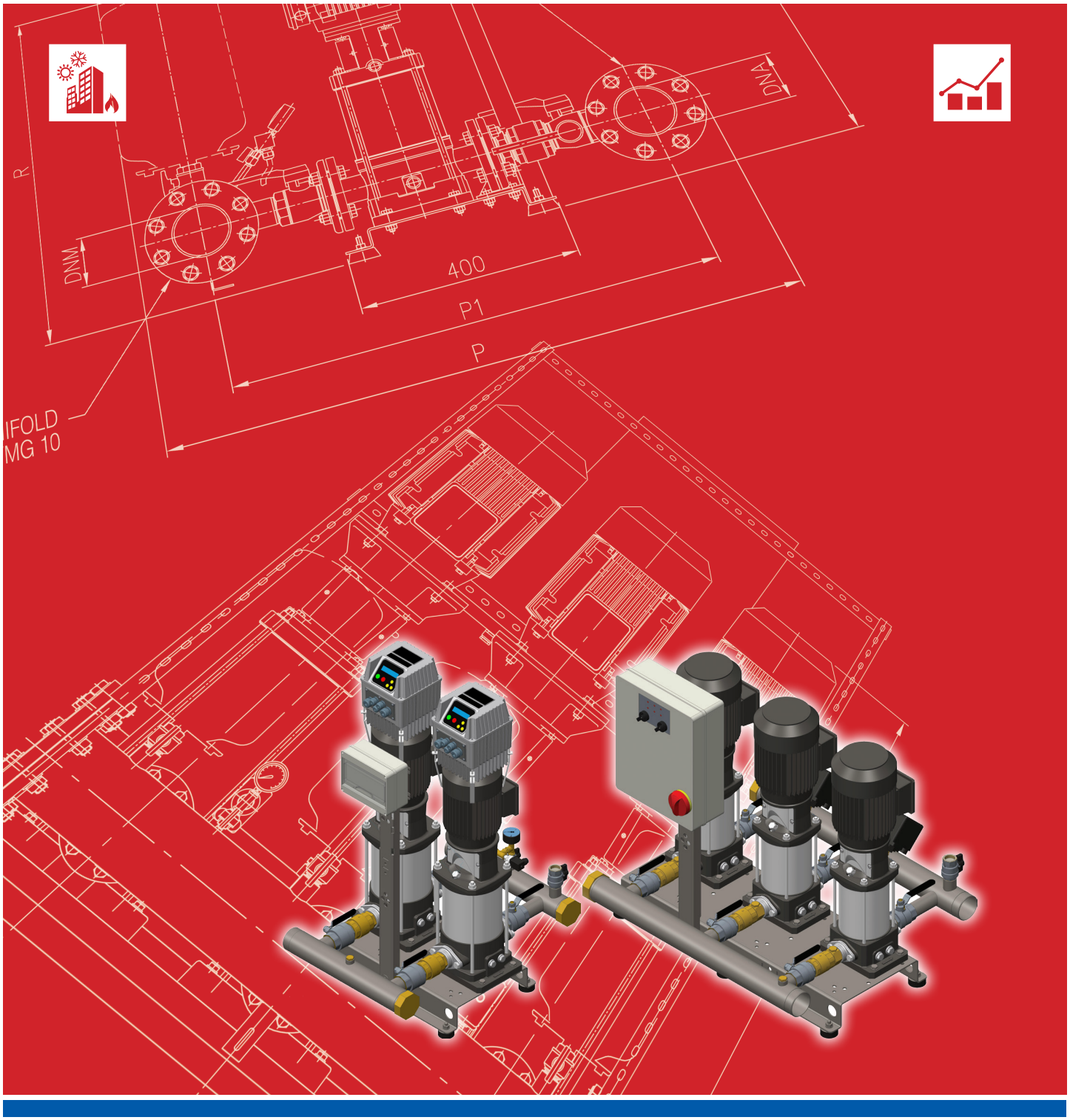
Booster kar

EBARA

Japanese Technology since 1912

EVMS - EVM Booster Sets

Data Book 50Hz



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Rev.-

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DEFINITION AND USE OF PRESSURISATION UNITS

In situations in which a municipal water mains is lacking or insufficient for the proper operation of the services, one must install a pressurization unit to provide acceptable pressure and flow rates to even in the most unfavourable services. Pressurisation units are used wherever there is a need to increase the pressure, or to pressurise a water circuit. **EBARA GP pressurisation units** are automatic systems with 2 or more pumps operating in parallel, designed to provide a simple and reliable solution to the most common requirements for maintenance of water supply pressure for apartment buildings, hotels, centres, offices and schools as well as providing auxiliary service in industrial and agricultural applications. They stand out for their robust construction, compact size, excellent efficiency and silent operation. GP units are equipped for connection to membrane and air cushion autoclaves. They are controlled by pressure switches or, for units with INVERTER control, by the signal from a pressure transducer.

TYPICAL APPLICATIONS

INDUSTRY	BUILDING SERVICE	WATER SUPPLY
		

PRINCIPLE OF OPERATION OF GP PRESSURISATION UNITS

When water is demanded, it is first drawn from the autoclave tank (if present). This demand for water, with the pumps stopped, lowers the pressure until the pressure switch with the highest setpoint trips and starts the first electropump. If the output flow is greater than the delivery capacity of a single pump, the pressure continues falling until it trips the second pressure switch, thus starting the second pump. This happens for all pumps in the unit. When the water demand stops or reduces, the system pressure rises, thus opening the pressure switches sequentially and shutting off the pumps one by one. This is done in inverse order to that in which the motors were started up, the number of hourly starts per pump is reduced and they are all used to the same extent.

NB: By connecting a float switch or minimum pressure switch to the control panel (both for demand from the first accumulation tank and from the water circuit itself) one can prevent the most frequent cause of pump failure: dry running.

PRINCIPLE OF OPERATION OF GPE PRESSURISATION UNITS

GPE units are designed to operate with a pump controlled by an **INVERTER** in the control panel, on board the motor, or in-line. The unit thus maintains constant pressure in the water circuit.
There are various versions of GPE unit:

- With INVERTER in the control panel (Standard **EFC** version)
  With a single INVERTER controlling a single pump which is alternated with the others at each start up (MFC version, on request, in which each pump is INVERTER controlled).
- With multiple INVERTERS, each pump controlled by its own INVERTER (**MFC versions**, versions with INVERTER on board motor or in-line INVERTER)

OPERATING CONDITIONS

EBARA GP-GPE pressurisation units can be used, in their standard versions, for civil, industrial and agricultural applications, as follows:
• building service
• water lifting and handling
• A/C
• heating
• irrigation
• washing systems
The conveyed fluid must be: clean, potable, ground or mixed water, free of solid or fibrous suspensions and aggressive chemical substances.
The units must be installed under cover, protected from the weather and freezing.
• Conveyed water temperature 0 - 50°C (depending on pumps).
• Ambient operating temperature 0 - 40°C, no higher than 1000 m above sea level.
• Max relative humidity 50% at +40°C.
NB: The system available NPSH must be greater than the NPSH demanded from the pump. For applications with different technical specifications, uses and climatic conditions (type of vector fluid, marine and aggressive industrial conditions), please contact our sales network.

TESTS AND TRIALS

Before shipping, all EBARA pressurisation units are subject to hydraulic, mechanical and electrical testing.

MECHANICAL AND HYDRAULIC TESTS

• Pressure switch calibration
• Pump direction of rotation
• Mechanical testing of moving parts and running noise (on each pump)
• Tightness test with delivery port closed and nameplate rating tests
• MANUAL trials (using button on control panel) for each pump
• AUTOMATIC trials (using switch on control panel) for unit

ELECTRICAL TESTS

• Earthing system continuity
• Applied voltage (dielectric rigidity)
• Insulation resistance

Principle of Operation of GPE Pressurisation UNITS with E-drive

GPE units with E-drive are designed to operate with each pumps controlled by an INVERTER installed on board its motor. The system is controlled by an MASTER INVERTER in relation to the reference signal supply by a pressure transmitters (4 - 20 mA passive). As the system pressure varies, the MASTER pump varies its rotary speed to restore it to the setpoint. If the water demand exceeds the capacity of the pump, the second variable speed pump cuts in and, pump goes into regulation mode to maintain the pressure setpoint; this happens for all the pumps in the unit. If the water demand drops off, the pressure tends to increase and the latest pump gradually reduces its speed to restore the correct operating pressure. This results in the regulation of the speed of the other pumps, until they gradually turn off. Once the system pressure has been restored and the water demand is 0, the MASTER pump switches off automatically.

Principle of Operation of GPE Pressurisation UNITS with E-power and Hydrocontroller

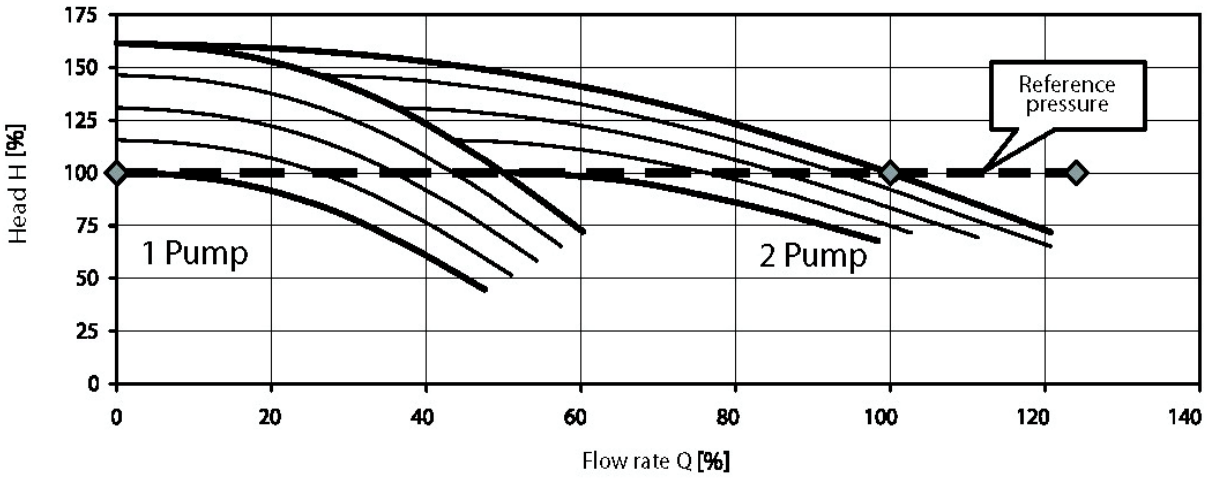
GPE units with E-power and Hydrocontroller are two pumps unit and are designed to operate with pumps controlled by an INVERTER in-line type. As the system pressure varies, the MASTER pump varies its rotary speed to restore it to the setpoint. If the water demand exceeds the capacity of the pump, the second variable speed pump cuts in and, the two pumps rotate at variable synchronous speed to restore the operating pressure. If the water demand drops off, the pressure tends to increase and both pumps gradually reduces its speed to restore the correct operating pressure. This results in the regulation of the speed of the other pumps, until they gradually turn off when the water demand is 0.

Principle of Operation of GPE Pressurisation UNITS with an EFC control panel
EFC multiple pump control units power pump n. 1 with the INVERTER to modulate system performance in relation to the reference signal while the other pumps are run at maximum nominal speed (around 2900 rpm) and started and stopped in relation to demand. These means there are two distinct primary electrical circuits:
n. 1 - INVERTER startup/control of a single pump,
n. 2 - contactor startup (direct or star/delta) of the other pumps.
The system is controlled by an electronic controller in relation to the reference signal supply by a pressure transmitter, flow meter or other unified control signal (4 - 20 mA passive).
If the electronic controller or pressure transducer fails, a system of pressure switches controls the pumps directly (if present).

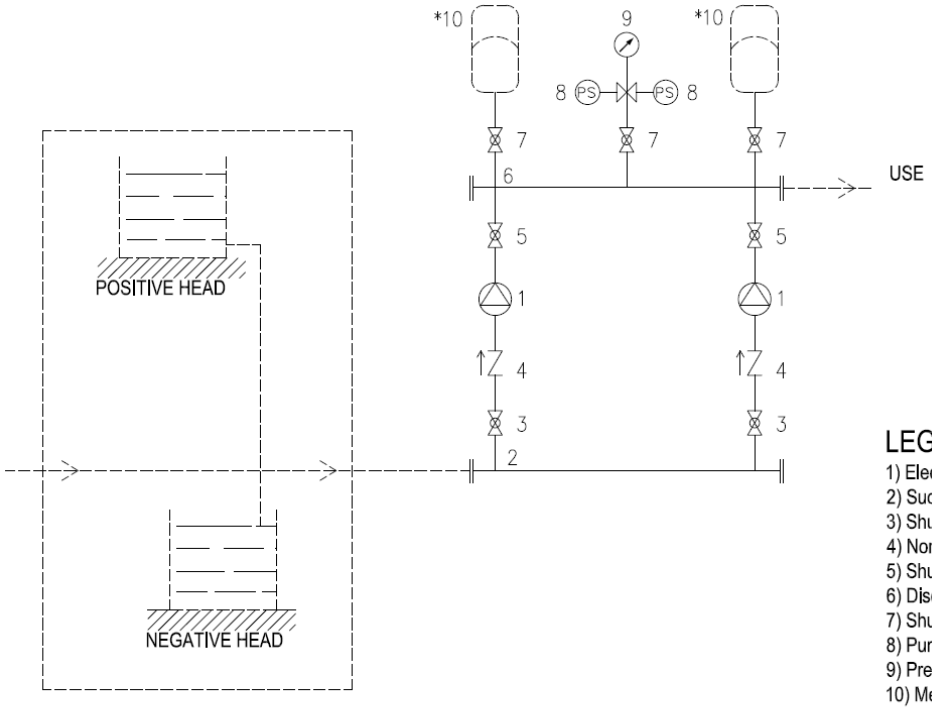
• In case of water distribution at constant pressure (Fig.1), the electronic controller is connected to the pressure transmitter on the units' delivery manifold, which outputs a signal proportional to the circuit pressure. When the pressure drops due to water demand, the pressure transmitter signal also drops and the controller starts and controls the speed of the first pump with the INVERTER to restore the reference/ operating pressure. If the pump's flow rate is lower than demand, the circuit pressure will continue to drop and the system responds by increasing the pump's speed. Once pump n. 1 reaches its maximum speed and demand is still in excess of its delivery, the controller will start pump n. 2 at maximum speed. The speed of pump n. 1 is immediately modulated so as to establish the operating pressure. If the pressure drops even further and pump n. 1 is once again running at maximum speed, the controller starts up pump n. 3, and so on for all pumps in the unit. If the water demand drops off, the pressure tends to increase and the controller reduces the speed of pump n. 1 to restore the correct operating pressure. At this point, the controller will stop one of the pumps running at maximum speed, while the speed of pump n. 1 is modulated to maintain the reference pressure. As the pressure continues to increase due to reduced demand, once the minimum speed of pump n. 1 is reached once more the controller will stop pump n. 3 and then pump n. 2. Once the demand for water has completely ceased, the controller reduces the speed of pump n. 1 to its minimum and after a set delay (around 1 minute) stops this pump too. The next time the system is started up, the INVERTER controlled pump will no longer be pump n. 1, but n. 2. The INVERTER controlled pump thus rotates through all pumps in sequence.

Principle of Operation of GPE Pressurisation UNITS with an MFC control panel
MFC multiple pump control panels power each pump with an INVERTER to modulate system performance in relation to the reference signal. MFC controllers differ from EFC controller from the point of view of their construction, since instead of having a single INVERTER to control all the pumps, each pump has its own INVERTER. The two types of control panel differ in construction, but they have the same type of operation by the controller, which responds to the reference signal output by a pressure transmitter or other unified control (4 - 20 mA passive). If the electronic controller or pressure transducer fails, a system of pressure switches controls the INVERTERS directly.
• In case of water distribution at constant starting pressure (Fig.1), the electronic controller is connected to the pressure transmitter on the units' delivery manifold, which outputs a signal proportional to the circuit pressure. When the pressure drops due to water demand, the pressure transmitter signal also drops and the controller starts and controls the speed of the first pump with the INVERTER to restore the reference/ operating pressure. If the pump's flow rate is lower than demand, the circuit pressure will continue to drop and the system responds by increasing the pump's speed. Once pump n. 1 reaches its maximum speed and demand is still in excess of its delivery, the controller will start pump n. 2, also at variable synchronous speed. The controller will modulate the speed of the two pumps to restore the operating pressure; the modulating frequency is the same for both pumps. If the pressure drops even further and pumps n. 1 and 2 are once again running at maximum speed, the controller starts up pump n. 3, and then pump n. 4, if present. When the water demand is reduced the pressure will end to increase, as does the pressure transmitter output value. The controller thus reduces the speed of pumps n. 1, 2, 3 and 4 (they are all controlled at the same speed) to restore the reference/ operating pressure. If the pumps' flow rate is greater than demand, the circuit pressure will continue to increase and the system responds by decreasing the speed of the pumps until it reaches the minimum speed setting. At this point, the controller will stop pump n. 4, while the speed of pumps n. 1, 2 and 3 is modulated to maintain the reference pressure. As the pressure continues to increase due to reduced demand, once the minimum speed setting is reached again, the controller will stop pump n. 3 and modulate the speed of pumps n. 1 and 2. This continues in sequence as the demand continues to fall, until the unit is completely stopped.

Fig. 1 - TWO PUMP UNIT WITH CONSTANT PRESSURE REGULATION



PRESSURISATION UNIT WATER CIRCUIT DIAGRAM

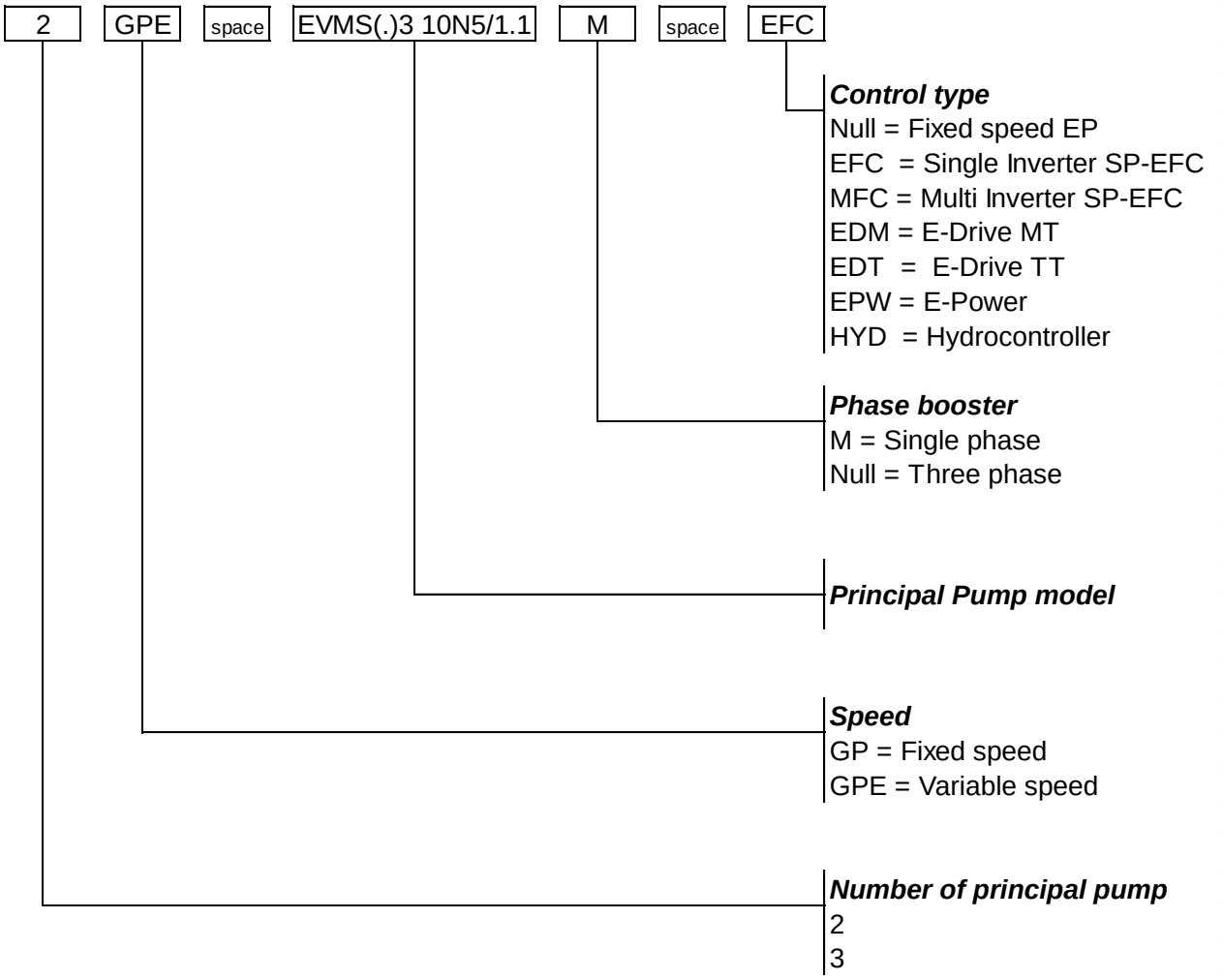


SUPPLY SYSTEM UPSTREAM FROM UNIT AT THE DISCRETION OF THE CUSTOMER OF THE SYSTEM DESIGNER

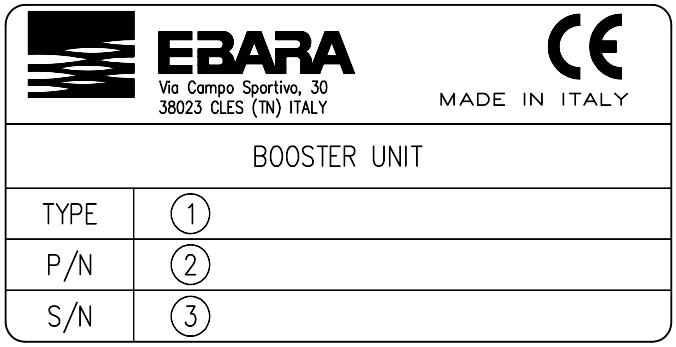
LEGEND
1) Electric Pump
2) Suction manifold
3) Shut-off valve in suction
4) Non-return valve
5) Shut-off valve in discharge
6) Discharge manifold
7) Shut-off valve
8) Pump control/regulation pressure switches
9) Pressure gauge
10) Membrane vessel (Optional*)

TYPE KEY

2-3GP(E) EVMS - EVM



NAME PLATE



1) "TYPE" booster model
2) "P/N" booster item number
3) "S/N" booster serial number

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PRODUCT SPECIFICATIONS

HYDRAULIC COMPONENTS AND CONTROL

BOOSTER SET											
Version			**EVMS**					**EVM**			
Operating range	Nominal flow rate (m3/h)	Single pump	3	5	10	15	20	32	45	64	
		2GP(E)	6	10	20	30	40	64	90	128	
		3GP(E)	9	15	30	45	60	96	135	192	
	Maximum working pressure		16 bar (0÷12 bar for EPW and HYD versions)								
	Liquid temperature range		0÷50°C (0÷40°C for EPW and HYD versions)								
	Ambient operating temperature (no higher than 1000 m above sea level)		0÷40°C								
Hydraulic components	Frame		omega sheet (up to 5.5 kW) UPN channel (from 7.5kW)					UPN channel			
			Galvanized steel								
	Manifold suction / discharge		Threaded manifold					Flanged manifold			
			Galvanized steel								
	Closing manifold		Threaded female cap			Counterflange kit					
			Brass			Galvanized steel					
	Check valve		Threaded check valve					Flanged clapet valve			
			Brass / NBR					Painted cast iron			
	Ball valve		Threaded ball valve					Butterfly valve (Lug)			
			Brass / PTFE					Painted cast iron			
	Fitting for air feeders (only for "GP" version)		Nipple					Flanged pipe			
			Brass					Galvanized steel			
Control	Pressure gauge		M3A-ABS 50/FR / plastic-copper alloy								
	Pressure switches		GP version with EP panel fixed speed GPE version with SP EFC / MFC panel with inverter XMP/ -25°C…+70°C								
	Pressure transmitter		GPE version with SP EFC / MFC panel GPE version with E-drive EN 10088-1.4301 (AISI 304) / 1.4404 (AISI 316L)								

ELECTRIC PANEL

BOOSTER SET										
Version			**EVMS**					**EVM**		
Operating range	Nominal flow rate (m3/h)	Single pump	3	5	10	15	20	32	45	64
		2GP(E)	6	10	20	30	40	64	90	128
		3GP(E)	9	15	30	45	60	96	135	192
	Maximum working pressure		16 bar (0÷12 bar for EPW and HYD versions)							
	Liquid temperature range		0÷50°C (0÷40°C for EPW and HYD versions)							
	Ambient operating temperature (no higher than 1000 m above sea level)		0÷40°C							
Control panel	Principal Electric panel	EP fixed speed up to 22 kW (only for GP)	●	●	●	●	●	●	●	●
		SP EFC/MFC variable speed from 4 kW to 22 kW (only for GPE)	○	○	○	○	○	●	●	●
	E-drive [1]	EDM single-phase supply (only for 2GPE up to 1.5 kW)	●	●	●	○	○	-	-	-
		EDT three-phase supply (only for GPE up to 15 kW)	●	●	●	●	●	●	●	●
	E-power (EPW) [1]	single-phase supply inverter (only 2GPE up to 2.2 kW)	●	●	-	-	-	-	-	-
	Hydrocontroller (HYD) [1]	three-phase supply inverter (only for 2GPE up to 2.2 kW)	●	●	-	-	-	-	-	-

● : Standard ○ : Optional

[1] To be assemble with protection panel (to see “PROTECTION PANEL” section)

TECHNICAL PUMP DATA

EVMS(.) 3-5-10-15-20

PUMP																	
Version			**EVMSG**					**EVMS**					**EVMSL**				
Operating range	Nominal flow rate (m3/h)		3	5	10	15	20	3	5	10	15	20	3	5	10	15	20
	Maximum working pressure		16 bar / 25 bar														
	Liquid temperature range		-30℃ to 140℃														
Liquid handled	Liquid type		Clean water, water contains glycol and moderately aggressive fluids					Drinking water, clean water, water contains glycol and moderately aggressive fluids					Water and moderately aggressive fluids				
Key components material	Impeller		EN 1.4301 (AISI 304)										EN 1.4401 (AISI 316)				
	Intermediate casin		EN 1.4301 (AISI 304)										EN 1.4401 (AISI 316)				
	Liner ring		EN 1.4301 (AISI 304) + PPS										EN 1.4401 (AISI 316) + PPS				
	Bottom casing		Cast Iron					EN 1.4301 (AISI 304)					EN 1.4401 (AISI 316)				
	Casing cover		EN 1.4301 (AISI 304)										EN 1.4401 (AISI 316)				
	Shaft		EN 1.4301 (AISI 304) EVMSG / EVMS -3-10 , EVMSG / EVMS 5-15-20 (depend on models)														
			EN 1.4404 (AISI 316L) EVMSL -3-10 , EVMSL 5-15-20 (depend on models)														
			EN 1.4462 (AISI 329A) EVMSG / EVMS / EVMSL 5-15-20 (depend on models)														
	Shaft seal		See the shaft seal options														
	O-ring	EPDM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		FPM	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	Outer casing		EN 1.4301 (AISI 304)										EN 1.4404 (AISI 316L)				
	Motor bracket		Cast iron														
	Base		Cast iron					Die cast aluminium									
Pipe connection	Oval flange		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			up to 16 bar														
	Round flange (DIN)		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
			up to 16 bar														
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			From 16 bar a 25 bar														

● : Standard ○ : Optional

EVM(.) 32-45-64

PUMP												
Version			**EVMG**			**EVM**			**EVML**		
Operating range	Nominal flow rate (m^3/h)		32	45	64	32	45	64	32	45	64
	Maximum Working pressure		16 bar / 30 bar								
	Liquid Temperature range		-15℃ to 120℃								
Liquid handled	Type of Liquid		Clean water, water contains glycol and moderately aggressive fluids						Water and moderately aggressive fluids		
	Max solid content		50 ppm								
	Max chlorine iron density		500 ppm								
Key components material	Impeller		EN 1.4301 (AISI 304)						EN 1.4401 (AISI 316)		
	Intermediate casing		EN 1.4301 (AISI 304)						EN 1.4401 (AISI 316)		
	Liner ring	EVM 32	EN 1.4301 (AISI 304) + PTFE						EN 1.4401 (AISI 316) + PTFE		
		EVM 45-64	EN 1.4401 (AISI 316) + PTFE								
	Bottom casing		Cast Iron			ASTMCF8			ASTMCF8M		
	Casing cover		Cast Iron			Cast Iron + EN 1.4301 (AISI 304)			Cast Iron + EN 1.4401 (AISI 316)		
	Shaft	EN 1.4301 (AISI 304)	●	●	●	●	●	●	-	-	-
		EN 1.4404 (AISI 316L)	-	-	-	-	-	-	●	●	●
	Shaft sleeve bearing		Tungstene carbide								
	Shaft Seal	type	Cartridge mechanical seal								
		material	Silicon Carbide / Carbon / FPM								
	O-ring		EPDM						FPM		
	Outer casing		EN 1.4301 (AISI 304)						EN 1.4404 (AISI 316L)		
	Motor Bracket		Cast Iron								
	Tie rod		Carbon Steel								
	Coupling		Carbon Steel								
	Base		Cast Iron								
Pipe connection	Round Flange (DIN)		●	●	●	●	●	●	●	●	●

TECHNICAL MOTOR DATA

ETM MOTOR

ETM MOTOR		
Version		**EVMS**
Power source	Frequency	50 Hz
	Phase	Three-phase
	Rotation speed	2900 min-1
	Power rating	0.75 ÷ 11 kW
		1.0 ÷ 15 HP
	Voltage	230/400 ± 10% V (up to 4 kW)
		400/690 ± 10% V (from 5.5 kW)
Type	Type	Electric - TEFC
	Efficiency level	IE3
	N°of poles	2
	Protection degree	IP 55
	Insulation class	F (temperature rise class B)
Others	Thermal Protection	PTC is available for the above 1.5 kW
	Casing Material	Aluminium
	Flange mount (IEC motor)	IM B14 (up to 4 kW)
		IM B5 (from 5.5 kW)

OTHER MOTOR

OTHER MOTOR			
Version		**EVMS**	**EVM**
Power source	Frequency	50 Hz	
	Phase	Single-phase	Three-phase
	Rotation speed	2900 min-1	
	Power rating	0.75 ÷ 2.2 kW	5.5 ÷ 22 kW
		1.0 ÷ 3.0 HP	7.5 ÷ 30 HP
	Voltage	230 ± 10% V	400/690 ± 10% V
Type	Type	Electric - TEFC	
	Efficiency level	-	IE3
	N°of poles	2	
	Protection degree	IP 55	
	Insulation class	F (temperature rise class B)	
Others	Thermal Protection	PTC is available for the above 1.5 kW	
	Casing Material	Aluminium	
	Flange mount (IEC motor)	IM B14	IM B5

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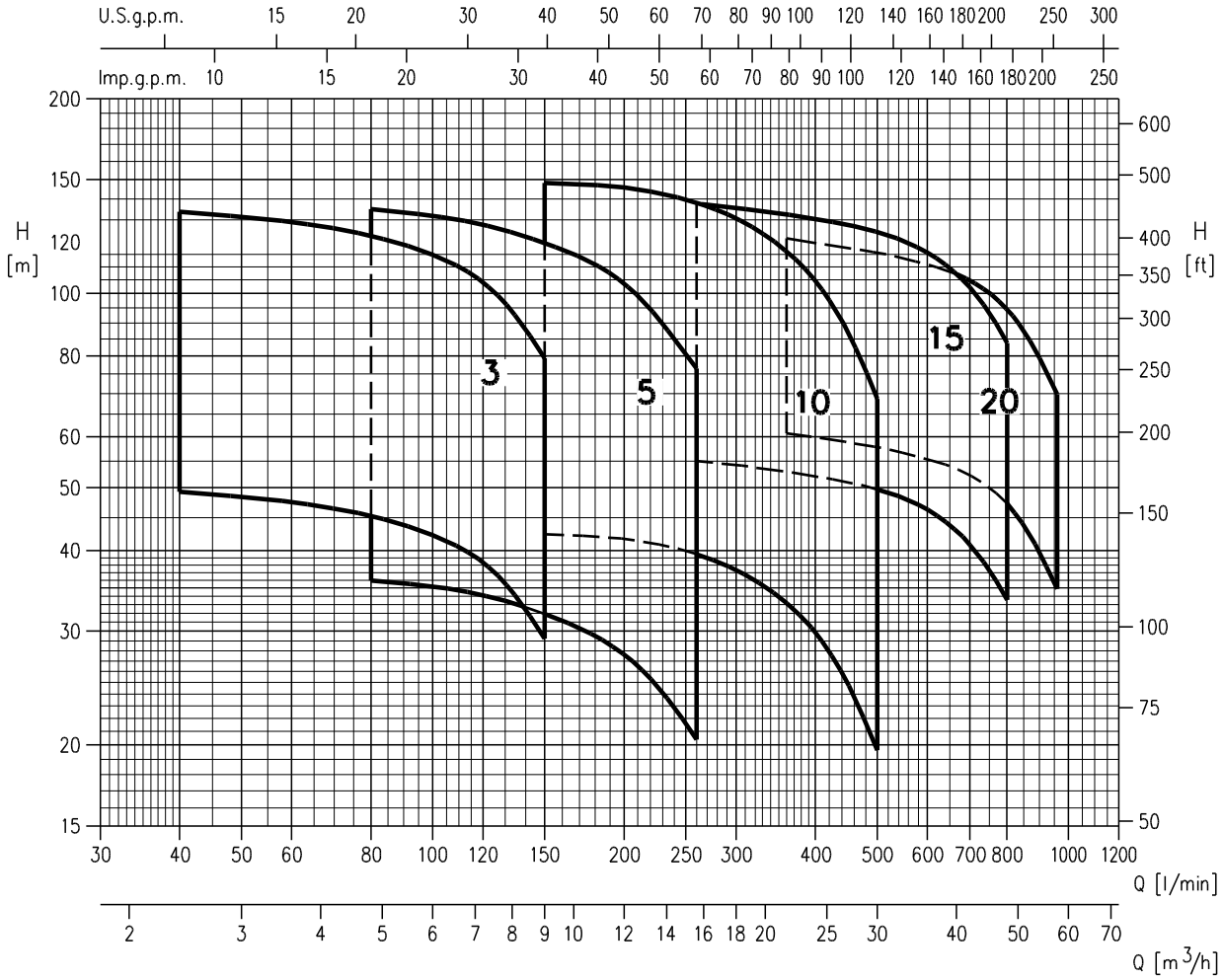
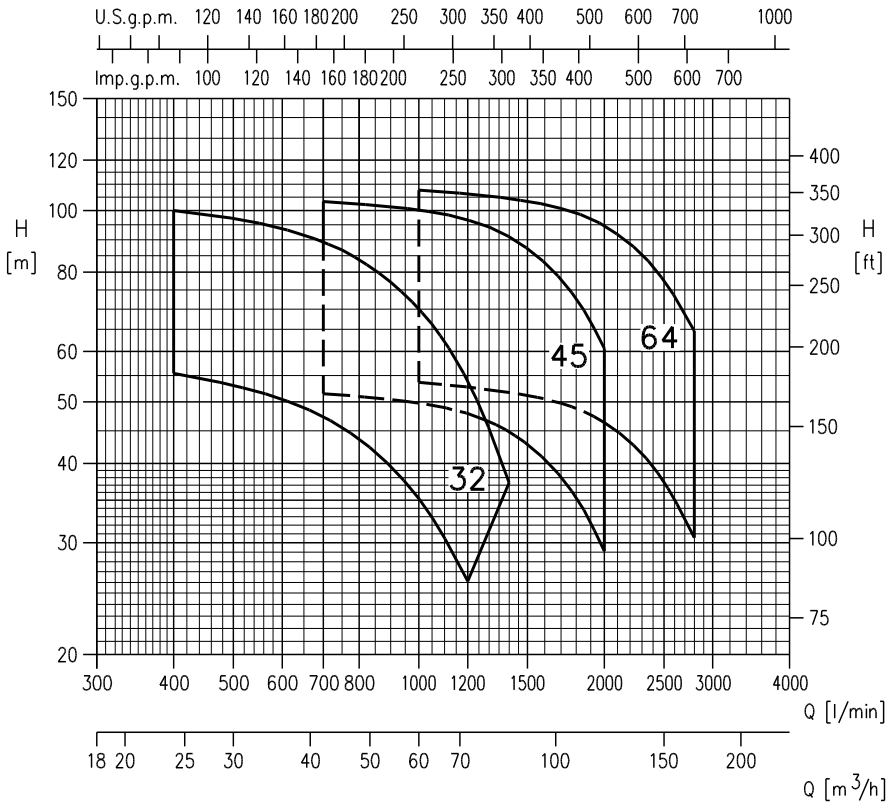
PERFORMANCE RANGE

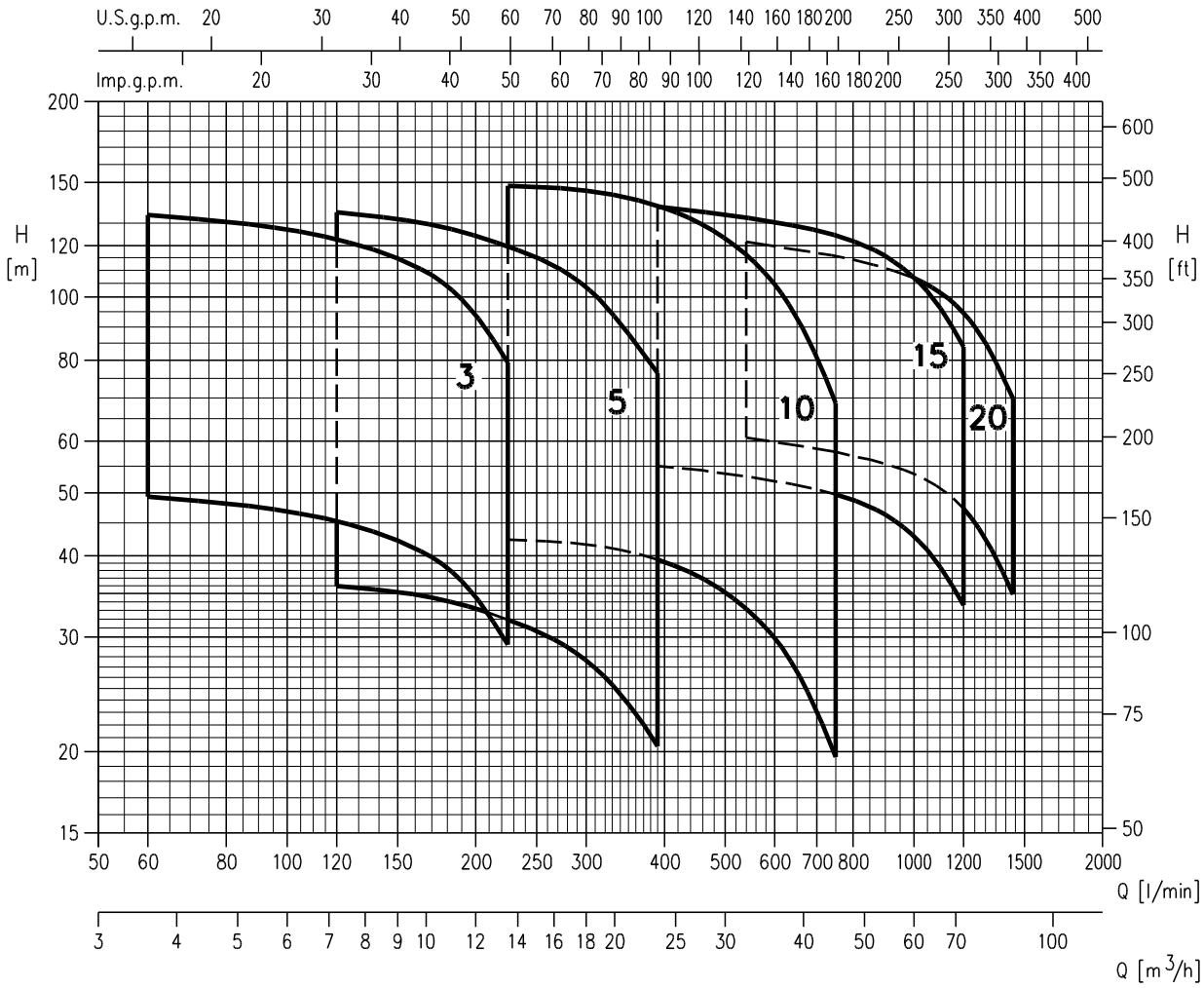
RESEAU BOOSTER SET 2GP(E) EVMS(.) 3-5-10-15-20



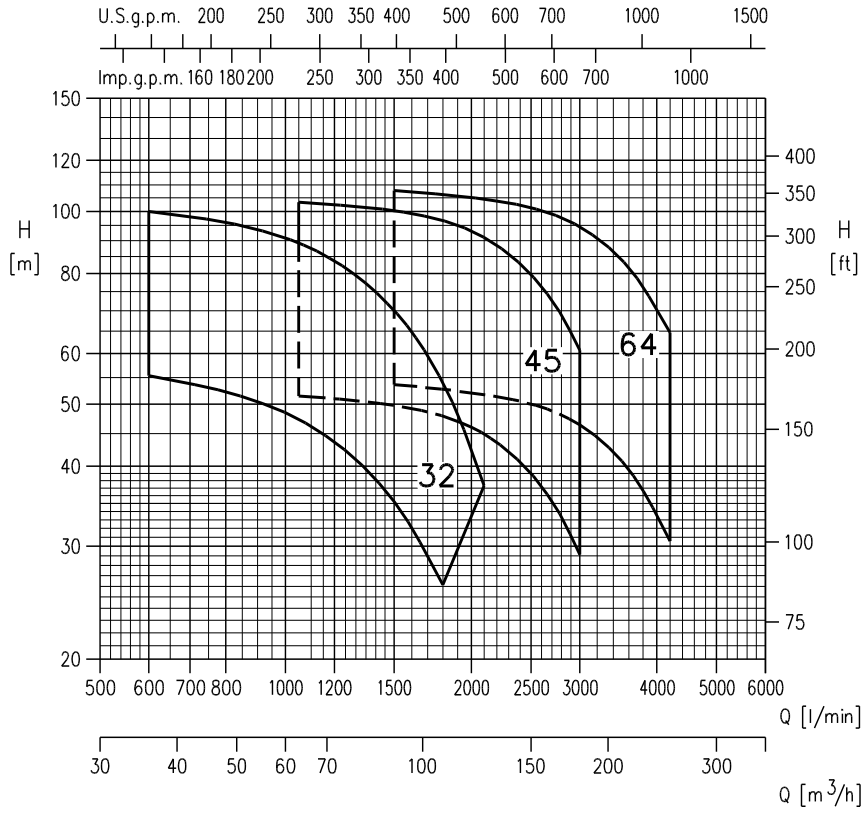
RESEAU BOOSTER SET 2GP(E) EVM(.) 32-45-64



RESEAU BOOSTER SET 3GP(E) EVMS(.) 3-5-10-15-20



RESEAU BOOSTER SET 3GP(E) EVM(.) 32-45-64



CURVE SPECIFICATION 2GP(E)

MINIMUN EFFICENCY INDEX (MEI)

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A
The curves refer to effective speed of asynchronous motors at 50 Hz
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of ν = 1 mm2/s (1 cSt)
The NPSH curve is an average curve obtained in the same conditions of performance curves.
The continuous curves indicate the recommended working range. The dotted curve is only a guide.
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

Q = volume flow rate
H = total head
P2 = pump power input (shaft power)
η = pump efficiency
NPSH = net positive suction head required by the pump
MEI = minimum efficiency index

The minimum efficiency index (MEI) is a misure of the quality of a pump size respect to its mean efficiency.
The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

Minimum efficiency index (MEI)

Pump Type	MEI *
EVMS(.)3	> 0.70
EVMS(.)5	> 0.70
EVMS(.)10	> 0.70
EVMS(.)15	> 0.70
EVMS(.)20	> 0.70
EVM(.)32	> 0.40
EVM(.)45	> 0.70
EVM(.)64	> 0.70

The values refer to the individual pumps

SELECTION CHART 2GP(E) EVMS(.) 3-5

Model	Supply		Motor		Maximum working pressure (MPa)	Q=Capacity							
						l/min	0	40	60	80	120	150	200	260
	Single phase	Three phase	kW	HP		m³/h	0	2.4	3.6	4.8	7.2	9.0	12.0	15.6
						H=Total manometric head in meters								
2GP(E) EVMS(.)3 7/0.75 (M)	●	○	0.75 + 0.75	1 + 1	1.6	51.5	49.5	47.5	45	38.3	29.2	-	-
2GP(E) EVMS(.)3 8/0.75	○	●	0.75 + 0.75	1 + 1		59	56.5	54.5	51.5	44	33.4	-	-
2GP(E) EVMS(.)3 9/1.1 (M)	●	●	1.1 + 1.1	1.5 + 1.5		66.5	63.5	61	58	49	37.6	-	-
2GP(E) EVMS(.)3 10/1.1	○	●	1.1 + 1.1	1.5 + 1.5		73.5	70.5	68	64.5	54.5	41.5	-	-
2GP(E) EVMS(.)3 16/1.5 (M)	●	●	1.5 + 1.5	2 + 2		118	113	109	103	87.5	67	-	-
2GP(E) EVMS(.)3 19/2.2	○	●	2.2 + 2.2	3 + 3		140	134	129	123	104	79.5	-	-
2GP(E) EVMS(.)5 4/0.75	○	●	0.75 + 0.75	1 + 1		37.9	-	-	35.9	34.1	31.9	27.6	20.4
2GP(E) EVMS(.)5 5/1.1	○	●	1.1 + 1.1	1.5 + 1.5		47.5	-	-	45	42.5	39.9	34.5	25.5
2GP(E) EVMS(.)5 6/1.5 (M)	●	●	1.5 + 1.5	2 + 2		57	-	-	54	51	48	41.5	30.6
2GP(E) EVMS(.)5 7/1.5 (M)	●	●	1.5 + 1.5	2 + 2		66.5	-	-	63	59.5	56	48.5	35.7
2GP(E) EVMS(.)5 8/2.2	○	●	2.2 + 2.2	3 + 3		76	-	-	72	68	64	55	41
2GP(E) EVMS(.)5 9/2.2 (M)	●	●	2.2 + 2.2	3 + 3		85.5	-	-	81	77	72	62	46
2GP(E) EVMS(.)5 11/2.2	○	●	2.2 + 2.2	3 + 3		104	-	-	98.5	94	87.5	76	56
2GP(E) EVMS(.)5 15/3.0	-	●	3.0 + 3.0	4 + 4		142	-	-	135	128	120	104	76.5

SELECTION CHART 2GP(E) EVMS(.) 10-15-20

Model	Supply		Motor		Maximum working pressure (MPa)	Q=Capacity												
						l/min	0	150	200	260	300	360	400	500	600	700	800	900	960
	Single phase	Three phase	kW	HP		m³/h	0	9,0	12,0	15,6	18,0	21,6	24,0	30,0	36,0	42,0	48,0	54,0	57,6
						H=Total manometric head in meters													
2GP(E) EVMS(.)10 4/2.2 (M)	●	●	2.2 + 2.2	3 + 3	1,6	43,6	42,4	41,7	39,5	37,3	33,2	29,8	19,6	-	-	-	-	-
2GP(E) EVMS(.)10 6/2.2 (M)	●	●	2.2 + 2.2	3 + 3		65,5	63,5	62,5	59	56	50	45	29,5	-	-	-	-	-
2GP(E) EVMS(.)10 7/3.0	-	●	3.0 + 3.0	4 + 4		76,5	74	73	69	65,5	58	52	34,4	-	-	-	-	-
2GP(E) EVMS(.)10 8/3.0	-	●	3.0 + 3.0	4 + 4		87,0	84,5	83,5	79	74,5	66,5	59,5	39,3	-	-	-	-	-
2GP(E) EVMS(.)10 11/4.0	-	●	4.0 + 4.0	5.5 + 5.5		120	116	115	109	103	91,5	82	54	-	-	-	-	-
2GP(E) EVMS(.)10 14/5.5	-	●	5.5 + 5.5	7.5 + 7.5		153	148	146	138	131	116	104	68,5	-	-	-	-	-
2GP(E) EVMS(.)15 4/4.0	-	●	4.0 + 4.0	5.5 + 5.5		59	-	-	55	54,5	53	52	50	46,5	41	33,6	-	-
2GP(E) EVMS(.)15 5/5.5	-	●	5.5 + 5.5	7.5 + 7.5		73,5	-	-	69	68	66	65	62	58	51	42	-	-
2GP(E) EVMS(.)15 6/5.5	-	●	5.5 + 5.5	7.5 + 7.5		88,5	-	-	82,5	81,5	79,5	78	74,5	69,5	61	50,5	-	-
2GP(E) EVMS(.)15 7/7.5	-	●	7.5 + 7.5	10 + 10		103	-	-	96,5	95	92,5	91	87	81	71,5	58,5	-	-
2GP(E) EVMS(.)15 8/7.5	-	●	7.5 + 7.5	10 + 10		118	-	-	110	109	106	104	99,5	92,5	81,5	67	-	-
2GP(E) EVMS(.)15 9/11	-	●	11 + 11	15 + 15		133	-	-	124	122	119	117	112	104	92	75,5	-	-
2GP(E) EVMS(.)15 10/11	-	●	11 + 11	15 + 15		147	-	-	138	136	132	130	124	116	102	84	-	-
2GP(E) EVMS(.)20 4/5.5	-	●	5.5 + 5.5	7.5 + 7.5		67,4	-	-	-	-	61	60	58	55,4	52,3	47,3	39,8	34,9
2GP(E) EVMS(.)20 6/7.5	-	●	7.5 + 7.5	10 + 10		101	-	-	-	-	91,2	90	87	83,1	78,5	71	59,7	52,3
2GP(E) EVMS(.)20 8/11	-	●	11 + 11	15 + 15		135	-	-	-	-	122	120	116	111	105	95	80	70

● : Standard ○ : On request

SELECTION CHART 2GP(E) EVM(.) 32-45-64

Model	Motor		Maximum working pressure [Mpa]	Q=Capacity									
				l/min 0	400	700	1000	1200	1400	1800	2000	2400	2800
	kW	HP		m³/h 0	24	42	60	72	84	108	120	144	168
				H=Total manometric head in meters									
2GP(E) EVM(.)32 3-3/5.5	5.5 + 5.5	7.5 + 7.5	1.6	59.5	55.5	47.5	35.2	26.1	-	-	-	-	-
2GP(E) EVM(.)32 3-1/5.5	5.5 + 5.5	7.5 + 7.5		68	62	55	44.5	35.2	24.5	-	-	-	-
2GP(E) EVM(.)32 4-3/7.5	7.5 + 7.5	10 + 10		84	77	67	51.5	39.4	-	-	-	-	-
2GP(E) EVM(.)32 4-1/7.5	7.5 + 7.5	10 + 10		92	83.5	74.5	61	48.5	34.2	-	-	-	-
2GP(E) EVM(.)32 5-3/11	11 + 11	15 + 15		106	100	89	70	54	37.3	-	-	-	-
2GP(E) EVM(.)45 2-0/7.5	7.5 + 7.5	10 + 10		54	-	51.5	50	48	45	35.4	29.1	-	-
2GP(E) EVM(.)45 3-2/11	11 + 11	15 + 15		69	-	64	61	58	53	37.3	-	-	-
2GP(E) EVM(.)45 3-0/11	11 + 11	15 + 15		81	-	77.5	75	72.5	68	54	45	-	-
2GP(E) EVM(.)45 4-2/15	15 + 15	20 + 20		96	-	90	86	82	76	56	43	-	-
2GP(E) EVM(.)45 4-0/15	15 + 15	20 + 20		108	-	103	100	96.5	91	73	60.5	-	-
2GP(E) EVM(.)64 2-0/11	11 + 11	15 + 15		58.5	-	-	53.5	53	52	49	46.5	39.5	30.6
2GP(E) EVM(.)64 3-3/15	15 + 15	20 + 20		71	-	-	64	62.5	61	55.5	51	39.3	-
2GP(E) EVM(.)64 3-2/15	15 + 15	20 + 20		76.5	-	-	69.5	68	66.5	61.5	57.5	46.5	32.5
2GP(E) EVM(.)64 3-1/15	15 + 15	20 + 20		82.5	-	-	75	74	72.5	68	64	53.5	40
2GP(E) EVM(.)64 3-0/18.5	18.5 + 18.5	25 + 25		88	-	-	80.5	79.5	78	74	70.5	60.5	47.5
2GP(E) EVM(.)64 4-3/18.5	18.5 + 18.5	25 + 25		100	-	-	91	89	87	80.5	75.5	60.5	42
2GP(E) EVM(.)64 4-1/22	22 + 22	30 + 30		112	-	-	102	101	98.5	93	88	74.5	57
2GP(E) EVM(.)64 4-0/22	22 + 22	30 + 30		117	-	-	108	106	104	99	94.5	81.5	64.5

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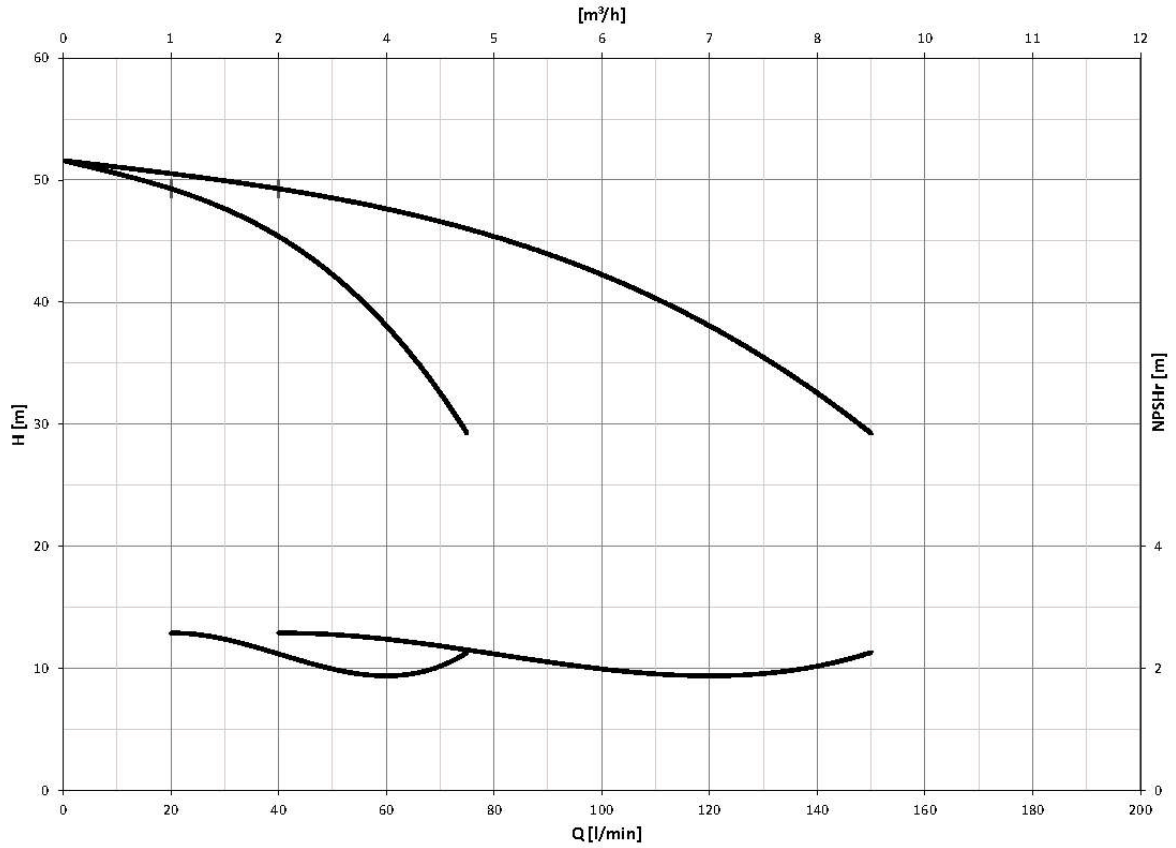
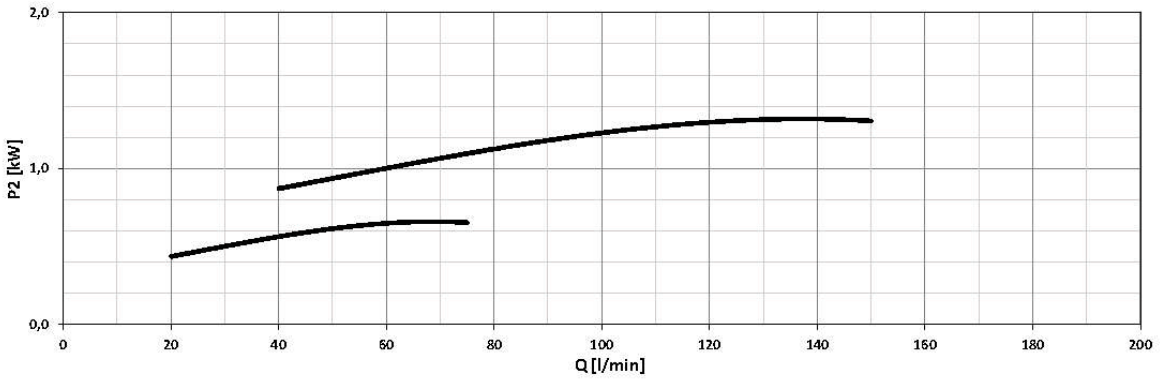
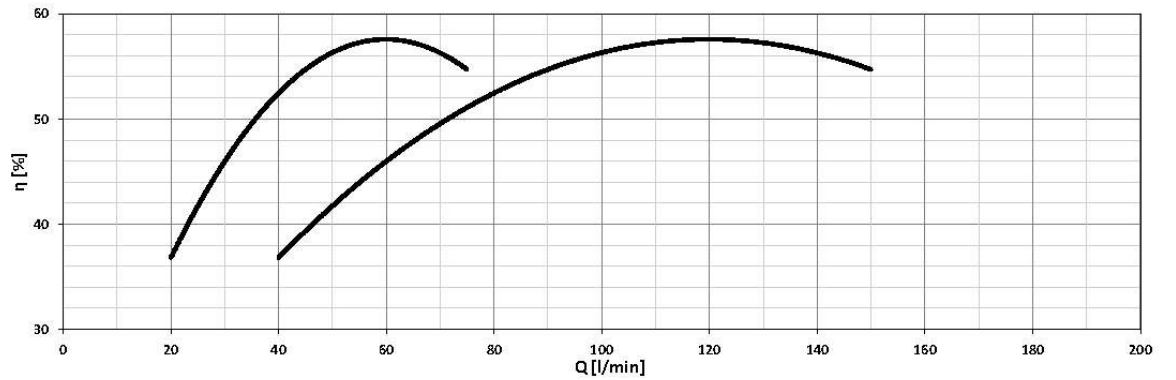
PERFORMANCE CURVE 2GP(E)

