			
1	100-160	15	144	25,0		24,6	23,9	22,9	21,5	19,6	17,4	14,6	11,4	7,8	3,7				
2	100-160	15	144	25,0		24,8	24,3	23,6	22,5	21,1	19,3	17,1	14,5	11,6	8,3	4,7			
1	100-160	18,5	156	29,4		28,6	28,1	27,3	26,0	24,3	22,1	19,4	16,2	12,4	8,3				
2	100-160	18,5	156	29,4		28,8	28,5	27,9	27,1	25,8	24,1	21,9	19,3	16,3	12,9	9,2			
1	100-160	22	167	34,1		33,1	32,5	31,6	30,4	28,6	26,4	23,7	20,5	16,7	12,5				
2	100-160	22	167	34,1		33,2	32,9	32,3	31,4	30,1	28,4	26,2	23,6	20,5	17,1	13,3			
1	100-160	30	187	44,1		42,5	41,7	40,7	39,4	37,8	35,7	33,3	30,3	26,9	22,9				
2	100-160	30	187	44,1		42,7	42,1	41,4	40,4	39,2	37,7	35,8	33,5	30,7	27,5	23,8	19,5	13,7	
				l/s 0 m3/h 0	11,4 41,0	18,9 68,0	26,4 95,0	33,9 122,0	41,4 149,0	48,9 176,0	56,4 203,0	63,9 230,0	71,4 257,0	78,9 284,0	86,4 311,0	93,9 338,0	101,4 365,0	110,0 395,9	
1	100-200	30	188	46,5	45,8	45,4	44,6	43,3	41,3	38,5	35,0	30,7	25,7	20,0					
2	100-200	30	188	46,5	45,8	45,6	45,1	44,1	42,5	40,2	37,2	33,6	29,3	24,4	19,0	13,2	6,9		
1	100-200	37	202	53,9		53,0	52,4	51,3	49,6	47,2	44,1	40,1	35,4	29,9					
2	100-200	37	202	53,9		53,2	52,8	52,1	50,8	48,9	46,3	43,0	39,0	34,3	29,0	23,2	16,8		
1	100-200	45	213	60,2		59,2	58,7	57,8	56,4	54,2	51,3	47,7	43,2	38,0					
2	100-200	45	213	60,2		59,4	59,1	58,6	57,5	55,9	53,6	50,5	46,8	42,4	37,4	31,7	25,5		
1	100-200	55	227	69,2		68,5	67,8	66,7	65,2	63,1	60,5	57,2	53,2	48,5					
2	100-200	55	227	69,2		68,7	68,3	67,5	66,4	64,8	62,7	60,1	56,8	52,9	48,3	43,0	36,9	29,1	
				l/s 0 m3/h 0	11,4 41,0	20,6 74,0	29,7 107,0	38,9 140,0	48,1 173,0	57,2 206,0	66,4 239,0	75,6 272,0	84,7 305,0	93,9 338,0	103,1 371,0	112,2 404,0	121,4 437,0	128,9 464,1	
1	100-250	45	213	59,1	58,7	58,3	57,5	56,1	53,6	50,1	45,5	39,7	32,8						
2	100-250	45	213	59,1	58,7	58,6	58,1	57,1	55,2	52,4	48,6	43,7	37,9	31,3	24,3	17,0	9,8		
1	100-250	55	227	68,3		67,6	66,9	65,4	63,2	59,9	55,6	50,2	43,8						
2	100-250	55	227	68,3		67,9	67,4	66,5	64,8	62,2	58,8	54,3	48,9	42,5	35,4	27,7	19,5		
3	100-250	55	227	68,3		68,2	67,9	67,2	65,8	63,6	60,6	56,6	51,8	46,1	39,7	32,7	25,4	19,4	
1	100-250	75	249	82,7		82,3	81,6	80,3	78,2	75,3	71,4	66,4	60,4						
2	100-250	75	249	82,7		82,6	82,2	81,3	79,8	77,6	74,5	70,5	65,5	59,6	52,8	45,1	36,7		
3	100-250	75	249	82,7		82,9	82,7	82,0	80,8	79,0	76,3	72,8	68,4	63,1	57,0	50,2	42,6		
1	100-250	90	259	90,1		89,6	88,8	87,5	85,4	82,5	78,6	73,7	67,8						
2	100-250	90	259	90,1		89,8	89,4	88,5	87,0	84,8	81,7	77,8	72,9	67,0	60,2	52,4	43,8		
3	100-250	90	259	90,1		90,1	89,9	89,2	88,0	86,2	83,5	80,1	75,7	70,5	64,4	57,5	49,8		
				l/s 0 m3/h 0	15,8 57,0	25,6 92,0	35,3 127,0	45,0 162,0	54,7 197,0	64,4 232,0	74,2 267,0	83,9 302,0	93,6 337,0	103,3 372,0	113,1 407,0	122,8 442,0	132,5 477,0	143,9 518,2	
1	100-316	132	286	116,6	116,0	115,3	113,9	111,6	108,3	104,1	98,9	92,7							
2	100-316	132	286	116,6	116,1	115,7	114,7	113,0	110,4	107,0	102,8	97,7	91,4	83,5	73,5	60,1			
3	100-316	132	286	116,6	116,3	116,1	115,3	113,9	111,7	108,7	105,0	100,5	94,9	87,8	78,6	66,2	49,1	20,7	

Prestazioni idrauliche in conformità a ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_nsc100-2p50_b_th

HYDRAULIC PERFORMANCE TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC125

GEM		PN kW	Impeller Ø mm	Q=DELIVERY															
TYPE	NSCC			I/s 0	25,0	38,3	51,7	65,0	78,3	91,7	105,0	118,3	131,7	145,0	158,3	171,7	185,0	196,9	
				m3/h 0	90,0	138,0	186,0	234,0	282,0	330,0	378,0	426,0	474,0	522,0	570,0	618,0	666,0	708,9	
H = TOTAL HEAD METRES COLUMN OF WATER																			
1	125-200	55	195	42,3	42,8	42,6	41,9	40,7	38,9	36,4	33,2	29,1							
2	125-200	55	195	42,3	43,1	43,2	43,0	42,5	41,4	39,8	37,6	34,7	31,0	26,4	20,9	14,4	6,8		
1	125-200	75	215	55,1		54,0	53,3	52,2	50,6	48,4	45,4	41,5							
2	125-200	75	215	55,1		54,7	54,4	53,9	53,1	51,8	49,8	47,1	43,7	39,3	34,2	28,3	21,9	16,0	
1	125-200	90	225	61,8		60,7	59,8	58,7	57,1	54,9	52,0	48,3							
2	125-200	90	225	61,8		61,3	61,0	60,4	59,6	58,3	56,5	53,9	50,6	46,4	41,4	35,8	29,9		
				I/s 0	23,9	39,4	55,0	70,6	86,1	101,7	117,2	132,8	148,3	163,9	179,4	195,0	210,6	224,5	
				m3/h 0	86,0	142,0	198,0	254,0	310,0	366,0	422,0	478,0	534,0	590,0	646,0	702,0	758,0	808,0	
1	125-315	110	250	84,0		82,8	81,1	77,8	72,4	64,8	54,9								
2	125-315	110	250	84,0		83,5	82,4	79,8	75,4	69,0	60,4	49,6	36,8	22,3	6,5				
1	125-315	132	265	96,8		95,7	94,1	91,3	86,7	80,1	71,2								
2	125-315	132	265	96,8		96,4	95,4	93,3	89,7	84,3	76,7	66,9	54,6	39,8	22,4				
3	125-315	132	265	96,8		96,5	95,8	93,9	90,6	85,6	78,5	69,2	57,5	43,3	26,6				
1	125-315	160	280	109,8		108,8	107,5	105,1	101,3	95,6	87,7								
2	125-315	160	280	109,8		109,6	108,8	107,1	104,2	99,7	93,2	84,4	73,1	59,2	42,8	24,1			
1	125-315	200	290	118,9		118,0	116,8	114,7	111,3	106,2	99,0								
2	125-315	200	290	118,9		118,7	118,1	116,8	114,3	110,3	104,5	96,5	86,0	72,9	57,3	39,2	18,9		
3	125-315	200	290	118,9		118,9	118,5	117,4	115,2	111,7	106,3	98,7	88,8	76,4	61,4	44,0	24,6	5,9	

Prestazioni idrauliche in conformità a ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

12845_nsc125-2p50-en_b_th

ELECTRICAL DATA TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC32-65

DUTY PUMP				JOCKEY PUMP			CURRENT (*) ABSORBED BY SETS								
							1x230V	3x400V				3x400V + 1x230V			
TYPE NSC			3x400V			3x400V	GEMK	GEM	GEM..J	GEM + GEM	GEM..J + GEM	KIT PIL + GEMK	GEM + GEMK	GEM..J + GEMK	
ELECTRICPUMP NSCC	PUMP NSC	Pn kW	In A	TYPE	Pn kW	In A	A	A	A	A	A	A	A	A	
32-125/15	32-125/D123	1,5	3,0	1SV08	0,5	1,4	3,0	3,0	4,4	5,9	7,3	4,4	6,0	7,4	
32-125/22	32-125/D133	2,2	4,6	1SV08	0,5	1,4	3,0	4,6	6,0	9,2	10,6	4,4	7,6	9,0	
32-125/30	32-125/D145	3	5,8	1SV08	0,5	1,4	3,0	5,8	7,3	11,7	13,1	4,4	8,8	10,3	
32-160/22X	32-160/D132	2,2	4,6	1SV08	0,5	1,4	3,0	4,6	6,0	9,1	10,6	4,4	7,6	9,0	
32-160/30	32-160/D150	3	5,8	1SV08	0,5	1,4	3,0	5,8	7,3	11,7	13,1	4,4	8,8	10,3	
32-160/40	32-160/D160,5	4	7,6	1SV08	0,5	1,4	3,0	7,6	9,0	15,1	16,6	4,4	10,6	12,0	
32-160/55	32-160/D171	5,5	10,6	1SV10	0,5	1,4	3,0	10,6	12,0	21,2	22,6	4,4	13,6	15,0	
32-200/30X	32-200/D150	3	5,8	1SV08	0,5	1,4	3,0	5,8	7,3	11,7	13,1	4,4	8,8	10,3	
32-200/40	32-200/D171	4	7,6	1SV10	0,5	1,4	3,0	7,6	9,0	15,1	16,6	4,4	10,6	12,0	
32-200/55	32-200/D186	5,5	10,6	1SV10	0,5	1,4	3,0	10,6	12,0	21,2	22,6	4,4	13,6	15,0	
32-200/75X	32-200/D198	7,5	14,1	1SV12	0,75	1,7	3,0	14,1	15,8	28,2	29,9	4,7	17,1	18,8	
32-250/75X	32-250/D208	7,5	14,1	1SV12	0,75	1,7	3,0	14,1	15,8	28,2	29,9	4,7	17,1	18,8	
32-250/110A	32-250/D226,5	11	19,6	1SV15	0,75	1,7	3,0	19,6	21,3	39,2	40,9	4,7	22,6	24,3	
32-250/110	32-250/D239	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
32-250/150	32-250/D259	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
40-160/30	40-160/D127	3	5,8	1SV17	1,1	2,4	3,0	5,8	8,2	11,7	14,1	5,4	8,8	11,2	
40-160/40X	40-160/D135	4	7,6	1SV17	1,1	2,4	3,0	7,6	10,0	15,1	17,5	5,4	10,6	13,0	
40-160/75X	40-160/D160	7,5	14,1	1SV17	1,1	2,4	3,0	14,1	16,5	28,2	30,6	5,4	17,1	19,5	
40-200/55X	40-200/D158	5,5	10,6	1SV17	1,1	2,4	3,0	10,6	13,0	21,2	23,6	5,4	13,6	16,0	
40-200/75X	40-200/D174	7,5	14,1	1SV17	1,1	2,4	3,0	14,1	16,5	28,2	30,6	5,4	17,1	19,5	
40-200/110X	40-200/D184	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
40-200/110	40-200/D199	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
40-250/110X	40-250/D195	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
40-250/110X1	40-250/D206	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
40-250/150X	40-250/D225	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
40-250/185	40-250/D243	18,5	33,0	1SV17	1,1	2,4	3,0	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
40-250/220	40-250/D257,5	22	38,2	1SV17	1,1	2,4	3,0	38,2	40,6	76,4	78,8	5,4	41,2	43,6	
50-200/110X	50-200/D163	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
50-200/110X1	50-200/D172	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
50-200/150X	50-200/D195	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
50-200/185X	50-200/D201	18,5	33,0	1SV17	1,1	2,4	3,0	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
50-250/150	50-250/D208	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
50-250/185	50-250/D220	18,5	33,0	1SV17	1,1	2,4	3,0	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
50-250/220	50-250/D232	22	38,2	1SV17	1,1	2,4	3,0	38,2	40,6	76,4	78,8	5,4	41,2	43,6	
50-250/300	50-250/D256	30	52,7	1SV17	1,1	2,4	3,0	52,7	55,1	105,4	107,8	5,4	55,7	58,1	
65-160/75	65-160/D145	7,5	14,1	1SV17	1,1	2,4	3,0	14,1	16,5	28,2	30,6	5,4	17,1	19,5	
65-160/110A	65-160/D151	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
65-160/110	65-160/D162	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
65-160/150	65-160/D176	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
65-160/185	65-160/D180	18,5	33,0	1SV17	1,1	2,4	3,0	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
65-200/110	65-200/D165	11	19,6	1SV17	1,1	2,4	3,0	19,6	22,0	39,2	41,6	5,4	22,6	25,0	
65-200/150	65-200/D177	15	20,6	1SV17	1,1	2,4	3,0	20,6	23,0	41,2	43,6	5,4	23,6	26,0	
65-200/185	65-200/D189	18,5	33,0	1SV17	1,1	2,4	3,0	33,0	35,4	66,0	68,4	5,4	36,0	38,4	
65-200/220	65-200/D199	22	38,2	1SV17	1,1	2,4	3,0	38,2	40,6	76,4	78,8	5,4	41,2	43,6	
65-200/300	65-200/D220	30	52,7	1SV17	1,1	2,4	3,0	52,7	55,1	105,4	107,8	5,4	55,7	58,1	
65-250/220	65-250/D195	22	38,2	1SV17	1,1	2,4	3,0	38,2	40,6	76,4	78,8	5,4	41,2	43,6	
65-250/300	65-250/D215	30	52,7	1SV17	1,1	2,4	3,0	52,7	55,1	105,4	107,8	5,4	55,7	58,1	
65-250/370	65-250/D229	37	64,0	1SV17	1,1	2,4	3,0	64,0	66,4	128,0	130,4	5,4	67,0	69,4	
65-250/450	65-250/D243	45	75,9	1SV17	1,1	2,4	3,0	75,9	78,3	151,8	154,2	5,4	78,9	81,3	
65-250/550	65-250/D258	55	92,5	1SV17	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9	
65-315/550X	65-315/D270	55	92,5	1SV19	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9	
65-315/750	65-315/D298	75	128,0	1SV22	1,1	2,4	3,0	128,0	130,4	256,0	258,4	5,4	131,0	133,4	
65-315/900	65-315/D315	90	152,0	1SV25	1,5	3,2	3,0	152,0	155,2	304,0	307,2	6,2	155,0	158,2	

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

MOD_EN-NSC32-65_2p50-en_c_te

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

ELECTRICAL DATA TABLE AT 50 Hz

EN 12845 FIRE-FIGHTING PUMP SET GEM SERIES..NSC80-125

DUTY PUMP				JOCKEY PUMP			CURRENT (*) ABSORBED BY SETS							
TYPE NSC		Pn kW	In A	TYPE	Pn kW	In A	1x230V	3x400V				3x400 + 1x230V		
ELECTRICPUMP NSCC	PUMP NSC						GEMK A	GEM A	GEM..J A	GEM + GEM A	GEM..J + GEM A	KIT PIL + GEMK A	GEM + GEMK A	GEM..J + GEMK A
80-160/110	80-160/D144	11	19,6	1SV08	0,5	1,4	3,0	19,6	21,0	39,2	40,6	4,4	22,6	24,0
80-160/150	80-160/D158	15	26,6	1SV08	0,5	1,4	3,0	26,6	28,0	53,2	54,6	4,4	29,6	31,0
80-160/185	80-160/D168	18,5	32,7	1SV08	0,5	1,4	3,0	32,7	34,1	65,4	66,8	4,4	35,7	37,1
80-160/220	80-160/D177	22	38,2	1SV10	0,5	1,4	3,0	38,2	39,6	76,4	77,8	4,4	41,2	42,6
80-200/220	80-200/D181	22	38,2	1SV10	0,5	1,4	3,0	38,2	39,6	76,4	77,8	4,4	41,2	42,6
80-200/300	80-200/D195	30	52,7	1SV12	0,75	1,7	3,0	52,7	54,4	105,4	107,1	4,7	55,7	57,4
80-200/370	80-200/D208	37	64,0	1SV12	0,75	1,7	3,0	64,0	65,7	128,0	129,7	4,7	67,0	68,7
80-200/450	80-200/D219	45	75,9	1SV15	0,75	1,7	3,0	75,9	77,6	151,8	153,5	4,7	78,9	80,6
80-250/370	80-250/D214	37	64,0	1SV15	0,75	1,7	3,0	64,0	65,7	128,0	129,7	4,7	67,0	68,7
80-250/450	80-250/D227	45	75,9	1SV15	0,75	1,7	3,0	75,9	77,6	151,8	153,5	4,7	78,9	80,6
80-250/550	80-250/D241	55	92,5	1SV17	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9
80-250/750	80-250/D259	75	128,0	1SV17	1,1	2,4	3,0	128,0	130,4	256,0	258,4	5,4	131,0	133,4
80-316/900	80-316/D280	90	152,0	1SV17	1,1	2,4	3,0	152,0	154,4	304,0	306,4	5,4	155,0	157,4
80-316/1100	80-316/D298	110	185,0	1SV17	1,1	2,4	3,0	185,0	187,4	370,0	372,4	5,4	188,0	190,4
80-316/1320	80-316/D310	132	222,0	1SV17	1,1	2,4	3,0	222,0	224,4	444,0	446,4	5,4	225,0	227,4
80-316/1600	80-316/D321	160	265,0	1SV17	1,1	2,4	3,0	265,0	267,4	530,0	532,4	5,4	268,0	270,4
100-160/150	100-160/D144	15	26,6	1SV17	1,1	2,4	3,0	26,6	29,0	53,2	55,6	5,4	29,6	32,0
100-160/185	100-160/D156	18,5	32,7	1SV17	1,1	2,4	3,0	32,7	35,1	65,4	67,8	5,4	35,7	38,1
100-160/220	100-160/D167	22	38,2	1SV17	1,1	2,4	3,0	38,2	40,6	76,4	78,8	5,4	41,2	43,6
100-160/300	100-160/D187	30	52,7	1SV17	1,1	2,4	3,0	52,7	55,1	105,4	107,8	5,4	55,7	58,1
100-200/300	100-200/D188	30	52,7	1SV17	1,1	2,4	3,0	52,7	55,1	105,4	107,8	5,4	55,7	58,1
100-200/370	100-200/D202	37	64,0	1SV17	1,1	2,4	3,0	64,0	66,4	128,0	130,4	5,4	67,0	69,4
100-200/450	100-200/D213	45	75,9	1SV17	1,1	2,4	3,0	75,9	78,3	151,8	154,2	5,4	78,9	81,3
100-200/550	100-200/D227	55	92,5	1SV17	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9
100-250/450	100-250/D213	45	75,9	1SV17	1,1	2,4	3,0	75,9	78,3	151,8	154,2	5,4	78,9	81,3
100-250/550	100-250/D227	55	92,5	1SV17	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9
100-250/750	100-250/D249	75	128,0	1SV17	1,1	2,4	3,0	128,0	130,4	256,0	258,4	5,4	131,0	133,4
100-250/900	100-250/D259	90	152,0	1SV17	1,1	2,4	3,0	152,0	154,4	304,0	306,4	5,4	155,0	157,4
100-316/1320	100-316/D286	132	222,0	1SV17	1,1	2,4	3,0	222,0	224,4	444,0	446,4	5,4	225,0	227,4
125-200/550	125-200/D195	55	92,5	1SV17	1,1	2,4	3,0	92,5	94,9	185,0	187,4	5,4	95,5	97,9
125-200/750	125-200/D215	75	128,0	1SV17	1,1	2,4	3,0	128,0	130,4	256,0	258,4	5,4	131,0	133,4
125-200/900	125-200/D225	90	152,0	1SV17	1,1	2,4	3,0	152,0	154,4	304,0	306,4	5,4	155,0	157,4
125-315/1100	125-315/D250	110	185,0	1SV17	1,1	2,4	3,0	185,0	187,4	370,0	372,4	5,4	188,0	190,4
125-315/1320	125-315/D265	132	222,0	1SV17	1,1	2,4	3,0	222,0	224,4	444,0	446,4	5,4	225,0	227,4
125-315/1600	125-315/D280	160	265,0	1SV19	1,1	2,4	3,0	265,0	267,4	530,0	532,4	5,4	268,0	270,4
125-315/2000	125-315/D290	200	335,0	1SV22	1,1	2,4	3,0	335,0	337,4	670,0	672,4	5,4	338,0	340,4

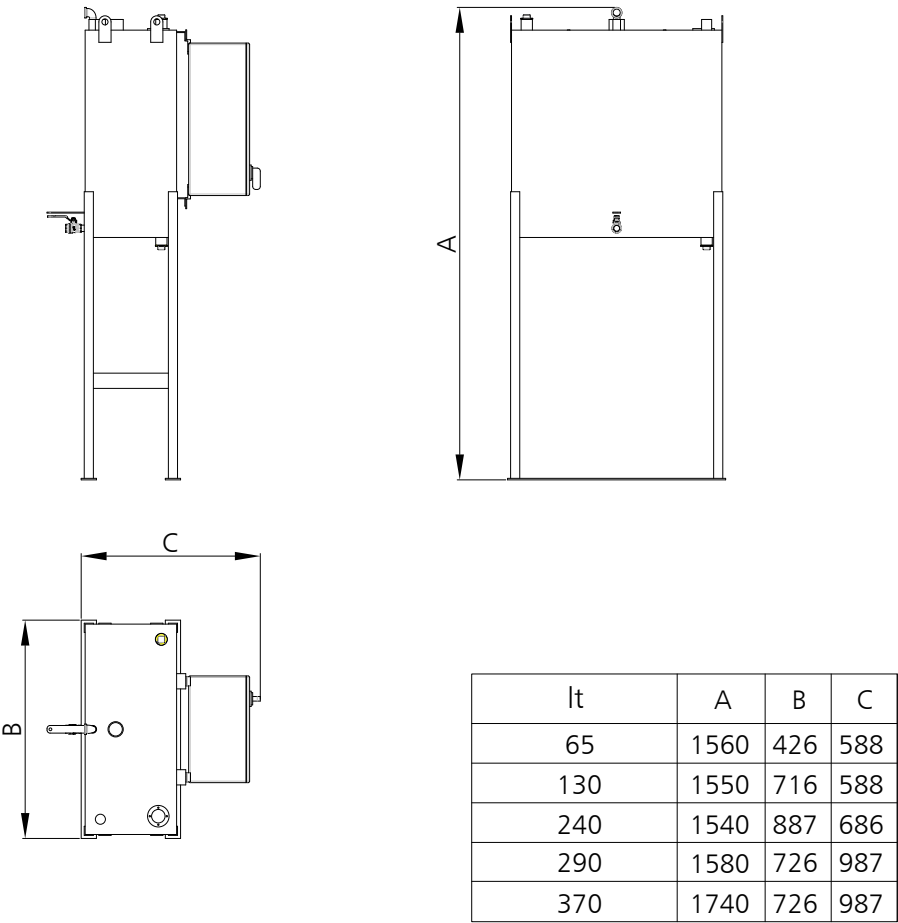
(*) The current indicated is the maximum current absorbed.

MOD_EN-NSC80-125_2p50-en_c_te

At the set composed by 3x400V three-phase power supply series GEM, GEM..J adding the control panel current of the pump set

GEMK at single phase power supply 1x230Vac

GEM..K TANK DIMENSIONS



SERB_D_DD

GEMK PUMP SET AND TANK COMBINATION

GEMK	TANK CAPACITY (l)	
	DIESEL ENGINE COOLING	
	AIR	WC
N32-125/D123	65	65
N32-125/D133	65	65
N32-125/D145	65	65
N32-160/D132	65	65
N32-160/D150	65	65
N32-160/D160,5	65	65
N32-160/D171	65	65
N32-200/D150	65	65
N32-200/D171	65	65
N32-200/D186	65	65
N32-200/D198	65	65
N32-250/D208	65	65
N32-250/D226,5	65	65
N32-250/D239	65	65
N32-250/D259	65	65
N40-160/D127	65	65
N40-160/D135	65	65
N40-160/D160	65	65
N40-200/D158	65	65
N40-200/D174	65	65
N40-200/D184	65	65
N40-200/D199	65	65
N40-250/D195	65	65
N40-250/D206	65	65
N40-250/D225	65	65
N40-250/D243	65	65
N40-250/D257,5	65	65
N50-200/D163	65	65
N50-200/D172	65	65
N50-200/D195	65	65
N50-200/D201	65	65
N50-250/D208	65	65
N50-250/D220	65	65
N50-250/D232	65	65
N50-250/D256	130	130
N65-160/D145	65	65
N65-160/D151	65	65
N65-160/D162	65	65
N65-160/D176	65	65
N65-160/D180	65	65
N65-200/D165	65	65
N65-200/D177	65	65
N65-200/D189	65	65
N65-200/D199	65	65
N65-200/D220	130	130

GEMK	TANK CAPACITY (l)	
	DIESEL ENGINE COOLING	
	AIR	WC
N65-250/D195	65	65
N65-250/D215	130	130
N65-250/D229	130	130
N65-250/D243	130	130
N65-250/D258	130	130
N65-315/D270	130	130
N65-315/D298	240	290
N65-315/D315	240	290
N80-160/D144	65	65
N80-160/D158	65	65
N80-160/D168	65	65
N80-160/D177	65	65
N80-200/D181	65	65
N80-200/D195	130	130
N80-200/D208	130	130
N80-200/D219	130	130
N80-250/D214	130	130
N80-250/D227	130	130
N80-250/D241	130	130
N80-250/D259	240	290
N80-316/D280	240	290
N80-316/D298	370	290
N80-316/D310	370	290
N80-316/D321	370	290
N100-160/D144	65	65
N100-160/D156	65	65
N100-160/D167	65	65
N100-160/D187	130	130
N100-200/D188	130	130
N100-200/D202	130	130
N100-200/D213	130	130
N100-200/D227	130	130
N100-250/D213	130	130
N100-250/D227	130	130
N100-250/D249	240	290
N100-250/D259	240	290
N100-316/D286	370	290
N125-200/D195	130	130
N125-200/D215	240	290
N125-200/D225	240	290
N125-315/D250	370	290
N125-315/D265	370	290
N125-315/D280	370	290
N125-315/D290	370	370

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**EN 12845
fire-fighting
pressure pump
set**

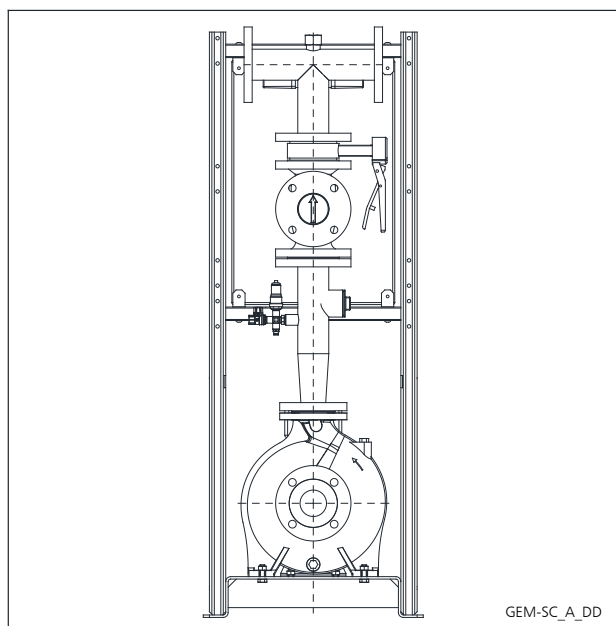
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

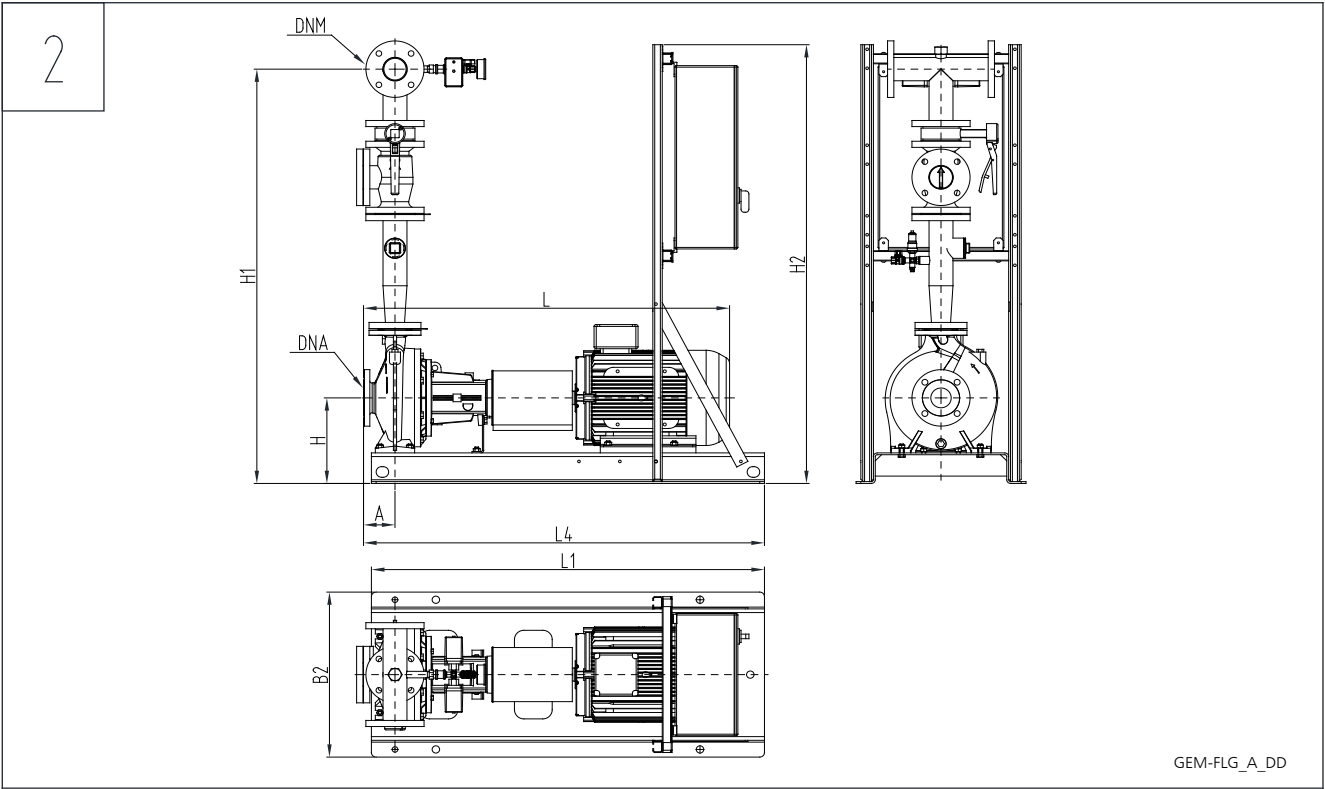
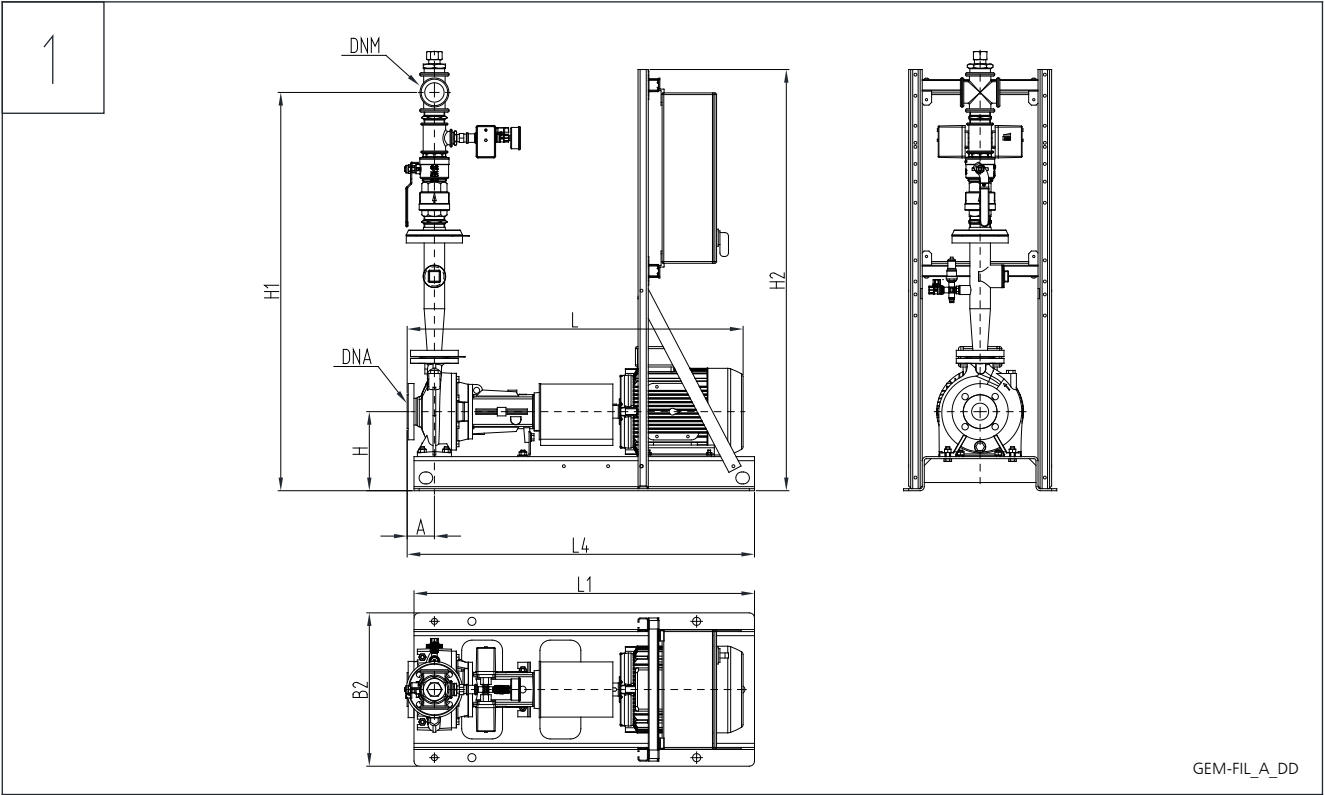
**GEM ..NSCC series
Electric service pump set**



SPECIFICATIONS

- **Flow:** up to 800 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Electric service pump 3 x 400 Vac $\pm 10\%$.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:**
 - 24 Vac.
- **Control panel protection grade:**
 - Electric service 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 200 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

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



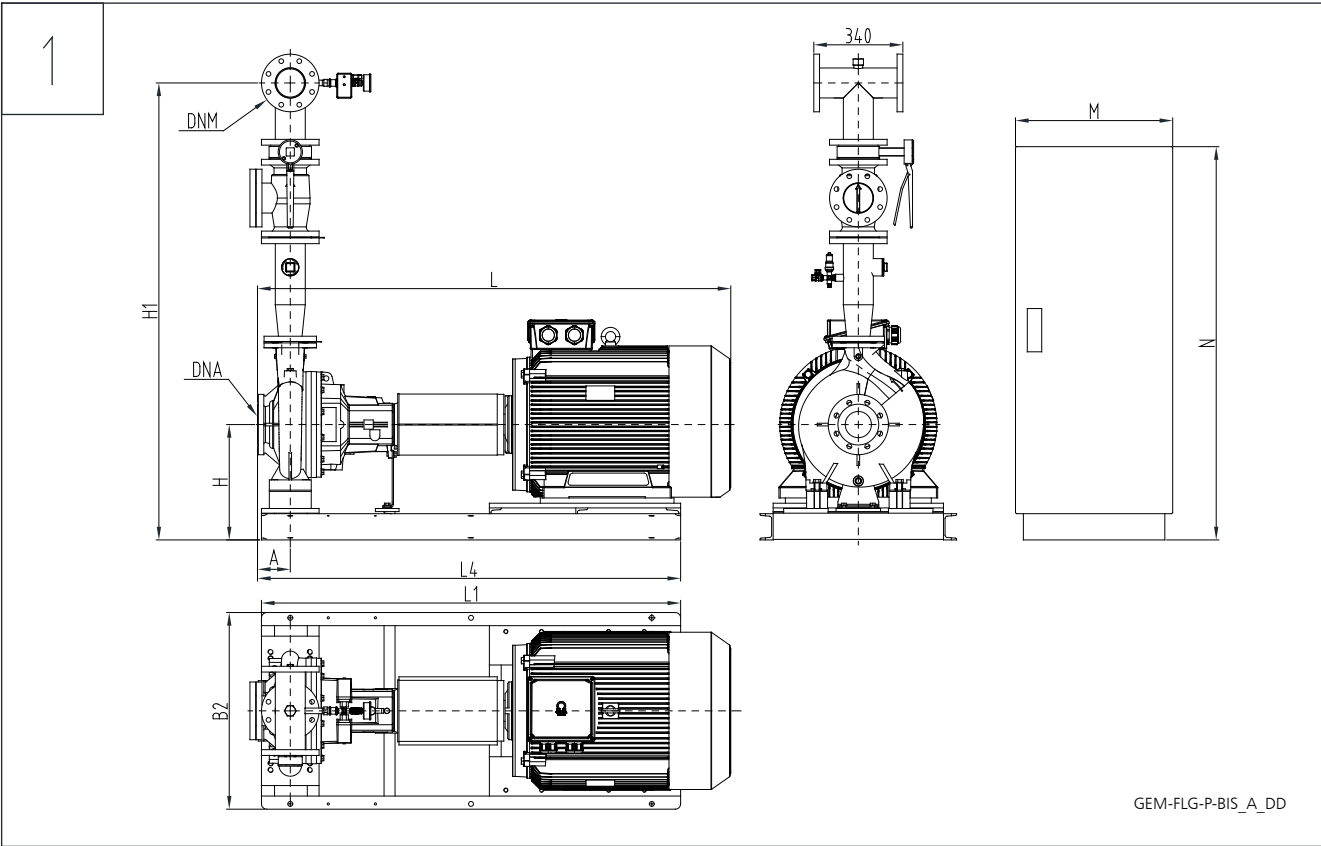
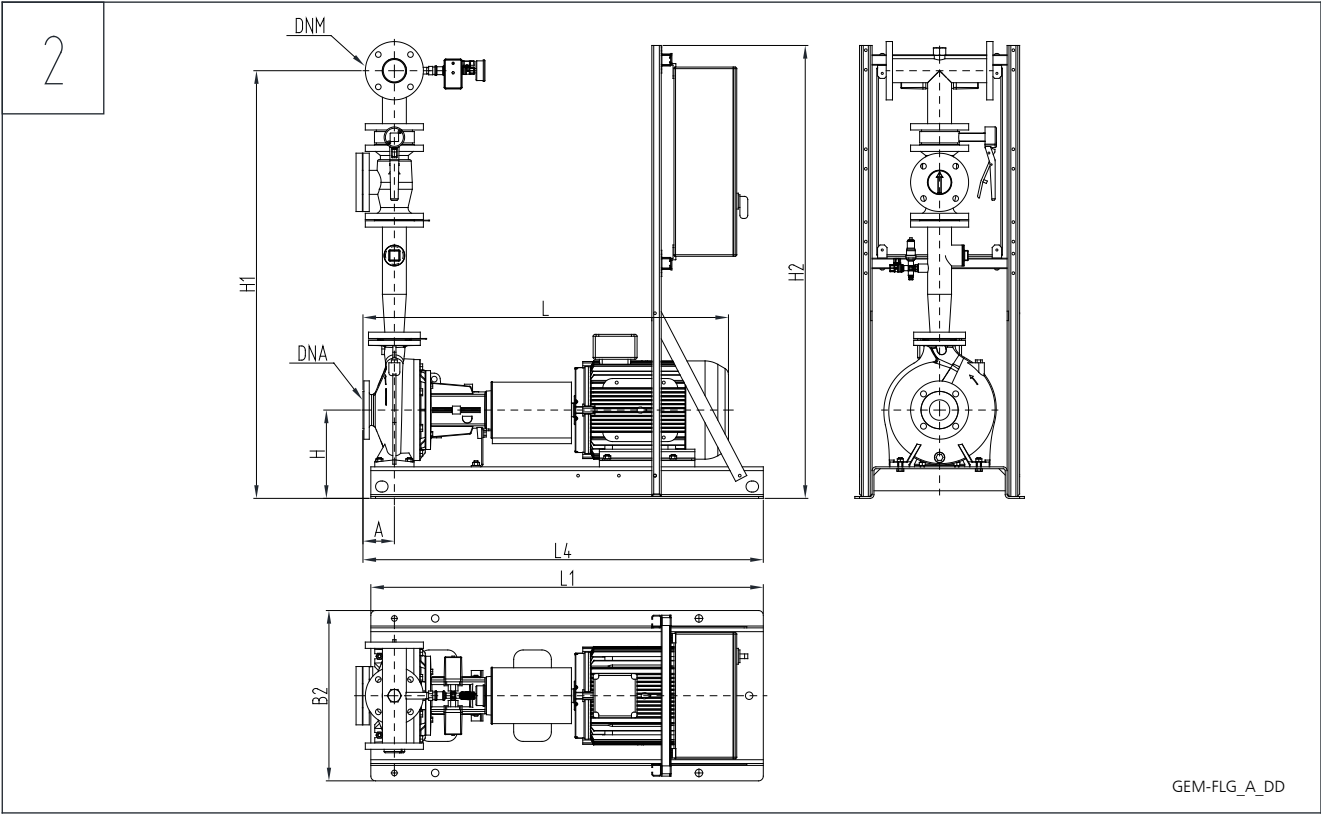
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..NSCC32-40 SERIES

GEM	DRW N°		DNA	DNM		A	B2	H	H1		H2	L	L1	L4
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2				
N32-125/15	/	1	50	/	Rp2"	80	390	212	/	1129	1236	888	900	920
N32-125/22	/	1	50	/	Rp2"	80	390	212	/	1129	1236	888	900	920
N32-125/30	/	1	50	/	Rp2"	80	390	212	/	1129	1236	919	900	920
N32-160/22X	/	1	50	/	Rp2"	80	390	232	/	1169	1236	888	900	920
N32-160/30	/	1	50	/	Rp2"	80	390	232	/	1169	1236	919	900	920
N32-160/40	/	1	50	/	Rp2"	80	390	232	/	1169	1236	922	900	920
N32-160/55	/	1	50	/	Rp2"	80	450	232	/	1169	1236	987	1000	1020
N32-200/30X	/	1	50	/	Rp2"	80	390	260	/	1217	1236	919	900	920
N32-200/40	/	1	50	/	Rp2"	80	390	260	/	1217	1236	922	900	920
N32-200/55	/	1	50	/	Rp2"	80	450	260	/	1217	1236	987	1000	1020
N32-200/75X	/	1	50	/	Rp2"	80	450	260	/	1217	1436	987	1000	1020
N32-250/75X	/	1	50	/	Rp2"	100	490	280	/	1282	1436	1007	1120	1145
N32-250/110A	/	1	50	/	Rp2"	100	540	280	/	1282	1436	1164	1250	1275
N32-250/110	/	1	50	/	Rp2"	100	540	280	/	1282	1436	1164	1250	1275
N32-250/150	/	1	50	/	Rp2"	100	540	280	/	1282	1436	1164	1250	1275
N40-160/30	1	2	65	Rp2"	65	80	390	232	1174	1233	1236	919	900	920
N40-160/40X	1	2	65	Rp2"	65	80	390	232	1174	1233	1236	922	900	920
N40-160/75X	1	2	65	Rp2"	65	80	450	232	1174	1233	1436	987	1000	1020
N40-200/55X	1	2	65	Rp2"	65	100	450	260	1222	1281	1436	1007	1000	1040
N40-200/75X	1	2	65	Rp2"	65	100	450	260	1222	1281	1436	1007	1000	1040
N40-200/110X	1	2	65	Rp2"	65	100	490	260	1222	1281	1436	1164	1120	1160
N40-200/110	1	2	65	Rp2"	65	100	490	260	1222	1281	1436	1164	1120	1160
N40-250/110X	1	2	65	Rp2"	65	100	540	280	1287	1346	1436	1164	1250	1275
N40-250/110X1	1	2	65	Rp2"	65	100	540	280	1287	1346	1436	1164	1250	1275
N40-250/150X	1	2	65	Rp2"	65	100	540	280	1287	1346	1436	1164	1250	1275
N40-250/185	1	2	65	Rp2"	65	100	540	280	1287	1346	1436	1164	1250	1275
N40-250/220	1	2	65	Rp2"	65	100	540	280	1287	1346	1436	1261	1250	1275

gem_nsc32-40_a_td

Dimensions in mm. Tolerance ± 10 mm.

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



EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..NSCC50-80 SERIES

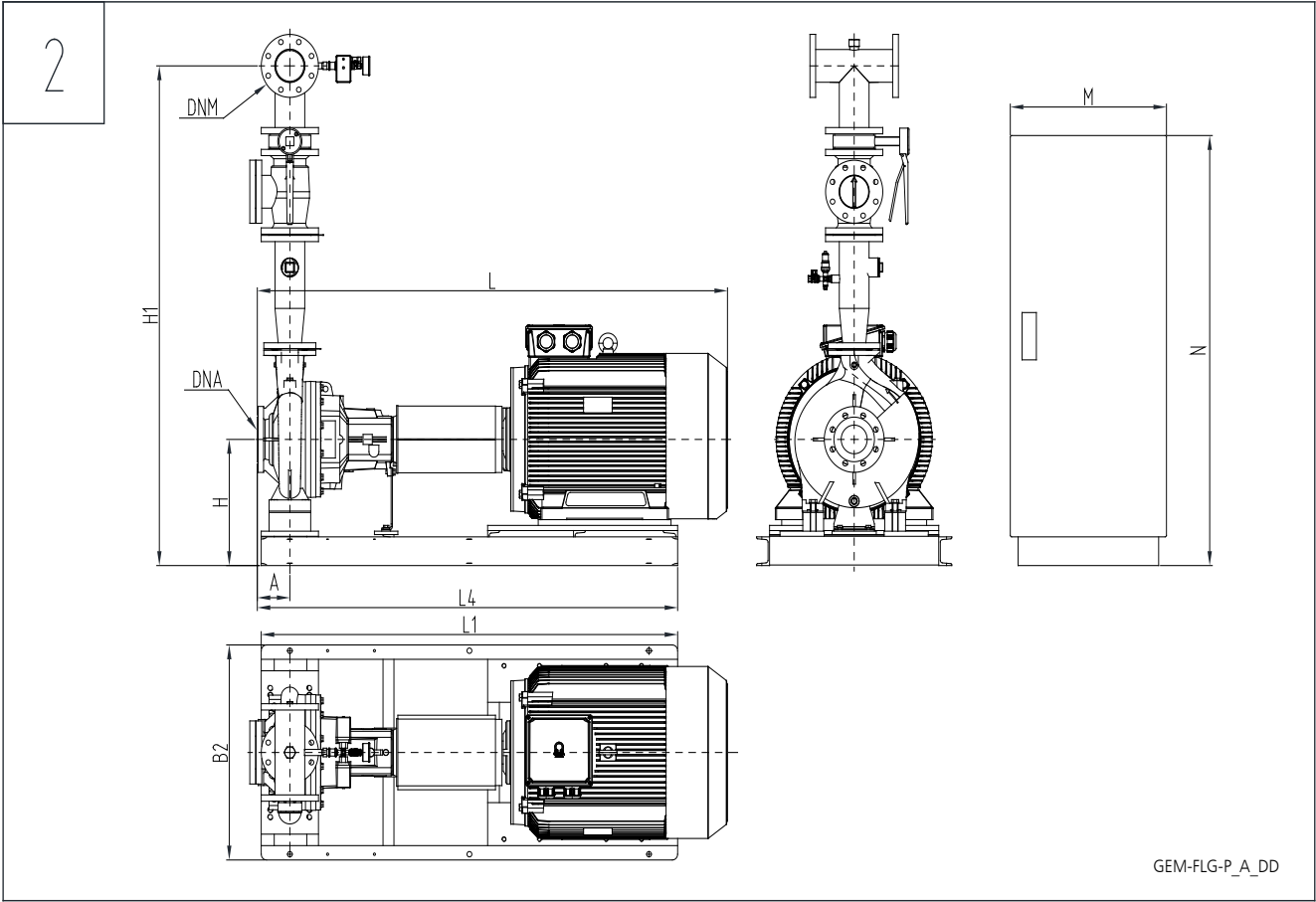
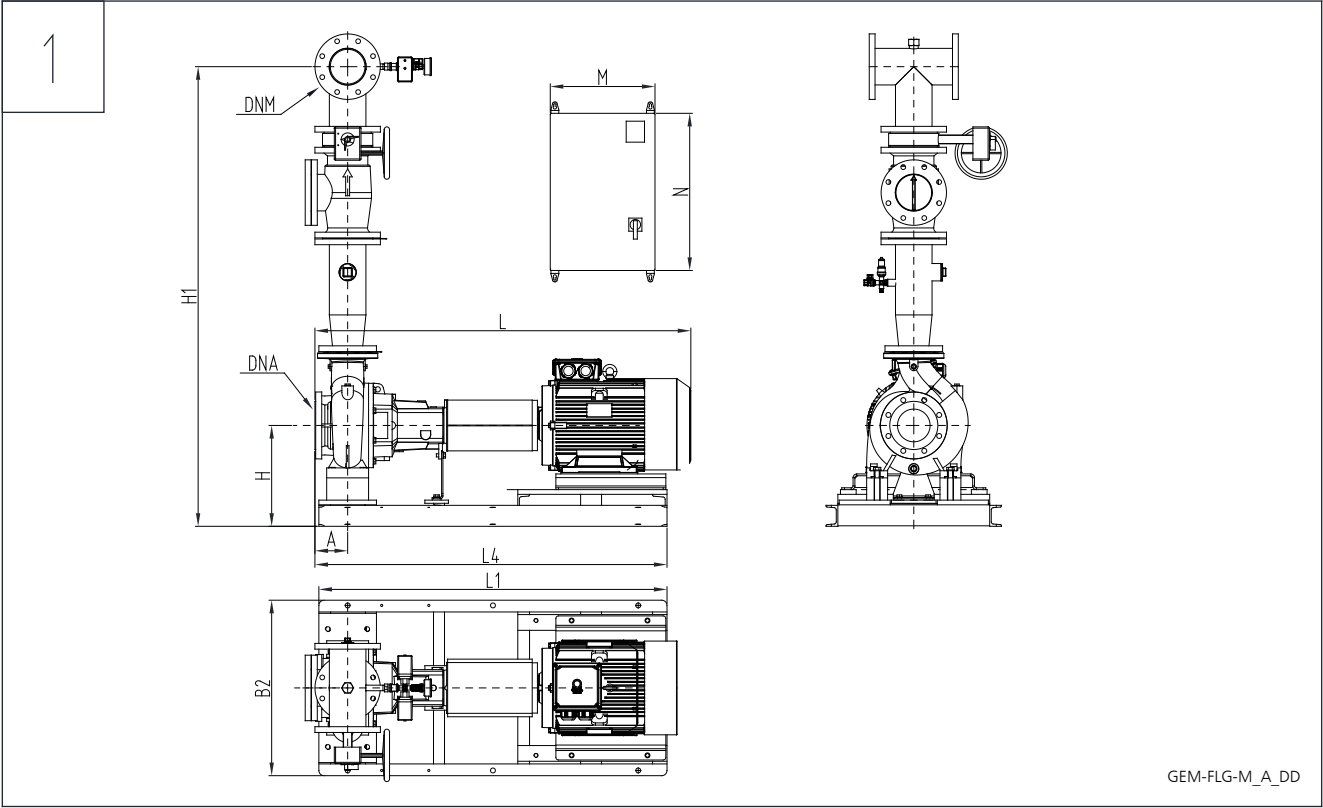
GEM	DRW N°	DNA	DNM		A	B2	H	H1		H2	L	L1	L4	M	N
			GEM1	GEM2				GEM1	GEM2						
N50-200/110X	2	65	65	80	100	490	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/110X1	2	65	65	80	100	490	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/150X	2	65	65	80	100	490	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/185X	2	65	65	80	100	490	260	1311	1382	1436	1164	1120	1160	/	/
N50-250/150	2	65	65	80	100	540	280	1356	1427	1436	1164	1250	1275	/	/
N50-250/185	2	65	65	80	100	540	280	1356	1427	1436	1164	1250	1275	/	/
N50-250/220	2	65	65	80	100	540	280	1356	1427	1436	1161	1250	1275	/	/
N50-250/300	2	65	65	80	100	610	310	1386	1457	1836	1341	1400	1425	/	/
N65-160/75	2	80	80	100	100	490	260	1387	1438	1436	1007	1120	1145	/	/
N65-160/110A	2	80	80	100	100	540	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/110	2	80	80	100	100	540	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/150	2	80	80	100	100	540	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/185	2	80	80	100	100	540	260	1387	1438	1436	1164	1250	1275	/	/
N65-200/110	2	80	80	100	100	540	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/150	2	80	80	100	100	540	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/185	2	80	80	100	100	540	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/220	2	80	80	100	100	540	280	1432	1483	1436	1301	1250	1275	/	/
N65-200/300	2	80	80	100	100	610	310	1462	1513	1836	1381	1400	1425	/	/
N65-250/220	2	80	80	100	100	540	310	1487	1538	1436	1411	1250	1260	/	/
N65-250/300	2	80	80	100	100	610	310	1487	1538	1836	1491	1400	1410	/	/
N65-250/370	2	80	80	100	100	610	310	1487	1538	1836	1521	1400	1410	/	/
N65-250/450	2	80	80	100	100	610	365	1542	1593	1836	1521	1400	1410	/	/
N65-250/550	2	80	80	100	100	660	390	1567	1618	1837	1617	1600	1610	/	/
N65-315/550X	1*	80	80	100	125	750	405	1612	1663	/	1642	1550	1565	500	700
N65-315/750	1	80	80	100	125	750	390	1597	1648	/	1747	1550	1565	600	1500
N65-315/900	1	80	80	100	125	750	390	1597	1648	/	1747	1550	1565	600	1500
N80-160/110	2	100	100	125	125	540	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/150	2	100	100	125	125	540	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/185	2	100	100	125	125	540	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/220	2	100	100	125	125	540	280	1493	1585	1436	1326	1250	1300	/	/
N80-200/220	2	100	100	125	125	540	280	1518	1610	1436	1436	1250	1300	/	/
N80-200/300	2	100	100	125	125	610	310	1548	1640	1836	1516	1400	1450	/	/
N80-200/370	2	100	100	125	125	610	310	1548	1640	1836	1516	1400	1450	/	/
N80-200/450	2	100	100	125	125	610	365	1603	1695	1836	1545	1400	1450	/	/
N80-250/370	2	100	100	125	125	610	310	1578	1670	1836	1516	1400	1435	/	/
N80-250/450	2	100	100	125	125	610	365	1633	1725	1836	1545	1400	1435	/	/
N80-250/550	2	100	100	125	125	660	390	1658	1750	1837	1641	1600	1635	/	/
N80-250/750	1	100	100	125	125	730	420	1688	1780	/	1746	1800	1835	600	1500
N80-316/900	1	100	100	125	125	750	440	1743	1835	/	1806	1600	1615	600	1500
N80-316/1100	1	100	100	125	125	860	505	1808	1900	/	1806	1850	1865	600	1500
N80-316/1320	1	100	100	125	125	860	505	1808	1900	/	1920	1850	1865	800	1700
N80-316/1600	1	100	100	125	125	860	505	1808	1900	/	1920	1850	1865	800	1700

gem_nsc50-80_a_td

Dimensions in mm. Tolerance ± 10 mm.

* electric control panel for service pump and wall-mounted pilot, 2 support bracket kits on request.

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



EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..NSCC100-125 SERIES

GEM	DRW N°	DNA	DNM		A	B2	H	H1		L	L1	L4	M	N
			GEM1	GEM2				GEM1	GEM2					
N100-160/150	1	125	125	150	125	670	365	1735	1816	1339	1330	1345	400	600
N100-160/185	1	125	125	150	125	670	365	1735	1816	1339	1330	1345	400	600
N100-160/220	1	125	125	150	125	670	385	1755	1836	1436	1330	1345	400	600
N100-160/300	1	125	125	150	125	560	330	1700	1781	1516	1350	1365	500	700
N100-200/300	1	125	125	150	125	560	330	1700	1781	1516	1350	1365	500	700
N100-200/370	1	125	125	150	125	560	330	1700	1781	1516	1350	1365	500	700
N100-200/450	1	125	125	150	125	560	355	1725	1806	1545	1350	1365	500	700
N100-200/550	1	125	125	150	125	750	405	1775	1856	1641	1550	1565	500	700
N100-250/450	1	125	125	150	140	560	355	1725	1806	1560	1350	1380	500	700
N100-250/550	1	125	125	150	140	750	405	1775	1856	1656	1550	1580	500	700
N100-250/750	2	125	125	150	140	750	390	1760	1841	1761	1550	1580	600	1500
N100-250/900	2	125	125	150	140	750	390	1760	1841	1761	1550	1580	600	1500
N100-316/1320	2	125	125	150	140	860	505	1910	1991	1935	1850	1880	800	1700
N125-200/550	1	150	150	200	140	750	405	1906	2062	1656	1550	1580	500	700
N125-200/750	2	150	150	200	140	750	405	1906	2062	1761	1550	1580	600	1500
N125-200/900	2	150	150	200	140	750	405	1906	2062	1761	1550	1580	600	1500
N125-315/1100	2	150	150	200	140	860	505	2046	2202	1821	1850	1880	600	1500
N125-315/1320	2	150	150	200	140	860	505	2046	2202	1935	1850	1880	800	1700
N125-315/1600	2	150	150	200	140	860	505	2046	2202	1935	1850	1880	800	1700
N125-315/2000	2	150	150	200	140	860	505	2046	2202	2085	1850	1880	800	1700

gem_nsc100-125_a_td

Dimensions in mm. Tolerance ± 10 mm.

Up to 55 kW wall-mounted electrical control panels for service and jockey pumps, on request 2 kit with support bracket.

Over 55 kW electric control panels for service pumps on the floor.

**EN 12845
fire-fighting
pressure pump
set**

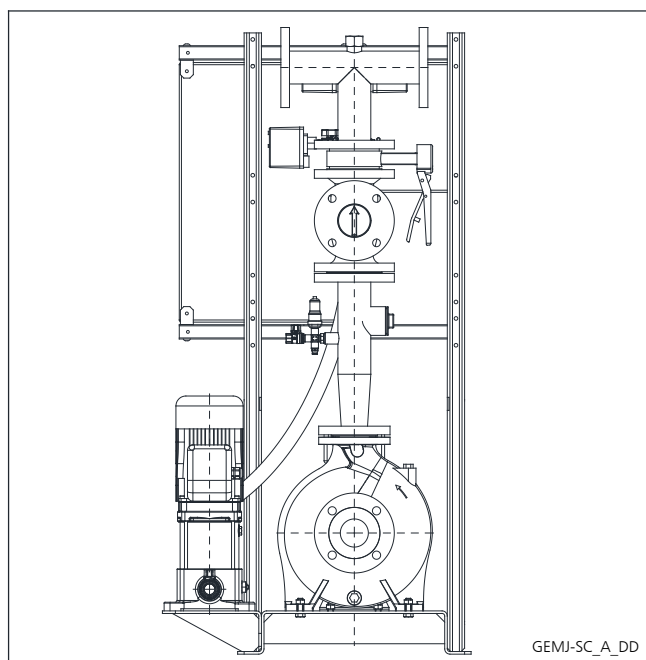
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

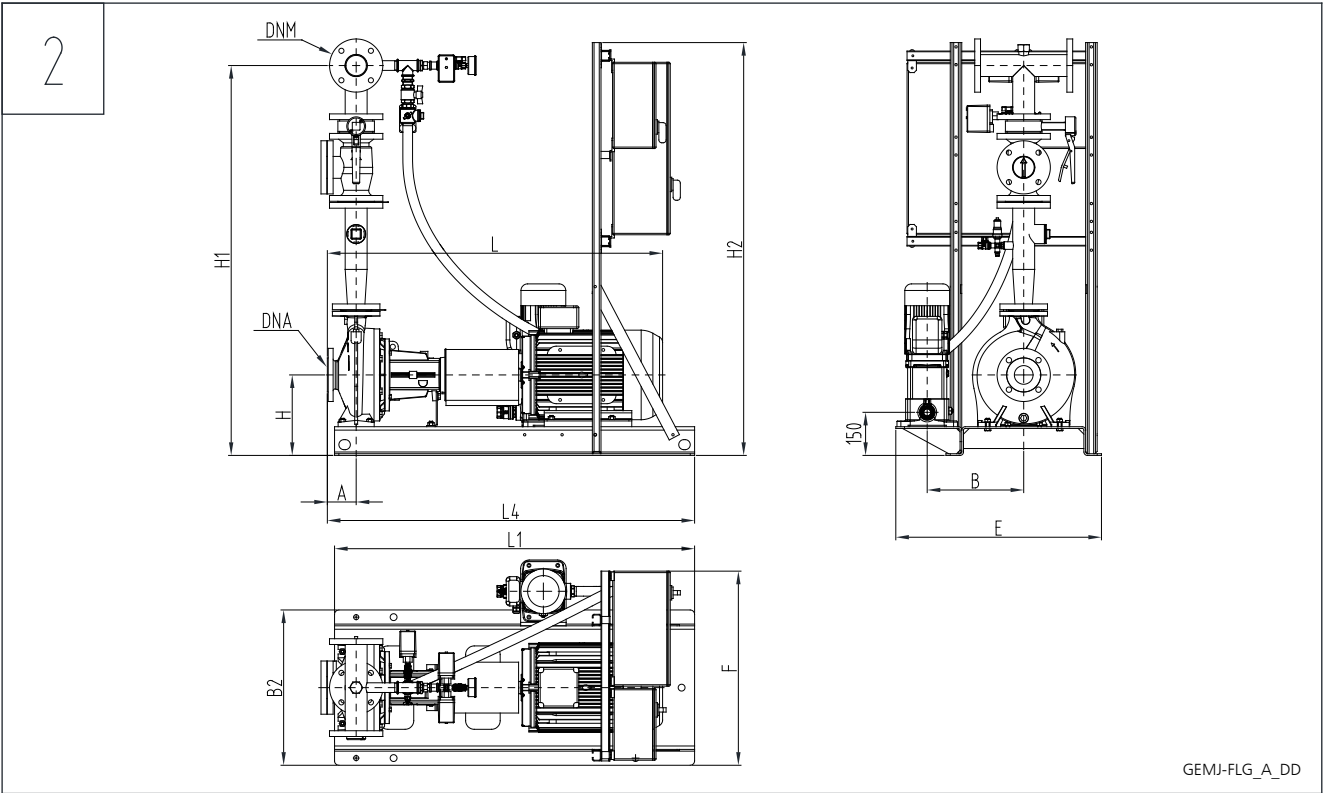
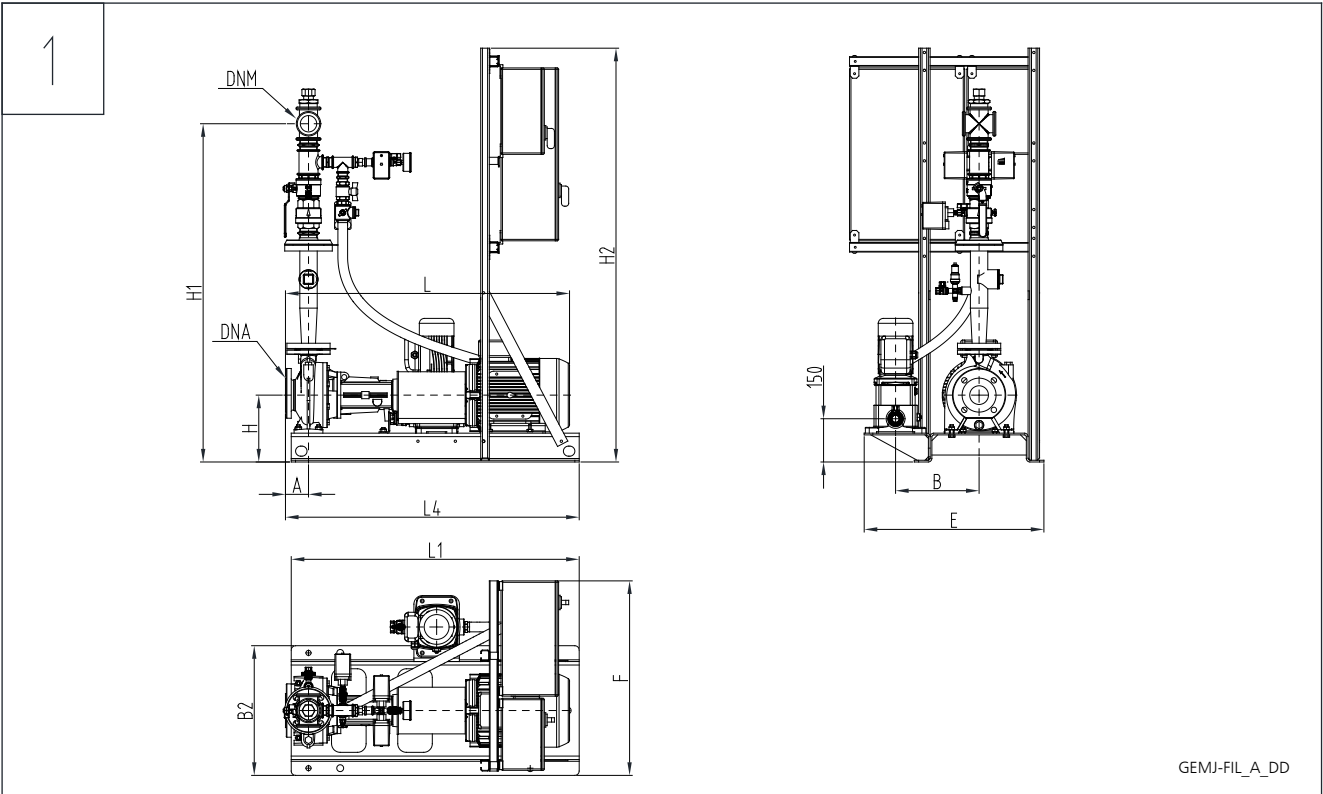
**GEM..J..NSCC series
Single electric service pump set,
with jockey pump on board**



SPECIFICATIONS

- **Flow:** up to 800 m³/h
- **Head:** up to 146 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:** 24 Vac.
- **Control panel protection grade:**
 - Electric service pump IP55.
 - 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 200 kW.
- **Horizontal electric service pump:**
 - NSCC series (motor protection grade IP55).
- **Vertical jockey pump:**
 - 1SV series version T (motor protection grade IP55).
- **Maximum operating pressure:** 16 bar.

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



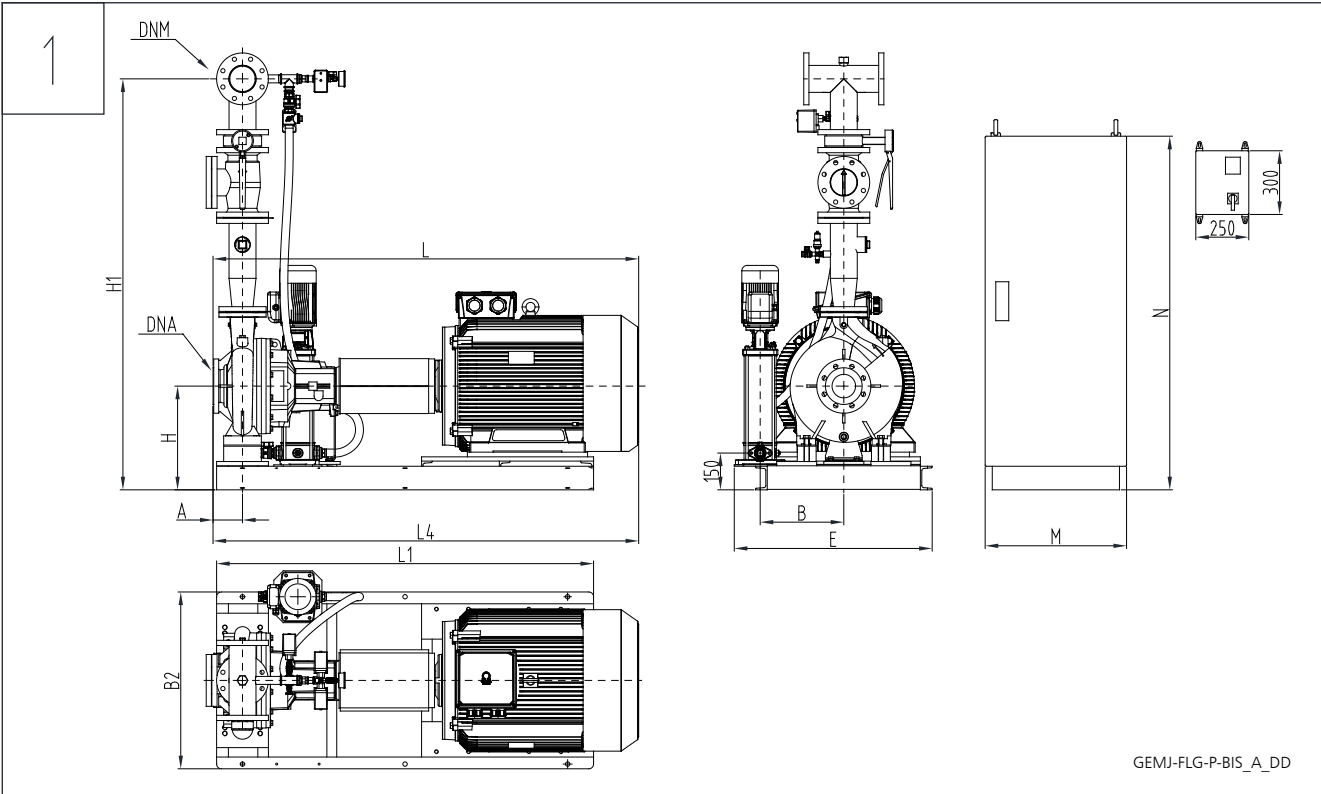
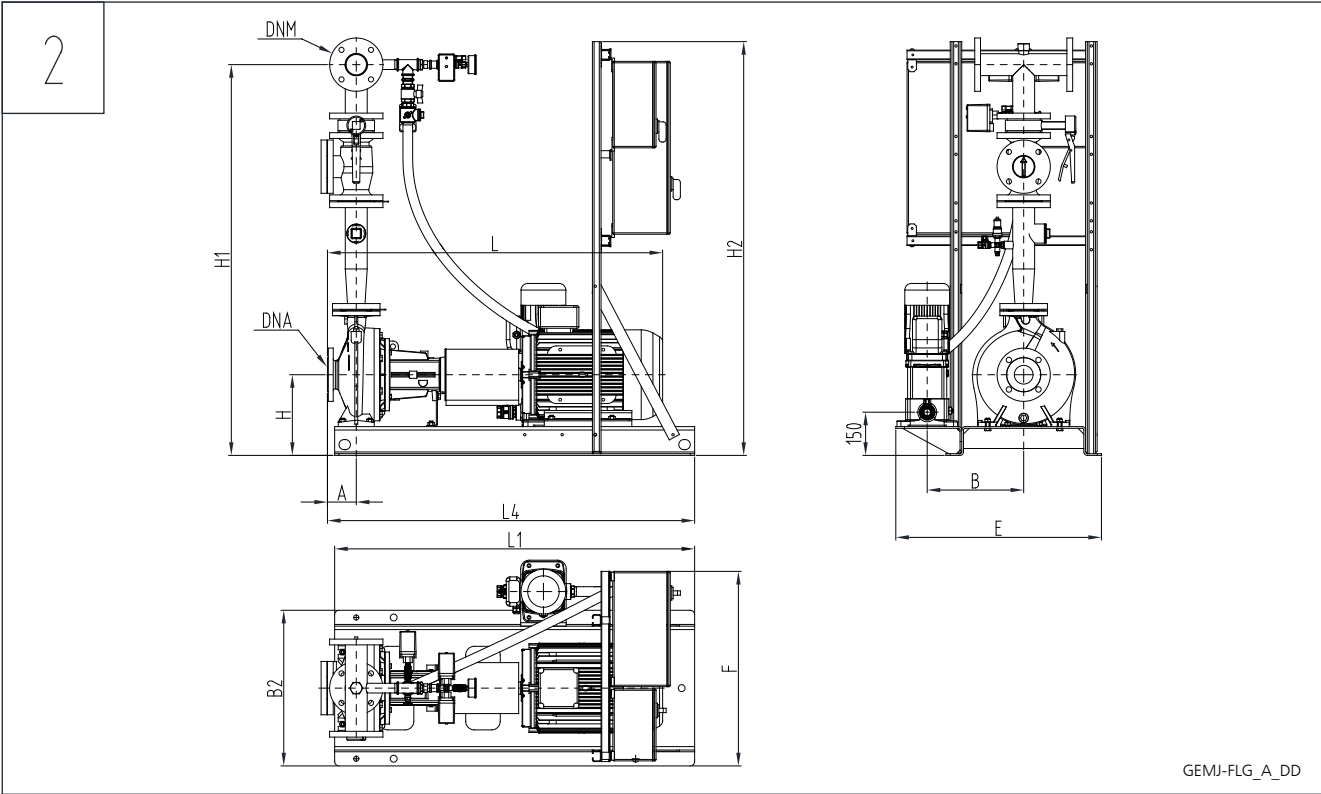
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..J..NSCC32-40 SERIES

GEMJ	DRW N°		DNA	DNM		A	B	B2	E	F	H	H1		H2	L	L1	L4
	GEM1	GEM2		GEM1	GEM2							GEM1	GEM2				
N32-125/15	/	1	50	/	Rp2"	80	270	390	574	615	212	/	1129	1236	888	900	920
N32-125/22	/	1	50	/	Rp2"	80	270	390	574	615	212	/	1129	1236	888	900	920
N32-125/30	/	1	50	/	Rp2"	80	270	390	574	615	212	/	1129	1236	919	900	920
N32-160/22X	/	1	50	/	Rp2"	80	270	390	574	615	232	/	1169	1236	888	900	920
N32-160/30	/	1	50	/	Rp2"	80	270	390	574	615	232	/	1169	1236	919	900	920
N32-160/40	/	1	50	/	Rp2"	80	270	390	574	615	232	/	1169	1236	922	900	920
N32-160/55	/	1	50	/	Rp2"	80	290	450	624	625	232	/	1169	1236	987	1000	1020
N32-200/30X	/	1	50	/	Rp2"	80	270	390	574	615	260	/	1217	1236	919	900	920
N32-200/40	/	1	50	/	Rp2"	80	270	390	574	615	260	/	1217	1236	922	900	920
N32-200/55	/	1	50	/	Rp2"	80	290	450	624	625	260	/	1217	1236	987	1000	1020
N32-200/75X	/	1	50	/	Rp2"	80	290	450	624	625	260	/	1217	1436	987	1000	1020
N32-250/75X	/	1	50	/	Rp2"	100	310	490	664	675	280	/	1282	1436	1007	1120	1145
N32-250/110A	/	1	50	/	Rp2"	100	335	540	714	675	280	/	1282	1436	1164	1250	1275
N32-250/110	/	1	50	/	Rp2"	100	335	540	714	675	280	/	1282	1436	1164	1250	1275
N32-250/150	/	1	50	/	Rp2"	100	335	540	714	675	280	/	1282	1436	1164	1250	1275
N40-160/30	1	2	65	Rp2"	65	80	270	390	574	615	232	1174	1233	1236	919	900	920
N40-160/40X	1	2	65	Rp2"	65	80	270	390	574	615	232	1174	1233	1236	922	900	920
N40-160/75X	1	2	65	Rp2"	65	80	290	450	624	625	232	1174	1233	1436	987	1000	1020
N40-200/55X	1	2	65	Rp2"	65	100	290	450	624	625	260	1222	1281	1436	1007	1000	1040
N40-200/75X	1	2	65	Rp2"	65	100	290	450	624	625	260	1222	1281	1436	1007	1000	1040
N40-200/110X	1	2	65	Rp2"	65	100	310	490	664	650	260	1222	1281	1436	1164	1120	1160
N40-200/110	1	2	65	Rp2"	65	100	310	490	664	650	260	1222	1281	1436	1164	1120	1160
N40-250/110X	1	2	65	Rp2"	65	100	335	540	714	675	280	1287	1346	1436	1164	1250	1275
N40-250/110X1	1	2	65	Rp2"	65	100	335	540	714	675	280	1287	1346	1436	1164	1250	1275
N40-250/150X	1	2	65	Rp2"	65	100	335	540	714	675	280	1287	1346	1436	1164	1250	1275
N40-250/185	1	2	65	Rp2"	65	100	335	540	714	675	280	1287	1346	1436	1164	1250	1275
N40-250/220	1	2	65	Rp2"	65	100	335	540	714	675	280	1287	1346	1436	1261	1250	1275

gemj_nsc32-40_a_td

 Dimensions in mm. Tolerance ± 10 mm.

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
GEM..J..NSCC50-80 SERIES**



EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..J..NSCC50-80 SERIES

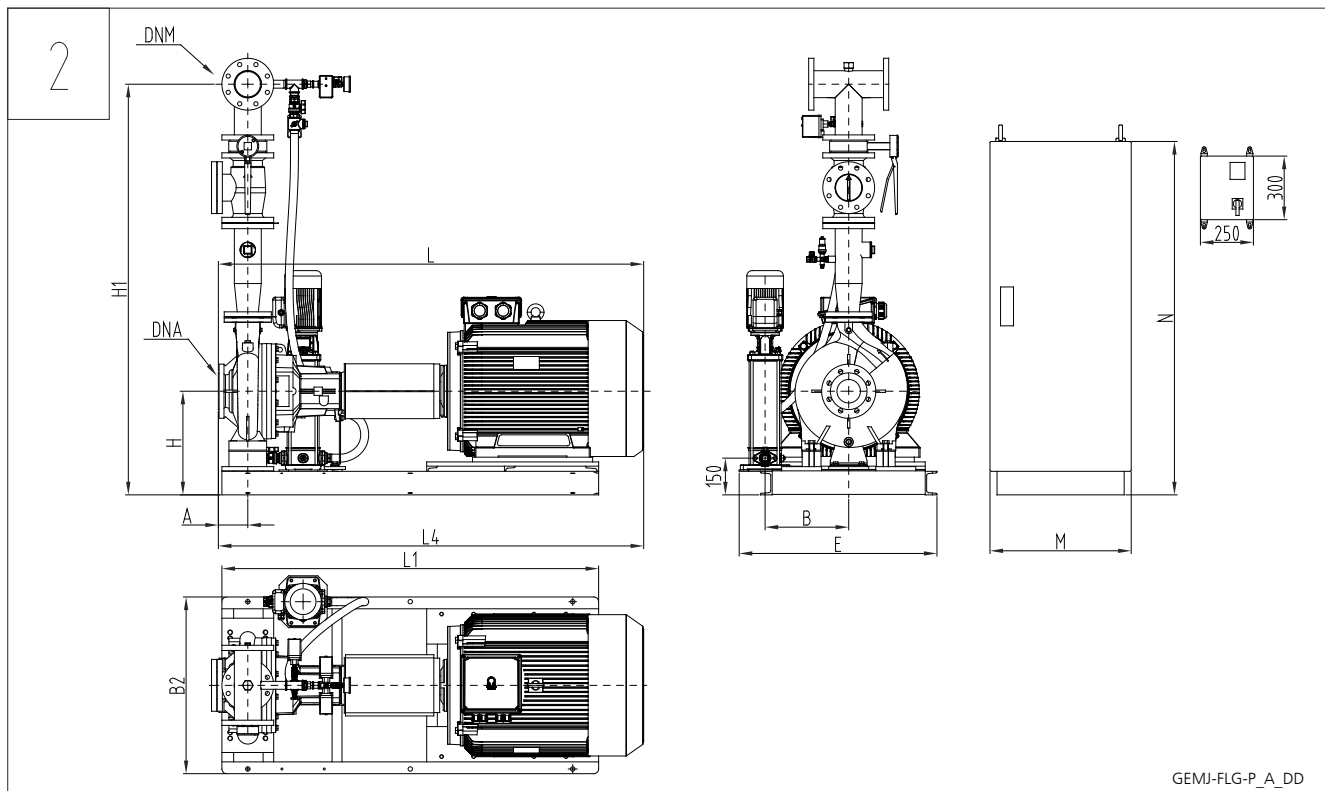
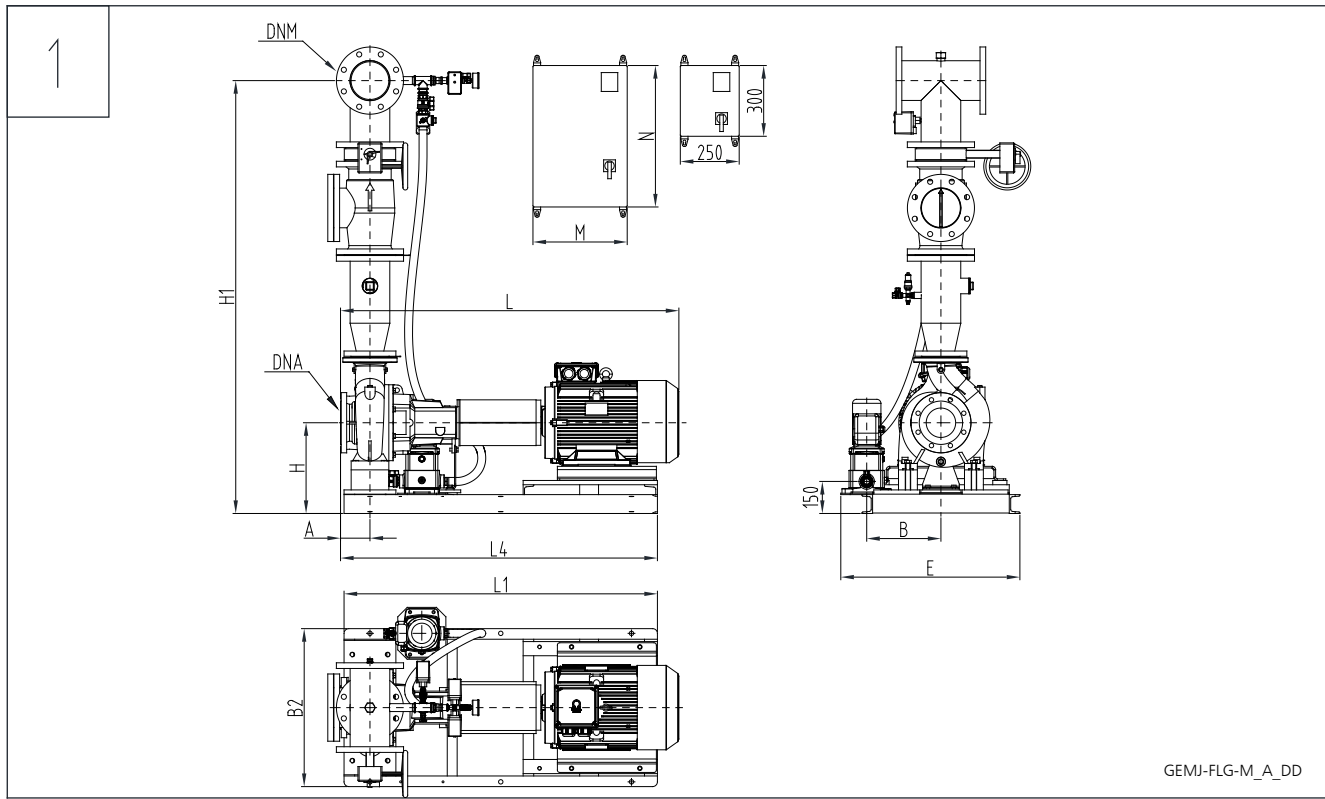
GEMJ	DRW N°	DNA	DNM		A	B	B2	E	F	H	H1		H2	L	L1	L4	M	N
			GEM1	GEM2							GEM1	GEM2						
N50-200/110X	2	65	65	80	100	310	490	664	650	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/110X1	2	65	65	80	100	310	490	664	650	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/150X	2	65	65	80	100	310	490	664	650	260	1311	1382	1436	1164	1120	1160	/	/
N50-200/185X	2	65	65	80	100	310	490	664	650	260	1311	1382	1436	1164	1120	1160	/	/
N50-250/150	2	65	65	80	100	335	540	714	675	280	1356	1427	1436	1164	1250	1275	/	/
N50-250/185	2	65	65	80	100	335	540	714	675	280	1356	1427	1436	1164	1250	1275	/	/
N50-250/220	2	65	65	80	100	335	540	714	675	280	1356	1427	1436	1161	1250	1275	/	/
N50-250/300	2	65	65	80	100	360	610	774	610	310	1386	1457	1836	1341	1400	1425	/	/
N65-160/75	2	80	80	100	100	310	490	664	675	260	1387	1438	1436	1007	1120	1145	/	/
N65-160/110A	2	80	80	100	100	335	540	714	675	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/110	2	80	80	100	100	335	540	714	675	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/150	2	80	80	100	100	335	540	714	675	260	1387	1438	1436	1164	1250	1275	/	/
N65-160/185	2	80	80	100	100	335	540	714	675	260	1387	1438	1436	1164	1250	1275	/	/
N65-200/110	2	80	80	100	100	335	540	714	675	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/150	2	80	80	100	100	335	540	714	675	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/185	2	80	80	100	100	335	540	714	675	280	1432	1483	1436	1204	1250	1275	/	/
N65-200/220	2	80	80	100	100	335	540	714	675	280	1432	1483	1436	1301	1250	1275	/	/
N65-200/300	2	80	80	100	100	360	610	774	610	310	1462	1513	1836	1381	1400	1425	/	/
N65-250/220	2	80	80	100	100	335	540	714	675	310	1487	1538	1436	1411	1250	1260	/	/
N65-250/300	2	80	80	100	100	360	610	774	610	310	1487	1538	1836	1491	1400	1410	/	/
N65-250/370	2	80	80	100	100	360	610	774	610	310	1487	1538	1836	1521	1400	1410	/	/
N65-250/450	2	80	80	100	100	360	610	774	610	365	1542	1593	1836	1521	1400	1410	/	/
N65-250/550	2	80	80	100	100	385	660	824	660	390	1567	1618	1837	1617	1600	1610	/	/
N65-315/550X	1*	80	80	100	125	355	750	840	/	405	1612	1663	/	1642	1550	1565	500	700
N65-315/750	1	80	80	100	125	355	750	840	/	390	1597	1648	/	1747	1550	1565	600	1500
N65-315/900	1	80	80	100	125	355	750	840	/	390	1597	1648	/	1747	1550	1565	600	1500
N80-160/110	2	100	100	125	125	335	540	714	675	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/150	2	100	100	125	125	335	540	714	675	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/185	2	100	100	125	125	335	540	714	675	280	1493	1585	1436	1229	1250	1300	/	/
N80-160/220	2	100	100	125	125	335	540	714	675	280	1493	1585	1436	1326	1250	1300	/	/
N80-200/220	2	100	100	125	125	335	540	714	675	280	1518	1610	1436	1436	1250	1300	/	/
N80-200/300	2	100	100	125	125	360	610	774	610	310	1548	1640	1836	1516	1400	1450	/	/
N80-200/370	2	100	100	125	125	360	610	774	610	310	1548	1640	1836	1516	1400	1450	/	/
N80-200/450	2	100	100	125	125	360	610	774	610	365	1603	1695	1836	1545	1400	1450	/	/
N80-250/370	2	100	100	125	125	360	610	774	610	310	1578	1670	1836	1516	1400	1435	/	/
N80-250/450	2	100	100	125	125	360	610	774	610	365	1633	1725	1836	1545	1400	1435	/	/
N80-250/550	2	100	100	125	125	385	660	824	660	390	1658	1750	1837	1641	1600	1635	/	/
N80-250/750	1	100	100	125	125	420	730	894	/	420	1688	1780	/	1746	1800	1835	600	1500
N80-316/900	1	100	100	125	125	355	750	840	/	440	1743	1835	/	1806	1600	1615	600	1500
N80-316/1100	1	100	100	125	125	405	860	945	/	505	1808	1900	/	1806	1850	1865	600	1500
N80-316/1320	1	100	100	125	125	405	860	945	/	505	1808	1900	/	1920	1850	1865	800	1700
N80-316/1600	1	100	100	125	125	405	860	945	/	505	1808	1900	/	1920	1850	1865	800	1700

gemj_nsc50-80_a_td

Dimensions in mm. Tolerance ± 10 mm.

* electric control panel for service pump and wall-mounted pilot, 2 support bracket kits on request.

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
GEM..J..NSCC100-125 SERIES**



EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEM..J..NSCC100-125 SERIES

GEMJ	DRW N°	DNA	DNM		A	B	B2	E	H	H1		L	L1	L4	M	N
			GEM1	GEM2						GEM1	GEM2					
N100-160/150	1	125	125	150	125	315	670	760	365	1735	1816	1339	1330	1345	400	600
N100-160/185	1	125	125	150	125	315	670	760	365	1735	1816	1339	1330	1345	400	600
N100-160/220	1	125	125	150	125	315	670	760	385	1755	1836	1436	1330	1345	400	600
N100-160/300	1	125	125	150	125	260	560	650	330	1700	1781	1516	1350	1365	500	700
N100-200/300	1	125	125	150	125	260	560	650	330	1700	1781	1516	1350	1365	500	700
N100-200/370	1	125	125	150	125	260	560	650	330	1700	1781	1516	1350	1365	500	700
N100-200/450	1	125	125	150	125	260	560	650	355	1725	1806	1545	1350	1365	500	700
N100-200/550	1	125	125	150	125	355	750	840	405	1775	1856	1641	1550	1565	500	700
N100-250/450	1	125	125	150	140	260	560	650	355	1725	1806	1560	1350	1380	500	700
N100-250/550	1	125	125	150	140	355	750	840	405	1775	1856	1656	1550	1580	500	700
N100-250/750	2	125	125	150	140	355	750	840	390	1760	1841	1761	1550	1580	600	1500
N100-250/900	2	125	125	150	140	355	750	840	390	1760	1841	1761	1550	1580	600	1500
N100-316/1320	2	125	125	150	140	405	860	945	505	1910	1991	1935	1850	1880	800	1700
N125-200/550	1	150	150	200	140	355	750	840	405	1906	2062	1656	1550	1580	500	700
N125-200/750	2	150	150	200	140	355	750	840	405	1906	2062	1761	1550	1580	600	1500
N125-200/900	2	150	150	200	140	355	750	840	405	1906	2062	1761	1550	1580	600	1500
N125-315/1100	2	150	150	200	140	405	860	945	505	2046	2202	1821	1850	1880	600	1500
N125-315/1320	2	150	150	200	140	405	860	945	505	2046	2202	1935	1850	1880	800	1700
N125-315/1600	2	150	150	200	140	405	860	945	505	2046	2202	1935	1850	1880	800	1700
N125-315/2000	2	150	150	200	140	405	860	945	505	2046	2202	2085	1850	1880	800	1700

gemj_nsc100-125_a_td

Dimensions in mm. Tolerance ± 10 mm.

Up to 55 kW wall-mounted electrical control panels for service and jockey pumps, on request 2 kit with support bracket.

Over 55 kW electric control panels for service pumps on the floor.