2GP(E) EVMS 3-7/0.75

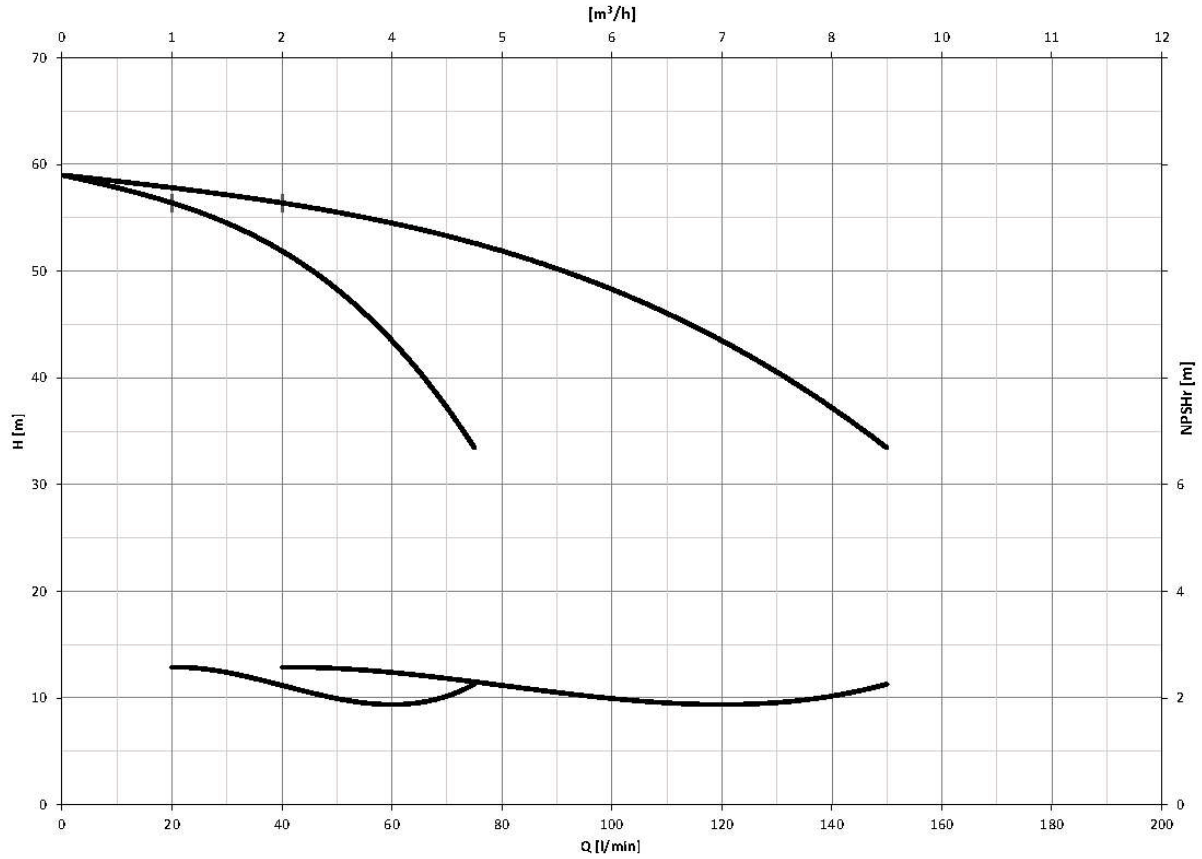


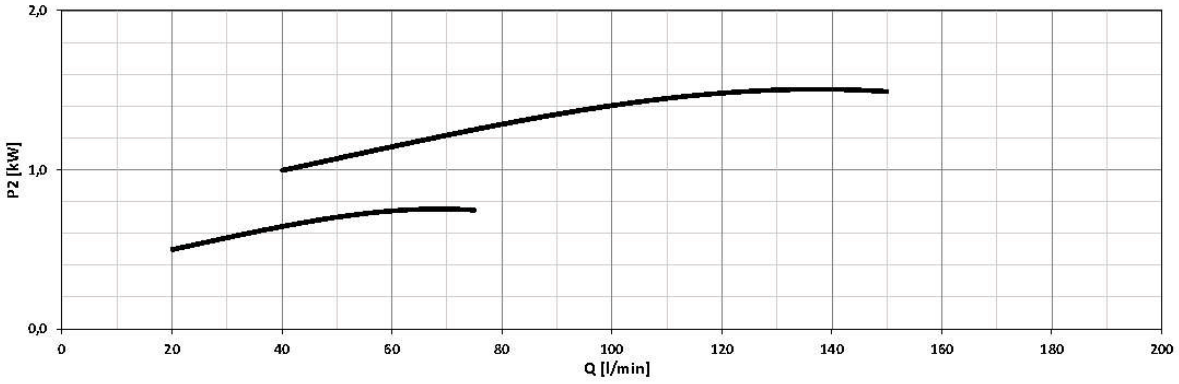


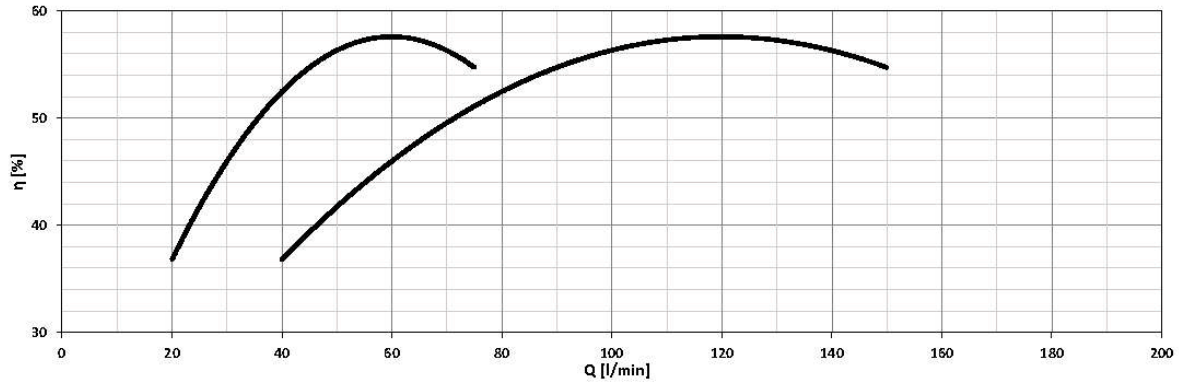


PERFORMANCE CURVE GP-GPE

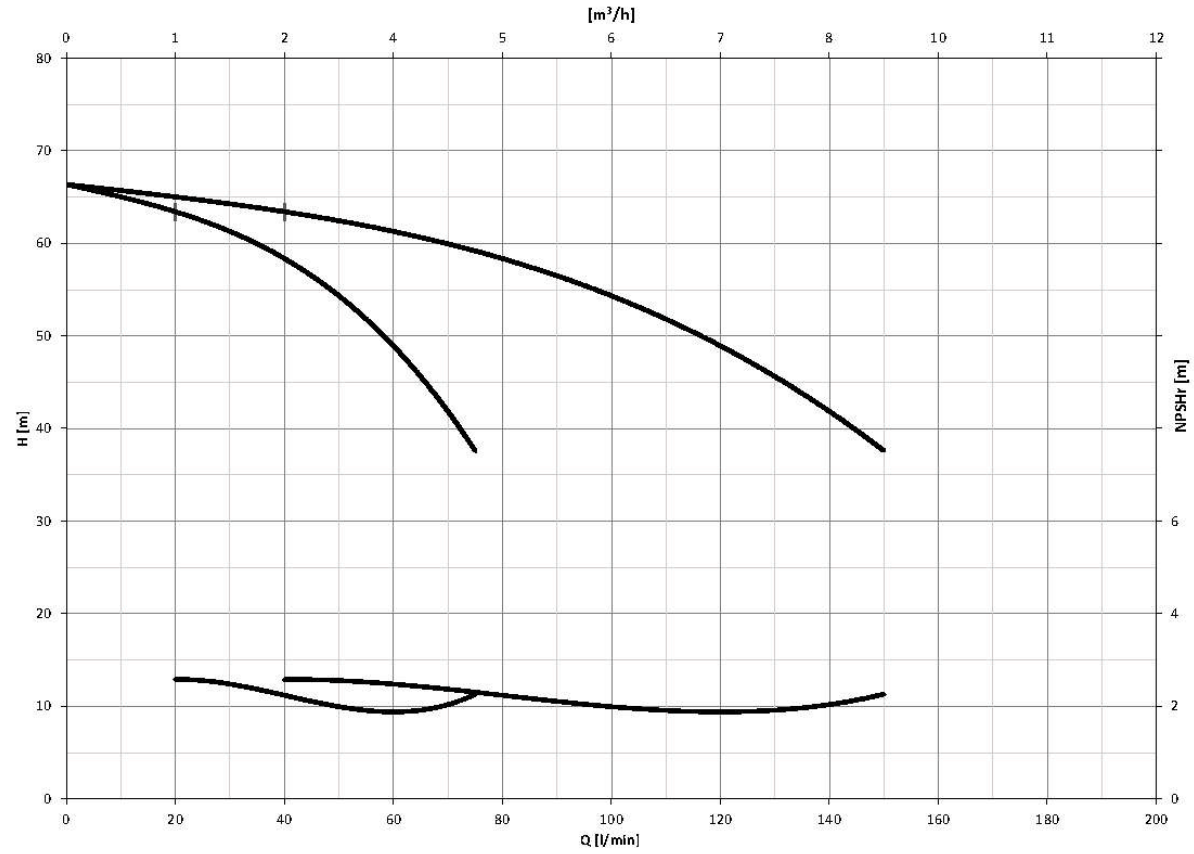
2GP(E) EVMS 3-8/0.75

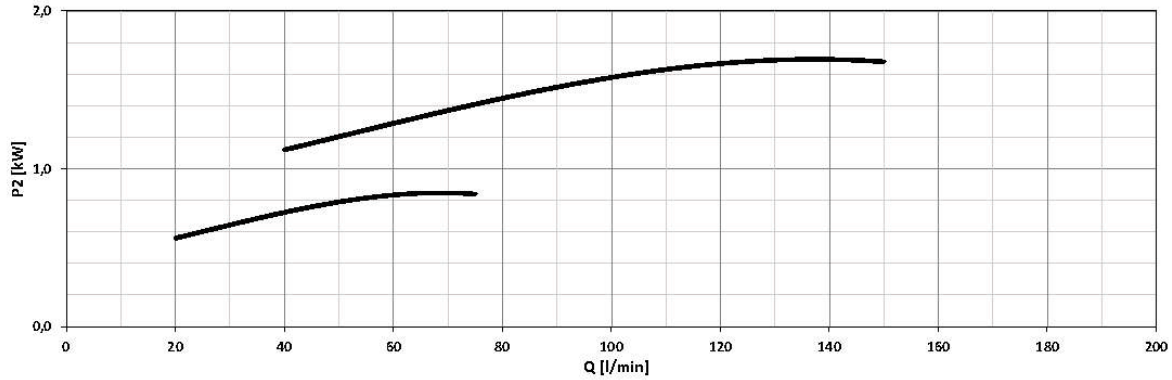


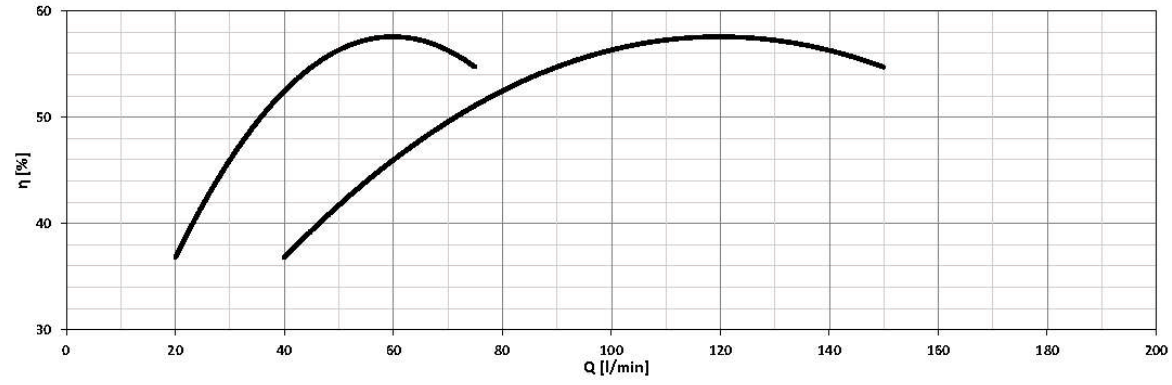




2GP(E) EVMS 3-9/1.1

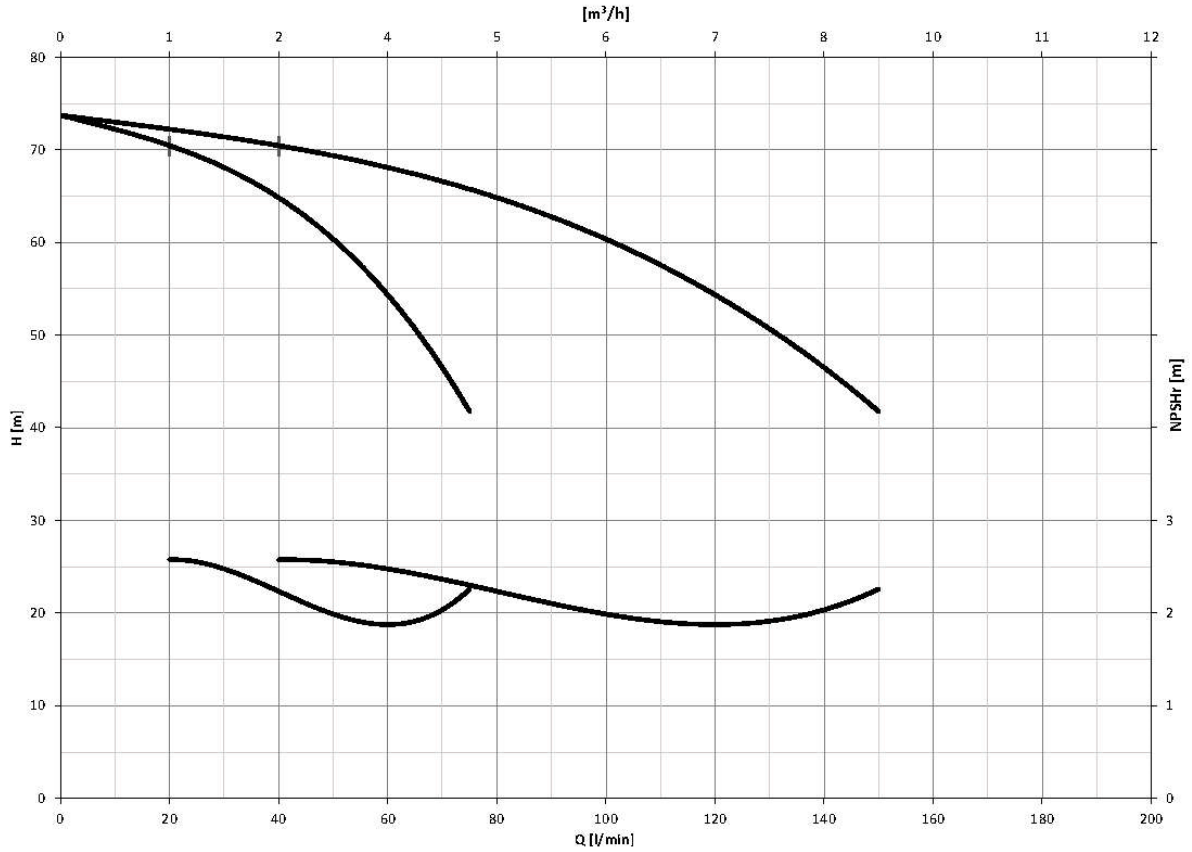


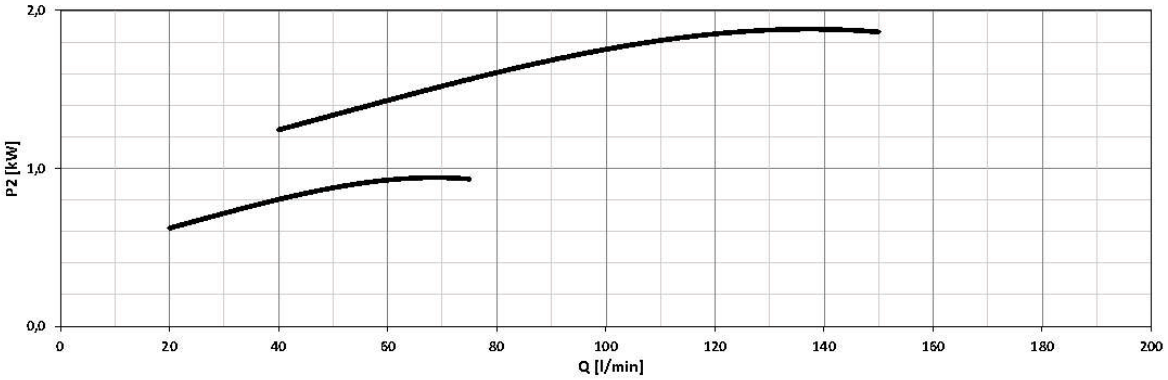


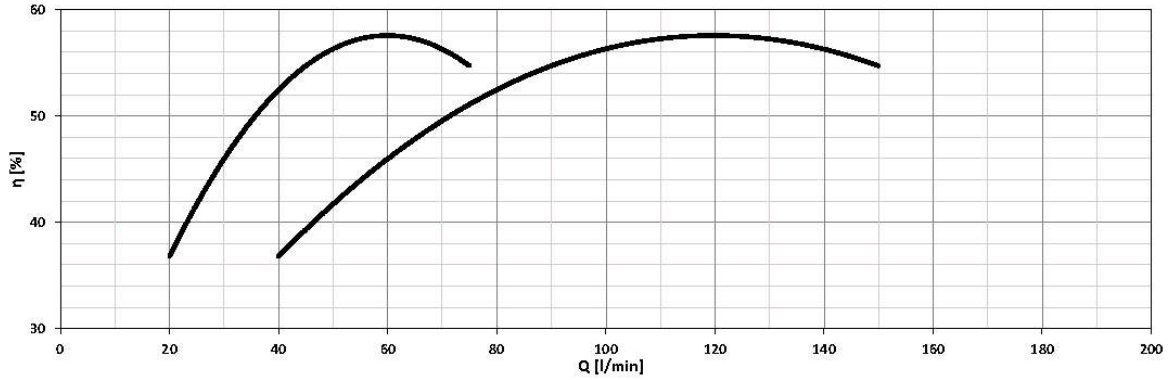


PERFORMANCE CURVE GP-GPE

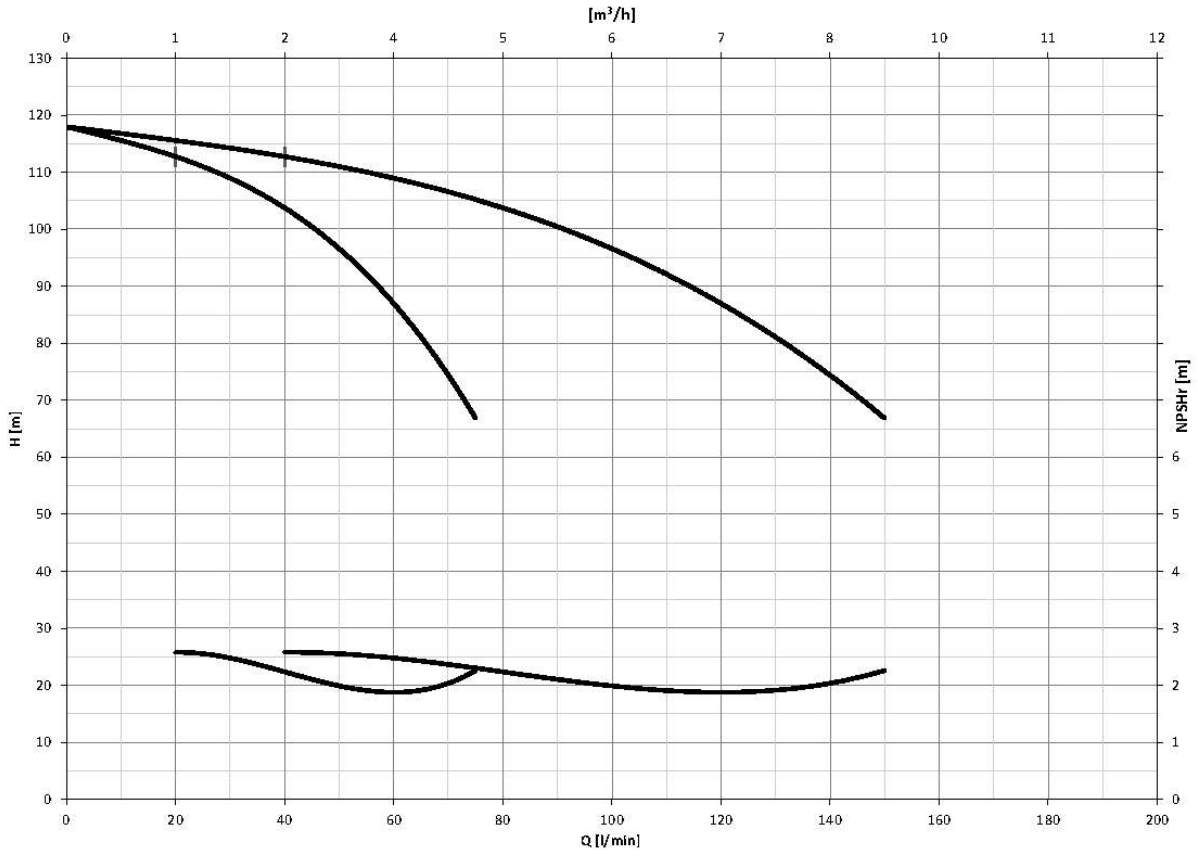
2GP(E) EVMS 3-10/1.1

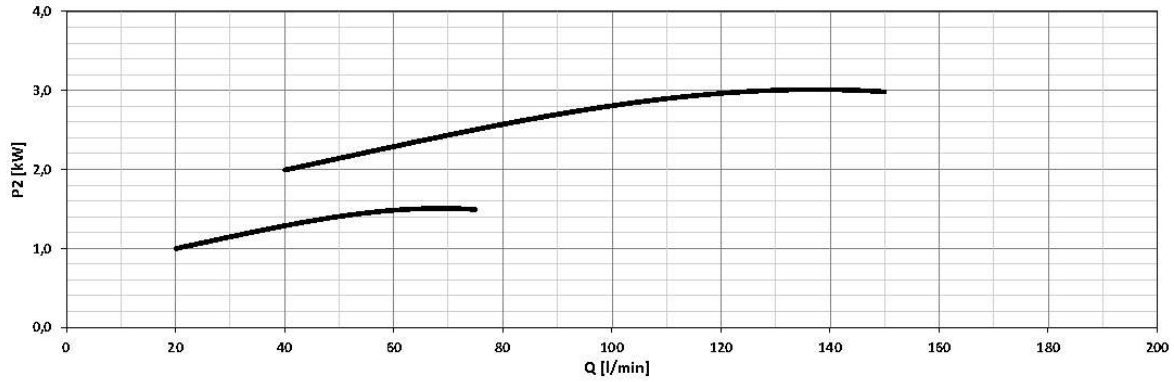


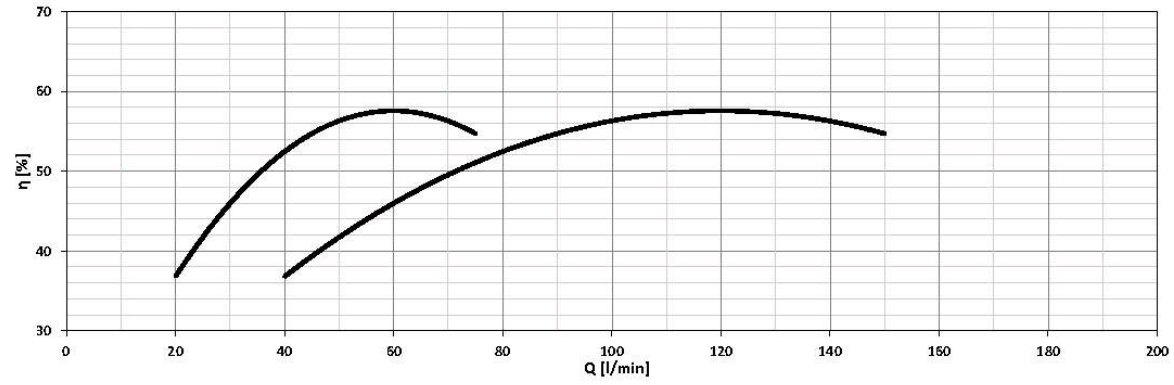




2GP(E) EVMS 3-16/1.5

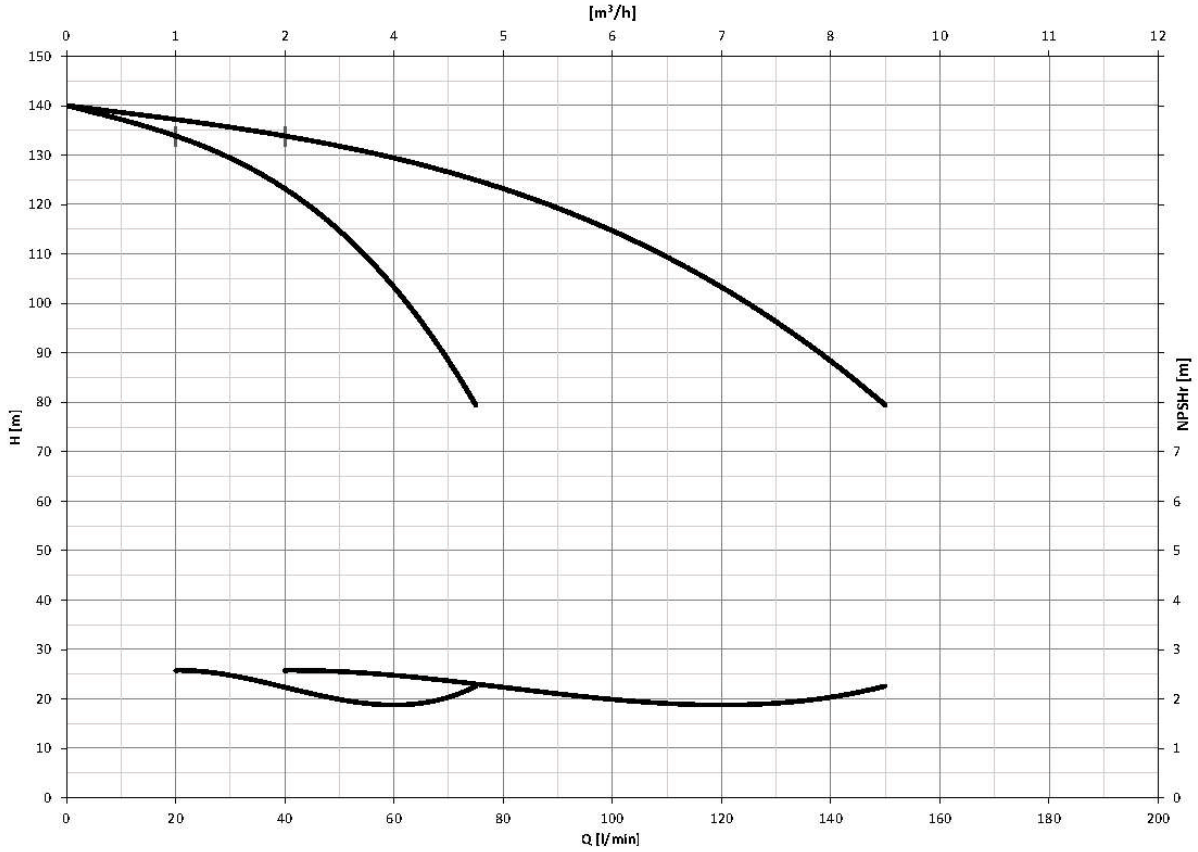


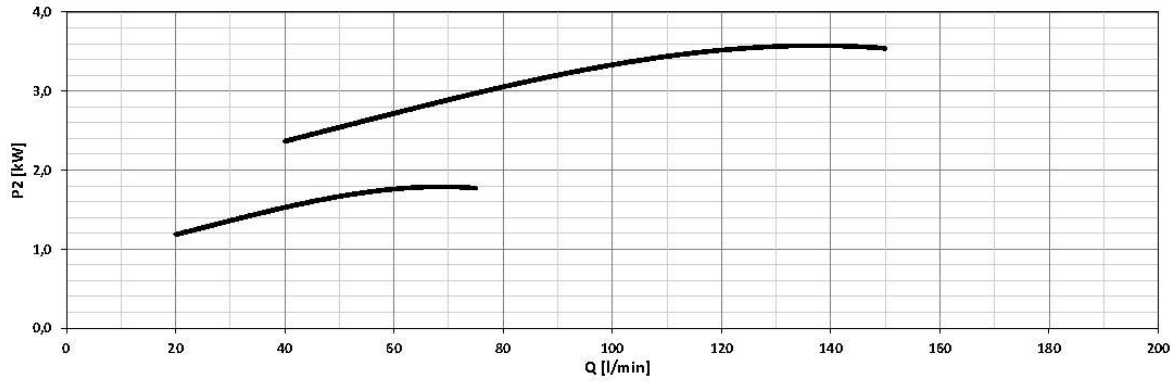


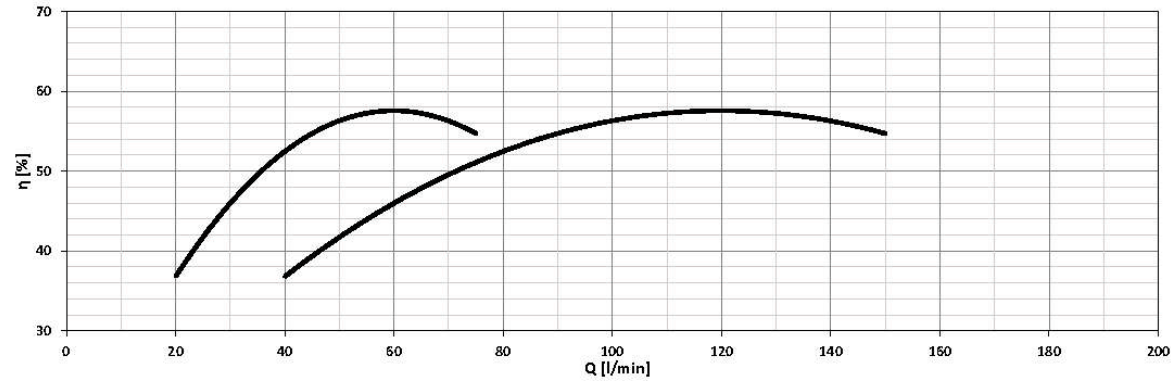


PERFORMANCE CURVE GP-GPE

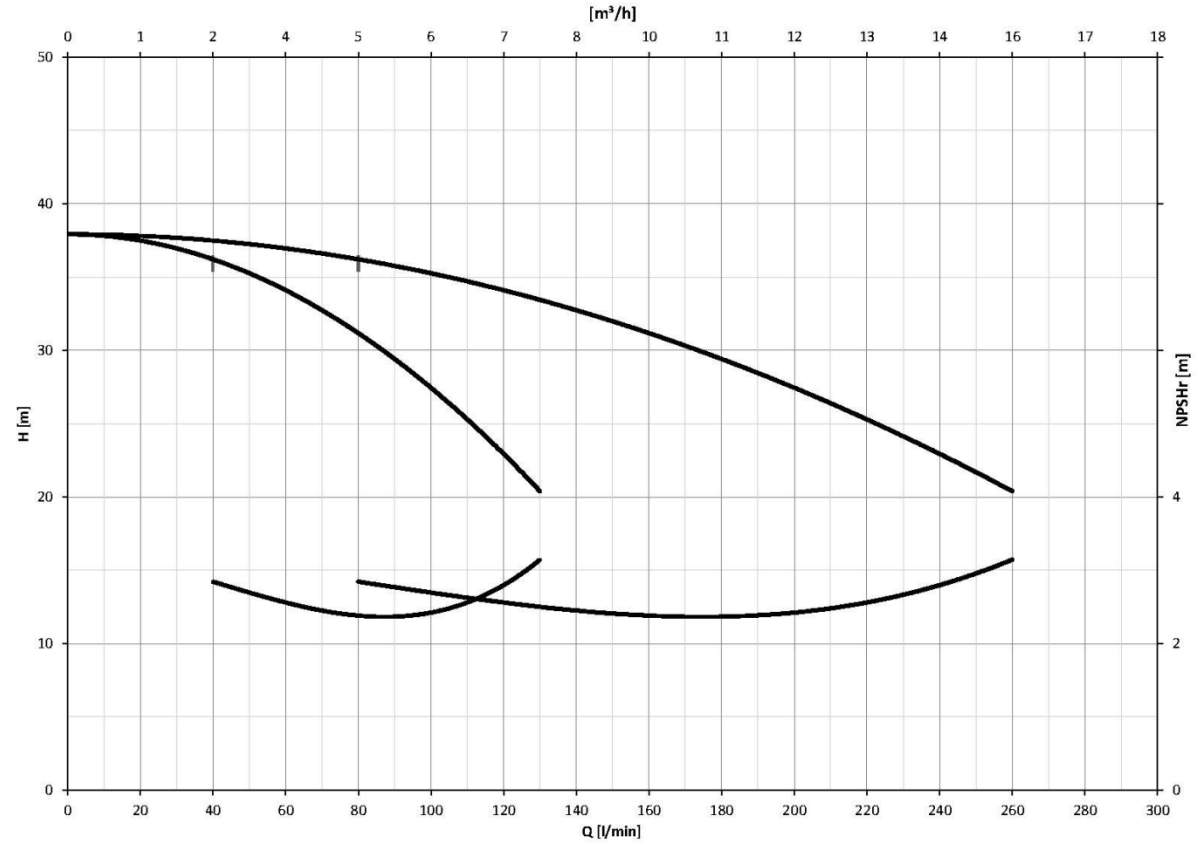
2GP(E) EVMS 3-19/2.2

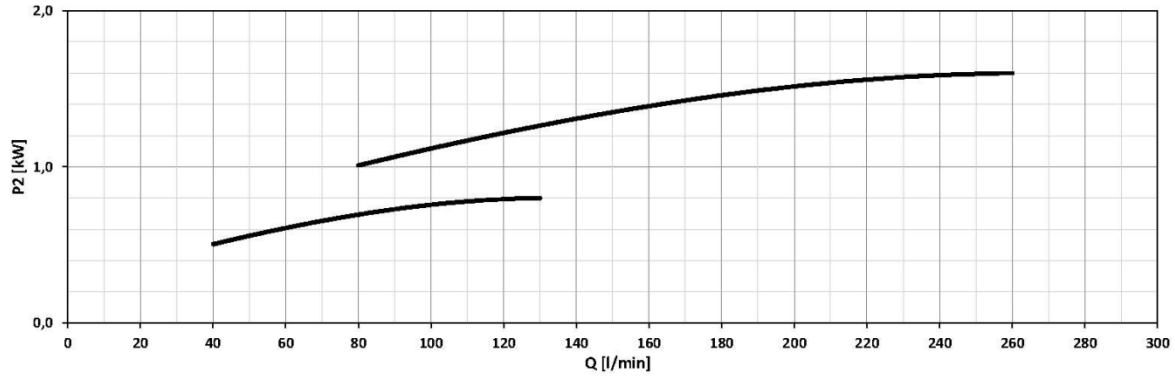


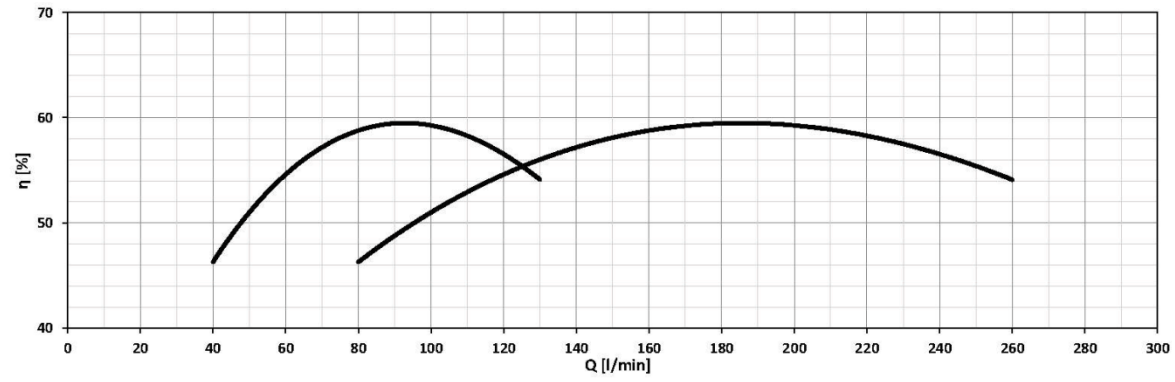




2GP(E) EVMS 5-4/0.75

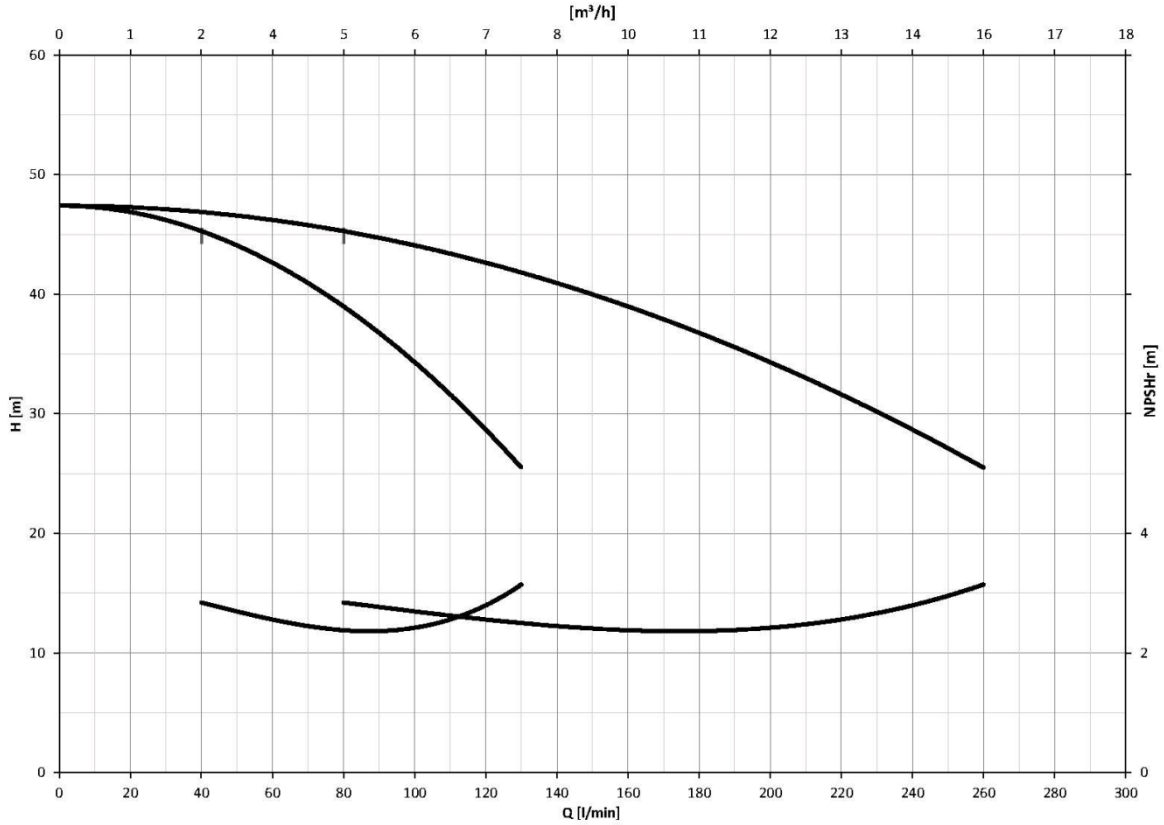


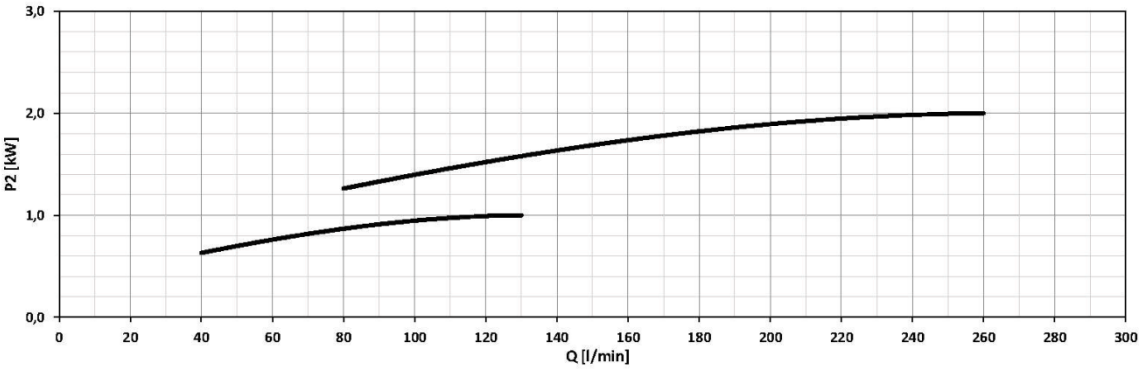


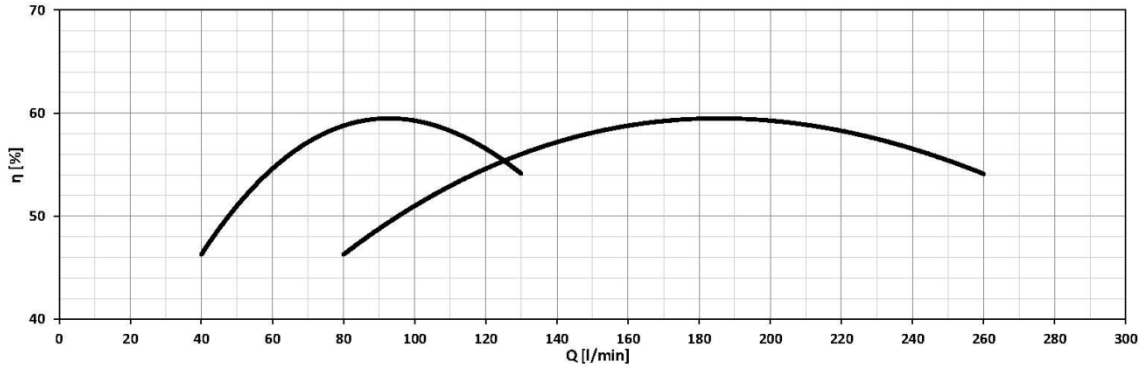


PERFORMANCE CURVE GP-GPE

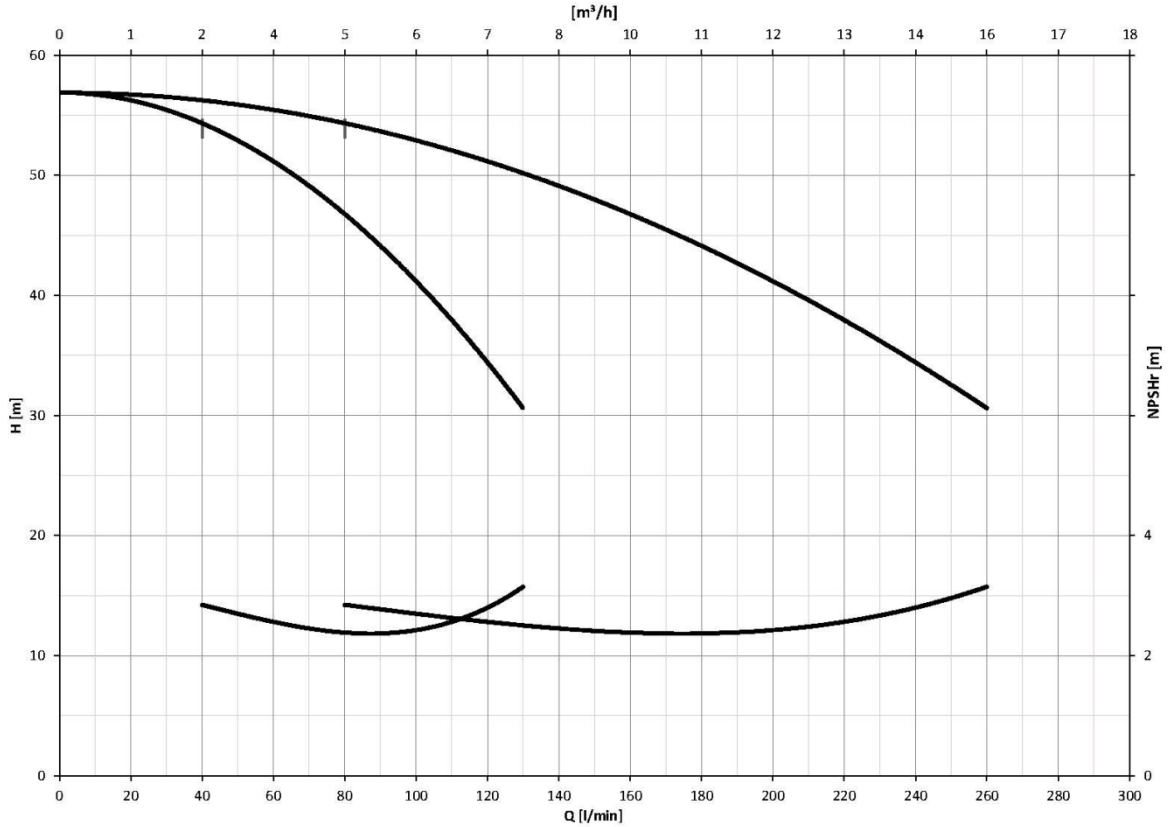
2GP(E) EVMS 5-5/1.1

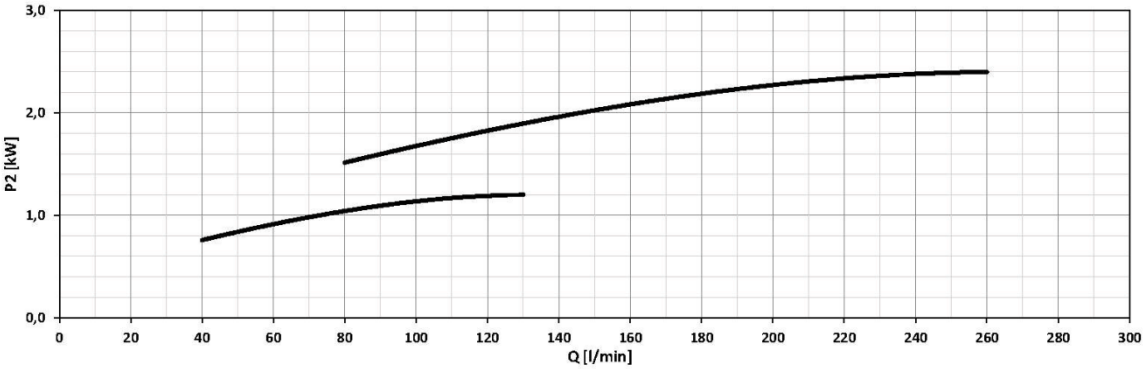


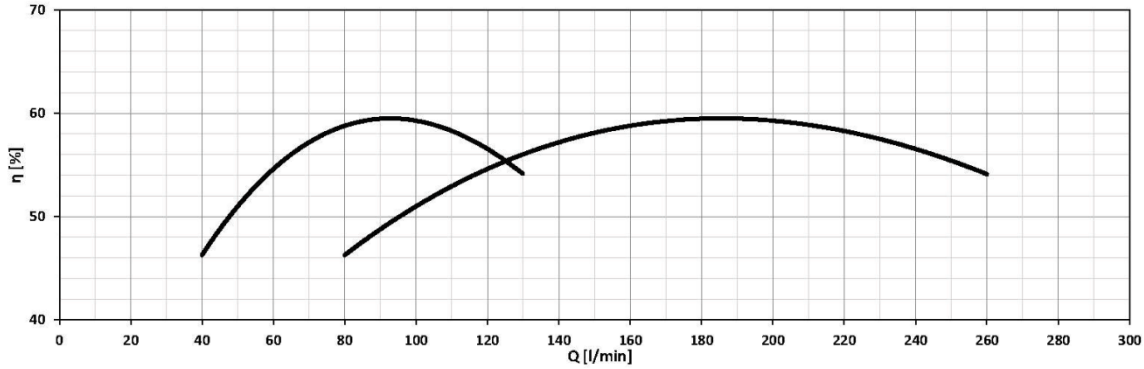




2GP(E) EVMS 5-6/1.5

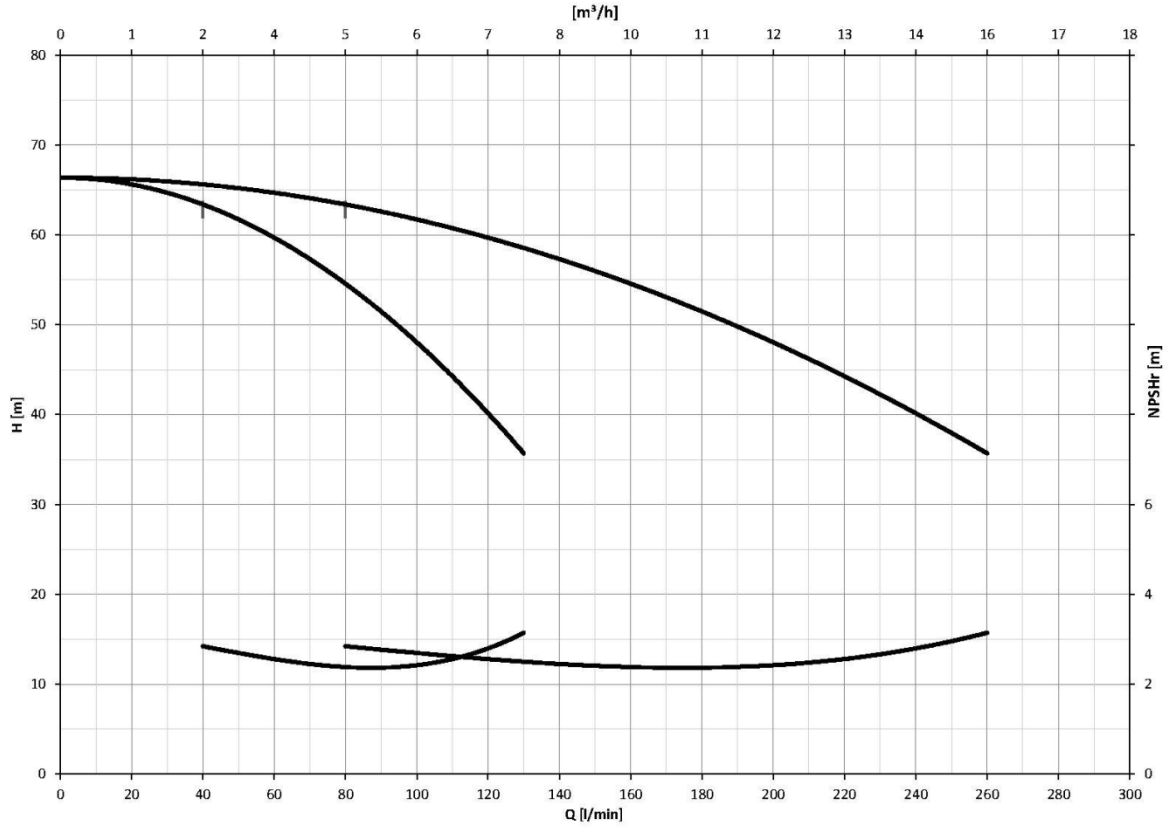


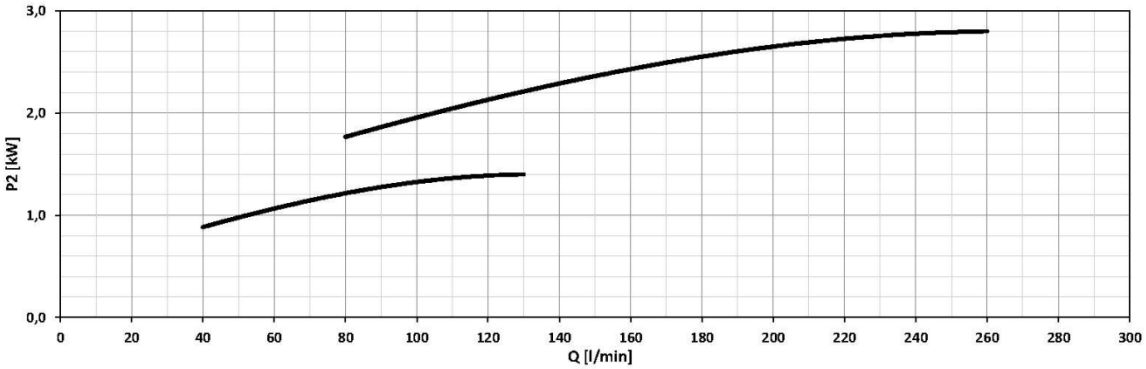


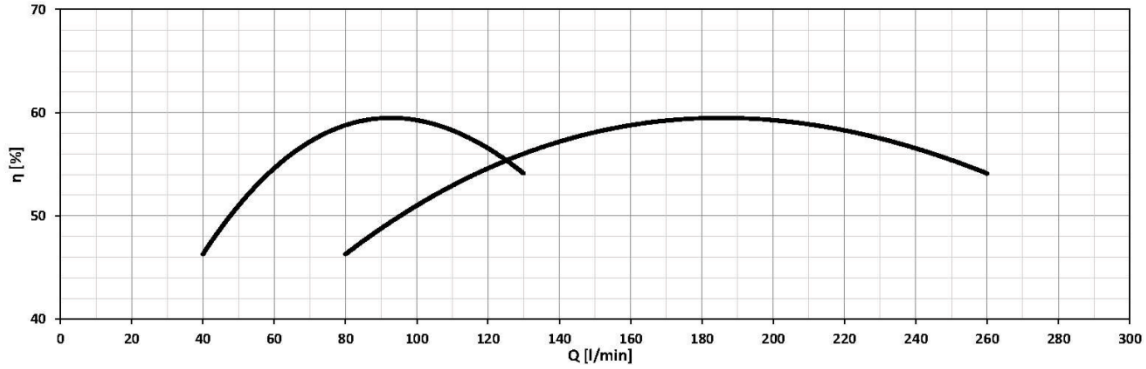


PERFORMANCE CURVE GP-GPE

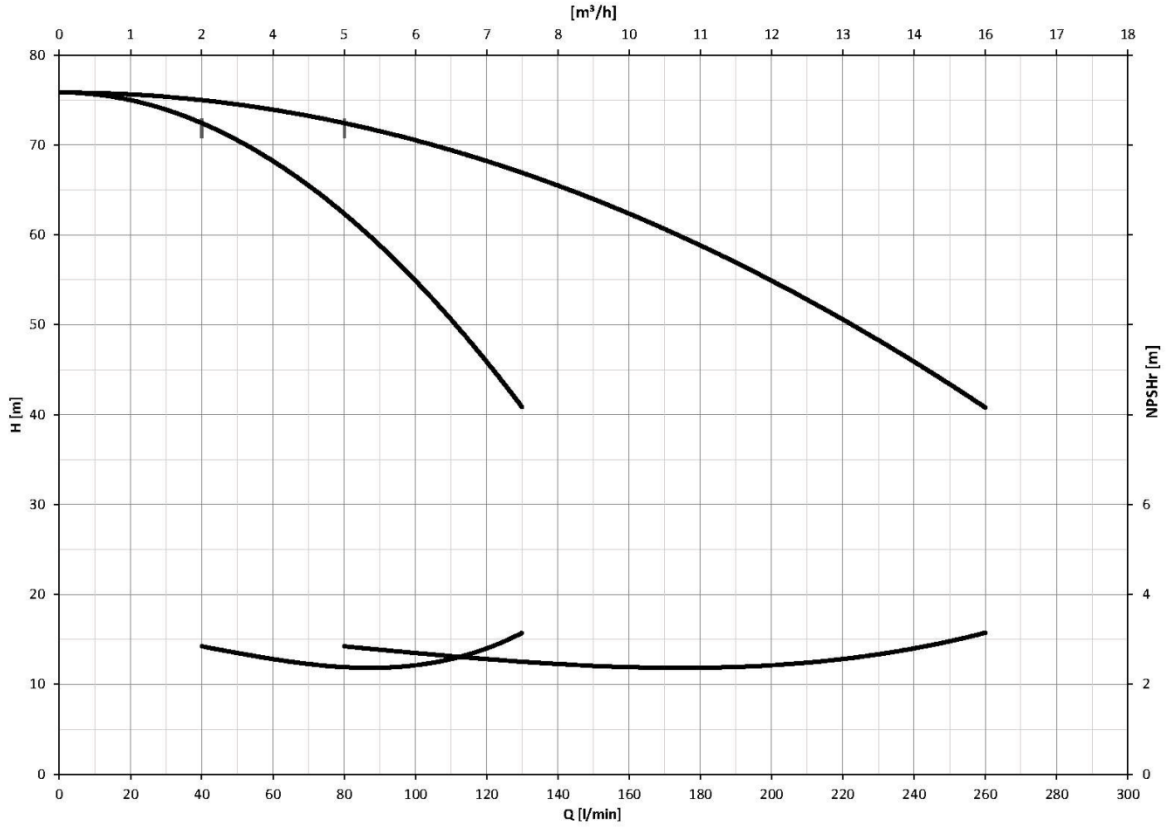
2GP(E) EVMS 5-7/1.5

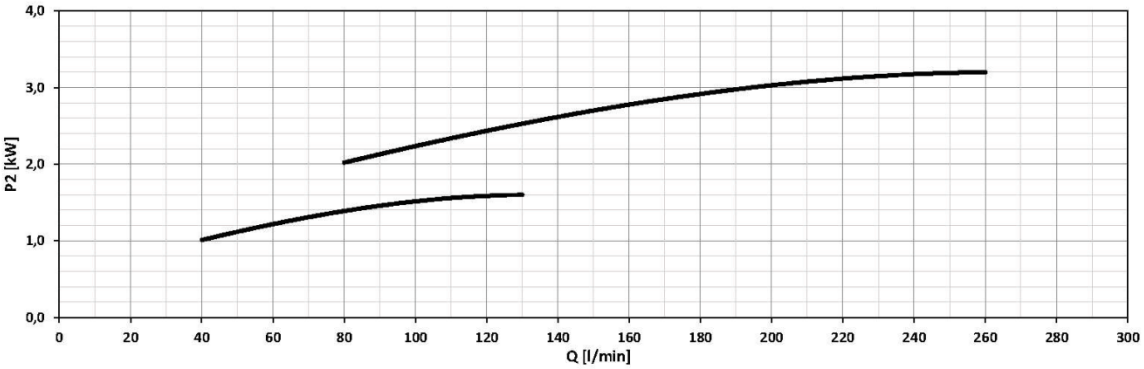


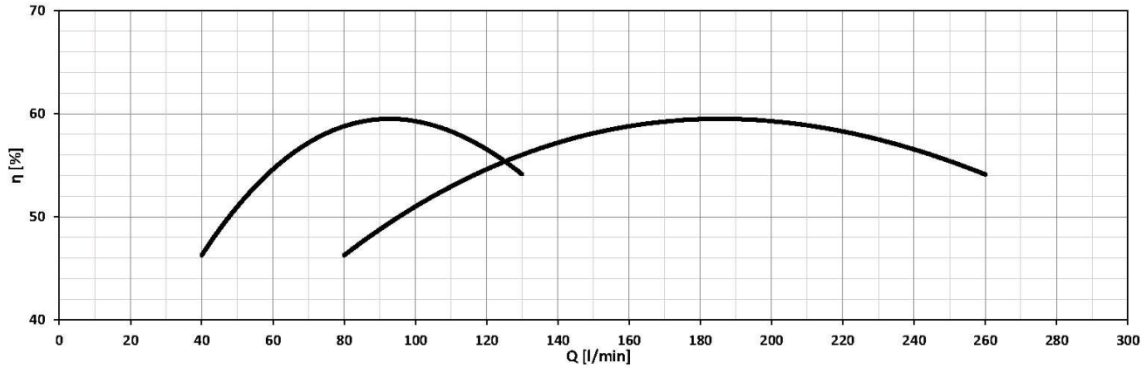




2GP(E) EVMS 5-8/2.2

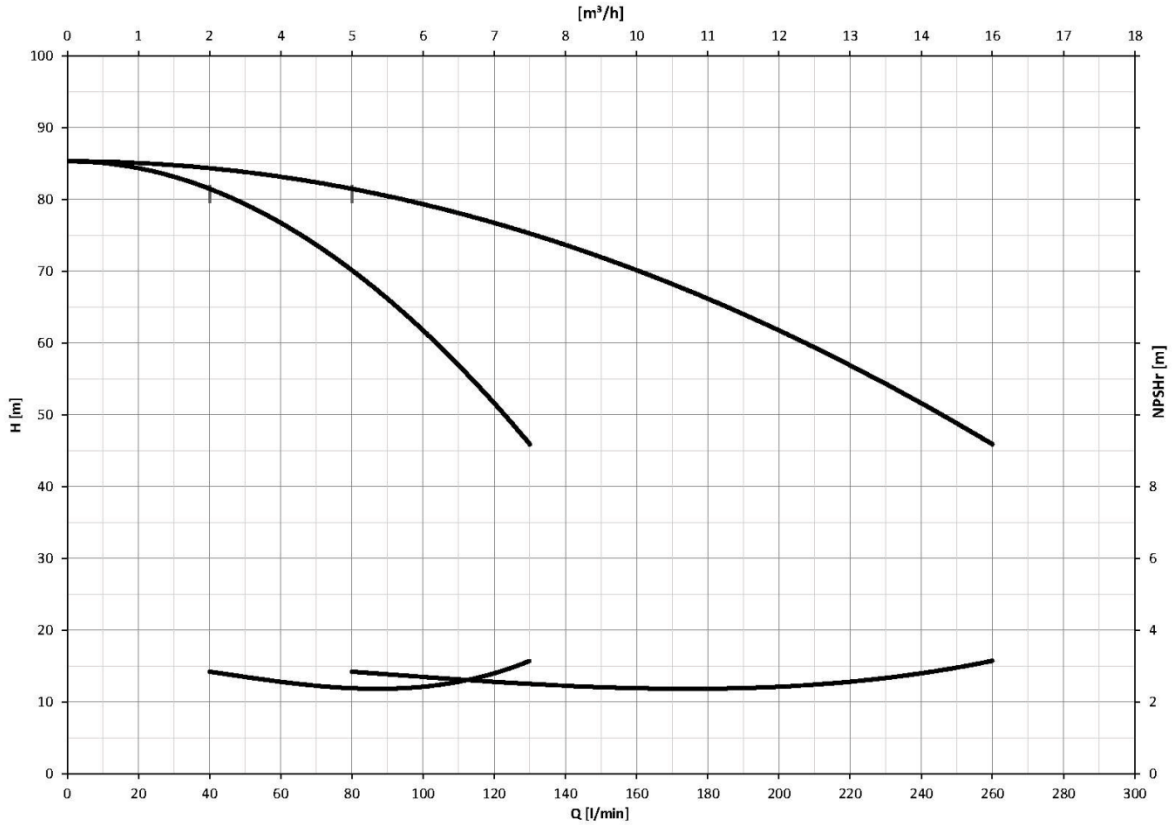


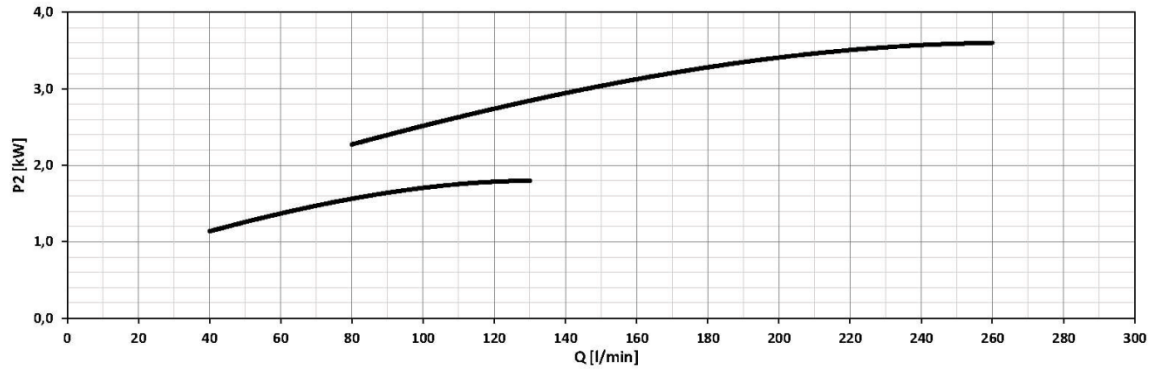


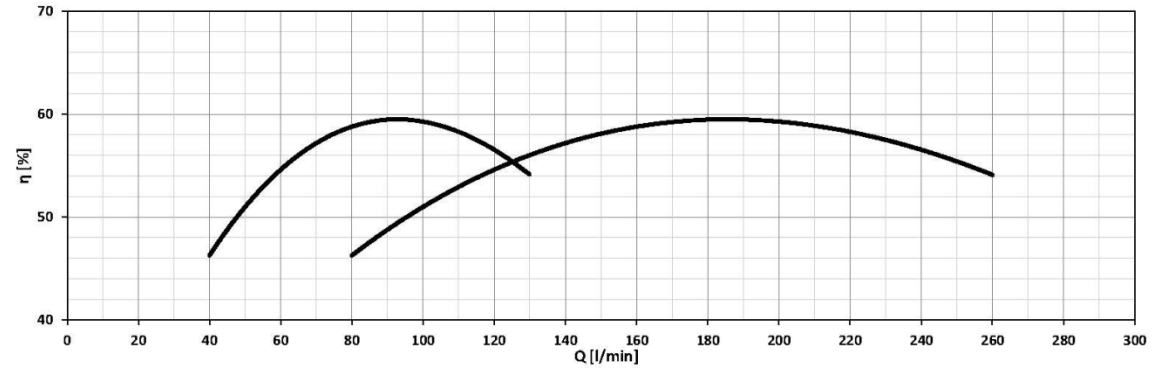


PERFORMANCE CURVE GP-GPE

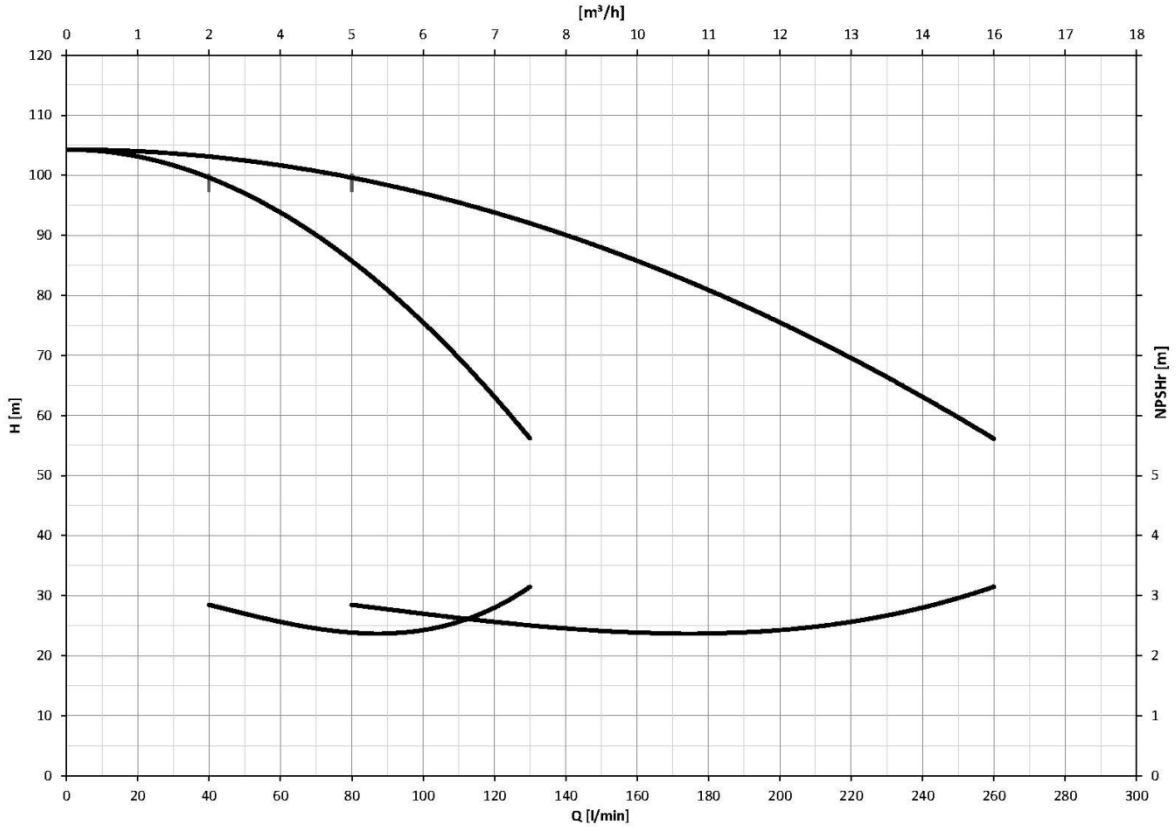
2GP(E) EVMS 5-9/2.2

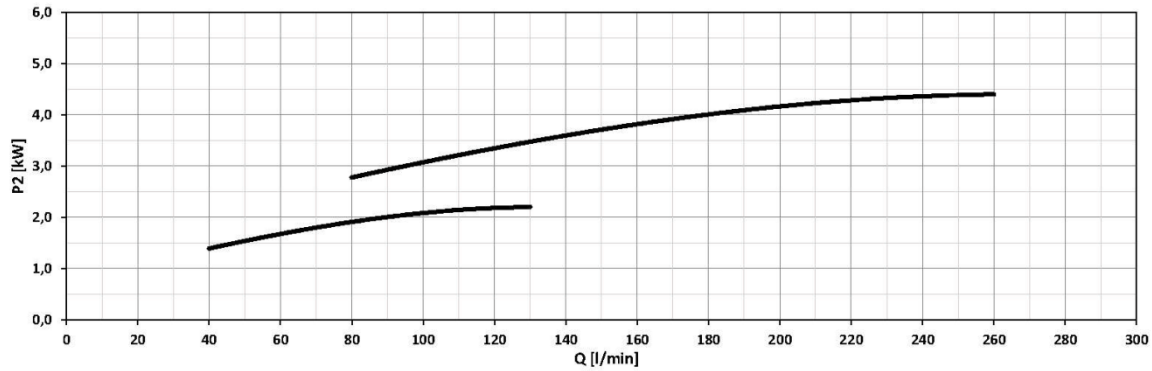


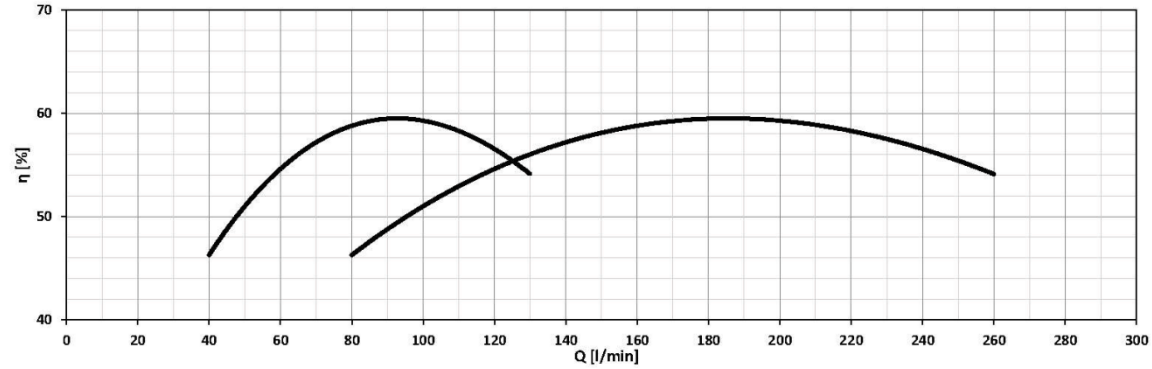




2GP(E) EVMS 5-11/2.2

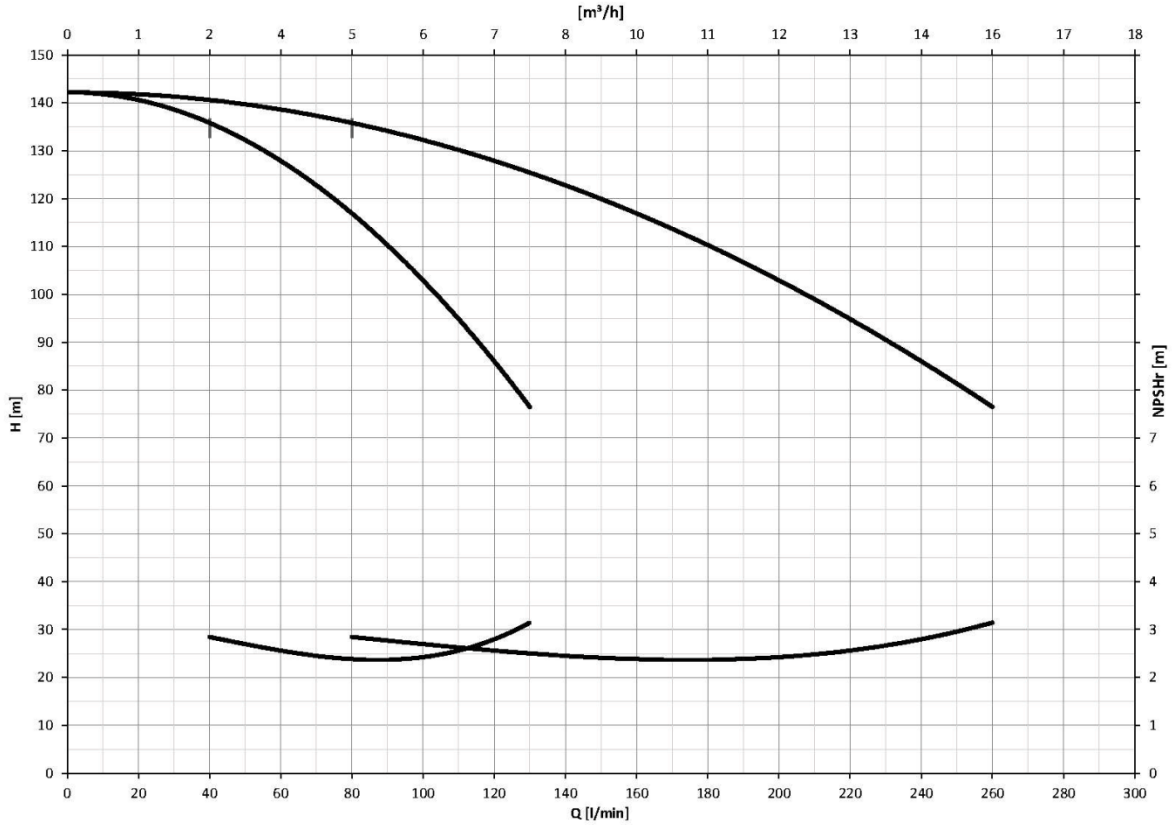


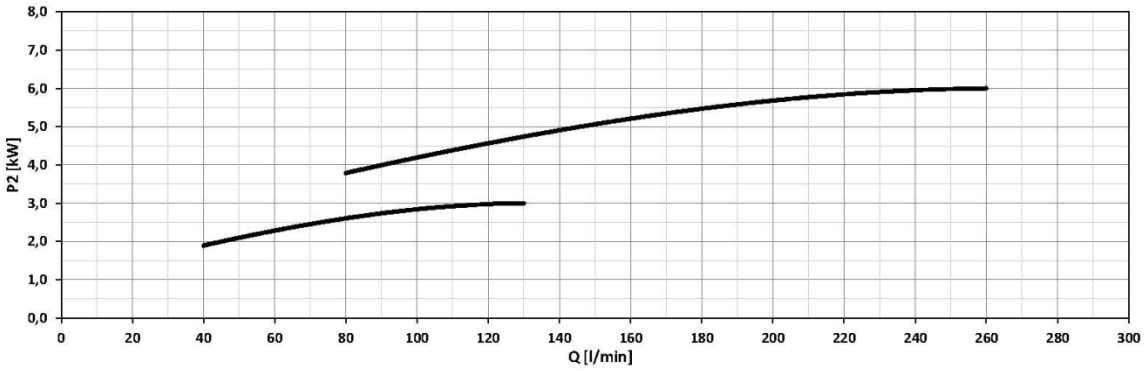


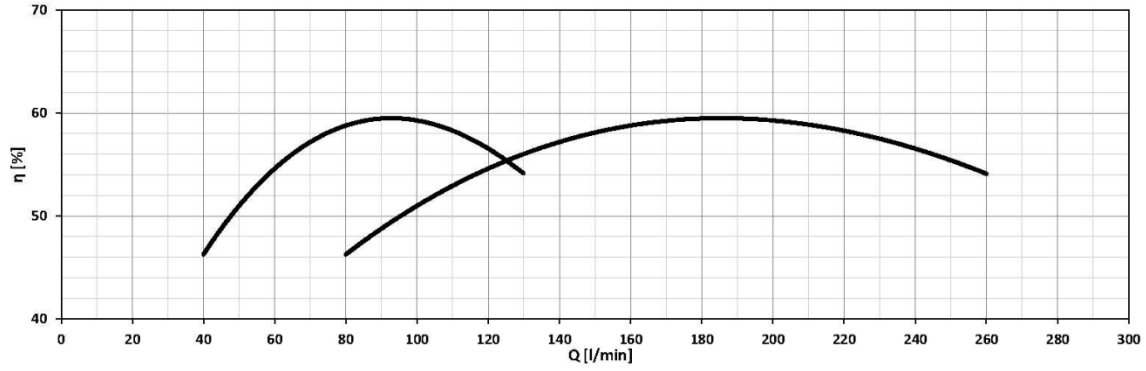


PERFORMANCE CURVE GP-GPE

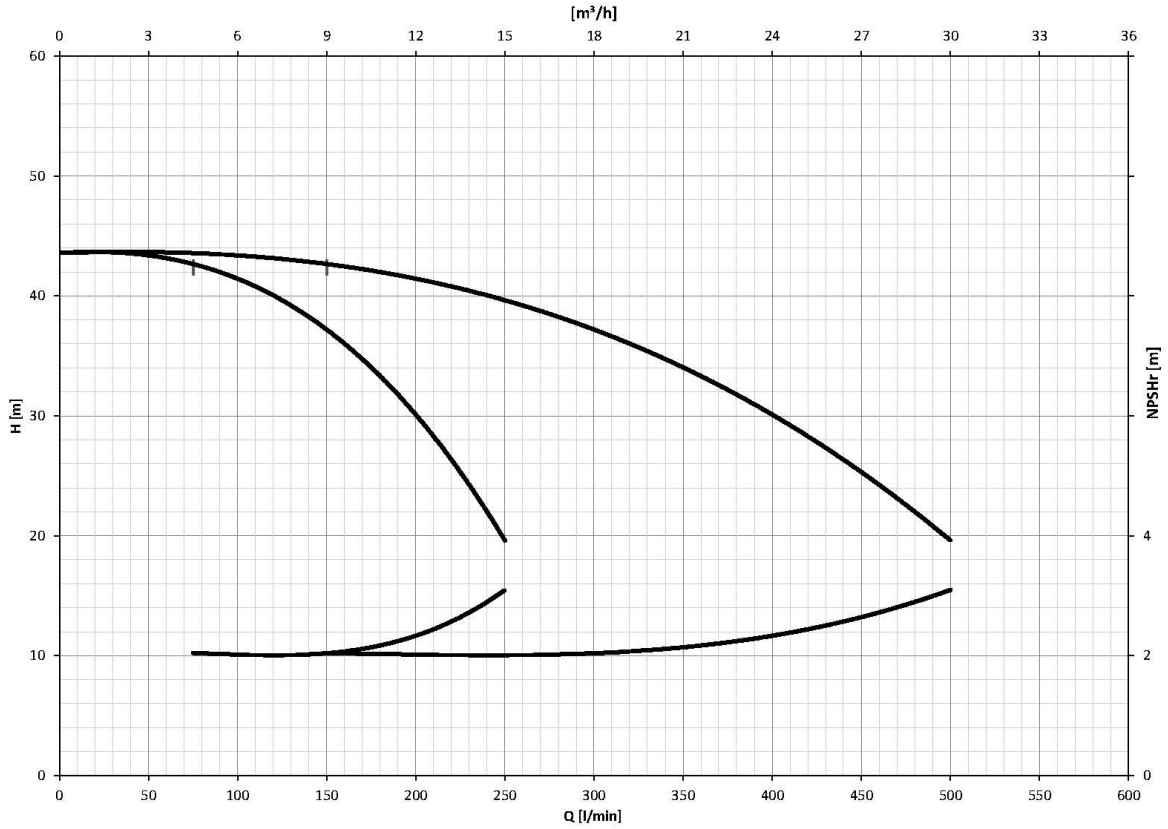