**EN 12845
fire-fighting
pressure pump
set**

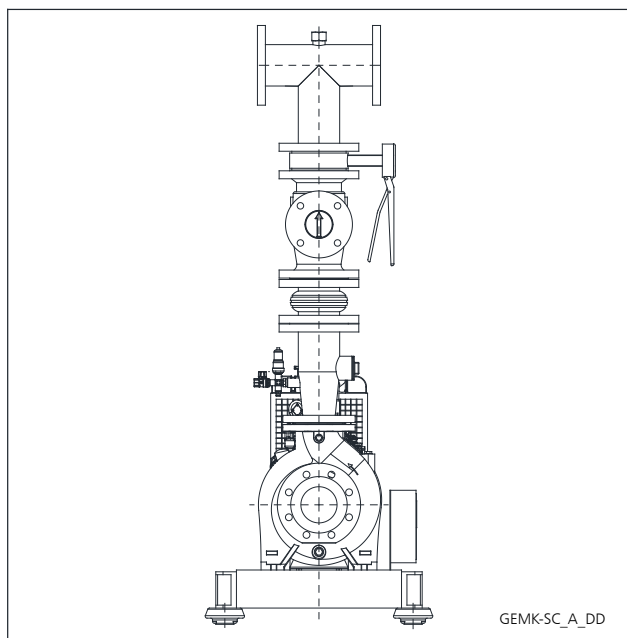
MARKET SECTORS

CIVIL, INDUSTRIAL

APPLICATIONS

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

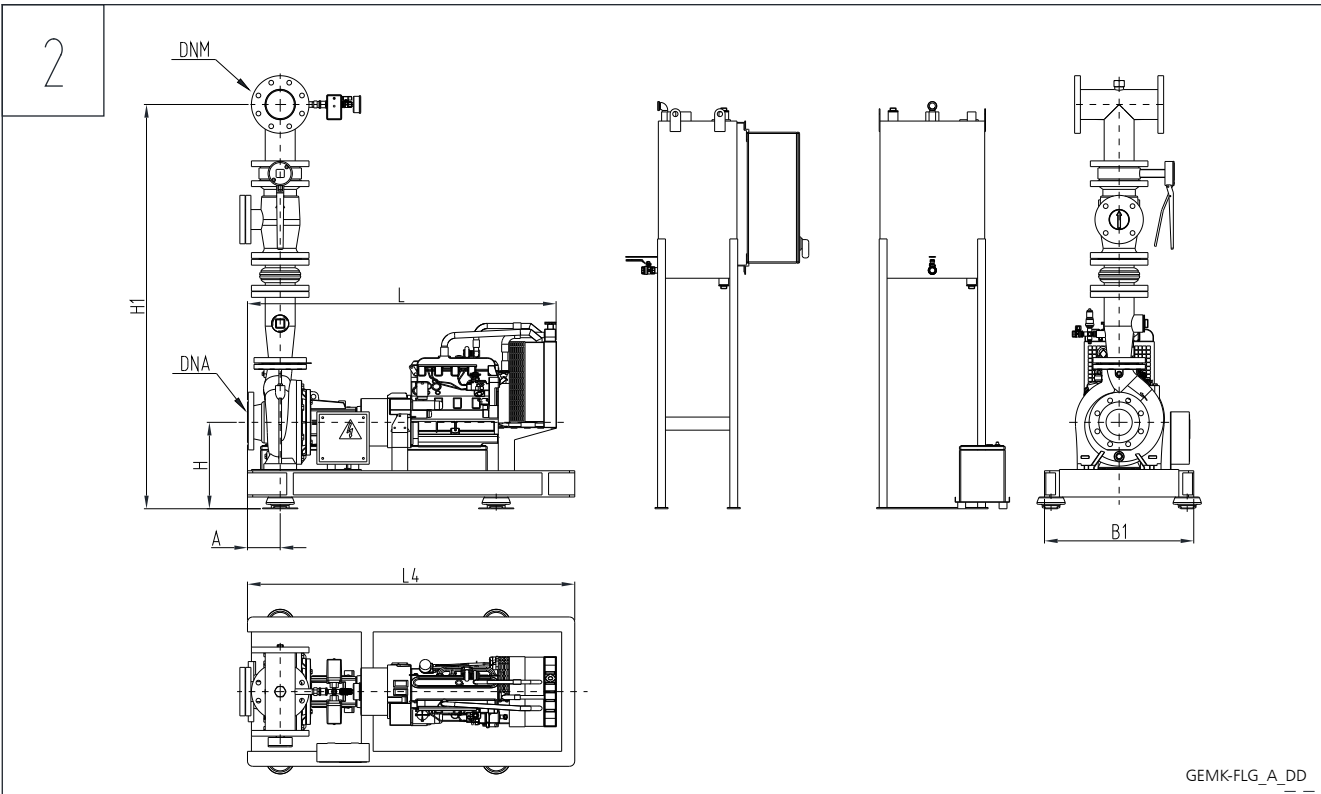
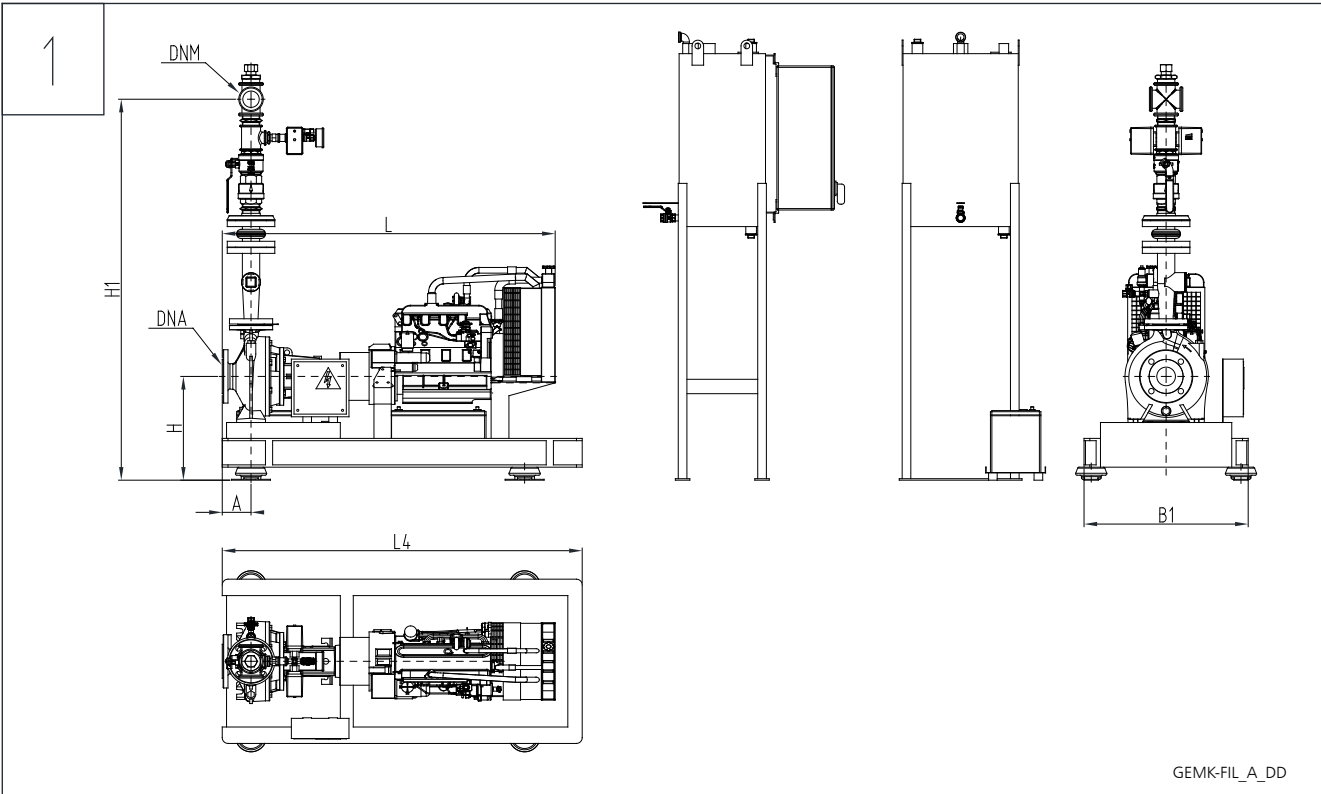
**GEMK..NSC series
Single diesel engine service
pump set**



SPECIFICATIONS

- **Flow:** up to 800 m³/h
- **Head:** up to 146 m.
- **Control panel input voltage:**
 - Diesel engine service pump 1 x 230 Vac $\pm$ 10%.
- **Frequency:** 50 Hz.
- **Voltage of controls outside panel:** 24 Vac.
- **Control panel protection grade:**
 - Diesel engine service pump IP55.
- **Electric motor starting:** from batteries.
- **Horizontal diesel service pump:**
 - NSC series.
- **Maximum operating pressure:** 16 bar.

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



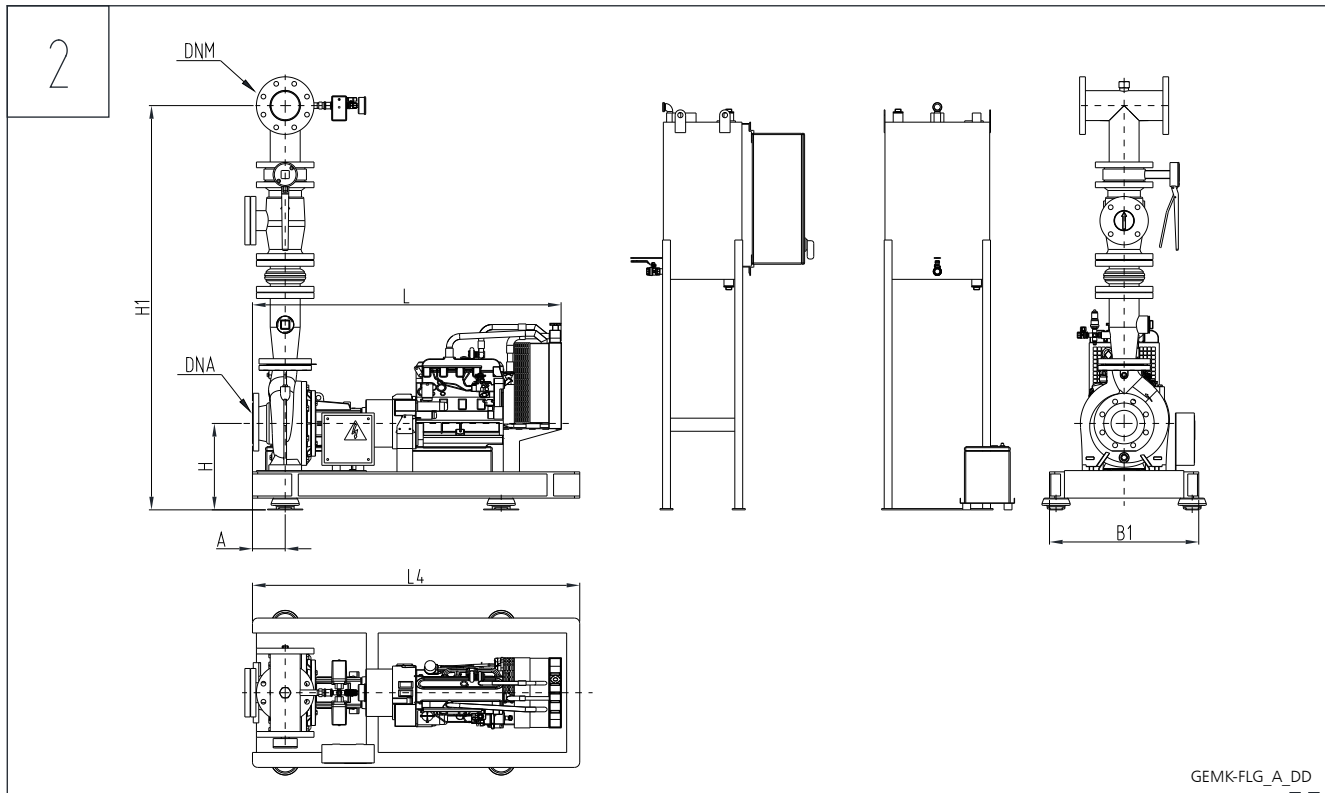
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK..NSCC32-40 SERIES

GEMK	DRW N°		DNA	DNM		A	B1	H	H1		L	L4
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2		
N32-125/D123	/	1	50	/	Rp2"	80	500	262	/	1179	885	950
N32-125/D133	/	1	50	/	Rp2"	80	500	262	/	1179	885	950
N32-125/D145	/	1	50	/	Rp2"	80	500	262	/	1179	885	950
N32-160/D132	/	1	50	/	Rp2"	80	500	282	/	1219	885	950
N32-160/D150	/	1	50	/	Rp2"	80	500	282	/	1219	885	950
N32-160/D160,5	/	1	50	/	Rp2"	80	500	282	/	1219	885	950
N32-160/D171	/	1	50	/	Rp2"	80	500	282	/	1219	901	950
N32-200/D150	/	1	50	/	Rp2"	80	500	310	/	1267	885	950
N32-200/D171	/	1	50	/	Rp2"	80	500	310	/	1267	885	950
N32-200/D186	/	1	50	/	Rp2"	80	500	310	/	1267	901	950
N32-200/D198	/	1	50	/	Rp2"	80	500	310	/	1267	965	950
N32-250/D208	/	1	50	/	Rp2"	100	500	280	/	1282	965	950
N32-250/D226,5	/	1	50	/	Rp2"	100	500	280	/	1282	997	950
N32-250/D239	/	1	50	/	Rp2"	100	570	330	/	1332	1169	1250
N32-250/D259	/	1	50	/	Rp2"	100	570	330	/	1332	1169	1250
N40-160/D127	1	2	65	Rp2"	65	80	500	282	1224	1283	880	950
N40-160/D135	1	2	65	Rp2"	65	80	500	282	1224	1283	880	950
N40-160/D160	1	2	65	Rp2"	65	80	500	282	1224	1283	880	950
N40-200/D158	1	2	65	Rp2"	65	100	500	310	1272	1331	902	950
N40-200/D174	1	2	65	Rp2"	65	100	500	310	1272	1331	1000	950
N40-200/D184	1	2	65	Rp2"	65	100	500	310	1272	1331	1000	950
N40-200/D199	1	2	65	Rp2"	65	100	570	360	1322	1381	1156	1250
N40-250/D195	1	2	65	Rp2"	65	100	500	280	1287	1346	997	950
N40-250/D206	1	2	65	Rp2"	65	100	570	330	1337	1396	1156	1250
N40-250/D225	1	2	65	Rp2"	65	100	570	330	1337	1396	1156	1250
N40-250/D243	1	2	65	Rp2"	65	100	680	380	1387	1446	1339	1350
N40-250/D257,5	1	2	65	Rp2"	65	100	680	380	1387	1446	1339	1350

Dimensions in mm. Tolerance ± 10 mm.

gemk_nsc32-40_a_td

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



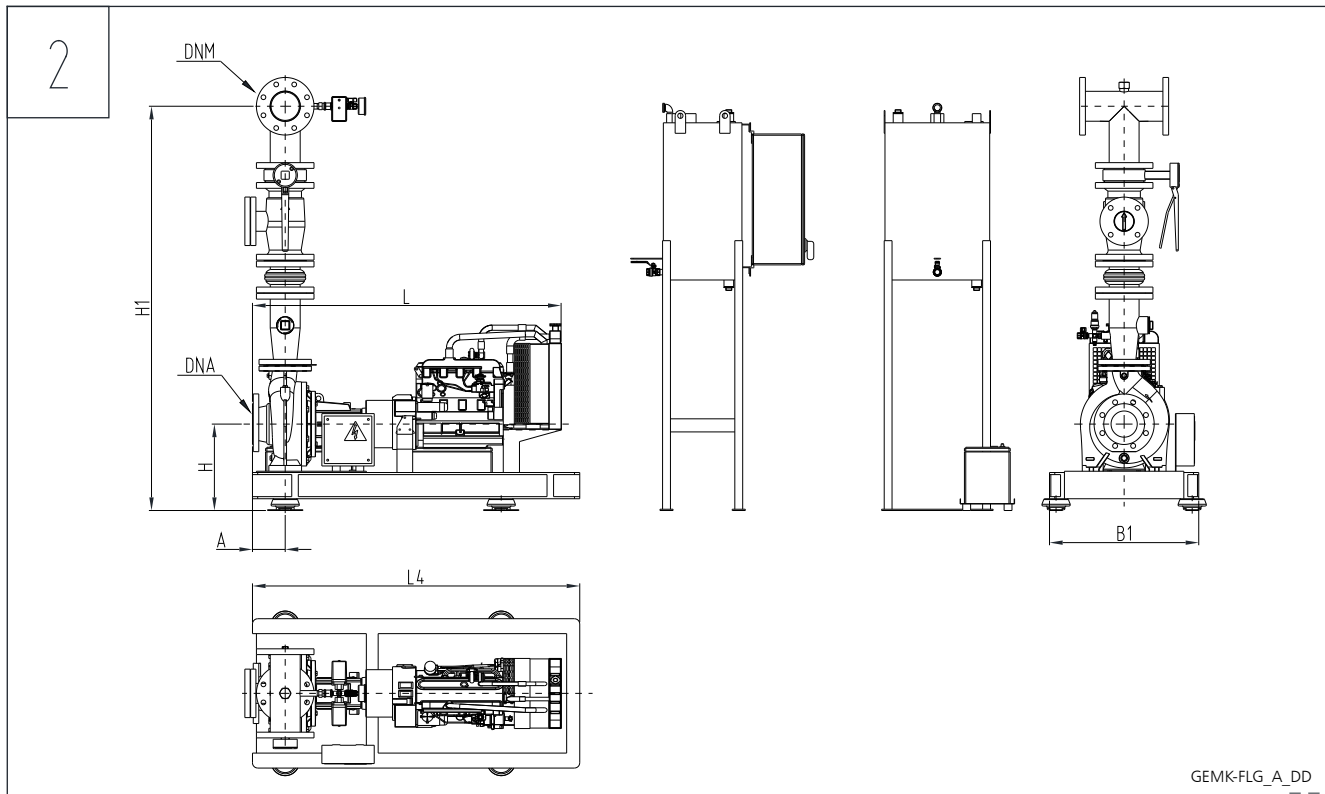
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK..NSC50-80 SERIES

GEMK	DNA	DNM		A	B1	H	H1		L	L4
		GEM1	GEM2				GEM1	GEM2		
N50-200/D163	65	65	80	100	500	310	1361	1432	997	950
N50-200/D172	65	65	80	100	500	310	1361	1432	997	950
N50-200/D195	65	65	80	100	570	360	1411	1482	1156	1250
N50-200/D201	65	65	80	100	570	360	1411	1482	1156	1250
N50-250/D208	65	65	80	100	570	330	1406	1477	1156	1250
N50-250/D220	65	65	80	100	570	380	1456	1527	1156	1250
N50-250/D232	65	65	80	100	680	380	1456	1527	1339	1350
N50-250/D256	65	65	80	100	680	360	1436	1507	1425	1550
N65-160/D145	80	80	100	100	500	310	1437	1488	902	950
N65-160/D151	80	80	100	100	500	310	1437	1488	997	950
N65-160/D162	80	80	100	100	500	310	1437	1488	997	950
N65-160/D176	80	80	100	100	570	360	1487	1538	1156	1250
N65-160/D180	80	80	100	100	570	360	1487	1538	1156	1250
N65-200/D165	80	80	100	100	570	380	1532	1583	1156	1250
N65-200/D177	80	80	100	100	570	380	1532	1583	1156	1250
N65-200/D189	80	80	100	100	570	380	1532	1583	1156	1250
N65-200/D199	80	80	100	100	680	380	1532	1583	1339	1350
N65-200/D220	80	80	100	100	680	360	1512	1563	1420	1550
N65-250/D195	80	80	100	100	680	360	1537	1588	1430	1350
N65-250/D215	80	80	100	100	680	360	1537	1588	1535	1550
N65-250/D229	80	80	100	100	680	360	1537	1588	1535	1550
N65-250/D243	80	80	100	100	640	365	1542	1593	1510	1550
N65-250/D258	80	80	100	100	640	390	1567	1618	1670	1550
N65-315/D270	80	80	100	125	640	405	1612	1663	1695	1550
N65-315/D298	80	80	100	125	700	390	1597	1648	2013	1750
N65-315/D315	80	80	100	125	700	390	1597	1648	2013	1750
N80-160/D144	100	100	125	125	500	280	1493	1585	1020	950
N80-160/D158	100	100	125	125	570	330	1543	1635	1180	1250
N80-160/D168	100	100	125	125	570	330	1543	1635	1180	1250
N80-160/D177	100	100	125	125	680	380	1593	1685	1339	1350
N80-200/D181	100	100	125	125	680	380	1618	1710	1339	1550
N80-200/D195	100	100	125	125	680	360	1598	1690	1560	1550
N80-200/D208	100	100	125	125	680	360	1598	1690	1560	1550
N80-200/D219	100	100	125	125	640	365	1603	1695	1535	1550
N80-250/D214	100	100	125	125	680	360	1628	1720	1560	1550
N80-250/D227	100	100	125	125	640	365	1633	1725	1525	1550
N80-250/D241	100	100	125	125	640	390	1658	1750	1685	1550
N80-250/D259	100	100	125	125	700	420	1688	1780	2013	1750
N80-316/D280	100	100	125	125	700	440	1743	1835	2074	1750
N80-316/D298	100	100	125	125	850	505	1808	1900	2285	2300
N80-316/D310	100	100	125	125	850	505	1808	1900	2285	2300
N80-316/D321	100	100	125	125	850	505	1808	1900	2285	2300

gemk_nsc50-80_a_td

Dimensions in mm. Tolerance ± 10 mm.

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

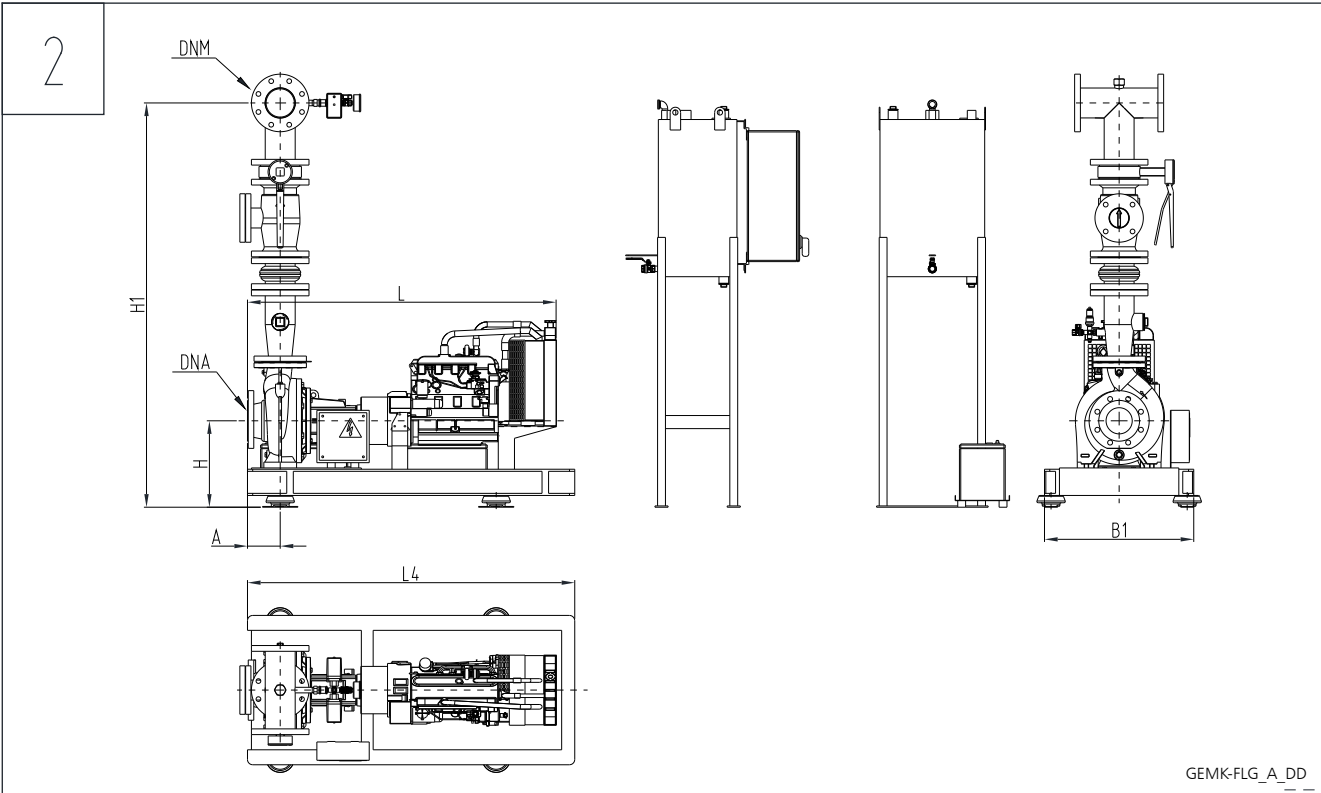
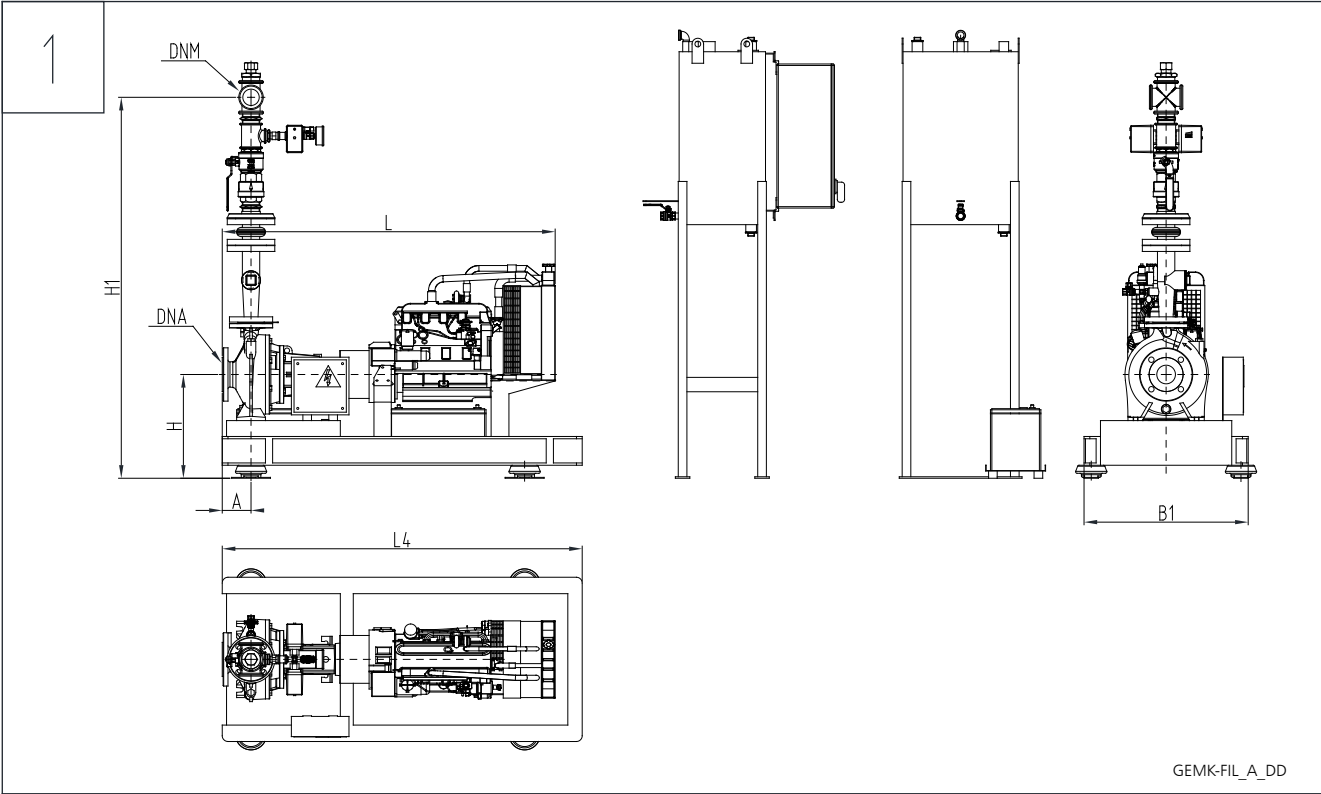


EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK..NSC100-125 SERIES

GEMK	DNA	DNM		A	B1	H	H1		L	L4
		GEM1	GEM2				GEM1	GEM2		
N100-160/D144	125	125	150	125	570	365	1735	1816	1304	1250
N100-160/D156	125	125	150	125	680	365	1735	1816	1474	1550
N100-160/D167	125	125	150	125	680	380	1750	1831	1474	1550
N100-160/D187	125	125	150	125	680	380	1750	1831	1560	1550
N100-200/D188	125	125	150	140	680	380	1750	1831	1474	1550
N100-200/D202	125	125	150	140	680	380	1750	1831	1474	1550
N100-200/D213	125	125	150	140	640	355	1725	1806	1535	1550
N100-200/D227	125	125	150	140	640	405	1775	1856	1710	1550
N100-250/D213	125	125	150	140	640	355	1725	1806	1550	1550
N100-250/D227	125	125	150	140	640	405	1775	1856	1710	1550
N100-250/D249	125	125	150	140	700	390	1760	1841	2028	1750
N100-250/D259	125	125	150	140	700	390	1760	1841	2028	1750
N100-316/D286	125	125	150	140	850	505	1910	1991	2300	2300
N125-200/D195	150	150	200	140	640	405	1906	2062	1710	1550
N125-200/D215	150	150	200	140	700	405	1906	2062	2028	1750
N125-200/D225	150	150	200	140	700	405	1906	2062	2028	1750
N125-315/D250	150	150	200	140	850	505	2046	2202	2300	2300
N125-315/D265	150	150	200	140	850	505	2046	2202	2300	2300
N125-315/D280	150	150	200	140	850	505	2046	2202	2300	2300
N125-315/D290	150	150	200	140	850	505	2046	2202	2300	2300

gemk_nsc100-125_a_td

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
GEMK/WC..NSC32-40 SERIES**



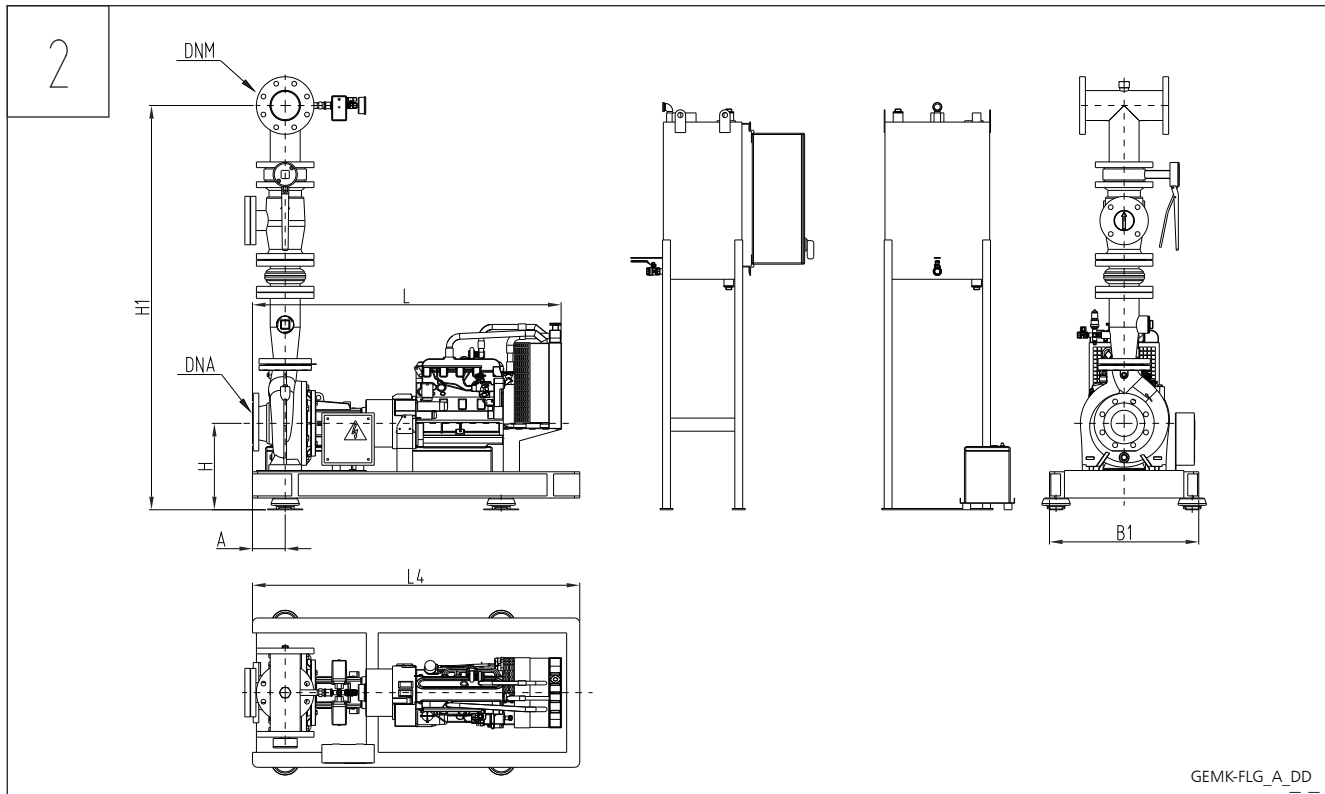
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK/WC..NSC32-40 SERIES

GEMK/WC	DRW N°		DNA	DNM		A	B1	H	H1		L	L4
	GEM1	GEM2		GEM1	GEM2				GEM1	GEM2		
N32-125/D123	/	1	50	/	Rp2"	80	680	312	/	1229	1300	1350
N32-125/D133	/	1	50	/	Rp2"	80	680	312	/	1229	1300	1350
N32-125/D145	/	1	50	/	Rp2"	80	680	312	/	1229	1300	1350
N32-160/D132	/	1	50	/	Rp2"	80	680	332	/	1269	1300	1350
N32-160/D150	/	1	50	/	Rp2"	80	680	332	/	1269	1300	1350
N32-160/D160,5	/	1	50	/	Rp2"	80	680	332	/	1269	1300	1350
N32-160/D171	/	1	50	/	Rp2"	80	680	332	/	1269	1300	1350
N32-200/D150	/	1	50	/	Rp2"	80	680	360	/	1317	1300	1350
N32-200/D171	/	1	50	/	Rp2"	80	680	360	/	1317	1300	1350
N32-200/D186	/	1	50	/	Rp2"	80	680	360	/	1317	1300	1350
N32-200/D198	/	1	50	/	Rp2"	80	680	360	/	1317	1300	1350
N32-250/D208	/	1	50	/	Rp2"	100	680	380	/	1382	1320	1350
N32-250/D226,5	/	1	50	/	Rp2"	100	680	380	/	1382	1320	1350
N32-250/D239	/	1	50	/	Rp2"	100	680	380	/	1382	1320	1350
N32-250/D259	/	1	50	/	Rp2"	100	680	380	/	1382	1320	1350
N40-160/D127	1	2	65	Rp2"	65	80	680	332	391	1274	1300	1350
N40-160/D135	1	2	65	Rp2"	65	80	680	332	391	1274	1300	1350
N40-160/D160	1	2	65	Rp2"	65	80	680	332	391	1274	1300	1350
N40-200/D158	1	2	65	Rp2"	65	100	680	360	419	1322	1320	1350
N40-200/D174	1	2	65	Rp2"	65	100	680	360	419	1322	1320	1350
N40-200/D184	1	2	65	Rp2"	65	100	680	360	419	1322	1320	1350
N40-200/D199	1	2	65	Rp2"	65	100	680	360	419	1322	1320	1350
N40-250/D195	1	2	65	Rp2"	65	100	680	380	439	1387	1320	1350
N40-250/D206	1	2	65	Rp2"	65	100	680	380	439	1387	1320	1350
N40-250/D225	1	2	65	Rp2"	65	100	680	380	439	1387	1320	1350
N40-250/D243	1	2	65	Rp2"	65	100	680	380	439	1387	1320	1350
N40-250/D257,5	1	2	65	Rp2"	65	100	680	380	439	1387	1339	1350

Dimensions in mm. Tolerance ± 10 mm.

gemk-wc_nsc32-40_a_td

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
GEMK/WC..NSC50-80 SERIES**



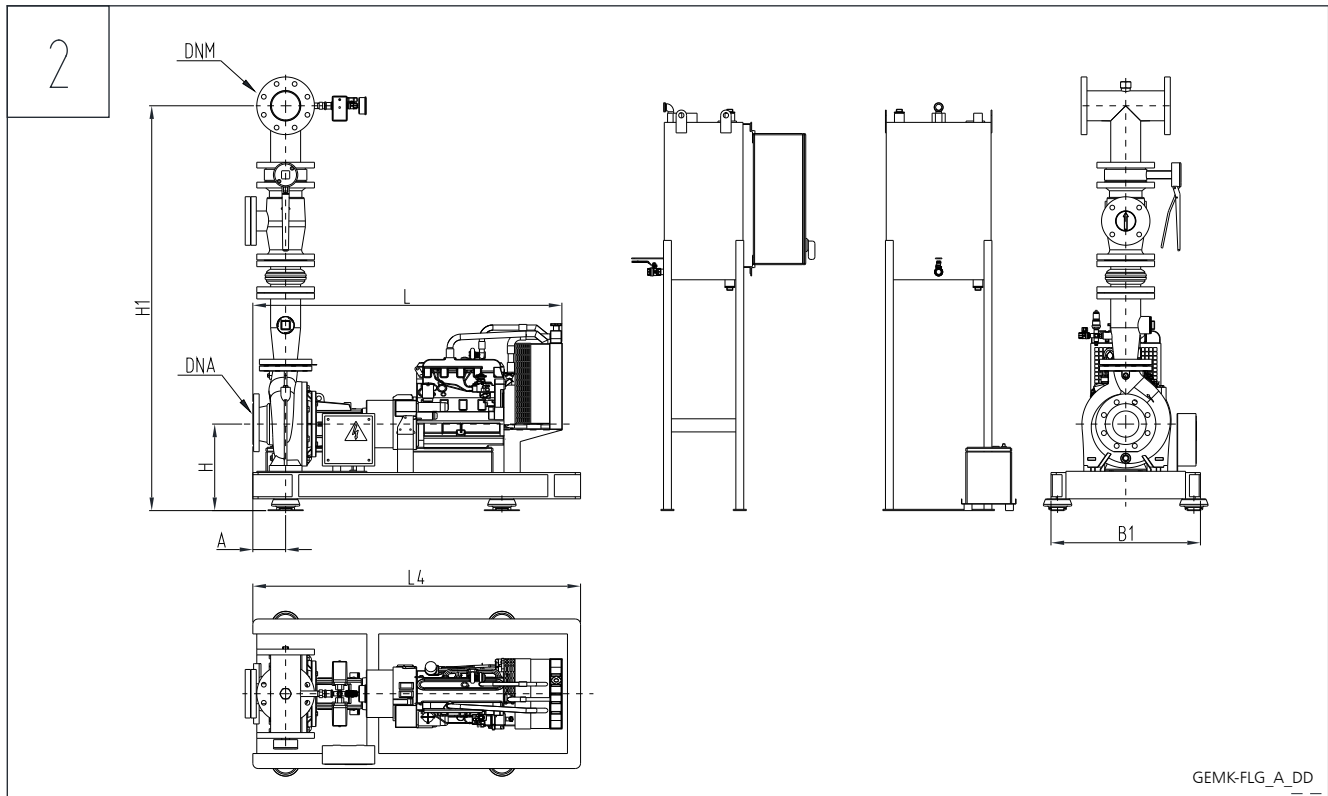
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK/WC..NSC50-80 SERIES

GEMK/WC	DNA	DNM		A	B1	H	H1		L	L4
		GEM1	GEM2				GEM1	GEM2		
N50-200/D163	65	65	80	100	680	360	1411	1482	1320	1350
N50-200/D172	65	65	80	100	680	360	1411	1482	1320	1350
N50-200/D195	65	65	80	100	680	360	1411	1482	1320	1350
N50-200/D201	65	65	80	100	680	360	1411	1482	1320	1350
N50-250/D208	65	65	80	100	680	380	1456	1527	1320	1350
N50-250/D220	65	65	80	100	680	380	1456	1527	1320	1350
N50-250/D232	65	65	80	100	680	380	1456	1527	1320	1350
N50-250/D256	65	65	80	100	680	360	1436	1507	1425	1550
N65-160/D145	80	80	100	100	680	360	1487	1538	1320	1350
N65-160/D151	80	80	100	100	680	360	1487	1538	1320	1350
N65-160/D162	80	80	100	100	680	360	1487	1538	1320	1350
N65-160/D176	80	80	100	100	680	360	1487	1538	1320	1350
N65-160/D180	80	80	100	100	680	360	1487	1538	1320	1350
N65-200/D165	80	80	100	100	680	380	1532	1538	1320	1350
N65-200/D177	80	80	100	100	680	380	1532	1538	1320	1350
N65-200/D189	80	80	100	100	680	380	1532	1538	1320	1350
N65-200/D199	80	80	100	100	680	380	1532	1538	1339	1350
N65-200/D220	80	80	100	100	680	360	1512	1538	1420	1550
N65-250/D195	80	80	100	100	680	360	1537	1538	1449	1350
N65-250/D215	80	80	100	100	680	360	1537	1538	1535	1550
N65-250/D229	80	80	100	100	680	360	1537	1538	1535	1550
N65-250/D243	80	80	100	100	640	365	1542	1538	1510	1550
N65-250/D258	80	80	100	100	640	390	1567	1538	1670	1550
N65-315/D270	80	80	100	125	640	405	1612	1538	1695	1550
N65-315/D298	80	80	100	125	850	490	1697	1538	1830	1650
N65-315/D315	80	80	100	125	850	490	1697	1538	1830	1650
N80-160/D144	100	100	125	125	680	380	1593	1685	1344	1350
N80-160/D158	100	100	125	125	680	380	1593	1685	1344	1350
N80-160/D168	100	100	125	125	680	380	1593	1685	1344	1350
N80-160/D177	100	100	125	125	680	380	1593	1685	1344	1350
N80-200/D181	100	100	125	125	680	380	1618	1710	1339	1550
N80-200/D195	100	100	125	125	680	360	1598	1690	1560	1550
N80-200/D208	100	100	125	125	680	360	1598	1690	1560	1550
N80-200/D219	100	100	125	125	640	365	1603	1695	1535	1550
N80-250/D214	100	100	125	125	680	410	1678	1770	1560	1550
N80-250/D227	100	100	125	125	640	365	1633	1725	1525	1550
N80-250/D241	100	100	125	125	640	390	1658	1750	1685	1550
N80-250/D259	100	100	125	125	850	520	1788	1880	1830	1650
N80-316/D280	100	100	125	125	850	540	1843	1935	1890	1650
N80-316/D298	100	100	125	125	850	505	1808	1900	1890	1650
N80-316/D310	100	100	125	125	850	505	1808	1900	2143	2000
N80-316/D321	100	100	125	125	850	505	1808	1900	2143	2000

Dimensions in mm. Tolerance ± 10 mm.

gemk-wc_nsc50-80_b_td

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
GEMK/WC..NSC100-125 SERIES**



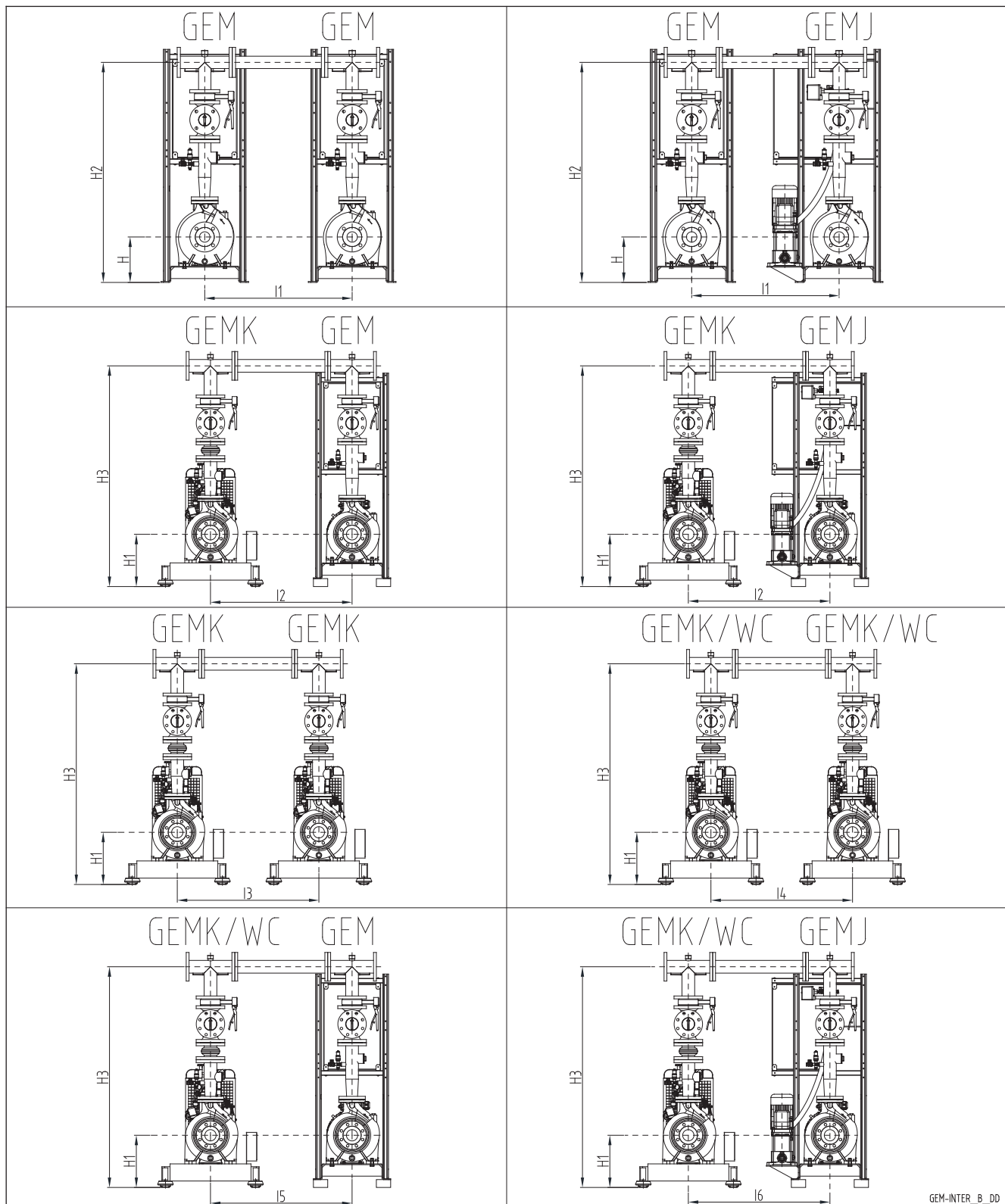
EN 12845 FIRE-FIGHTING PRESSURE PUMP SET GEMK/WC..NSC100-125 SERIES

GEMK/WC	DNA	DNM		A	B1	H	H1		L	L4
		GEM1	GEM2				GEM1	GEM2		
N100-160/D144	125	125	150	125	680	365	1735	1816	1474	1550
N100-160/D156	125	125	150	125	680	365	1735	1816	1474	1550
N100-160/D167	125	125	150	125	680	380	1750	1831	1474	1550
N100-160/D187	125	125	150	125	680	380	1750	1831	1560	1550
N100-200/D188	125	125	150	125	680	380	1750	1831	1474	1550
N100-200/D202	125	125	150	125	680	380	1750	1831	1474	1550
N100-200/D213	125	125	150	140	640	355	1725	1806	1550	1550
N100-200/D227	125	125	150	140	640	405	1775	1856	1710	1550
N100-250/D213	125	125	150	140	640	355	1725	1806	1550	1550
N100-250/D227	125	125	150	140	640	405	1775	1856	1710	1550
N100-250/D249	125	125	150	140	850	490	1860	1941	1845	1650
N100-250/D259	125	125	150	140	850	490	1860	1941	1845	1650
N100-316/D286	125	125	150	140	850	505	1910	1991	2095	2000
N125-200/D195	150	150	200	140	640	405	1906	2062	1710	1550
N125-200/D215	150	150	200	140	850	505	2006	2062	1845	1650
N125-200/D225	150	150	200	140	850	505	2006	2062	1845	1650
N125-315/D250	150	150	200	140	850	505	2046	2202	1845	1650
N125-315/D265	150	150	200	140	850	505	2046	2202	2155	2000
N125-315/D280	150	150	200	140	850	505	2046	2202	2155	2000
N125-315/D290	150	150	200	140	850	505	2046	2202	2155	2000

gemk-wc_nsc100-125_a_td

Dimensions in mm. Tolerance ± 10 mm.

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
DIMENSIONS OF COMBINATIONS NSC32-65**



The diesel engine pump set is always supplied with spacers to be installed, where necessary, under the electric pump set for the alignment of the suction heights.