2GP(E) EVMS 5-15/3.0

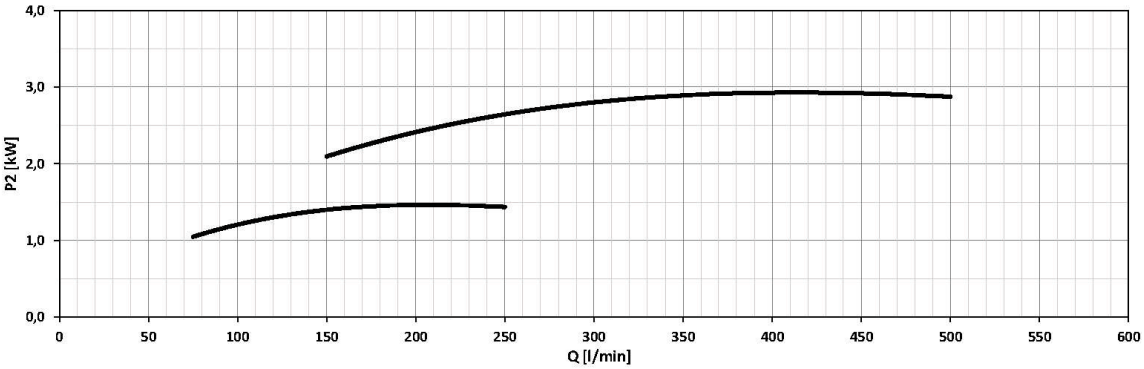


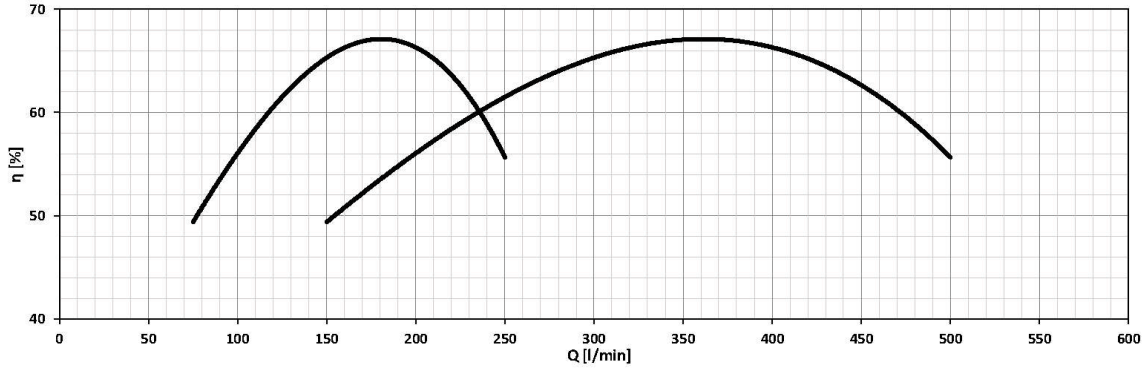




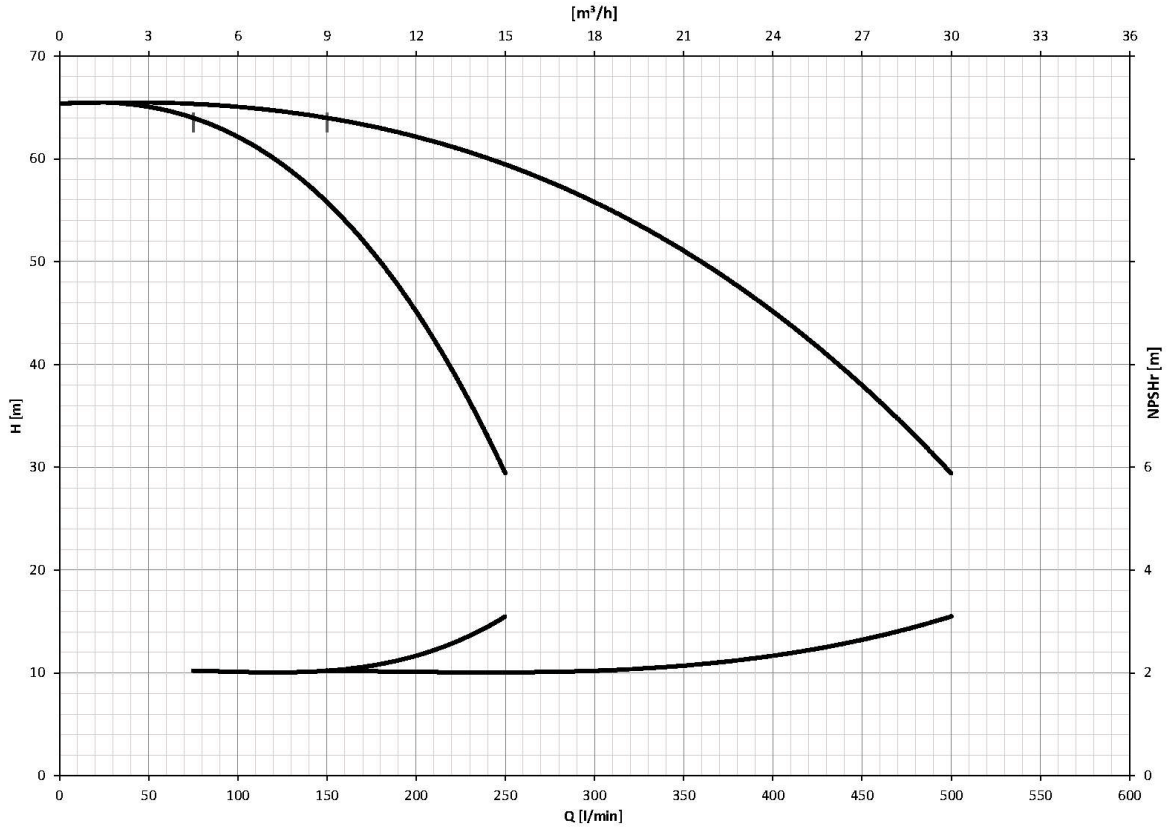
2GP(E) EVMS 10-4/2.2

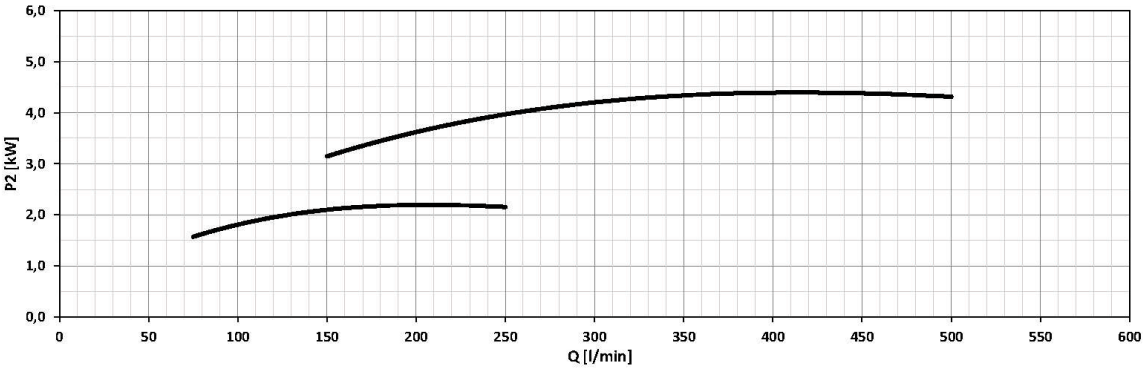


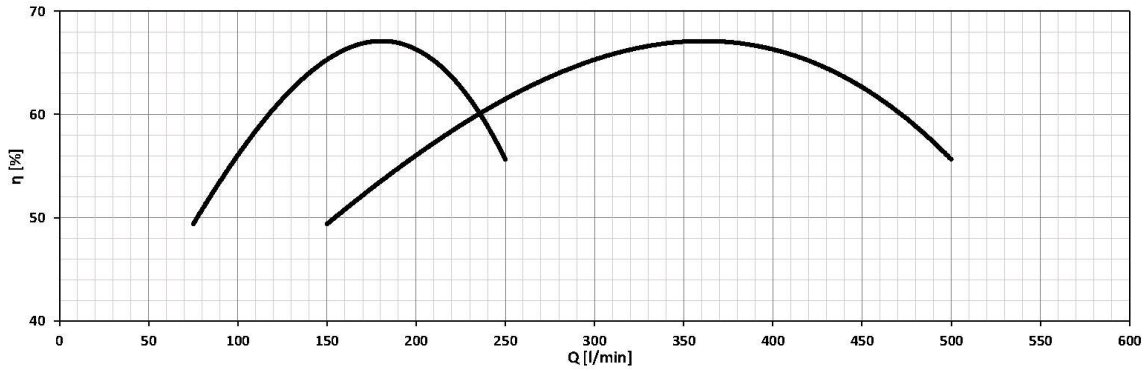




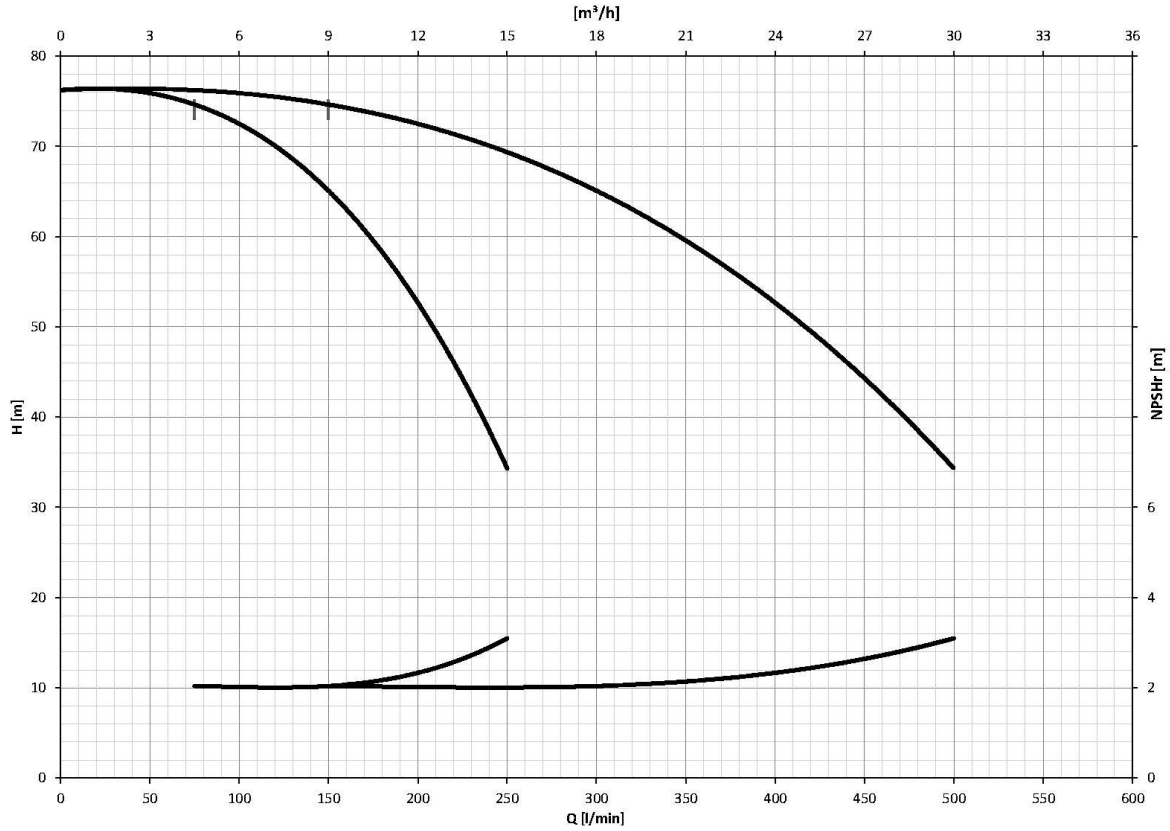
2GP(E) EVMS 10-6/2.2

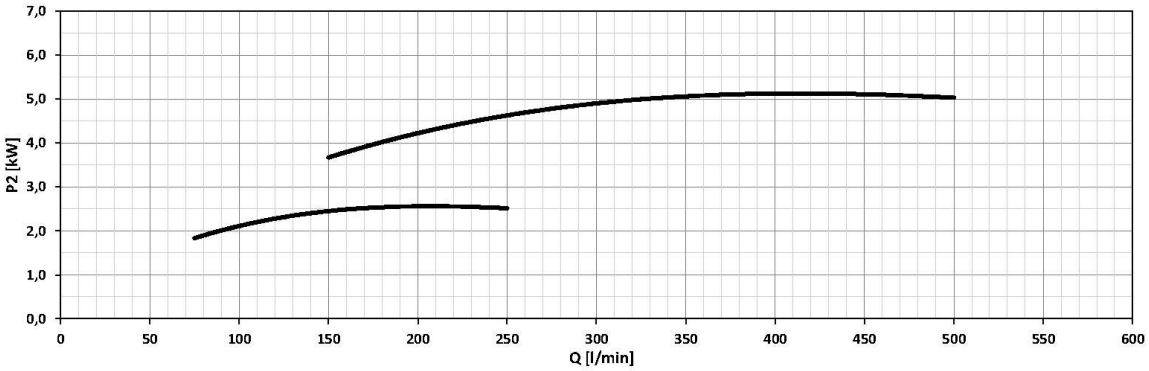


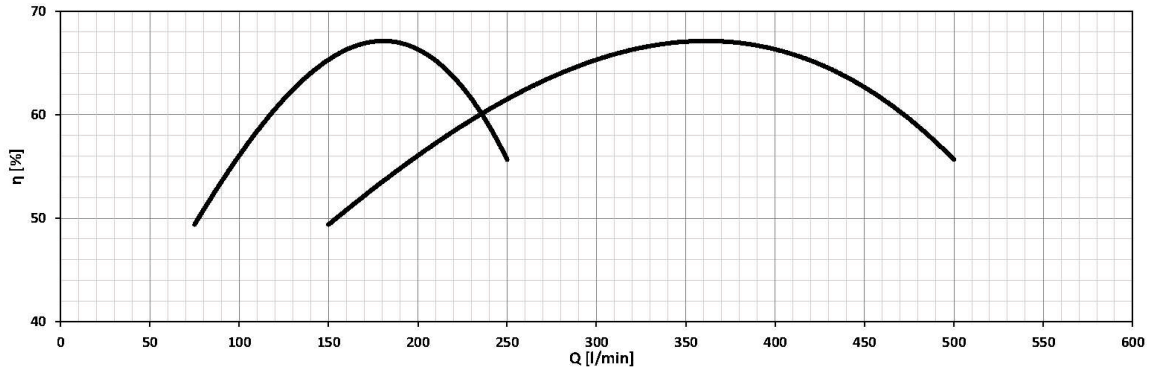




2GP(E) EVMS 10-7/3.0

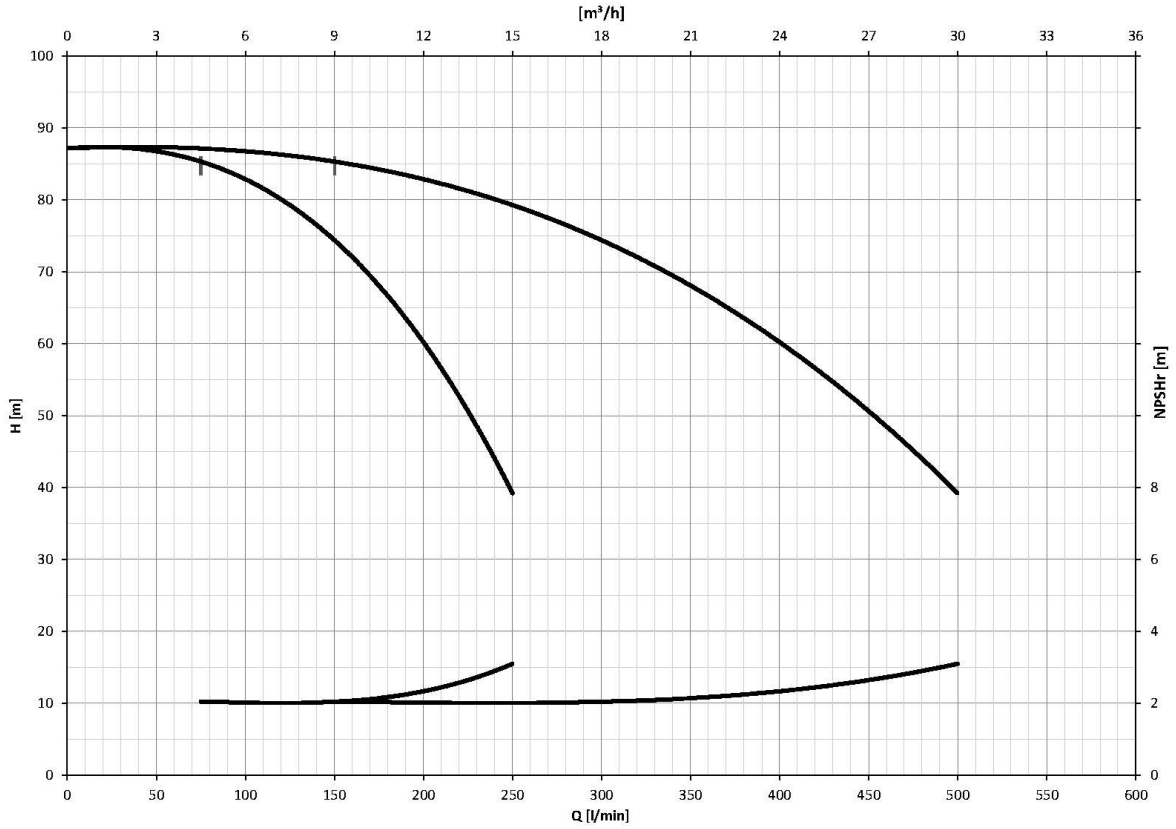


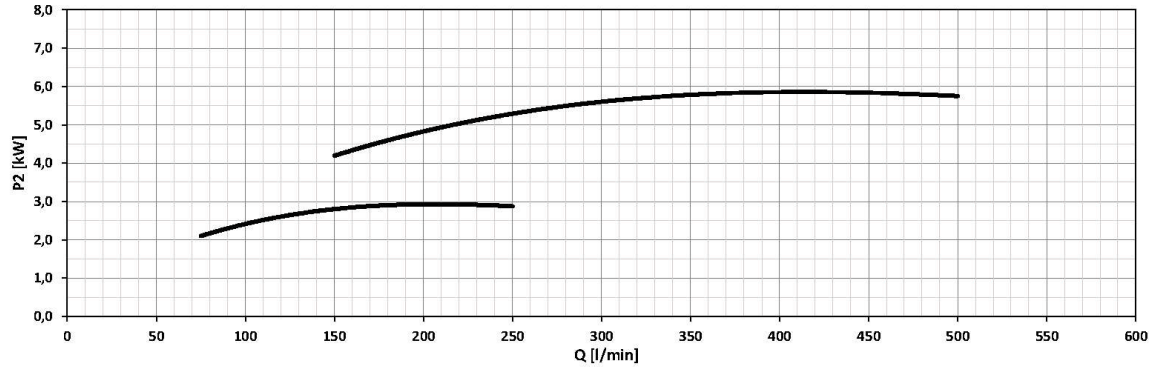


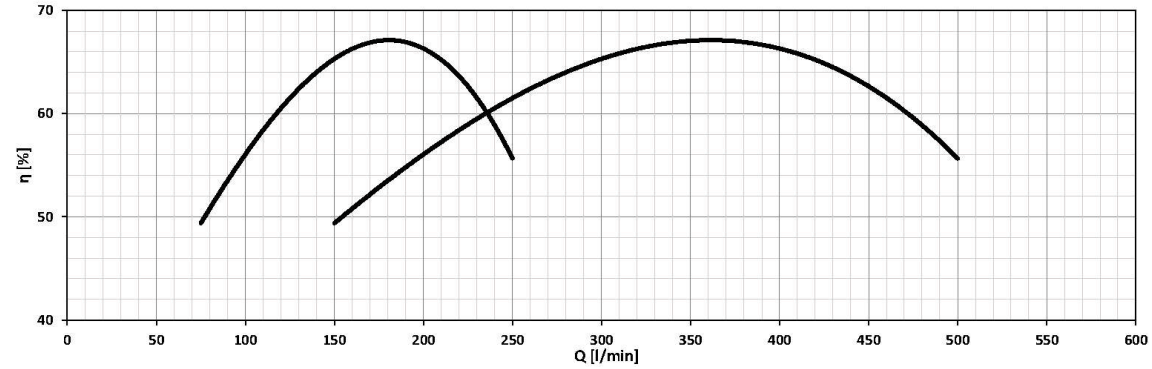


PERFORMANCE CURVE GP-GPE

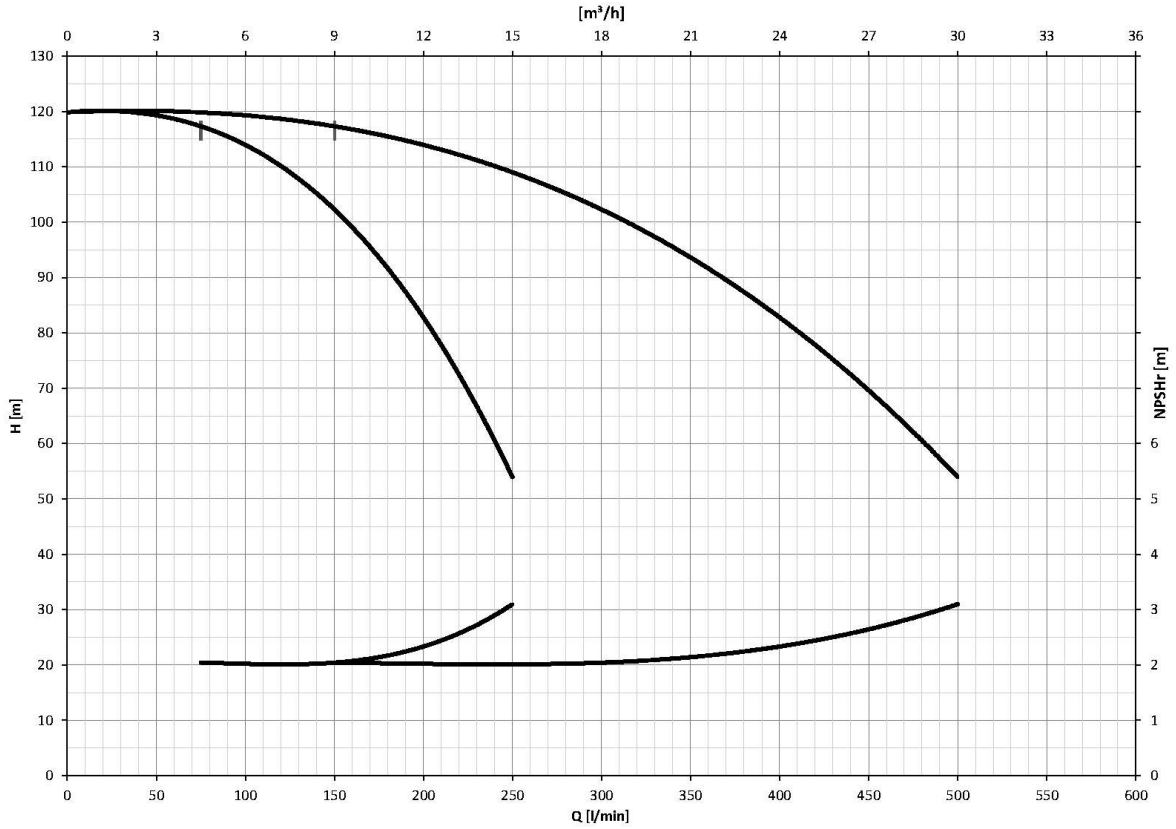
2GP(E) EVMS 10-8/3.0

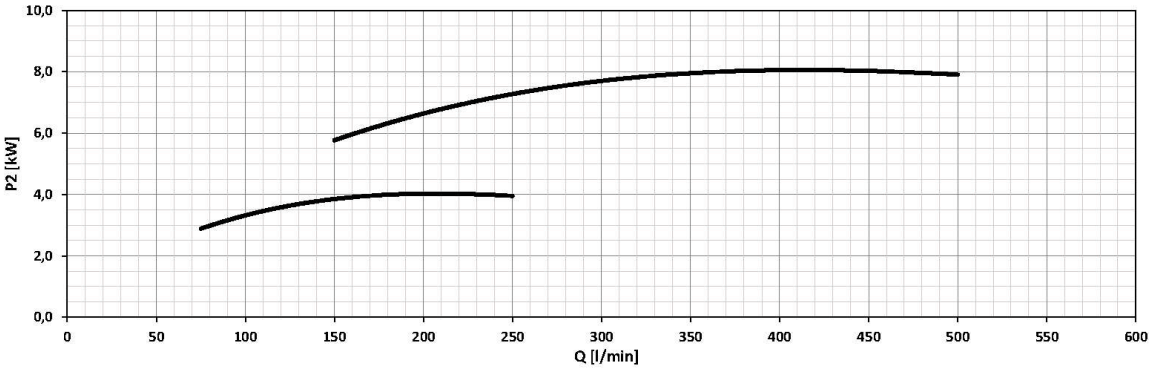


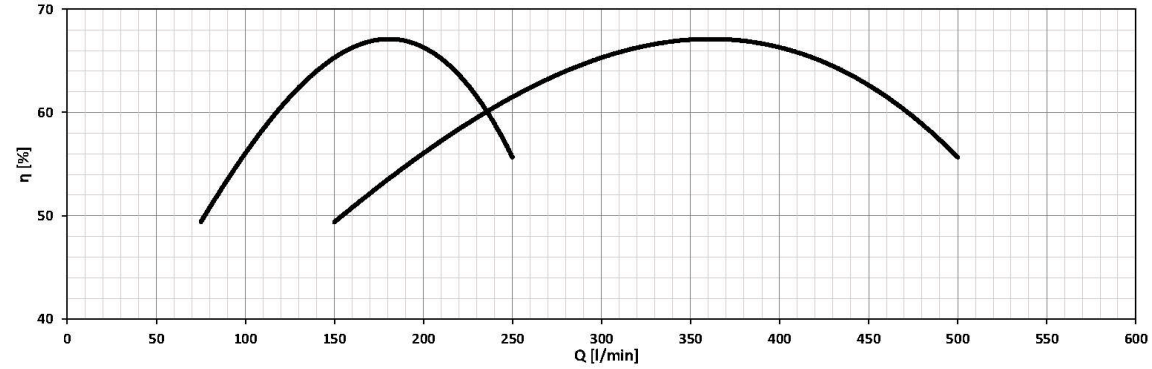




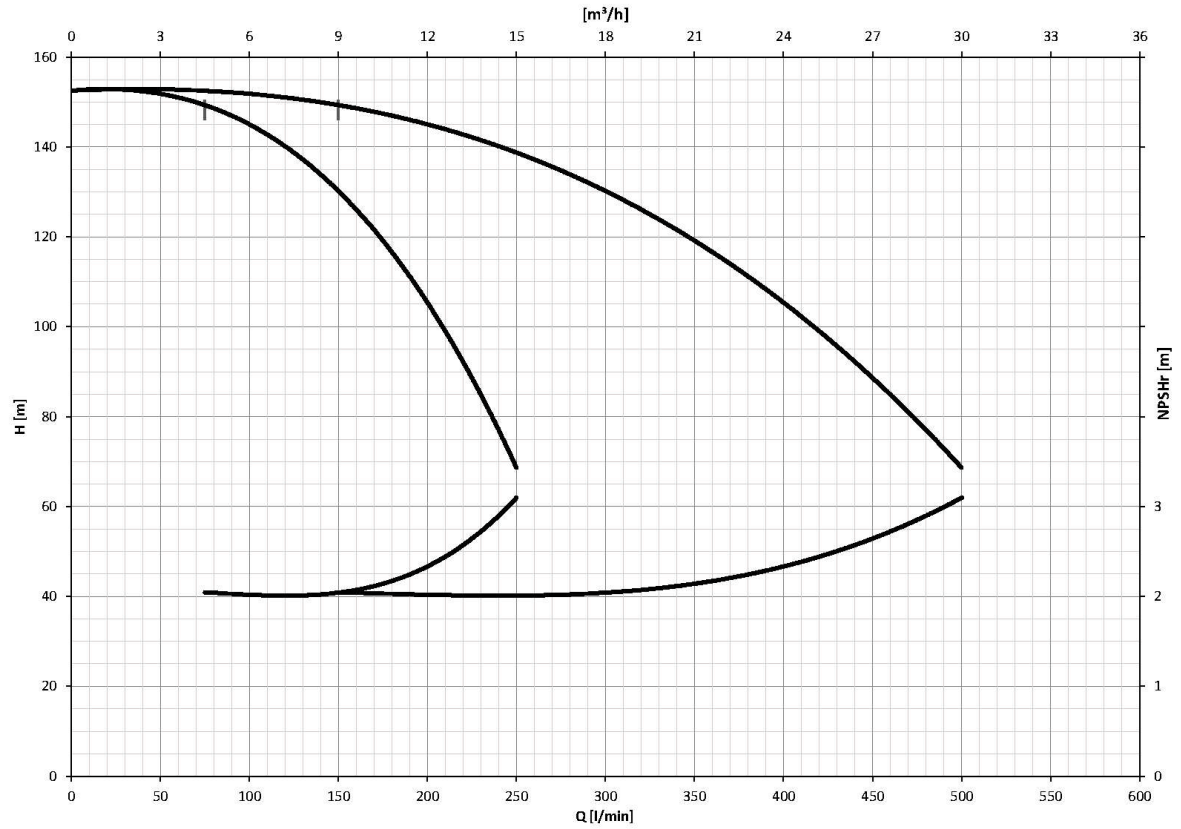
2GP(E) EVMS 10-11/4.0

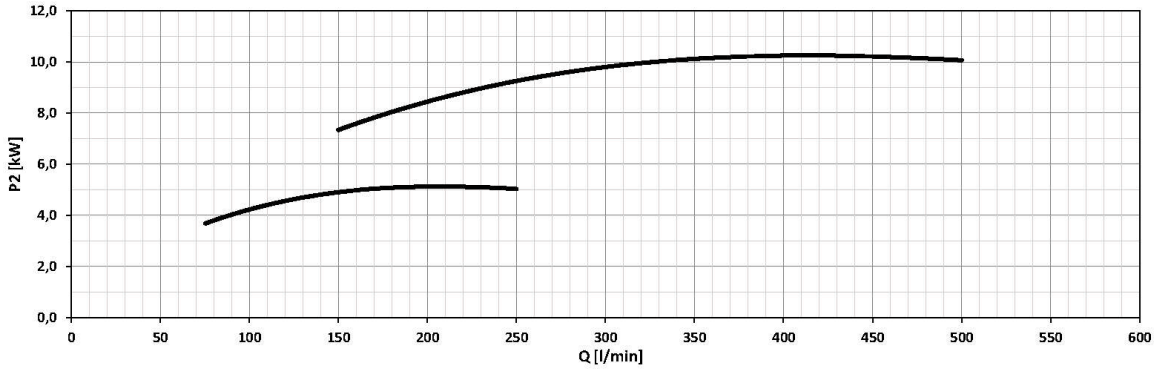


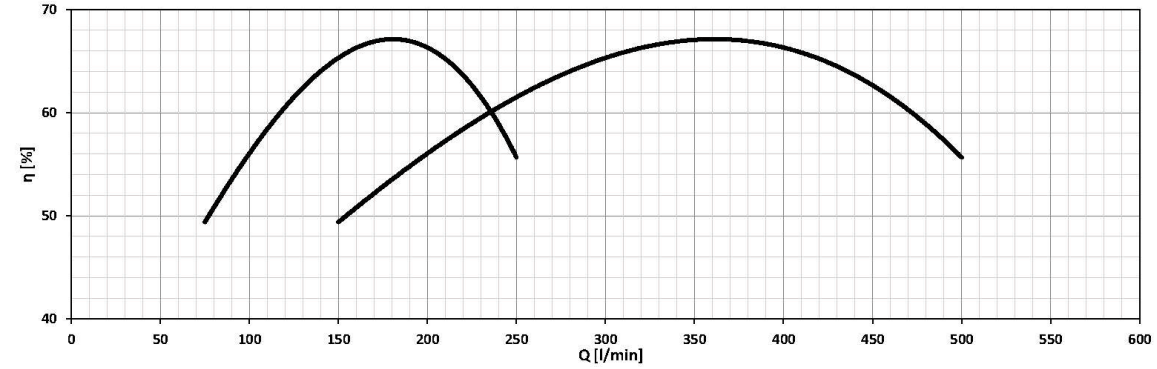




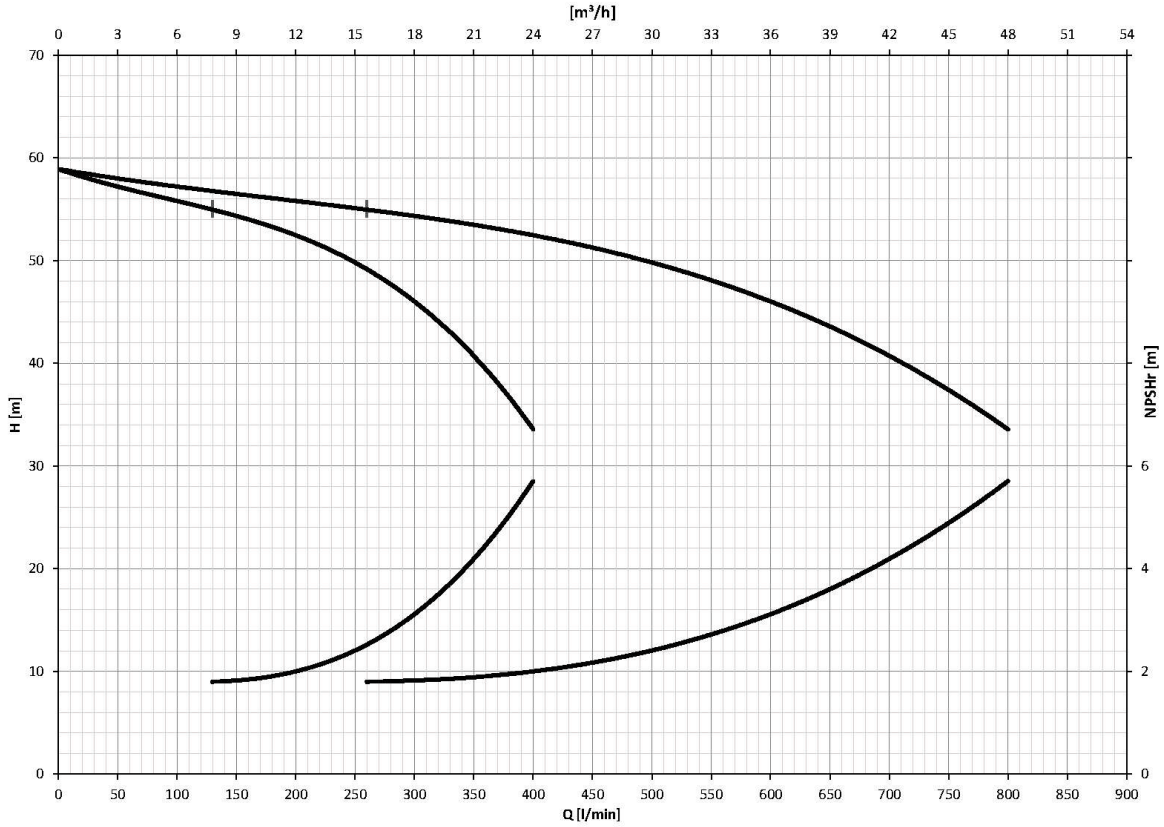
2GP(E) EVMS 10-14/5.5

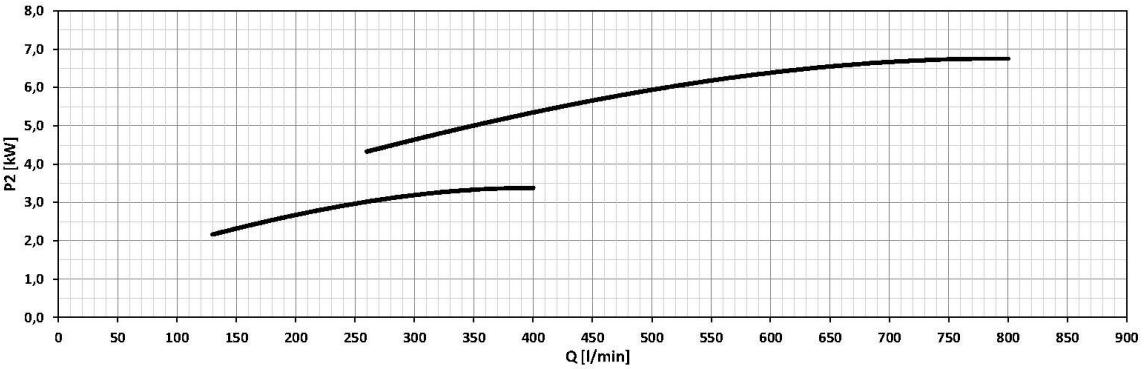


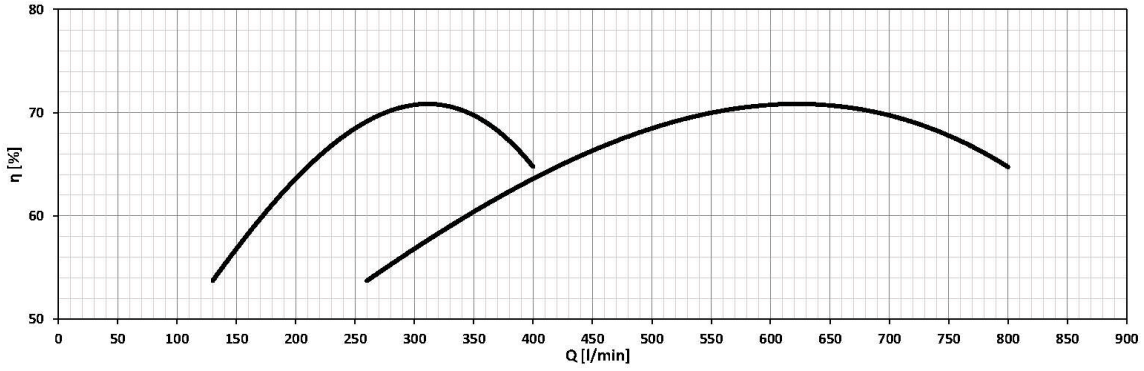




2GP(E) EVMS 15-4/4.0

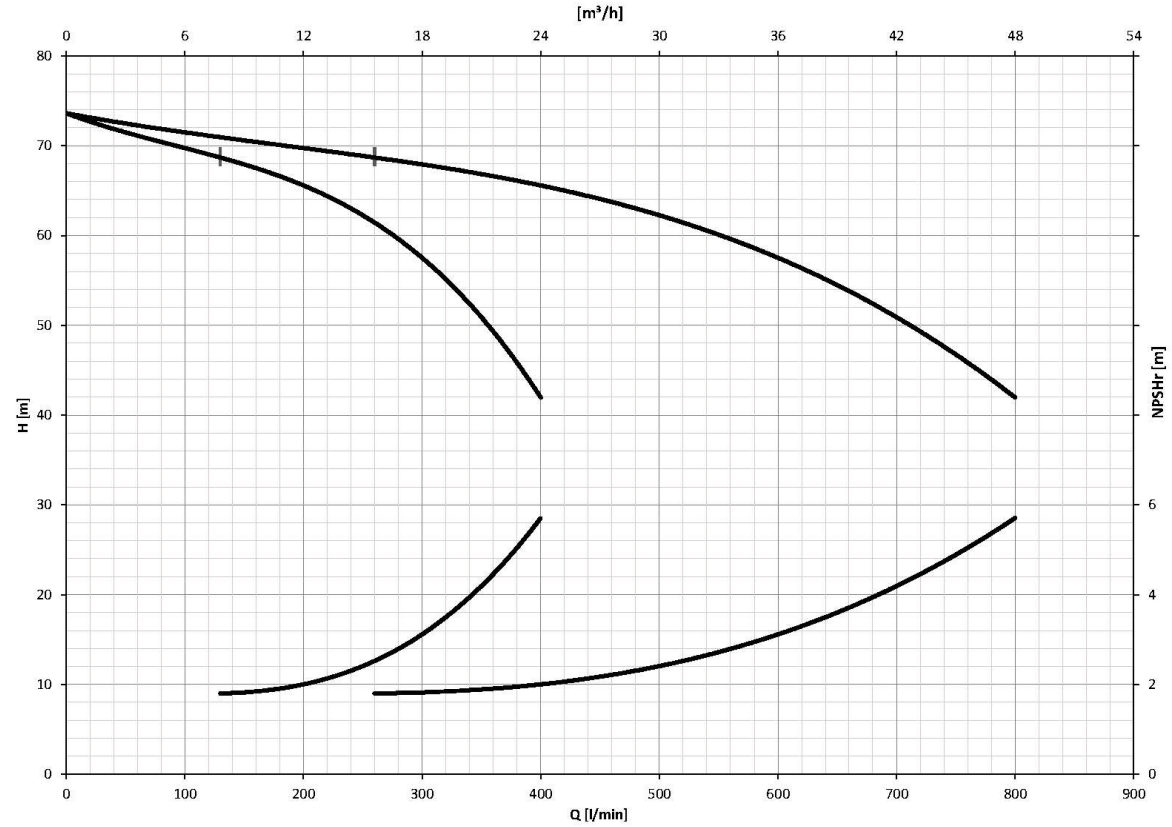


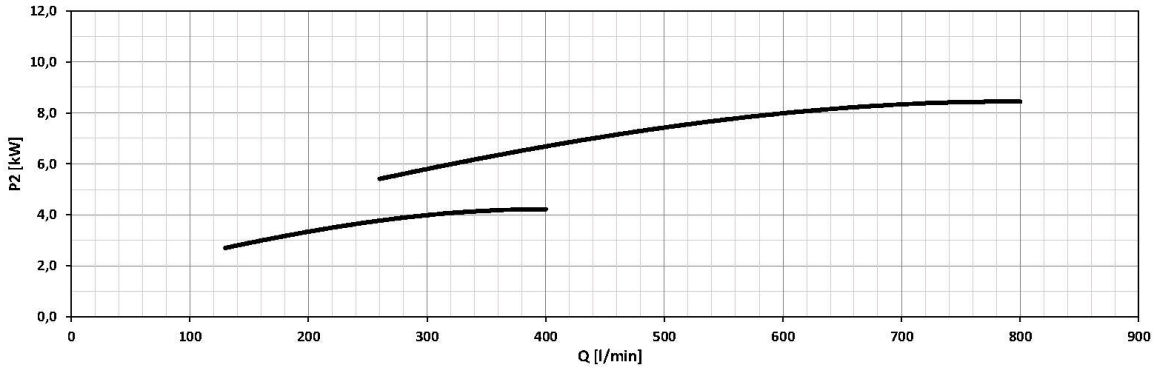


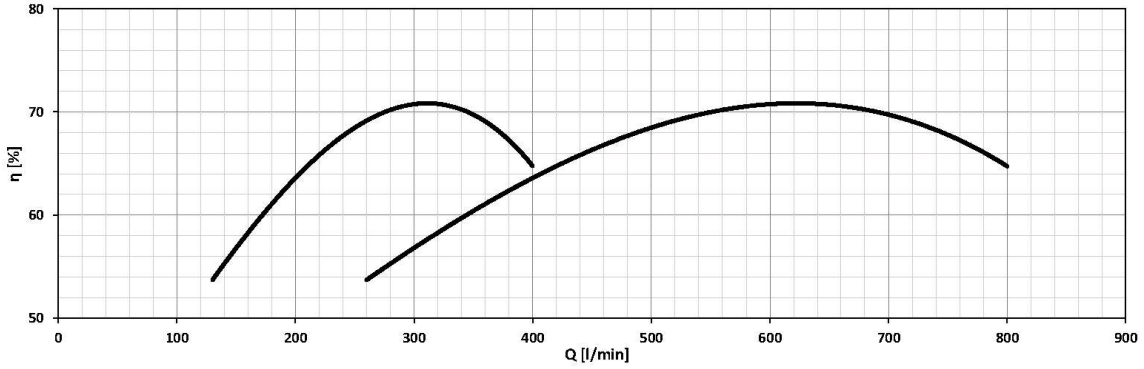


PERFORMANCE CURVE GP-GPE

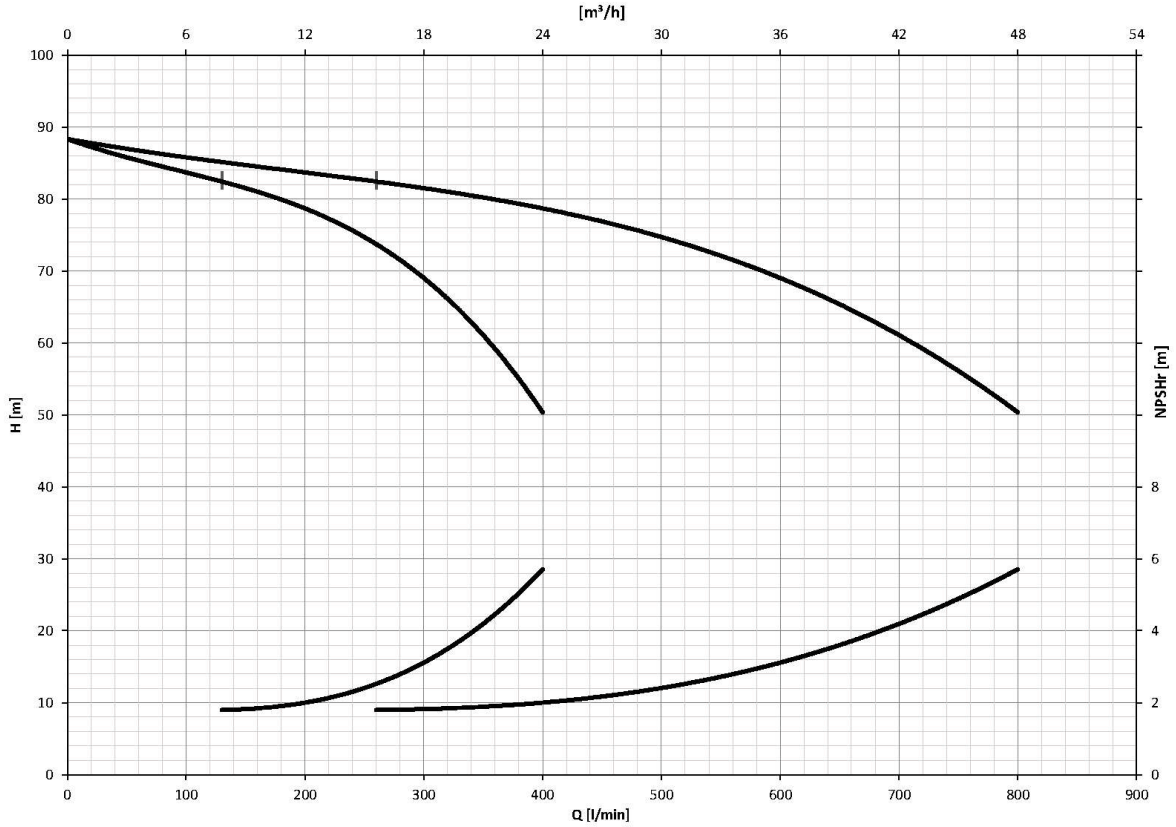
2GP(E) EVMS 15-5/5.5

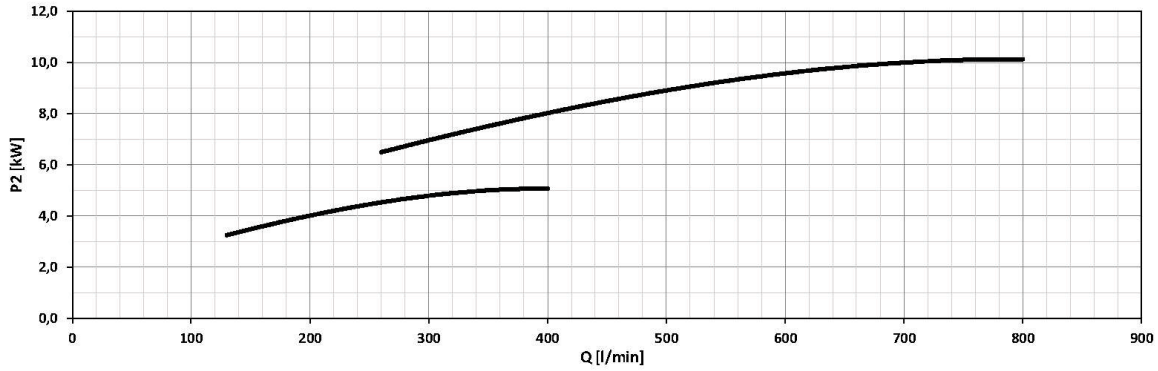


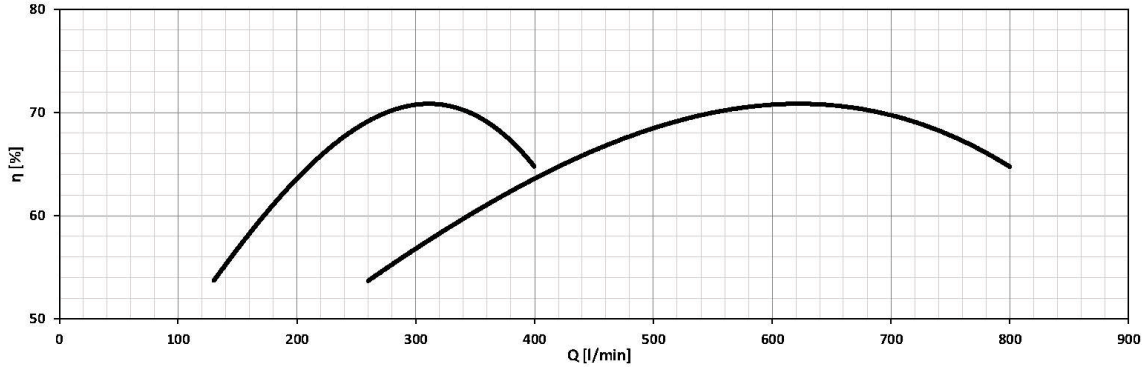




2GP(E) EVMS 15-6/5.5

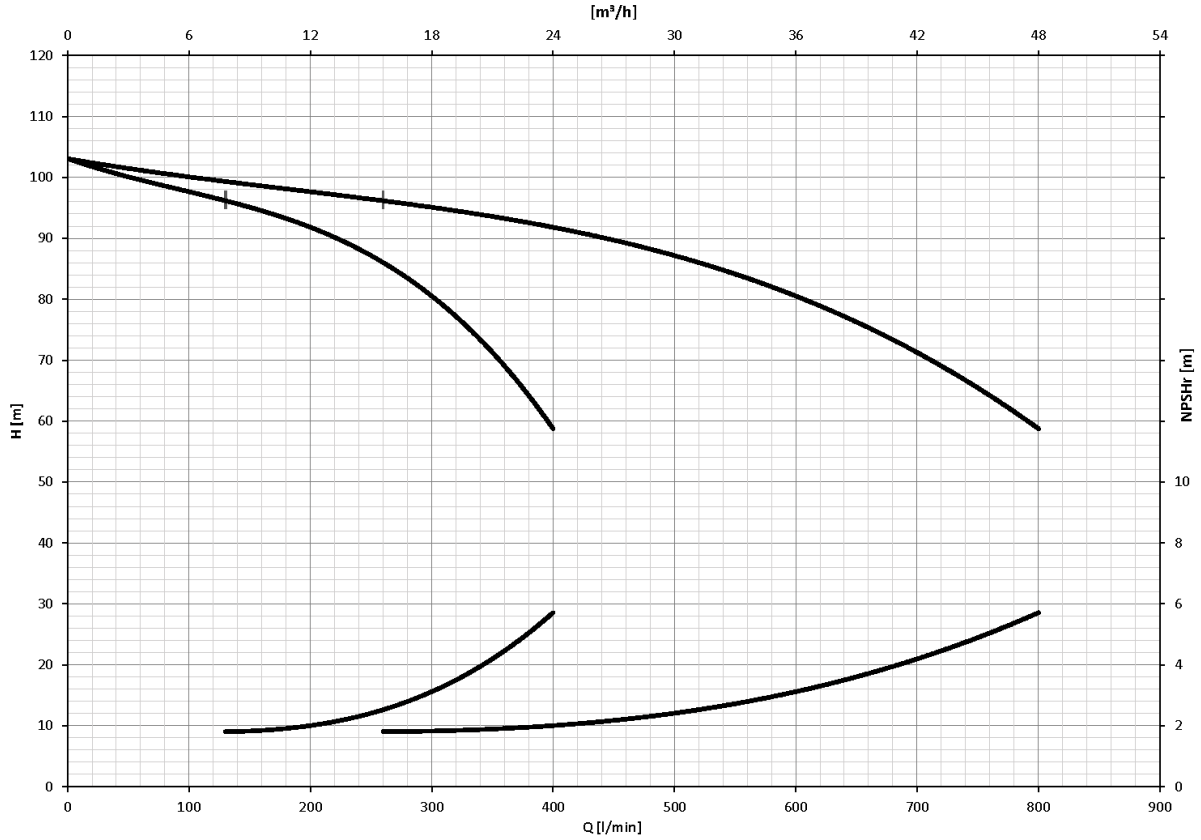


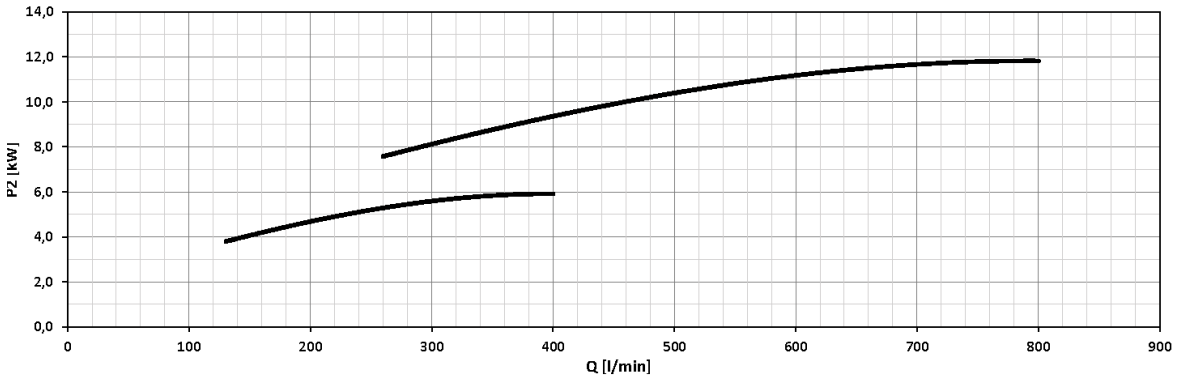


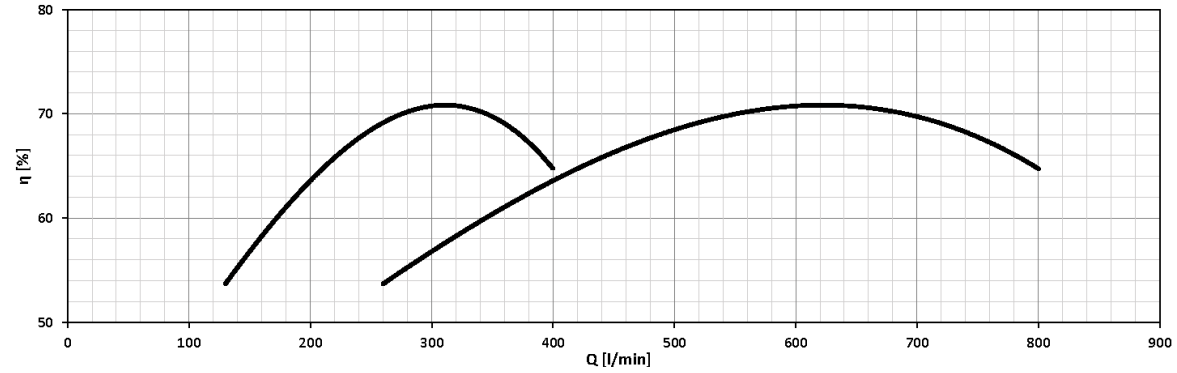


PERFORMANCE CURVE GP-GPE

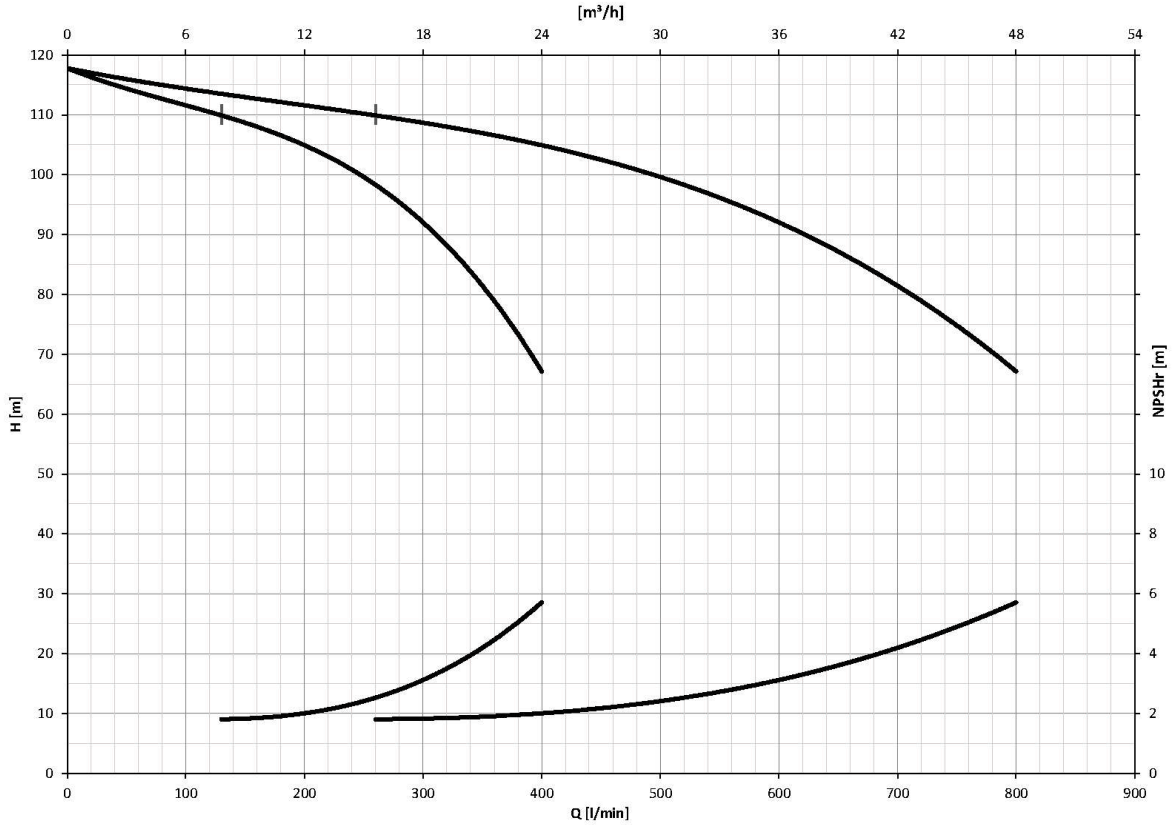
2GP(E) EVMS 15-7/7.5

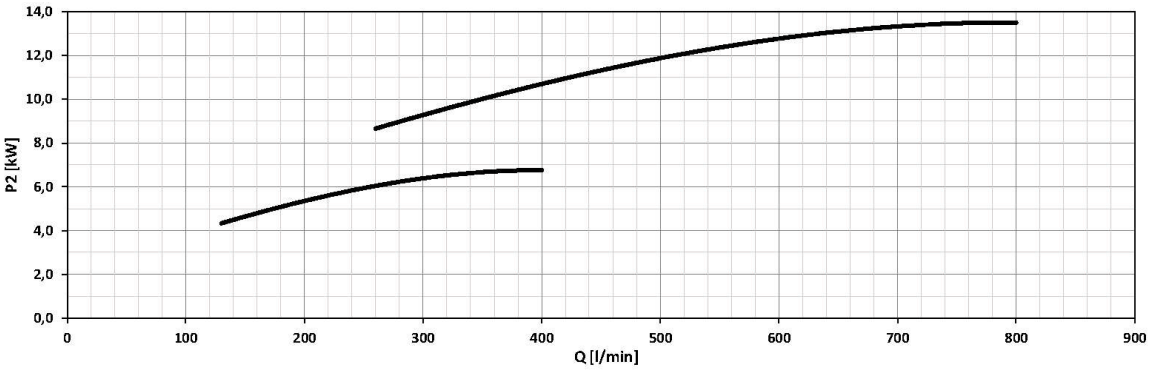


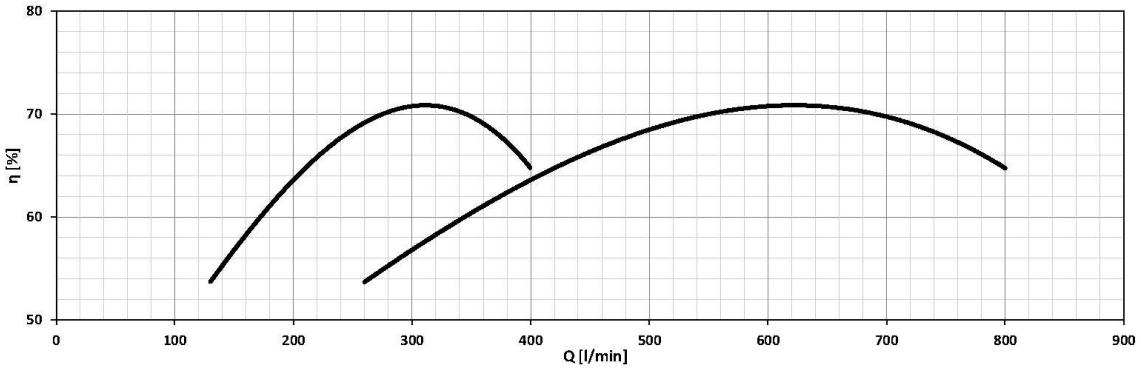




2GP(E) EVMS 15-8/7.5

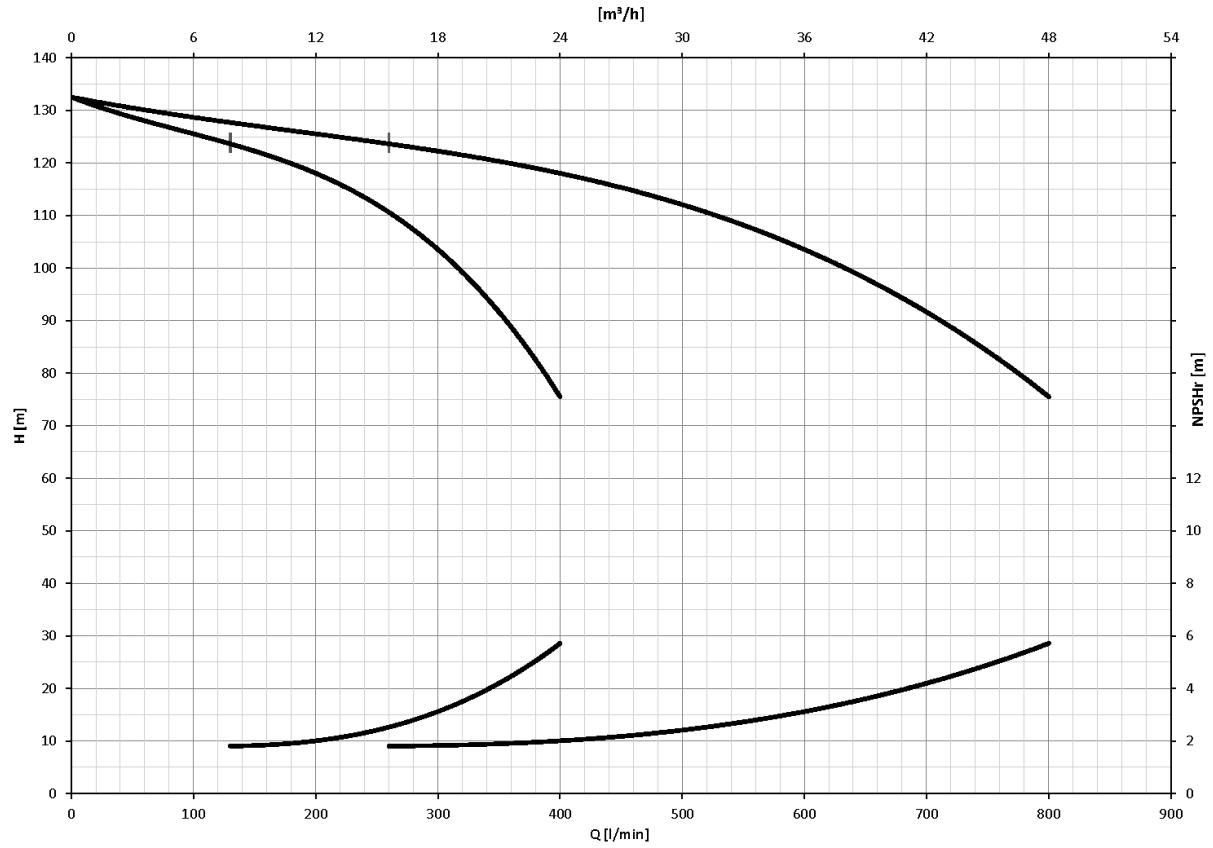


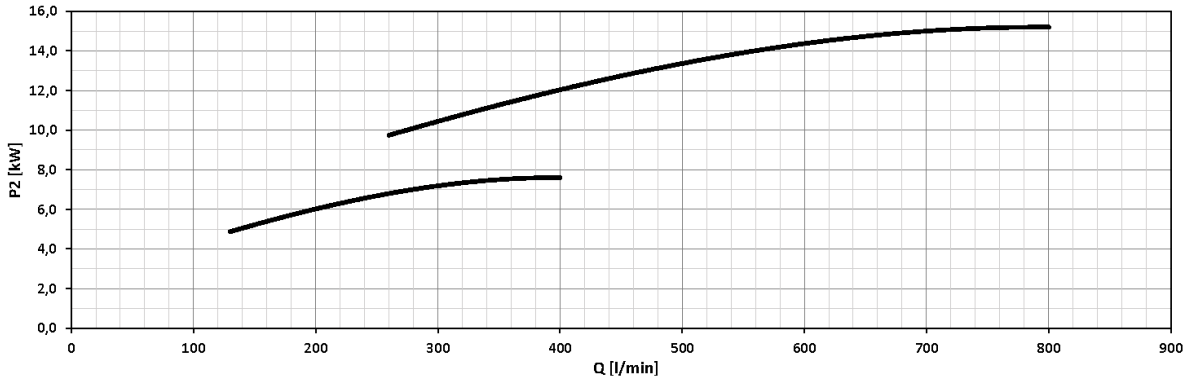


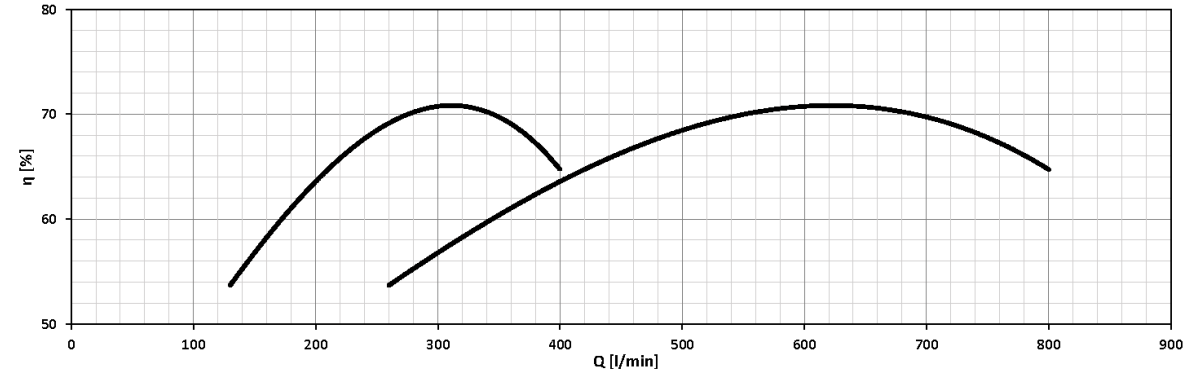


PERFORMANCE CURVE GP-GPE

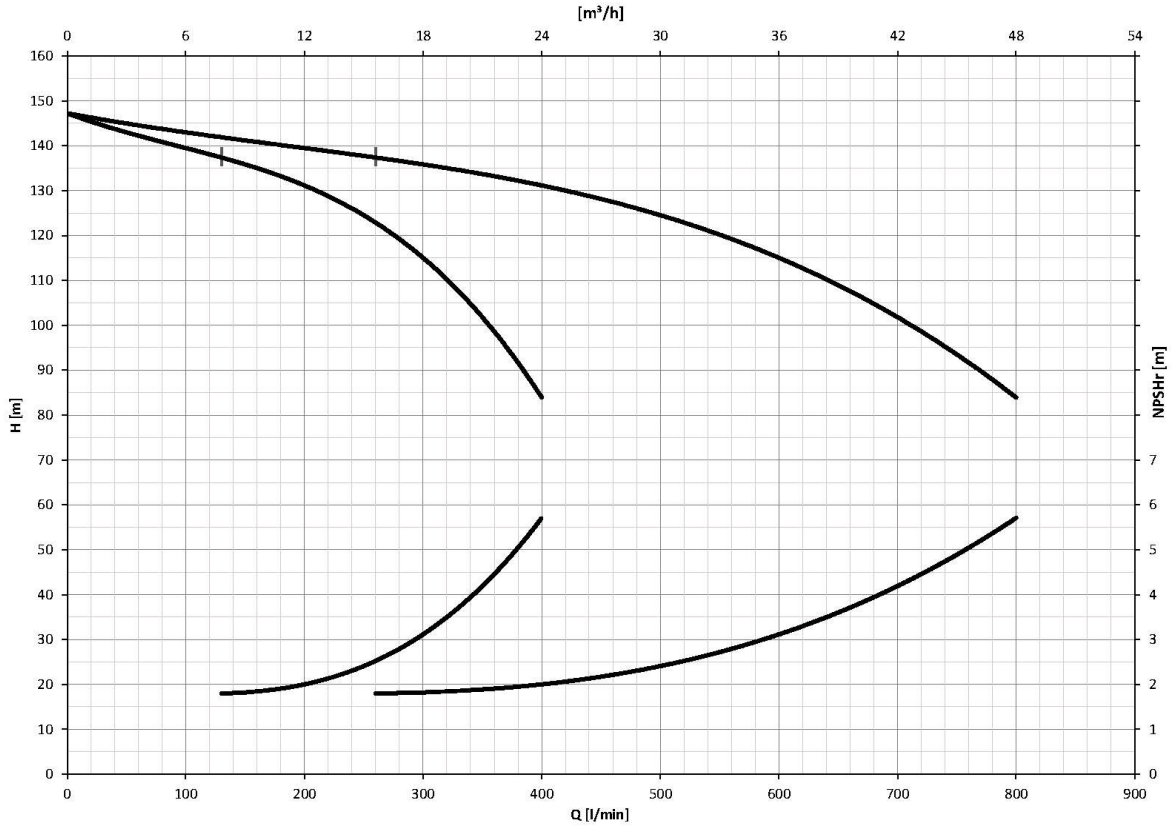
2GP(E) EVMS 15-9/11

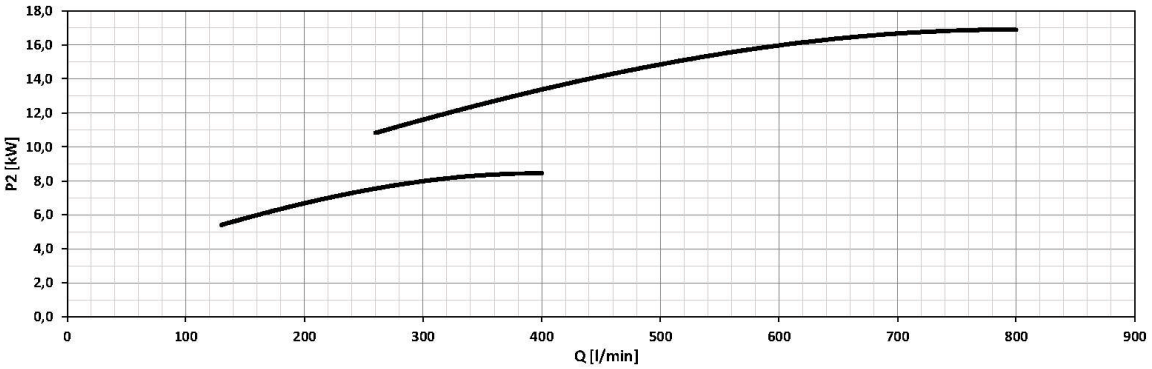


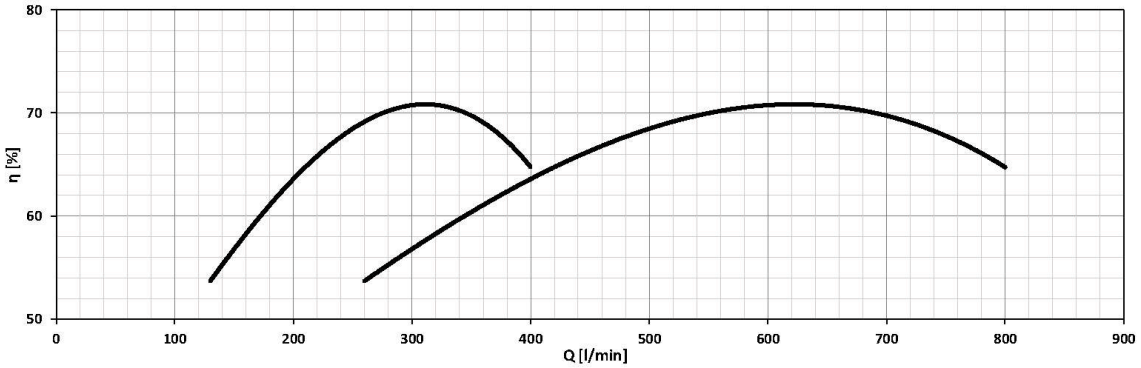




2GP(E) EVMS 15-10/11

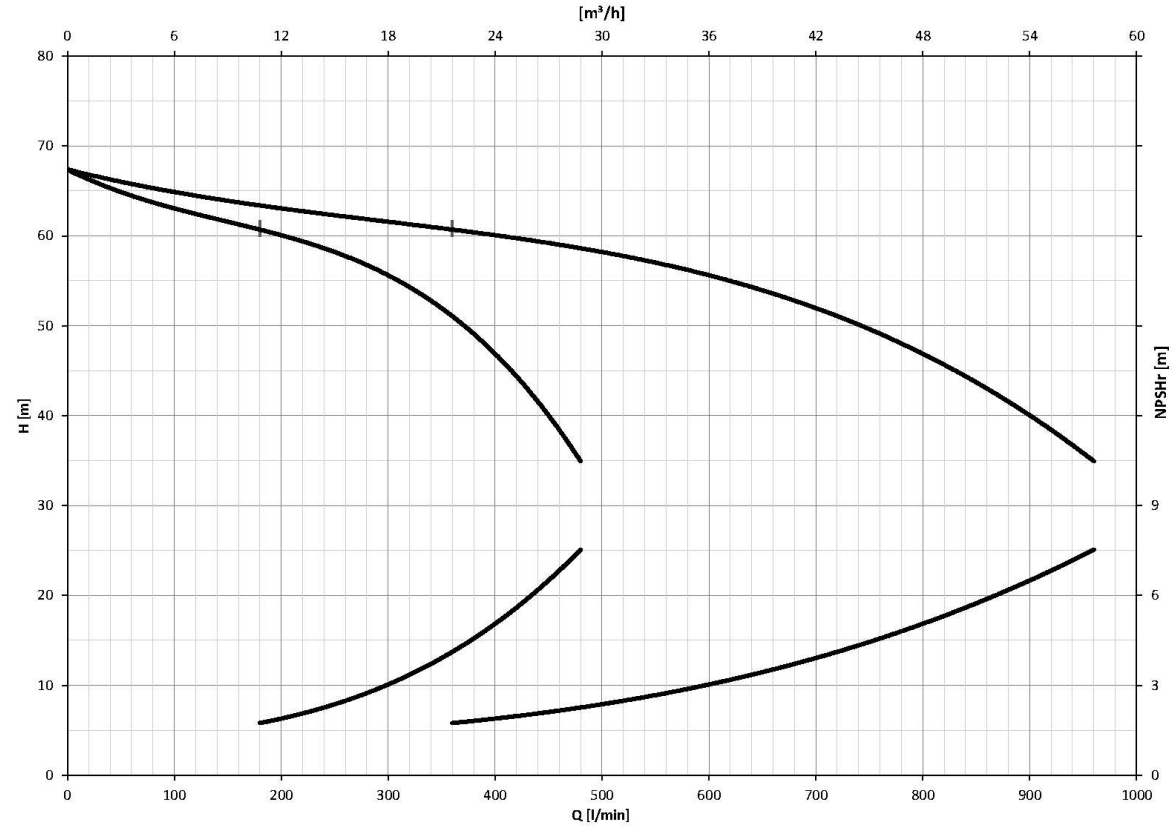


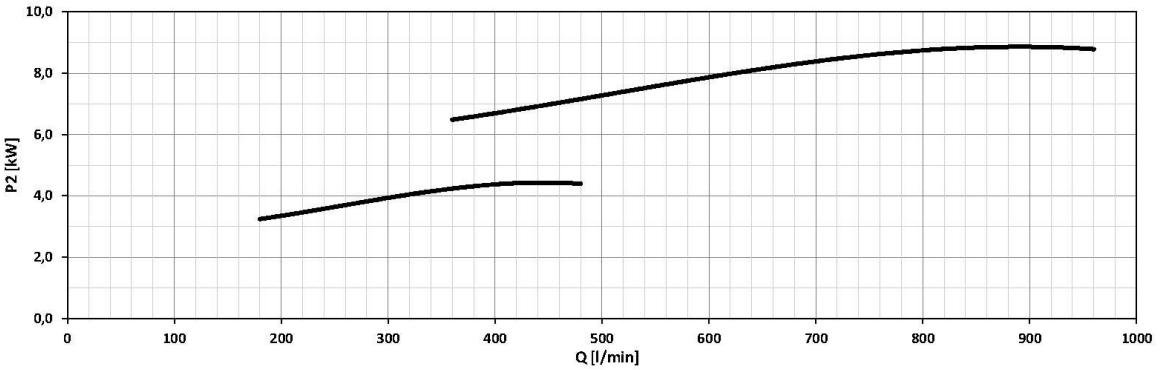


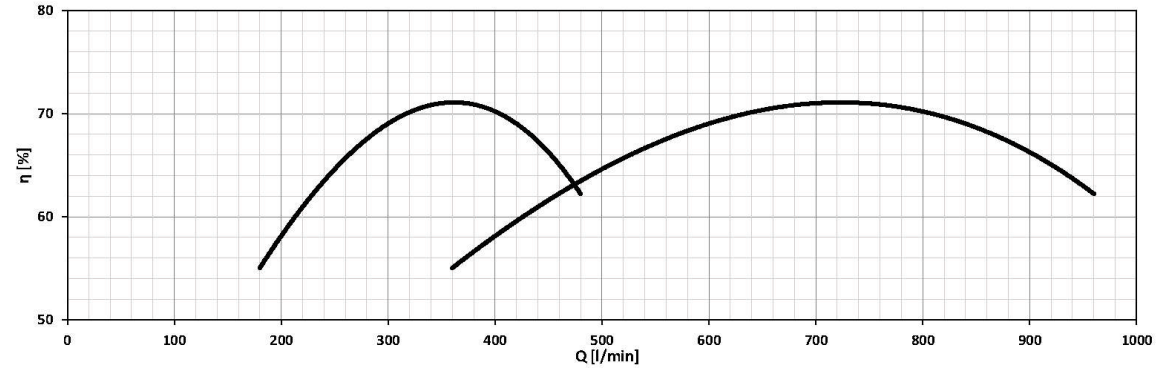


PERFORMANCE CURVE GP-GPE

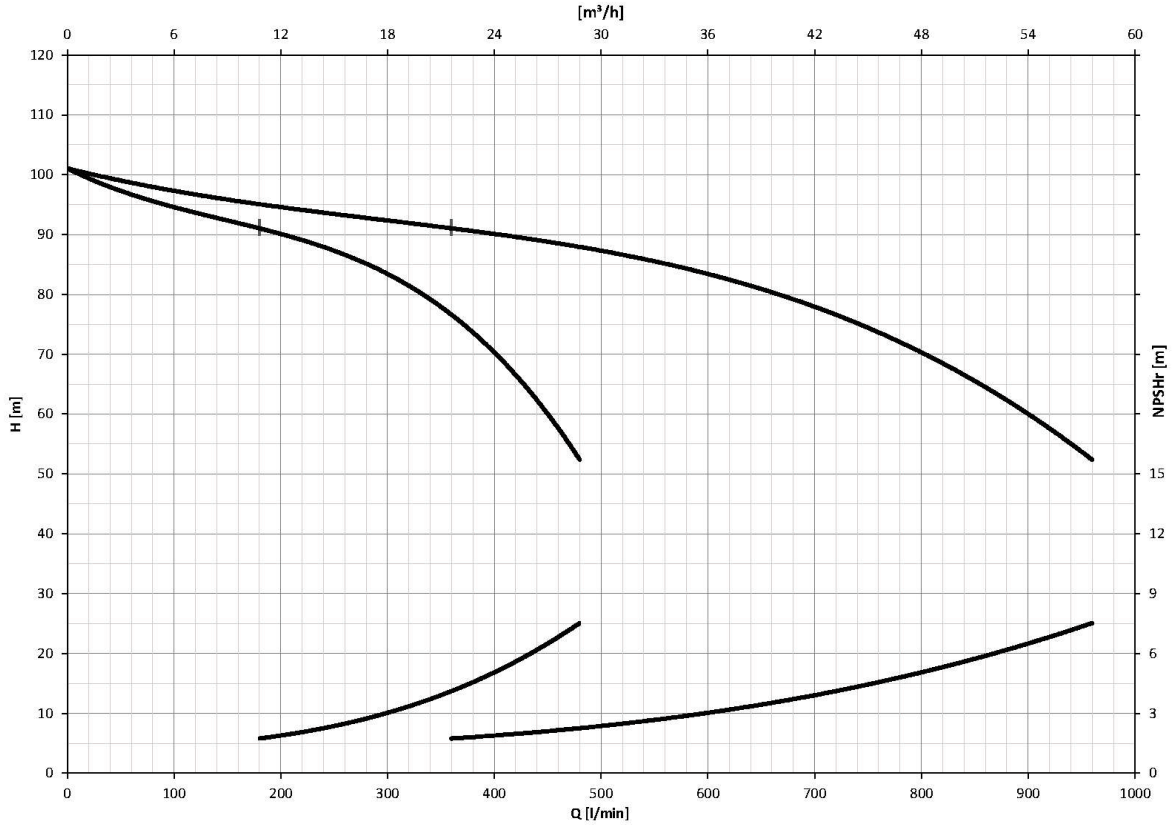
2GP(E) EVMS 20-4/5.5

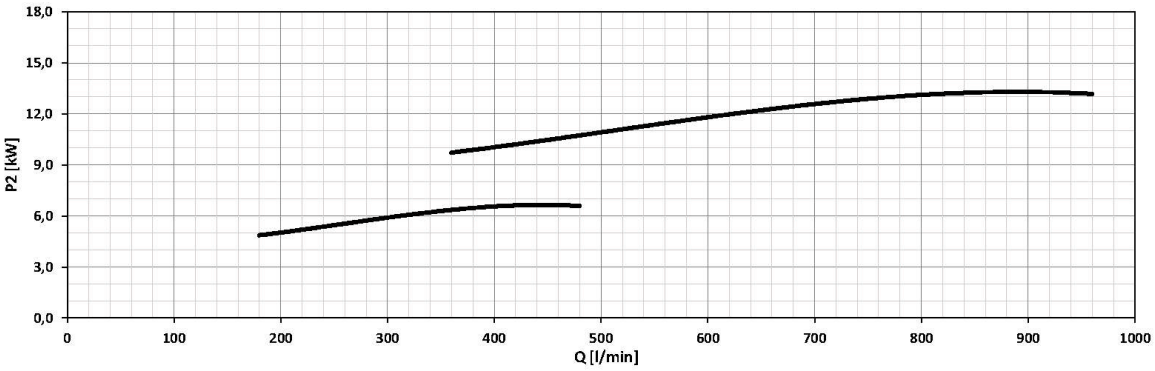


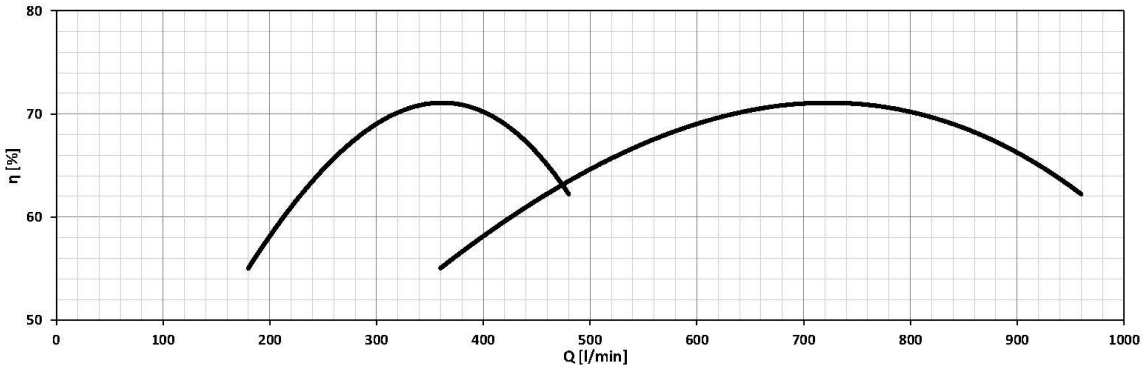




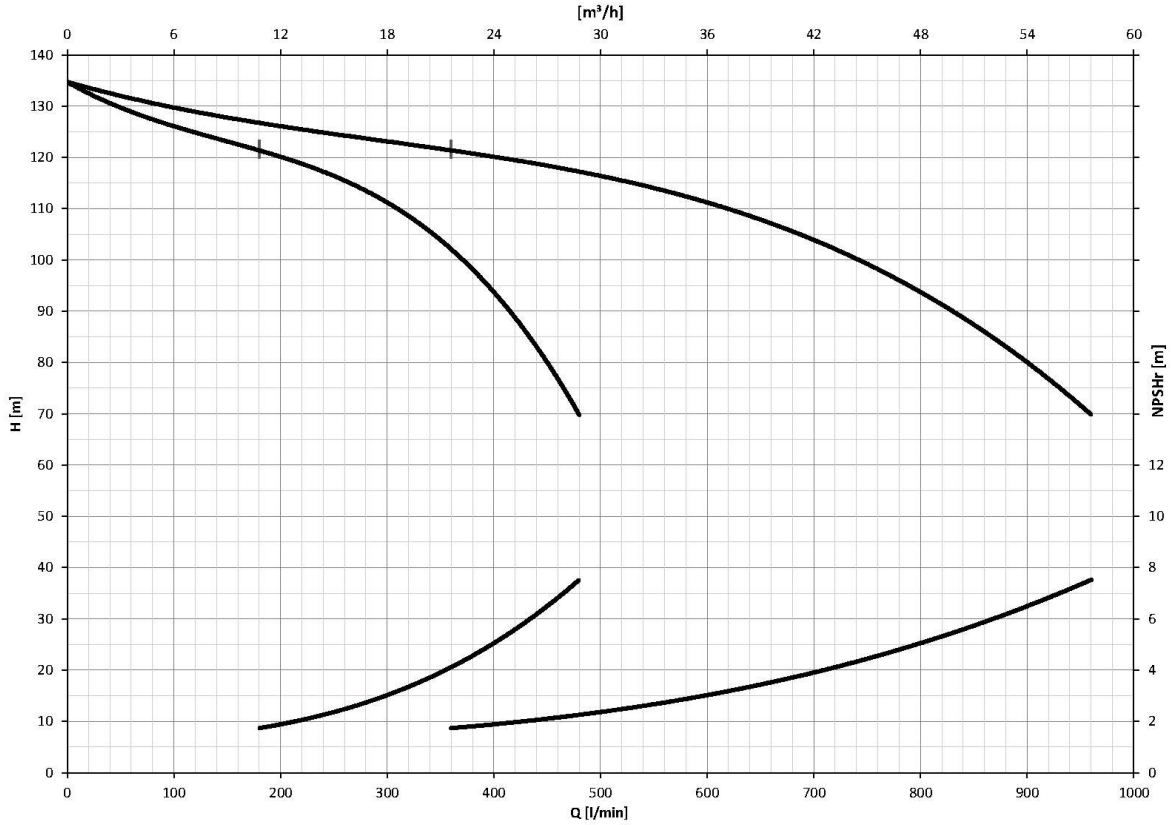
2GP(E) EVMS 20-6/7.5

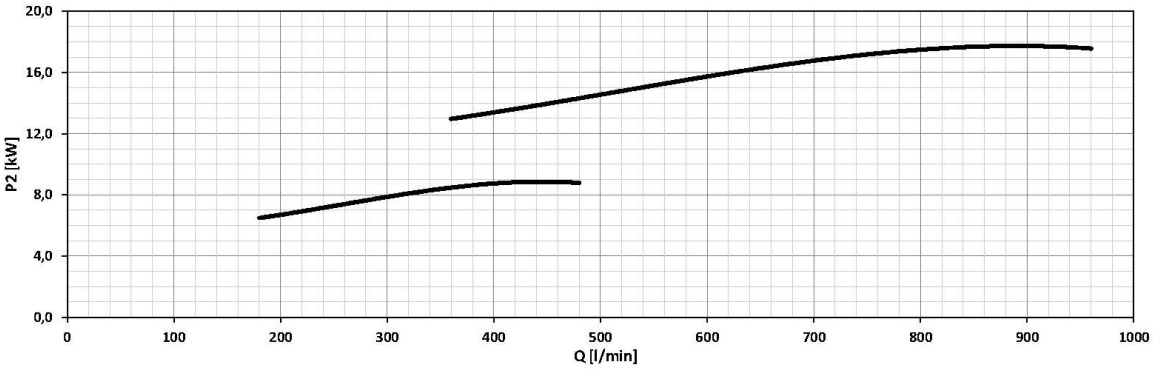


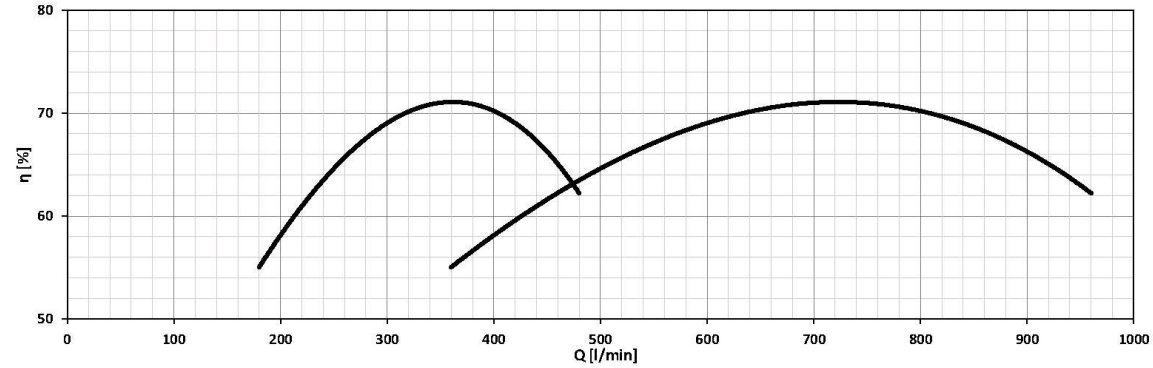




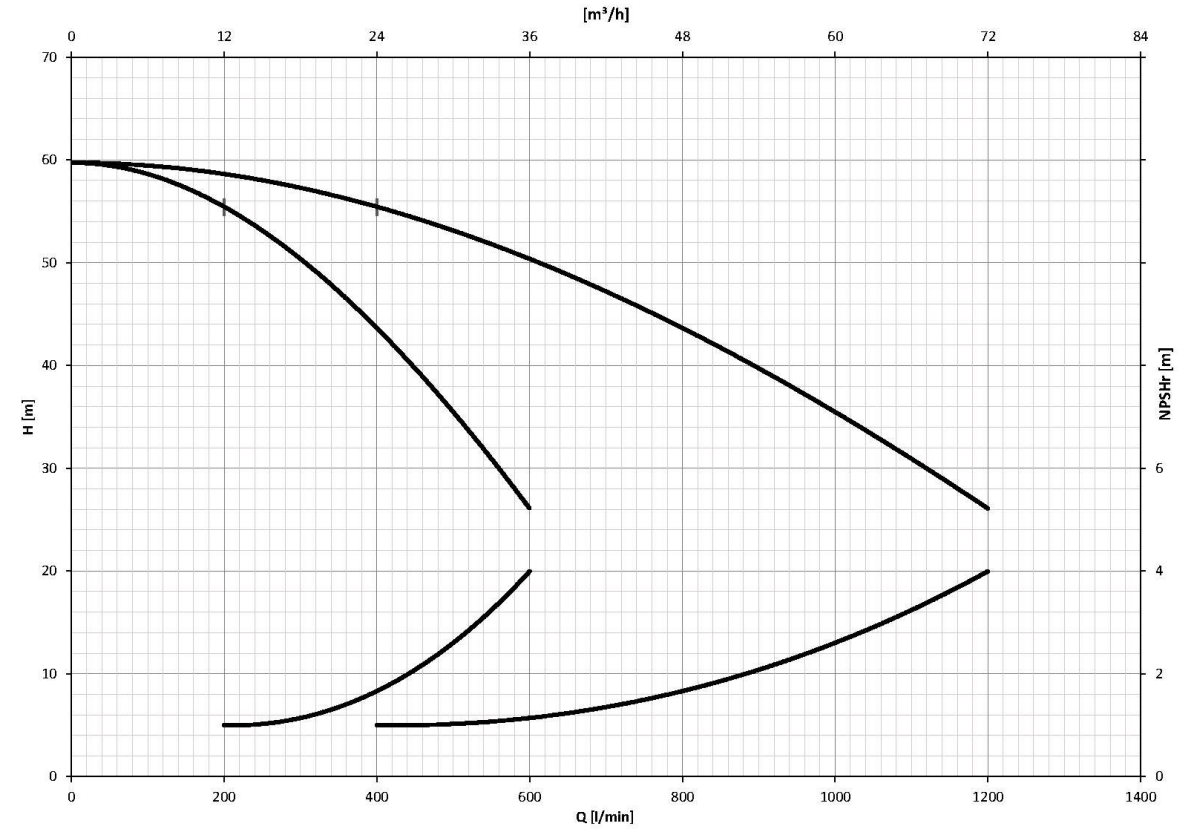
2GP(E) EVMS 20-8/11

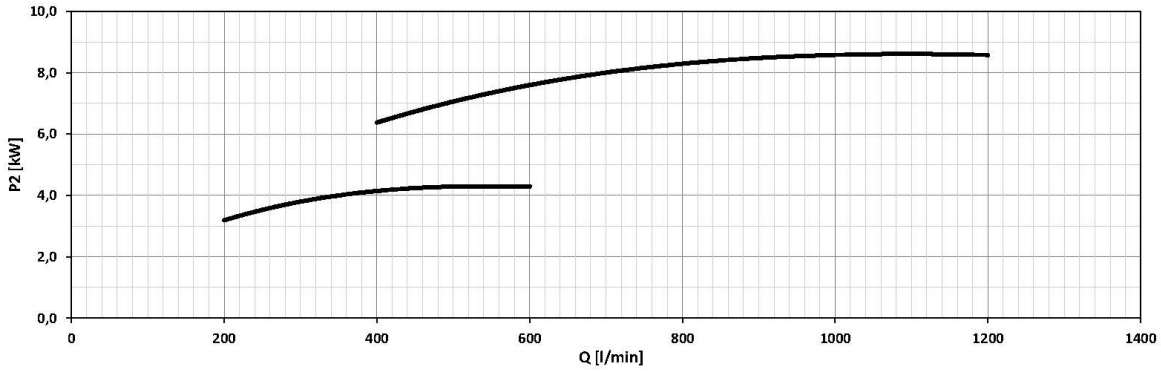


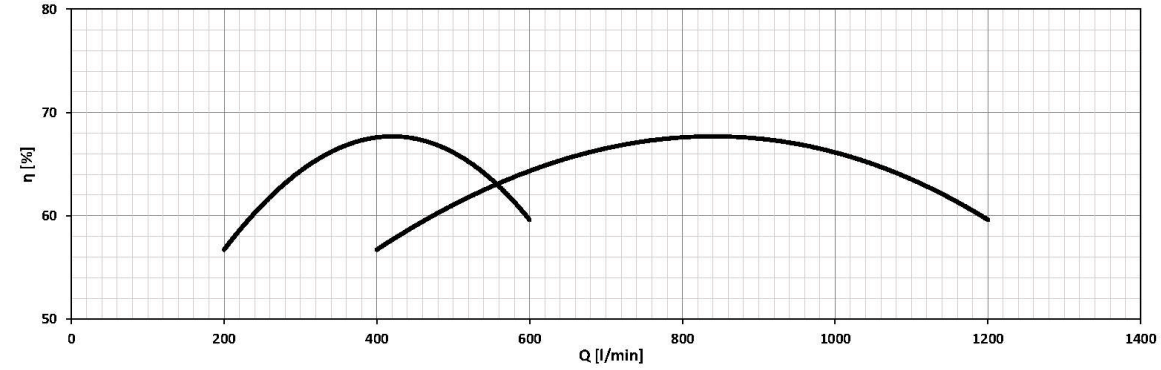




2GP(E) EVMS 32 3-3/5.5

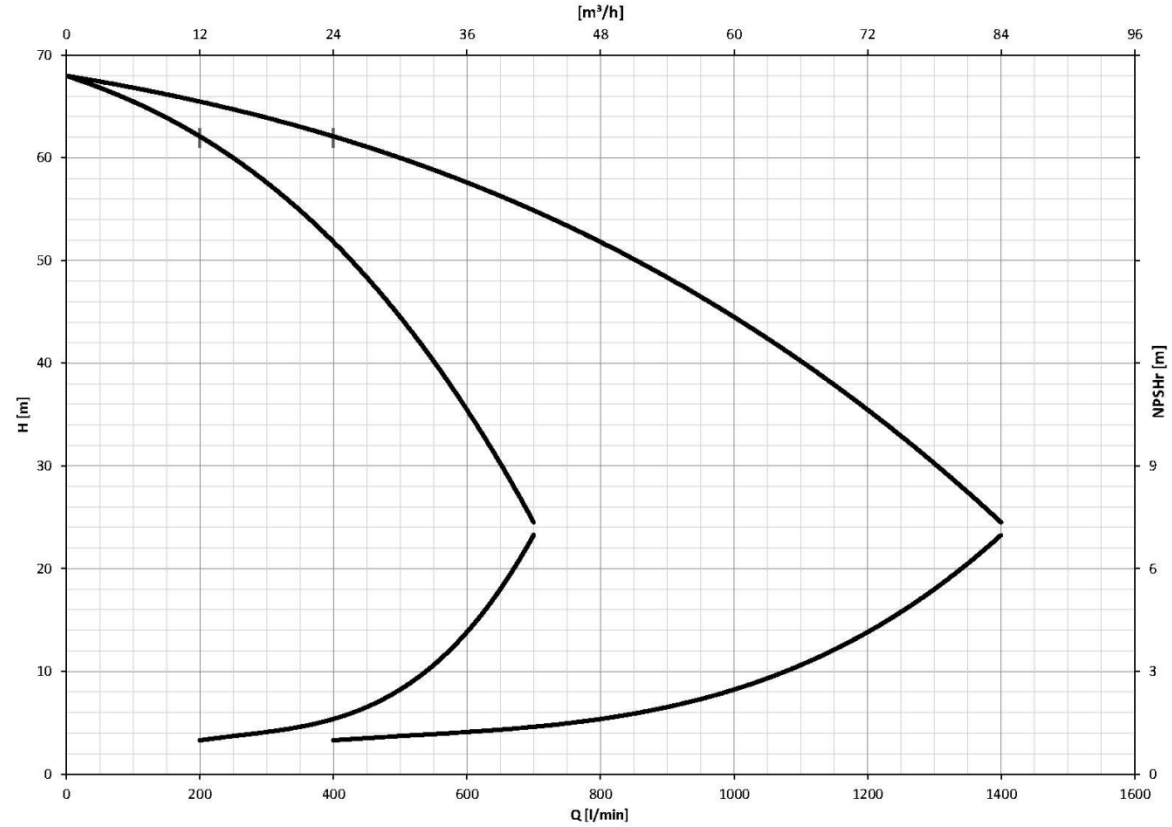


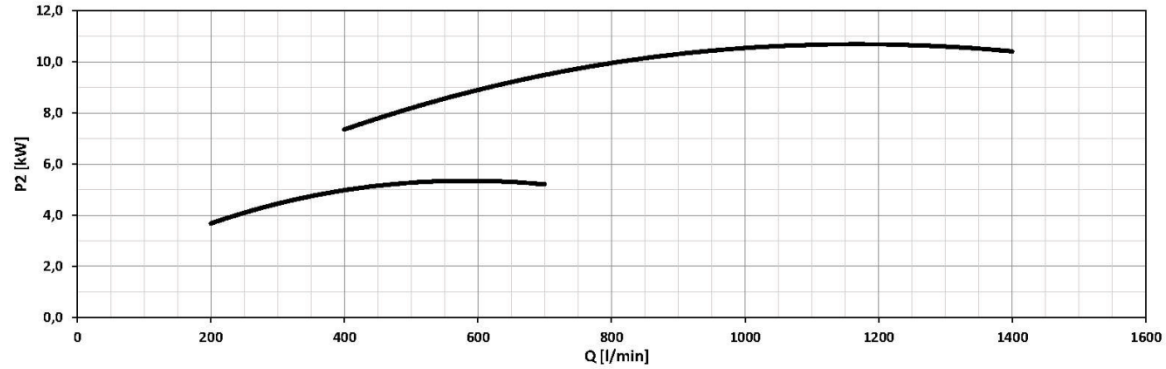


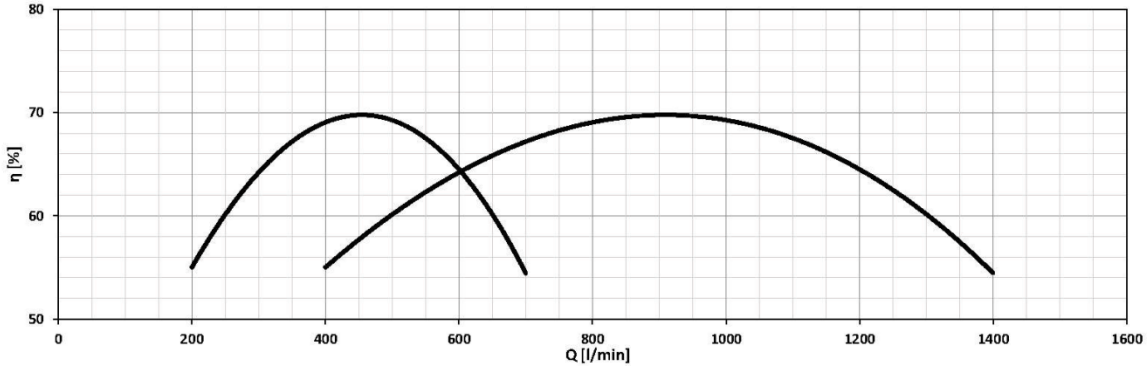


PERFORMANCE CURVE GP-GPE

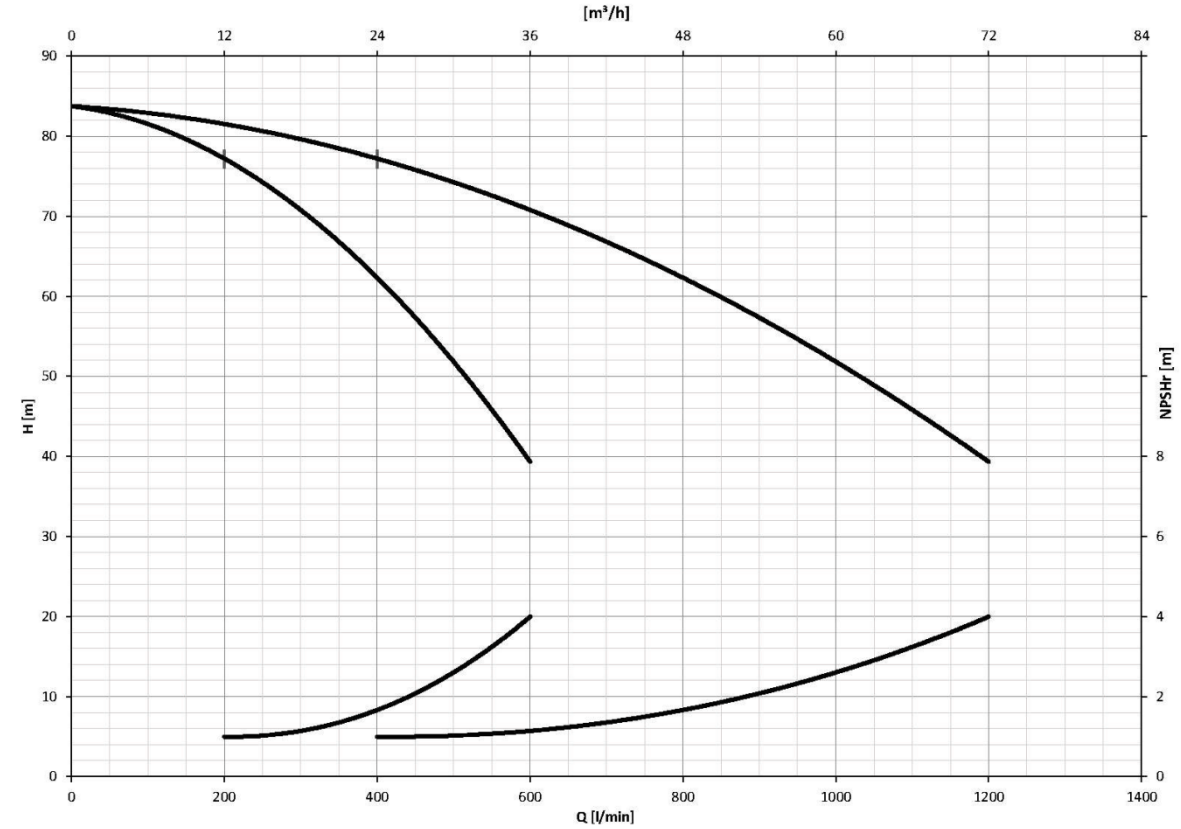
2GP(E) EVMS 32 3-1/5.5

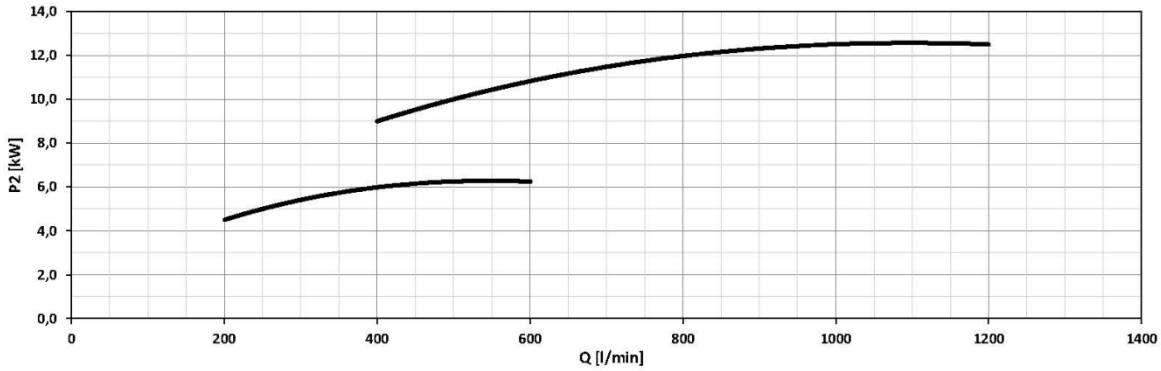


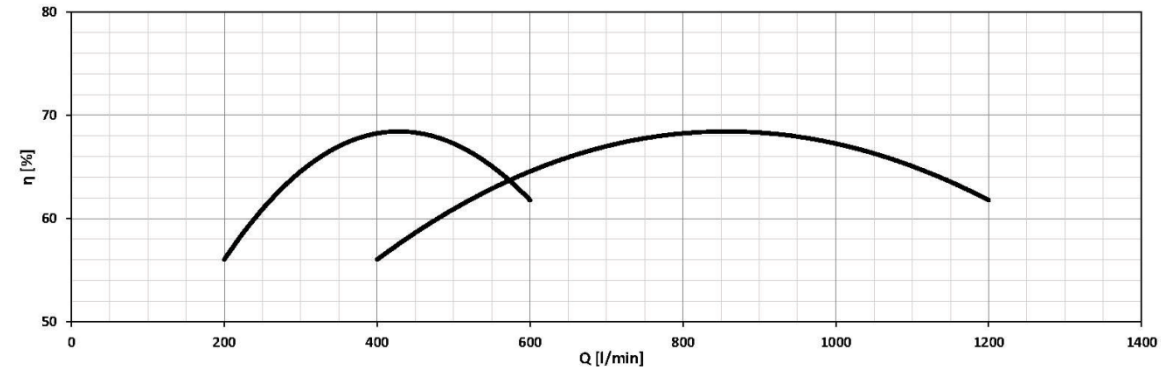




2GP(E) EVMS 32 4-3/7.5

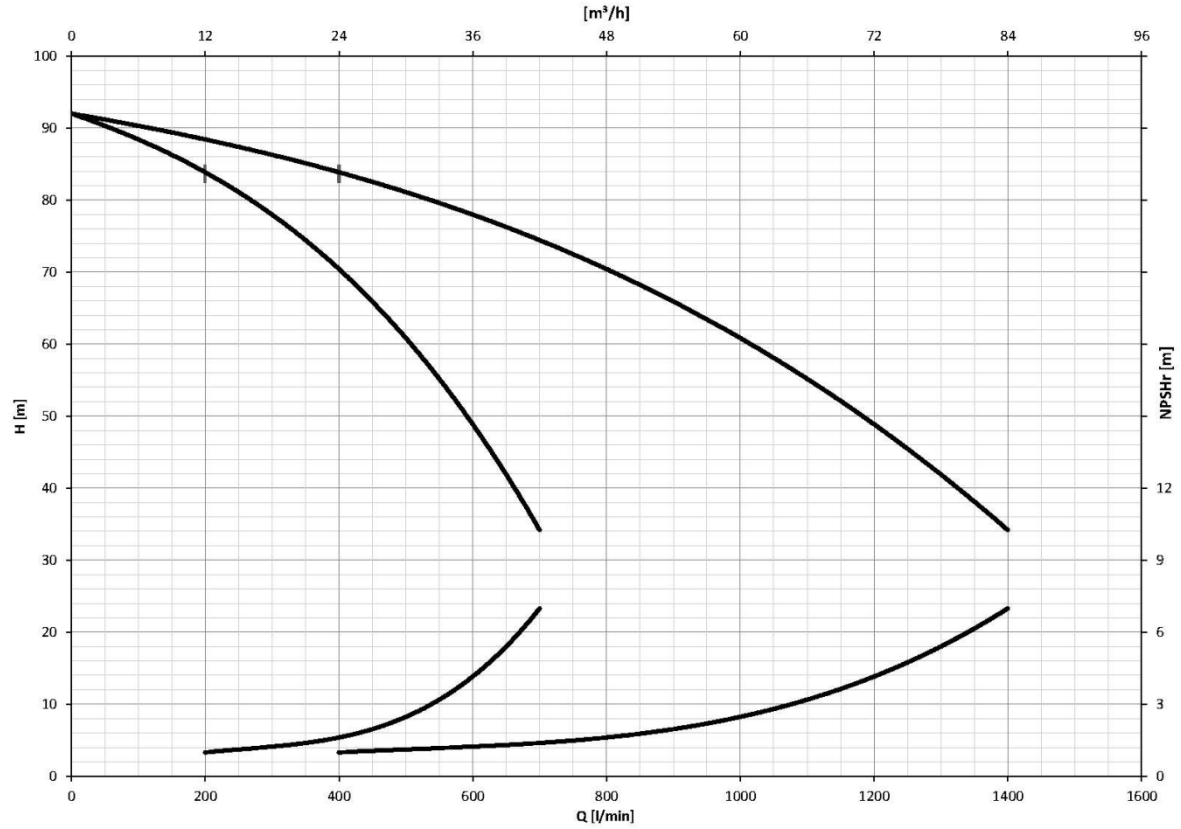


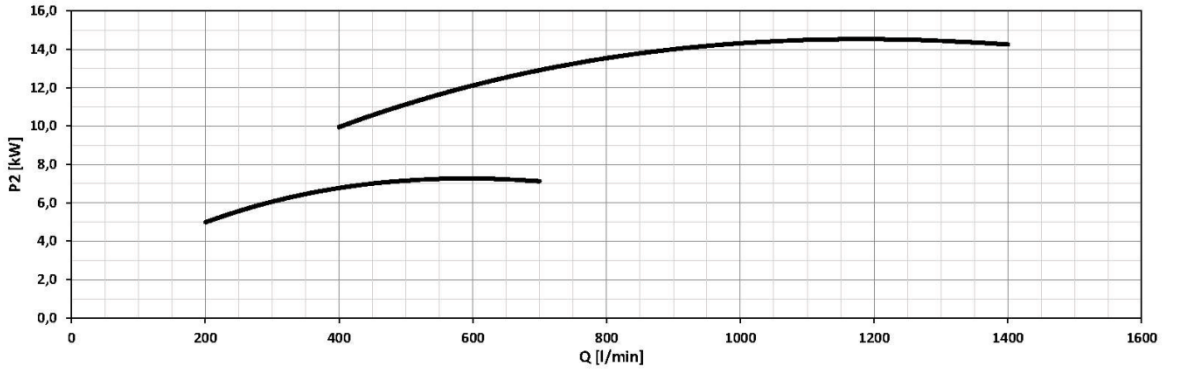


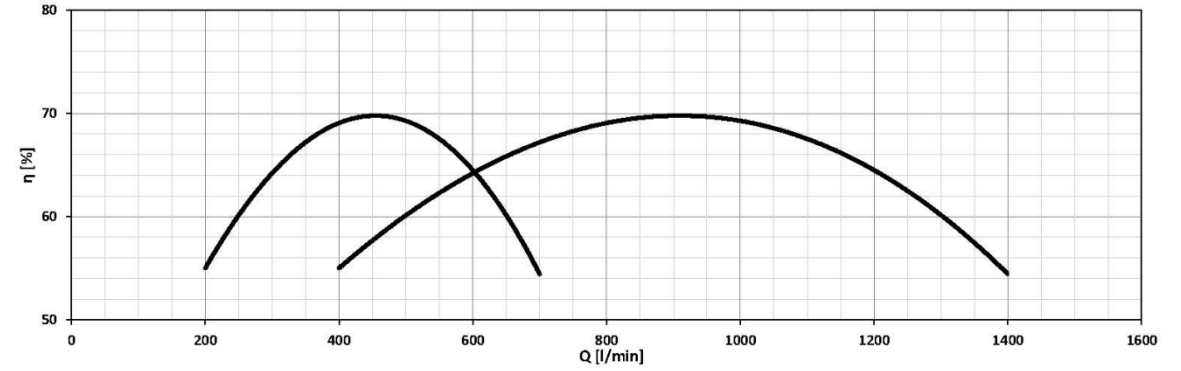


PERFORMANCE CURVE GP-GPE

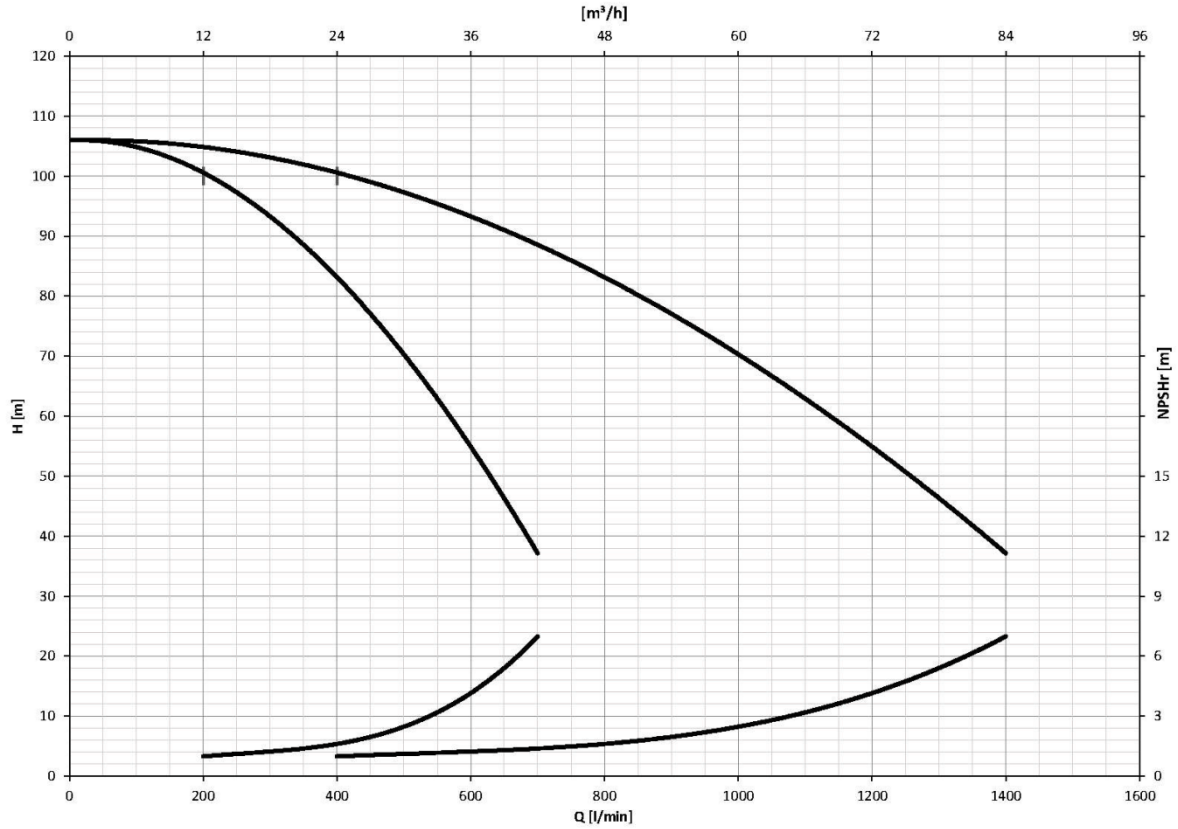
2GP(E) EVMS 32 4-1/7.5

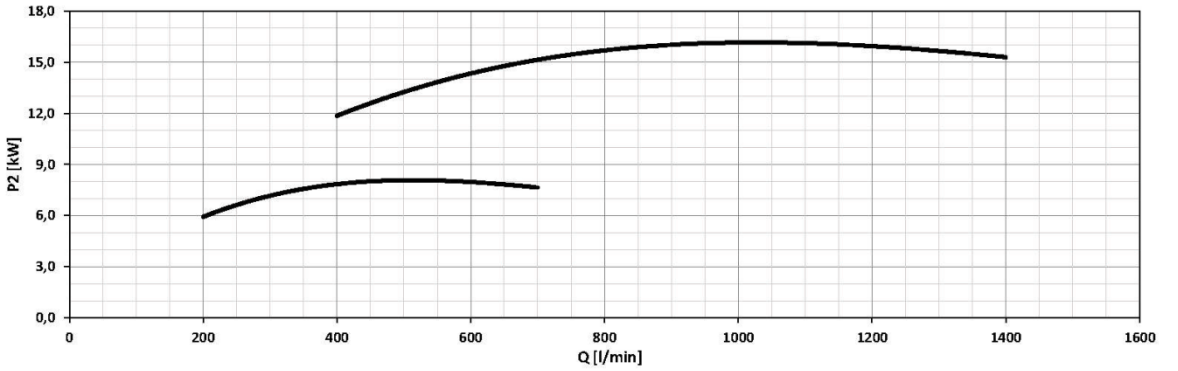


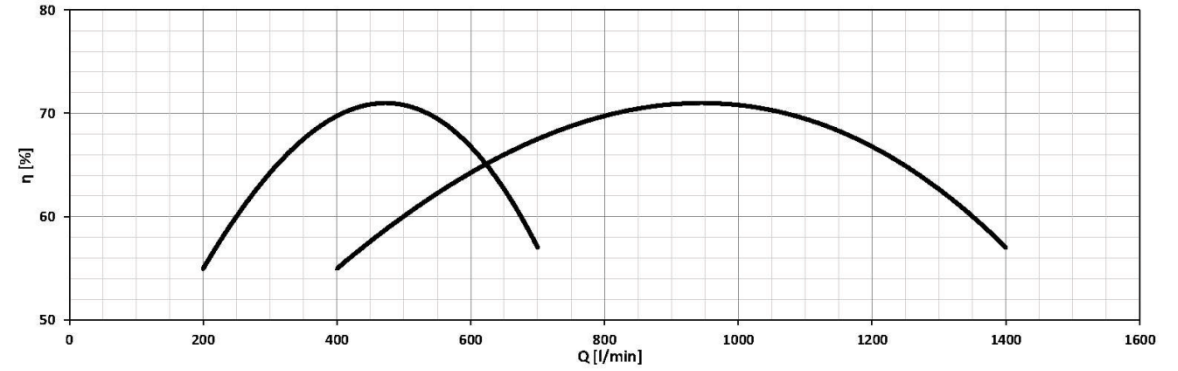




2GP(E) EVMS 32 5-3/11

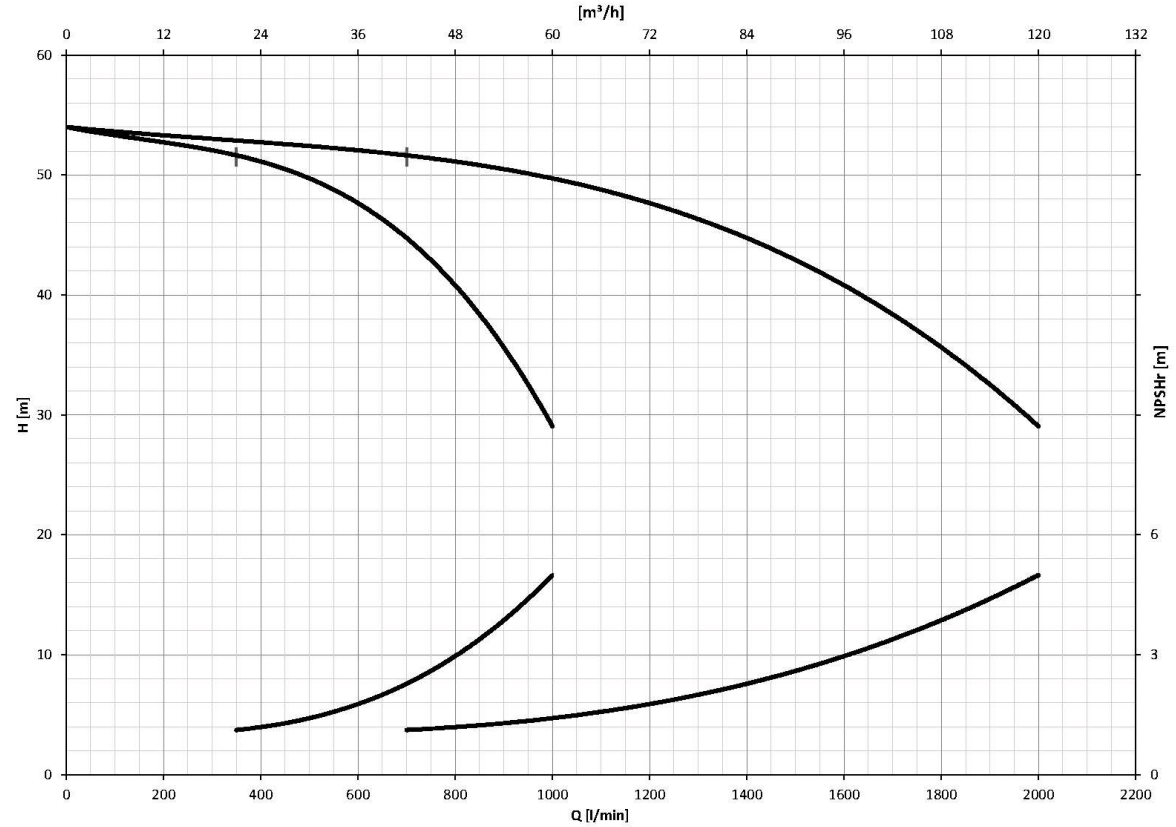


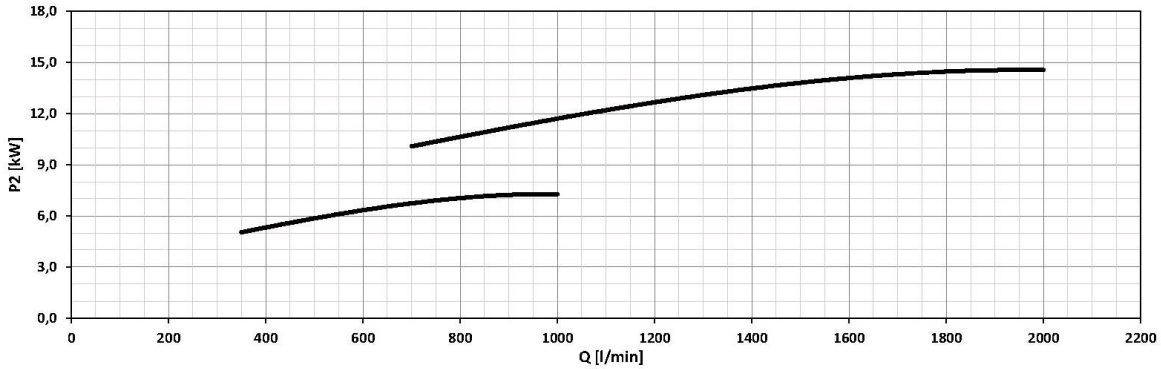


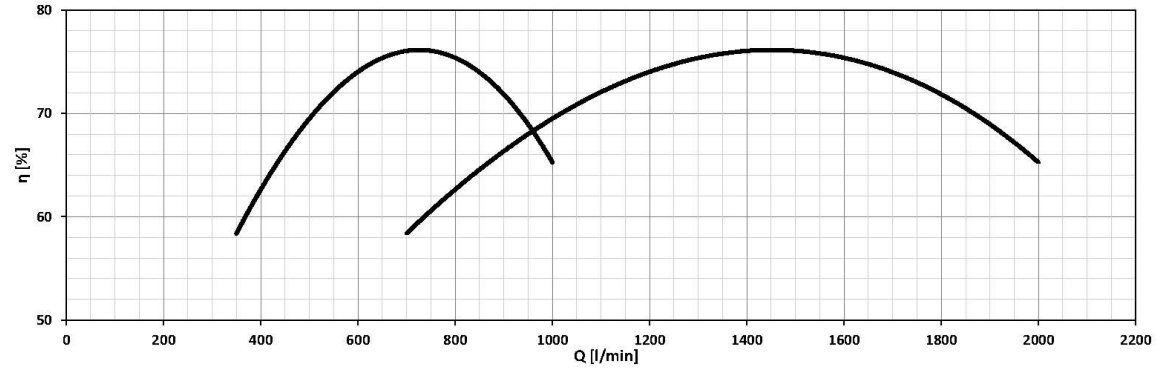


PERFORMANCE CURVE GP-GPE

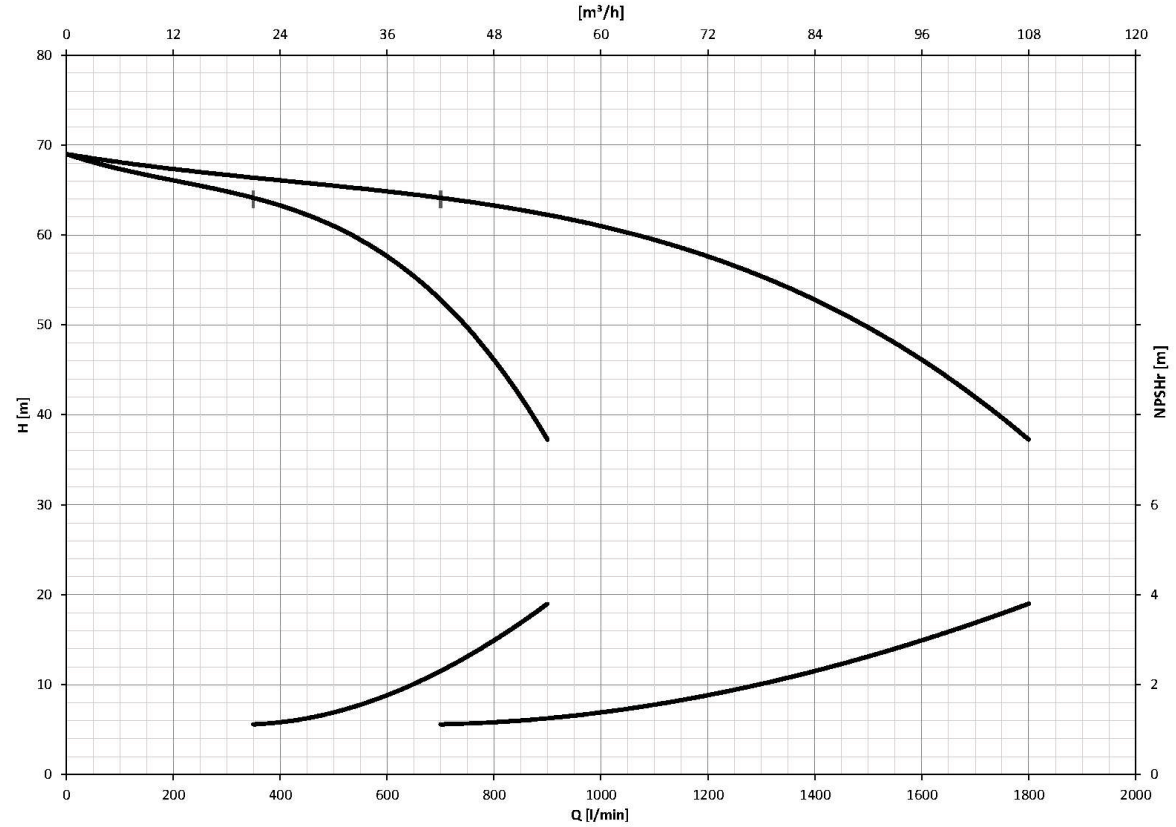
2GP(E) EVMS 45 2-0/7.5

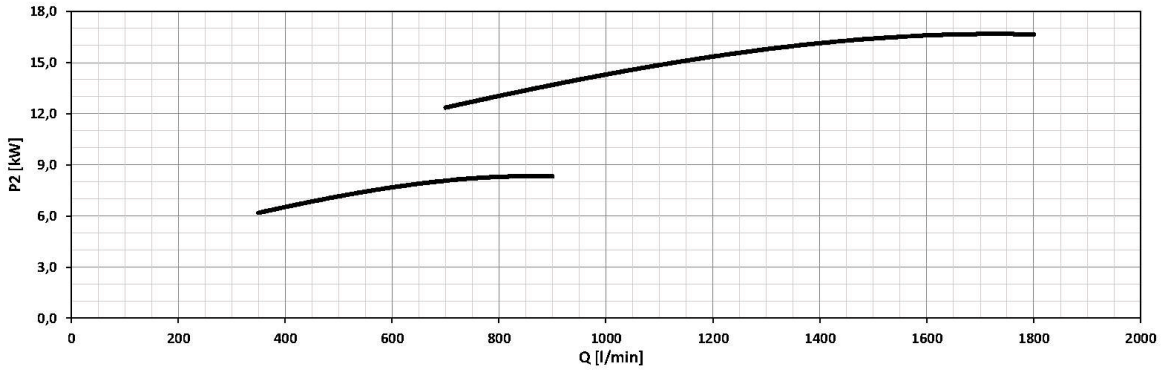


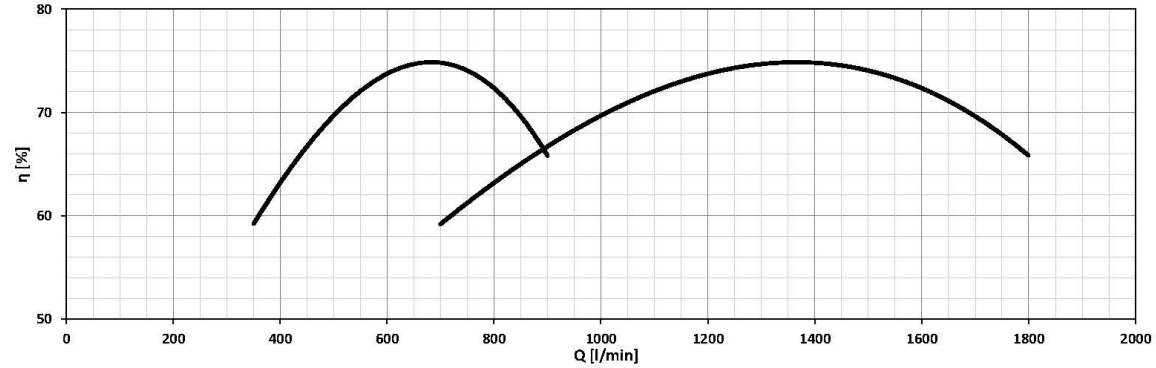




2GP(E) EVMS 45 3-2/11

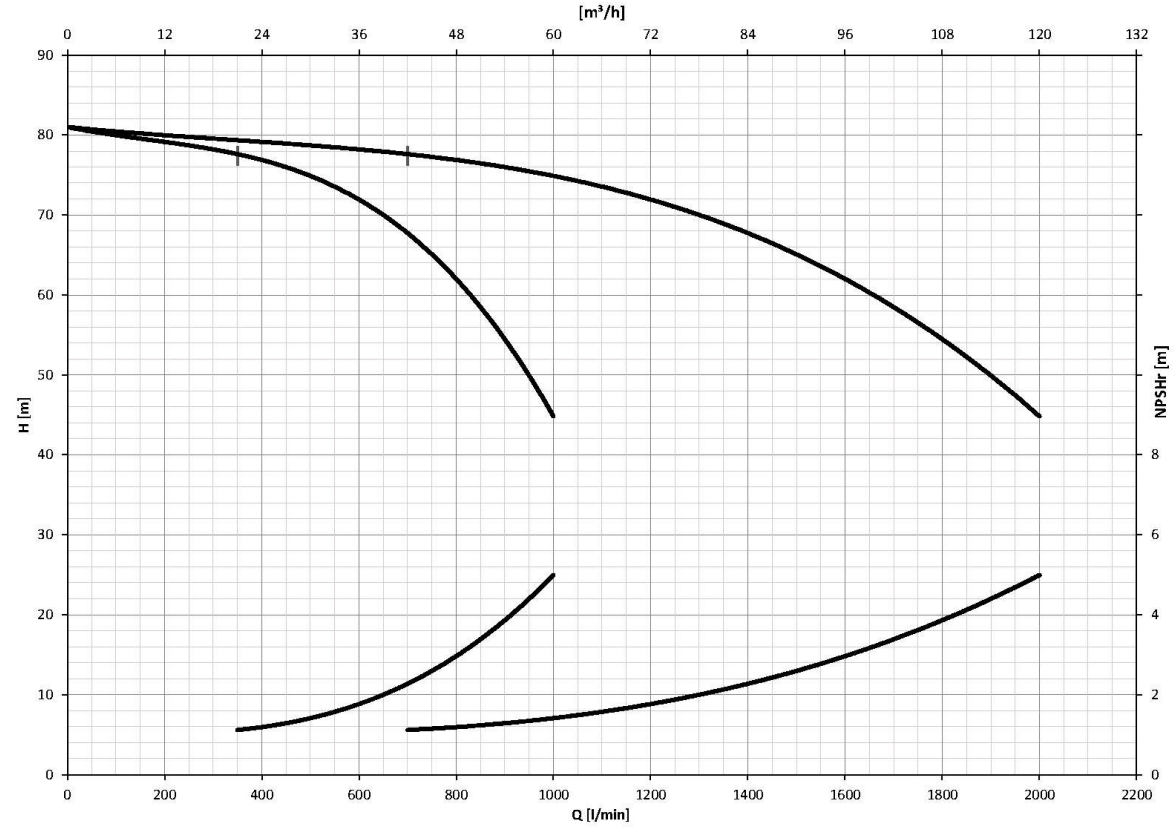


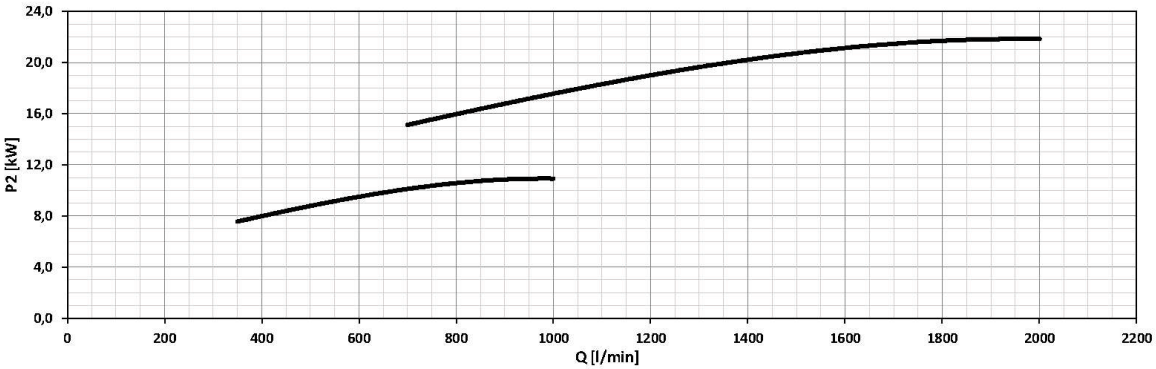


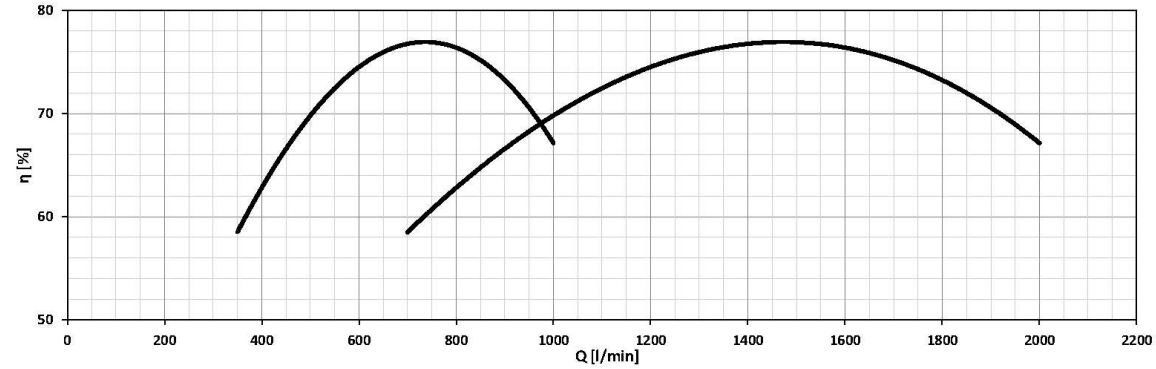


PERFORMANCE CURVE GP-GPE

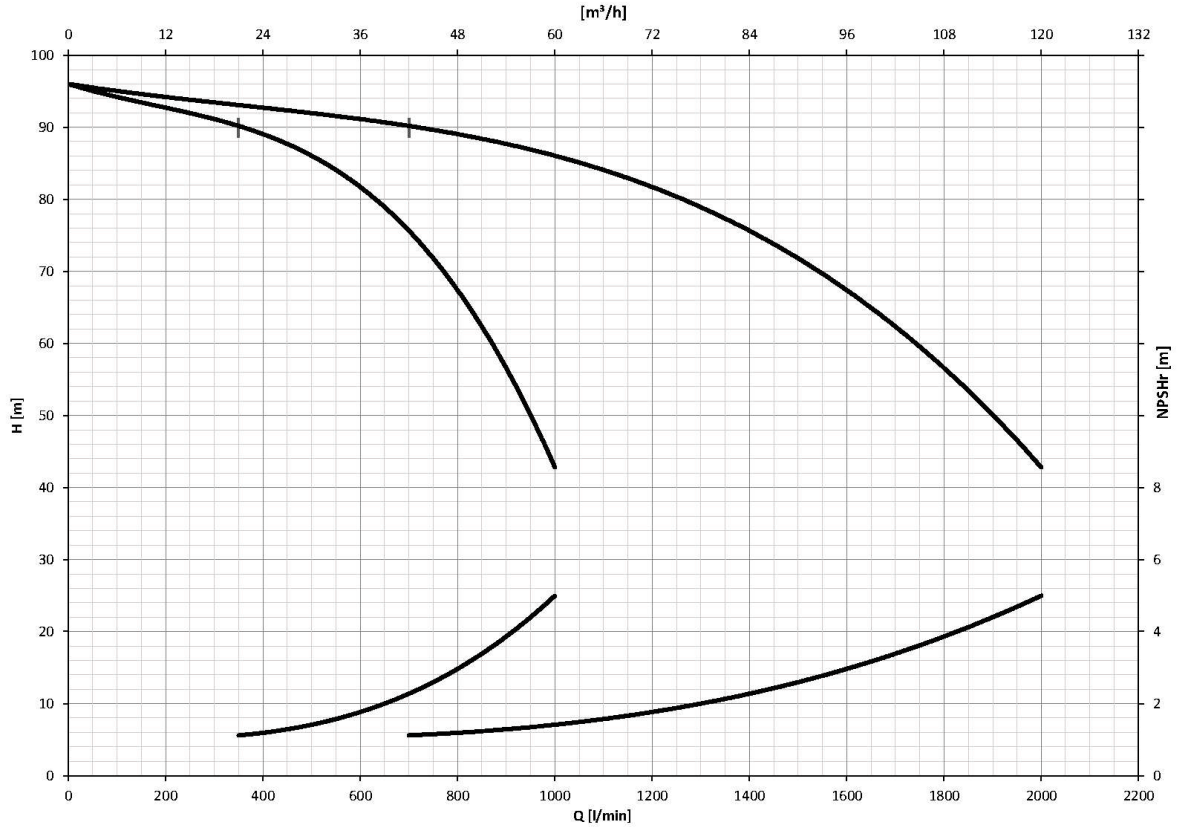
2GP(E) EVMS 45 3-0/11

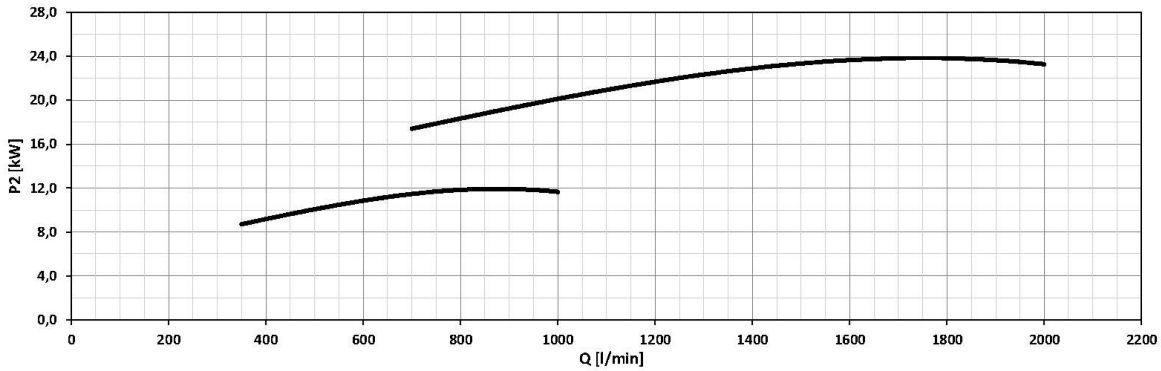


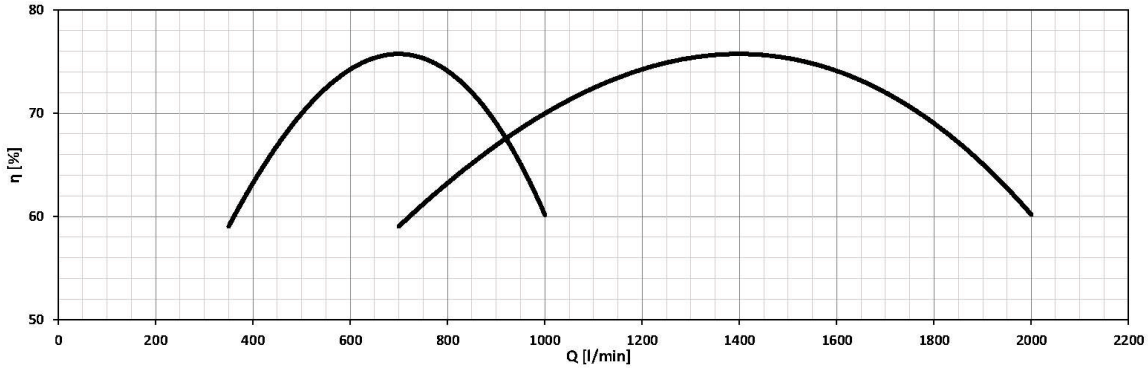




2GP(E) EVMS 45 4-2/15

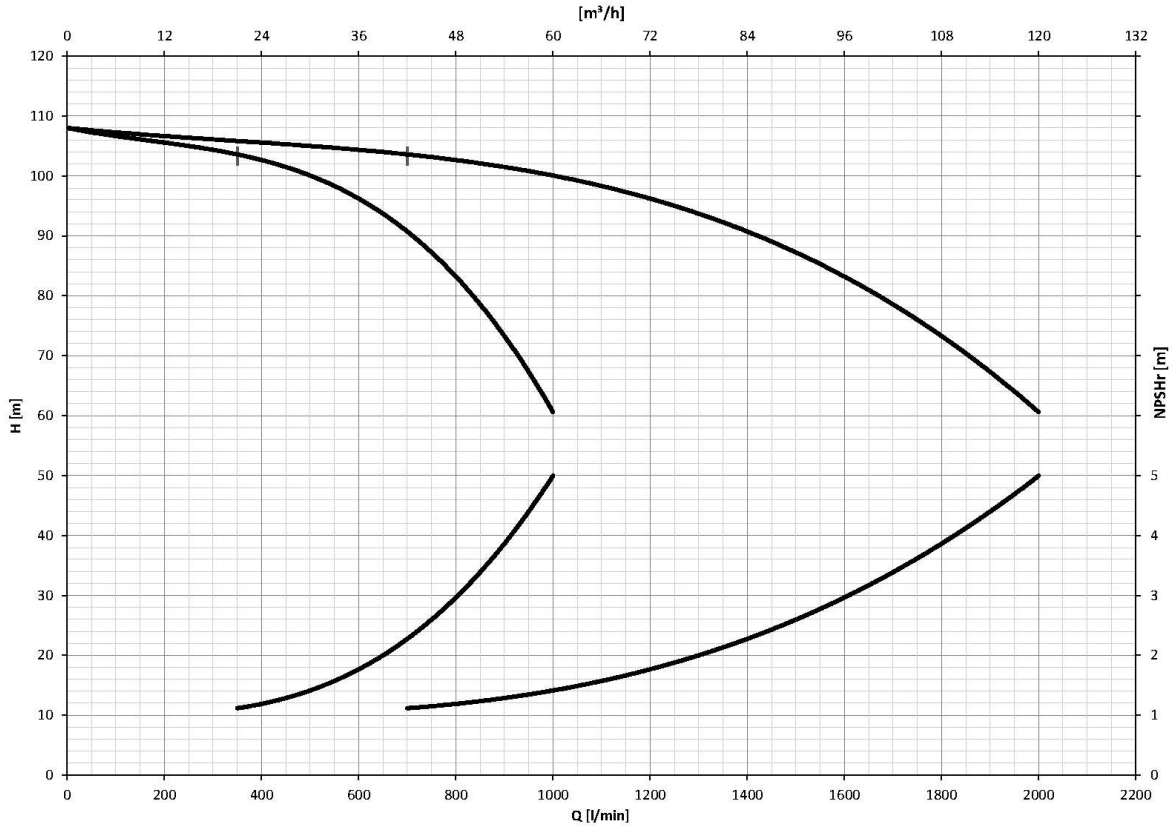


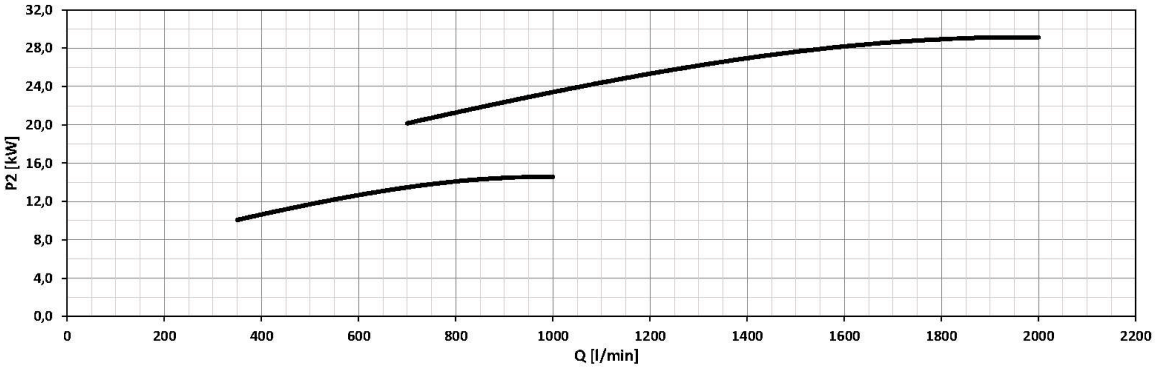


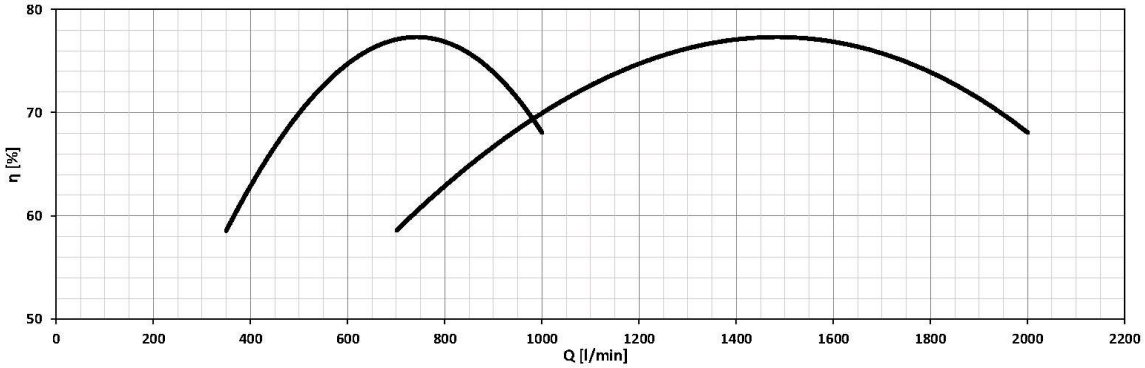


PERFORMANCE CURVE GP-GPE

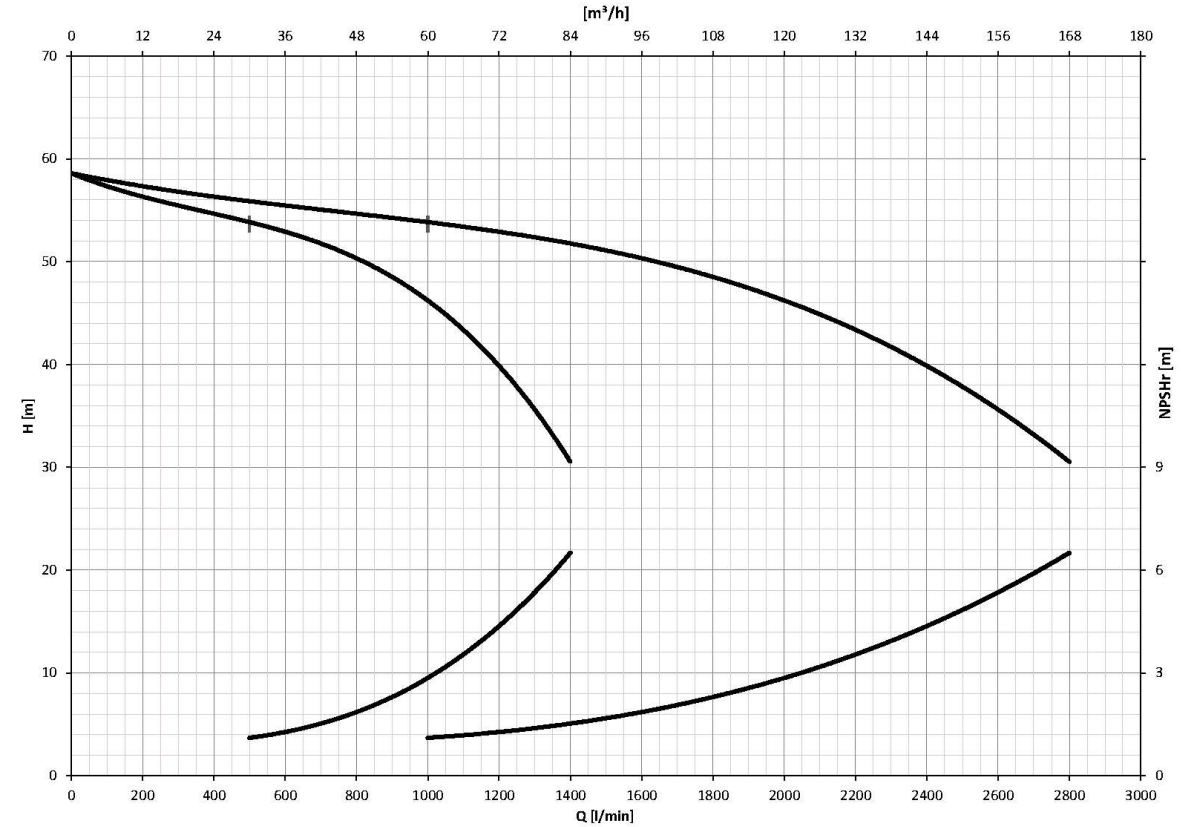
2GP(E) EVMS 45 4-0/15

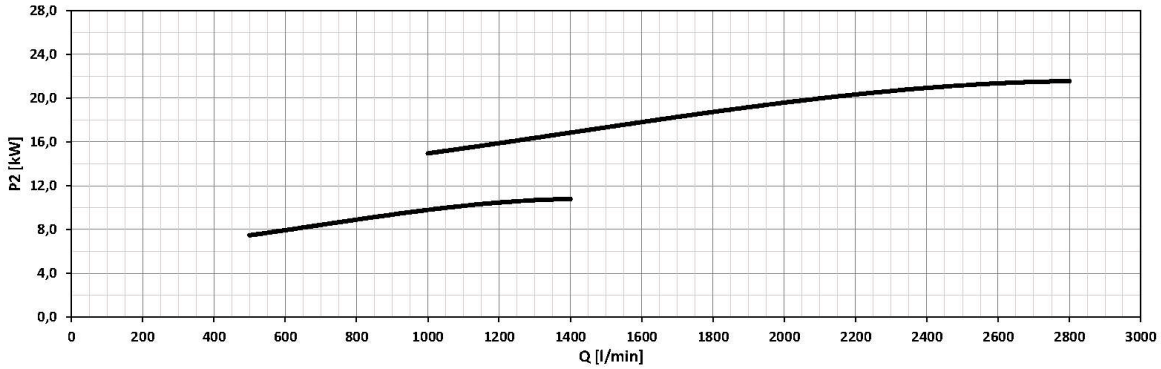


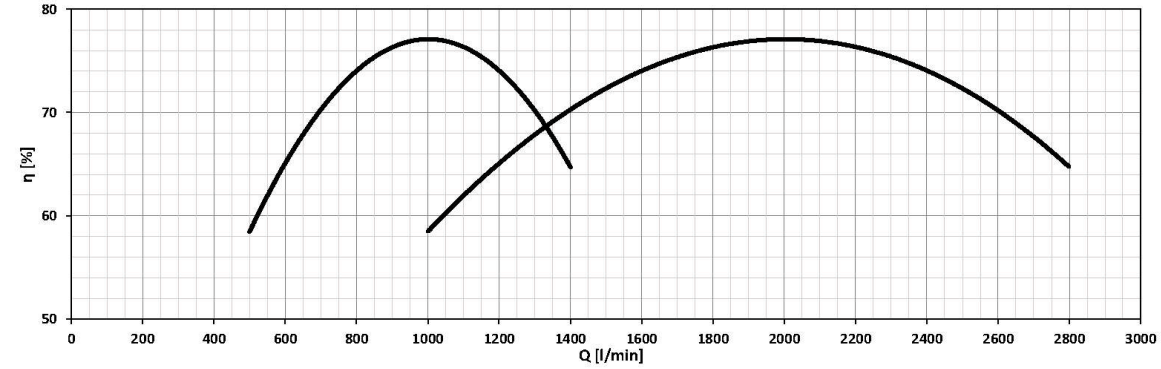




2GP(E) EVMS 64 2-0/11

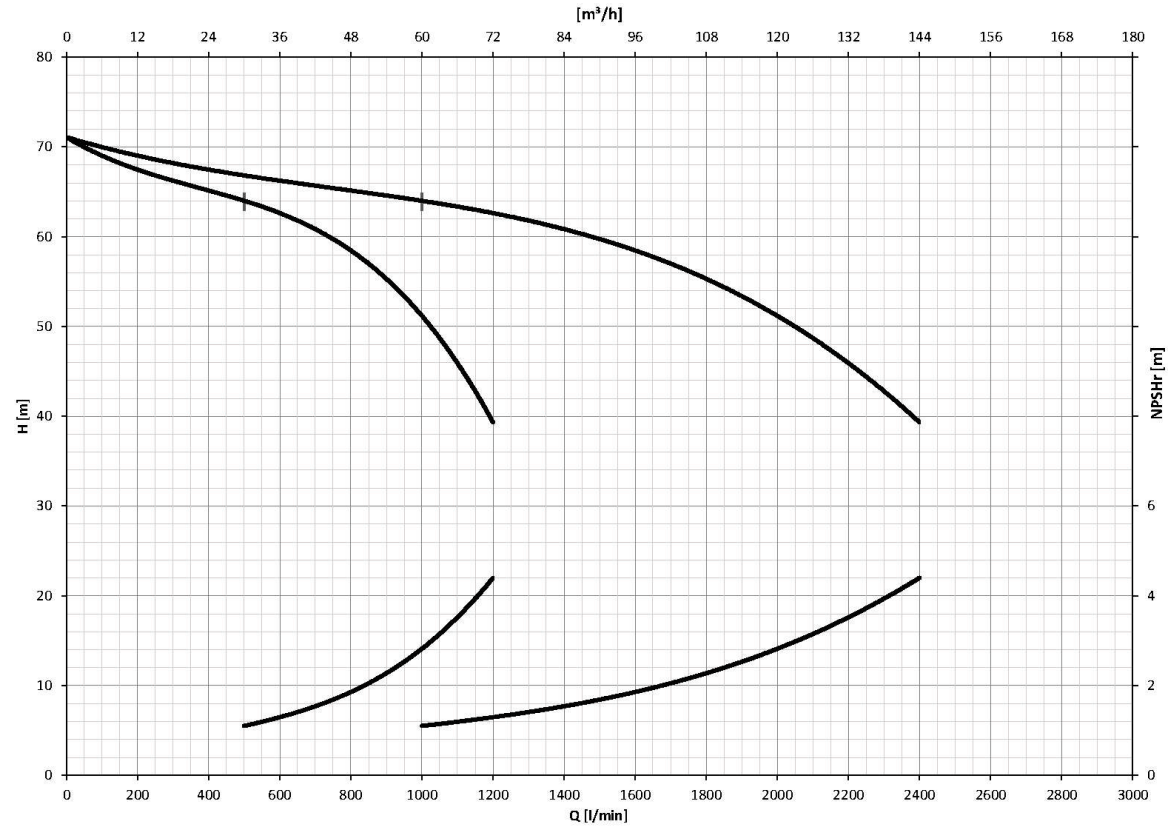