EN 12845 FIRE-FIGHTING PRESSURE PUMP SET DIMENSIONS OF COMBINATIONS NSC32-65

GEM / GEMJ	GEMK	H	H1		H2		H3 STD		H3 WC		I1	I2	I3	I4	I5	I6
			STD	WC	GEM1	GEM2	GEM1	GEM2	GEM1	GEM2						
N32-125/15	N32-125/D123	212	262	312	/	1129	/	1179	/	1229	1340	1340	1340	1500	1340	1500
N32-125/22	N32-125/D133	212	262	312	/	1129	/	1179	/	1229	1340	1340	1340	1500	1340	1500
N32-125/30	N32-125/D145	212	262	312	/	1129	/	1179	/	1229	1340	1340	1340	1500	1340	1500
N32-160/22X	N32-160/D132	232	282	332	/	1169	/	1219	/	1269	1340	1340	1340	1500	1340	1500
N32-160/30	N32-160/D150	232	282	332	/	1169	/	1219	/	1269	1340	1340	1340	1500	1340	1500
N32-160/40	N32-160/D160,5	232	282	332	/	1169	/	1219	/	1269	1340	1340	1340	1500	1340	1500
N32-160/55	N32-160/D171	232	282	332	/	1169	/	1219	/	1269	1340	1340	1340	1500	1500	1500
N32-200/30X	N32-200/D150	260	310	360	/	1217	/	1267	/	1317	1340	1340	1340	1500	1340	1500
N32-200/40	N32-200/D171	260	310	360	/	1217	/	1267	/	1317	1340	1340	1340	1500	1340	1500
N32-200/55	N32-200/D186	260	310	360	/	1217	/	1267	/	1317	1340	1340	1340	1500	1500	1500
N32-200/75X	N32-200/D198	260	310	360	/	1217	/	1267	/	1317	1340	1340	1340	1500	1500	1500
N32-250/75X	N32-250/D208	280	280	380	/	1282	/	1282	/	1382	1340	1340	1340	1500	1500	1500
N32-250/110A	N32-250/D226,5	280	280	380	/	1282	/	1282	/	1382	1340	1340	1340	1500	1500	1500
N32-250/110	N32-250/D239	280	330	380	/	1282	/	1332	/	1382	1340	1500	1500	1500	1500	1500
N32-250/150	N32-250/D259	280	330	380	/	1282	/	1332	/	1382	1340	1500	1500	1500	1500	1500
N40-160/30	N40-160/D127	232	282	332	1174	1233	1224	1283	391	1274	1340	1340	1340	1500	1340	1500
N40-160/40X	N40-160/D135	232	282	332	1174	1233	1224	1283	391	1274	1340	1340	1340	1500	1340	1500
N40-160/75X	N40-160/D160	232	282	332	1174	1233	1224	1283	391	1274	1340	1340	1340	1500	1500	1500
N40-200/55X	N40-200/D158	260	310	360	1222	1281	1272	1331	419	1322	1340	1340	1340	1500	1500	1500
N40-200/75X	N40-200/D174	260	310	360	1222	1281	1272	1331	419	1322	1340	1340	1340	1500	1500	1500
N40-200/110X	N40-200/D184	260	310	360	1222	1281	1272	1331	419	1322	1340	1340	1340	1500	1500	1500
N40-200/110	N40-200/D199	260	360	360	1222	1281	1322	1381	419	1322	1340	1340	1500	1500	1500	1500
N40-250/110X	N40-250/D195	280	280	380	1287	1346	1287	1346	439	1387	1340	1340	1340	1500	1500	1500
N40-250/110X1	N40-250/D206	280	330	380	1287	1346	1337	1396	439	1387	1340	1500	1500	1500	1500	1500
N40-250/150X	N40-250/D225	280	330	380	1287	1346	1337	1396	439	1387	1340	1500	1500	1500	1500	1500
N40-250/185	N40-250/D243	280	380	380	1287	1346	1387	1446	439	1387	1340	1500	1500	1500	1500	1500
N40-250/220	N40-250/D257,5	280	380	380	1287	1346	1387	1446	439	1387	1340	1500	1500	1500	1500	1500
N50-200/110X	N50-200/D163	260	310	360	1311	1382	1361	1432	1411	1482	1340	1340	1340	1500	1500	1500
N50-200/110X1	N50-200/D172	260	310	360	1311	1382	1361	1432	1411	1482	1340	1340	1340	1500	1500	1500
N50-200/150X	N50-200/D195	260	360	360	1311	1382	1411	1482	1411	1482	1340	1340	1500	1500	1500	1500
N50-200/185X	N50-200/D201	260	360	360	1311	1382	1411	1482	1411	1482	1340	1340	1500	1500	1500	1500
N50-250/150	N50-250/D208	280	330	380	1356	1427	1406	1477	1456	1527	1340	1500	1500	1500	1500	1500
N50-250/185	N50-250/D220	280	380	380	1356	1427	1456	1527	1456	1527	1340	1500	1500	1500	1500	1500
N50-250/220	N50-250/D232	280	380	380	1356	1427	1456	1527	1456	1527	1340	1500	1500	1500	1500	1500
N50-250/300	N50-250/D256	310	360	360	1386	1457	1436	1507	1436	1507	1500	1500	1500	1500	1500	1500
N65-160/75	N65-160/D145	260	310	360	1387	1438	1437	1488	1487	1538	1340	1340	1340	1500	1500	1500
N65-160/110A	N65-160/D151	260	310	360	1387	1438	1437	1488	1487	1538	1340	1340	1340	1500	1500	1500
N65-160/110	N65-160/D162	260	310	360	1387	1438	1437	1488	1487	1538	1340	1340	1340	1500	1500	1500
N65-160/150	N65-160/D176	260	360	360	1387	1438	1487	1538	1487	1538	1340	1500	1500	1500	1500	1500
N65-160/185	N65-160/D180	260	360	360	1387	1438	1487	1538	1487	1538	1340	1500	1500	1500	1500	1500
N65-200/110	N65-200/D165	280	380	380	1432	1483	1532	1583	1532	1538	1340	1500	1500	1500	1500	1500
N65-200/150	N65-200/D177	280	380	380	1432	1483	1532	1583	1532	1538	1340	1500	1500	1500	1500	1500
N65-200/185	N65-200/D189	280	380	380	1432	1483	1532	1583	1532	1538	1340	1500	1500	1500	1500	1500
N65-200/220	N65-200/D199	280	380	380	1432	1483	1532	1583	1532	1538	1340	1500	1500	1500	1500	1500
N65-200/300	N65-200/D220	310	360	360	1462	1513	1512	1563	1512	1538	1500	1500	1500	1500	1500	1500
N65-250/220	N65-250/D195	310	360	360	1487	1538	1537	1588	1537	1538	1340	1500	1500	1500	1500	1500
N65-250/300	N65-250/D215	310	360	360	1487	1538	1537	1588	1537	1538	1500	1500	1500	1500	1500	1500
N65-250/370	N65-250/D229	310	360	360	1487	1538	1537	1588	1537	1538	1500	1500	1500	1500	1500	1500
N65-250/450	N65-250/D243	365	365	365	1542	1593	1542	1593	1542	1538	1500	1500	1500	1500	1500	1500
N65-250/550	N65-250/D258	390	390	390	1567	1618	1567	1618	1567	1538	1500	1500	1500	1500	1500	1500
N65-315/550X	N65-315/D270	405	405	405	1612	1663	1612	1663	1612	1538	1660	1500	1500	1500	1500	1500
N65-315/750	N65-315/D298	390	390	490	1597	1648	1597	1648	1697	1538	1660	1660	1500	1660	1660	1660
N65-315/900	N65-315/D315	390	390	490	1597	1648	1597	1648	1697	1538	1660	1660	1500	1660	1660	1660

Dimensions in mm. Tolerance ± 10 mm.

interassi-nsc32-65_c_td

**EN 12845 FIRE-FIGHTING PRESSURE PUMP SET
DIMENSIONS OF COMBINATIONS NSC80-125**



The diesel engine pump set is always supplied with spacers to be installed, where necessary, under the electric pump set for the alignment of the suction heights.

EN 12845 FIRE-FIGHTING PRESSURE PUMP SET DIMENSIONS OF COMBINATIONS NSC80-125

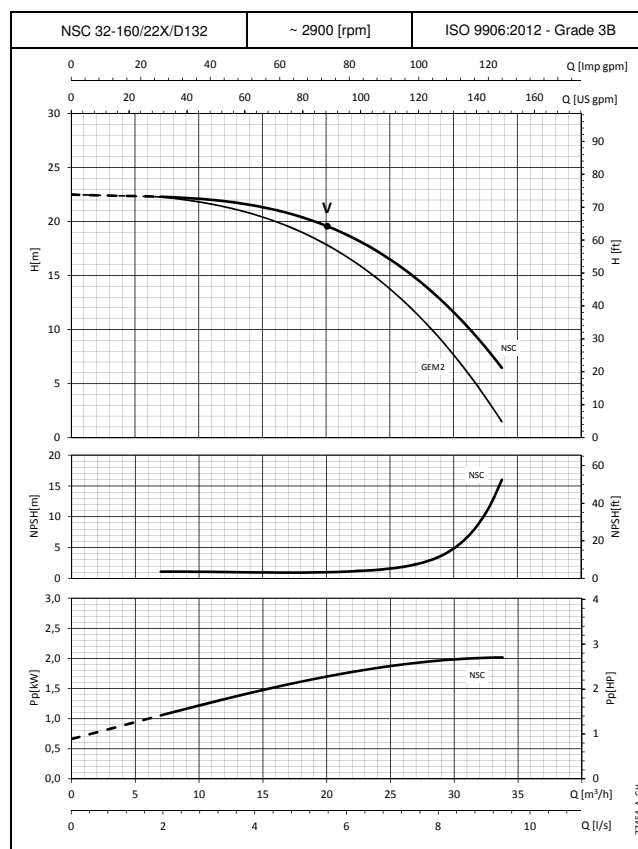
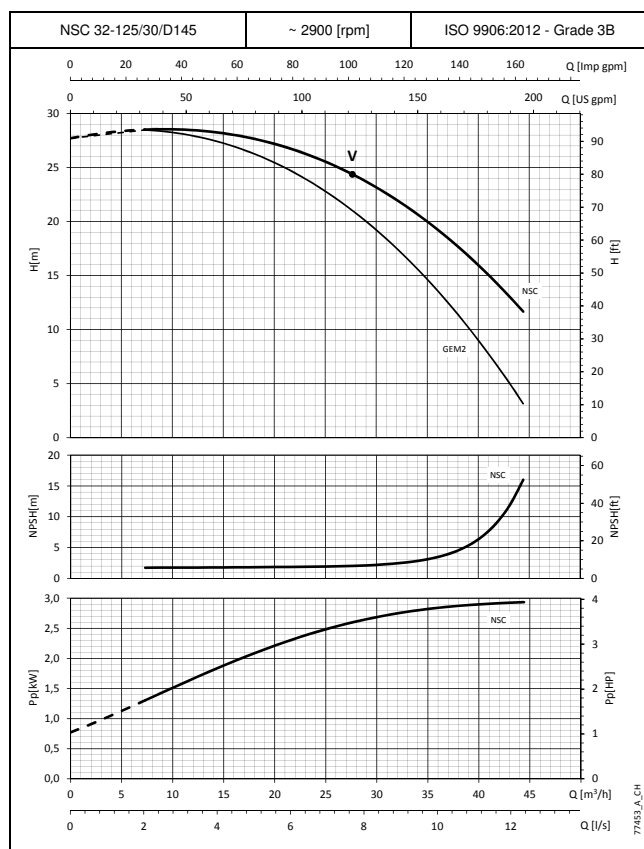
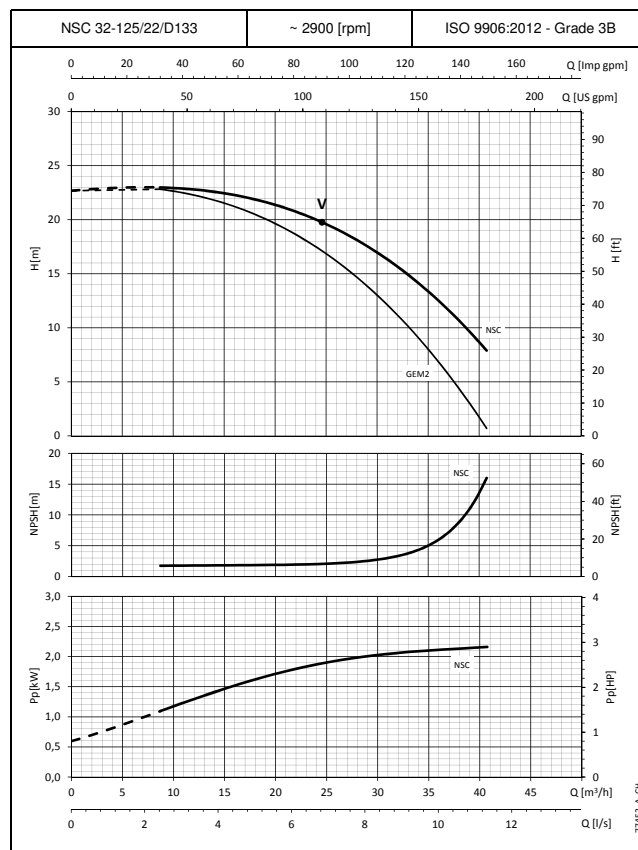
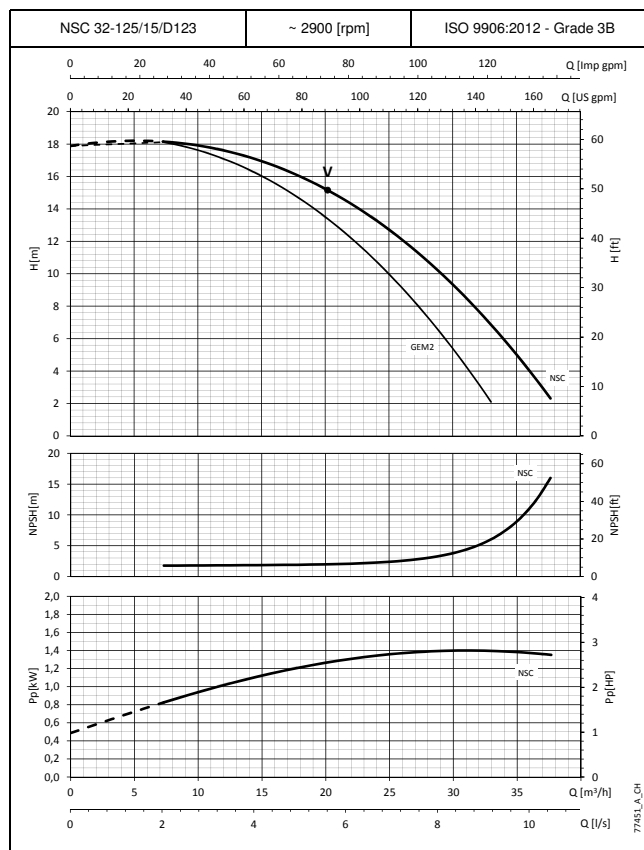
GEM / GEMJ	GEMK	H	H1		H2		H3 STD		H3 WC		I1	I2	I3	I4	I5	I6
			STD	WC	GEM1	GEM2	GEM1	GEM2	GEM1	GEM2						
N80-160/110	N80-160/D144	280	280	380	1493	1585	1493	1585	1593	1685	1340	1340	1340	1340	1500	1500
N80-160/150	N80-160/D158	280	330	380	1493	1585	1543	1635	1593	1685	1340	1340	1500	1500	1500	1500
N80-160/185	N80-160/D168	280	330	380	1493	1585	1543	1635	1593	1685	1340	1340	1500	1500	1500	1500
N80-160/220	N80-160/D177	280	380	380	1493	1585	1593	1685	1593	1685	1340	1340	1500	1500	1500	1500
N80-200/220	N80-200/D181	280	380	380	1518	1610	1618	1710	1618	1710	1340	1340	1500	1500	1500	1500
N80-200/300	N80-200/D195	310	360	360	1548	1640	1598	1690	1598	1690	1500	1500	1500	1500	1500	1500
N80-200/370	N80-200/D208	310	360	360	1548	1640	1598	1690	1598	1690	1500	1500	1500	1500	1500	1500
N80-200/450	N80-200/D219	365	365	365	1603	1695	1603	1695	1603	1695	1500	1500	1500	1500	1500	1500
N80-250/370	N80-250/D214	310	360	410	1578	1670	1628	1720	1678	1770	1500	1500	1500	1500	1500	1500
N80-250/450	N80-250/D227	365	365	365	1633	1725	1633	1725	1633	1725	1500	1500	1500	1500	1500	1500
N80-250/550	N80-250/D241	390	390	390	1658	1750	1658	1750	1658	1750	1500	1500	1500	1500	1500	1500
N80-250/750	N80-250/D259	420	420	520	1688	1780	1688	1780	1788	1880	1660	1660	1660	1660	1660	1660
N80-316/900	N80-316/D280	440	440	540	1743	1835	1743	1835	1843	1935	1660	1660	1660	1660	1660	1660
N80-316/1100	N80-316/D298	505	505	505	1808	1900	1808	1900	1808	1900	1660	1660	1660	1660	1660	1660
N80-316/1320	N80-316/D310	505	505	505	1808	1900	1808	1900	1808	1900	1660	1660	1660	1660	1660	1660
N80-316/1600	N80-316/D321	505	505	505	1808	1900	1808	1900	1808	1900	1660	1660	1660	1660	1660	1660
N100-160/150	N100-160/D144	365	365	365	1735	1816	1735	1816	1735	1816	1500	1500	1500	1500	1500	1500
N100-160/185	N100-160/D156	365	365	365	1735	1816	1735	1816	1735	1816	1500	1500	1500	1500	1500	1500
N100-160/220	N100-160/D167	385	380	380	1755	1836	1750	1831	1750	1831	1500	1500	1500	1500	1500	1500
N100-160/300	N100-160/D187	330	380	380	1700	1781	1750	1831	1750	1831	1500	1500	1500	1500	1500	1500
N100-200/300	N100-200/D188	330	380	380	1700	1781	1750	1831	1750	1831	1500	1500	1500	1500	1500	1500
N100-200/370	N100-200/D202	330	380	380	1700	1781	1750	1831	1750	1831	1500	1500	1500	1500	1500	1500
N100-200/450	N100-200/D213	355	355	355	1725	1806	1725	1806	1725	1806	1500	1500	1500	1500	1500	1500
N100-200/550	N100-200/D227	405	405	405	1775	1856	1775	1856	1775	1856	1660	1660	1500	1500	1500	1500
N100-250/450	N100-250/D213	355	355	355	1725	1806	1725	1806	1725	1806	1500	1500	1500	1500	1500	1500
N100-250/550	N100-250/D227	405	405	405	1775	1856	1775	1856	1775	1856	1660	1660	1500	1500	1500	1500
N100-250/750	N100-250/D249	390	390	490	1760	1841	1760	1841	1860	1941	1660	1660	1660	1660	1660	1660
N100-250/900	N100-250/D259	390	390	490	1760	1841	1760	1841	1860	1941	1660	1660	1660	1660	1660	1660
N100-316/1320	N100-316/D286	505	505	505	1910	1991	1910	1991	1910	1991	1660	1660	1660	1660	1660	1660
N125-200/550	N125-200/D195	405	405	405	1906	2062	1906	2062	1906	2062	1660	1660	1500	1500	1500	1500
N125-200/750	N125-200/D215	405	405	505	1906	2062	1906	2062	2006	2062	1660	1660	1660	1660	1660	1660
N125-200/900	N125-200/D225	405	405	505	1906	2062	1906	2062	2006	2062	1660	1660	1660	1660	1660	1660
N125-315/1100	N125-315/D250	505	505	505	2046	2202	2046	2202	2046	2202	1660	1660	1660	1660	1660	1660
N125-315/1320	N125-315/D265	505	505	505	2046	2202	2046	2202	2046	2202	1660	1660	1660	1660	1660	1660
N125-315/1600	N125-315/D280	505	505	505	2046	2202	2046	2202	2046	2202	1660	1660	1660	1660	1660	1660
N125-315/2000	N125-315/D290	505	505	505	2046	2202	2046	2202	2046	2202	1660	1660	1660	1660	1660	1660

Dimensions in mm. Tolerance ± 10 mm.

interassi-nsc80-125_b_td

PERFORMANCE CURVES

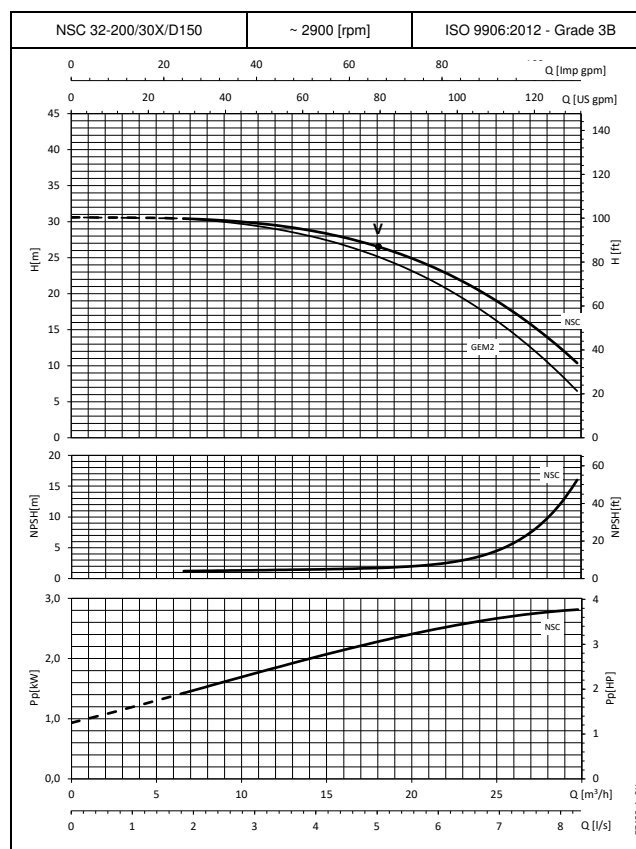
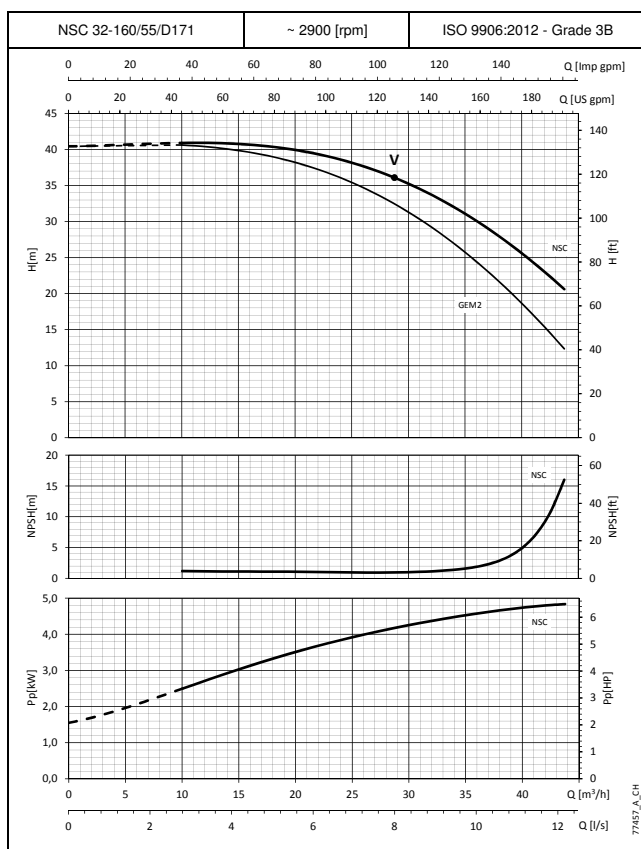
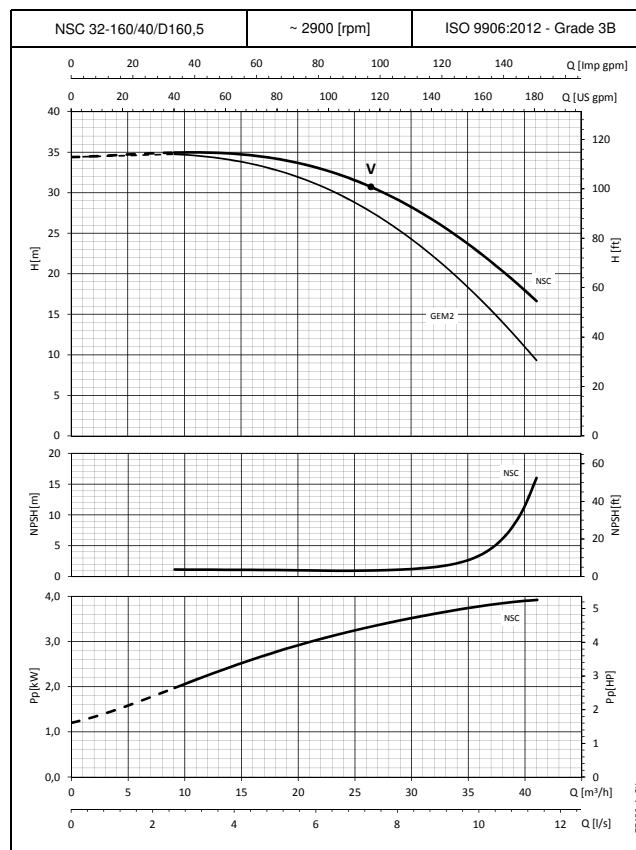
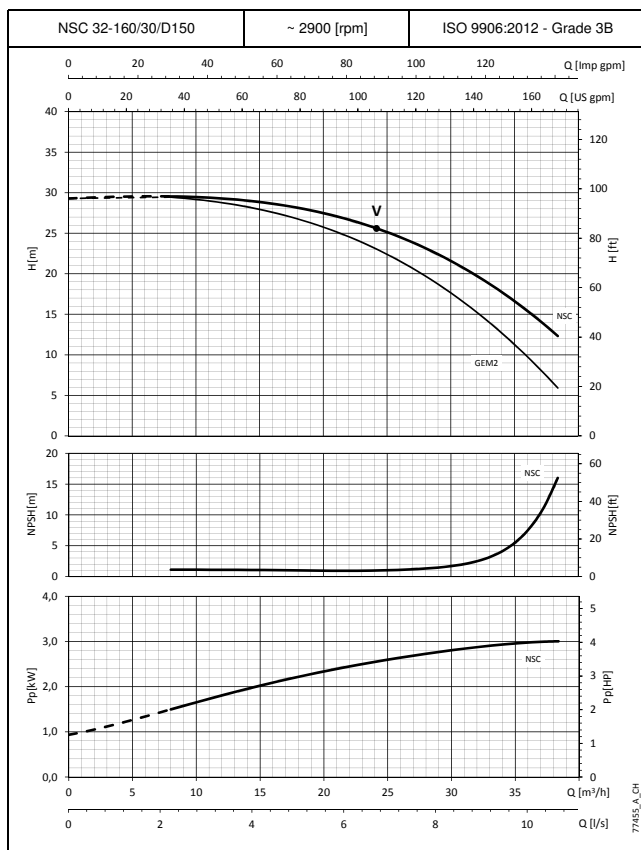
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



GEM1, GEM2, GEM3 = hydraulic performance of the pressure pump set. **NSC** = pump hydraulic performance without drops.

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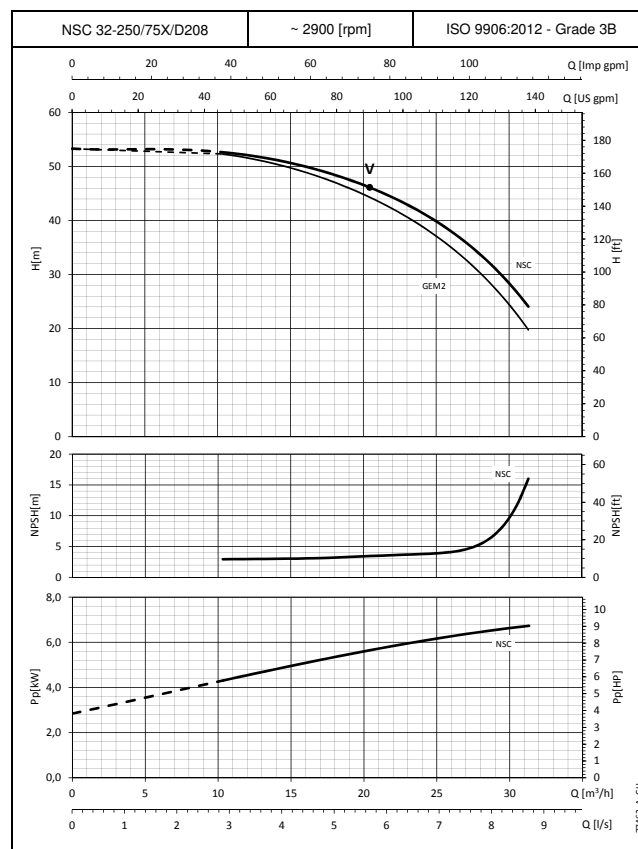
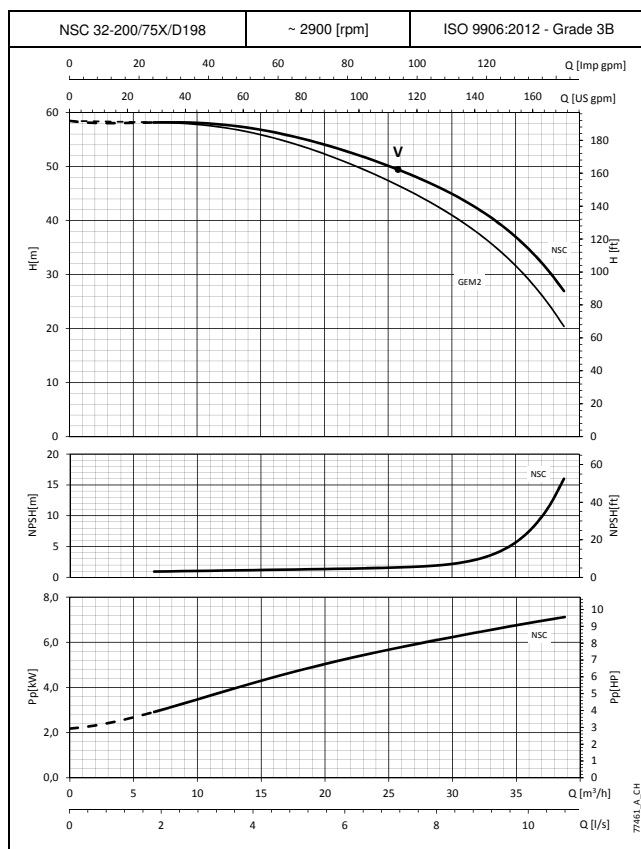
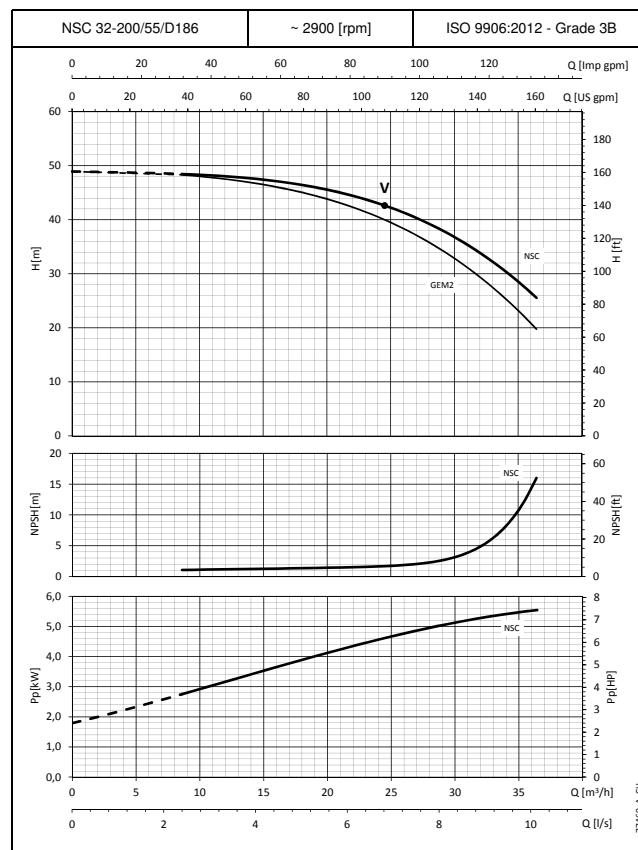
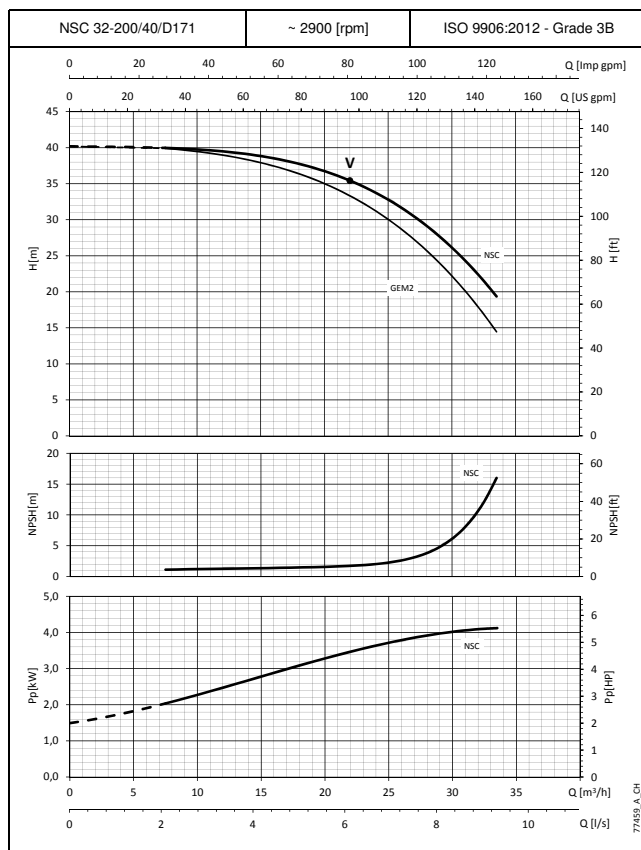
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



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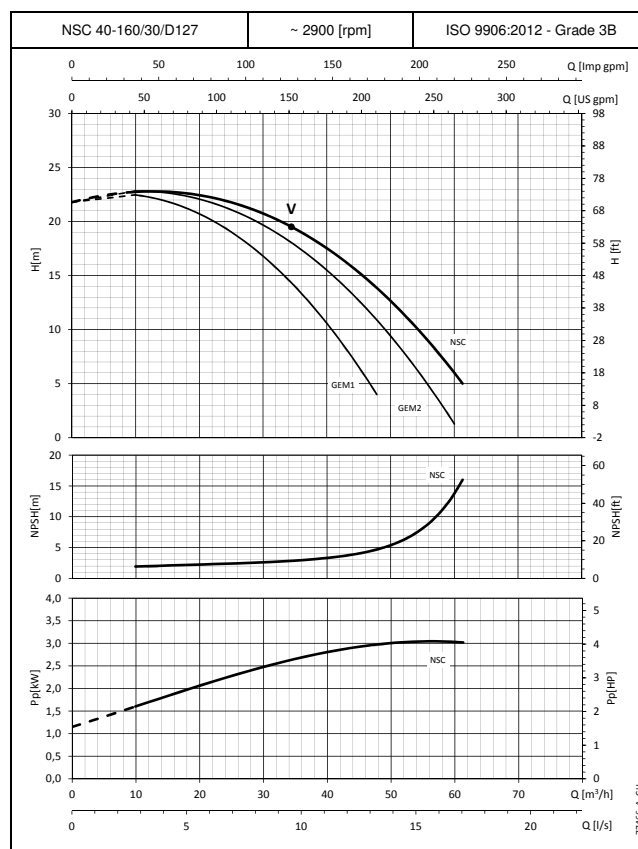
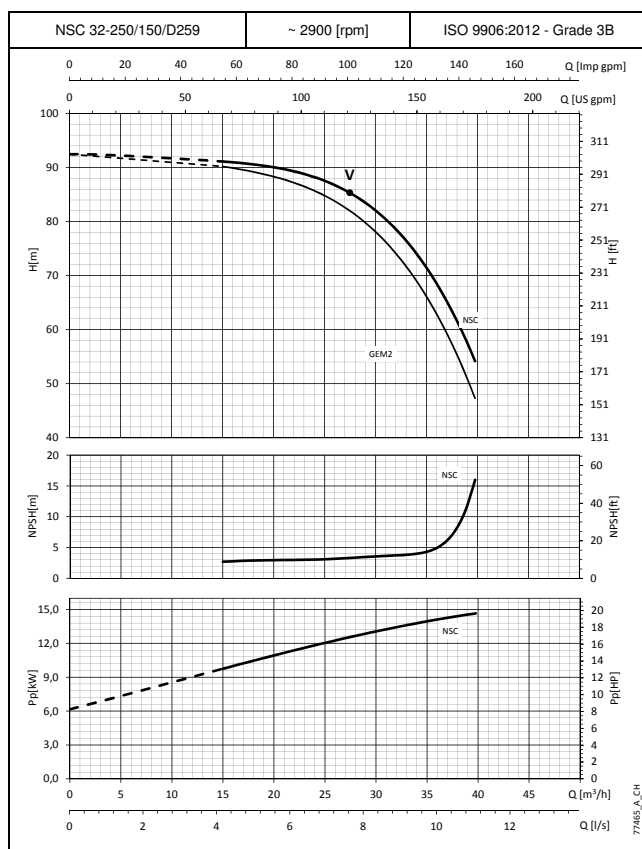
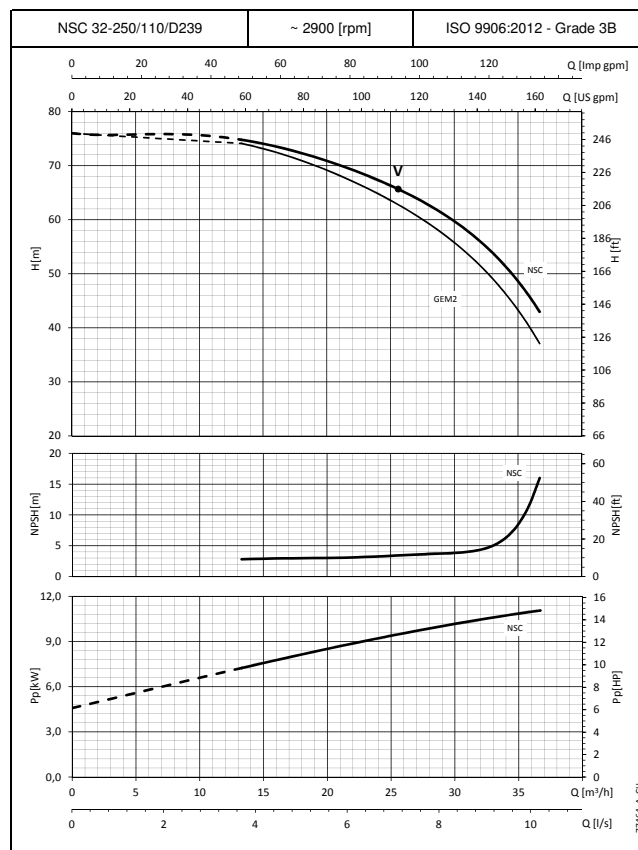
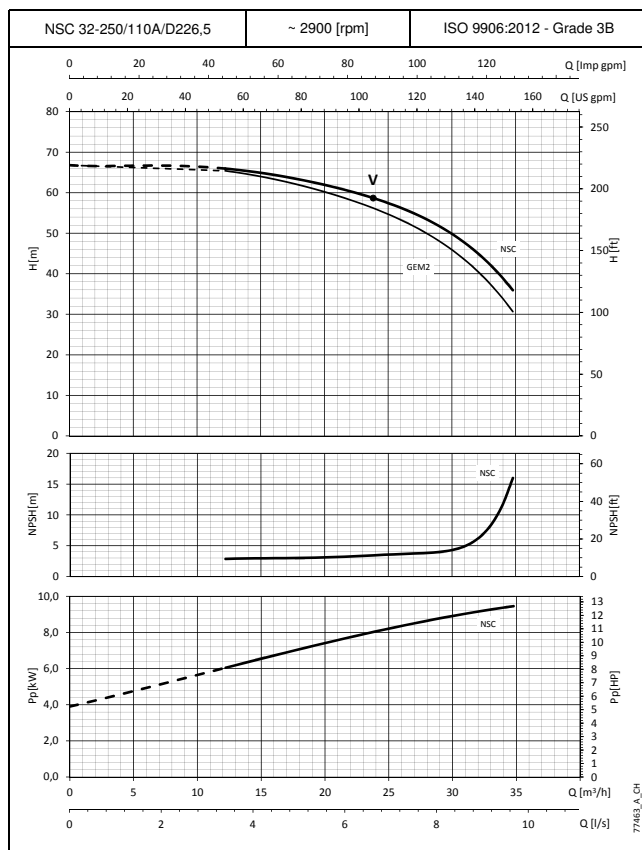
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



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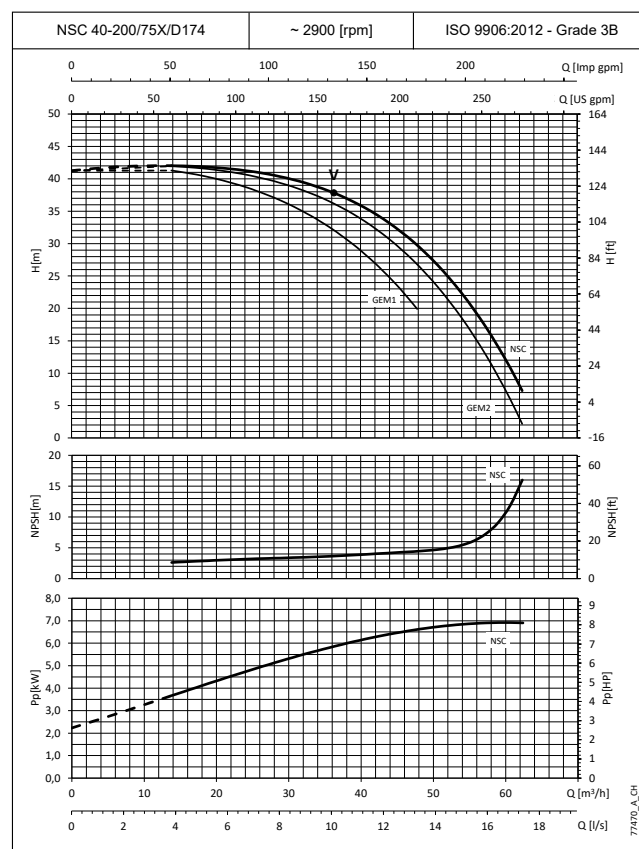
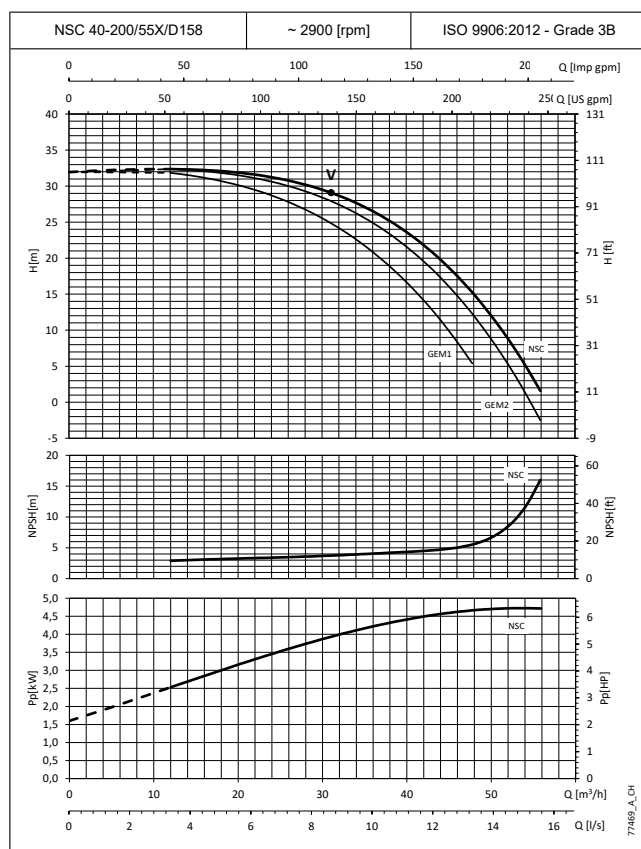
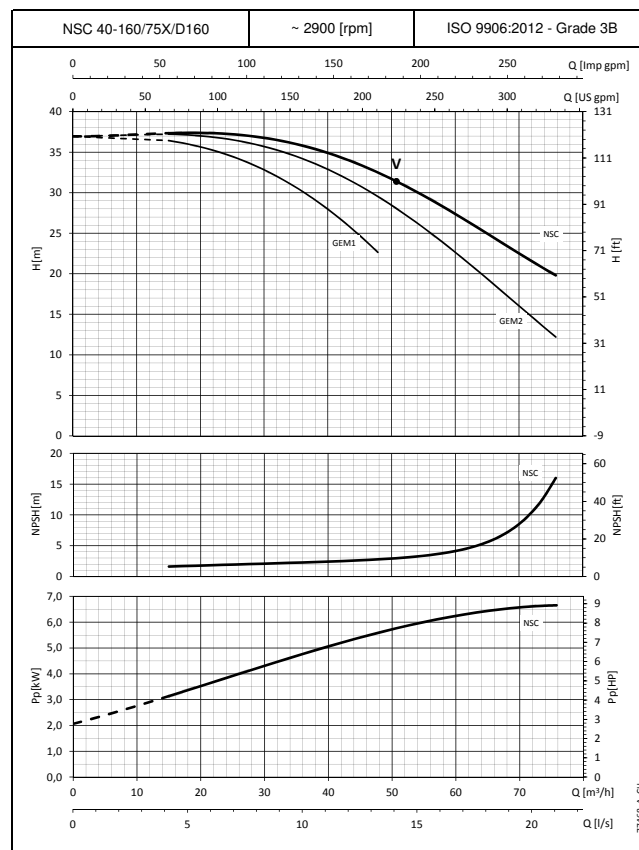
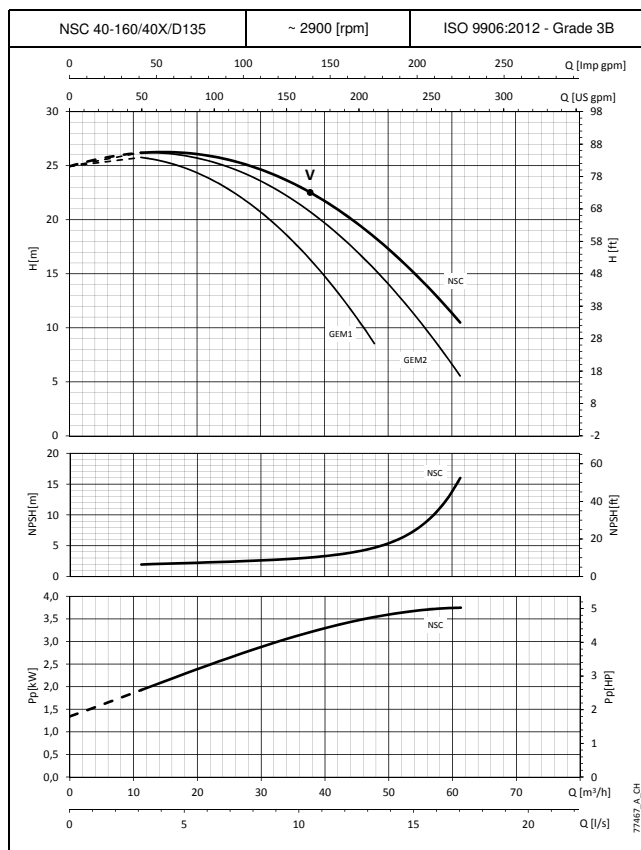
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