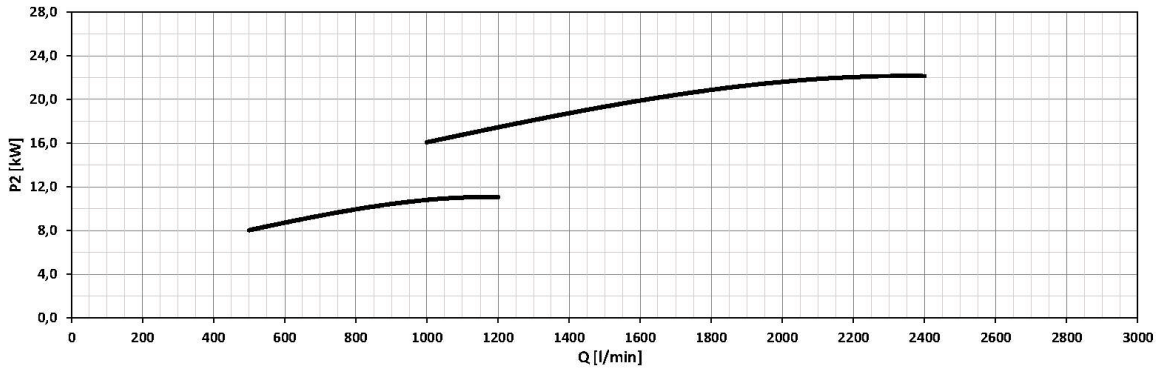


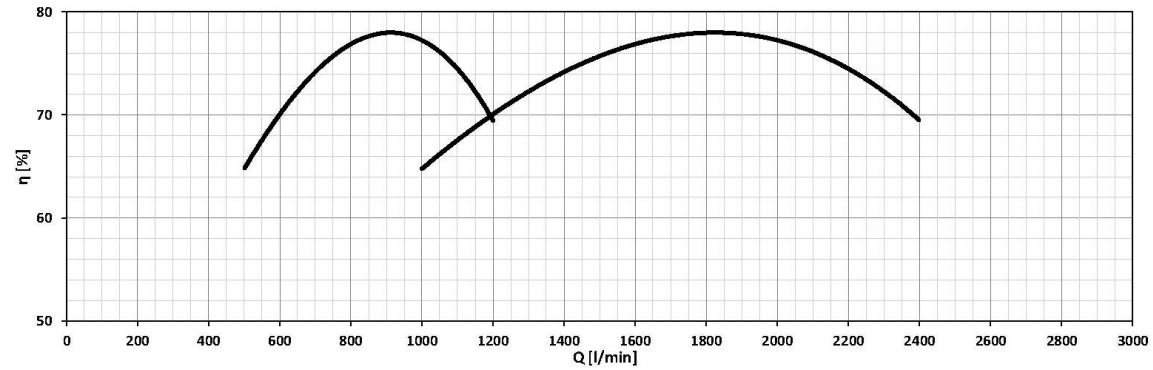


PERFORMANCE CURVE GP-GPE

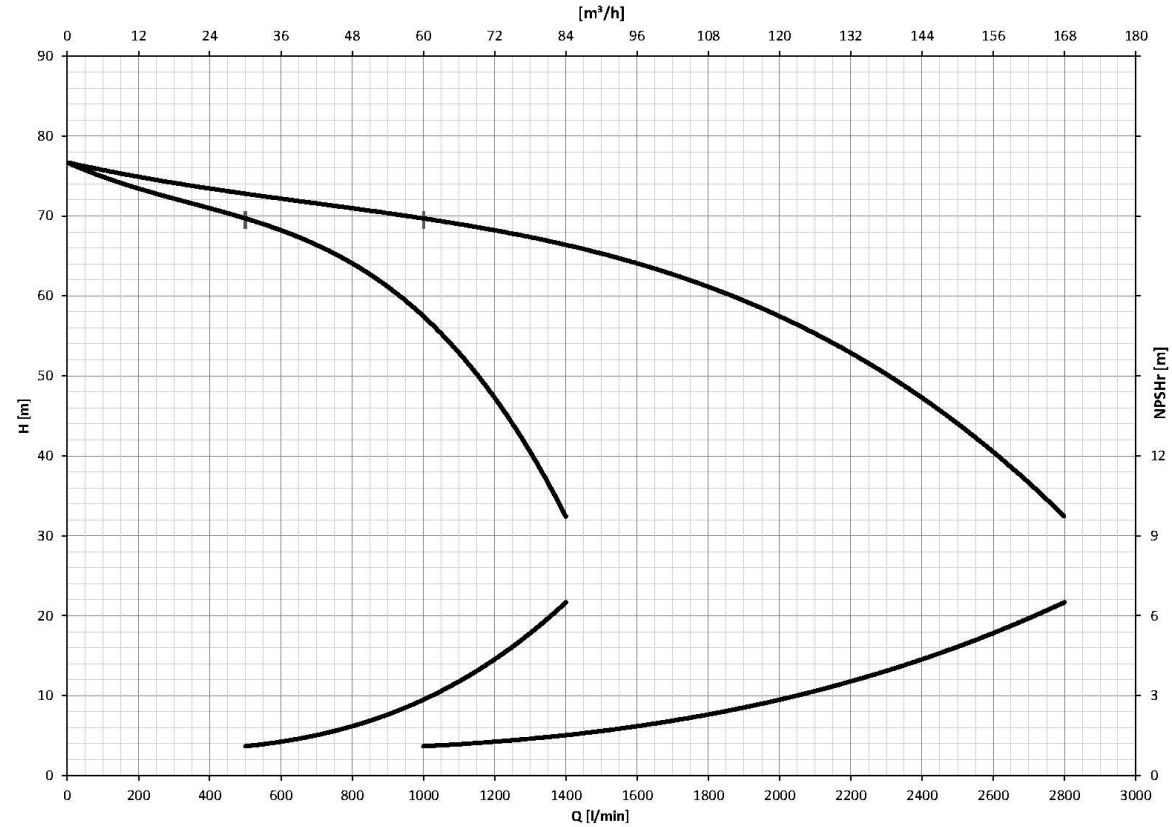
2GP(E) EVMS 64 3-3/15

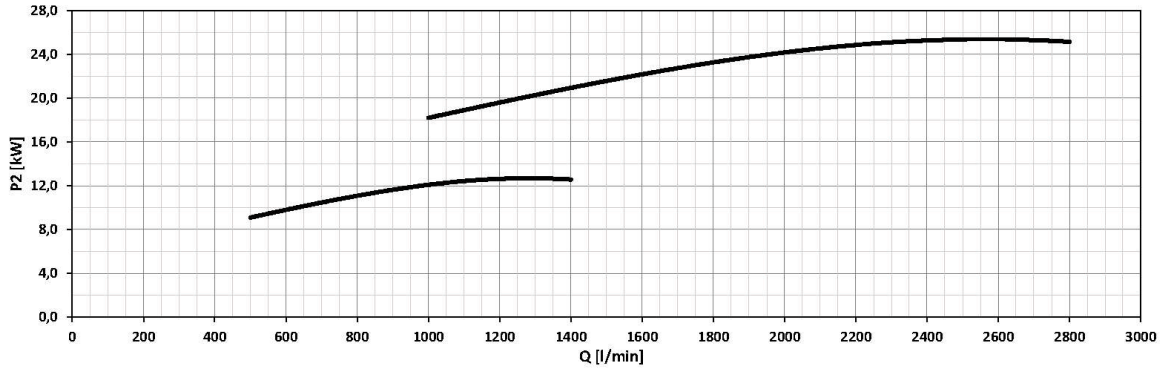


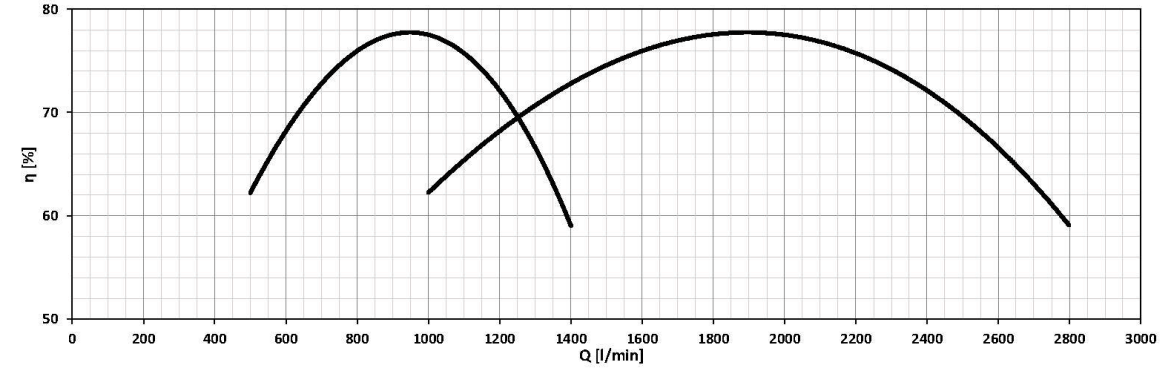




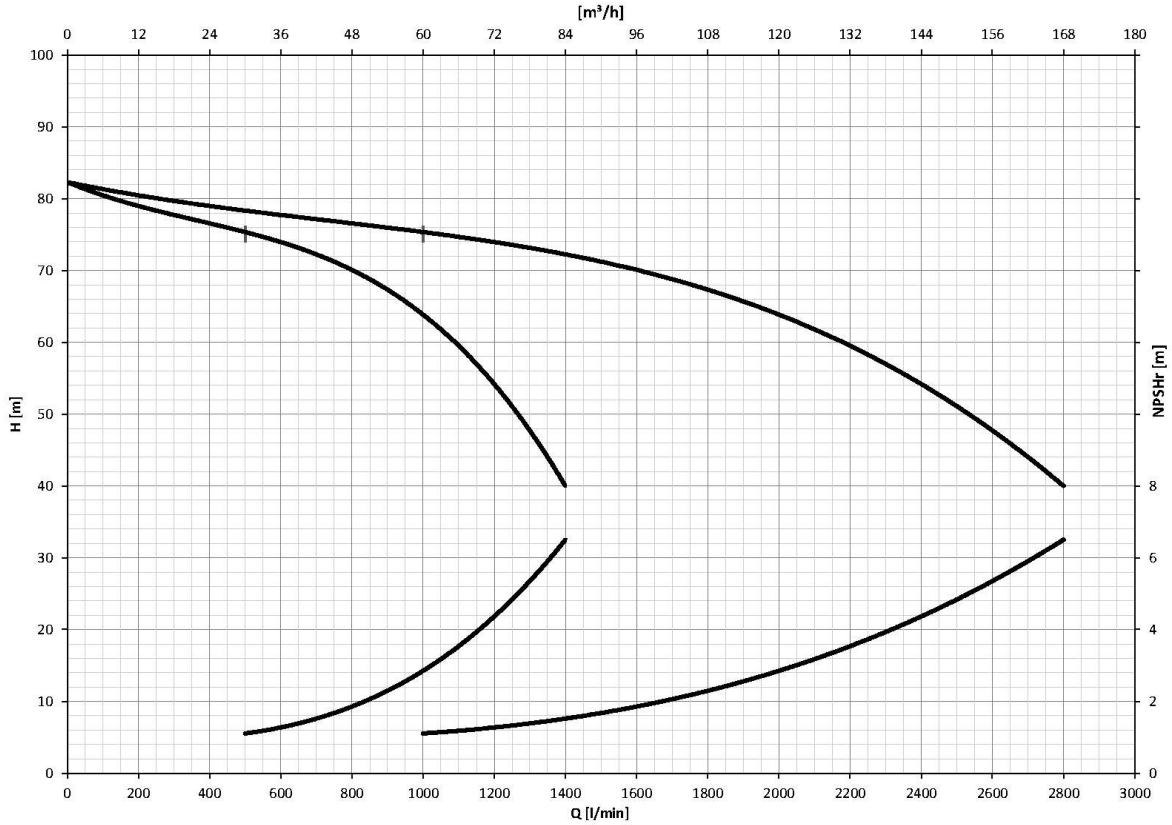
2GP(E) EVMS 64 3-2/15

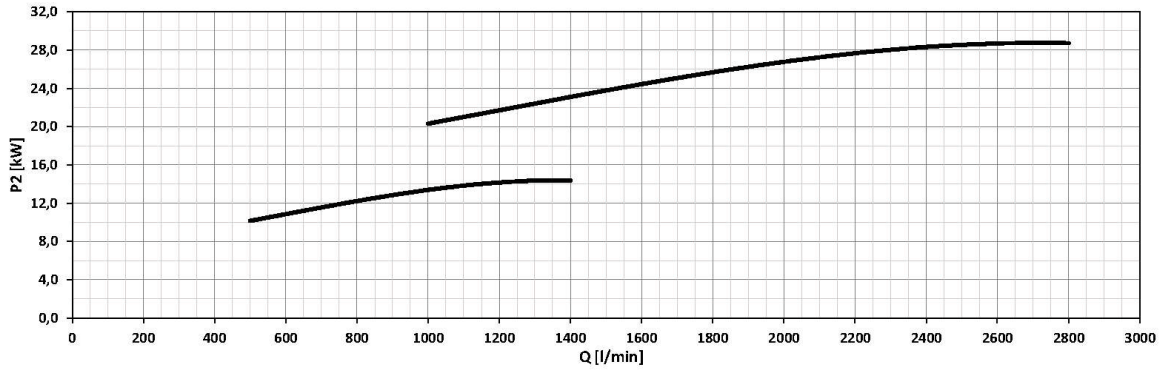


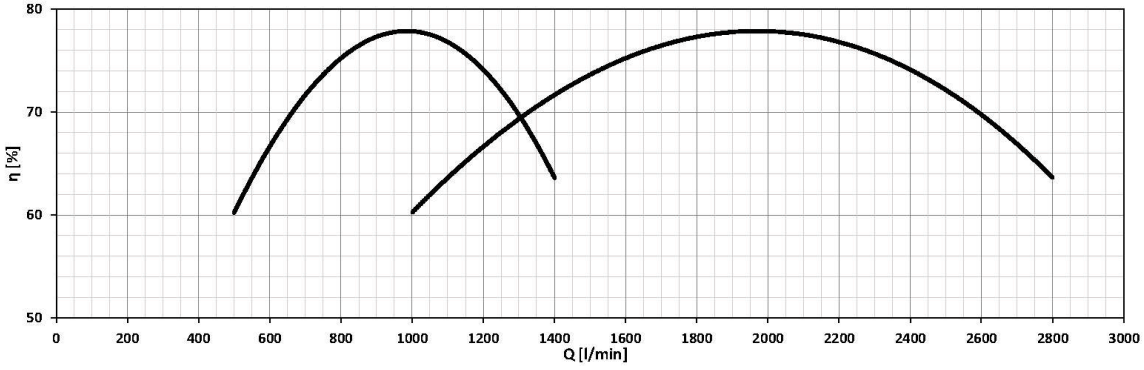




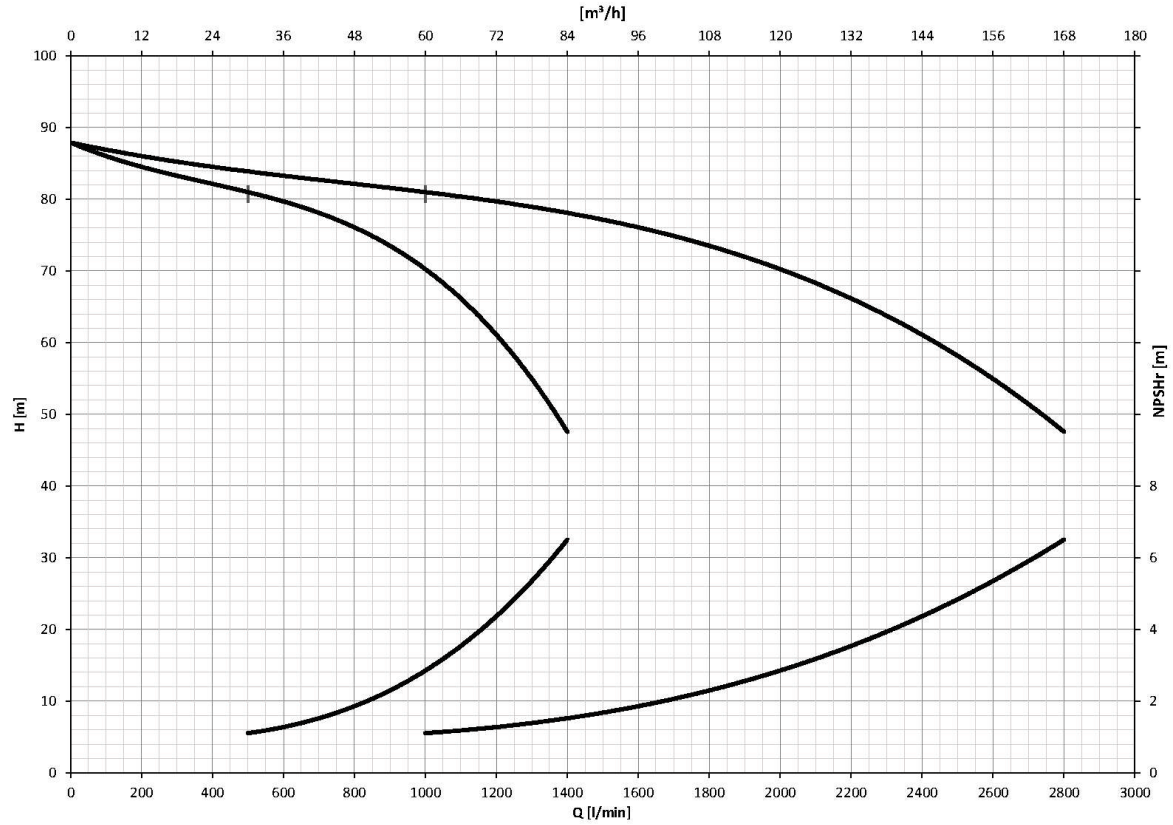
2GP(E) EVMS 64 3-1/15

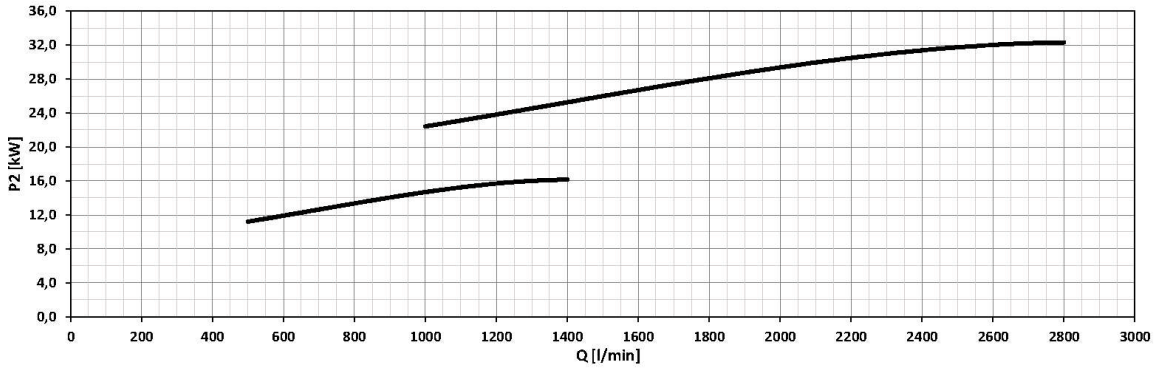


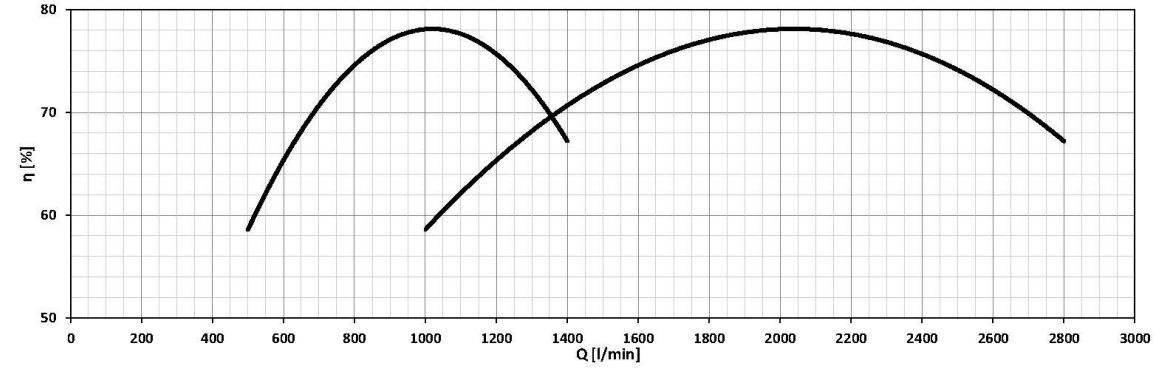




2GP(E) EVMS 64 3-0/18.5

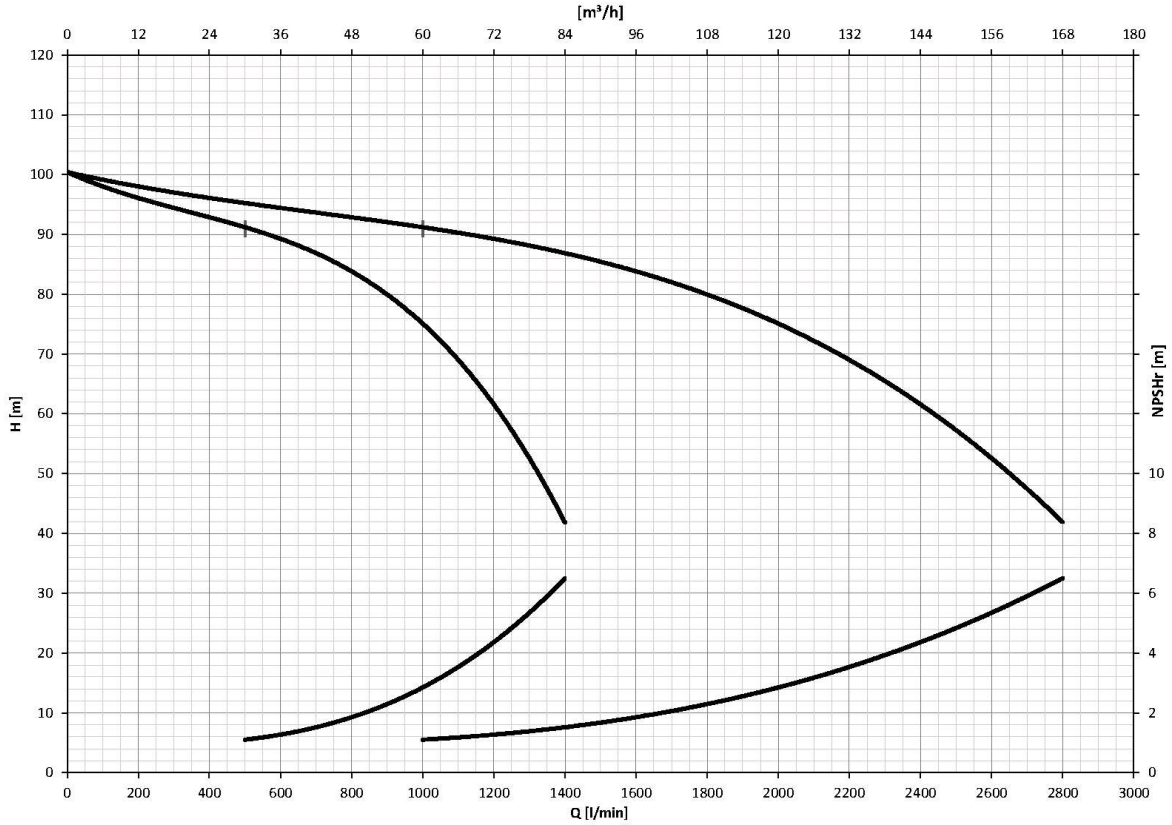


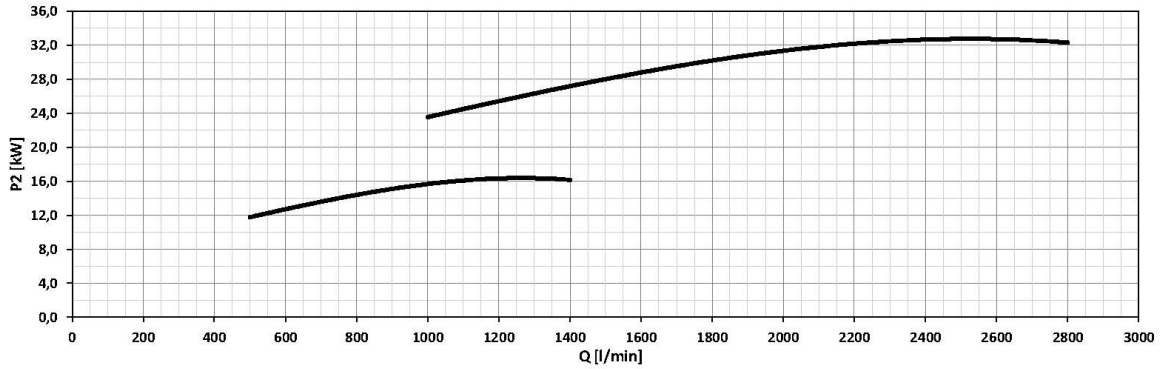


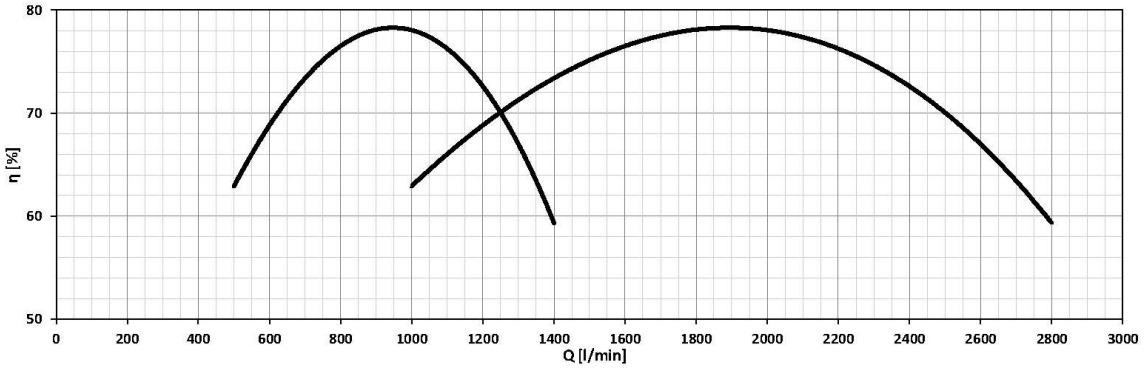


PERFORMANCE CURVE GP-GPE

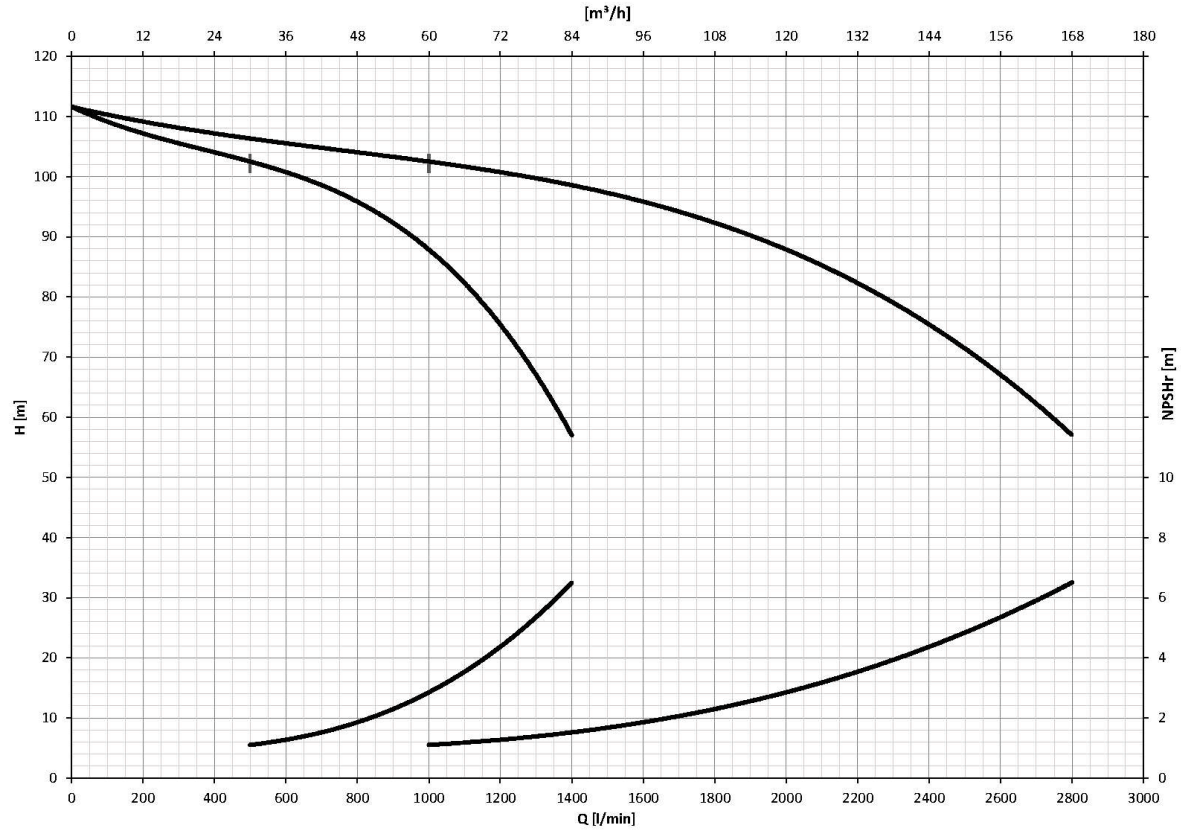
2GP(E) EVMS 64 4-3/18.5

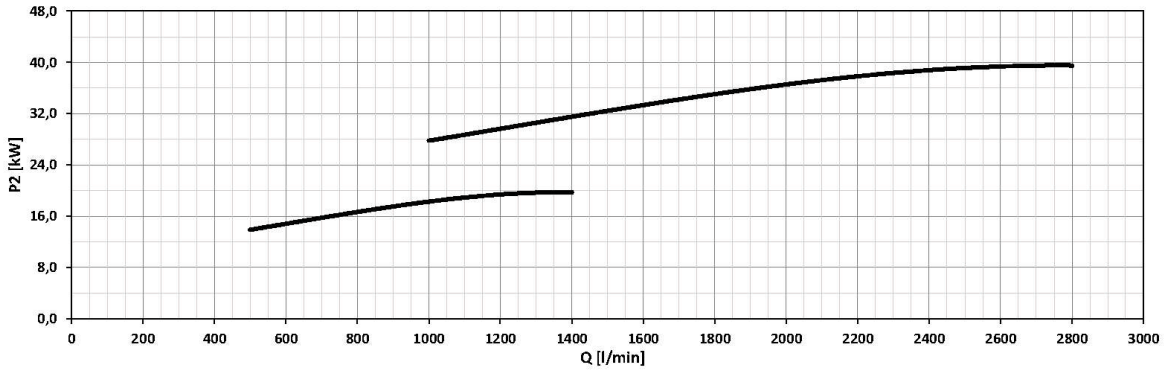


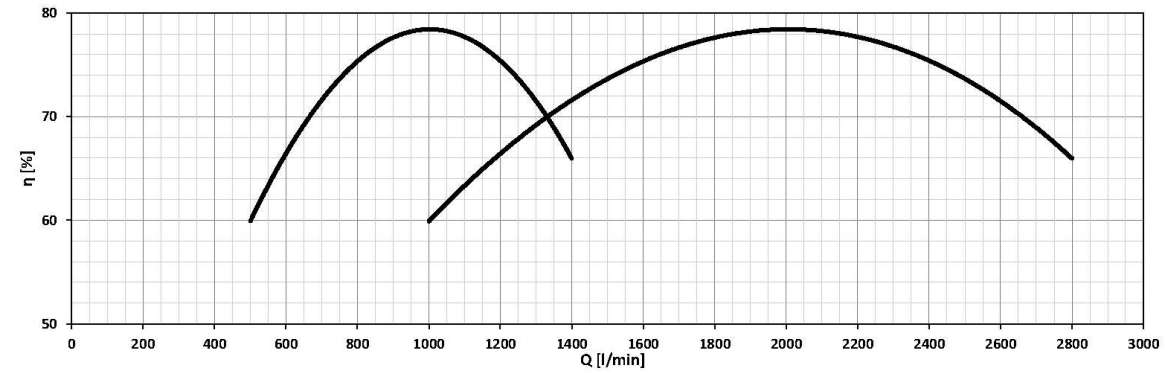




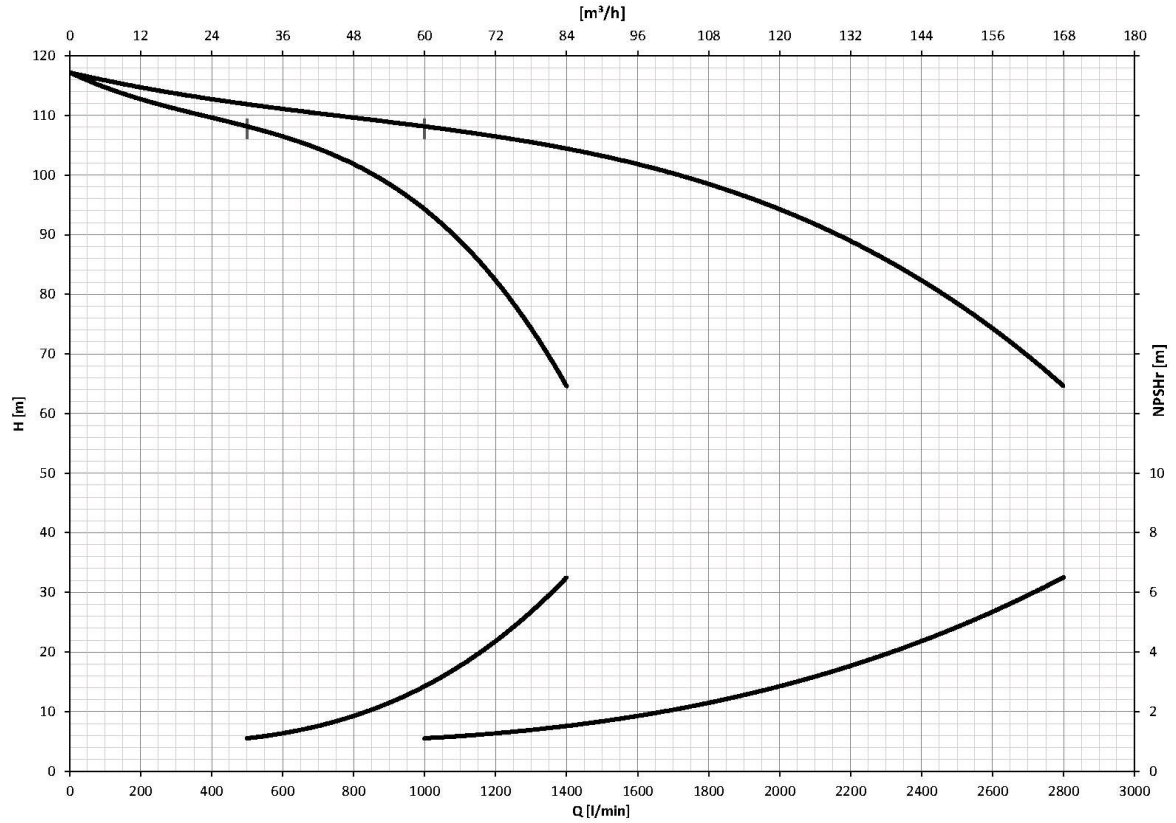
2GP(E) EVMS 64 4-1/22

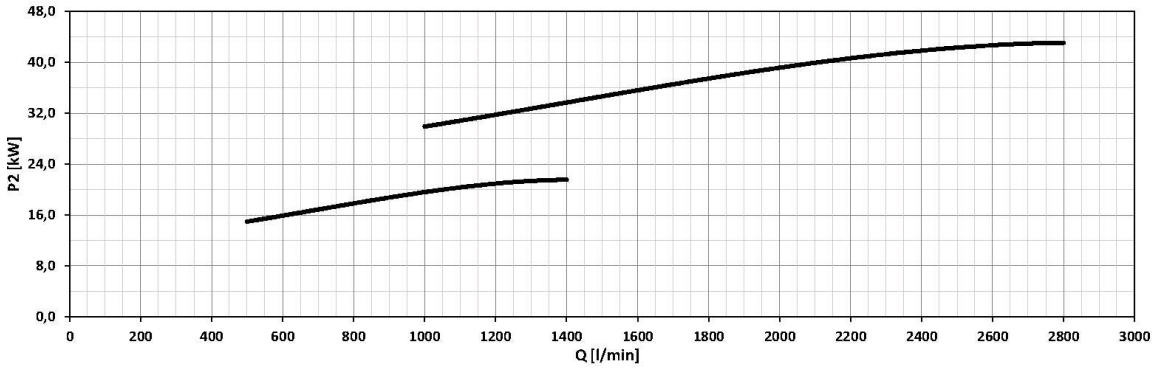


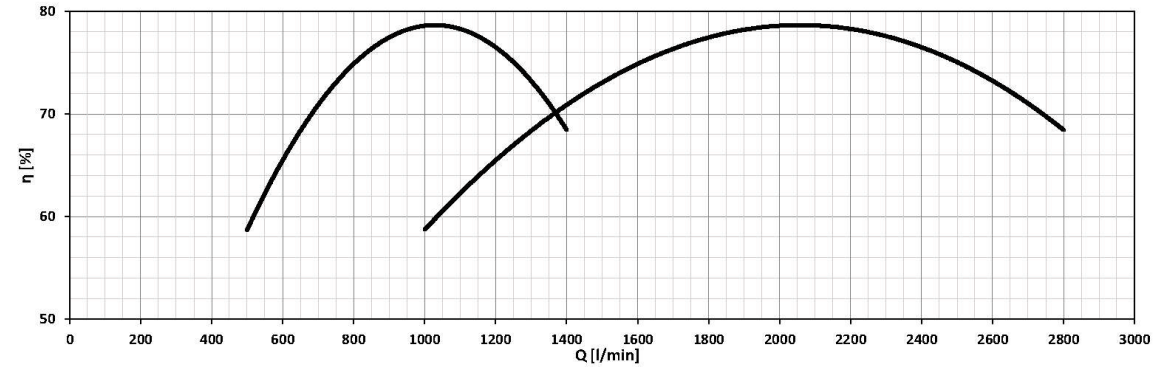




2GP(E) EVMS 64 4-0/22







CURVE SPECIFICATION 3GP(E)

Minimun efficency index (MEI)

The specifications below qualify the curves shown on the following pages.

Tolerances according to ISO 9906 Annex A
The curves refer to effective speed of asynchronous motors at 50 Hz
Measurements were carried out with clean water at 20°C of temperature and with a kinematic viscosity of ν = 1 mm2/s (1 cSt)
The NPSH curve is an average curve obtained in the same conditions of performance curves.
The continuous curves indicate the recommended working range. The dotted curve is only a guide.
In order to avoid the risk of over-heating, the pumps should not be used at a flow rate below 10% of best efficiency point.

Symbols explanation:

Q = volume flow rate
H = total head
P2 = pump power input (shaft power)
η = pump efficiency
NPSH = net positive suction head required by the pump
MEI = minimum efficiency index

The minimum efficiency index (MEI) is a misure of the quality of a pump size respect to its mean efficiency.
The minimum efficiency index is based on the hydraulic efficiency and on the head at the best efficiency point.

Minimum efficiency index (MEI)

Pump Type	MEI *
EVMS(.)3	> 0.70
EVMS(.)5	> 0.70
EVMS(.)10	> 0.70
EVMS(.)15	> 0.70
EVMS(.)20	> 0.70
EVM(.)32	> 0.40
EVM(.)45	> 0.70
EVM(.)64	> 0.70

The values refer to the individual pumps

SELECTION CHART 3GP(E) EVMS(.) 3-5

Model	Motor		Maximum working pressure (MPa)	Q=Capacity							
				l/min 0	60	90	120	180	225	300	390
	kW	HP		m³/h 0	3.6	5.4	7.2	10.8	13.5	18.0	23.4
				H=Total manometric head in meters							
3GP(E) EVMS(.)3 7/0.75	0.75 + 0.75 + 0.75	1 + 1 + 1		51.5	49.5	47.5	45	38.3	29.2	-	-
3GP(E) EVMS(.)3 9/1.1	1.1 + 1.1 + 1.1	1.5 + 1.5 + 1.5		66.5	63.5	61	58	49	37.6	-	-
3GP(E) EVMS(.)3 10/1.1	1.1 + 1.1 + 1.1	1.5 + 1.5 + 1.5		73.5	70.5	68.0	64.5	54.5	41.5	-	-
3GP(E) EVMS(.)3 16/1.5	1.5 + 1.5 + 1.5	2 + 2 + 2		118.0	113.0	109	103.0	87.5	67.0	-	-
3GP(E) EVMS(.)3 19/2.2	2.2 + 2.2 + 2.2	3 + 3 + 3		140.0	134.0	129	123.0	104.0	79.5	-	-
3GP(E) EVMS(.)5 4/0,75	0.75 + 0.75 + 0.75	1 + 1 + 1		37.9	-	-	35.9	34.1	31.9	27.6	20.4
3GP(E) EVMS(.)5 5/1,1	1.1 + 1.1 + 1.1	1.5 + 1.5 + 1.5	1.6	47.5	-	-	45.0	42.5	39.9	34.5	25.5
3GP(E) EVMS(.)5 6/1,5	1.5 + 1.5 + 1.5	2 + 2 + 2		57.0	-	-	54.0	51.0	48.0	41.5	30.6
3GP(E) EVMS(.)5 7/1.5	1.5 + 1.5 + 1.5	2 + 2 + 2		66.5	-	-	63	59.5	56	48.5	35.7
3GP(E) EVMS(.)5 8/2.2	2.2 + 2.2 + 2.2	3 + 3 + 3		76	-	-	72	68	64	55	41
3GP(E) EVMS(.)5 9/2.2	2.2 + 2.2 + 2.2	3 + 3 + 3		85.5	-	-	81	77	72	62	46
3GP(E) EVMS(.)5 11/2,2	2.2 + 2.2 + 2.2	3 + 3 + 3		104.0	-	-	99	94	88	76	56
3GP(E) EVMS(.)5 15/3,0	3.0 + 3.0 + 3.0	4 + 4 + 4		142.0	-	-	135	128	120	104	77

SELECTION CHART 3GP(E) EVMS(.) 10-15-20

Model	Motor		Maximum working pressure (MPa)	Q=Capacity													
				l/min 0	225	300	390	450	540	600	750	900	1050	1200	1350	1440
	kW	HP		m³/h 0	13,5	18,0	23,4	27,0	32,4	36,0	45,0	54,0	63,0	72,0	81,0	86,4
				H=Total manometric head in meters													
3GP(E) EVMS(.)10 4/2.2	2.2 + 2.2 + 2.2	3 + 3 + 3		43,6	42,4	41,7	39,5	37,3	33,2	29,8	19,6	-	-	-	-	-
3GP(E) EVMS(.)10 6/2.2	2.2 + 2.2 + 2.2	3 + 3 + 3		65,5	63,5	62,5	59	56	50	45	29,5	-	-	-	-	-
3GP(E) EVMS(.)10 7/3.0	3.0 + 3.0 + 3.0	4 + 4 + 4		76,5	74	73	69	65,5	58	52	34,4	-	-	-	-	-
3GP(E) EVMS(.)10 8/3.0	3.0 + 3.0 + 3.0	4 + 4 + 4		87,0	84,5	83,5	79	74,5	66,5	59,5	39,3	-	-	-	-	-
3GP(E) EVMS(.)10 11/4.0	4.0 + 4.0 + 4.0	5.5 + 5.5 + 5.5		120	116	115	109	103	91,5	82	54	-	-	-	-	-
3GP(E) EVMS(.)10 14/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5		153	148	146	138	131	116	104	68,5	-	-	-	-	-
3GP(E) EVMS(.)15 4/4.0	4.0 + 4.0 + 4.0	5.5 + 5.5 + 5.5		59	-	-	55	54,5	53	52	50	46,5	41	33,6	-	-
3GP(E) EVMS(.)15 5/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5		73,5	-	-	69	68	66	65	62	58	51	42	-	-
3GP(E) EVMS(.)15 6/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5	1,6	88,5	-	-	82,5	81,5	79,5	78	74,5	69,5	61	50,5	-	-
3GP(E) EVMS(.)15 7/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		103	-	-	96,5	95	92,5	91	87	81	71,5	58,5	-	-
3GP(E) EVMS(.)15 8/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		118	-	-	110	109	106	104	99,5	92,5	81,5	67	-	-
3GP(E) EVMS(.)15 9/11	11 + 11 + 11	15 + 15 + 15		133	-	-	124	122	119	117	112	104	92	75,5	-	-
3GP(E) EVMS(.)15 10/11	11 + 11 + 11	15 + 15 + 15		147	-	-	138	136	132	130	124	116	102	84	-	-
3GP(E) EVMS(.)20 4/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5		67,4	-	-	-	-	61	60	58	55,4	52,3	47,3	39,8	34,9
3GP(E) EVMS(.)20 6/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		101	-	-	-	-	91,2	90	87	83,1	78,5	71	59,7	52,3
3GP(E) EVMS(.)20 8/11	11 + 11 + 11	15 + 15 + 15		135	-	-	-	-	122	120	116	111	105	95	80	70

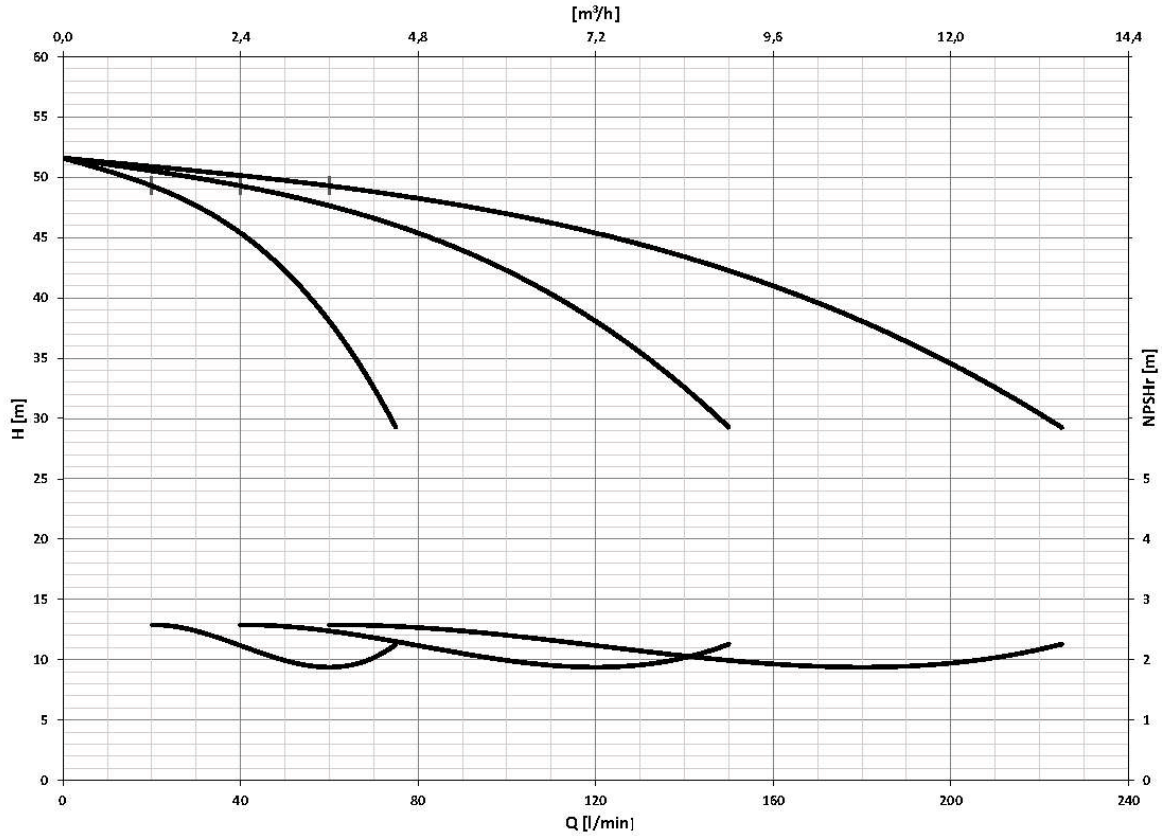
SELECTION CHART 3GP(E) EVM(.) 32-45-64

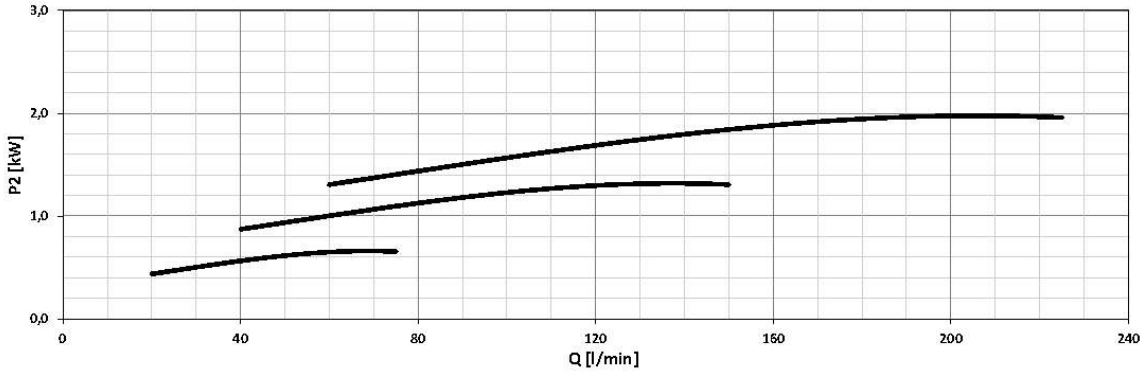
Model	Motor		Maximum working pressure [Mpa]	Q=Capacity									
				l/min 0	600	1050	1500	1800	2100	2700	3000	3600	4200
	kW	HP		m³/h 0	36	63	90	108	126	162	180	216	252
				H=Total manometric head in meters									
3GP(E) EVM(.)32 3-3/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5	1.6	59.5	55.5	47.5	35.2	26.1	-	-	-	-	-
3GP(E) EVM(.)32 3-1/5.5	5.5 + 5.5 + 5.5	7.5 + 7.5 + 7.5		68	62	55	44.5	35.2	24.5	-	-	-	-
3GP(E) EVM(.)32 4-3/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		84	77	67	51.5	39.4	-	-	-	-	-
3GP(E) EVM(.)32 4-1/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		92	83.5	74.5	61	48.5	34.2	-	-	-	-
3GP(E) EVM(.)32 5-3/11	11 + 11 + 11	15 + 15 + 15		106	100	89	70	54	37.3	-	-	-	-
3GP(E) EVM(.)45 2-0/7.5	7.5 + 7.5 + 7.5	10 + 10 + 10		54	-	51.5	50	48	45	35.4	29.1	-	-
3GP(E) EVM(.)45 3-2/11	11 + 11 + 11	15 + 15 + 15		69	-	64	61	58	53	37.3	-	-	-
3GP(E) EVM(.)45 3-0/11	11 + 11 + 11	15 + 15 + 15		81	-	77.5	75	72.5	68	54	45	-	-
3GP(E) EVM(.)45 4-2/15	15 + 15 + 15	20 + 20 + 20		96	-	90	86	82	76	56	43	-	-
3GP(E) EVM(.)45 4-0/15	15 + 15 + 15	20 + 20 + 20		108	-	103	100	96.5	91	73	60.5	-	-
3GP(E) EVM(.)64 2-0/11	11 + 11 + 11	15 + 15 + 15		58.5	-	-	53.5	53	52	49	46.5	39.5	30.6
3GP(E) EVM(.)64 3-3/15	15 + 15 + 15	20 + 20 + 20		71	-	-	64	62.5	61	55.5	51	39.3	-
3GP(E) EVM(.)64 3-2/15	15 + 15 + 15	20 + 20 + 20		76.5	-	-	69.5	68	66.5	61.5	57.5	46.5	32.5
3GP(E) EVM(.)64 3-1/15	15 + 15 + 15	20 + 20 + 20		82.5	-	-	75	74	72.5	68	64	53.5	40
3GP(E) EVM(.)64 3-0/18.5	18.5 + 18.5 + 18.5	25 + 25 + 25		88	-	-	80.5	79.5	78	74	70.5	60.5	47.5
3GP(E) EVM(.)64 2-0/11	18.5 + 18.5 + 18.5	25 + 25 + 25		100	-	-	91	89	87	80.5	75.5	60.5	42
3GP(E) EVM(.)64 4-1/22	22 + 22 + 22	30 + 30 + 30		112	-	-	102	101	98.5	93	88	74.5	57
3GP(E) EVM(.)64 4-0/22	22 + 22 + 22	30 + 30 + 30		117	-	-	108	106	104	99	94.5	81.5	64.5

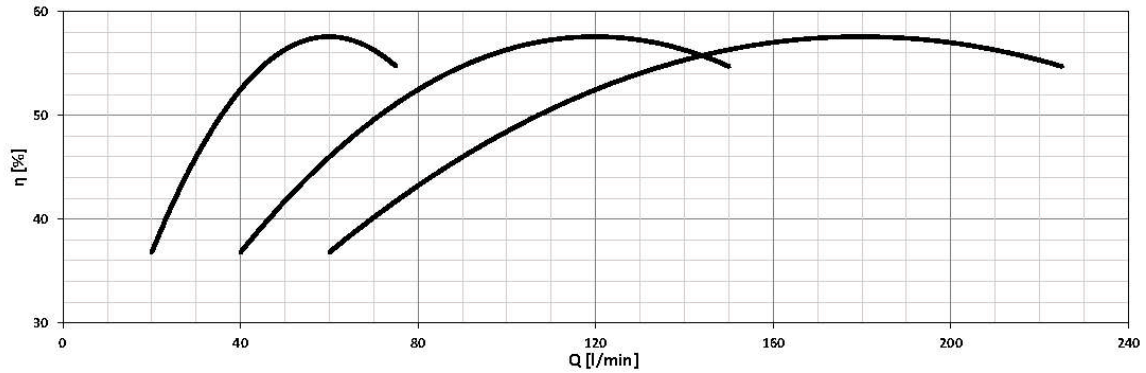
INTENTIONALLY EMPTY PAGE

PERFORMANCE CURVE 3GP(E)

3GP(E) EVMS 3 7/0.75

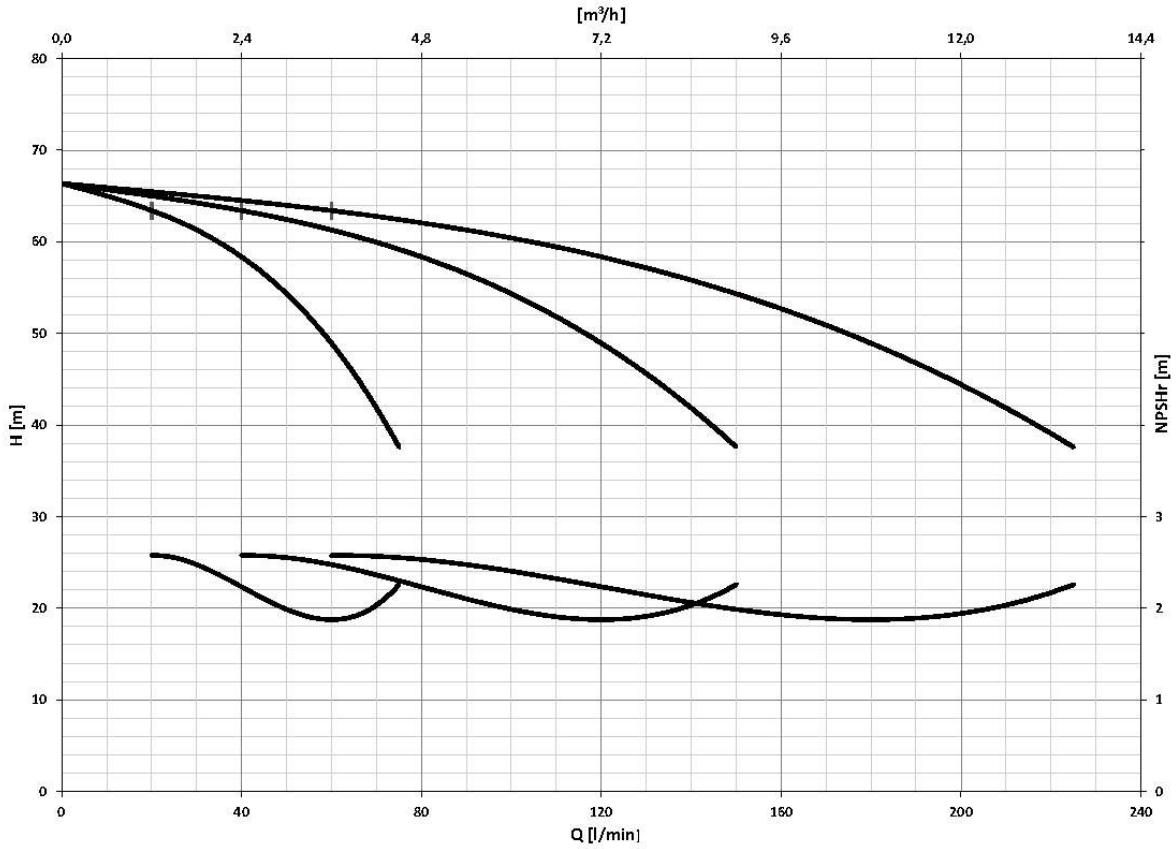


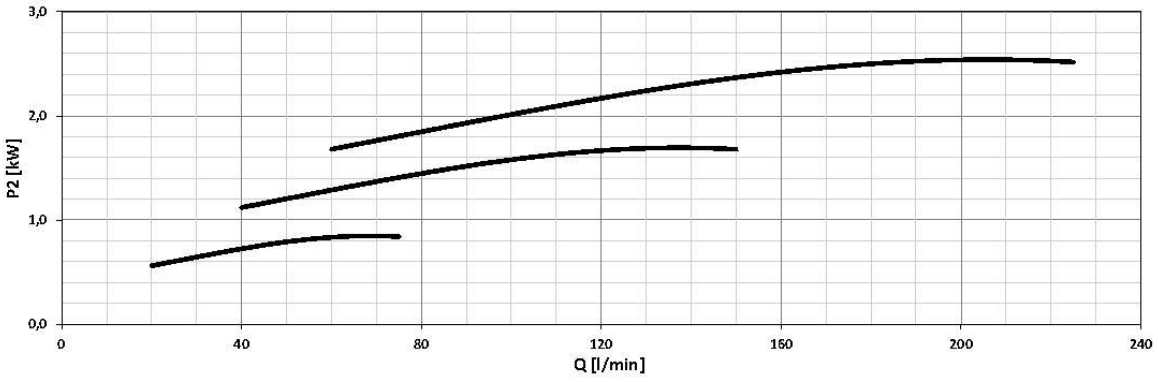


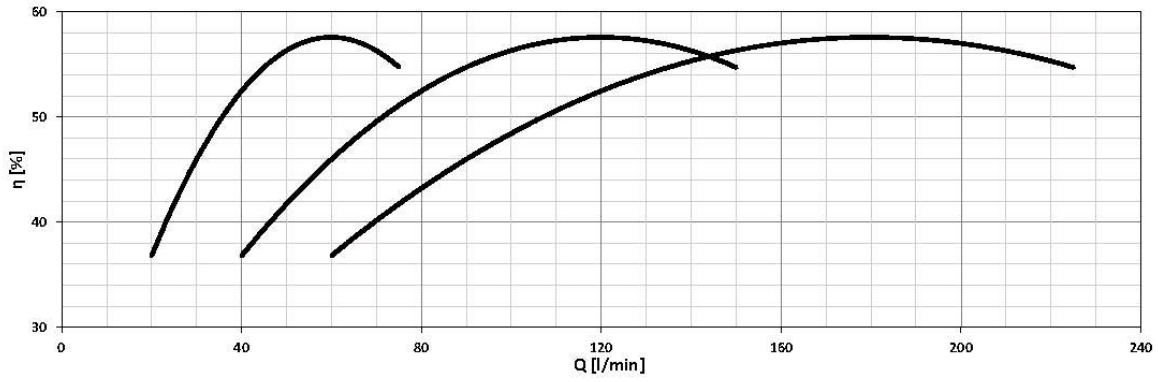


PERFORMANCE CURVE GP-GPE

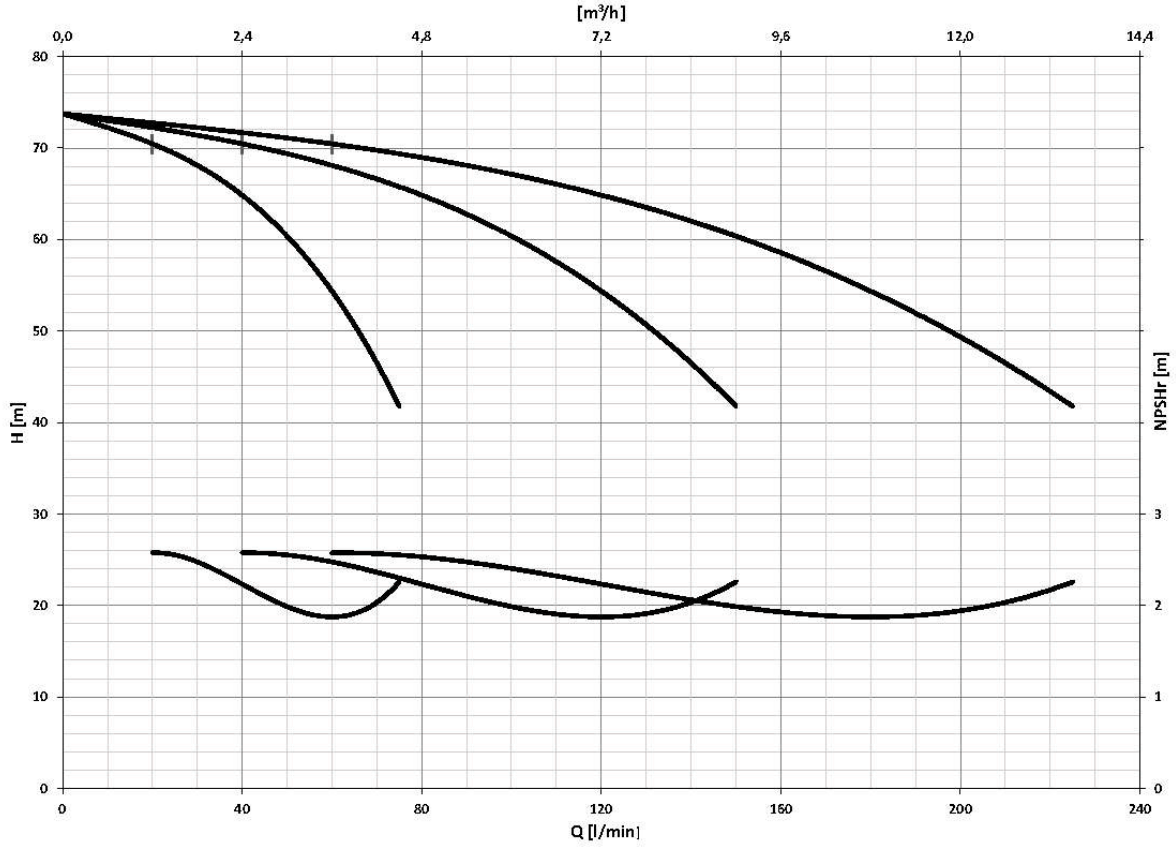
3GP(E) EVMS 3 9/1.1

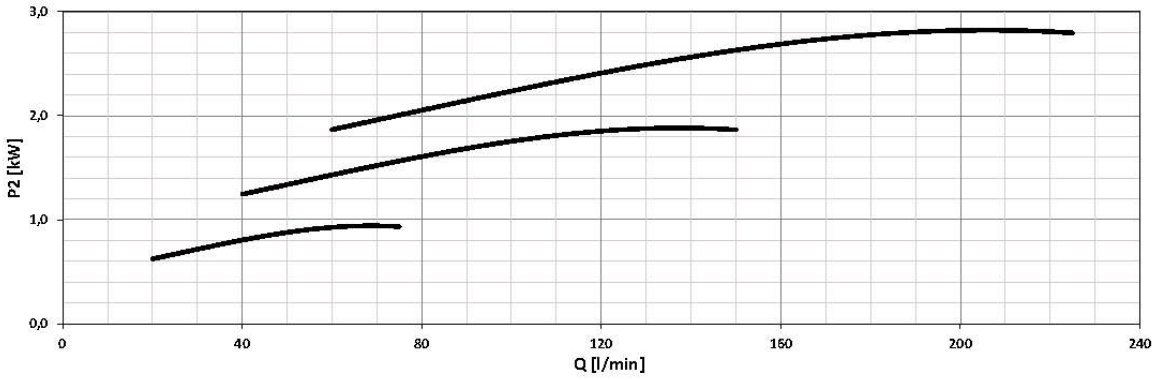


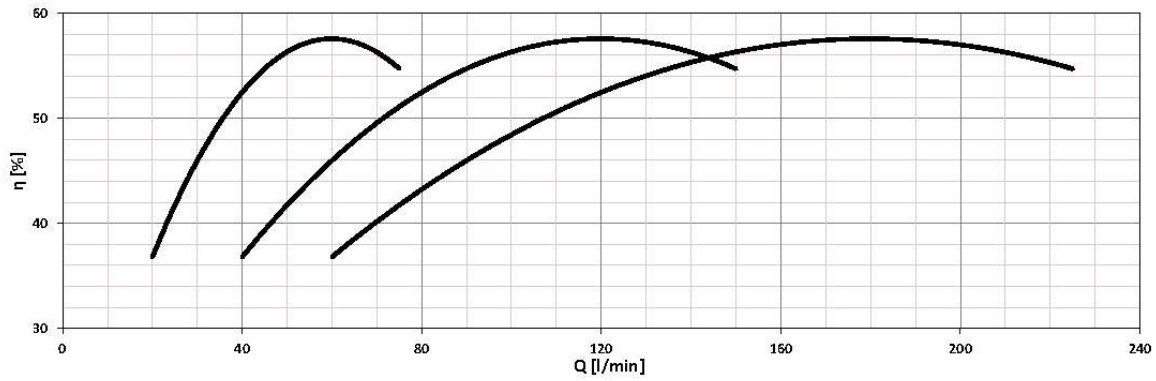




3GP(E) EVMS 3 10/1.1

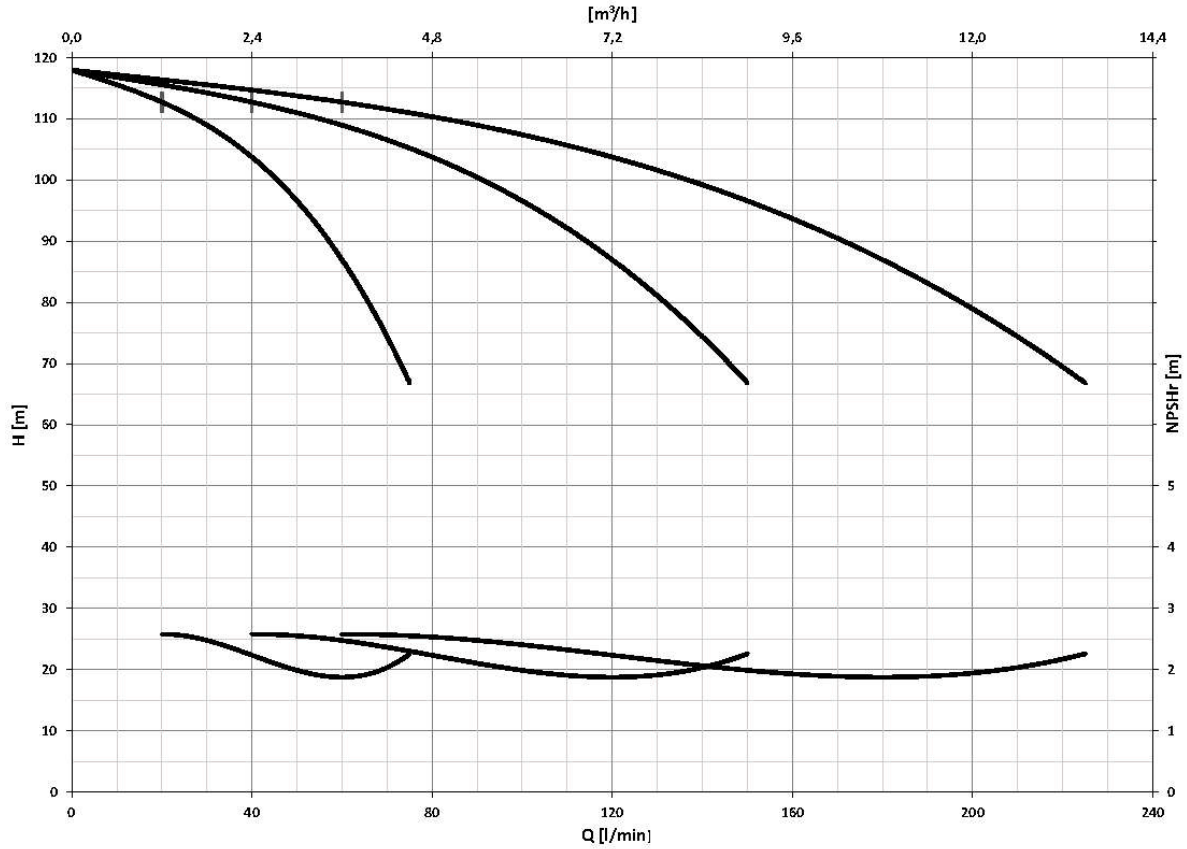


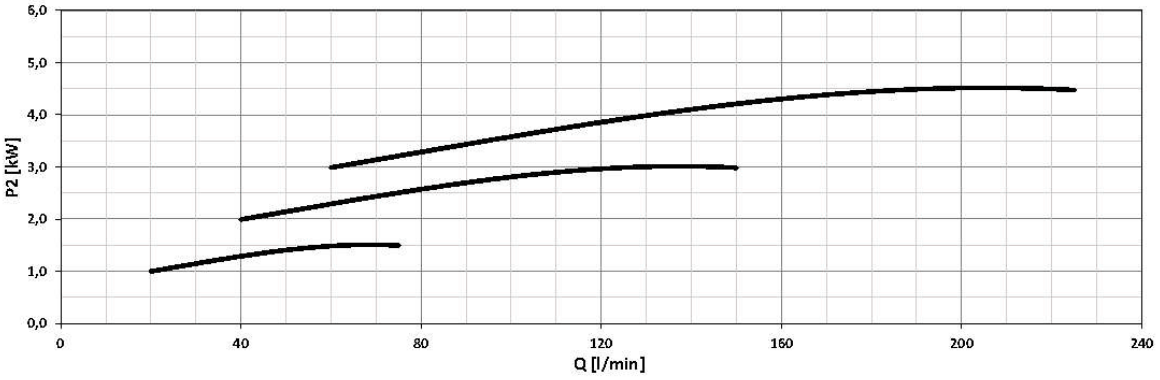


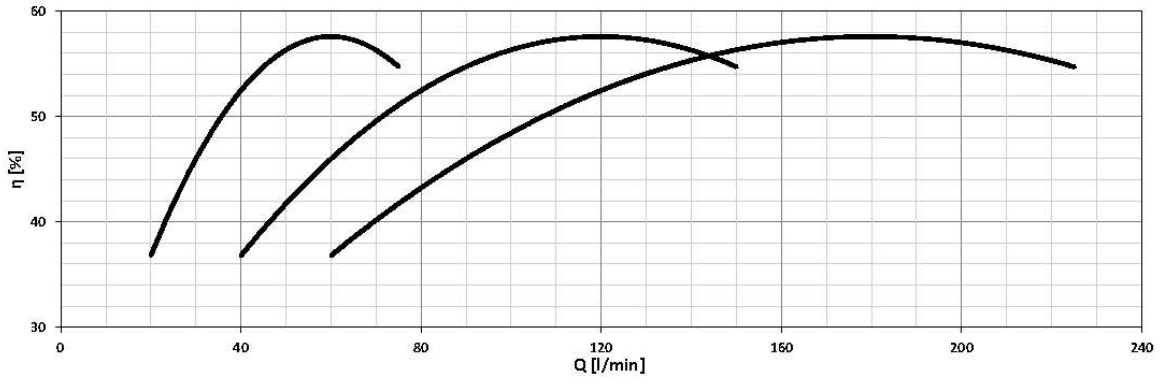


PERFORMANCE CURVE GP-GPE

3GP(E) EVMS 3 16/1.5

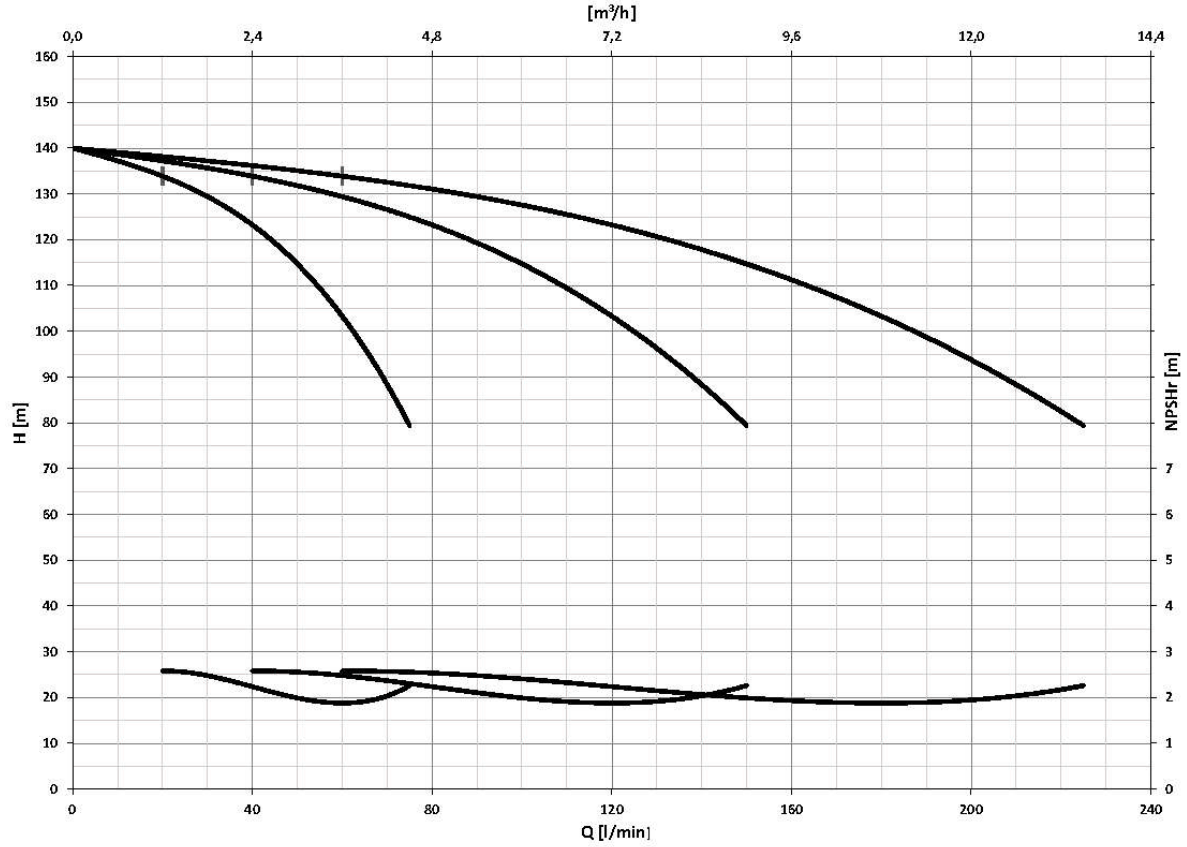


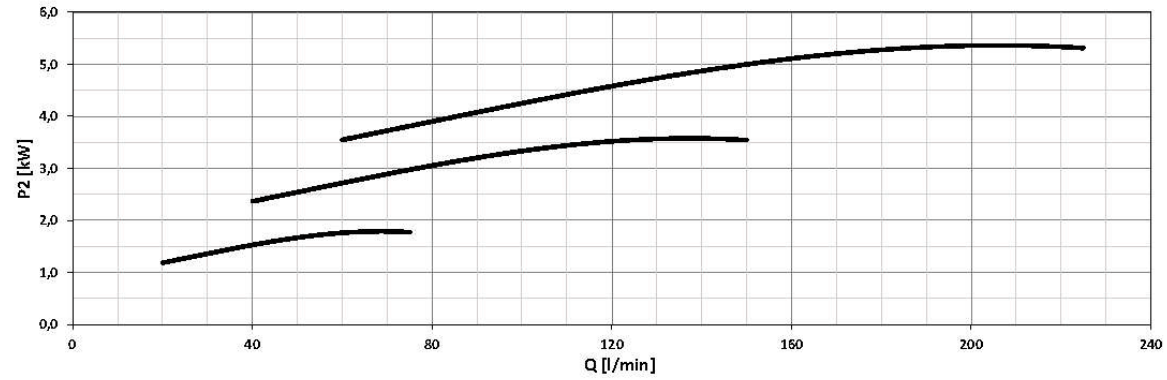


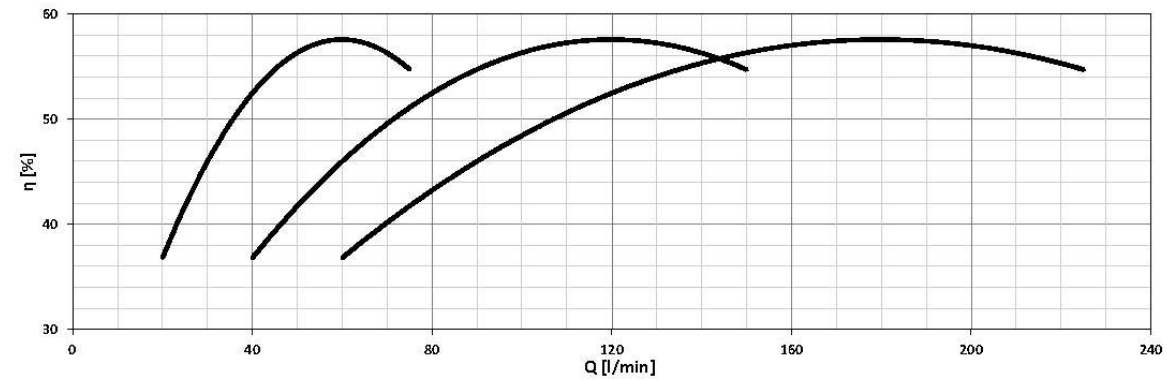


460

3GP(E) EVMS 3 19/2.2

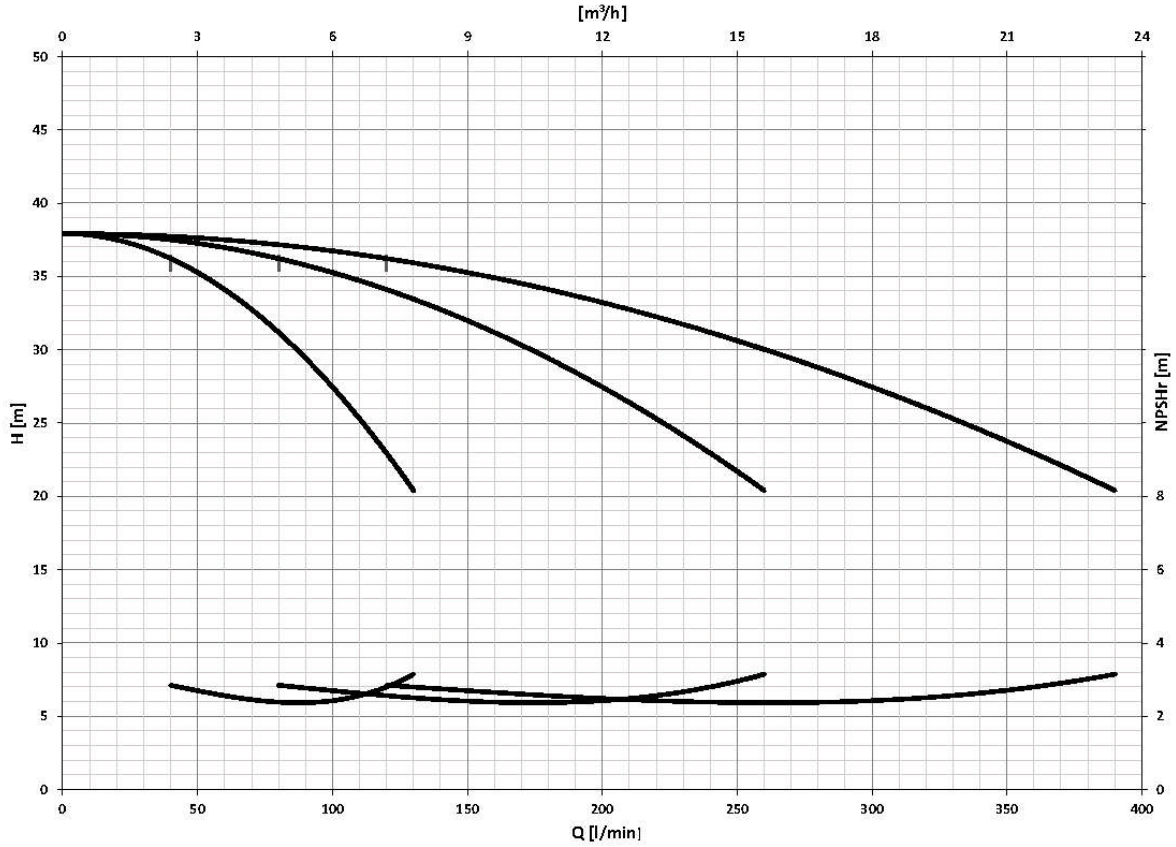


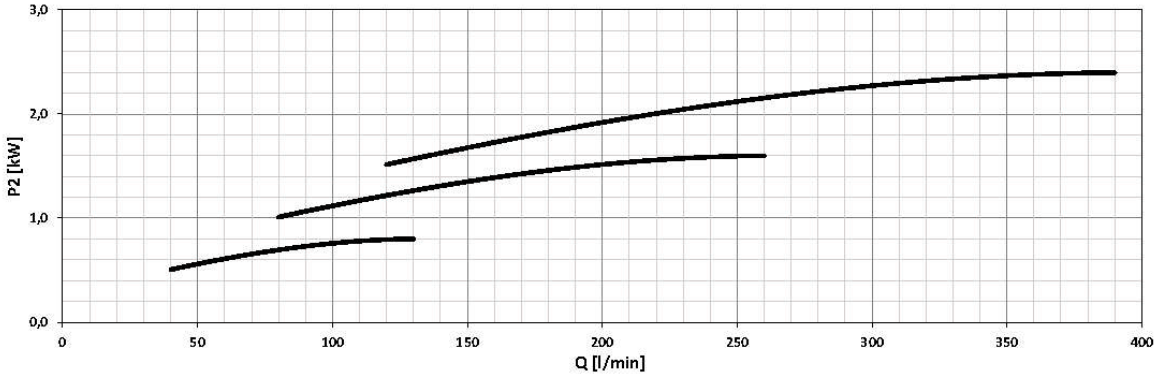


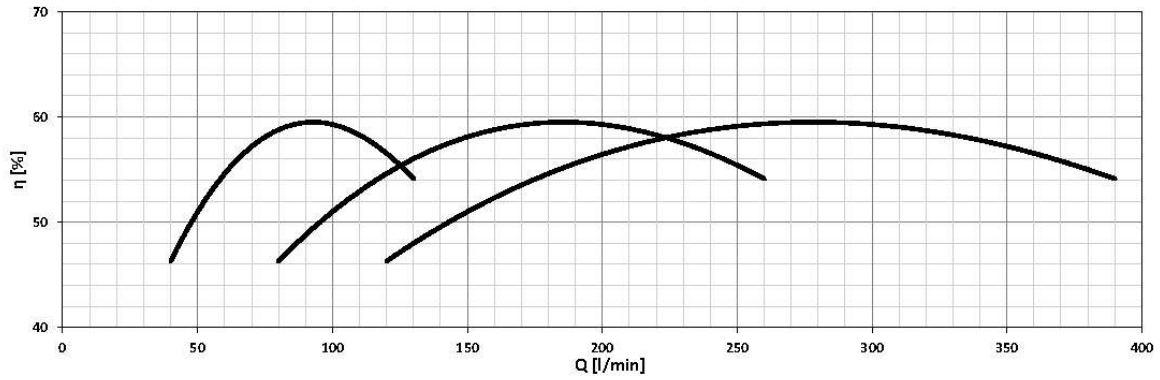


PERFORMANCE CURVE GP-GPE

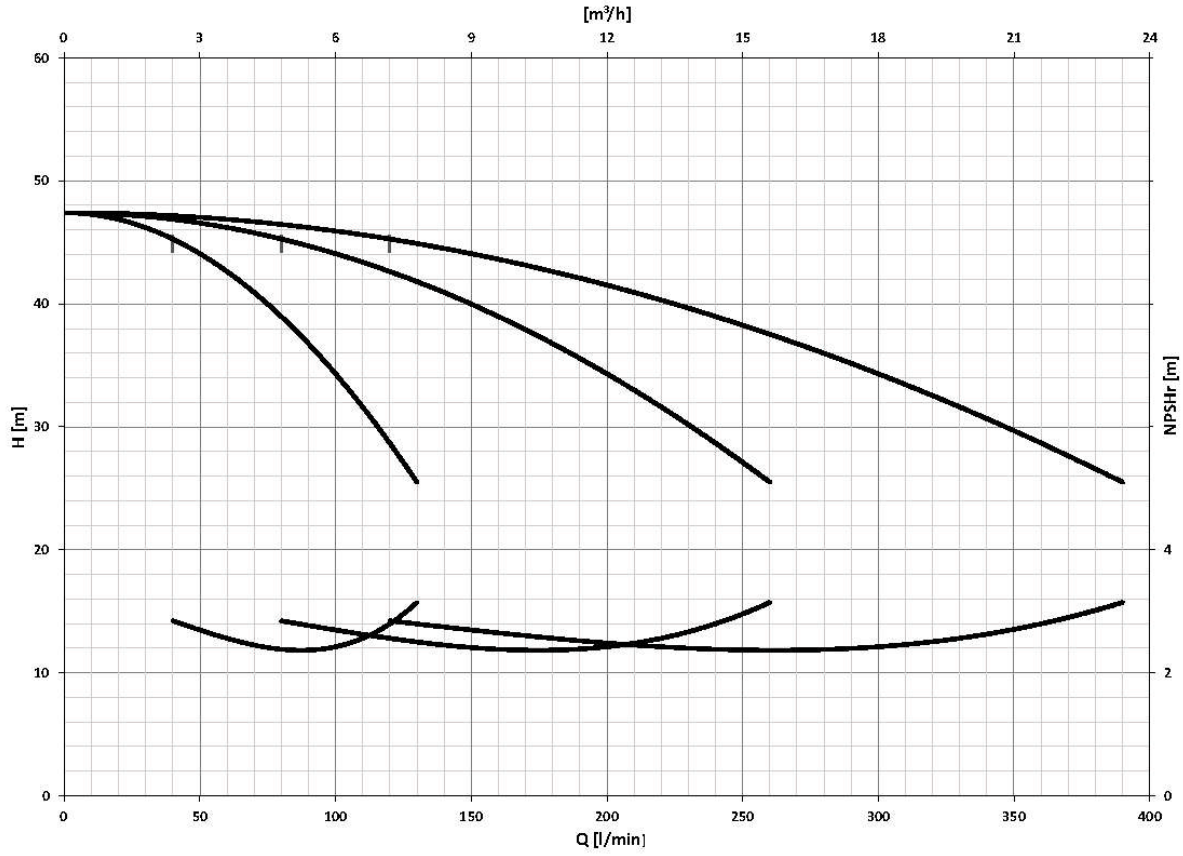
3GP(E) EVMS 5 4/0.75

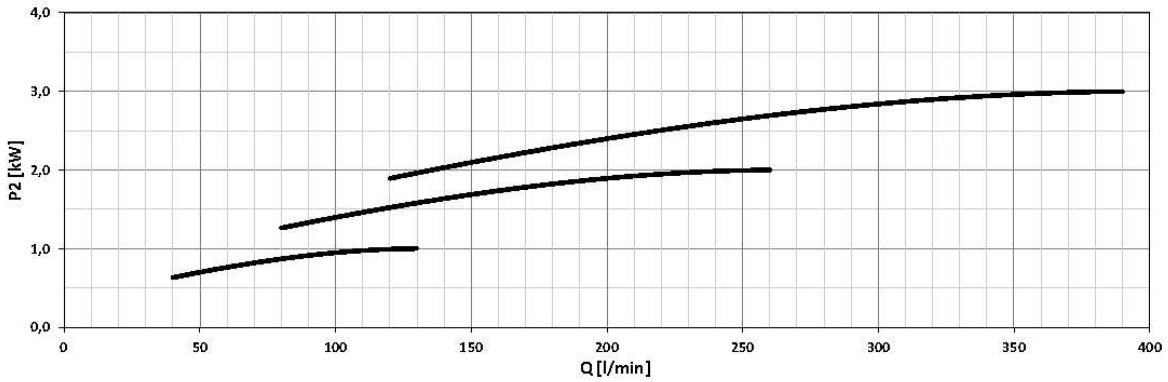


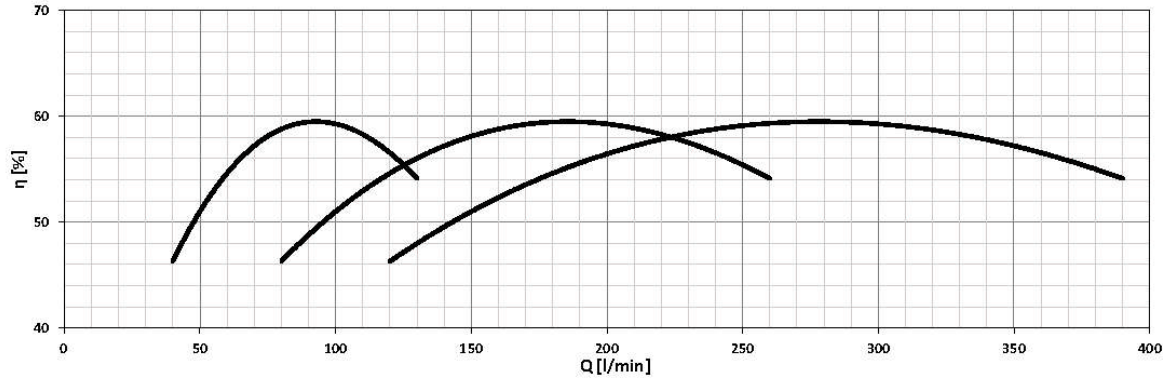




3GP(E) EVMS 5 5/1.1

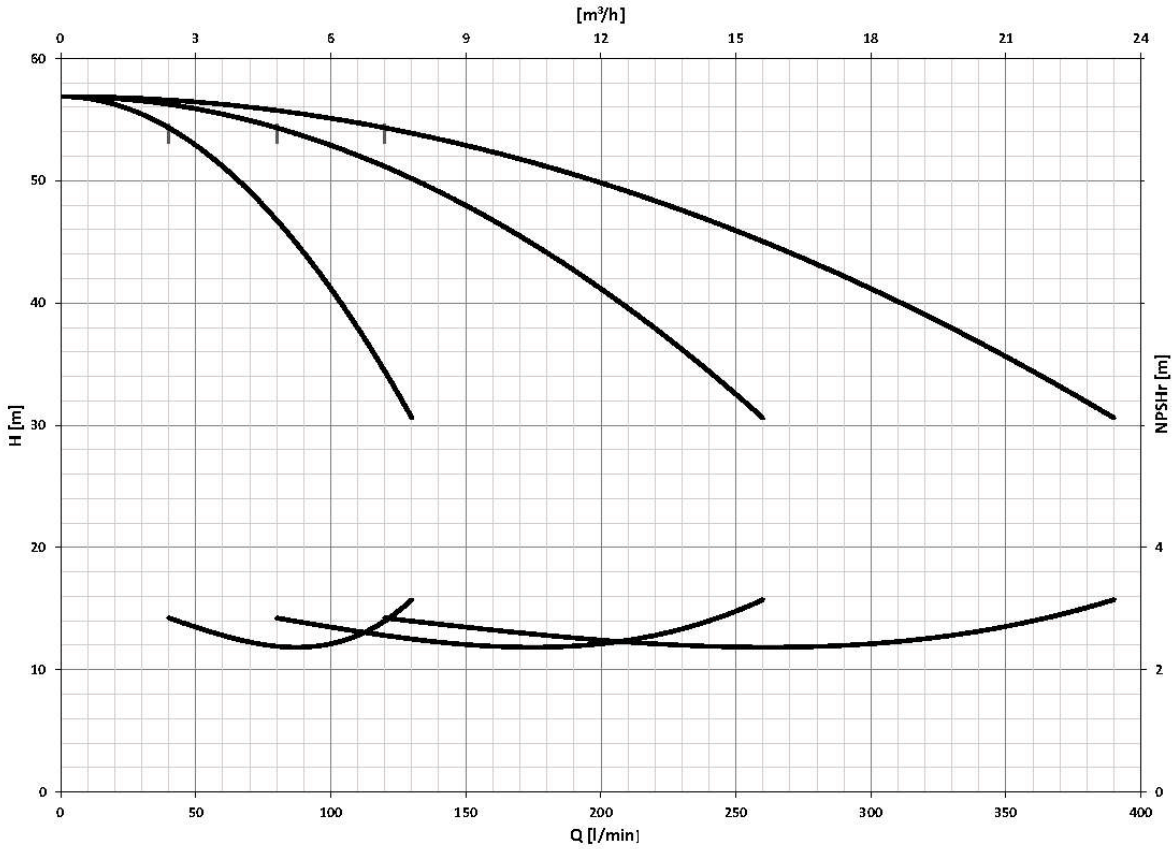


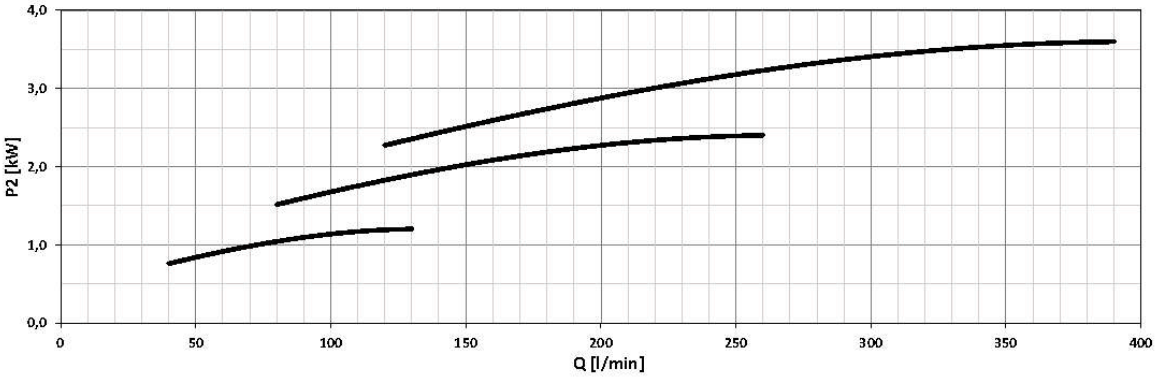


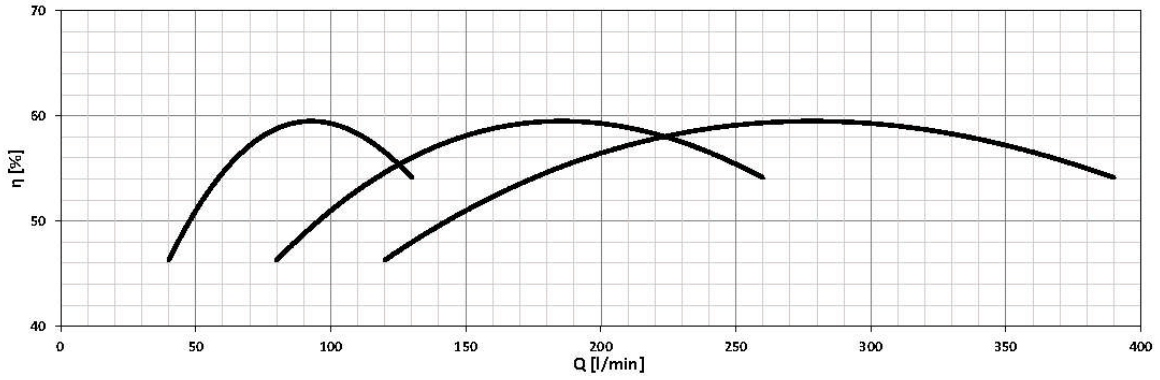


PERFORMANCE CURVE GP-GPE

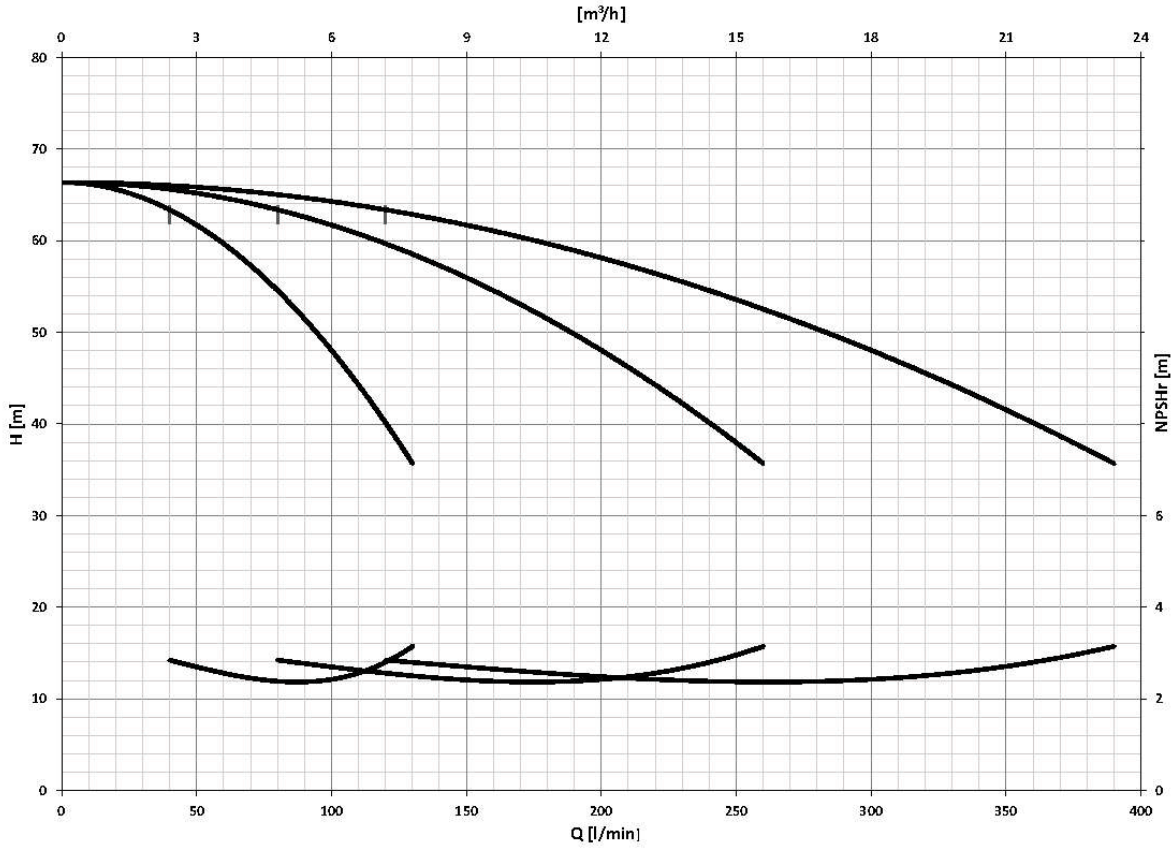
3GP(E) EVMS 5 6/1.5

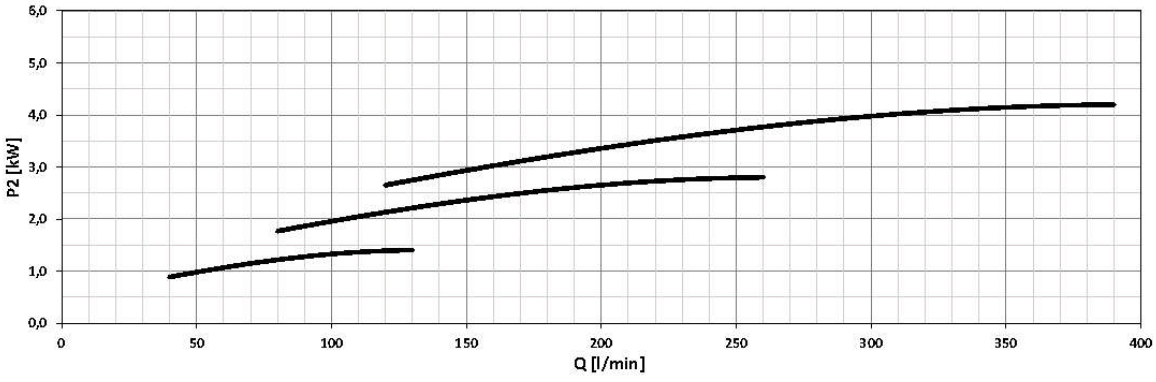


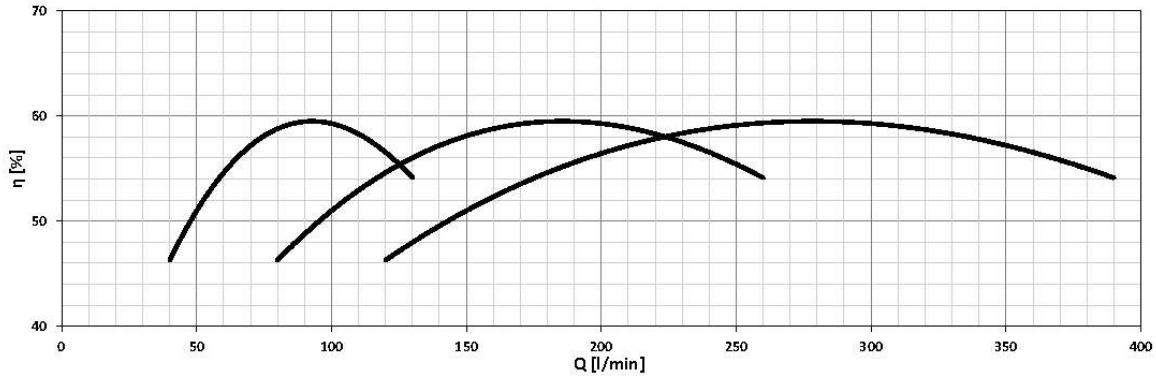




3GP(E) EVMS 5 7/1.5

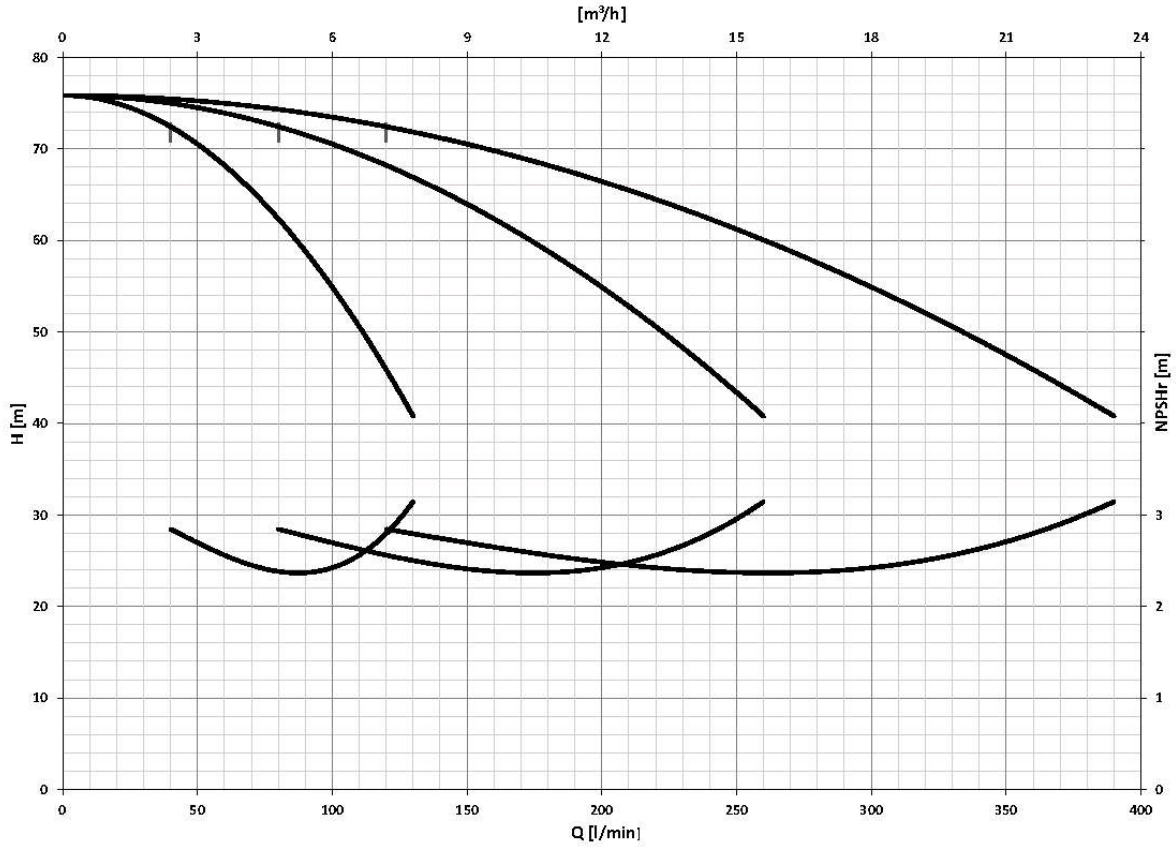


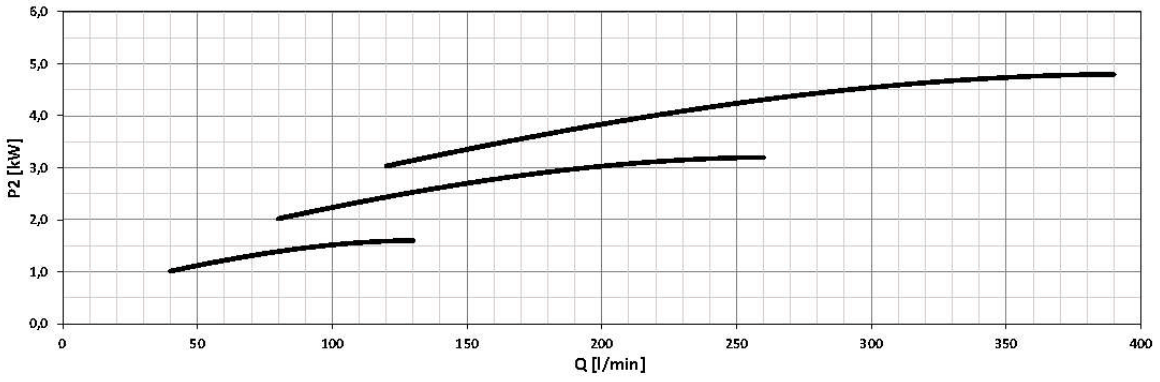


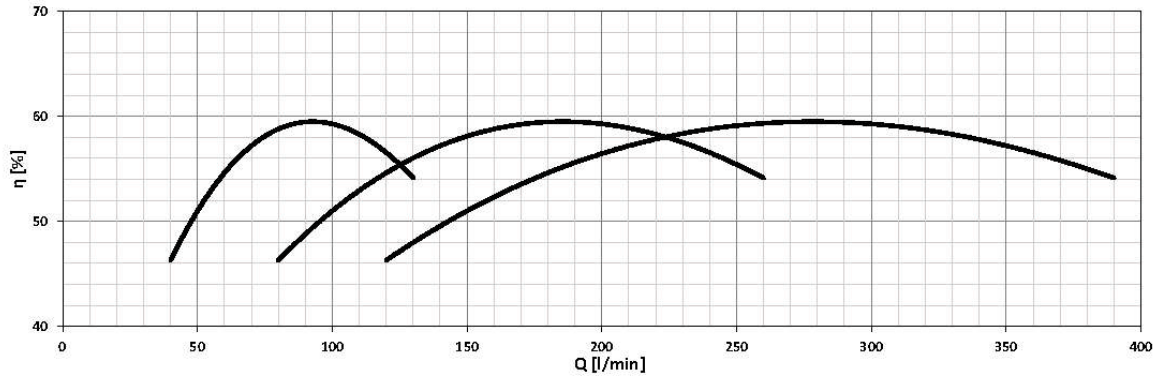


PERFORMANCE CURVE GP-GPE

3GP(E) EVMS 5 8/2.2







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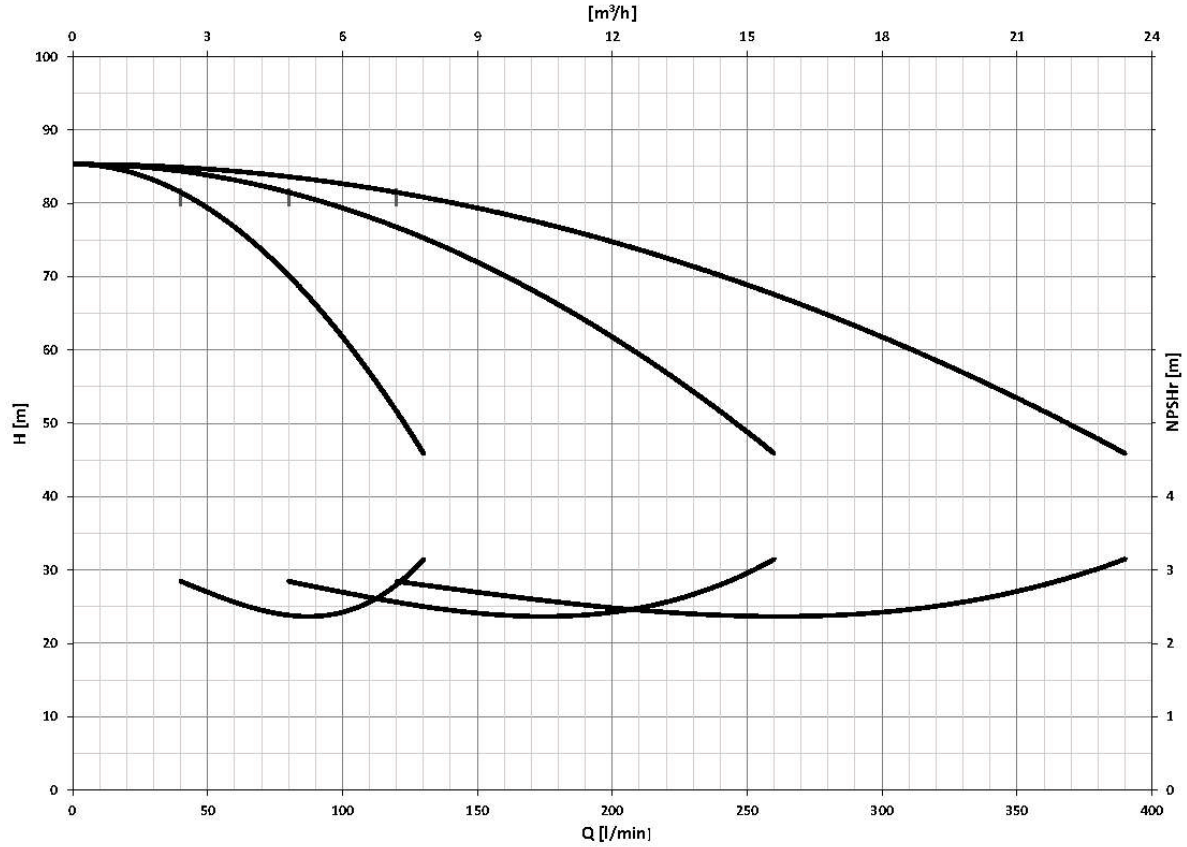
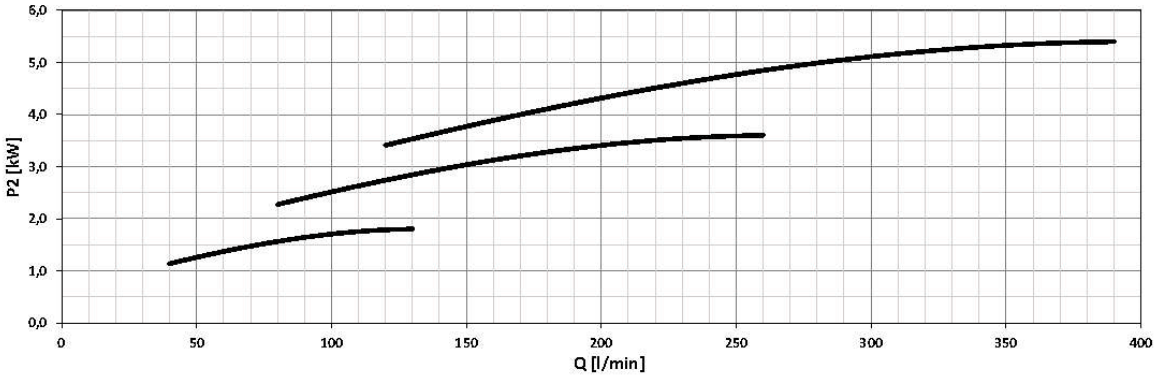
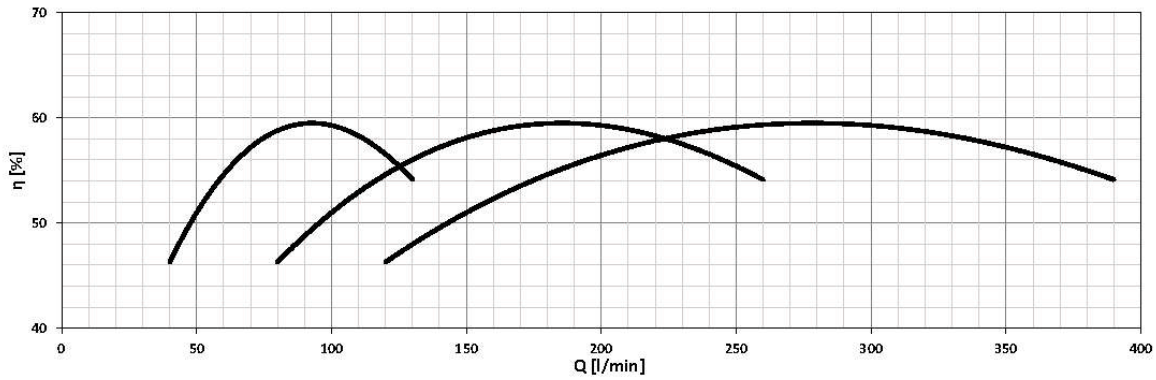
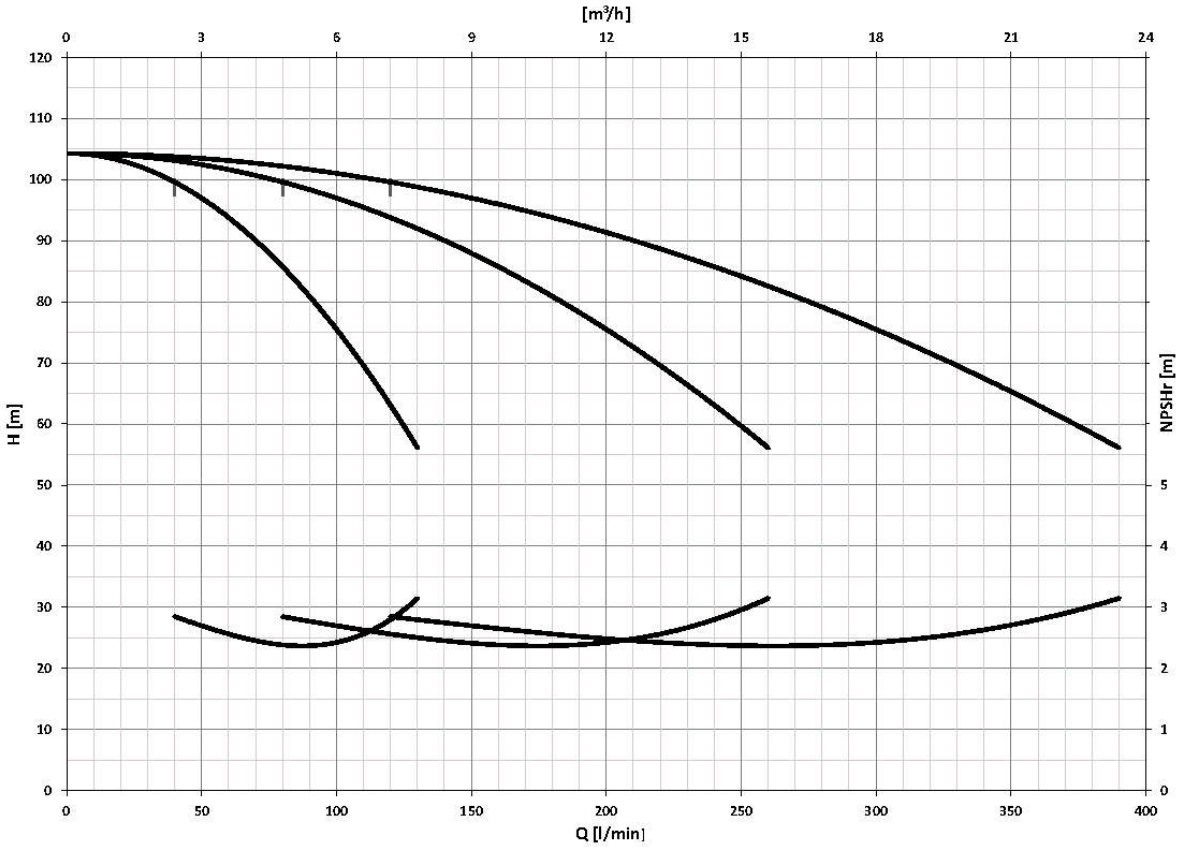