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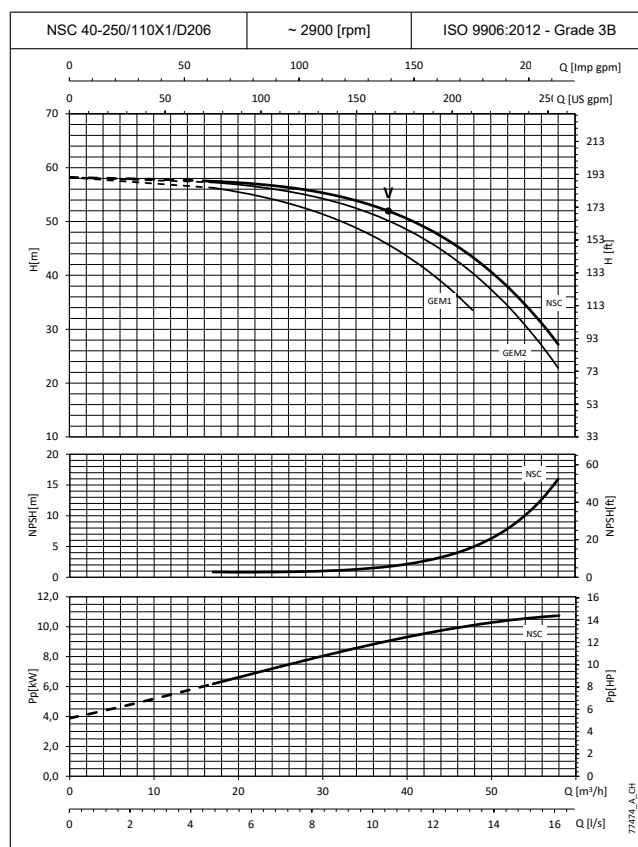
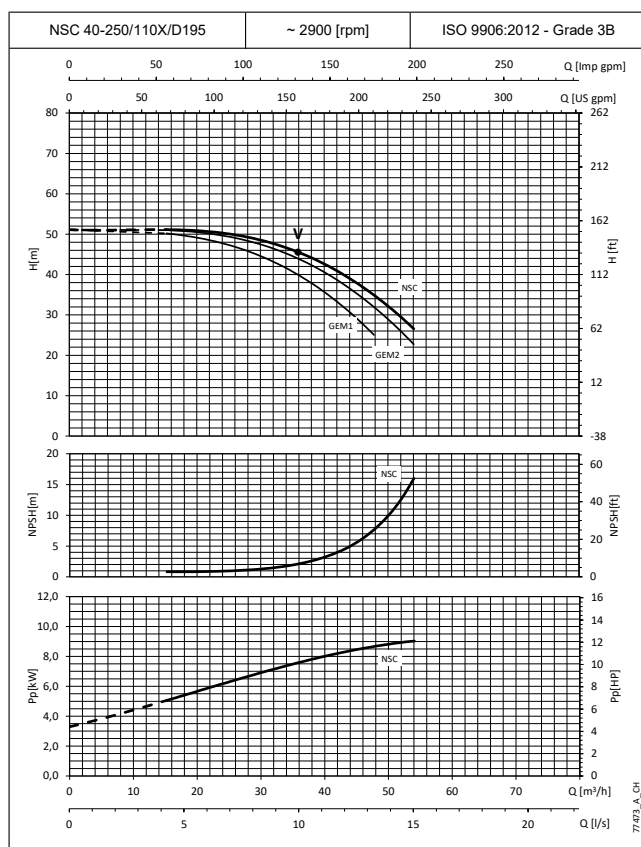
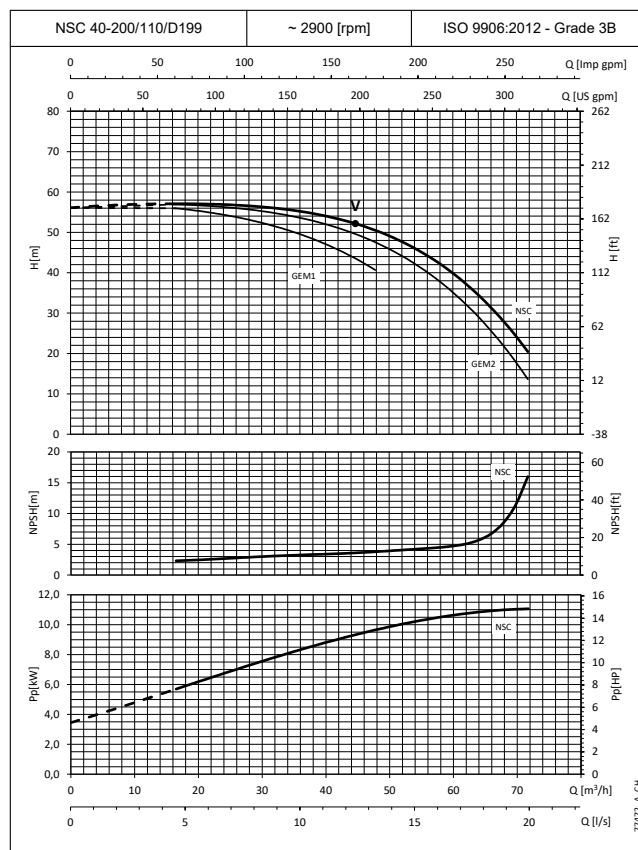
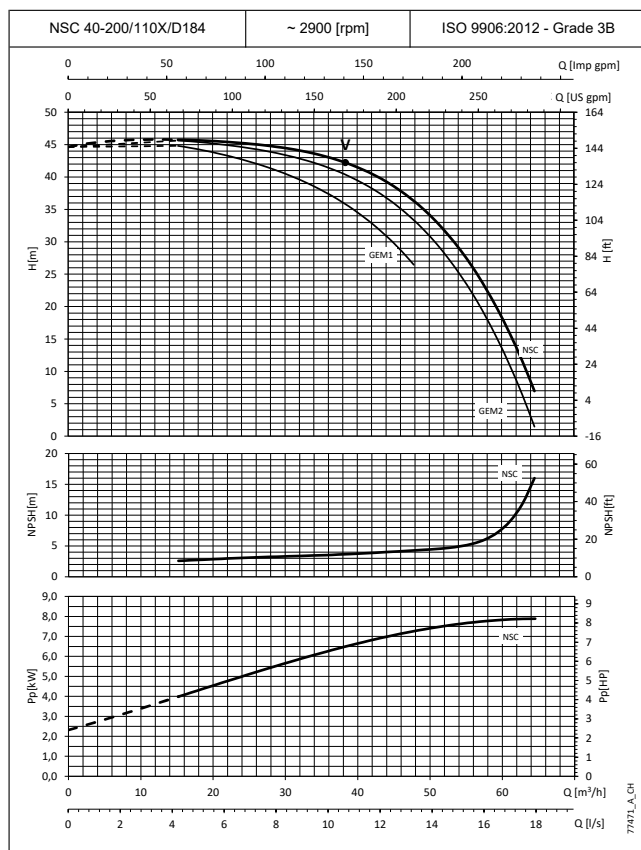
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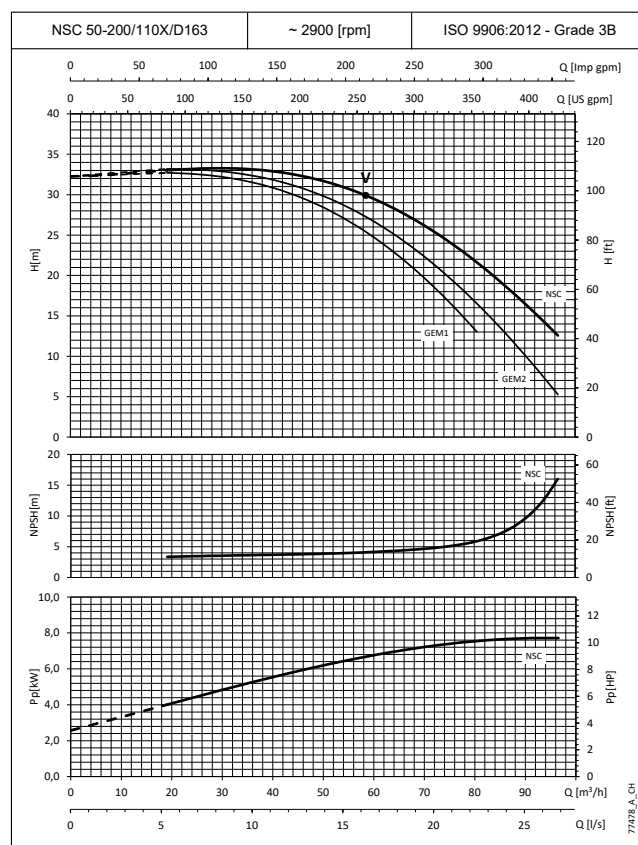
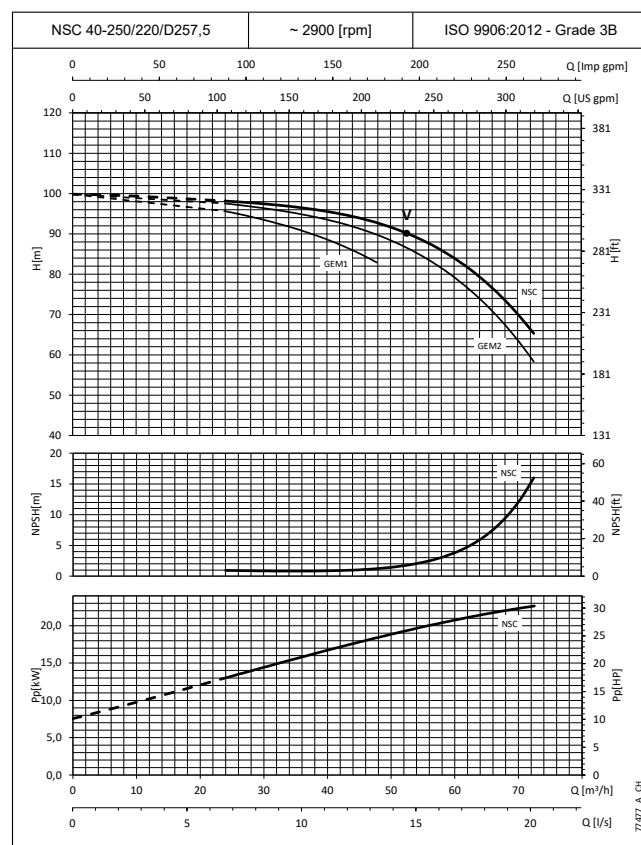
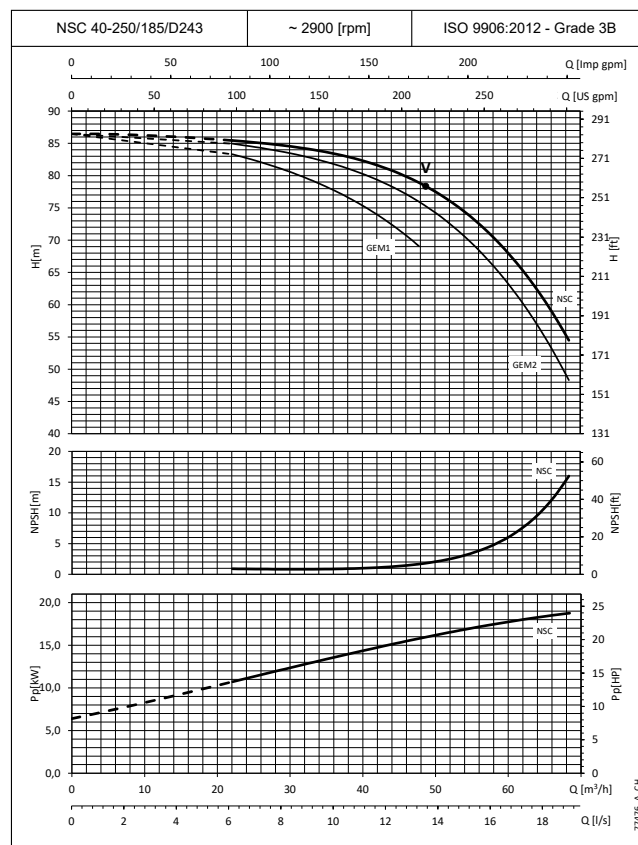
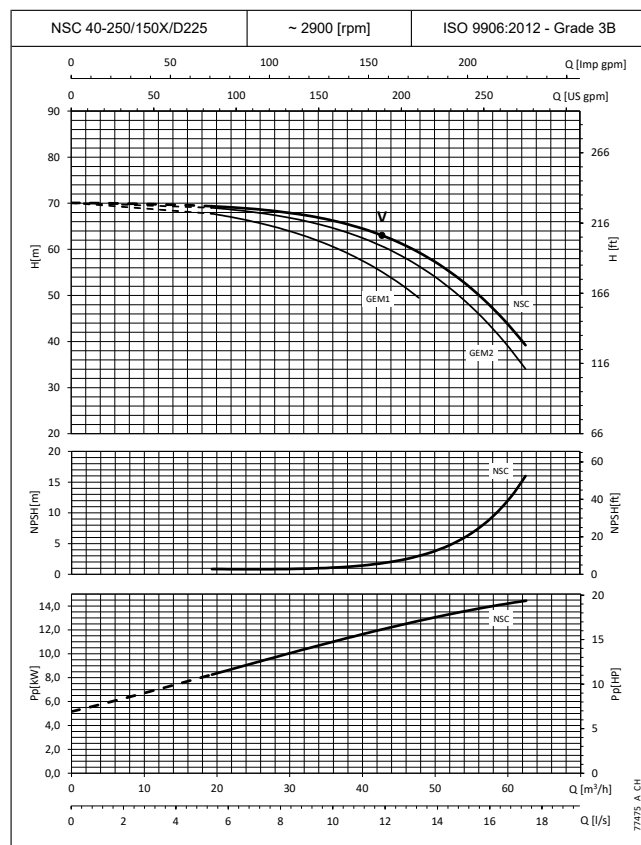
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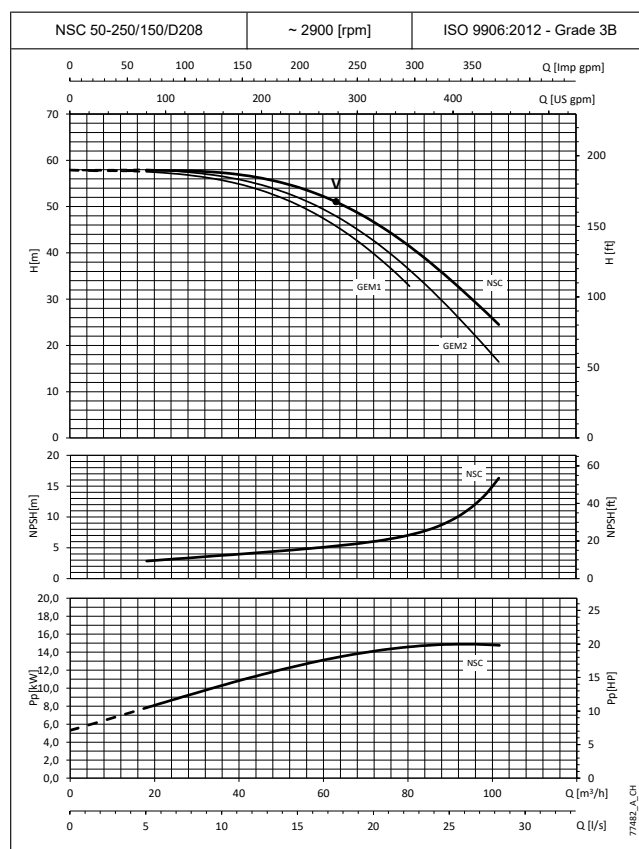
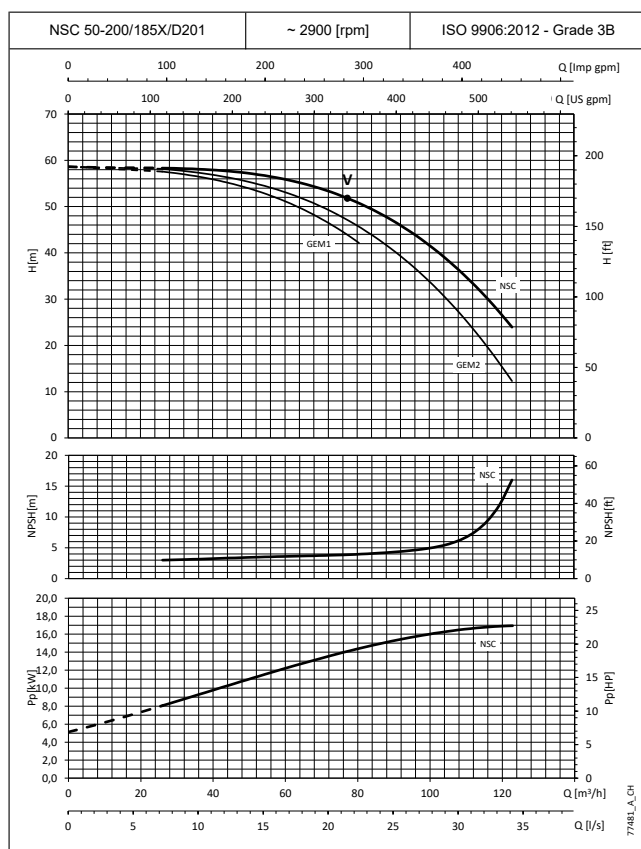
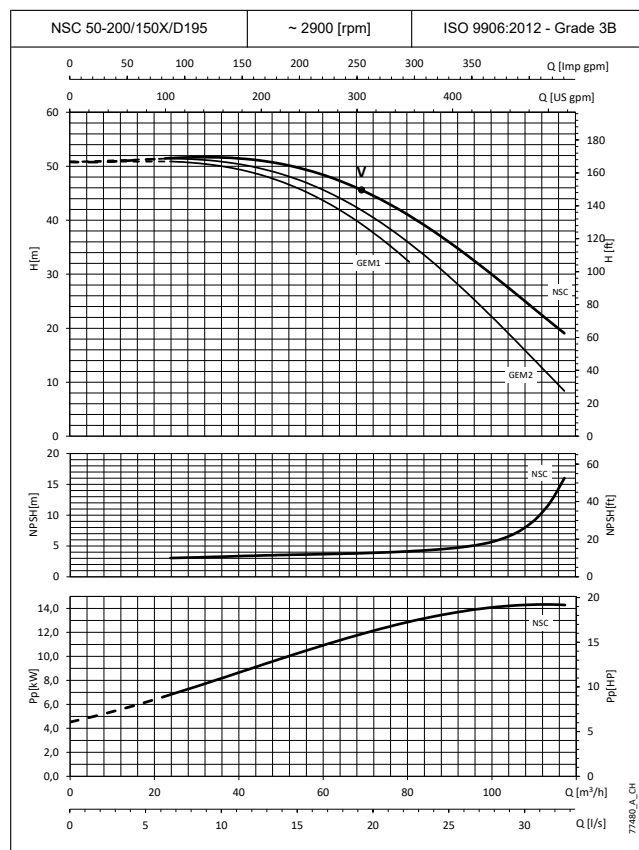
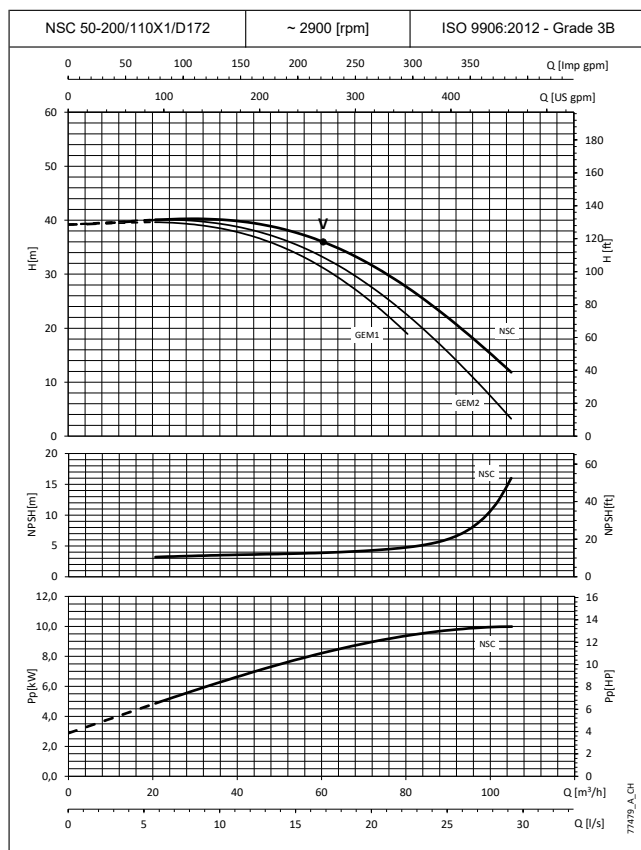
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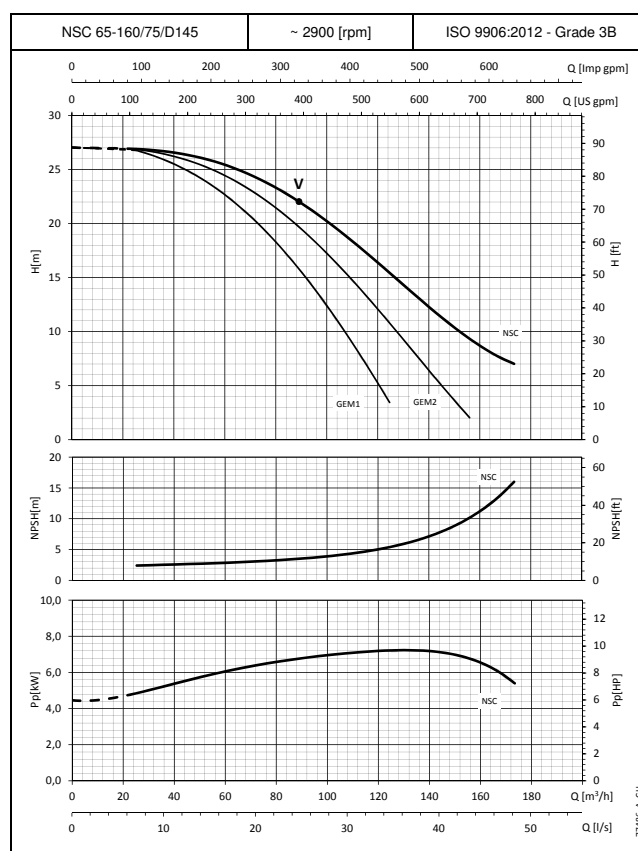
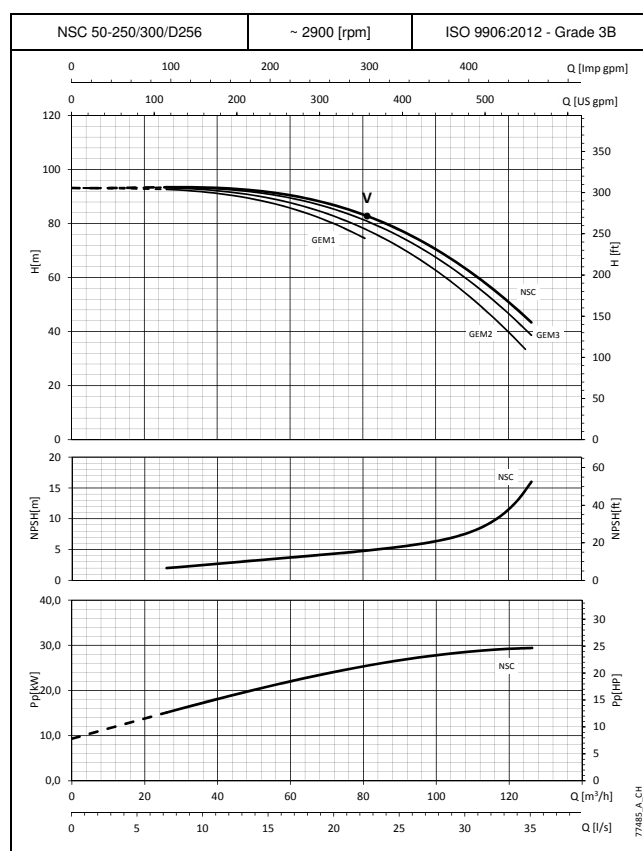
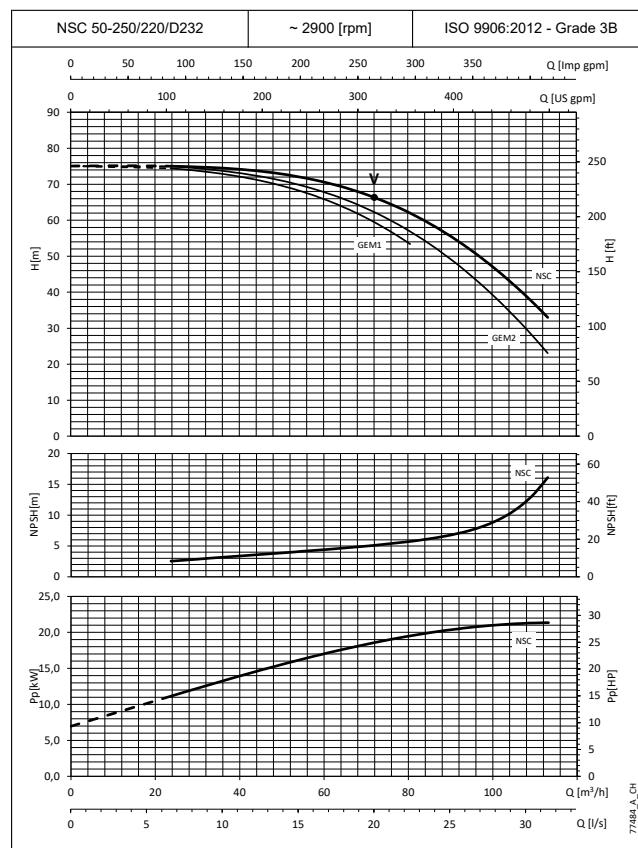
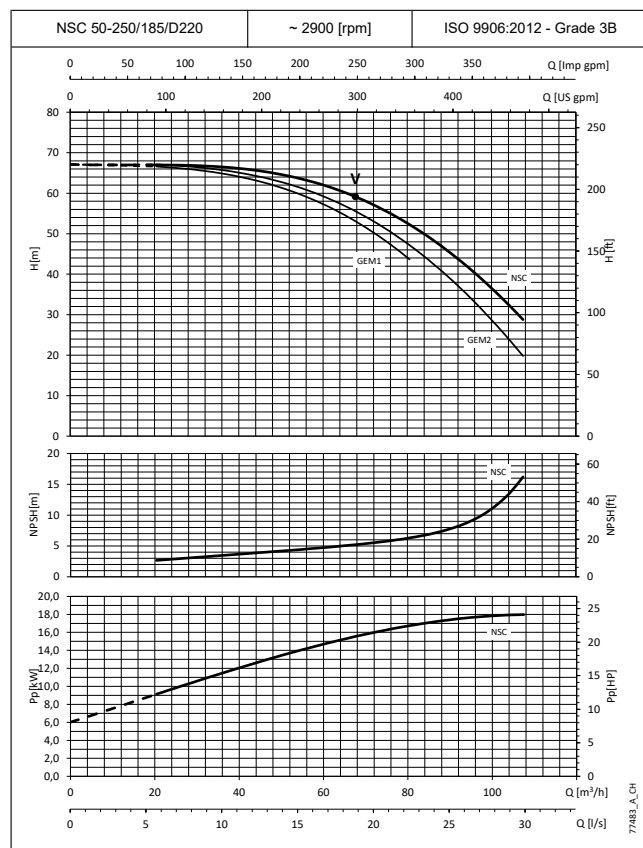
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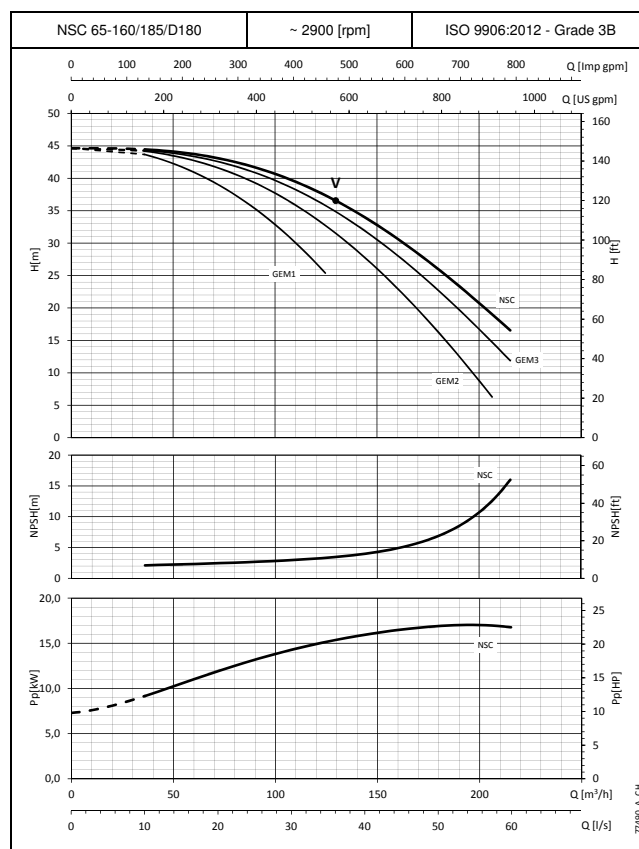
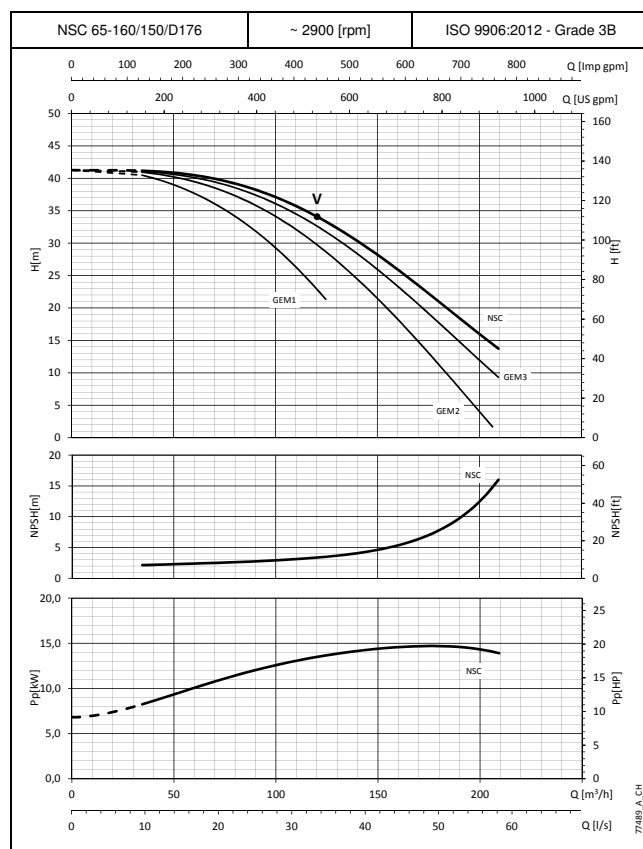
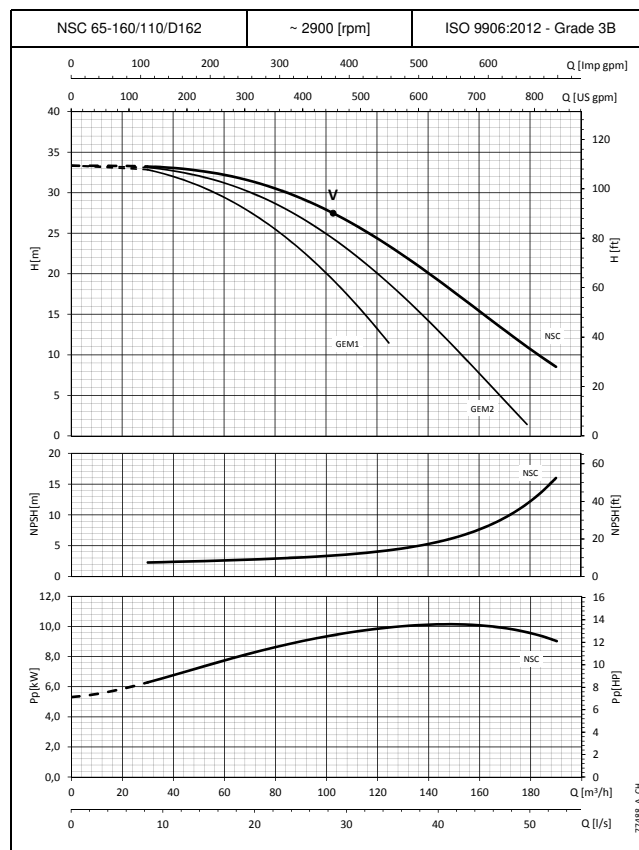
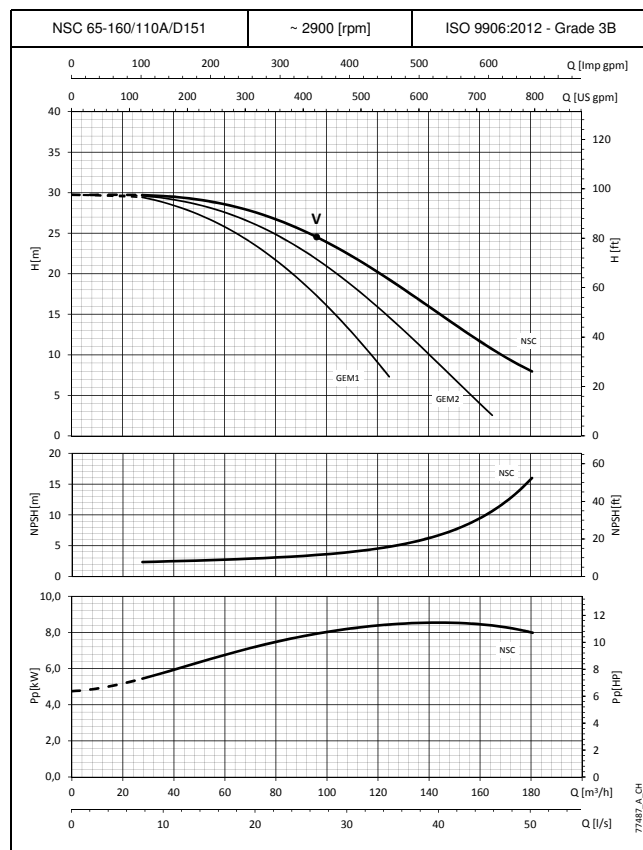
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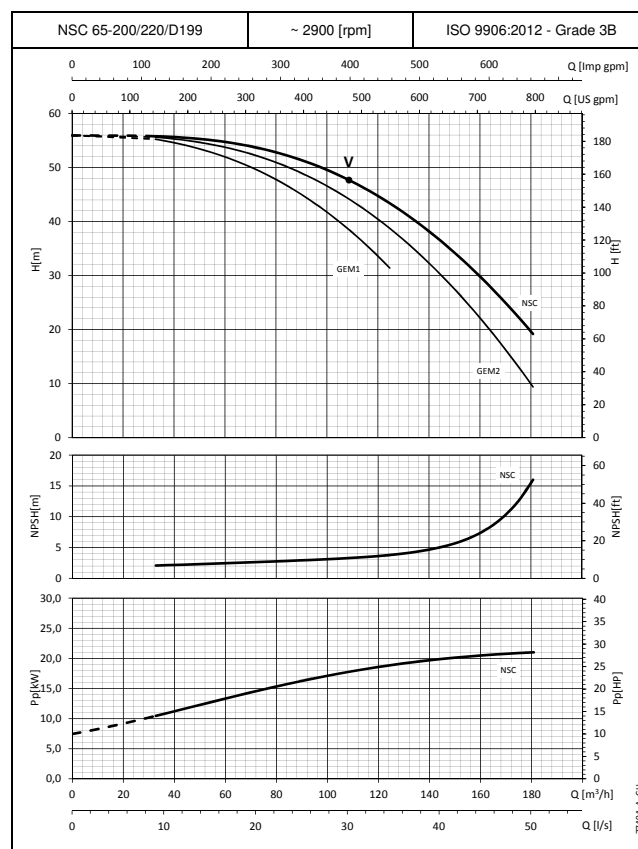
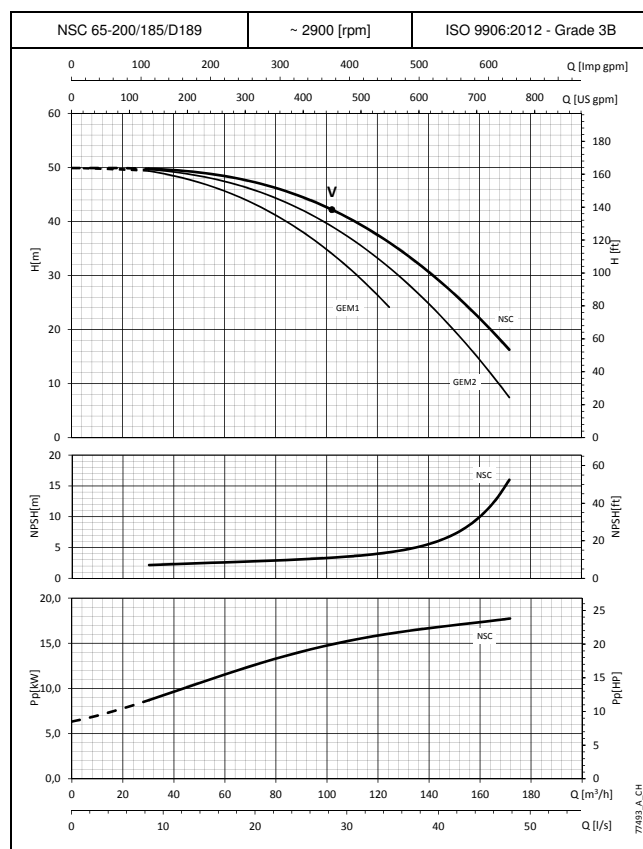
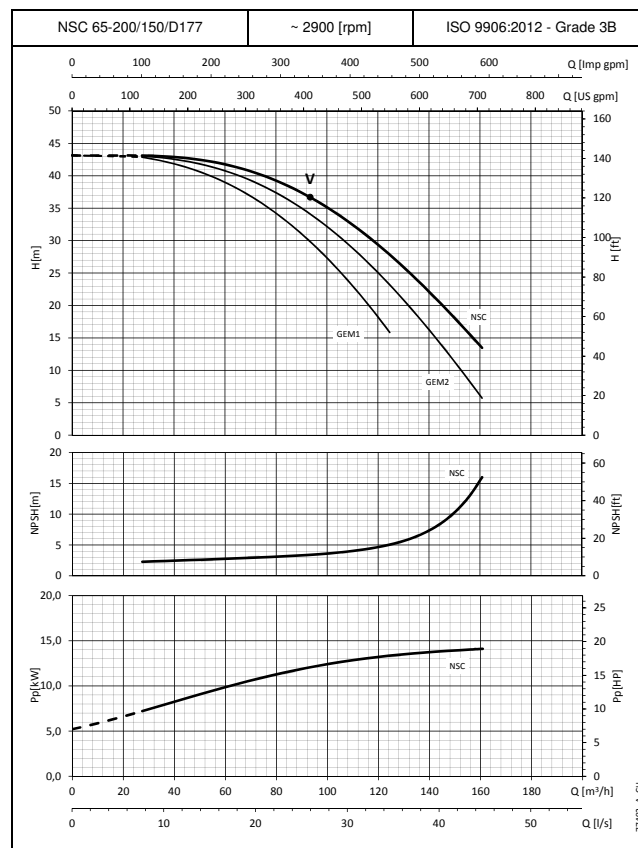
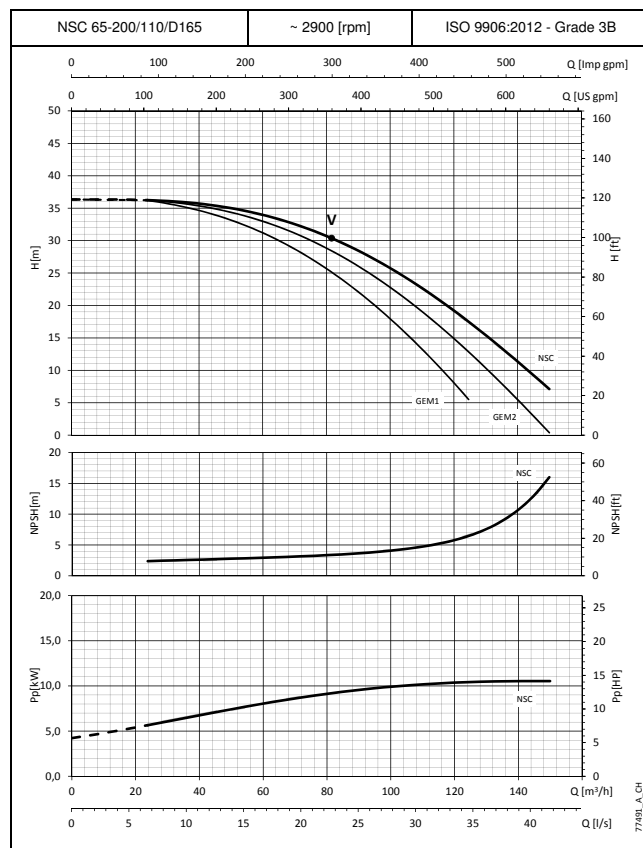
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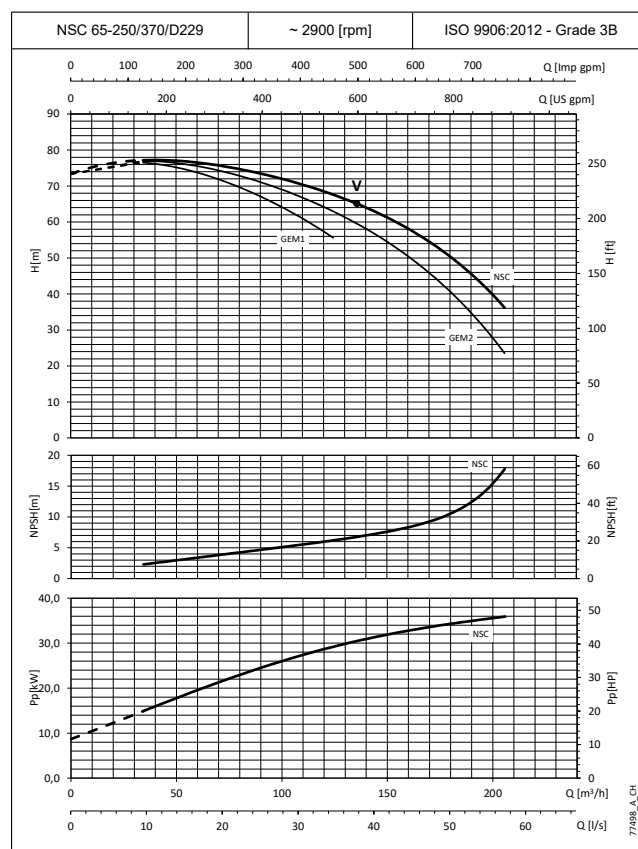
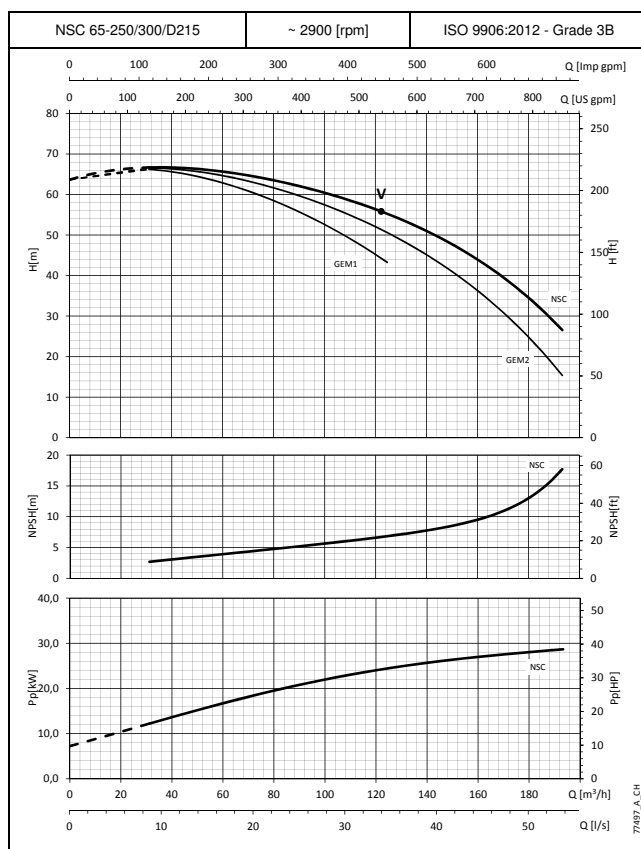