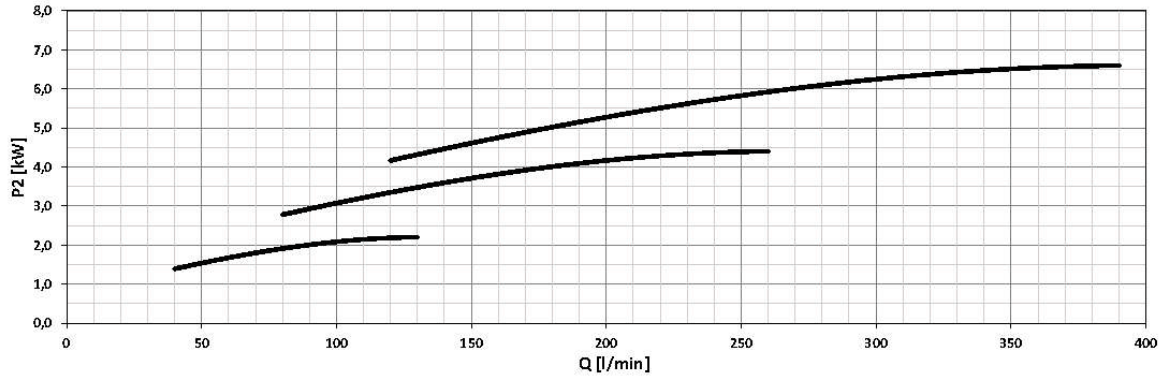


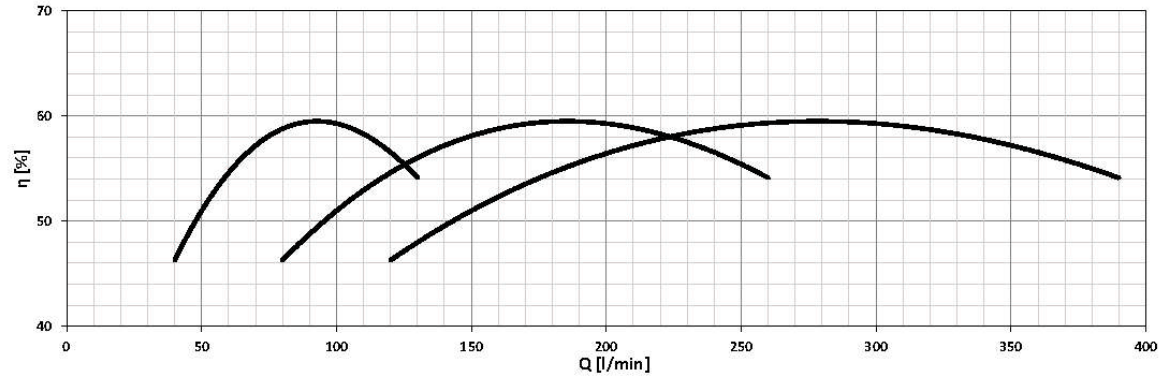


PERFORMANCE CURVE GP-GPE

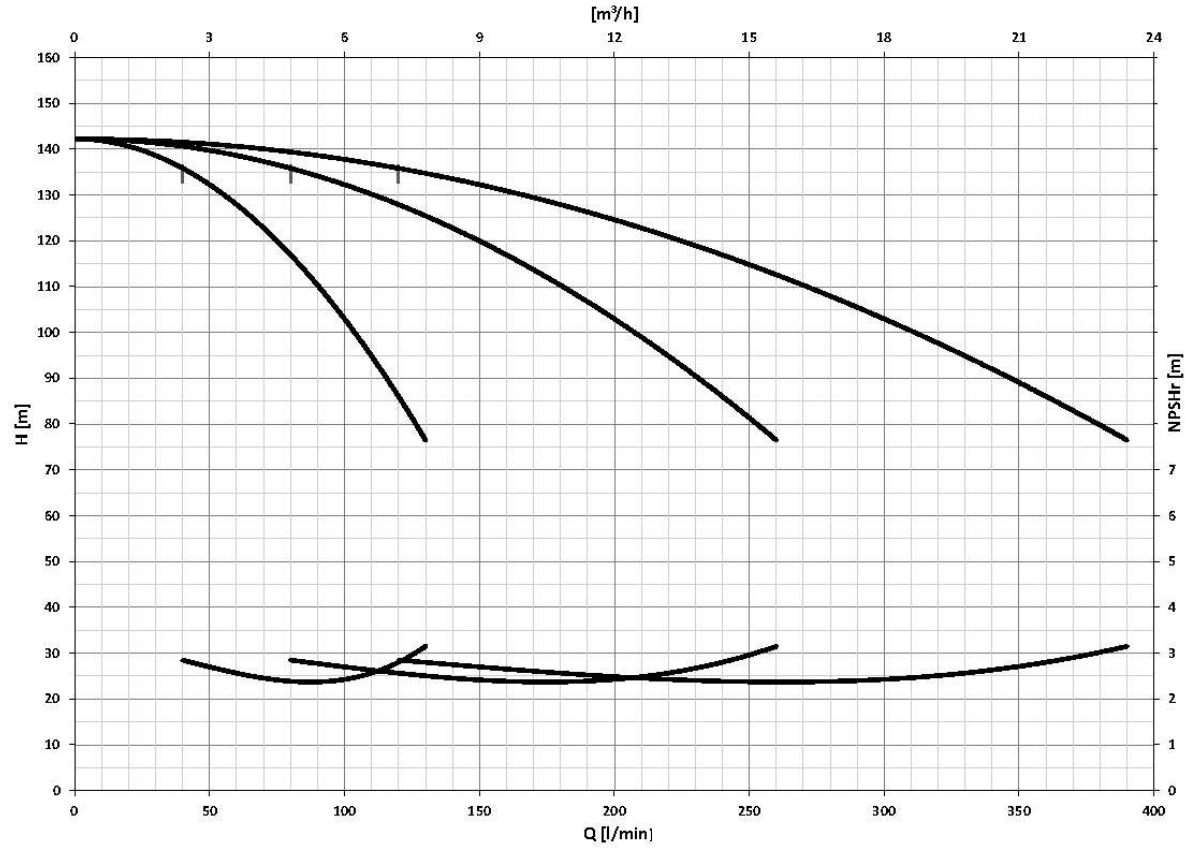
3GP(E) EVMS 5 11 /2.2

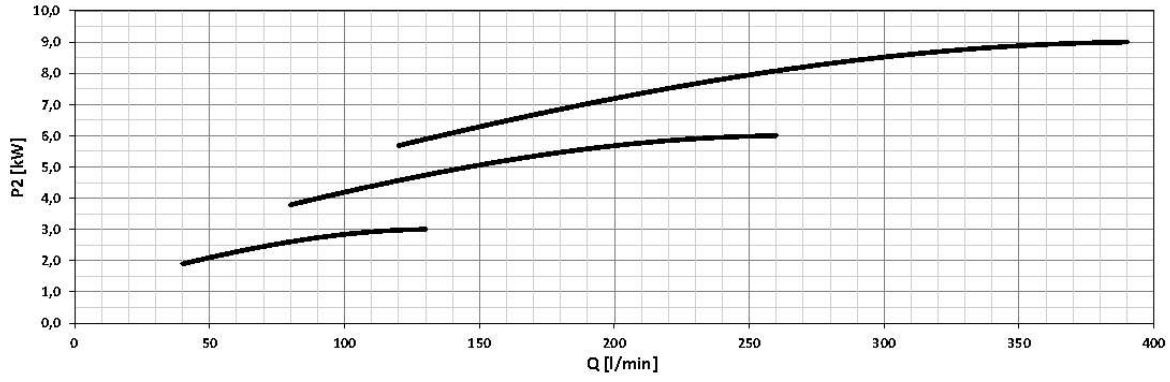


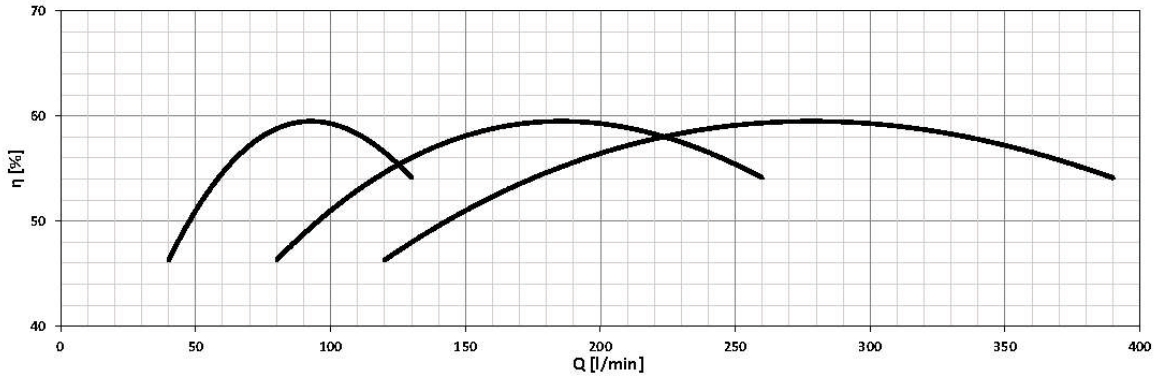




3GP(E) EVMS 5 15/3.0

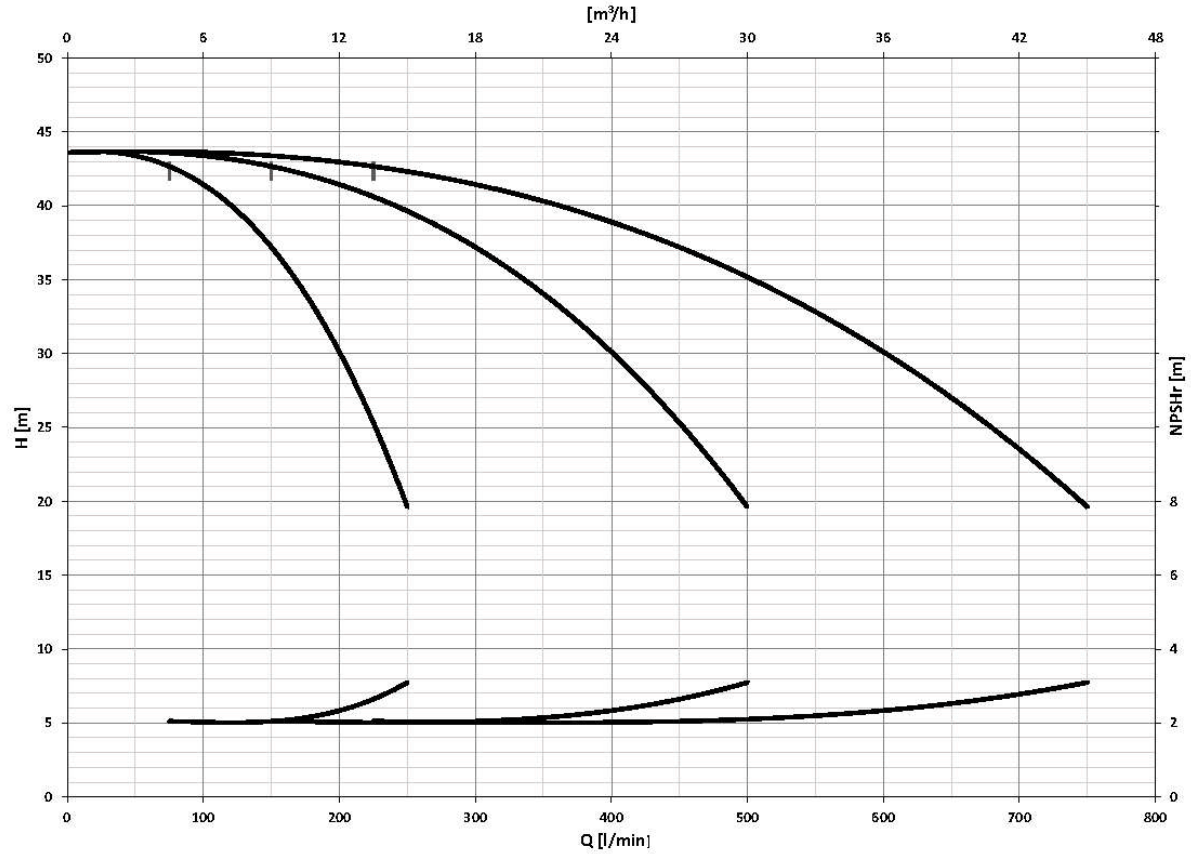


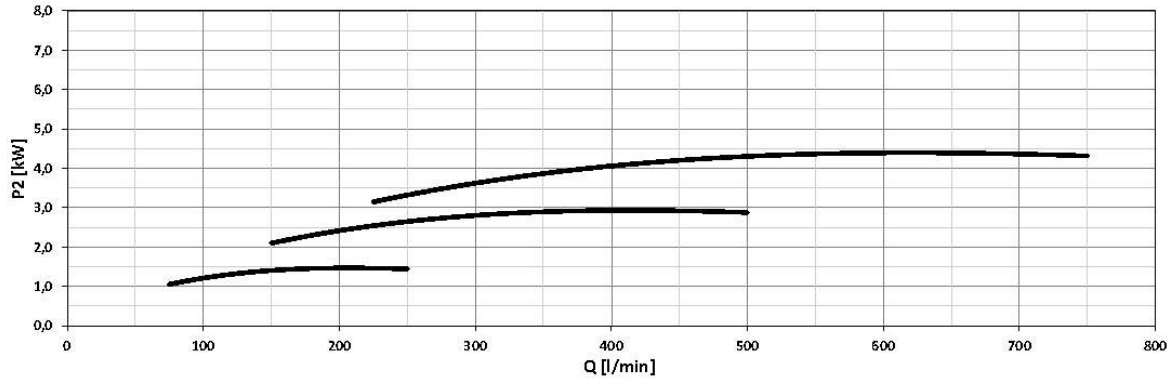


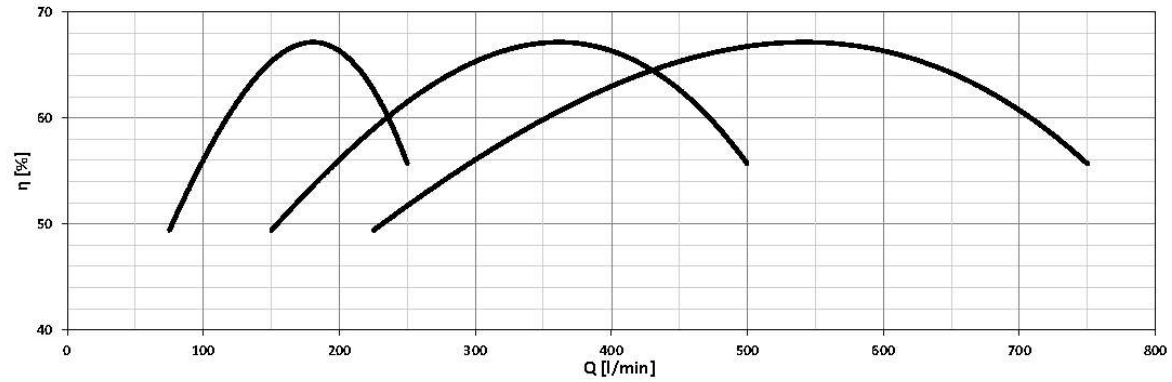


PERFORMANCE CURVE GP-GPE

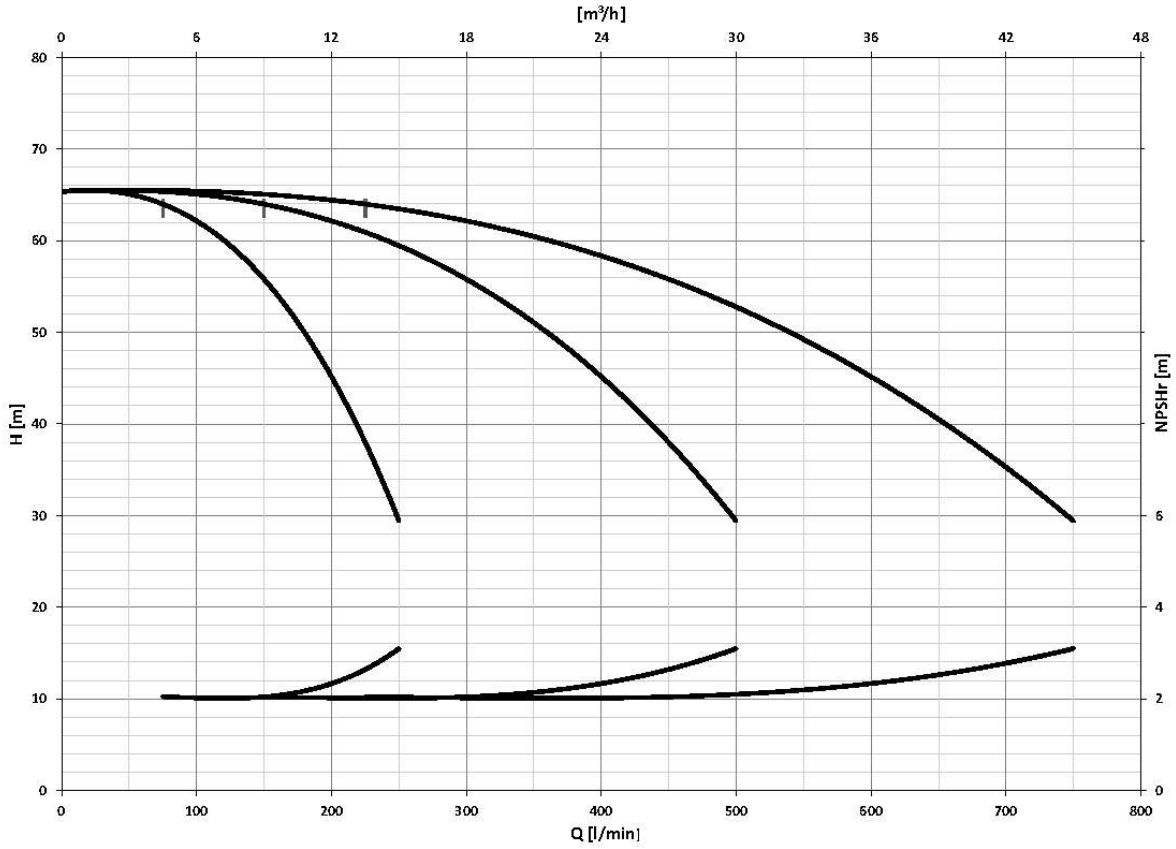
3GP(E) EVMS 10 4/2.2

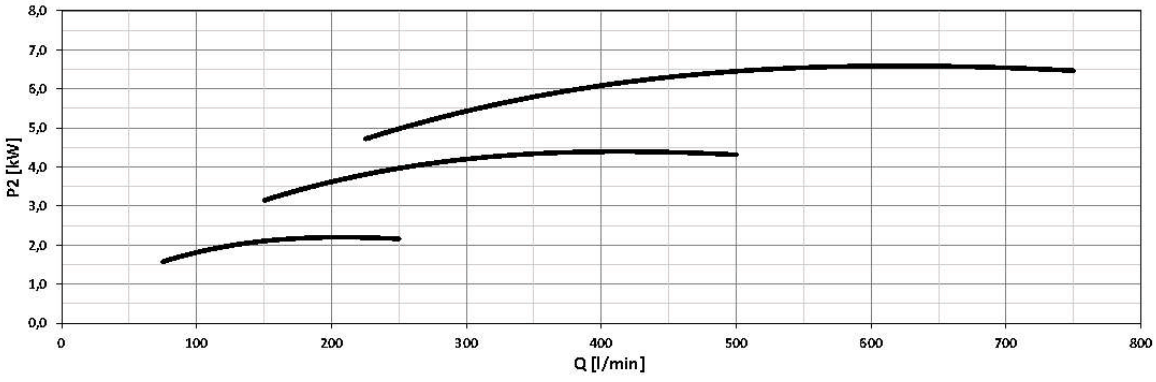


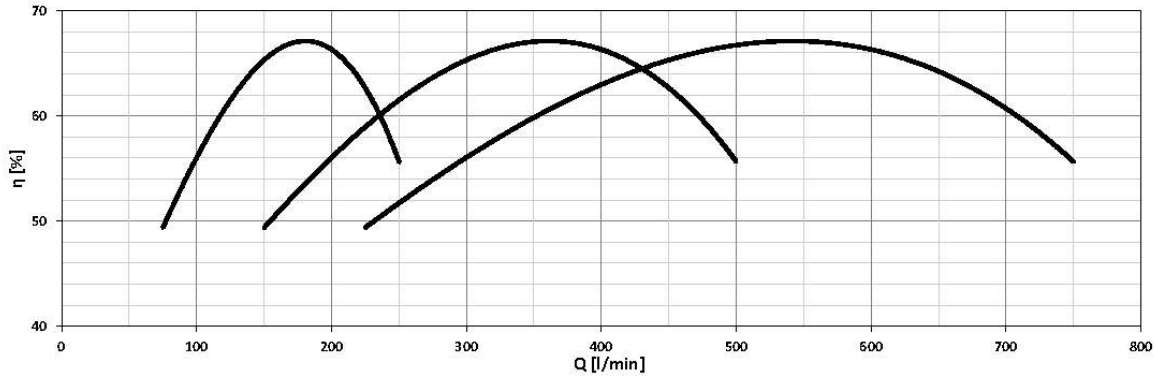




3GP(E) EVMS 10 6/2.2







PERFORMANCE CURVE GP-GPE

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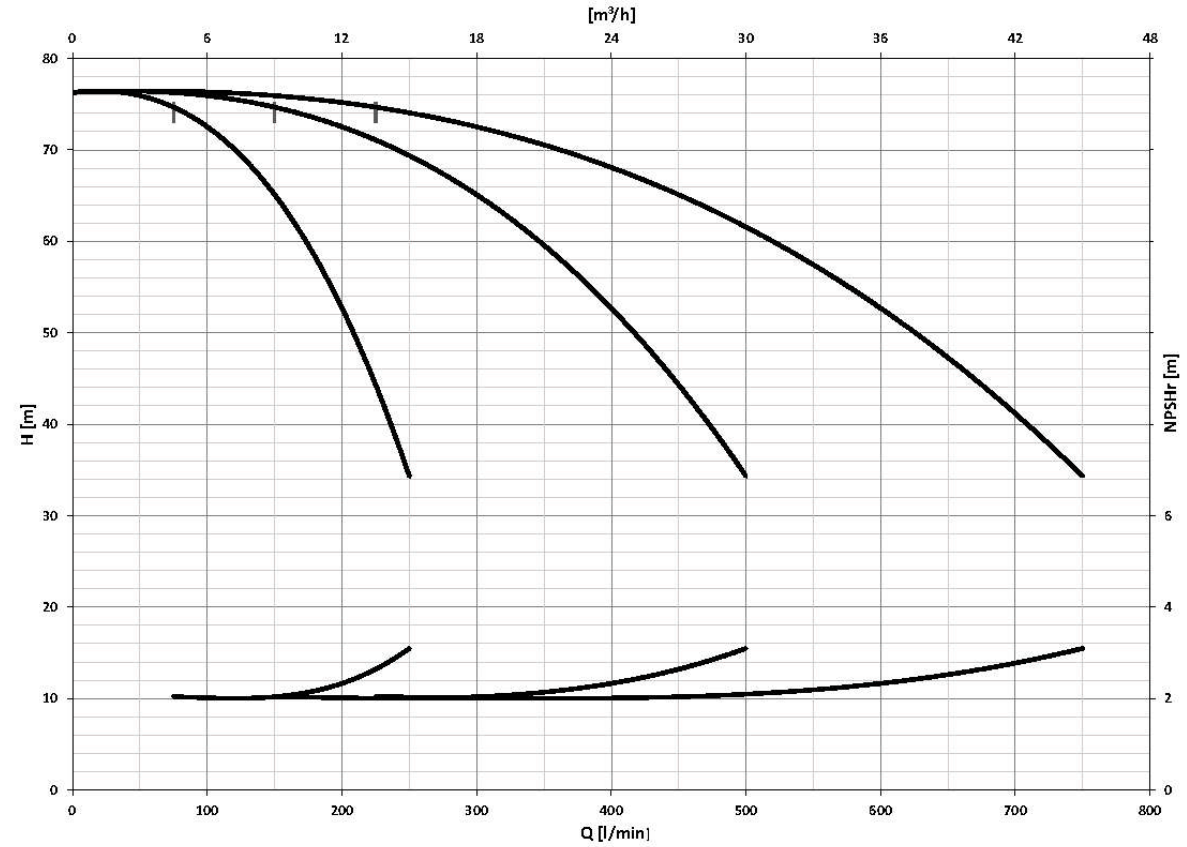

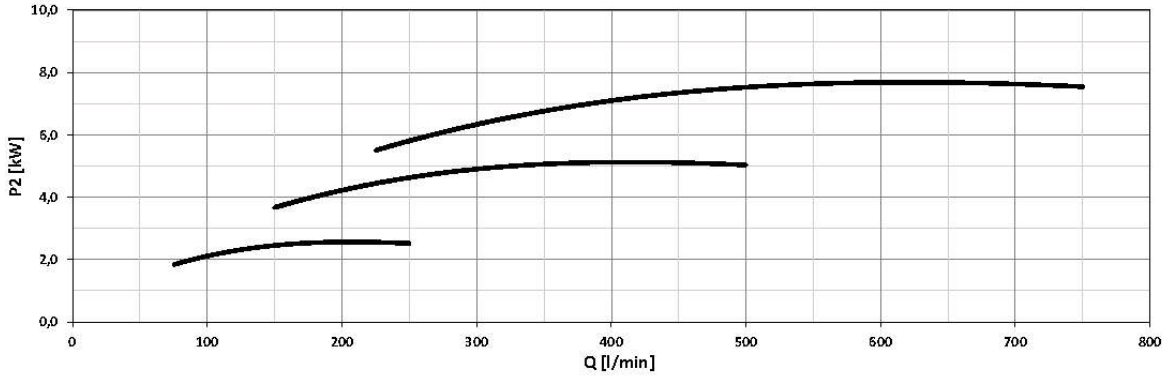

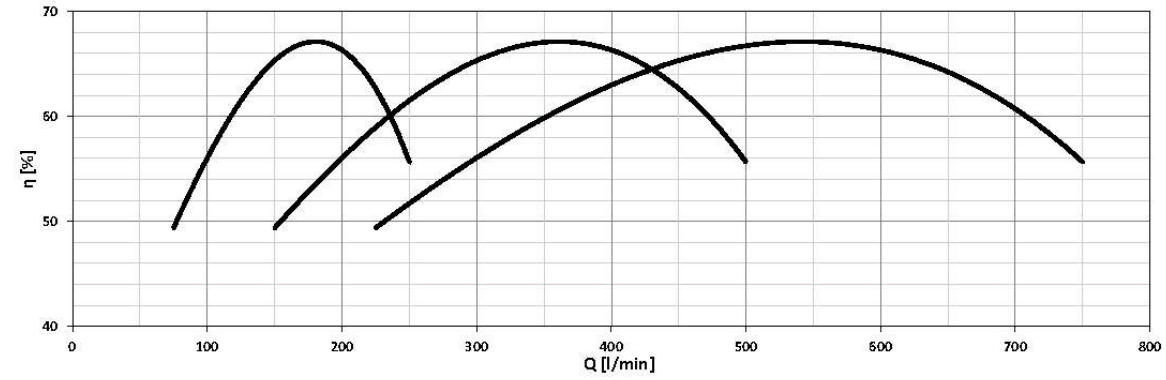

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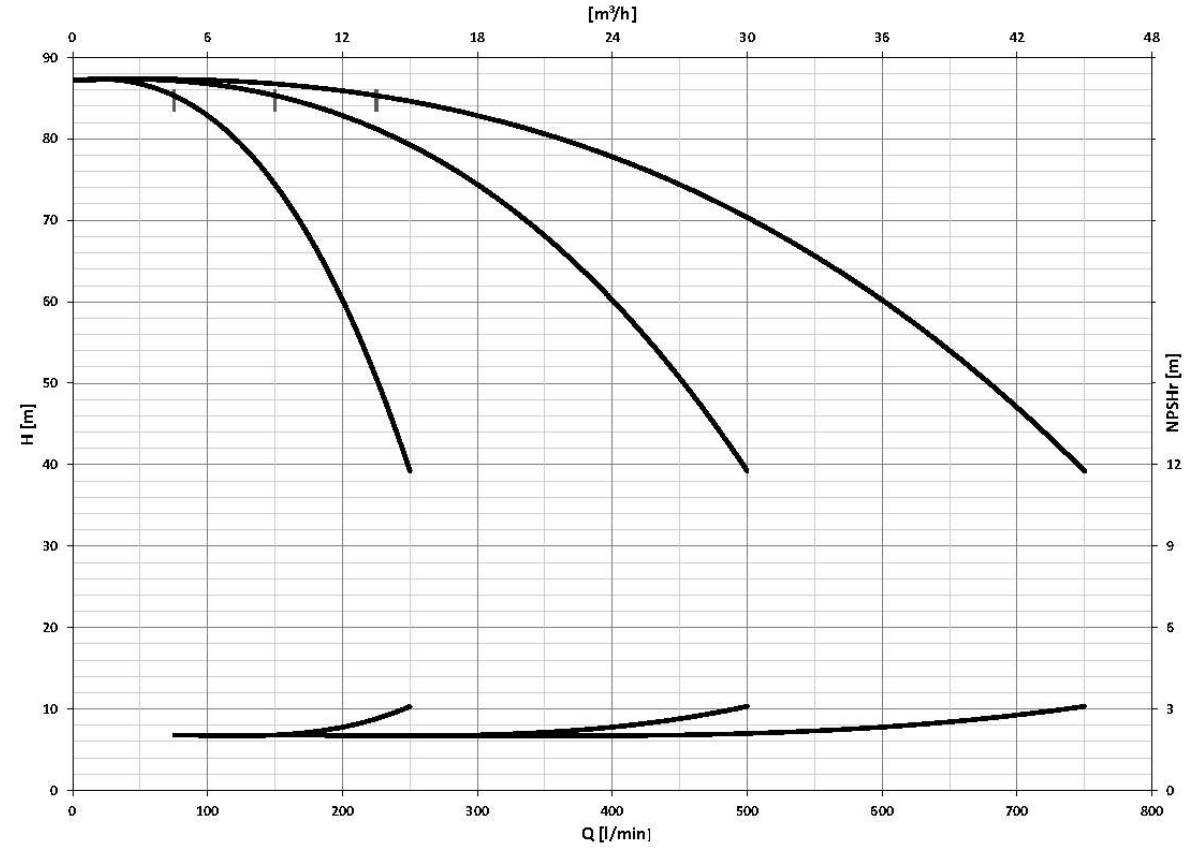

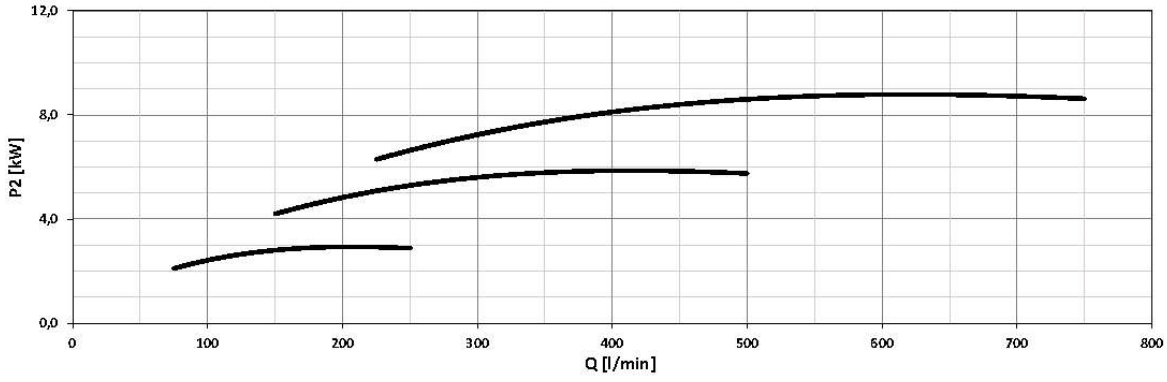

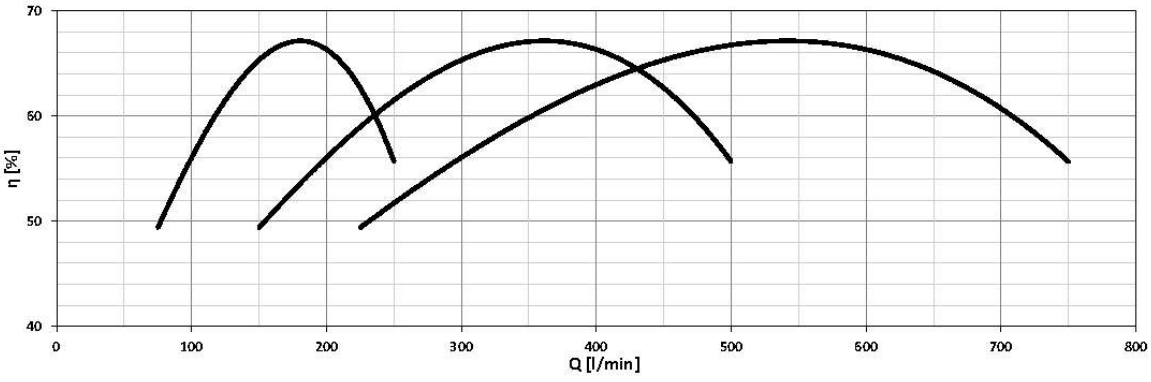

PERFORMANCE CURVE GP-GPE

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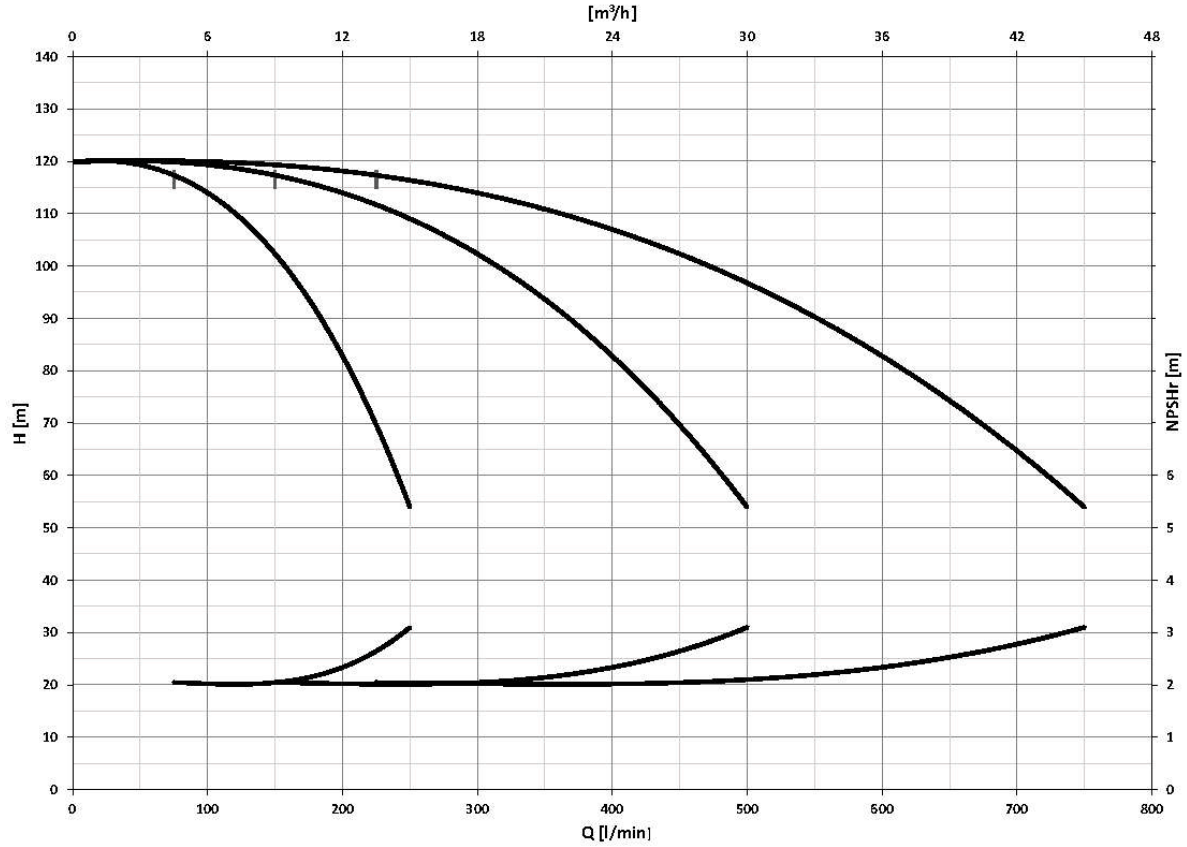
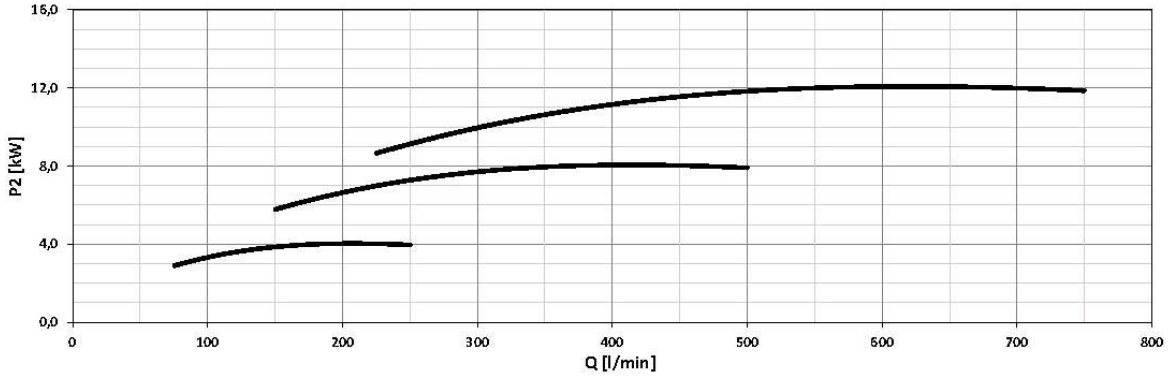
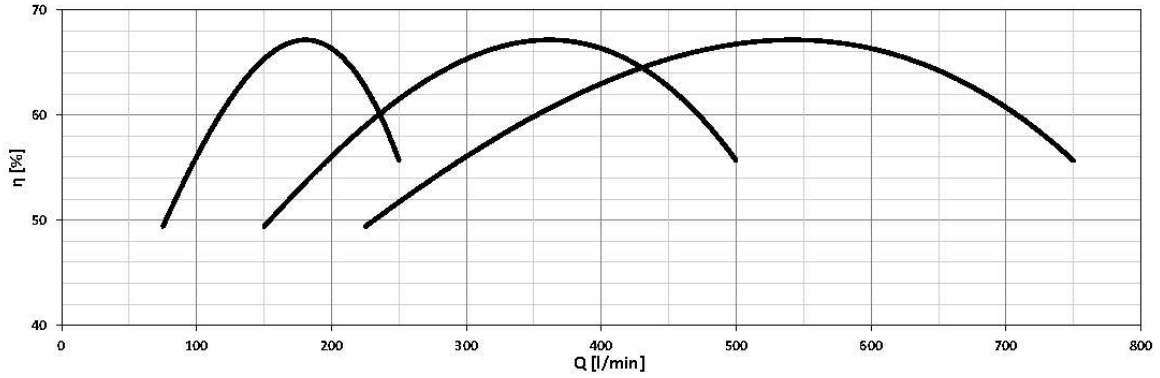
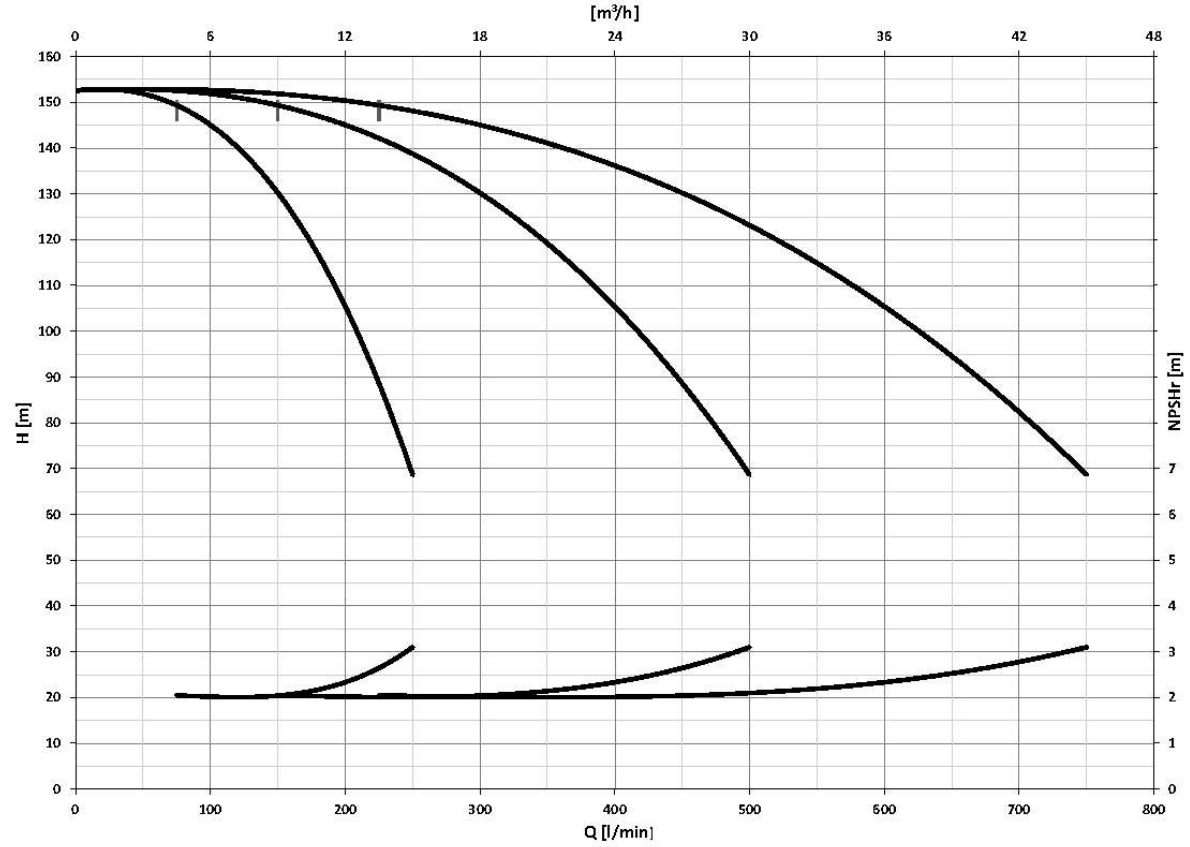
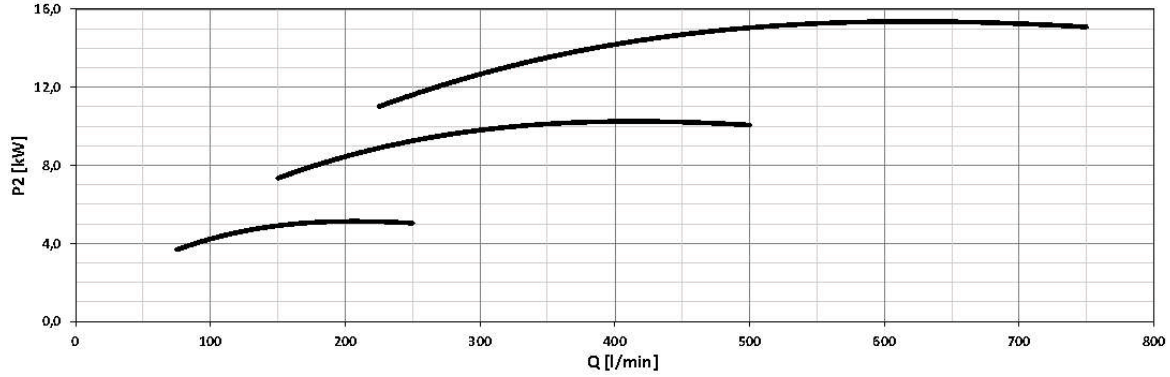


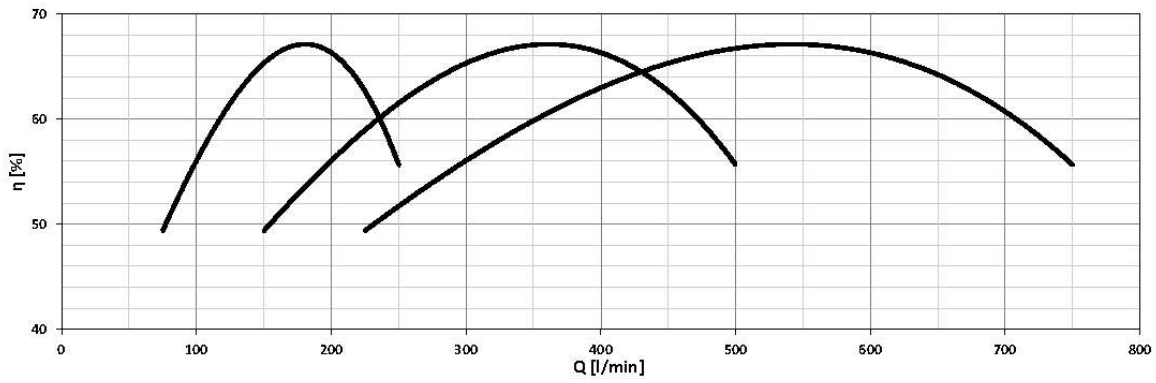




3GP(E) EVMS 10 14/5.5



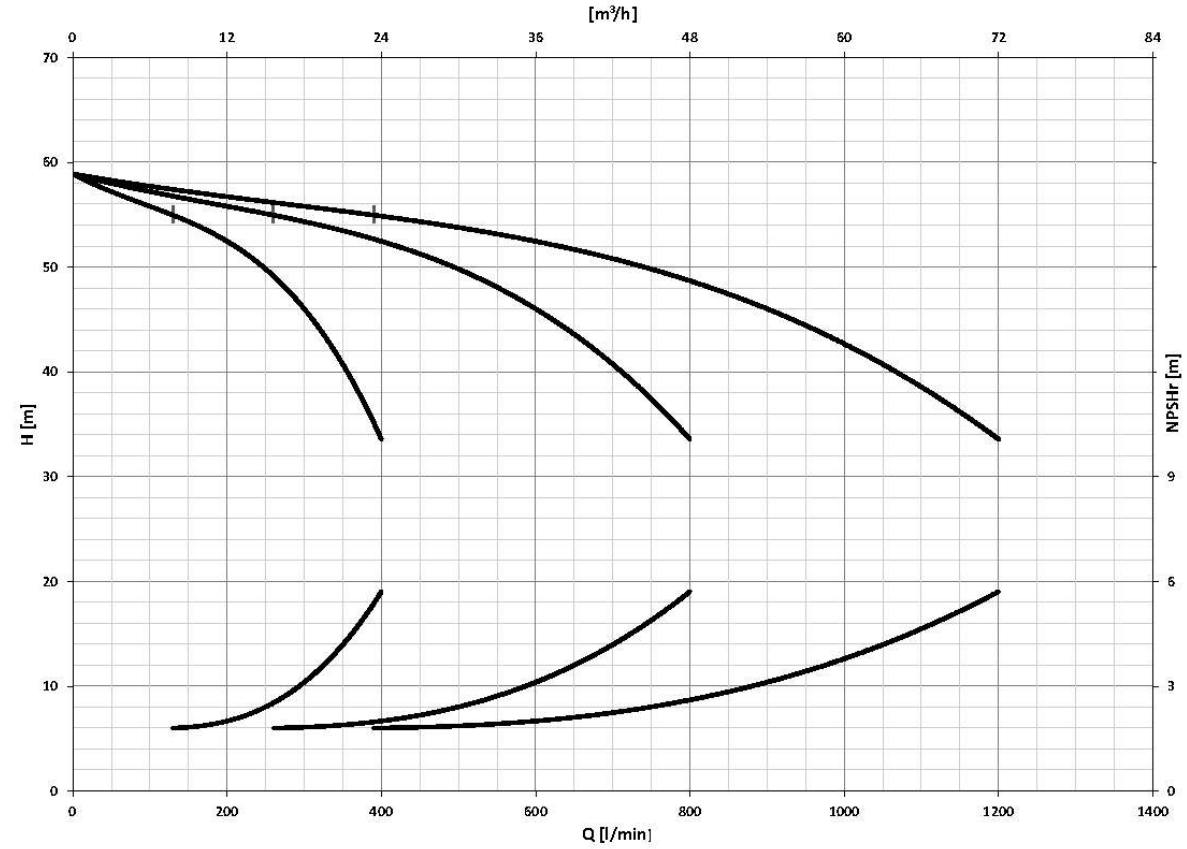


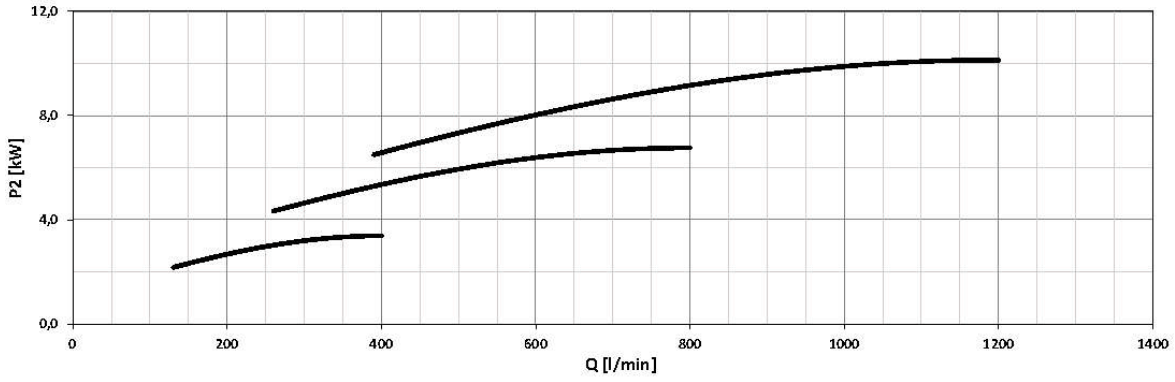


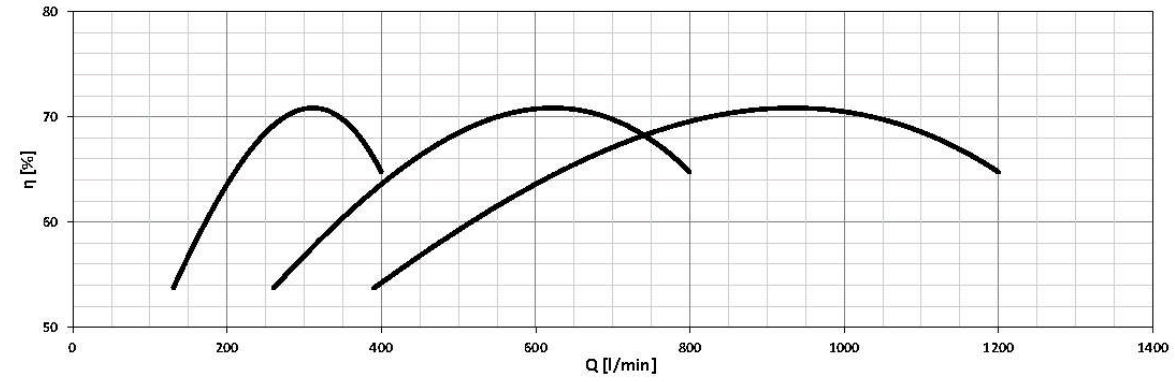
PERFORMANCE CURVE

GP-GPE

3GP(E) EVMS 15 4/4.0







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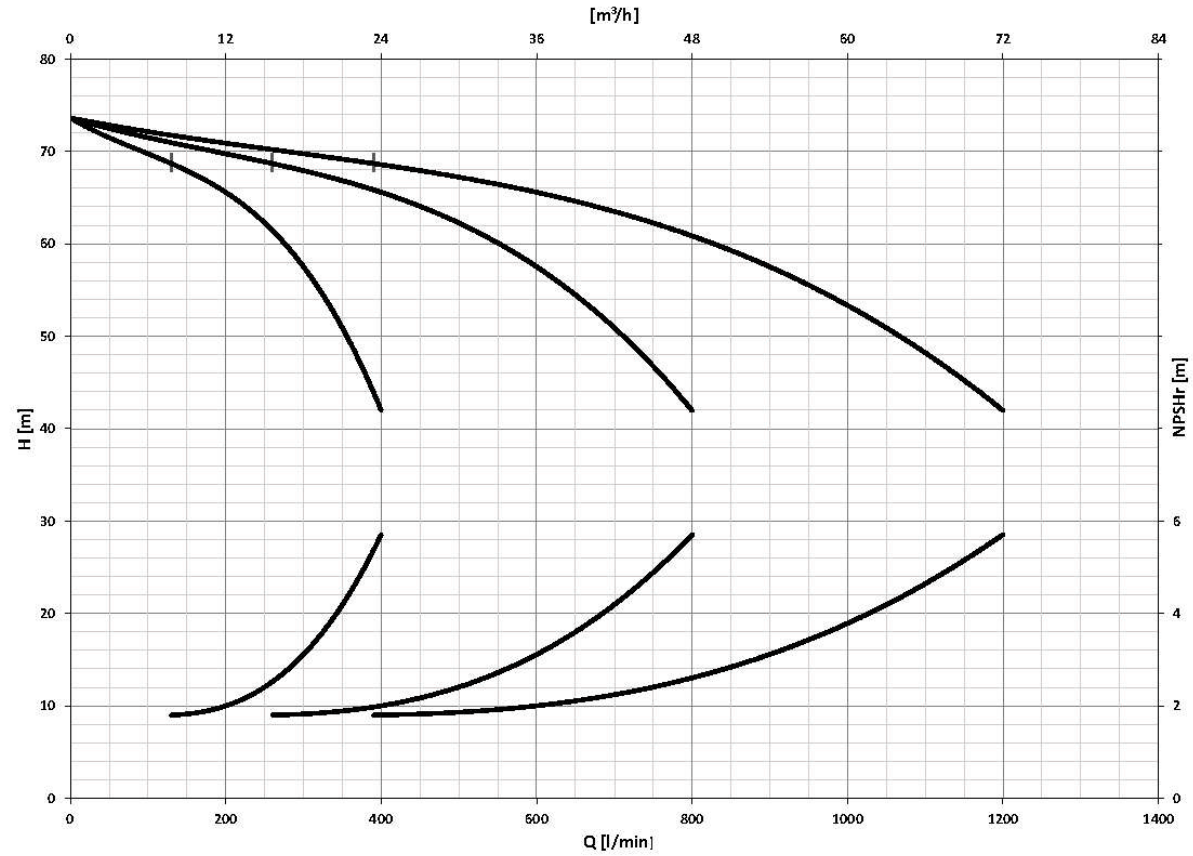
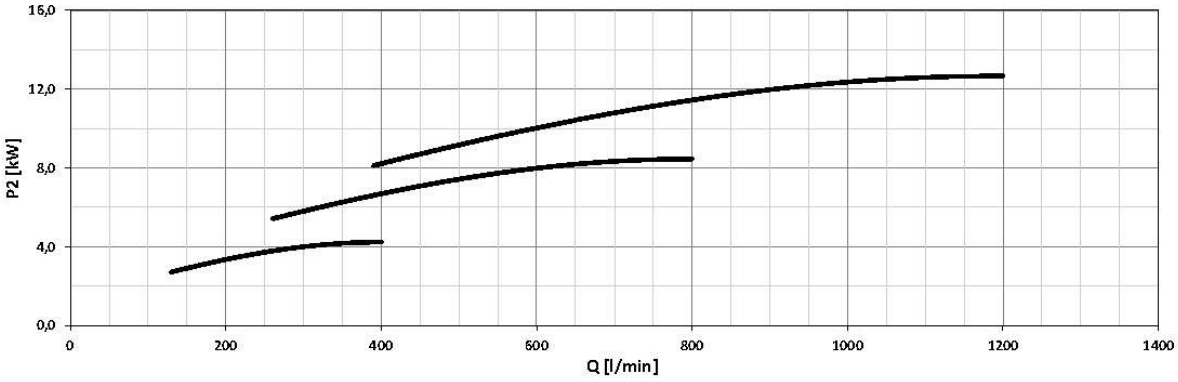
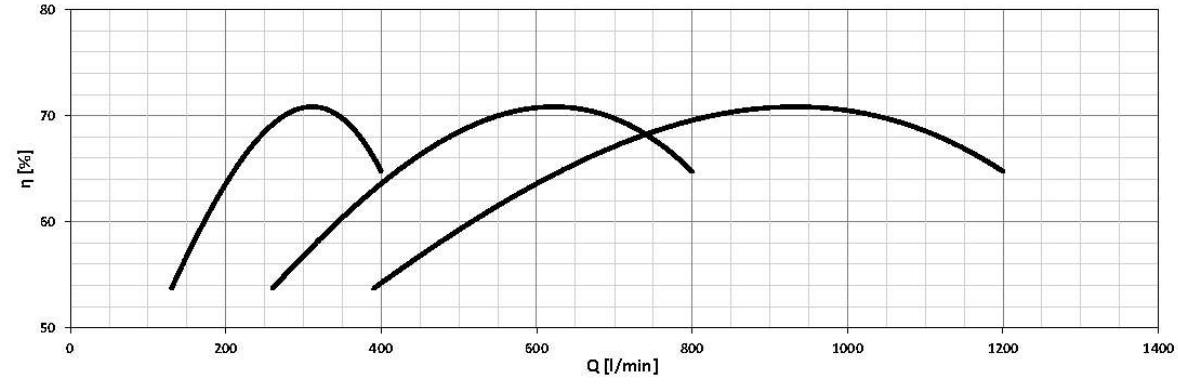
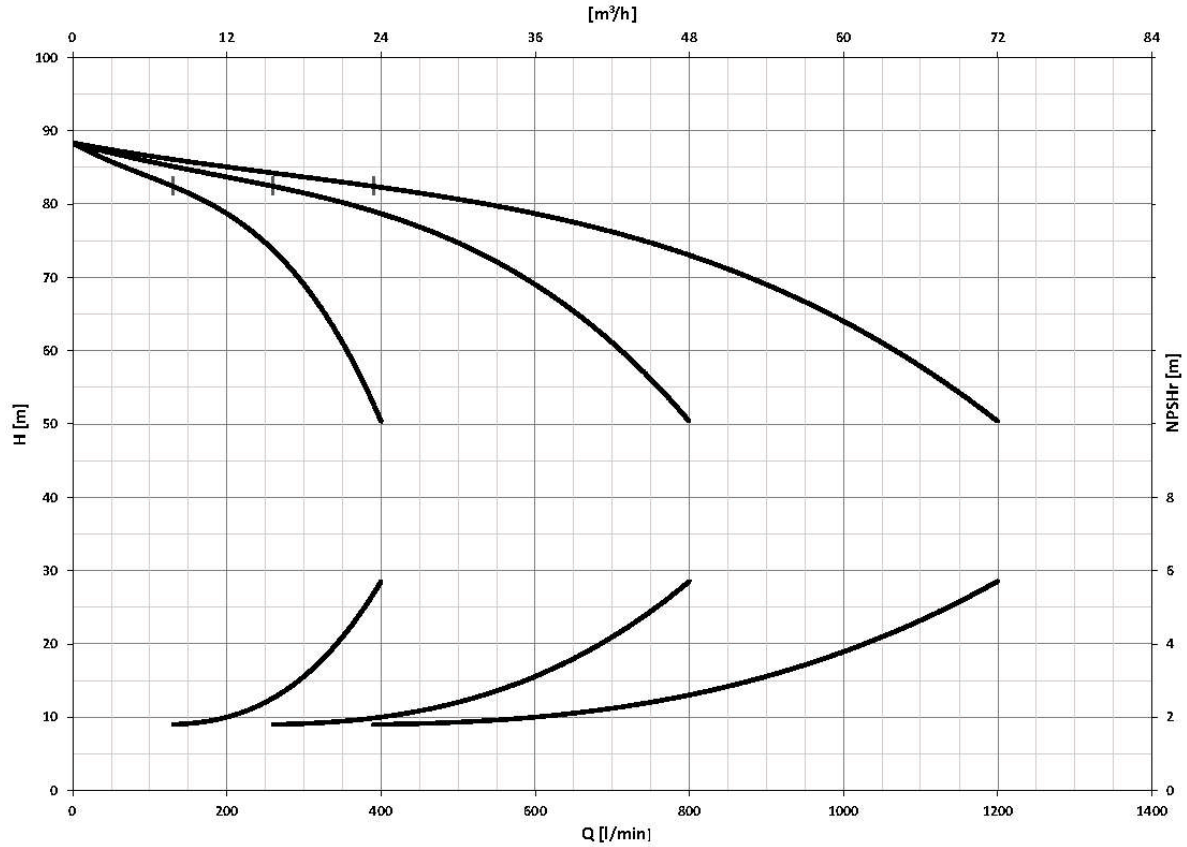