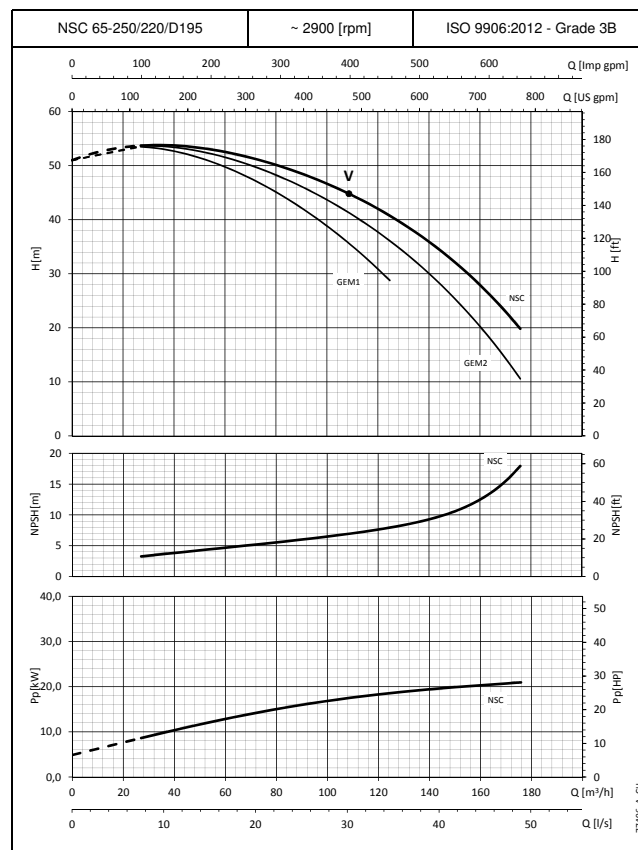
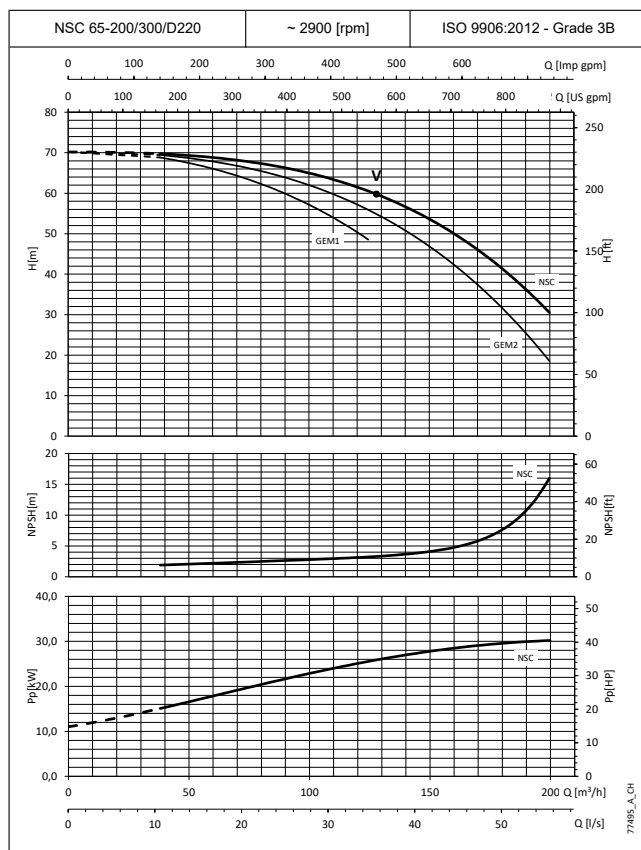
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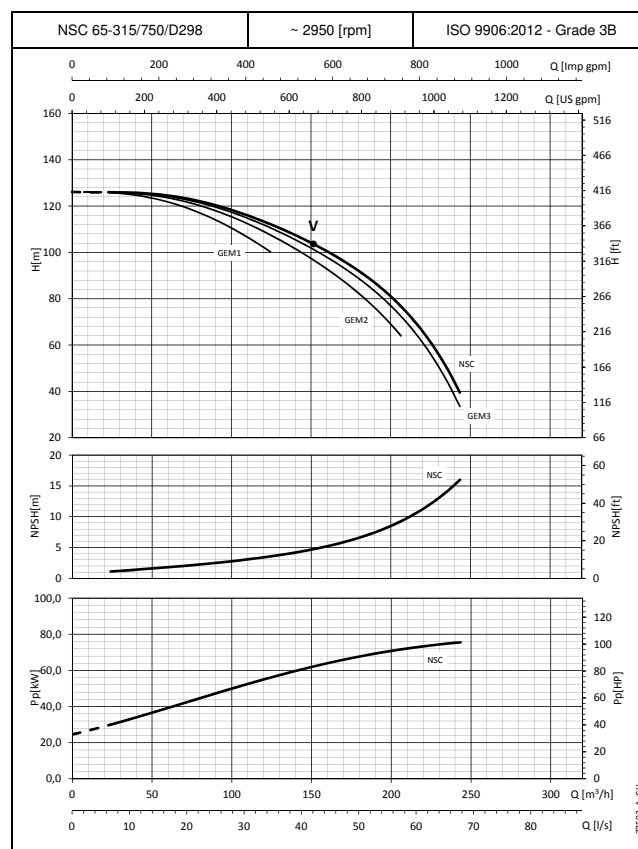
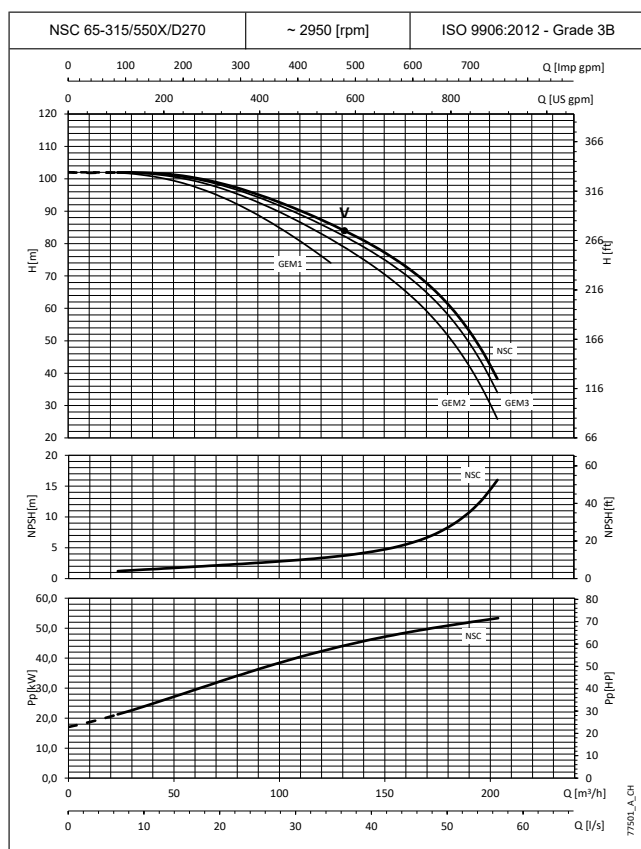
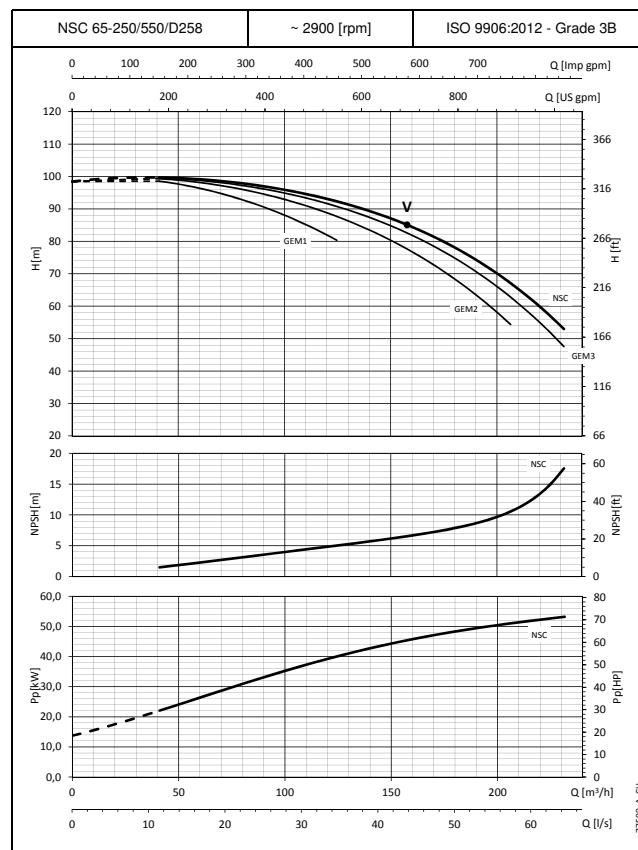
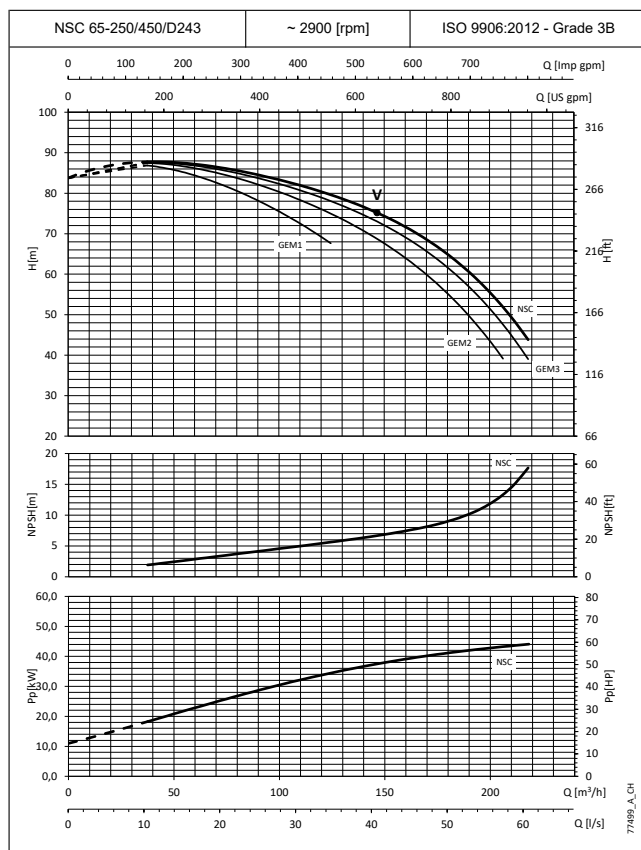
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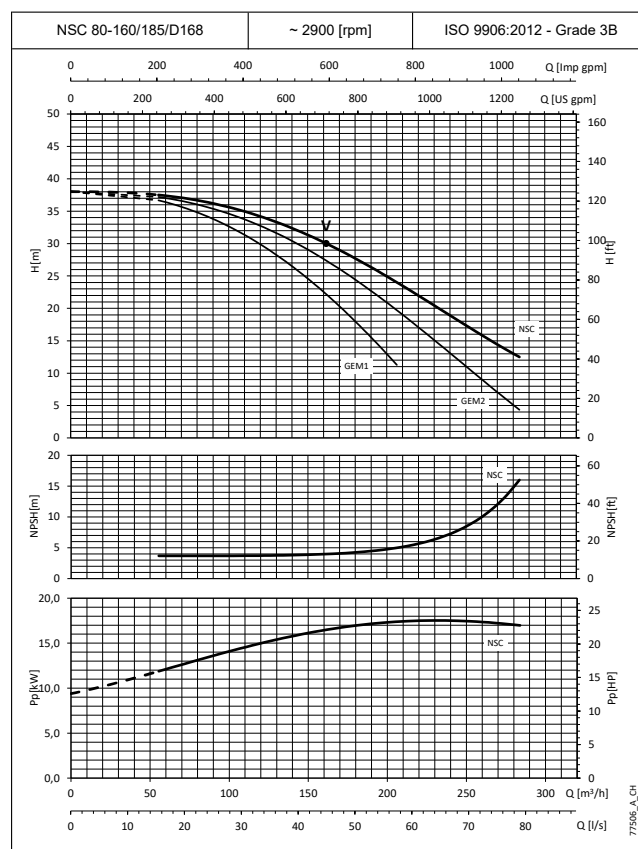
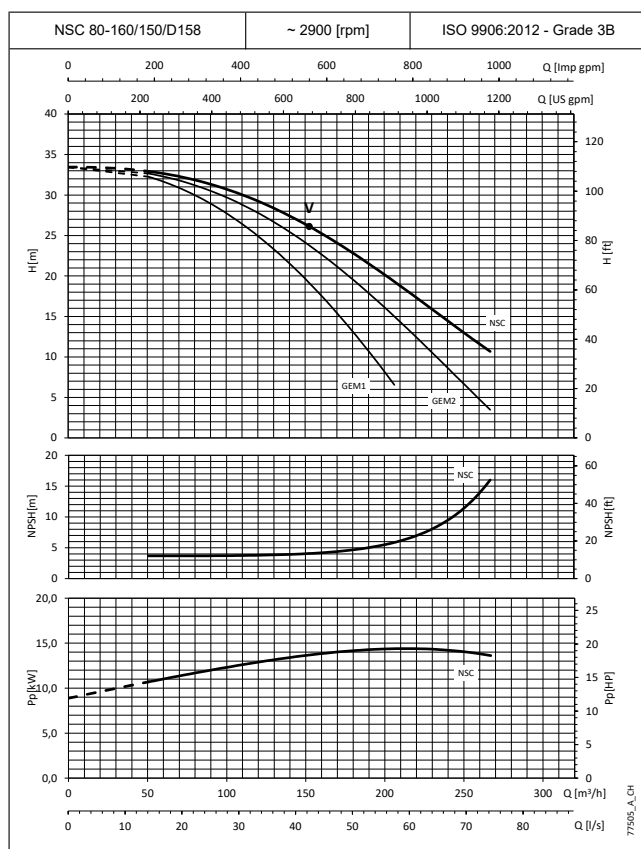
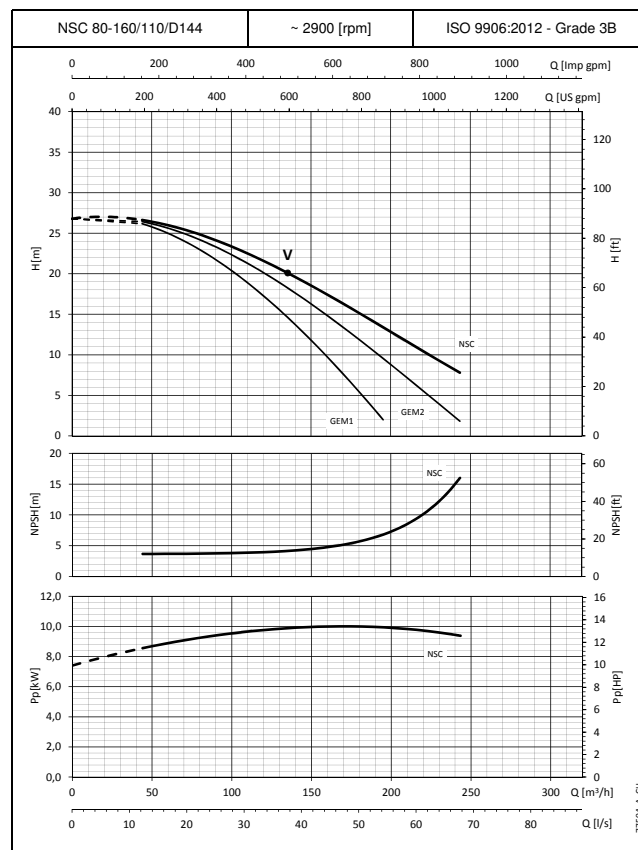
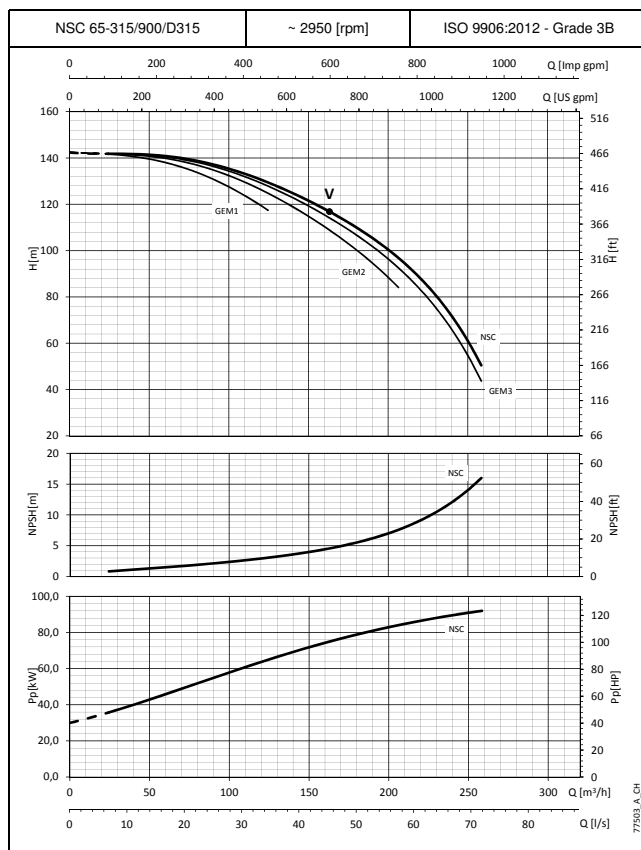
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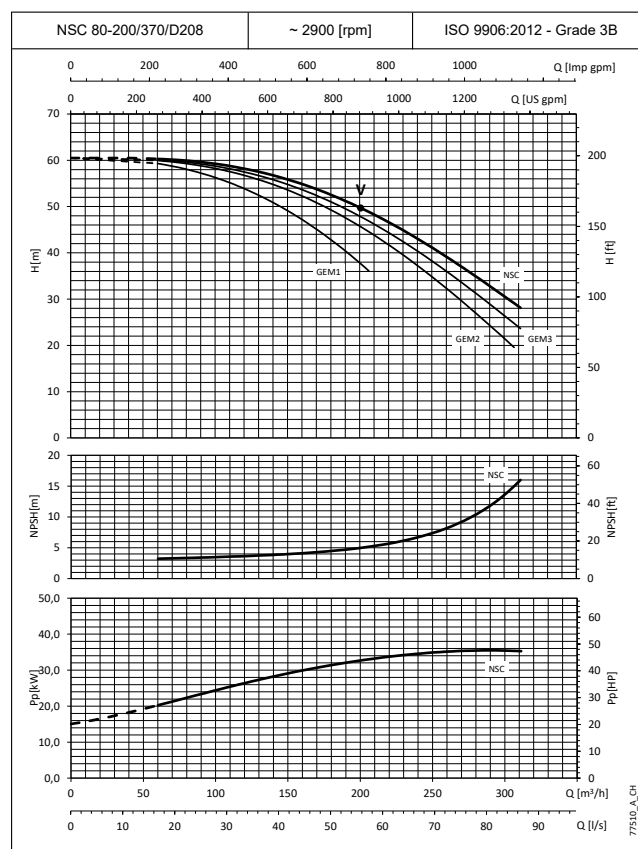
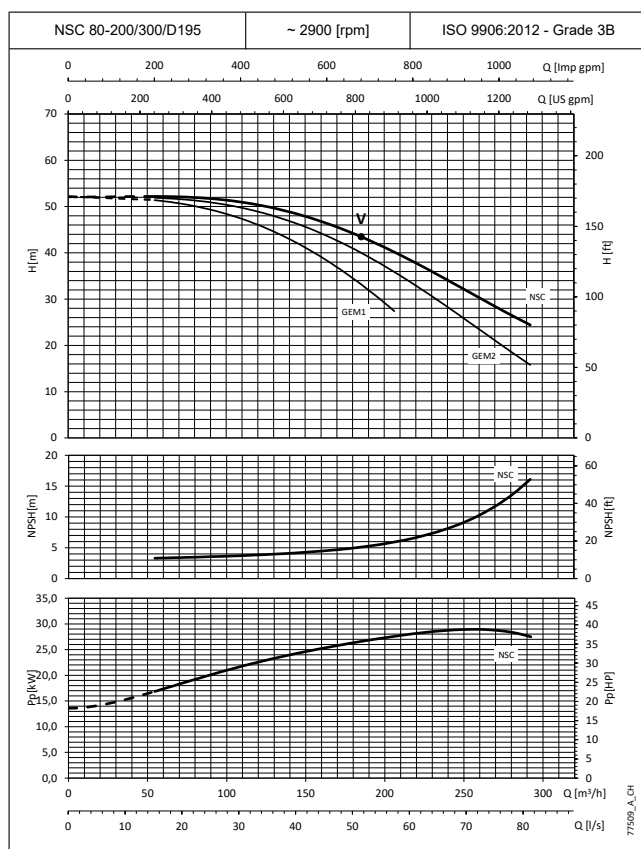
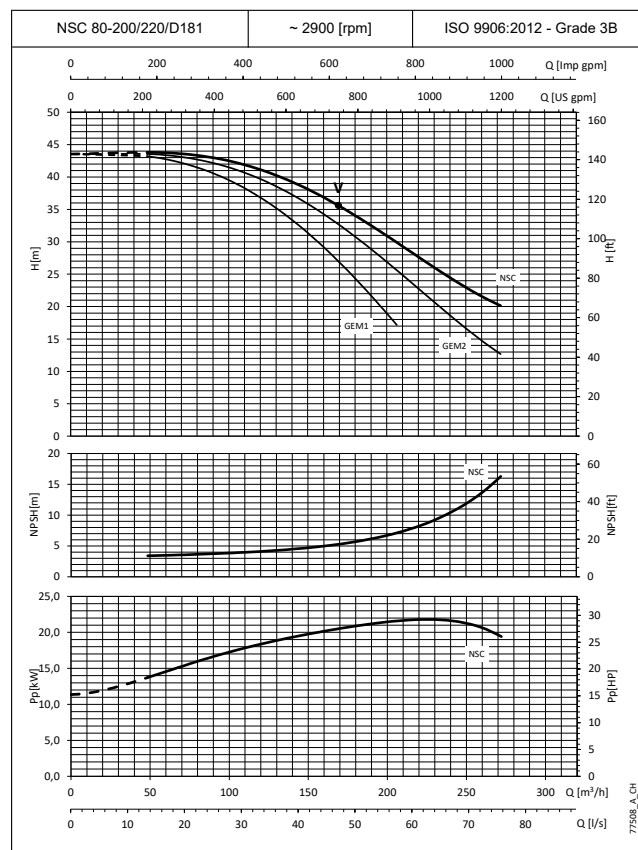
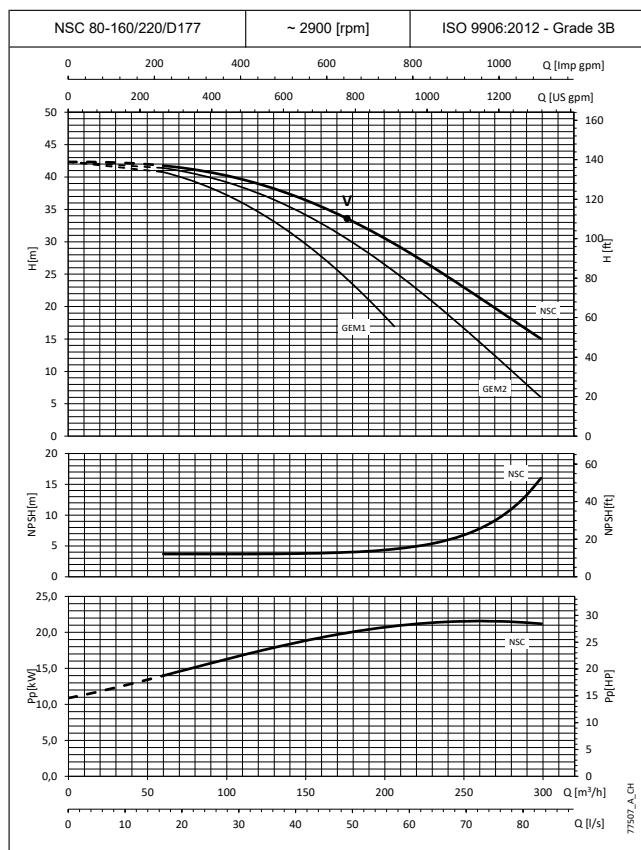
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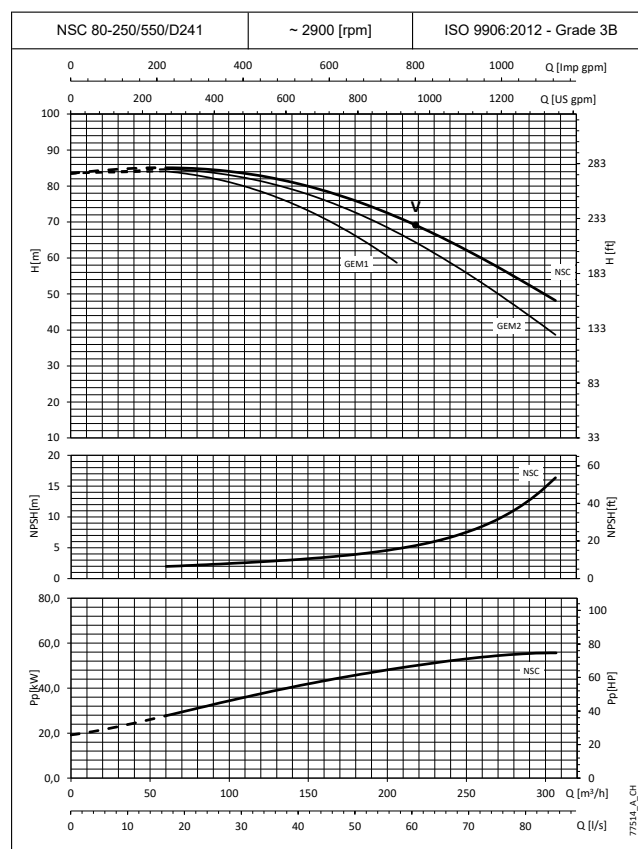
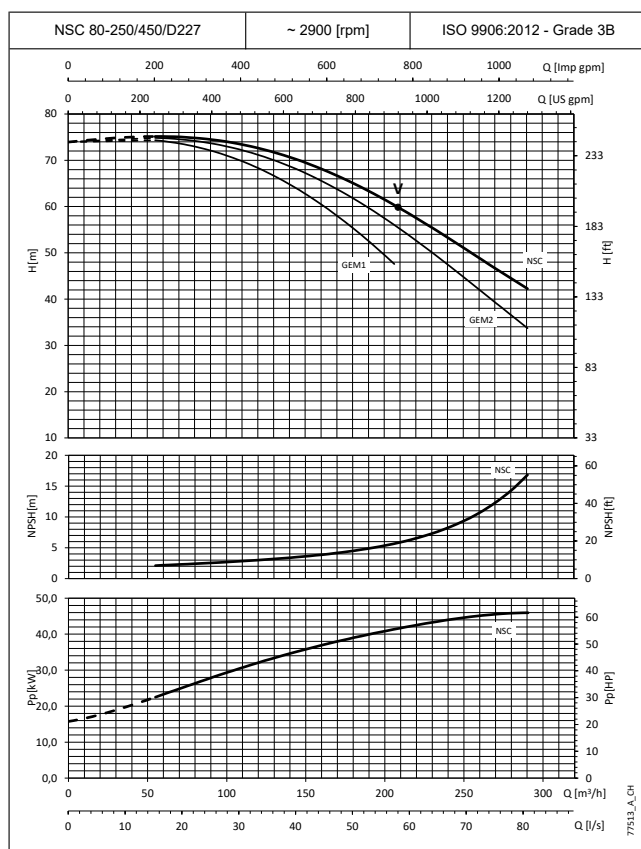
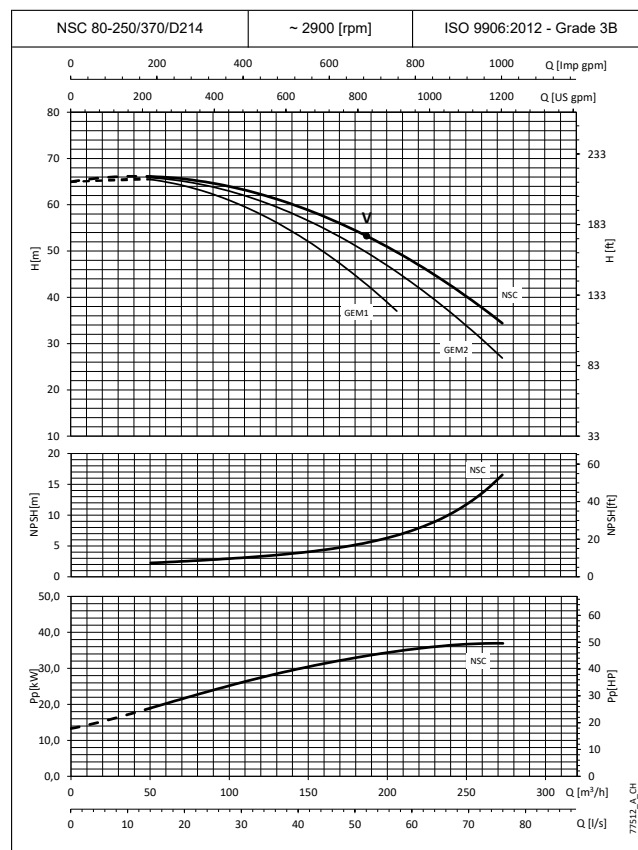
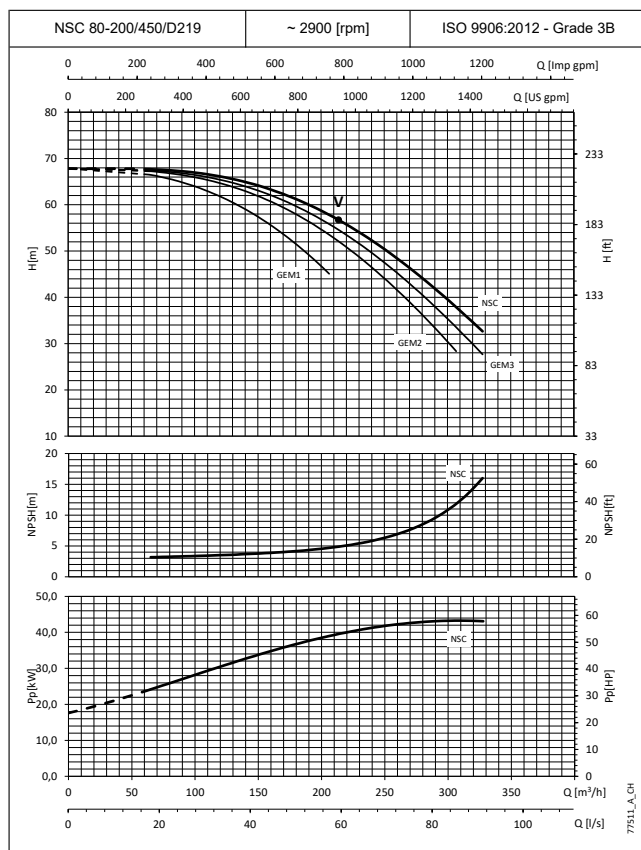
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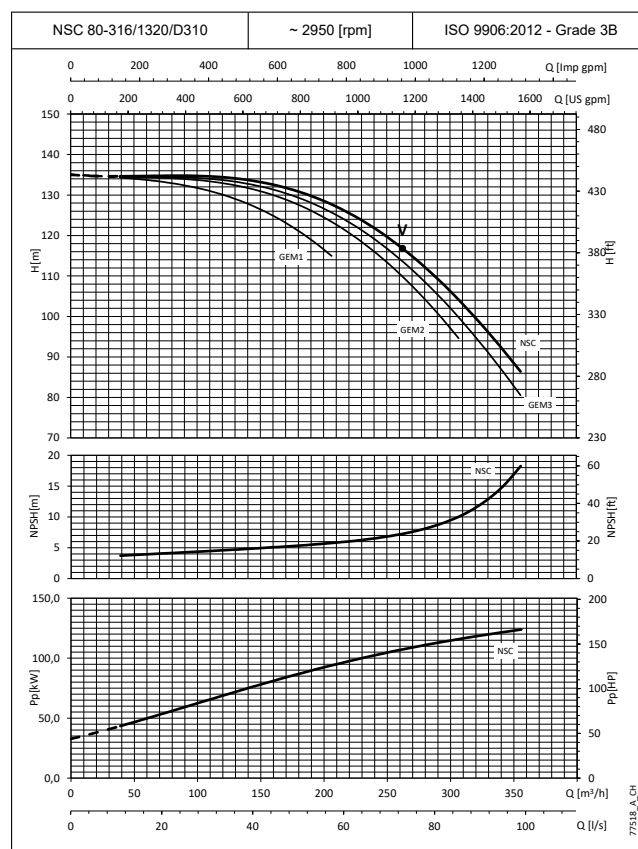
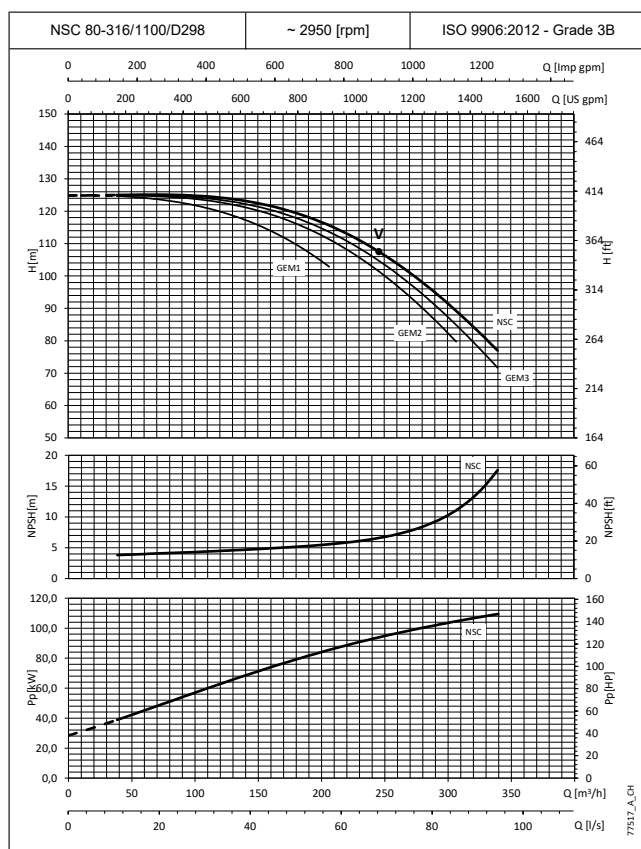
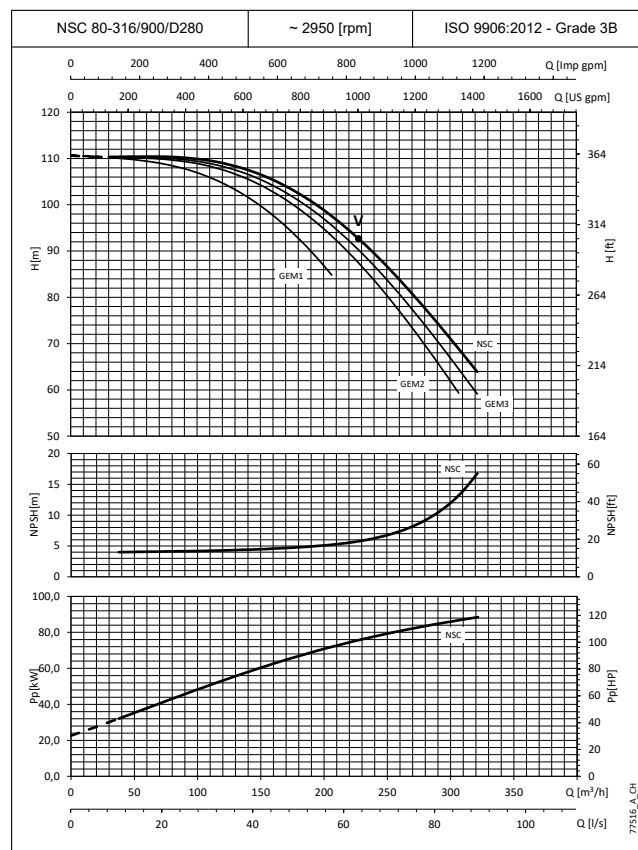
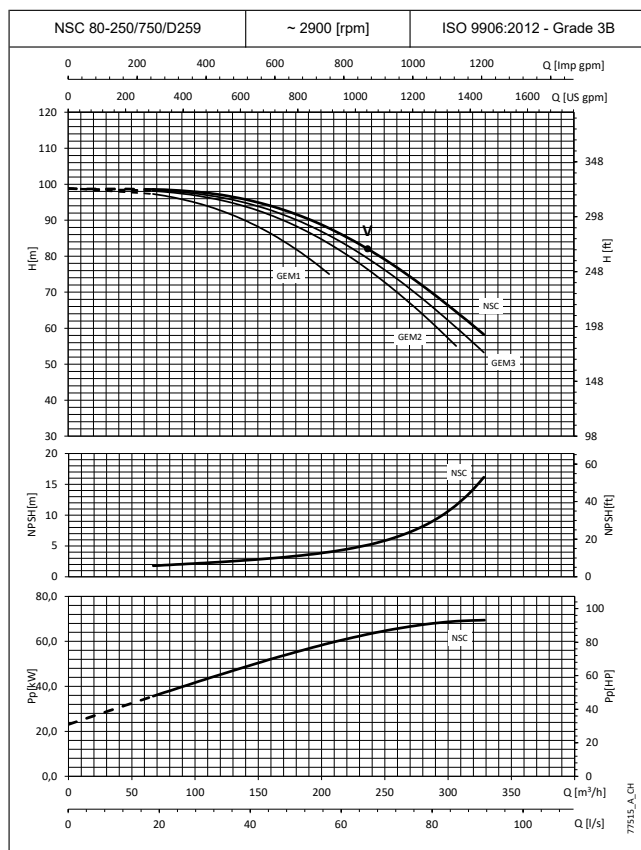
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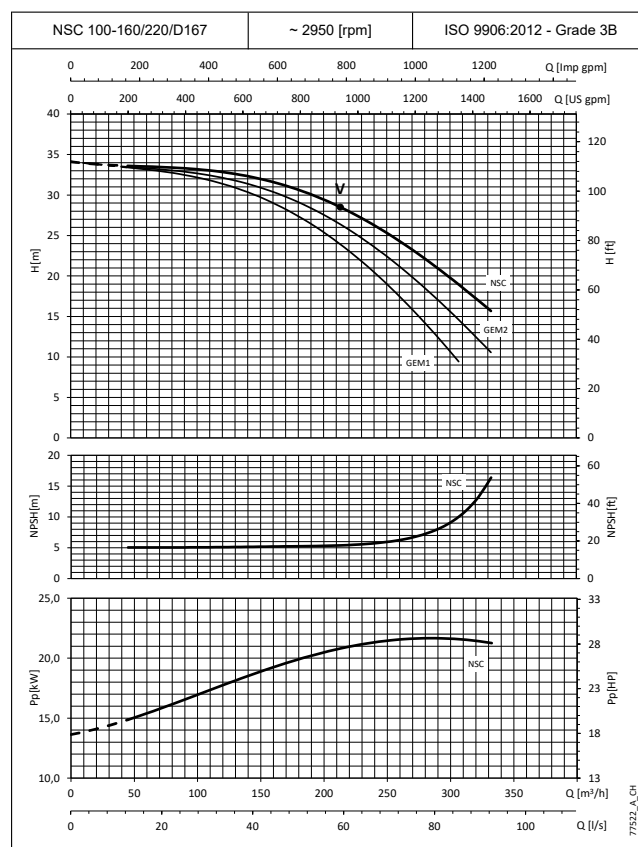
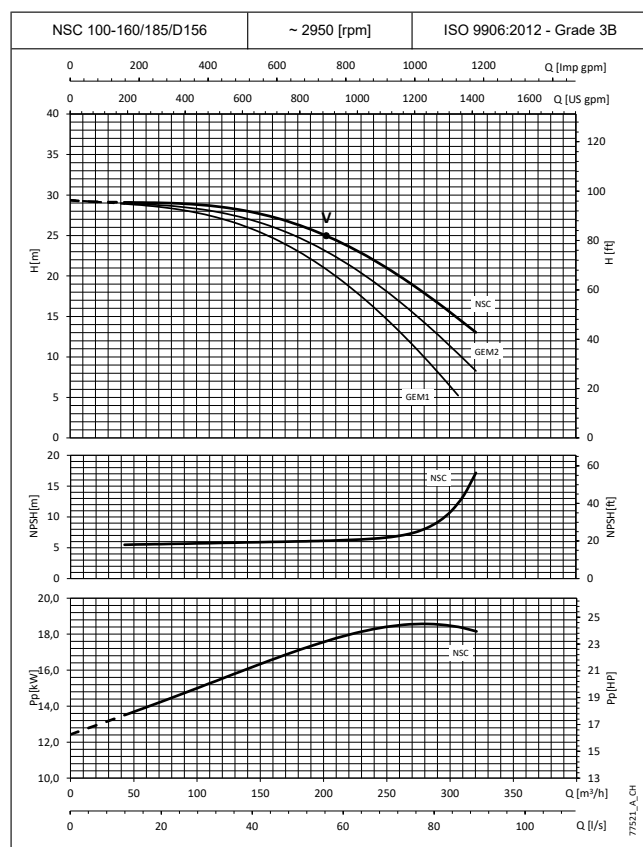
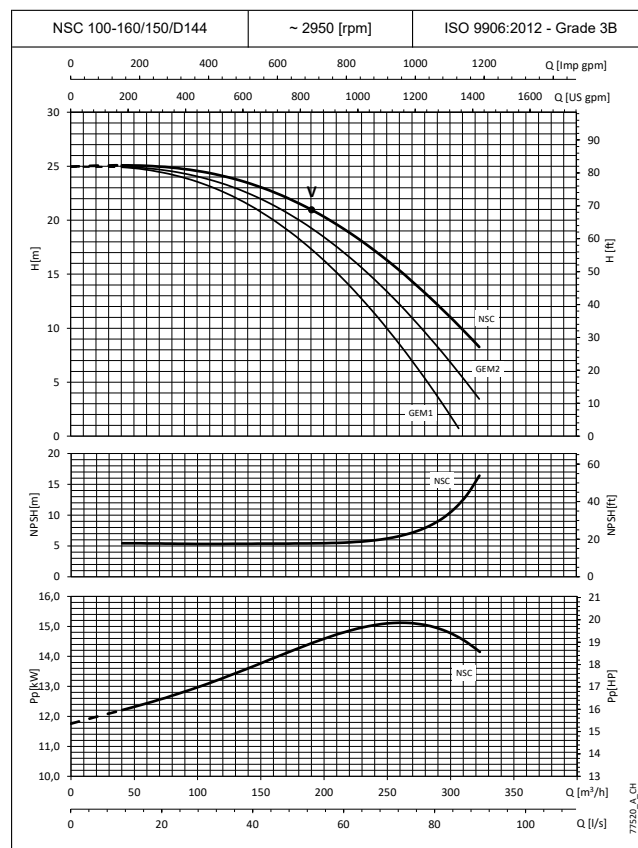
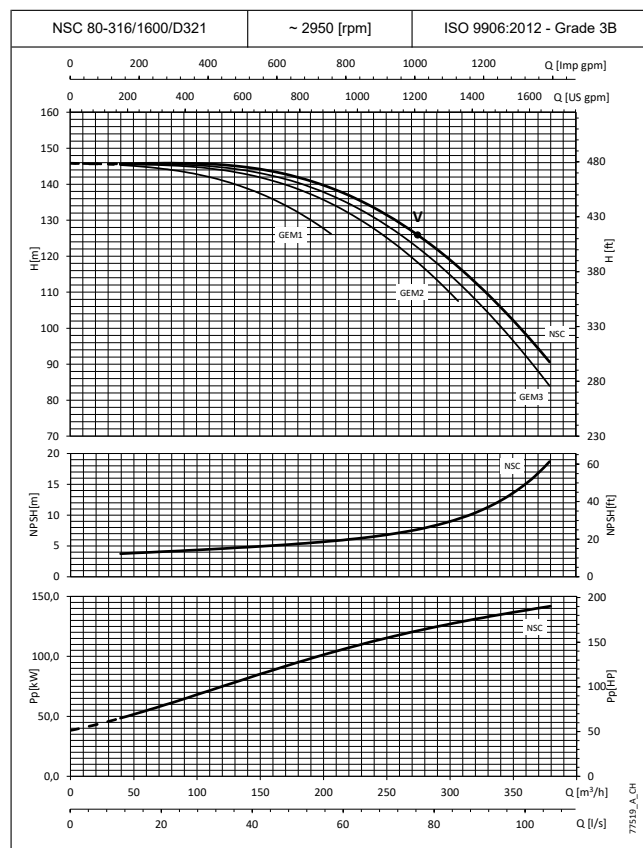
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



GEM1, GEM2, GEM3 = hydraulic performance of the pressure pump set. NSC = pump hydraulic performance without drops.

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

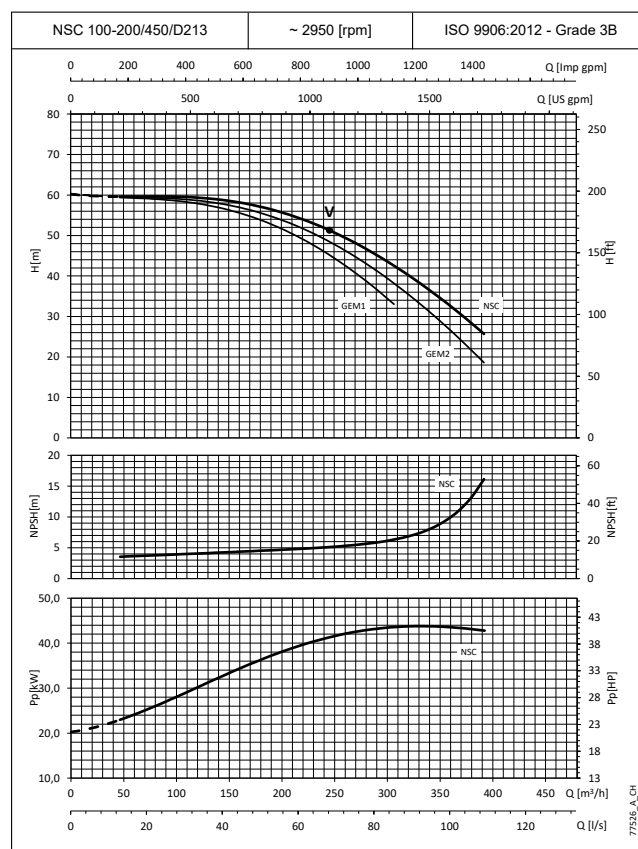
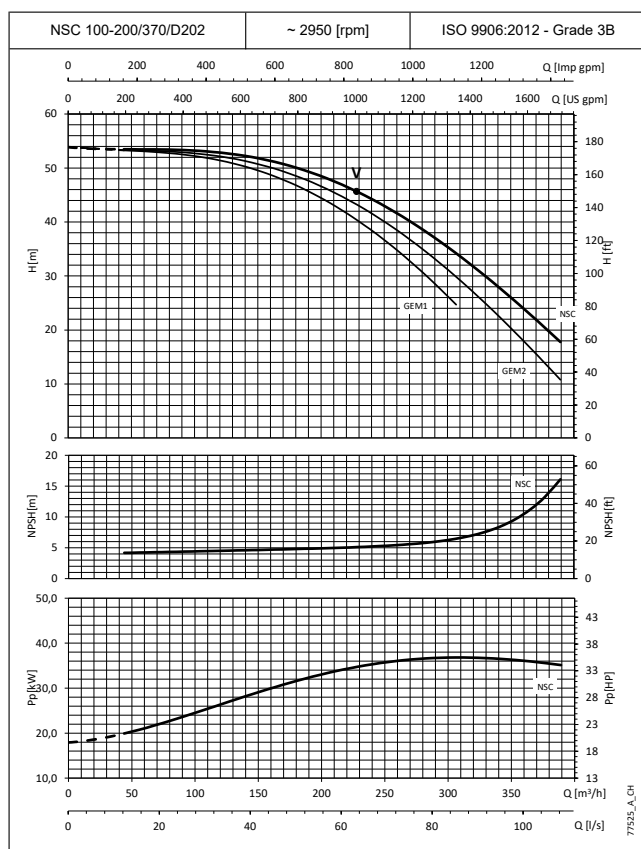
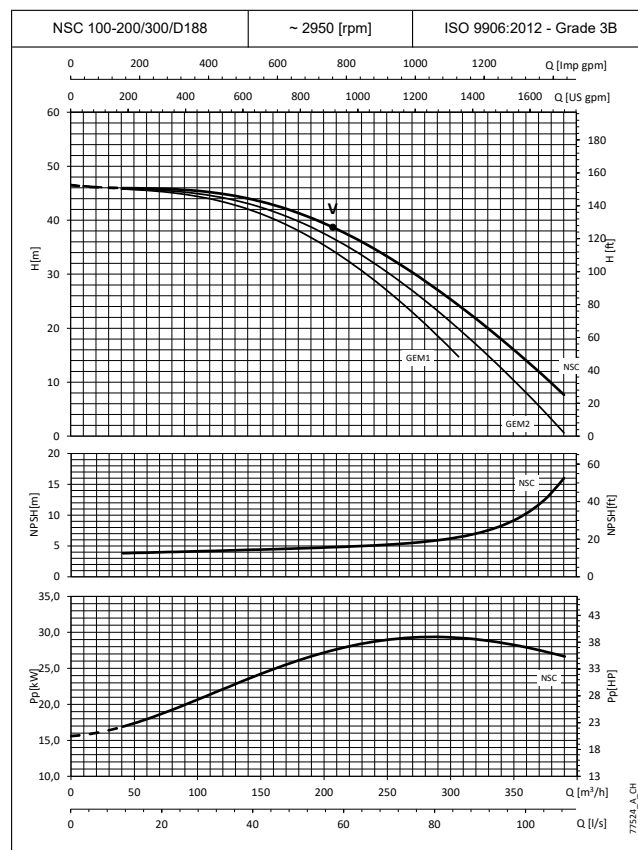
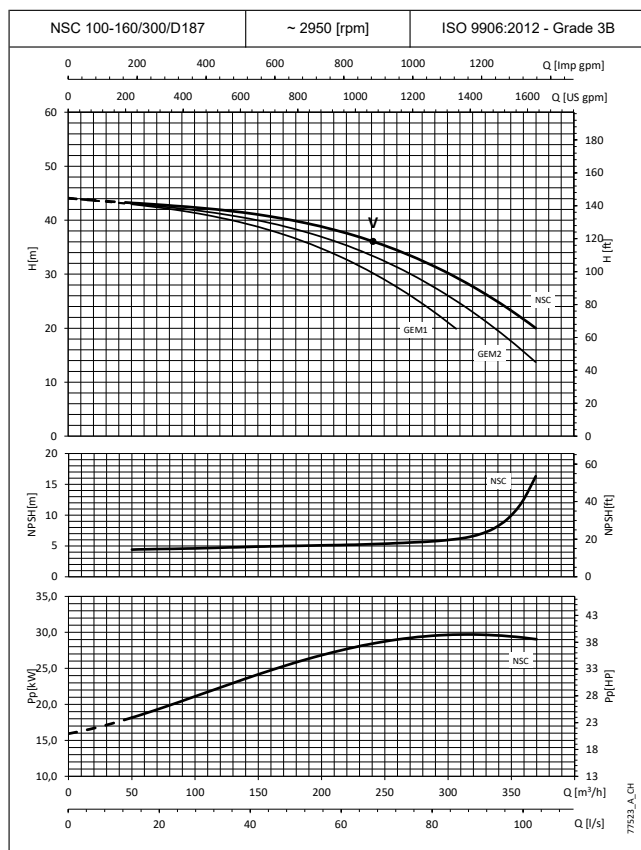
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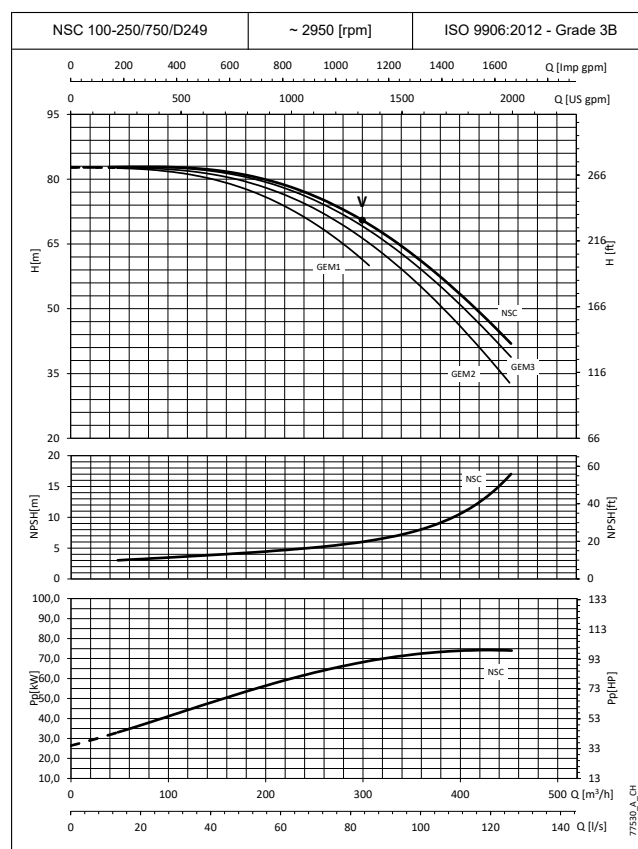
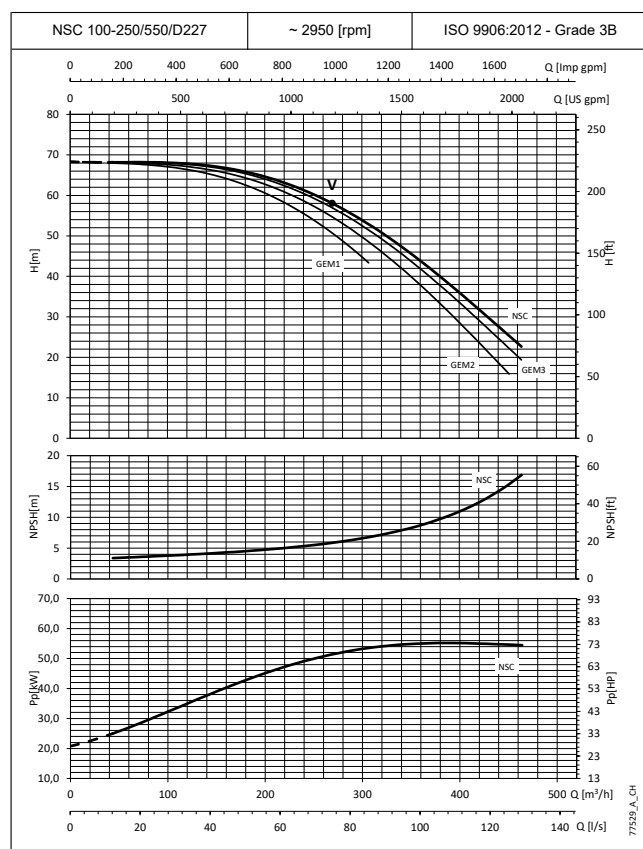
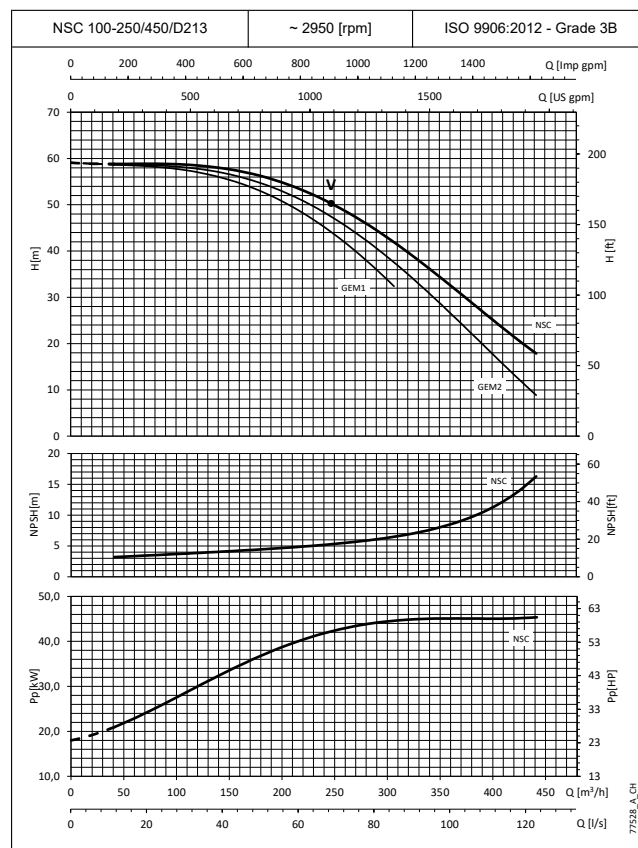
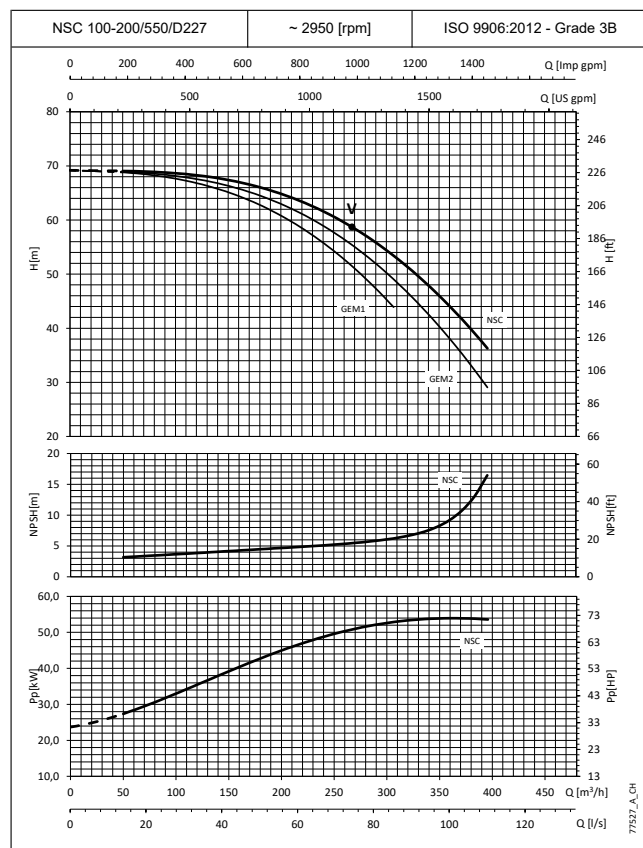
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



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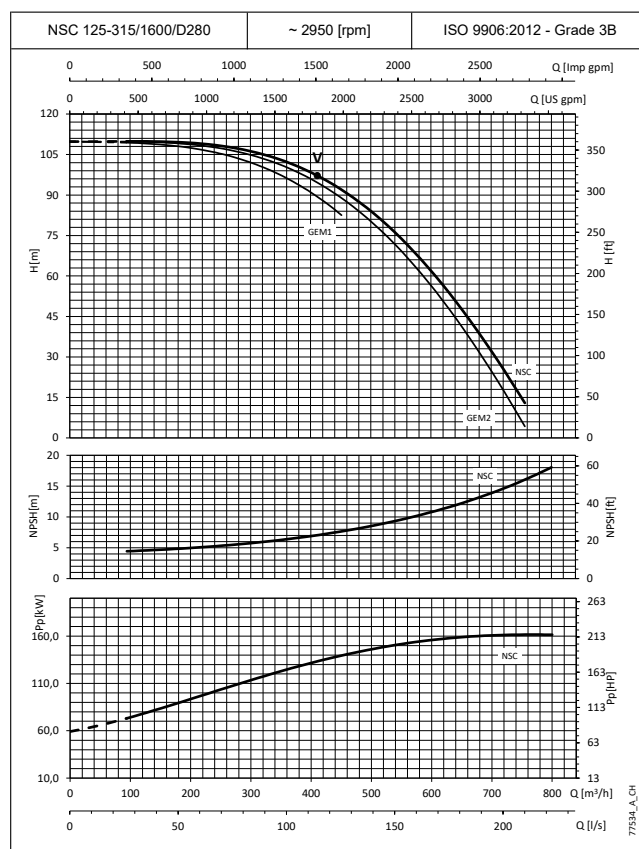
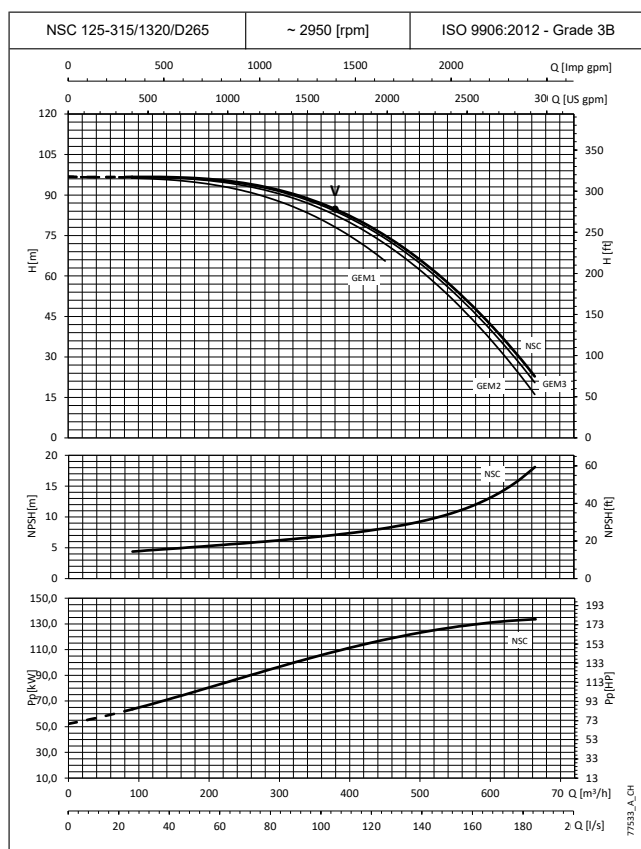
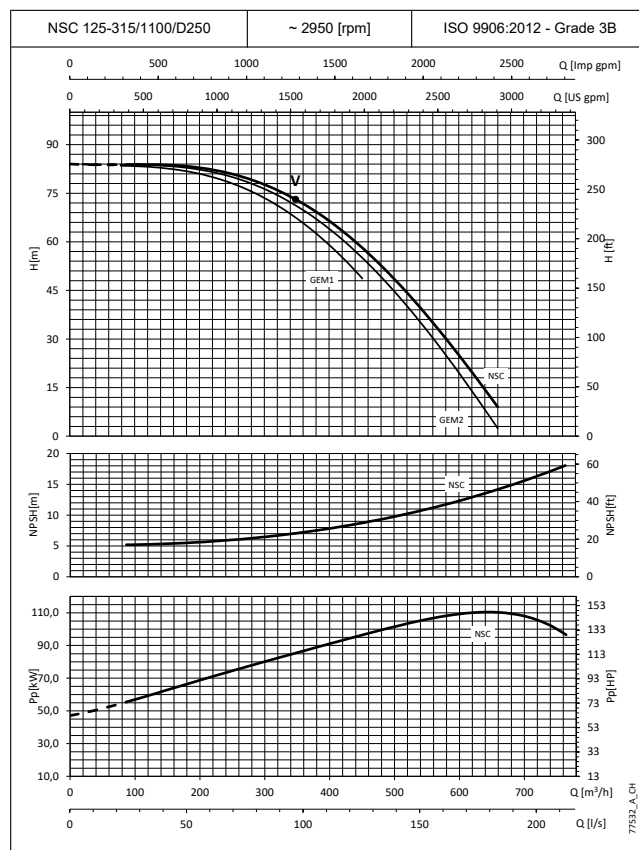
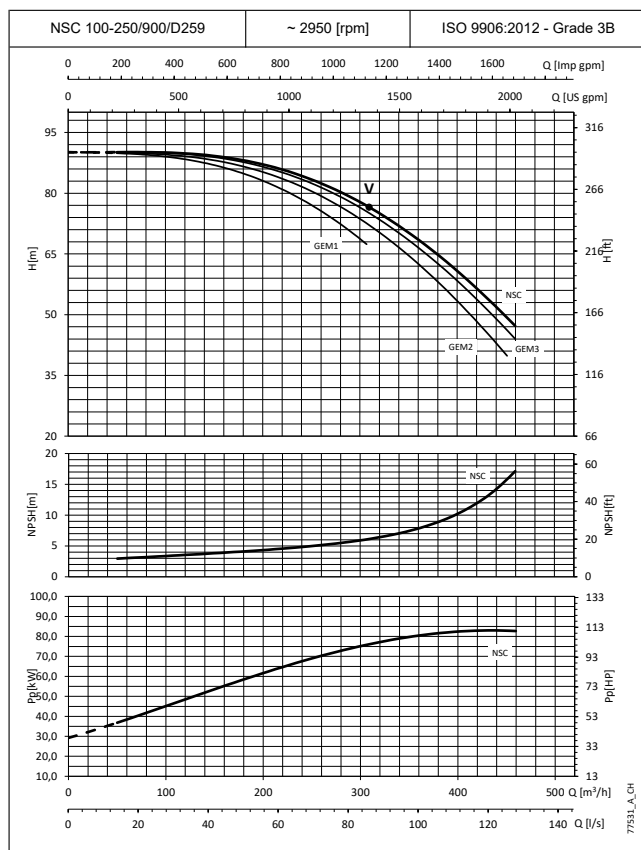
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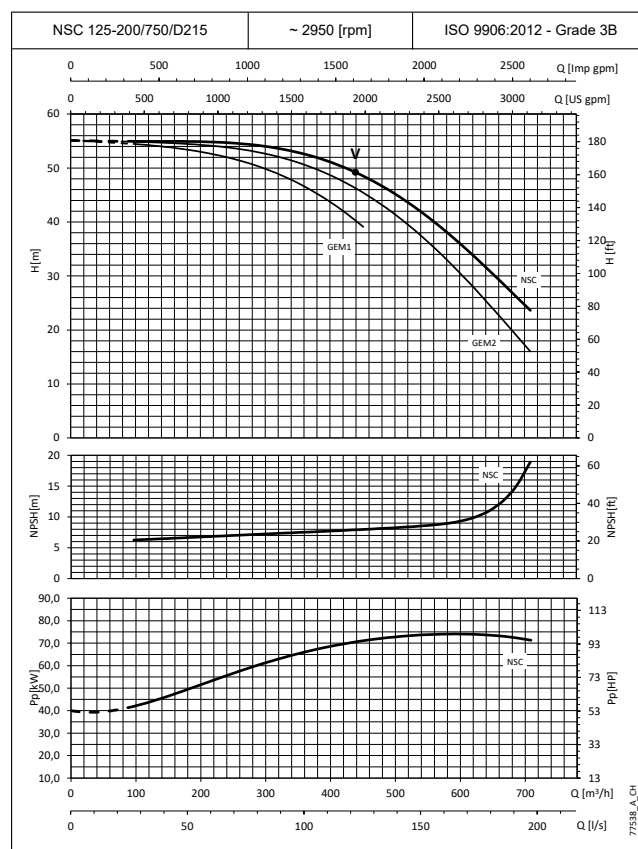
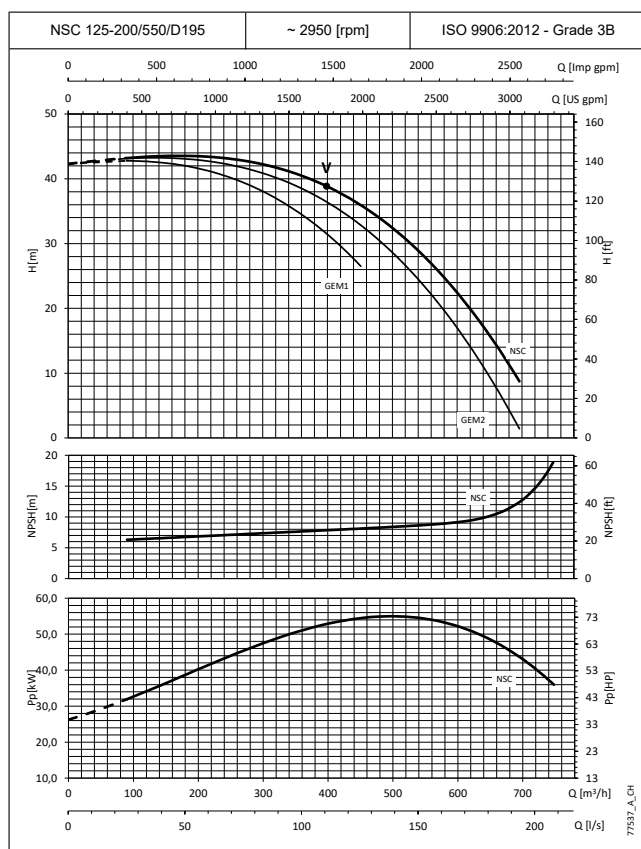
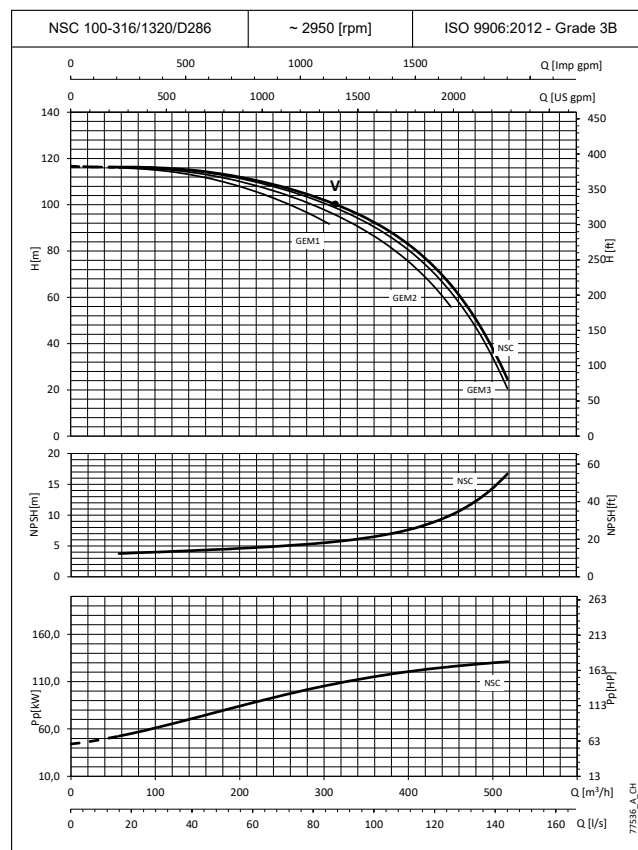
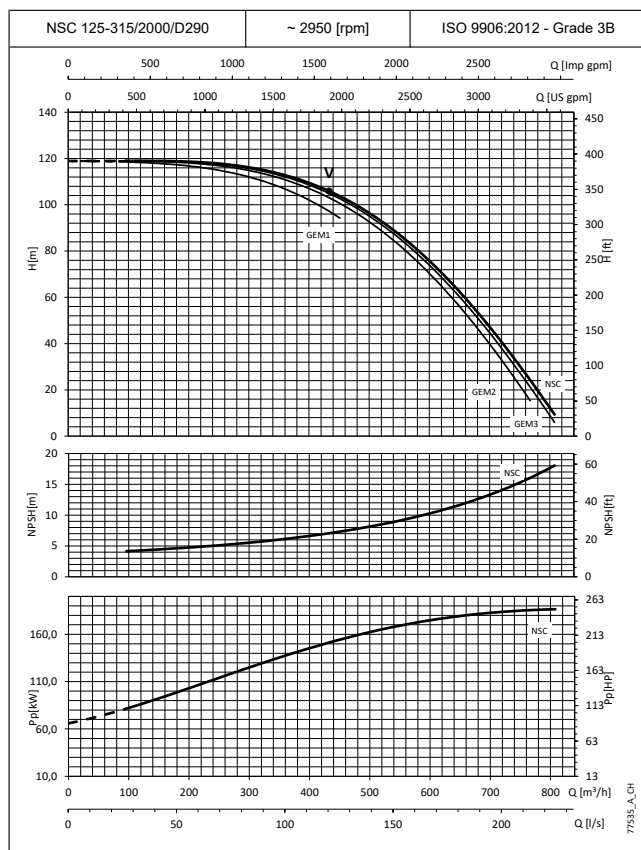
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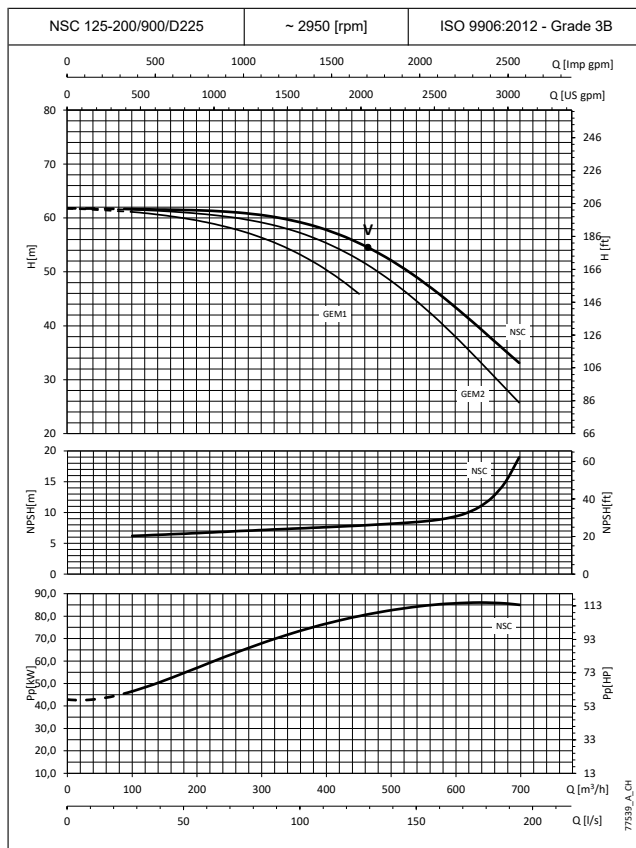
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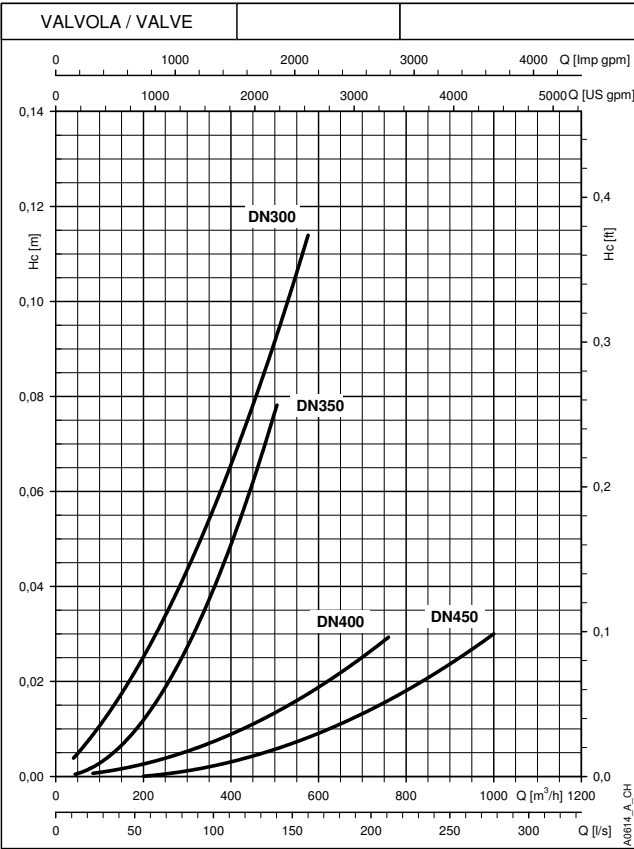
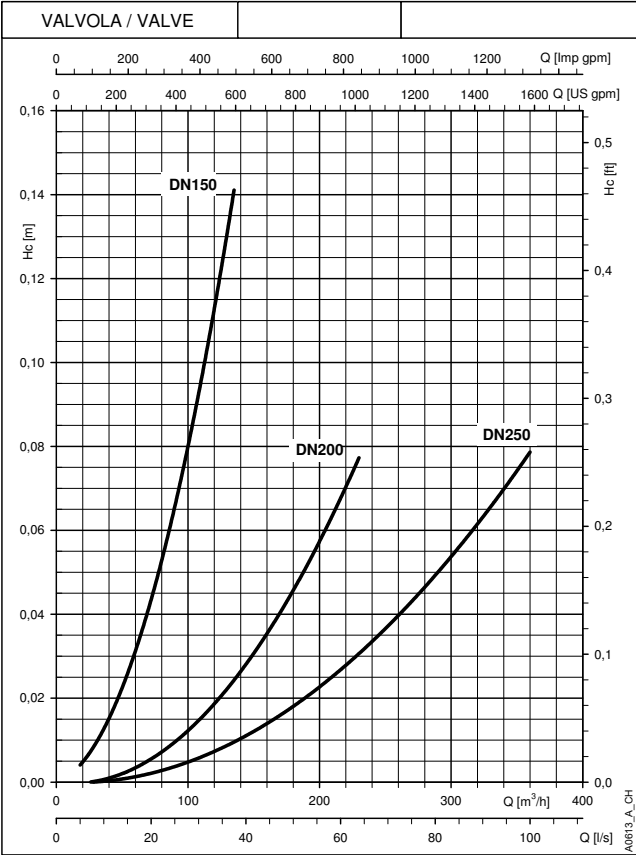
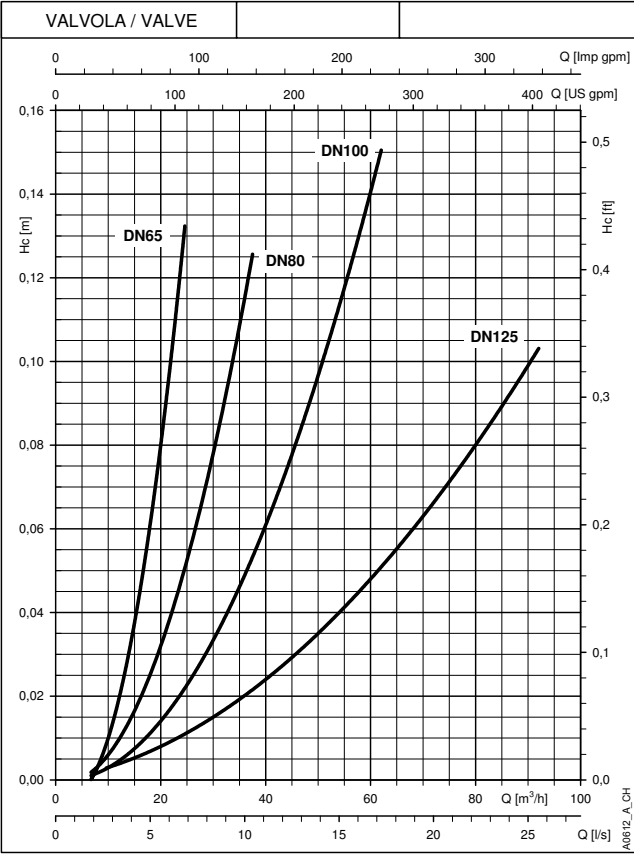
PUMP SET SERIES GEM..NSC PERFORMANCE CURVES AT 50 Hz, 2 POLES



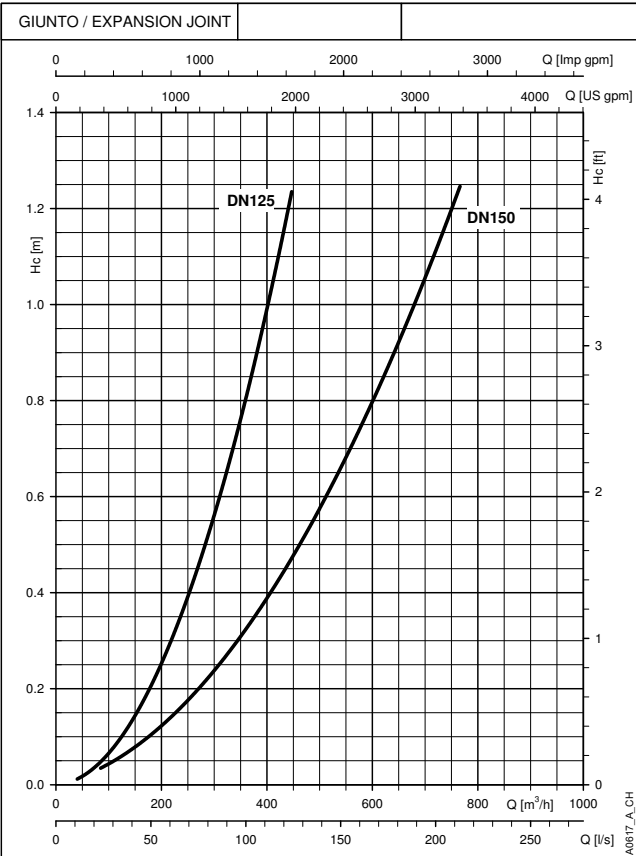
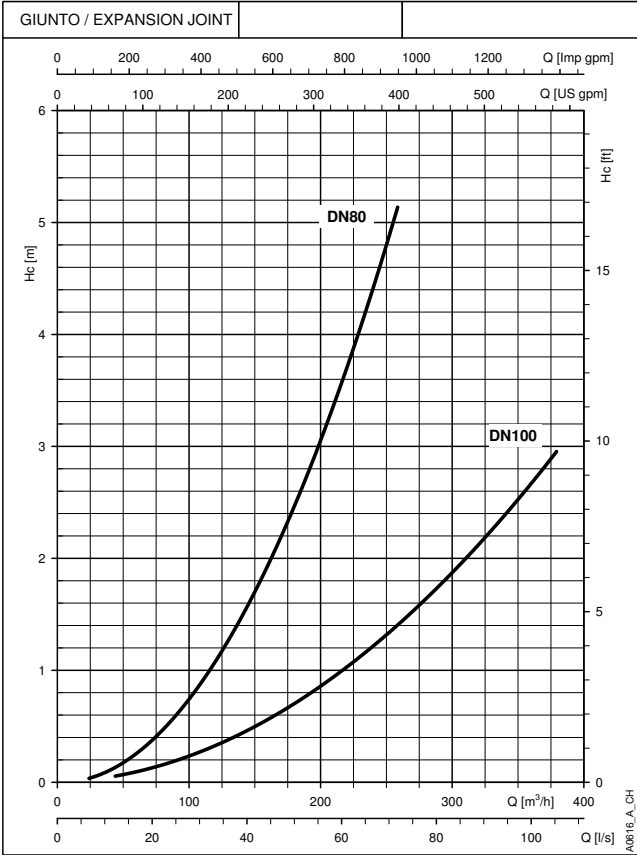
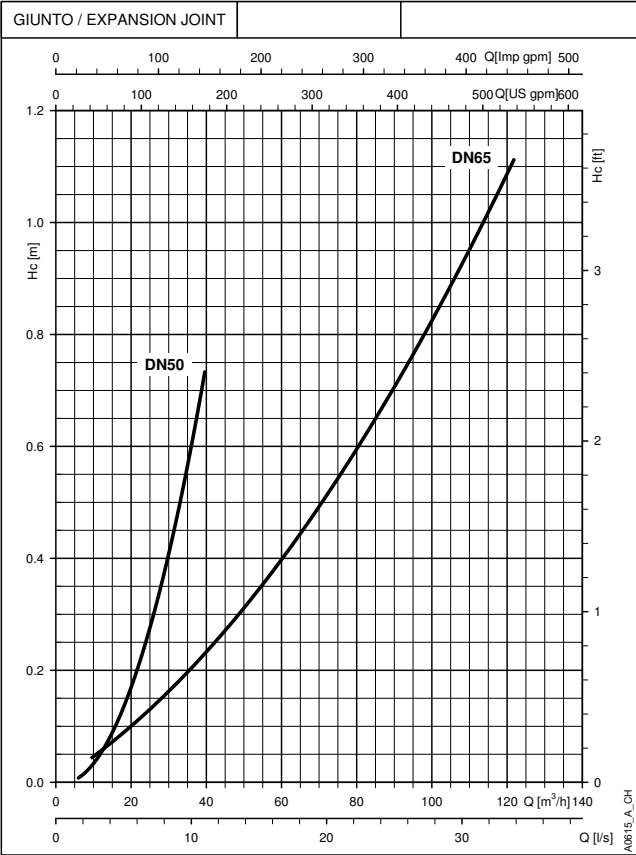
GEM1, GEM2, GEM3 = hydraulic performance of the pressure pump set. **NSC** = pump hydraulic performance without drops.

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PUMP SET SERIES GEM..NSC
HC PRESSURE DROP CURVE IN ON/OFF BUTTERFLY VALVE



PUMP SET SERIES GEM..NSC
HC PRESSURE DROP CURVE IN EXPANSION JOINT



ACCESSORIES

JOINING PIPE KIT

The pump set can be combined through **joining kits**.

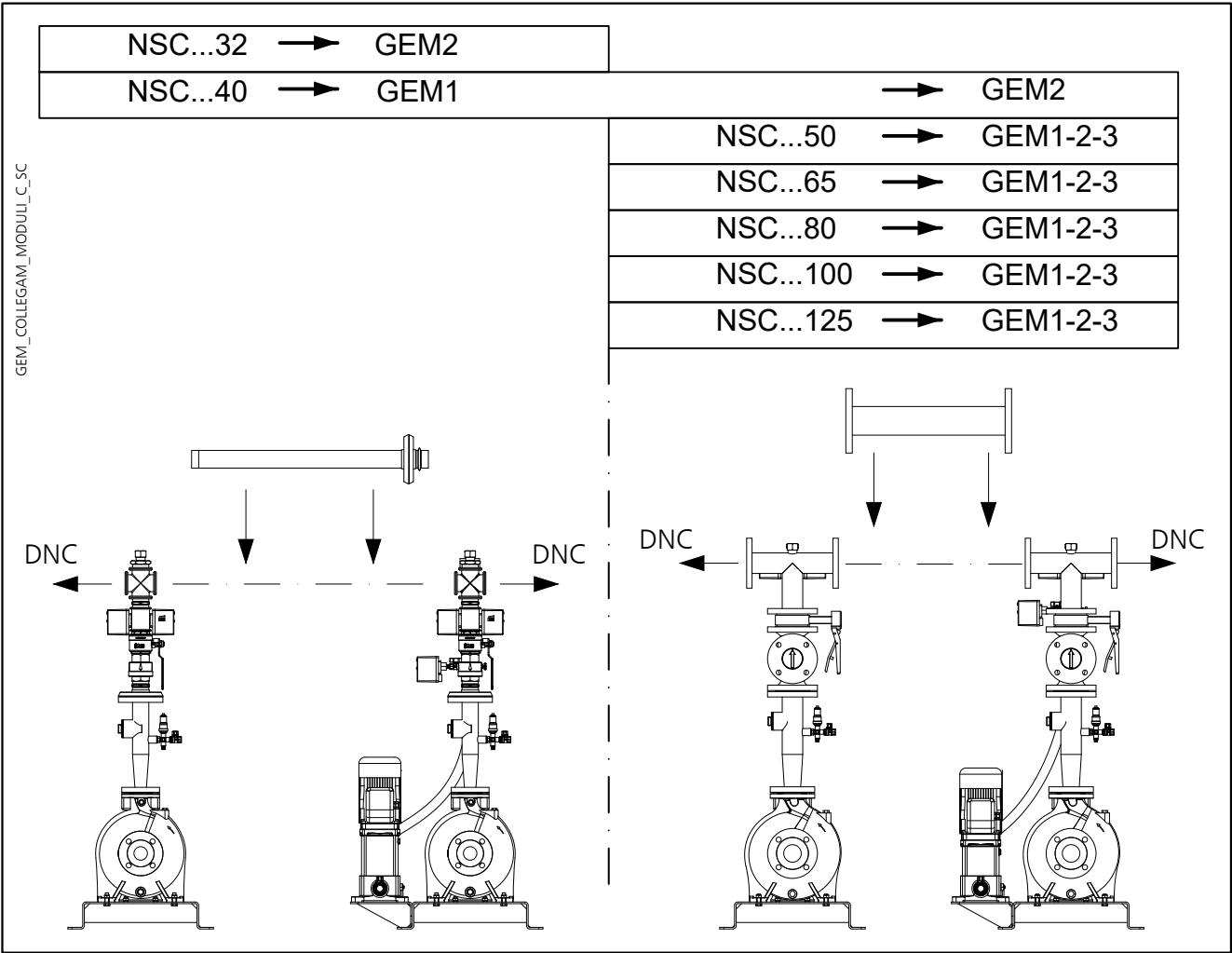


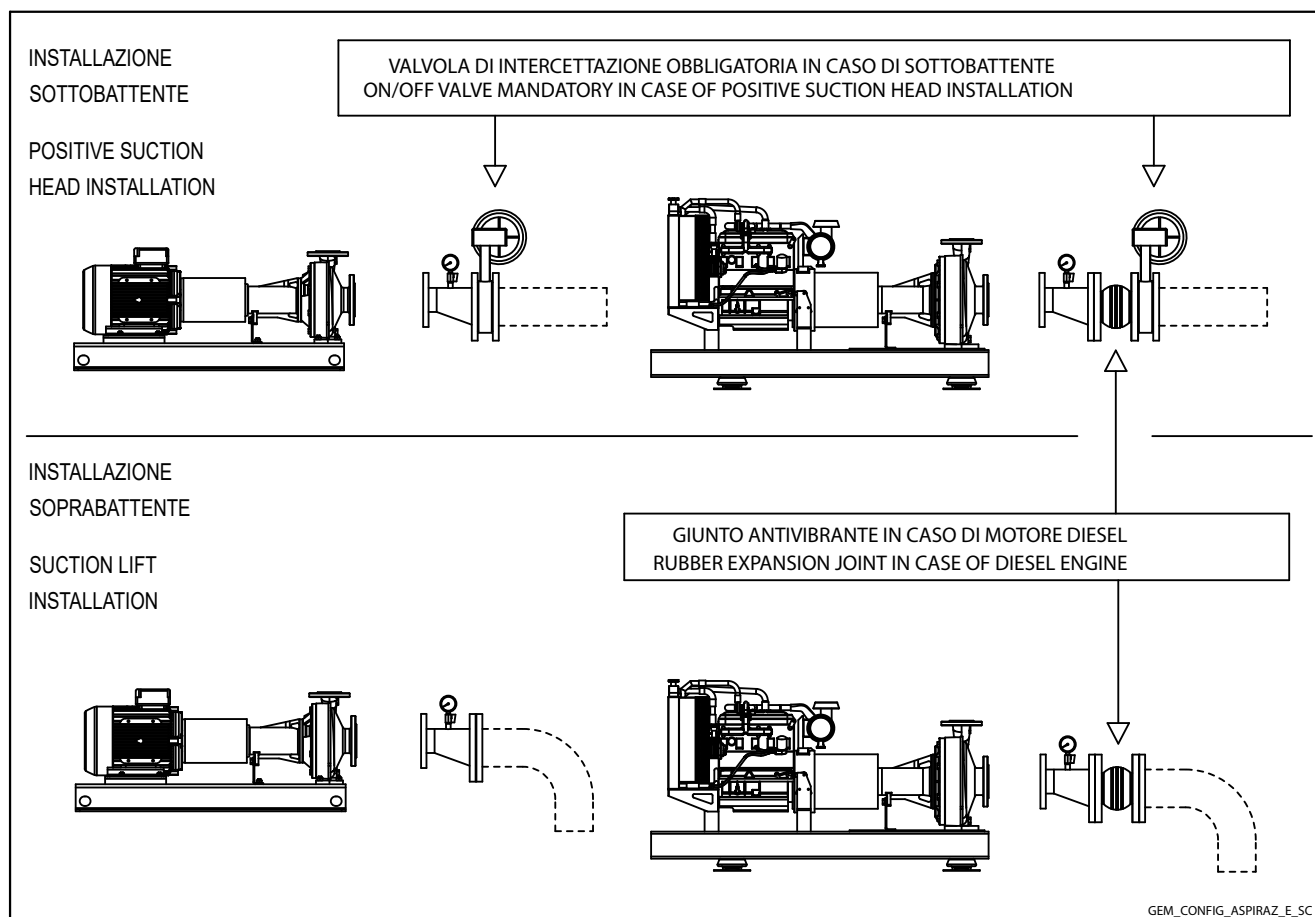
TABLE OF COMBINATIONS FOR JOINING KITS

NSC PUMP SERIE	SET GEM SERIE	KIT JOINING TYPE	DNC
32	GEM2	THREAD	50
40	GEM1		50
	GEM2	FLANGED	65
50	GEM1		65
	GEM2		80
	GEM3		100
65	GEM1		80
	GEM2		100
	GEM3		125
80	GEM1		100
	GEM2		125
	GEM3		150
100	GEM1		125
	GEM2		150
	GEM3		200
125	GEM1		150
	GEM2		200
	GEM3		250

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SUCTION SIDE KIT

The EN 12845 fire-fighting pressure pump set are supplied without valves and stubs on the suction side of the service pump. Different suction kit are available according to the type of installation and to the standard requirements.



In case of suction lift installation the **cone kit** must be used, while the **on/off valve kit** is optional.

For positive suction head installation the **cone kit** must be used and it is mandatory to install the on/off valve kit (according to EN12845, chapter 10.5).

For diesel engines the **rubber expansion joint kit** is mandatory.

The **cone kit** is equipped with:

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

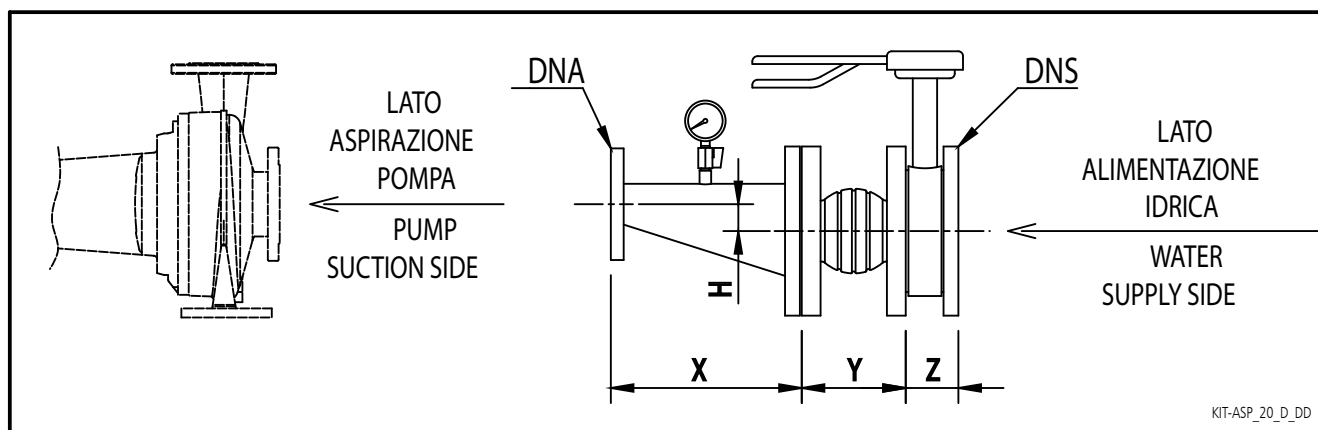
The **on/off valve kit** is equipped with:

- On/off butterfly valve with lever handle for diameters up to DN100, butterfly valve with handwheel and reducer for DN125 and higher.
(Micro kit for monitoring ON/OFF status available on request).

The **rubber expansion joint kit** is equipped with:

- rubber joint

SUCTION SIDE KIT DIMENSIONS TABLE



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

Dimensions in mm. Tolerance ± 10 mm.

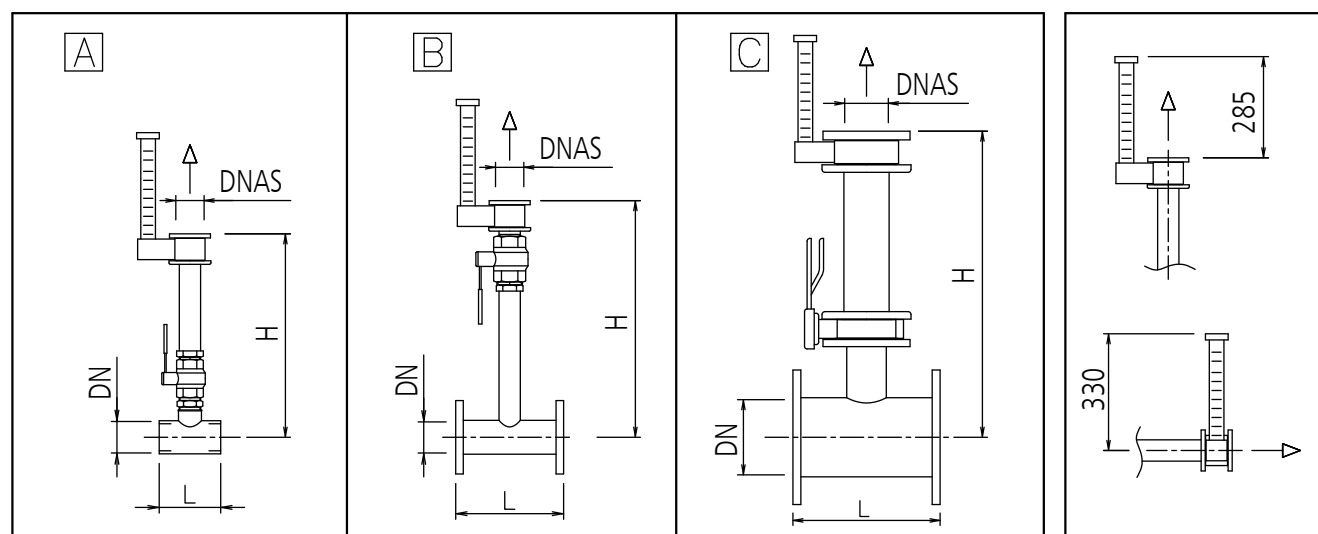
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FLOW METER KIT

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.
Available on request, micro kit for monitoring ON/OFF status.
- Connection piping and straight piping upline from the flow meter.

The installer must supply and assemble the regulating valve downstream of the flow meter and the discharge piping towards the tank or discharge outlet. The pipe downstream of the flow meter must be straight and at least 3DN long.



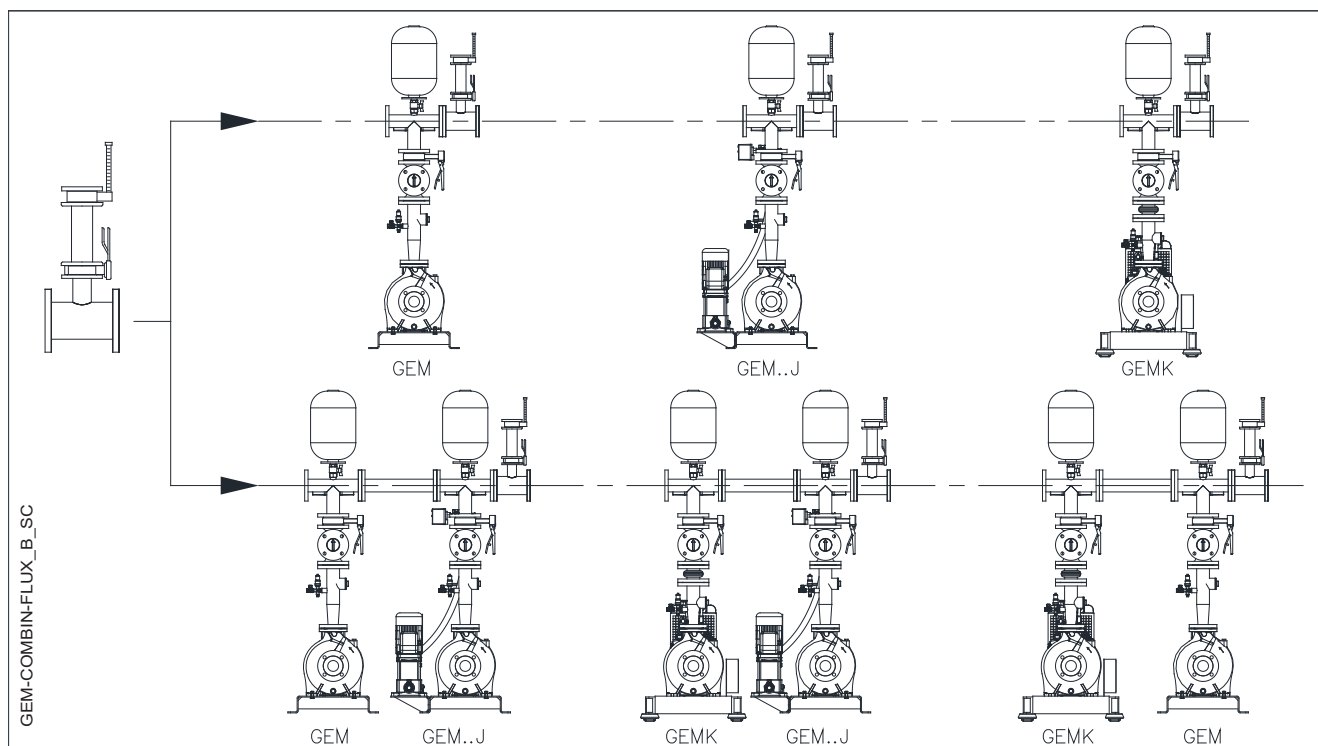
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KIT	SHAPE	DN	DNAS	DIMENSIONS	
				L	H
				(mm)	
1"1/4X40	A	Rp1"1/4	40	90	380
1"1/2X40	A	Rp1"1/2	40	100	352
2"X40	A	Rp2"	40	105	362
2"X50	A	Rp2"	50	105	424
2"1/2X40	A	Rp2"1/2	40	104	368
2"1/2X50	A	Rp2"1/2	50	122	436
65X40	B	65	40	300	378
65X50	B	65	50	300	432
80X40	B	80	40	300	384
80X50	B	80	50	300	440
100X40	B	100	40	300	398
100X50	B	100	50	300	452
125X40	B	125	40	300	410
125X50	B	125	50	300	464
65X65	C	65	65	340	686
65X80	C	65	80	340	952
80X65	C	80	65	340	692
80X80	C	80	80	340	758
80X100	C	80	100	340	1088
80X125	C	80	125	340	1418
100X65	C	100	65	340	704
100X80	C	100	80	340	770
100X100	C	100	100	340	898
100X125	C	100	125	340	1228

KIT	SHAPE	DN	DNAS	DIMENSIONS	
				L	H
				(mm)	
125X65	C	125	65	340	718
125X80	C	125	80	340	782
125X100	C	125	100	340	910
125X125	C	125	125	340	1040
125X150	C	125	150	340	1384
150X65	C	150	65	380	732
150X80	C	150	80	380	796
150X100	C	150	100	380	924
150X125	C	150	125	380	1054
150X150	C	150	150	380	1196
150X200	C	150	200	380	1648
200X65	C	200	65	380	758
200X80	C	200	80	380	822
200X100	C	200	100	380	950
200X125	C	200	125	380	1080
200X150	C	200	150	380	1222
200X200	C	200	200	380	1472
250X65	C	250	65	440	784
250X80	C	250	80	440	850
250X100	C	250	100	440	978
250X125	C	250	125	440	1106
250X150	C	250	150	440	1248
250X200	C	250	200	440	1500

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TABLE OF COMBINATIONS FOR FLOW METER KIT



		FLOW METER KIT MODEL										
NSC SERIE	GEM SERIE	2"X40	65X40	65X50	80X50	80X65	100X50	100X65	100X80	100X100	125X65	125X80
		Q MAX (m3/h)										
32	GEM2	52										
40	GEM1	52										
40	GEM2		52	85								
50	GEM1		52	85								
50	GEM2				85	133						
50	GEM3						85	133				
65	GEM1				85	133						

NSC SERIE	GEM SERIE	100X50	100X65	100X80	100X100	125X65	125X80	125X100	125X125	150X80	150X100	150X125
		Q MAX (m3/h)										
65	GEM2	85	133	190	266							
65	GEM3					133	190	266				
80	GEM1	85	133	190	266							
80	GEM2					133	190	266	399			
80	GEM3									190	266	399
100	GEM1					133	190	266	399			

NSC SERIE	GEM SERIE	150X80	150X100	150X125	200X100	200X125	200X150	200X200	250X125	250X150	250X200	
		Q MAX (m3/h)										
100	GEM2	190	266	456								
100	GEM3				266	456	570					
125	GEM1	190	266	456								
125	GEM2				266	456	570	950				
125	GEM3								456	570	950	

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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. The aim is to keep the pump primed.

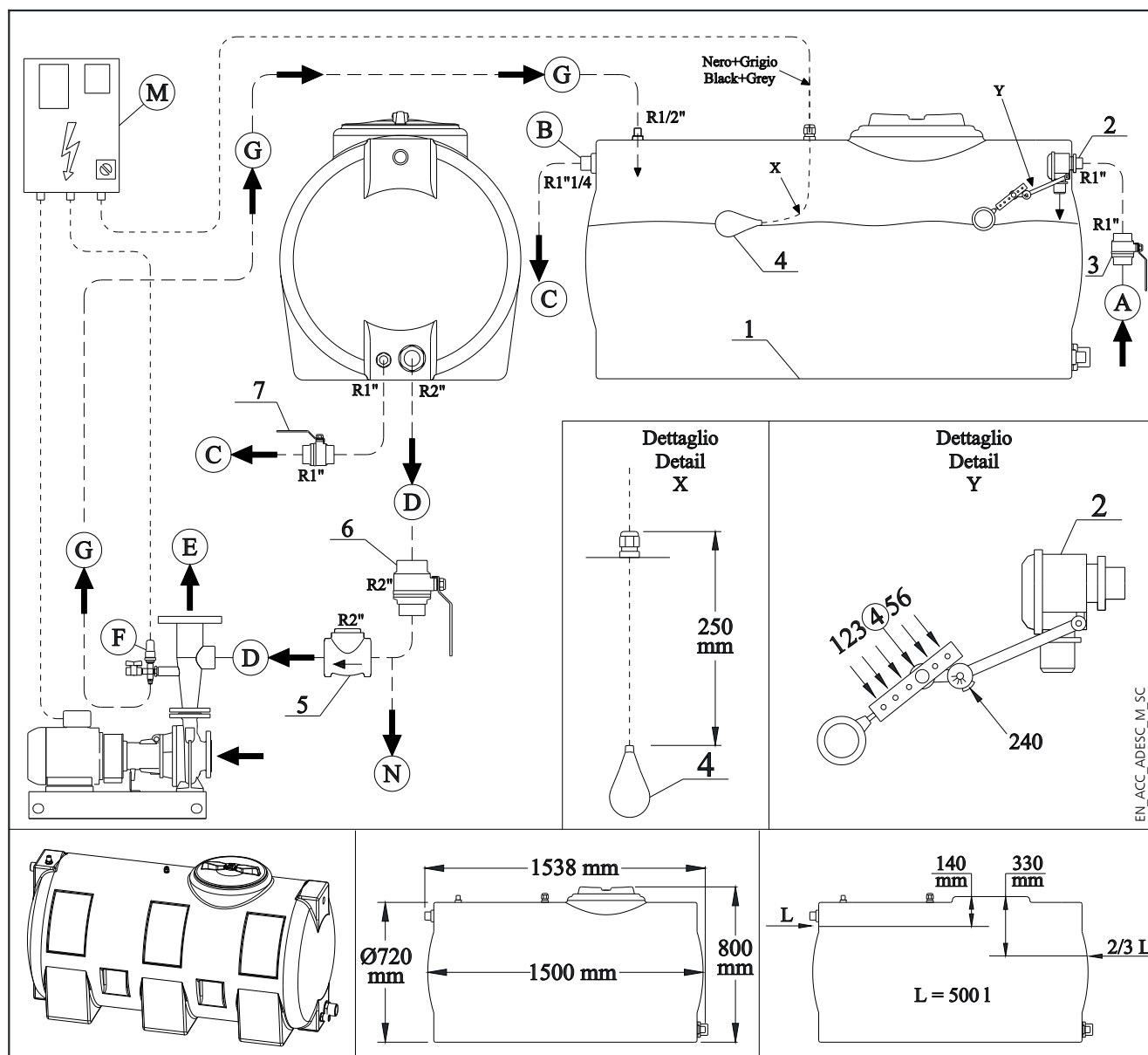
Each pump must have its own independent priming tank placed at a higher level than the pump. A level switch automatically activates the service pump if the level of the tank drops and is not reintegrated. The hydraulic and electrical connections must be made by the installer. The horizontal 500 L tank is made of polyethylene.

ACCESSORIES KIT FOR PRIMING TANK

The accessories kit includes:

- Filling and discharge valves, reductions, non-return valve.
- Float 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.



N°	DENOMINATION	N°	DENOMINATION
1	Pump priming tank	B	Over flow
2*	Floating valve	C	Drain
3*	In flow on-off ball valve	D	To delivery side of the main pump
4*	Float switch	E	To trunk main
5*	Priming supply non return valve	F	Pressure switch
6*	Priming supply valve always open	G	Return to priming tank
7*	Drain valve	M	Duty pump control box
A	In flow	N	Possible priming jockey pump

* items included on kit

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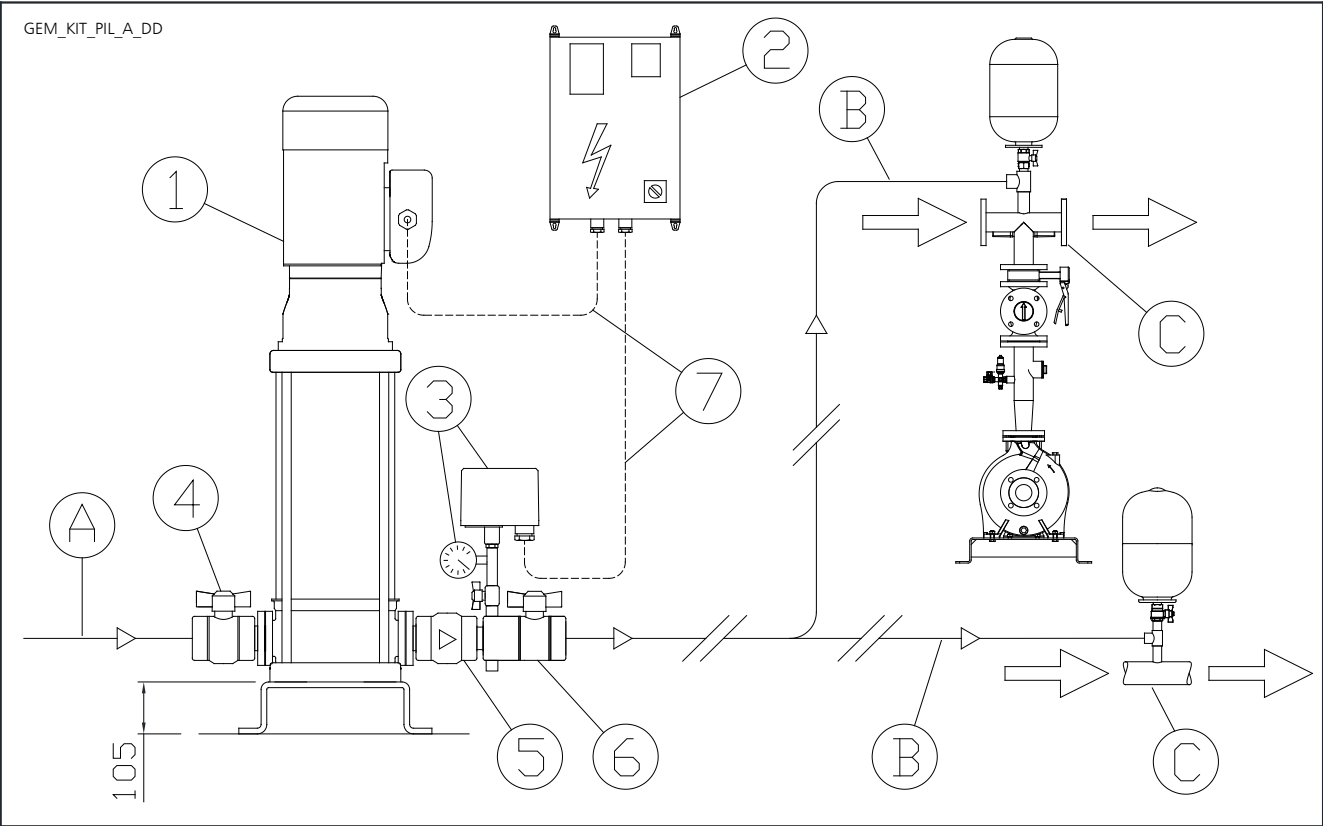
ELECTRIC JOCKEY PUMP KIT

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. Start and stop are automatic.

- The kit includes:
- valves, pressure switch, pressure gauge
 - base
 - electric pumps 1SV
 - electric panel with 5 m long cables

On request kits are available for different e-SV™ electric pump models.

The figure shows the example of connection:



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

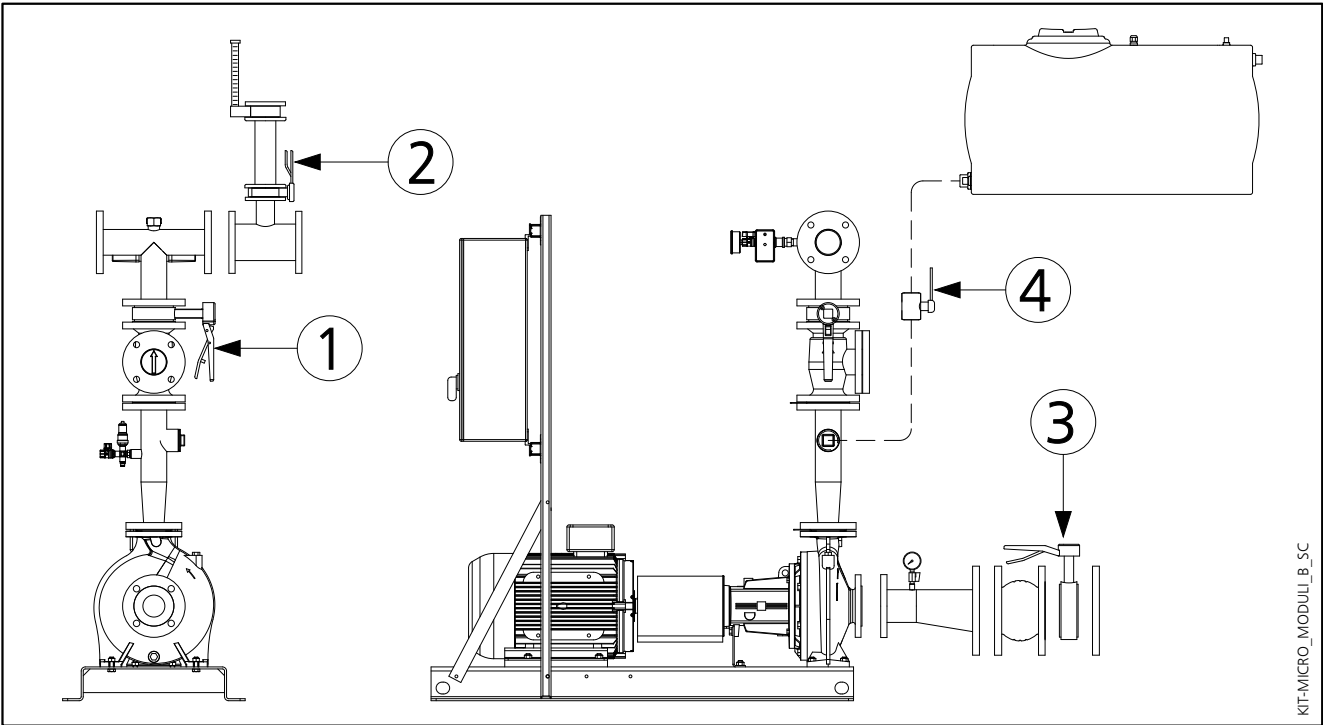
P:S: 1,2,3,4,5,6,7 are included on kit

MICRO KIT FOR ON/OFF VALVE

The micro kit includes valve mounting components and an electro-mechanical limit switch to detect the open/closed status of the valve.

Different kit are available depending on the position of the on-off valve:

- 1. Delivery side
- 2. Flow meter
- 3. Suction side
- 4. Priming



POSITION	MONITORING KIT TYPE	DESCRIPTION	STATUS
1	A	MICRO KIT BALL VALVE 2"	OPEN
	B	MICRO KIT BUTTERFLY VALVE WITH LEVER HANDLE	OPEN
	L	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	OPEN
	M	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	OPEN
2	B	MICRO KIT BUTTERFLY VALVE WITH LEVER HANDLE	CLOSED
	L	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	CLOSED
	M	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	CLOSED
	D	MICRO KIT BALL VALVE 1"	CLOSED
	E	MICRO KIT BALL VALVE 1"1/4	CLOSED
	F	MICRO KIT BALL VALVE 1"1/2	CLOSED
	G	MICRO KIT BALL VALVE 2"	CLOSED
3	B	MICRO KIT BUTTERFLY VALVE WITH LEVER HANDLE	OPEN
	L	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	OPEN
	M	MICRO KIT BUTTERFLY VALVE WITH HANDWHEEL	OPEN
4	A	MICRO KIT BALL VALVE 2"	OPEN

micro_model-en_a_tc

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

ELECTRIC PUMP NSCC	PUMP NSC	MICRO KIT		
		TYPE		
		GEM...		
		1	2	3
32-125/15	32-125/D123	-	A	-
32-125/22	32-125/D133	-	A	-
32-125/30	32-125/D145	-	A	-
32-160/22X	32-160/D132	-	A	-
32-160/30	32-160/D150	-	A	-
32-160/40	32-160/D160,5	-	A	-
32-160/55	32-160/D171	-	A	-
32-200/30X	32-200/D150	-	A	-
32-200/40	32-200/D171	-	A	-
32-200/55	32-200/D186	-	A	-
32-200/75X	32-200/D198	-	A	-
32-250/75X	32-250/D208	-	A	-
32-250/110A	32-250/D226,5	-	A	-
32-250/110	32-250/D239	-	A	-
32-250/150	32-250/D259	-	A	-
40-160/30	40-160/D127	A	B	-
40-160/40X	40-160/D135	A	B	-
40-160/75X	40-160/D160	A	B	-
40-200/55X	40-200/D158	A	B	-
40-200/75X	40-200/D174	A	B	-
40-200/110X	40-200/D184	A	B	-
40-200/110	40-200/D199	A	B	-
40-250/110X	40-250/D195	A	B	-
40-250/110X1	40-250/D206	A	B	-
40-250/150X	40-250/D225	A	B	-
40-250/185	40-250/D243	A	B	-
40-250/220	40-250/D257,5	A	B	-
50-200/110X	50-200/D163	B	B	B
50-200/110X1	50-200/D172	B	B	B
50-200/150X	50-200/D195	B	B	B
50-200/185X	50-200/D201	B	B	B
50-250/150	50-250/D208	B	B	B
50-250/185	50-250/D220	B	B	B
50-250/220	50-250/D232	B	B	B
50-250/300	50-250/D256	B	B	B
65-160/75	65-160/D145	B	B	L
65-160/110A	65-160/D151	B	B	L
65-160/110	65-160/D162	B	B	L
65-160/150	65-160/D176	B	B	L
65-160/185	65-160/D180	B	B	L
65-200/110	65-200/D165	B	B	L
65-200/150	65-200/D177	B	B	L
65-200/185	65-200/D189	B	B	L
65-200/220	65-200/D199	B	B	L
65-200/300	65-200/D220	B	B	L

ELECTRIC PUMP NSCC	PUMP NSC	MICRO KIT		
		TYPE		
		GEM...		
		1	2	3
65-250/220	65-250/D195	B	B	L
65-250/300	65-250/D215	B	B	L
65-250/370	65-250/D229	B	B	L
65-250/450	65-250/D243	B	B	L
65-250/550	65-250/D258	B	B	L
65-315/550X	65-315/D270	B	B	L
65-315/750	65-315/D298	B	B	L
65-315/900	65-315/D315	B	B	L
80-160/110	80-160/D144	B	L	L
80-160/150	80-160/D158	B	L	L
80-160/185	80-160/D168	B	L	L
80-160/220	80-160/D177	B	L	L
80-200/220	80-200/D181	B	L	L
80-200/300	80-200/D195	B	L	L
80-200/370	80-200/D208	B	L	L
80-200/450	80-200/D219	B	L	L
80-250/370	80-250/D214	B	L	L
80-250/450	80-250/D227	B	L	L
80-250/550	80-250/D241	B	L	L
80-250/750	80-250/D259	B	L	L
80-316/900	80-316/D280	B	L	L
80-316/1100	80-316/D298	B	L	L
80-316/1320	80-316/D310	B	L	L
80-316/1600	80-316/D321	B	L	L
100-160/150	100-160/D144	L	L	L
100-160/185	100-160/D156	L	L	L
100-160/220	100-160/D167	L	L	L
100-160/300	100-160/D187	L	L	L
100-200/300	100-200/D188	L	L	L
100-200/370	100-200/D202	L	L	L
100-200/450	100-200/D213	L	L	L
100-200/550	100-200/D227	L	L	L
100-250/450	100-250/D213	L	L	L
100-250/550	100-250/D227	L	L	L
100-250/750	100-250/D249	L	L	L
100-250/900	100-250/D259	L	L	L
100-316/1320	100-316/D286	L	L	L
125-200/550	125-200/D195	L	L	M
125-200/750	125-200/D215	L	L	M
125-200/900	125-200/D225	L	L	M
125-315/1100	125-315/D250	L	L	M
125-315/1320	125-315/D265	L	L	M
125-315/1600	125-315/D280	L	L	M
125-315/2000	125-315/D290	L	L	M

micro-kit-en_a_tc

TABLE OF COMBINATIONS MICRO KIT FOR ON/OFF VALVE OF THE FLOW METER KIT

FLOW METER KIT	MICRO KIT TYPE	FLOW METER KIT	MICRO KIT TYPE	FLOW METER KIT	MICRO KIT TYPE
2"X40	F	100X65	B	150X125	L
2"X50	G	100X80	B	150X150	L
65X40	F	100X100	B	150X200	L
65X50	G	100X125	B	200X100	B
65X65	B	125X65	B	200X125	L
80X50	G	125X80	B	200X150	L
80X65	B	125X100	B	200X200	L
80X80	B	125X125	L	250X150	L
80X100	B	150X80	B	250X200	L
100X50	G	150X100	B		

micro_flux-en_a_tc

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

VALVE KIT	MICRO KIT TYPE	VALVE KIT	MICRO KIT TYPE	VALVE KIT	MICRO KIT TYPE
DN 65	B	DN 150	L	DN 300	N
DN 80	B	DN 200	L	DN 350	N
DN 100	B	DN 250	M	DN 400	P
DN 125	L				

micro_valv-en_a_tc

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

VALVE KIT	MICRO KIT TYPE
2"	A

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MONITORING KIT FOR ON/OFF VALVE

The kit includes an electronic module to be installed inside the electric or motor pump control panel.

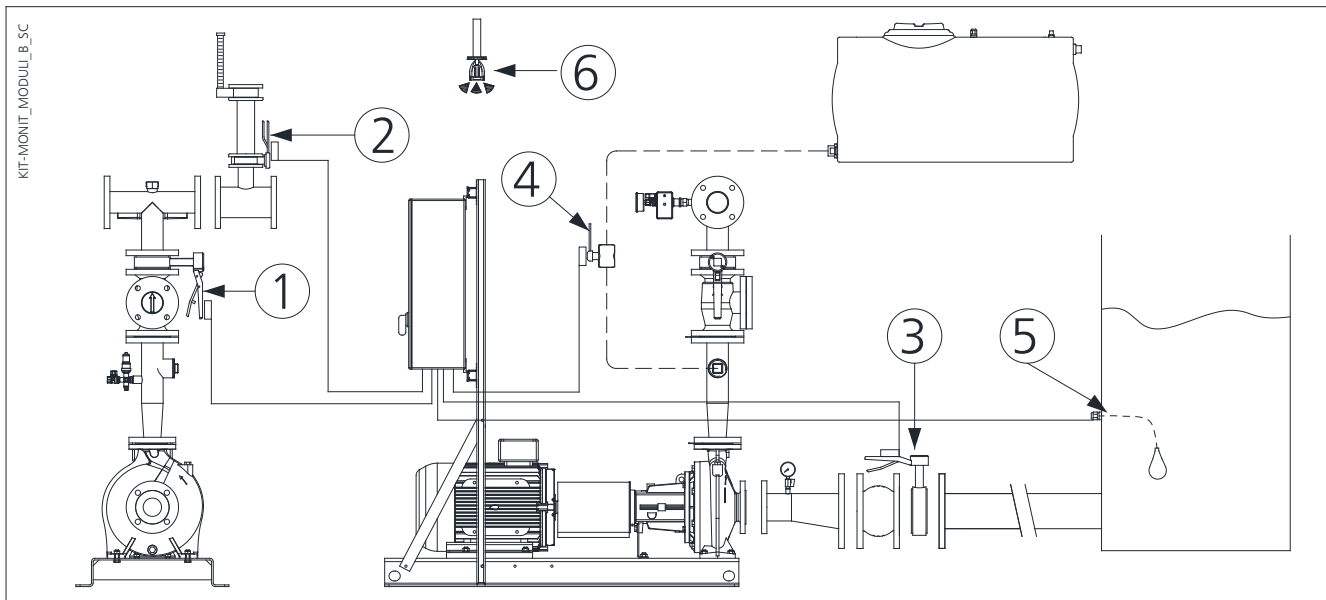
The module consists of six digital inputs to which can be connected:

- 5. water reserve
- 6. sprinkler status of the pump room

and the micros of the on/off valves:

- 1. Delivery side
- 2. Flow meter
- 3. Suction side
- 4. Priming

The electronic board of the control panel shows the status of the connected valves with the generation of an alarm in case of incorrect position.



ELECTRICAL ALARMS PANEL FF128AL

Electric panel for remote status and alarm monitoring of the GEM fire-fighting pump set with LCD display. To the panel from one up to a maximum of three pump set can be connected.

It is possible to set up systems with a maximum of three FF128AL panels.

Programming is simple and guided at first start-up or from the menu, where it is enough to set the number and type of pumps, if electric or motor pumps.

ABS casing (IP65) complete with:

1. Buzzer sound alarm
2. Electronic board with:
 - A. LCD display
 - B. Leds check button
 - C. Navigation/Set up buttons
 - D. Buzzer silencing button
 - E. Optical interface for programming and event download

6 digital inputs available with 5 programmable and 3 programmable digital outputs.

Signaling LED for electric service pump:

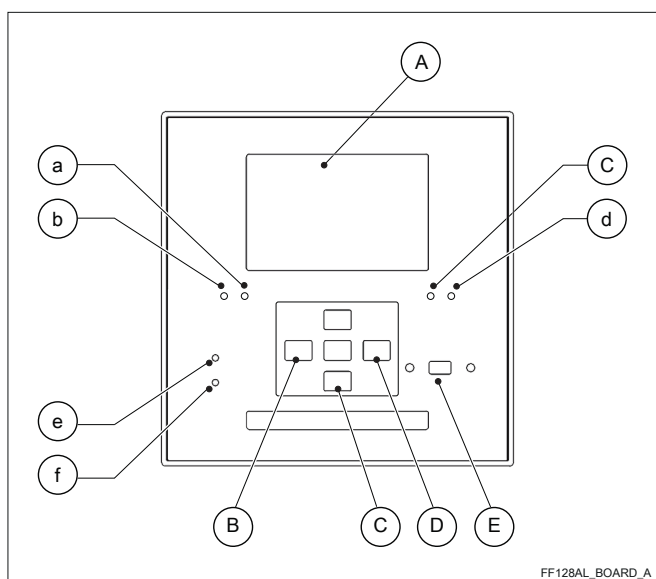
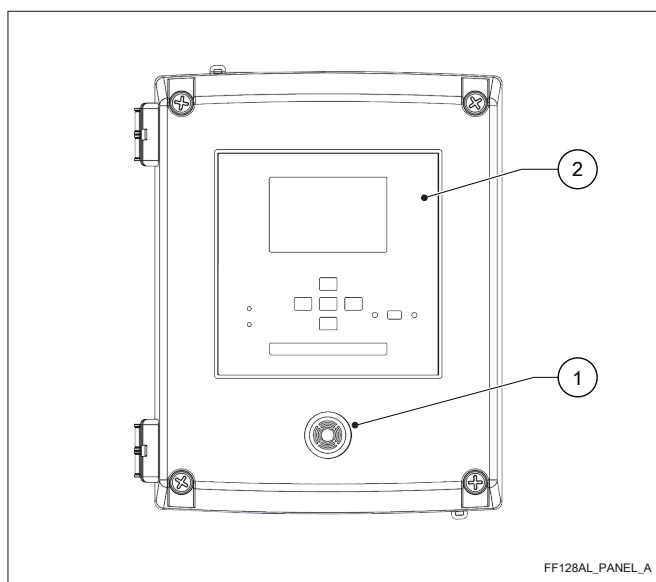
- a. power not available
- b. failure to START
- c. pump running
- d. START request
- e. battery power available / communication present

Signaling LED for diesel engine pump:

- a. automatic mode disabled
- b. failure to START
- c. pump running
- d. presence of global alarm on the firefighting pump controller
- e. battery power available/communication present
- f. customized reporting

Inside the panel:

- Protection fuses and battery charger
- Predisposition for battery installation (battery not included in the supply)
- Expansion bus for connection of up to a maximum of 2 modules, available as accessories::
 - GSM
 - RS485
 - 6 digital inputs
 - 2 inputs plus 2 relay outputs



GSM MODULE KIT

Kit consisting of GSM module, quad-band antenna (800/900/1800/1900MHz) with 2.5 m cable and PC connection cable with optical USB connector for programming and event download.

The module is designed to be fixed directly inside the FF128AL alarm panel or to the electric pump control board (FF128EP) or to the motor pump control board (FF128DP).

Features of the GSM-GPRS modem:

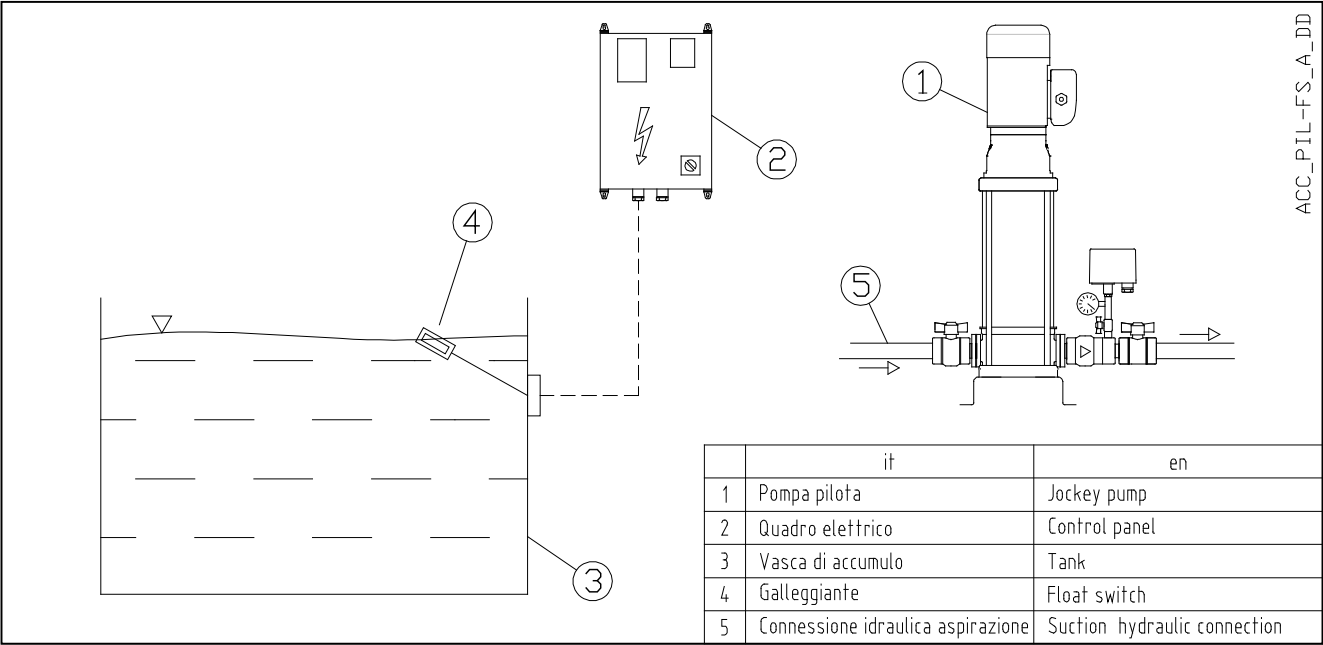
- Quad-band modem
- Power supply via expansion bus
- Compact size
- Direct insertion into the expansion slot of the unit (FF128AL, FF128EP, FF128DP)
- Sending SMS, e-mail, alarms, statuses, events of the unit to which it is connected
- Receipt of commands via SMS
- Display of GSM network connection status, signal strength reception on the display of the unit to which it is connected (FF128AL, FF128EP, FF128DP)
- SMA connector for antenna
- Built-in housing for SIM card

**PROTECTION SYSTEMS AGAINST DRY RUNNING
OF THE ELECTRIC JOCKEY PUMP**

To prevent the electric jockey pump from working without water on the suction side, it is necessary to use protection systems. The control panel is designed for the connection of a float switch, a minimum pressure switch or an optional level control module (available on request) to which connect three electrode probes.

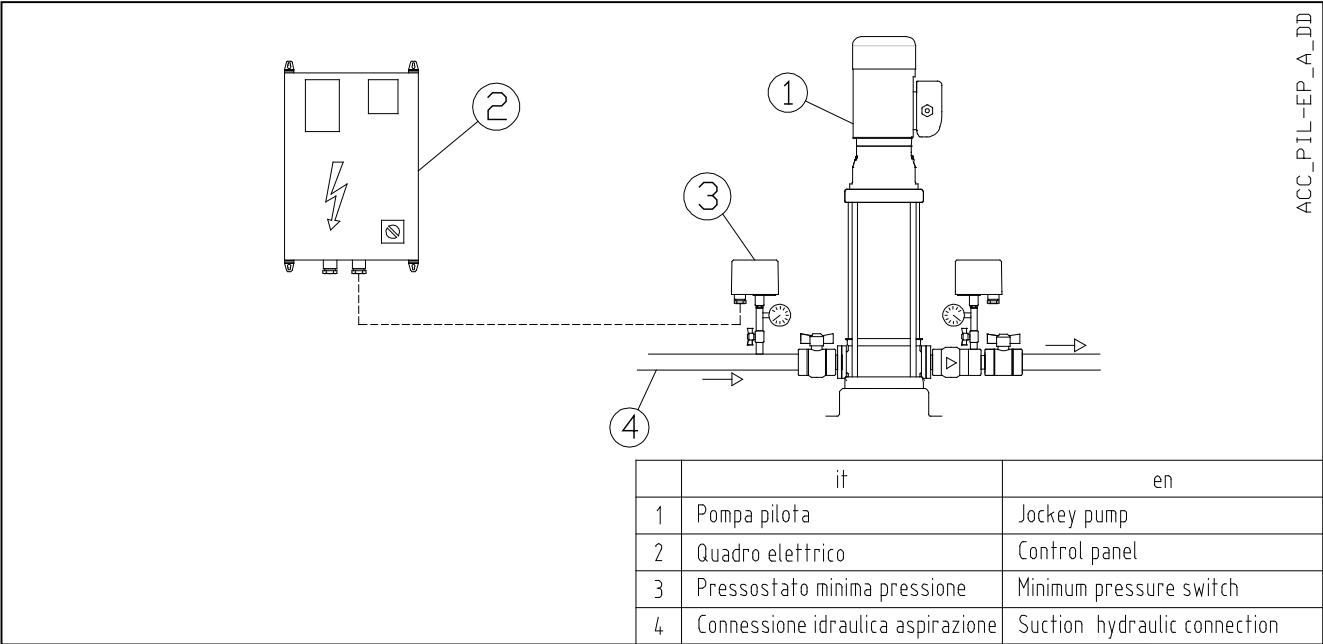
FLOAT SWITCH PROTECTION

The system with float switch is used in installations with water supply from the storage tank (basin). The float switch is connected to the electric panel of the jockey pump. If there is no water, the electric pump, if running, stops.



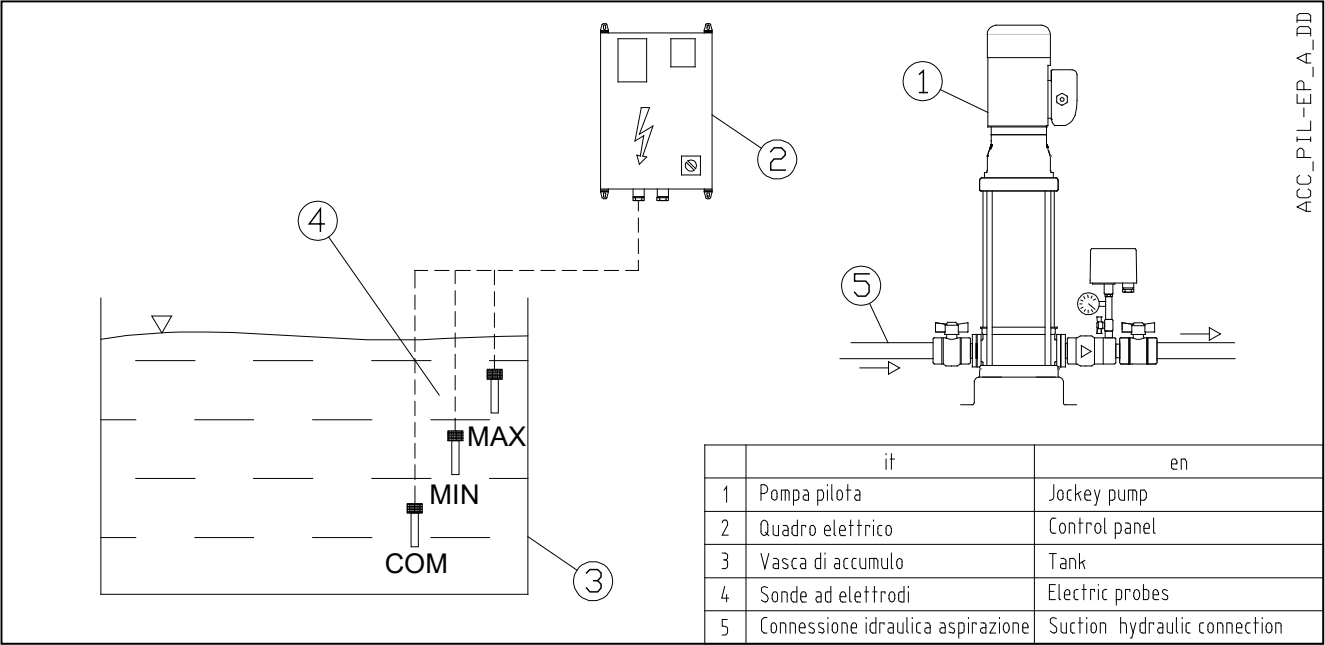
MINIMUM PRESSURE SWITCH PROTECTION

The system with minimum pressure switch is used for water supplies as pressurized networks. The pressure switch is connected to the electric panel of the jockey pump. If there is no water, the electric pump, if running, stops.



ELECTRODE PROBE PROTECTION

The system with electrode probes is used in installations with water supply from storage tanks (basins).
The three probes are connected directly to the electronic module (auxiliary) which must be installed in the electric panel of the jockey pump.
If there is no water, the electric pump, if running, stops.

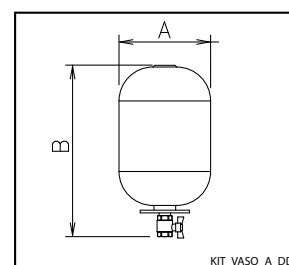


DIAPHRAGM TANK KIT

The GEM pressure pump set is designed to install a diaphragm tank kit. The kit includes a 24-litre diaphragm tank and a 1" ball valve.

Volume Litres	PN bar	DIMENSIONS (mm)		Materials	
		ø A	B	Diaphragm	Tank
24	8	270	515	EPDM	Painted steel
24	10	270	515	EPDM	Painted steel
24	16	270	515	EPDM	Painted steel

kit_vaso-en_a_td



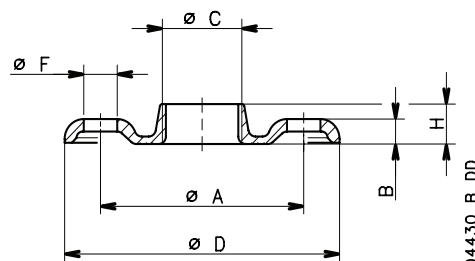
FLANGES

Available on request **threaded, weld-on or blind flanges** in galvanized steel.

THREADED FLANGES

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

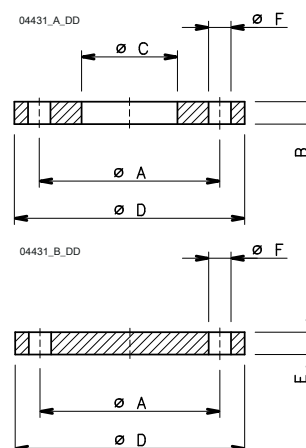
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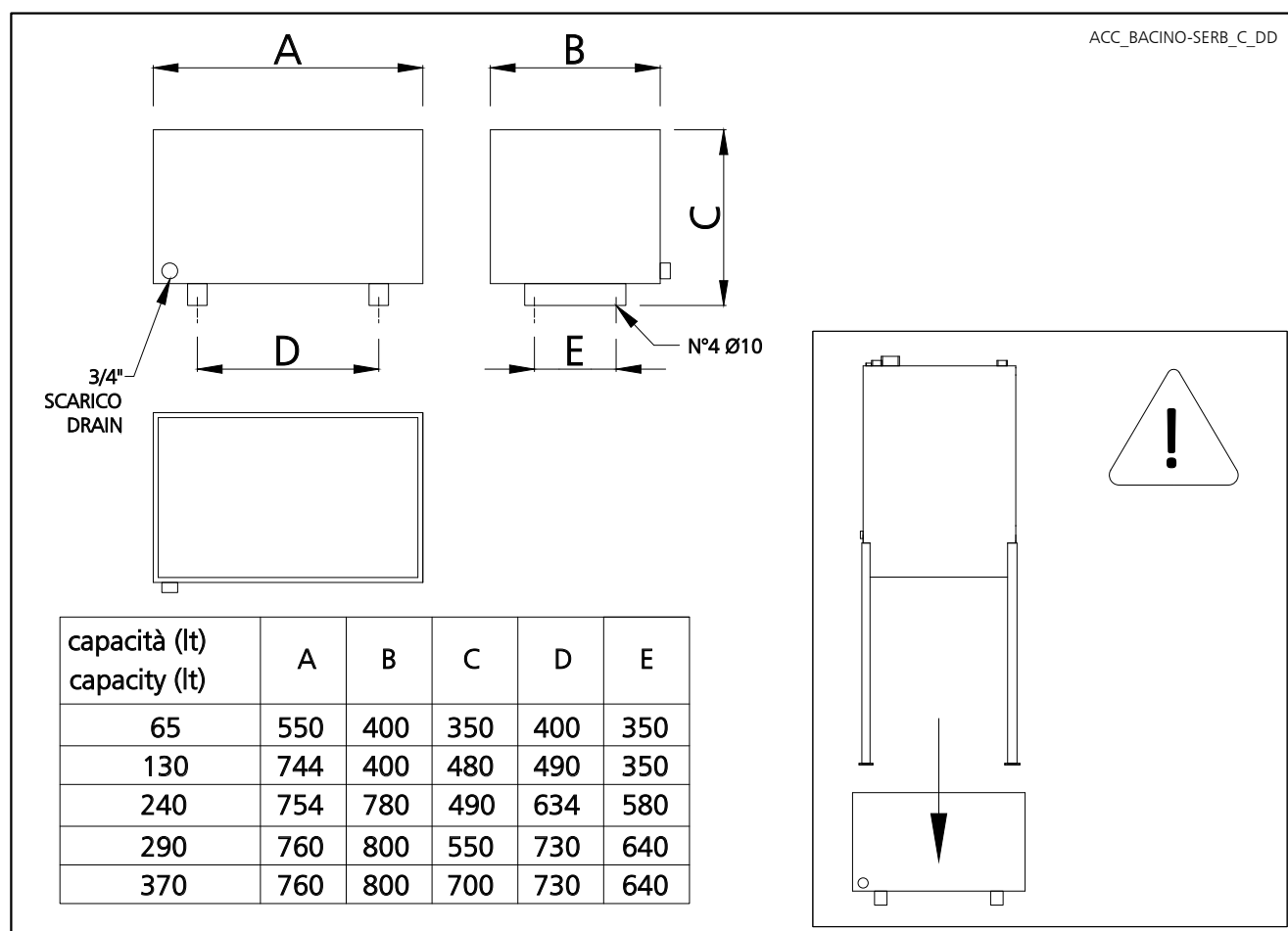
WELD-ON OR BLIND FLANGES

TIPO	DN	DIMENSIONI (mm)					FORI		
		ø C	ø A	B	ø D	E	ø F	N°	PN
2"	50	61,5	125	20	165	18	18	4	16
2"1/2	65	77,5	145	20	185	18	18	4	16
3"	80	90,5	160	20	200	20	18	8	16
4"	100	116	180	22	220	20	18	8	16
5"	125	141,5	210	22	250	22	18	8	16
6"	150	170,5	240	24	285	22	22	8	16
8"	200	221,5	295	26	340	24	22	12	16
10"	250	276,5	355	29	405	26	26	12	16
12"	300	327,5	410	32	460	28	26	12	16

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ADDITIONAL DIESEL COLLECTOR BASIN KIT



DIESEL ENGINE SPARE PARTS KIT

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

Diesel engine spare parts kit contains:

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

DIESEL DISCHARGE VALVE KIT

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

Xylem |'zīləm|

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

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



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