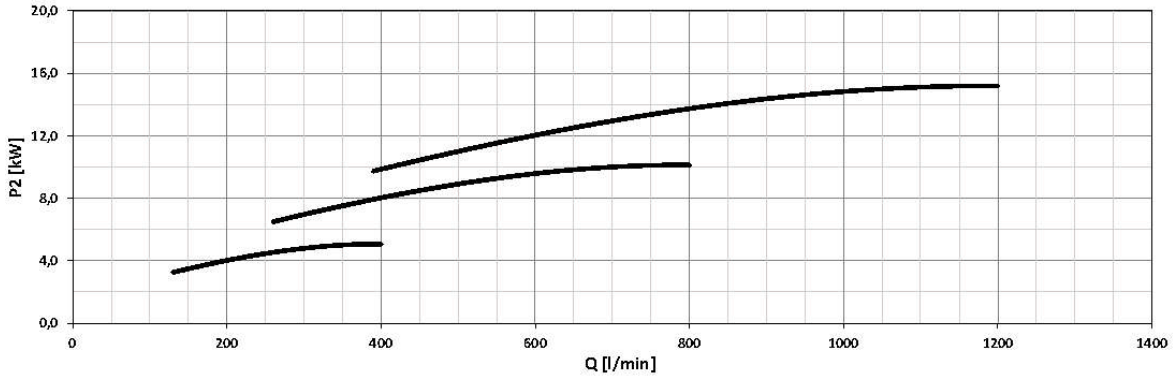


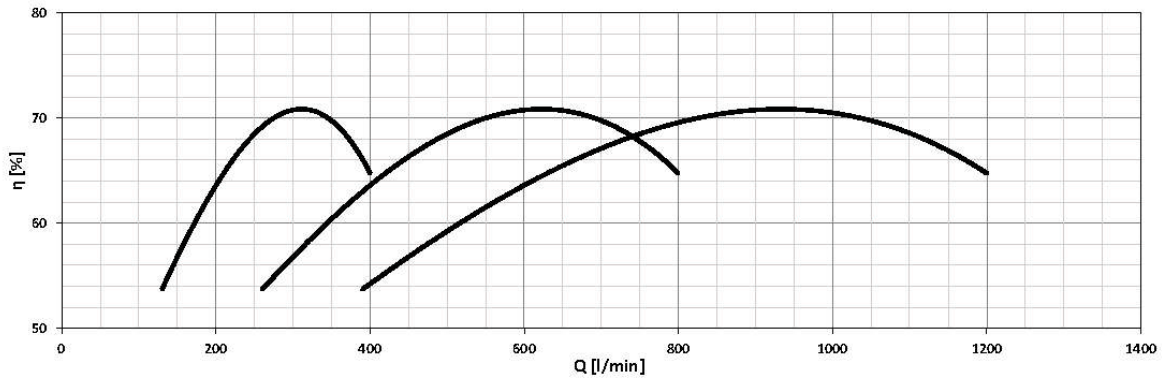


PERFORMANCE CURVE GP-GPE

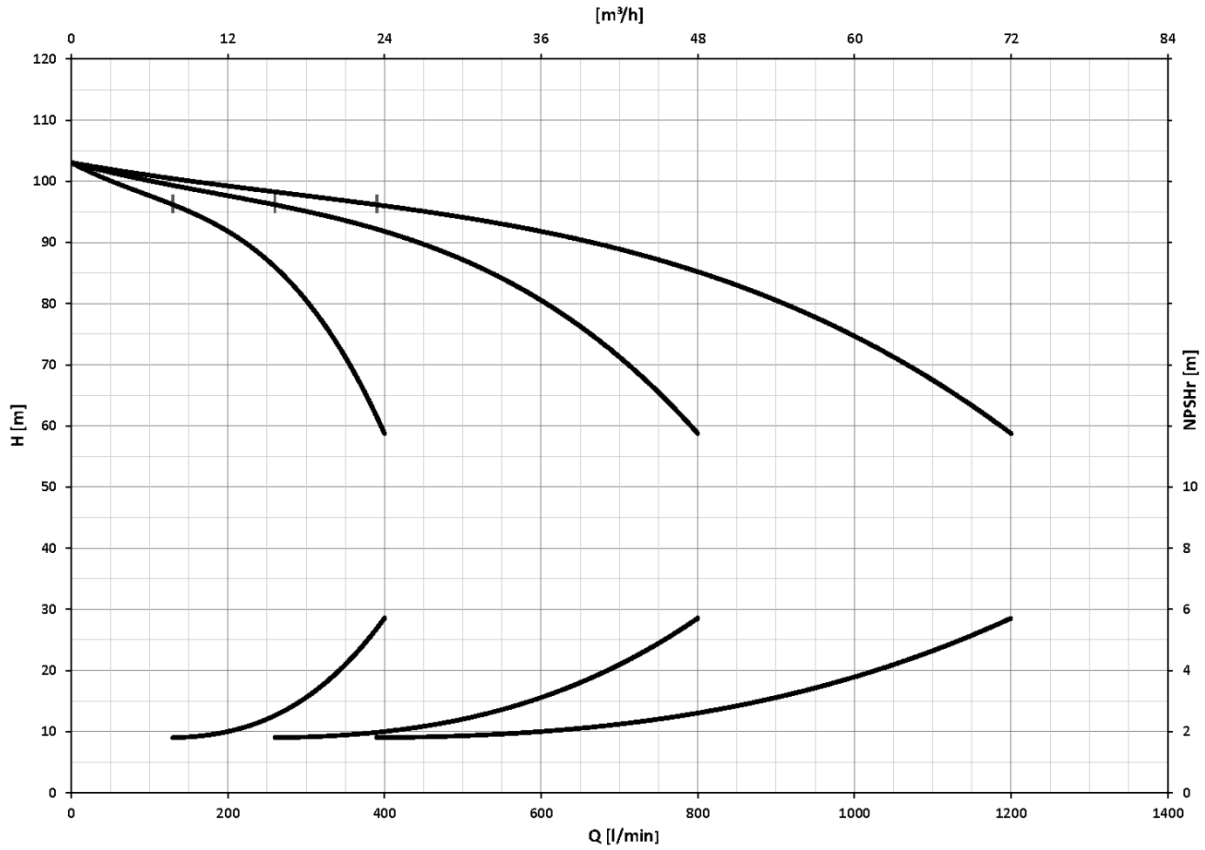
3GP(E) EVMS 15 6/5.5

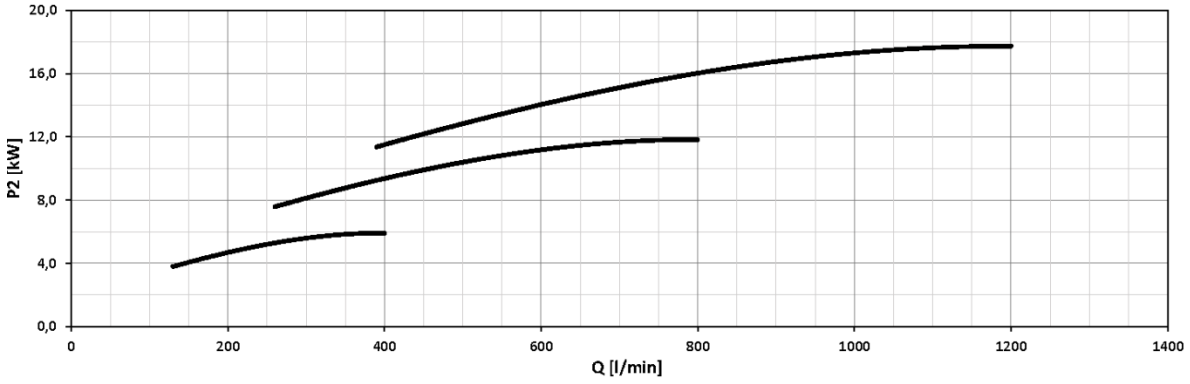


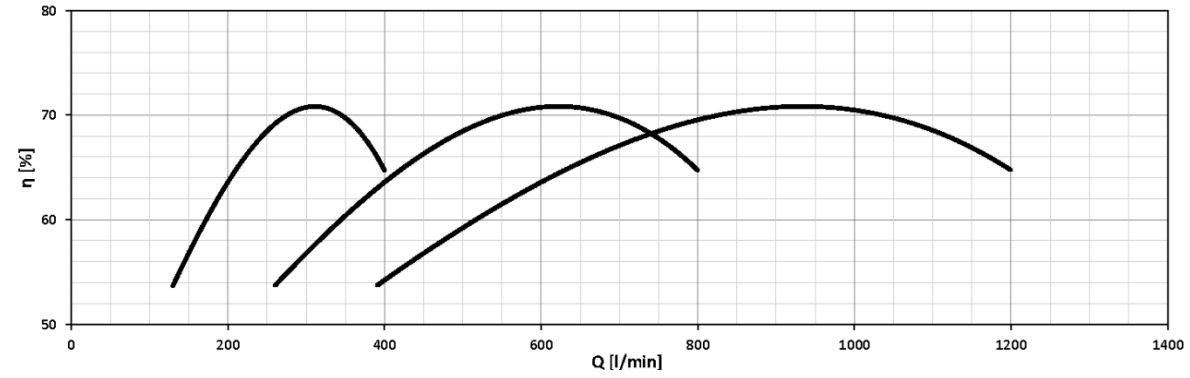




3GP(E) EVMS 15 7/7.5

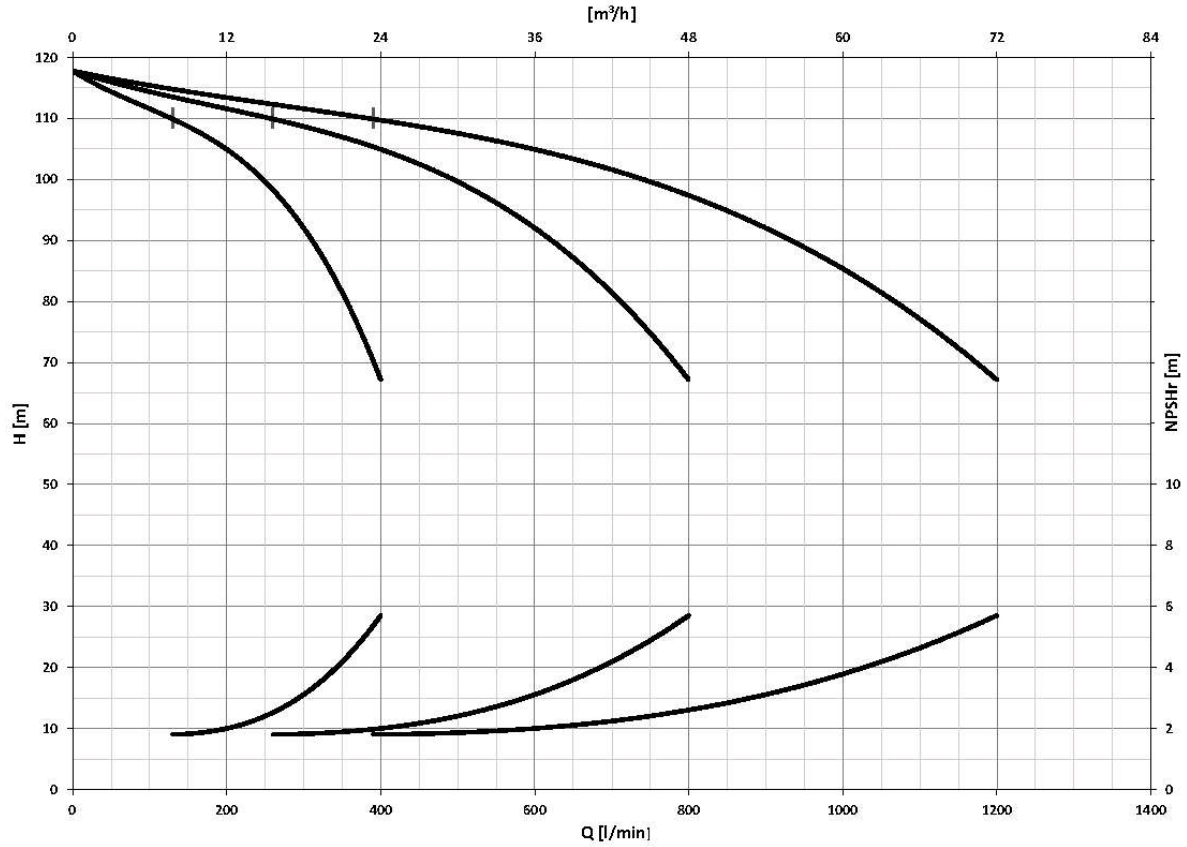


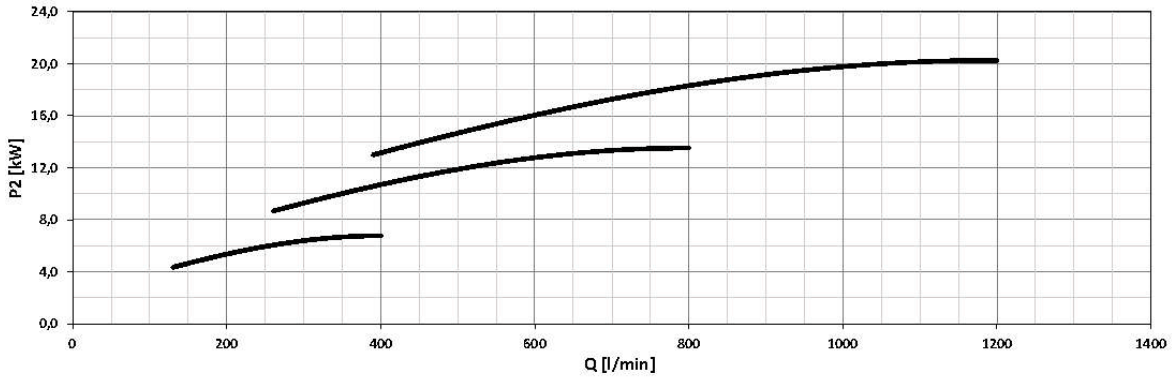


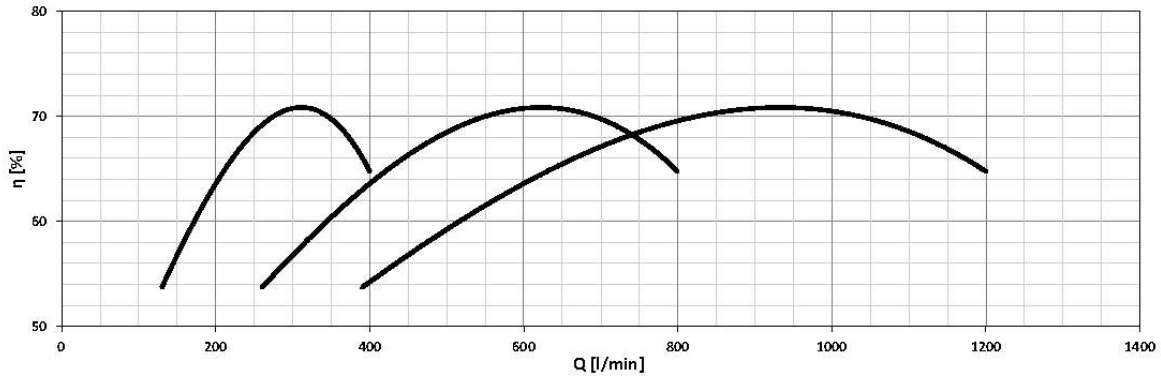


PERFORMANCE CURVE GP-GPE

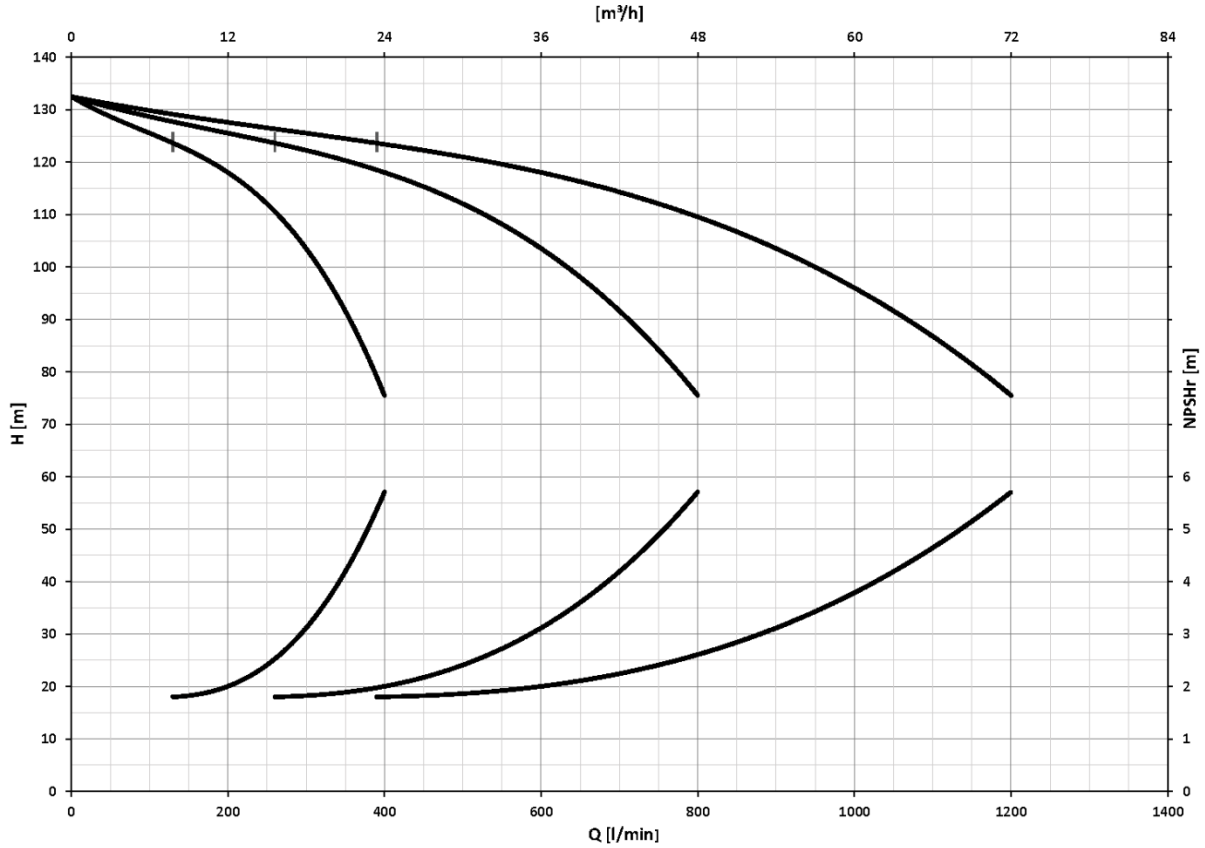
3GP(E) EVMS 15 8/7.5

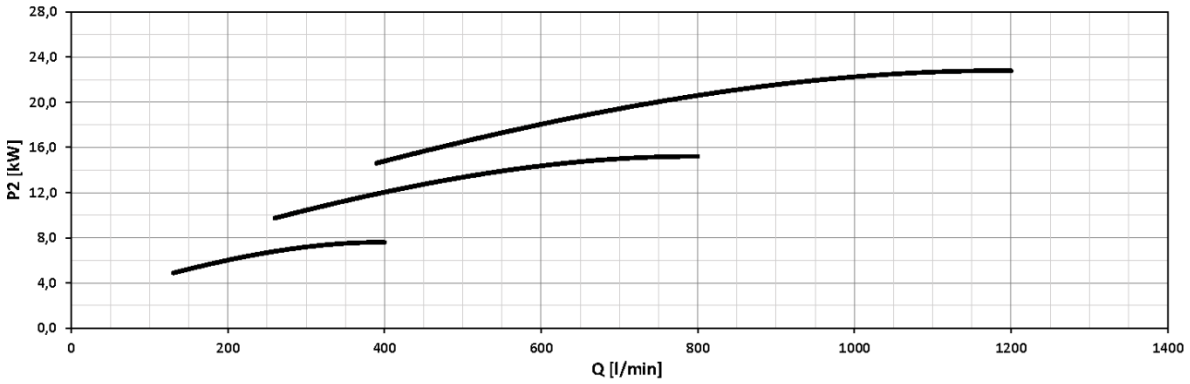


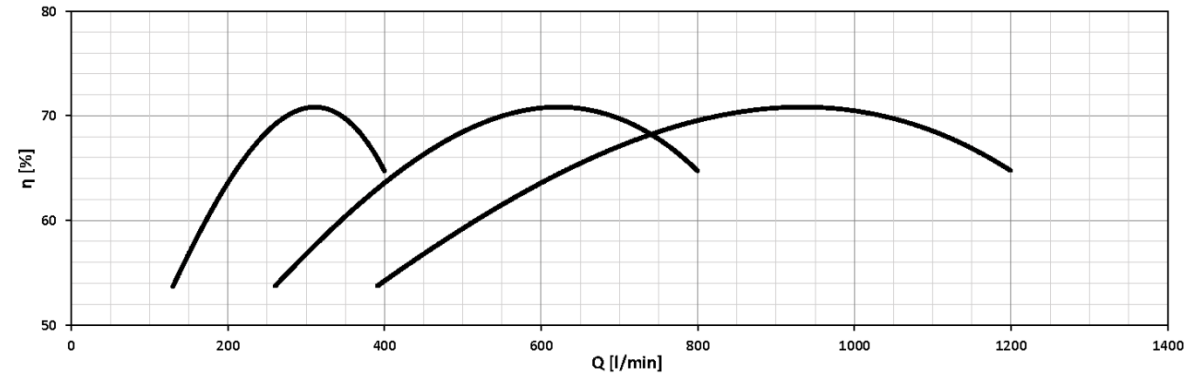




3GP(E) EVMS 15 9/11







PERFORMANCE CURVE GP-GPE

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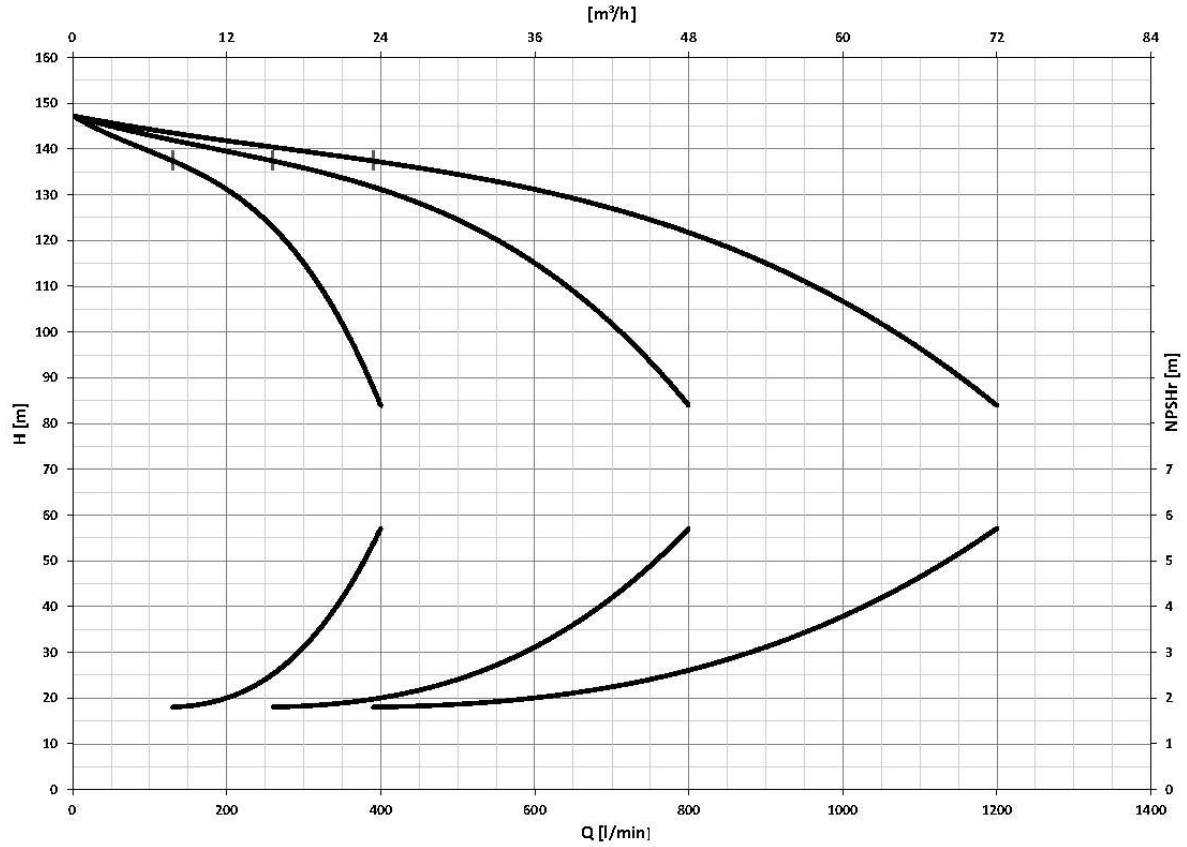
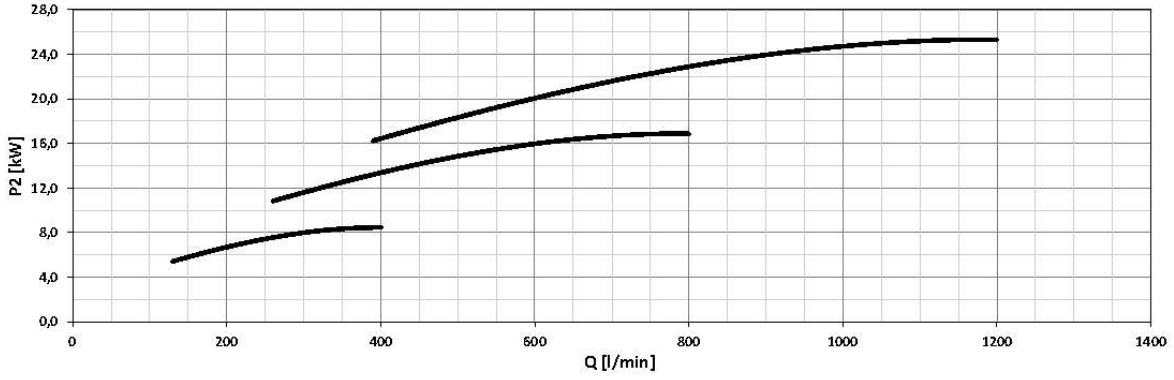
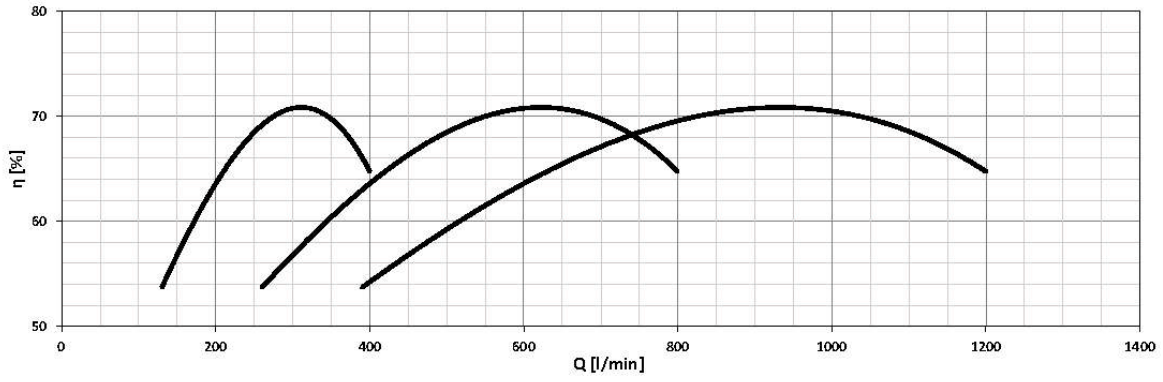
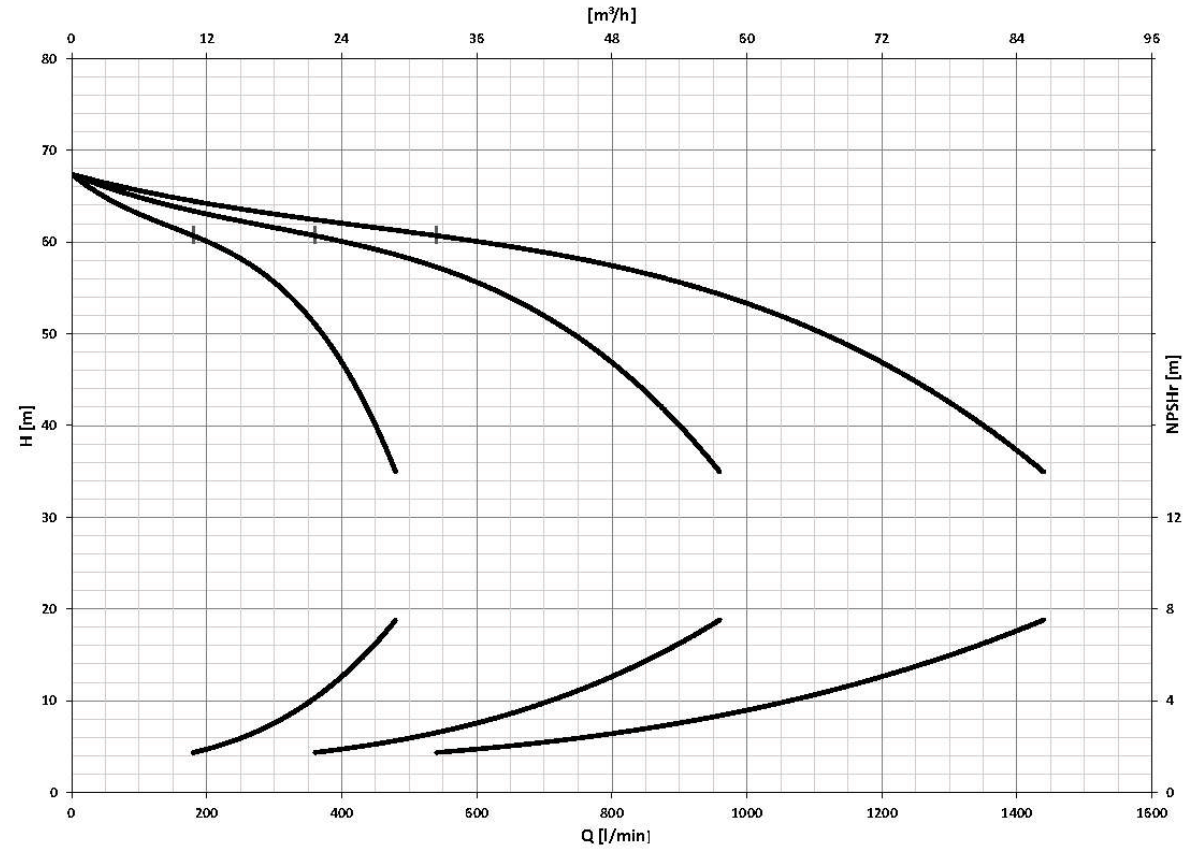
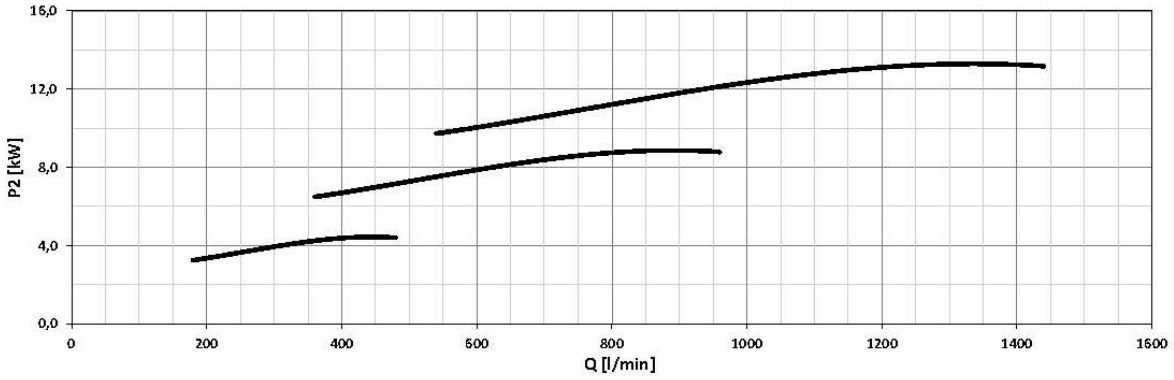


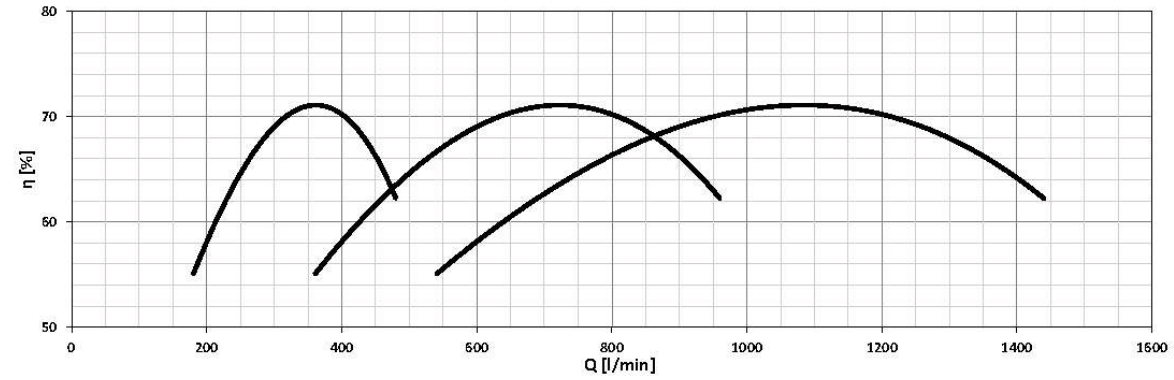




3GP(E) EVMS 20 4/5.5







PERFORMANCE CURVE GP-GPE

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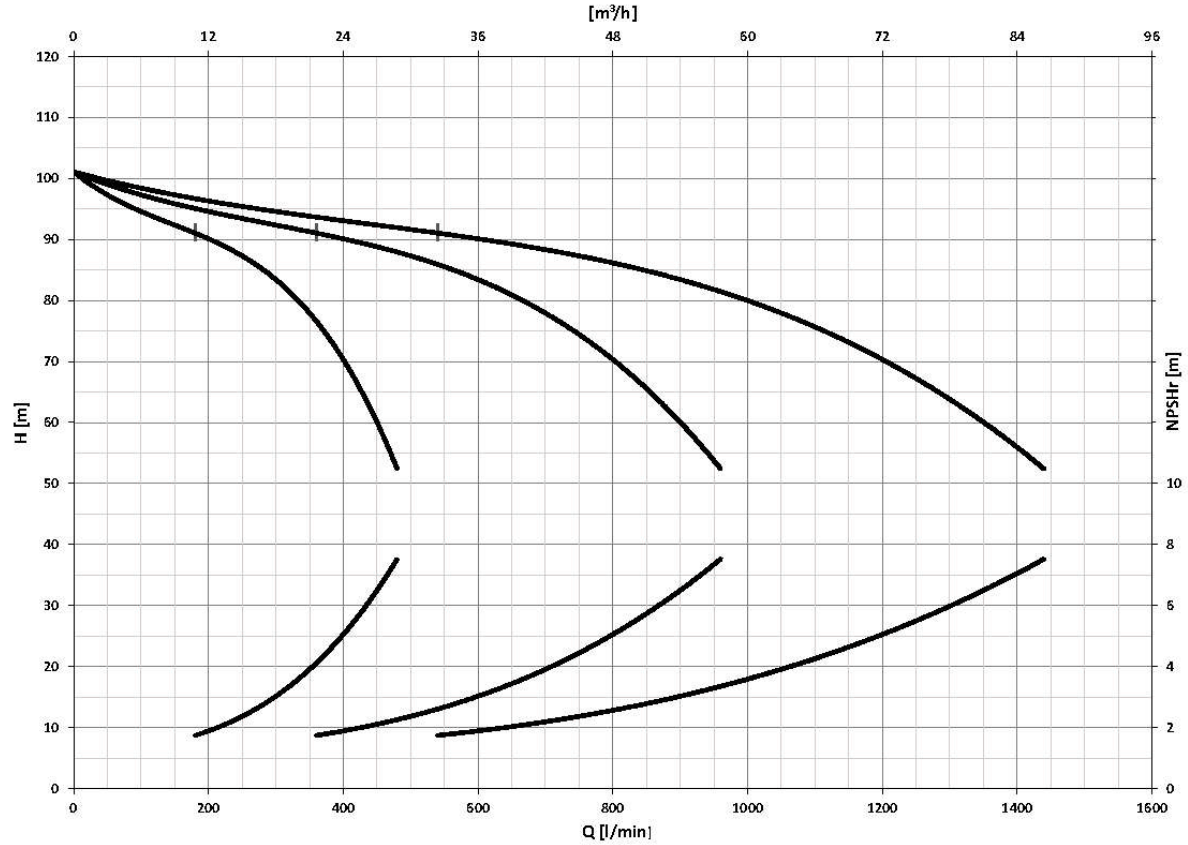

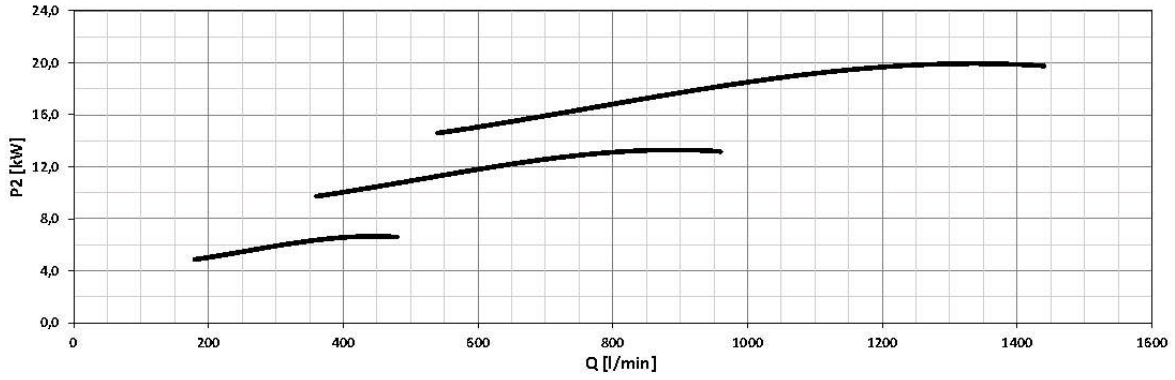

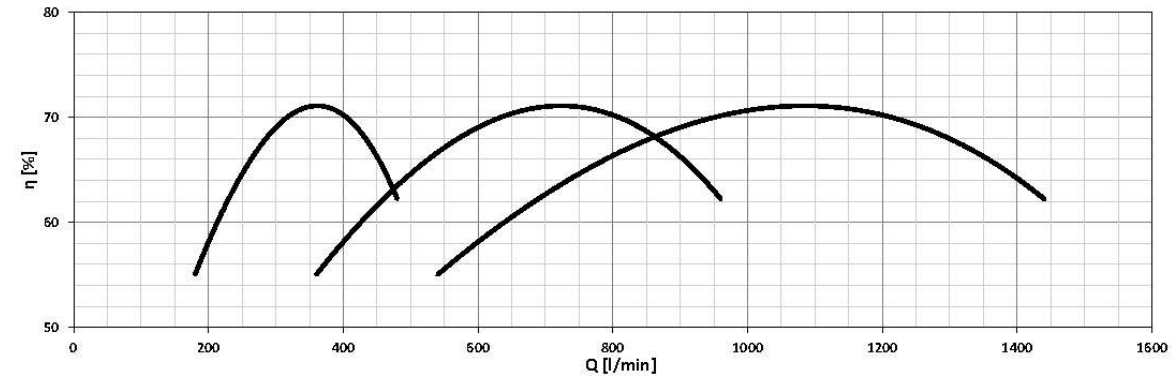

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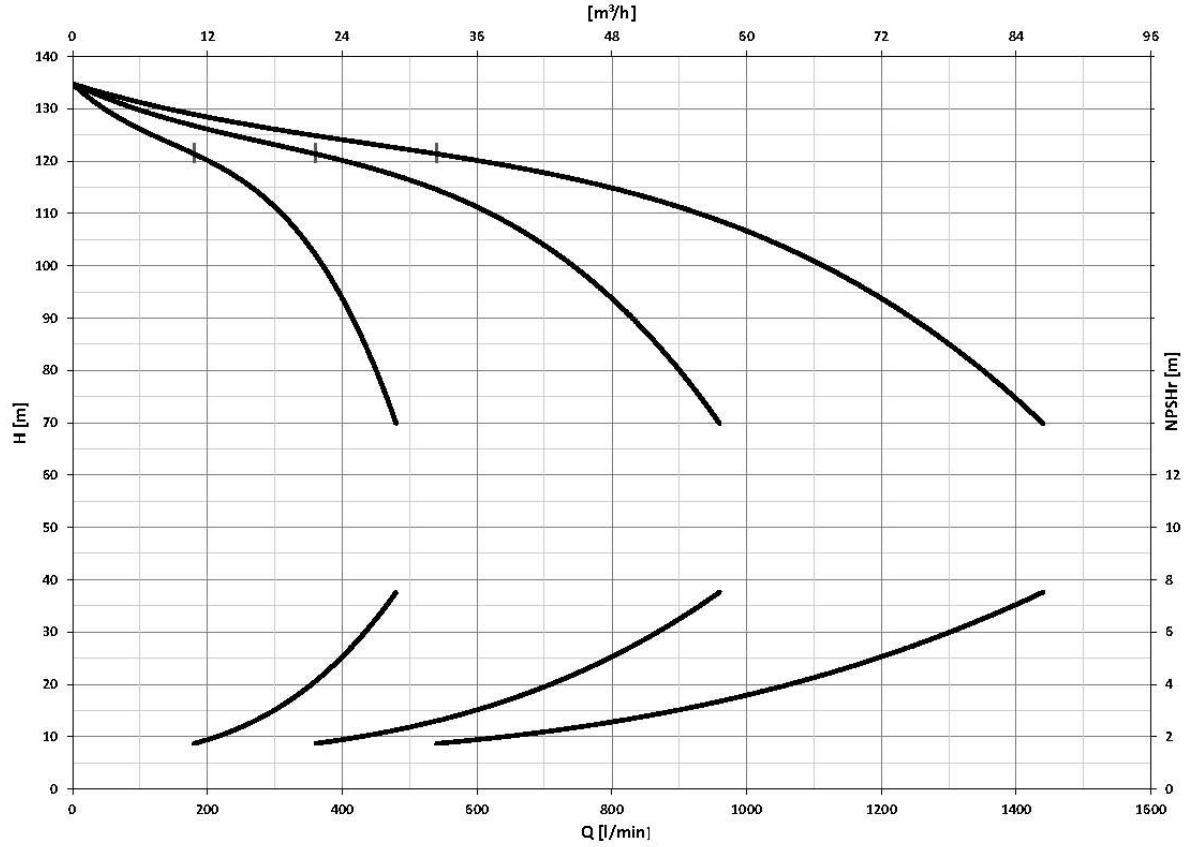
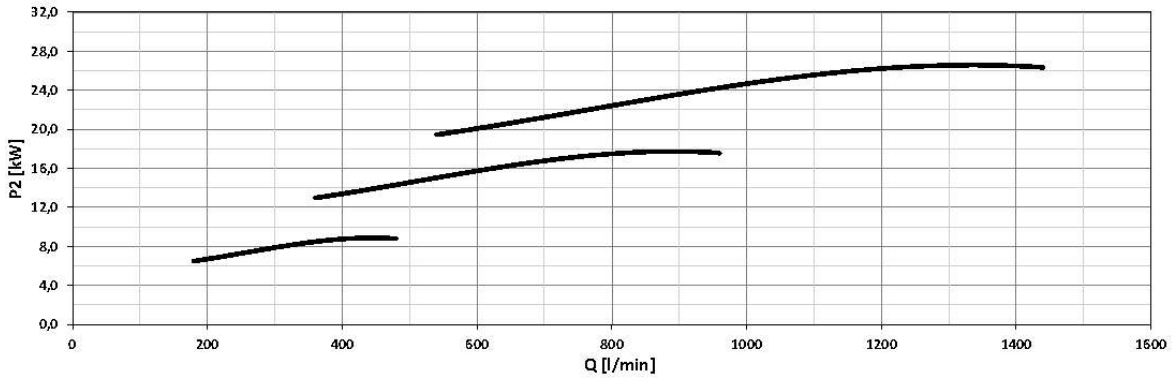
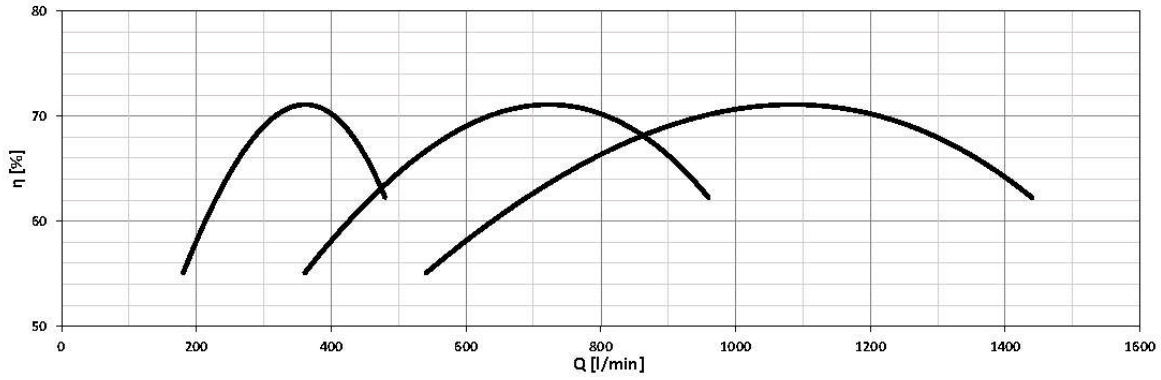
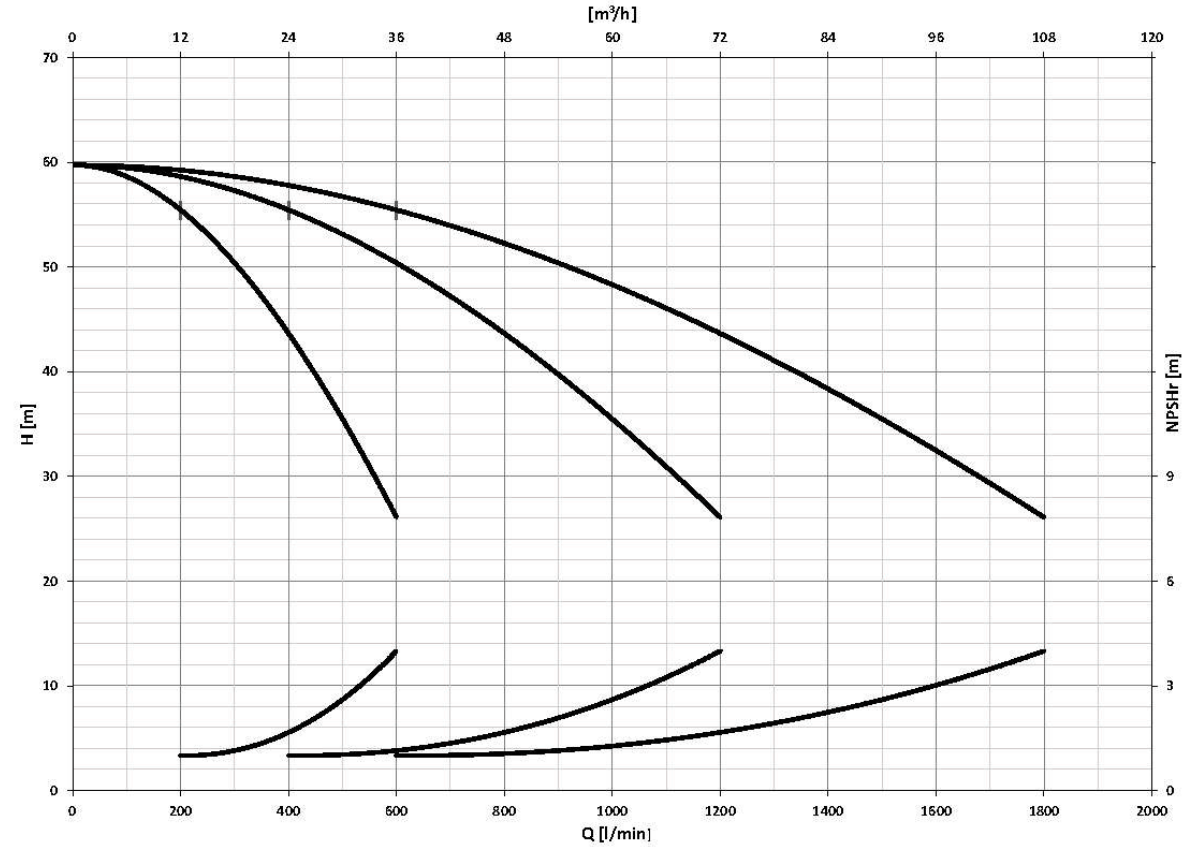


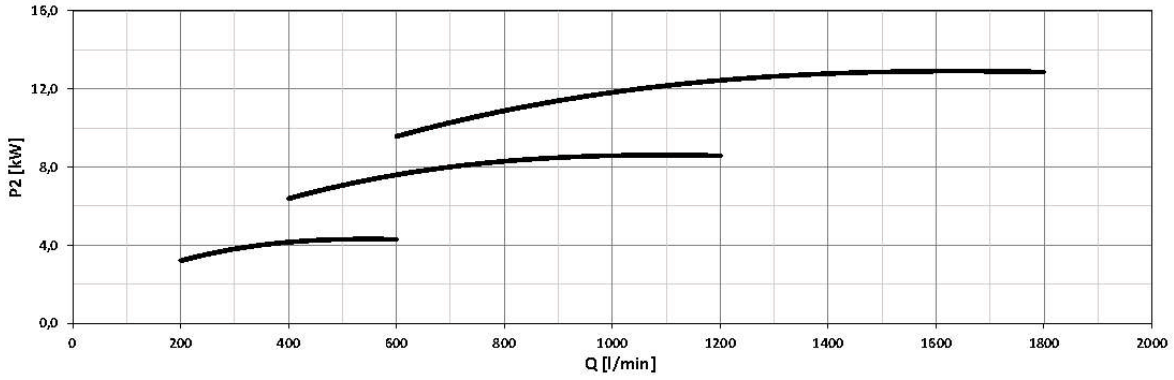


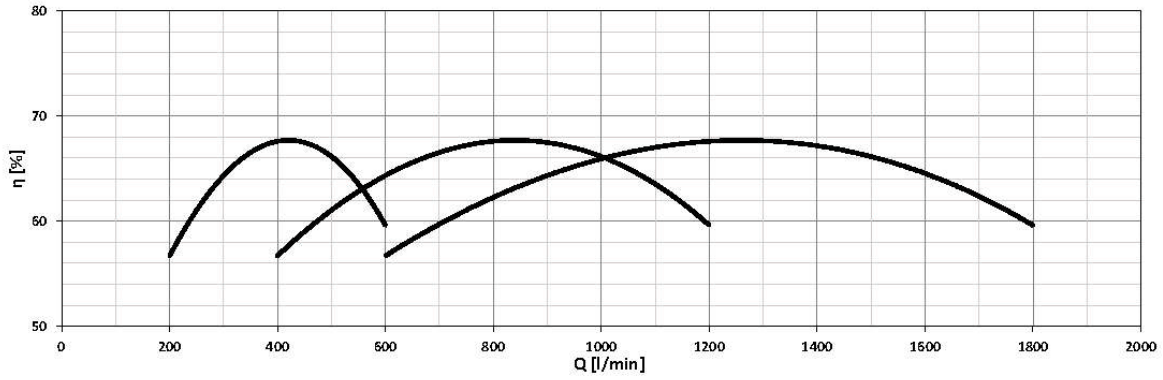


PERFORMANCE CURVE GP-GPE

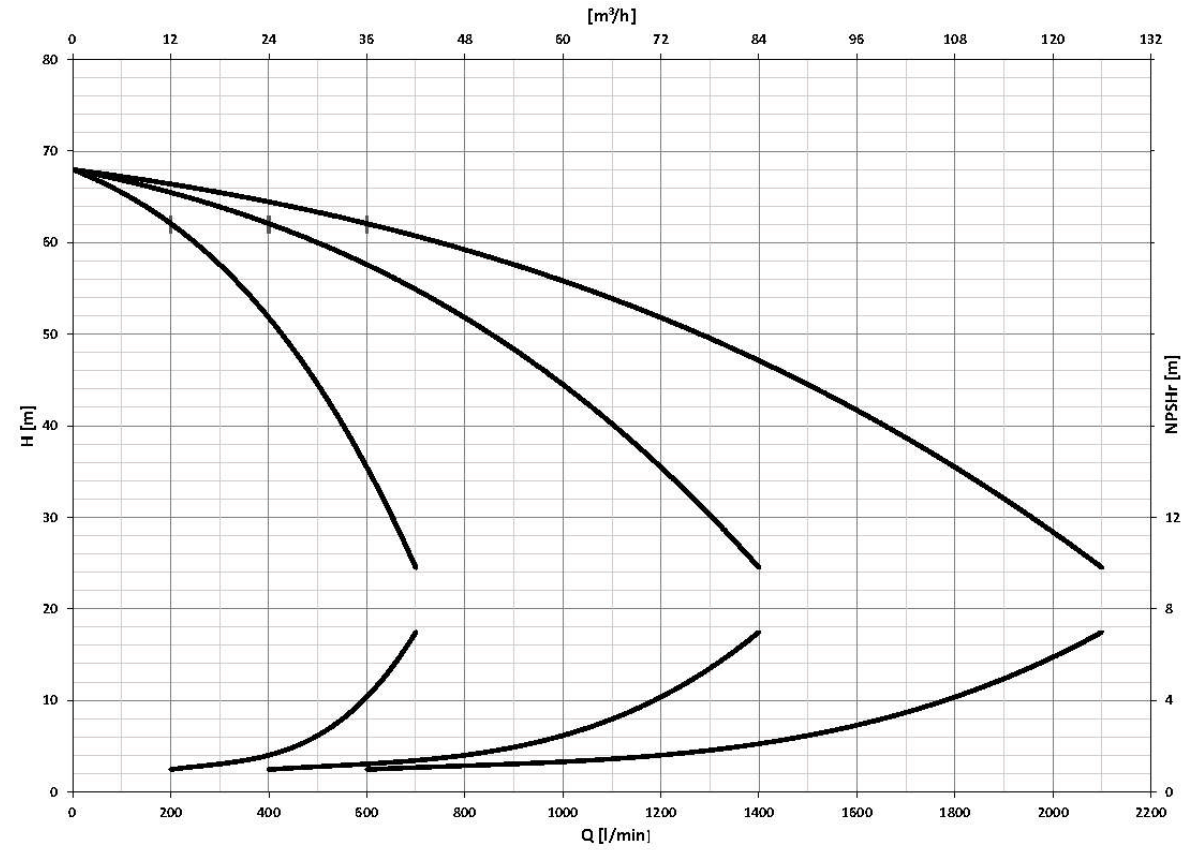
3GP(E) EVM 32 3-3/5.5

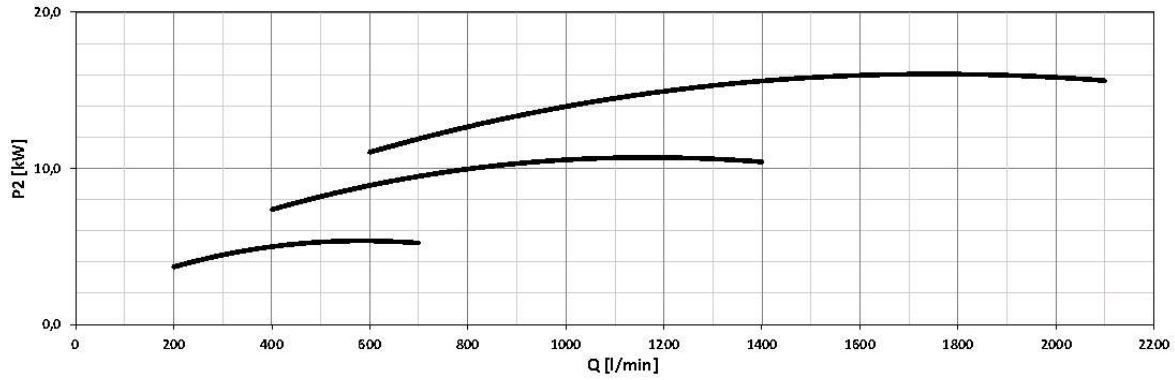


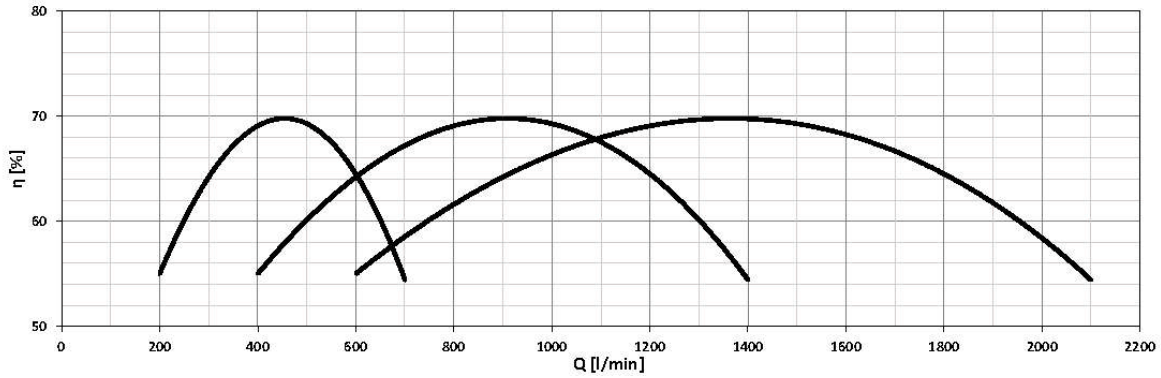




3GP(E) EVM 32 3-1/5.5

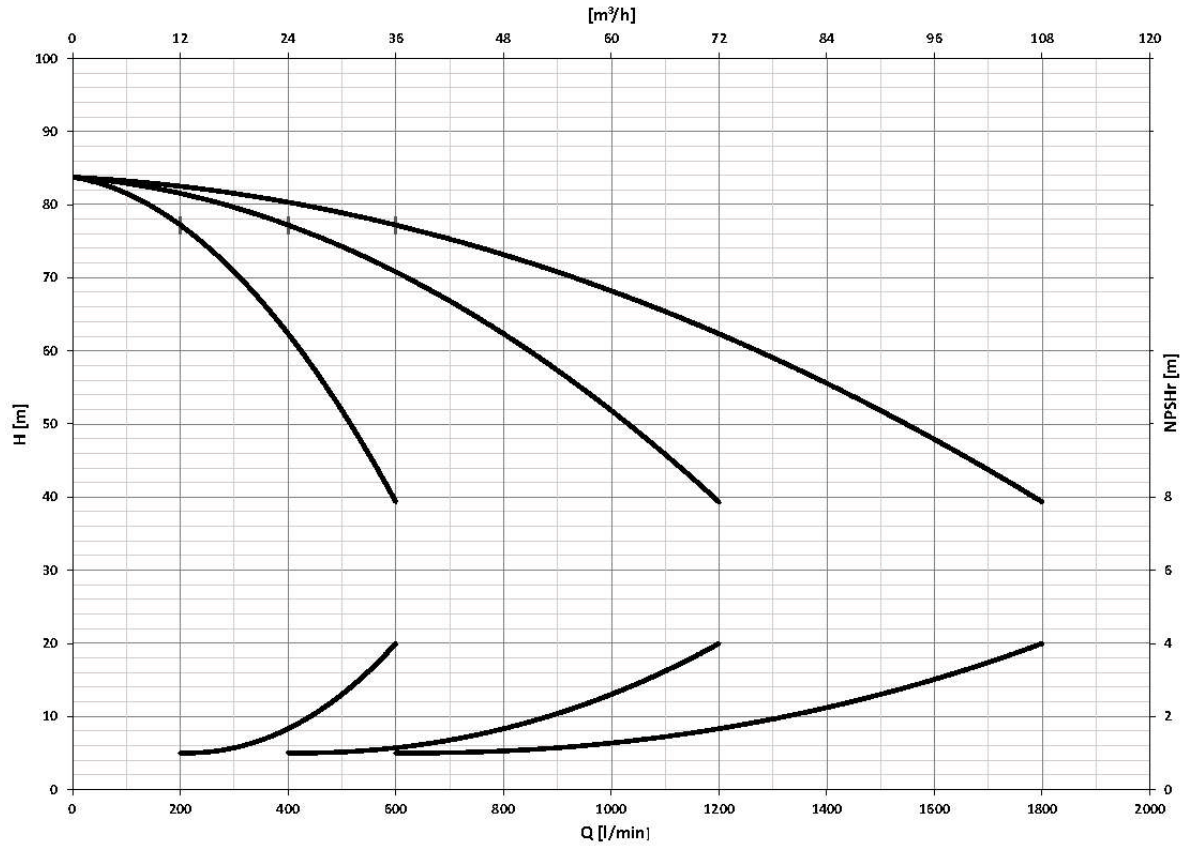


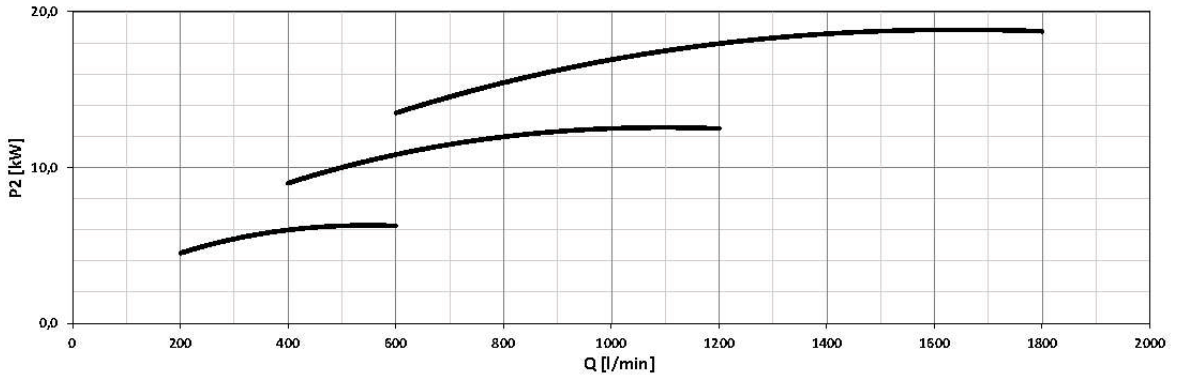


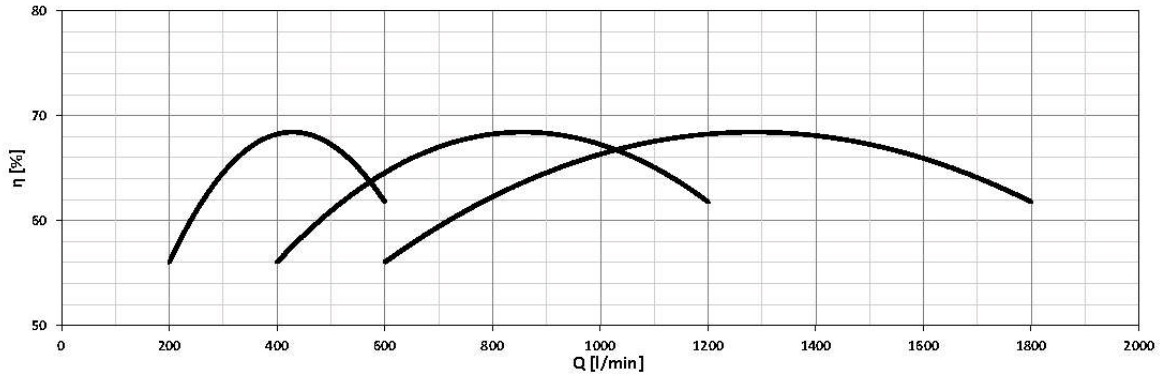


PERFORMANCE CURVE GP-GPE

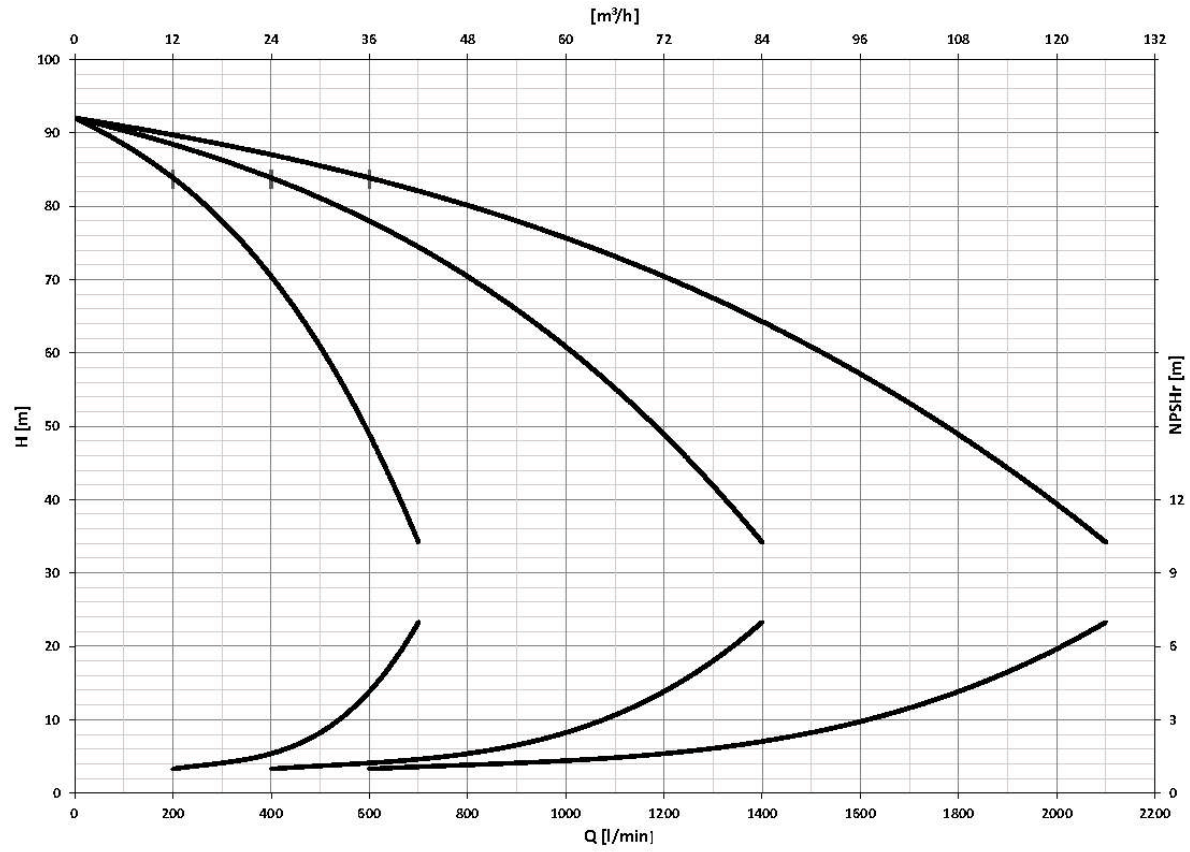
3GP(E) EVM 32 4-3/7.5

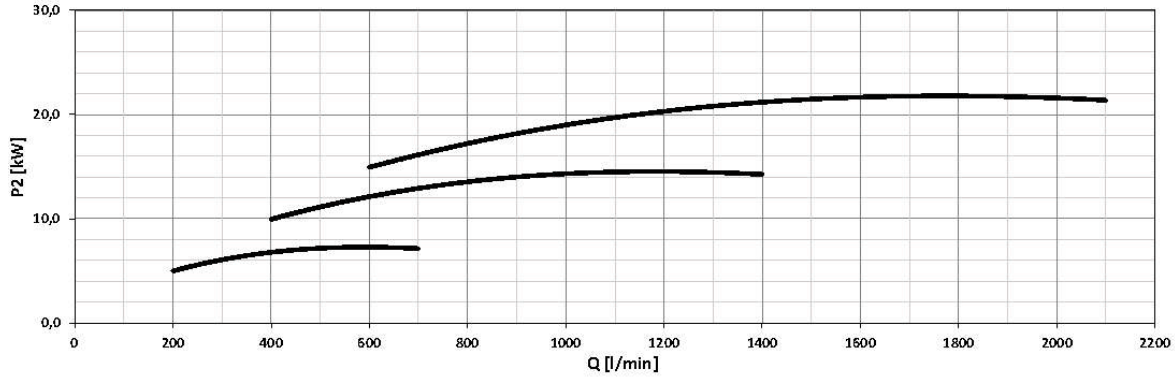


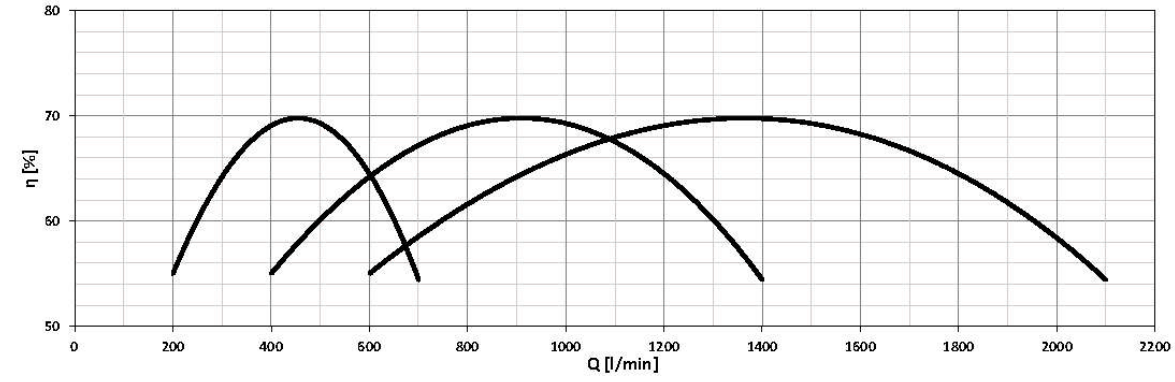




3GP(E) EVM 32 4-1/7.5

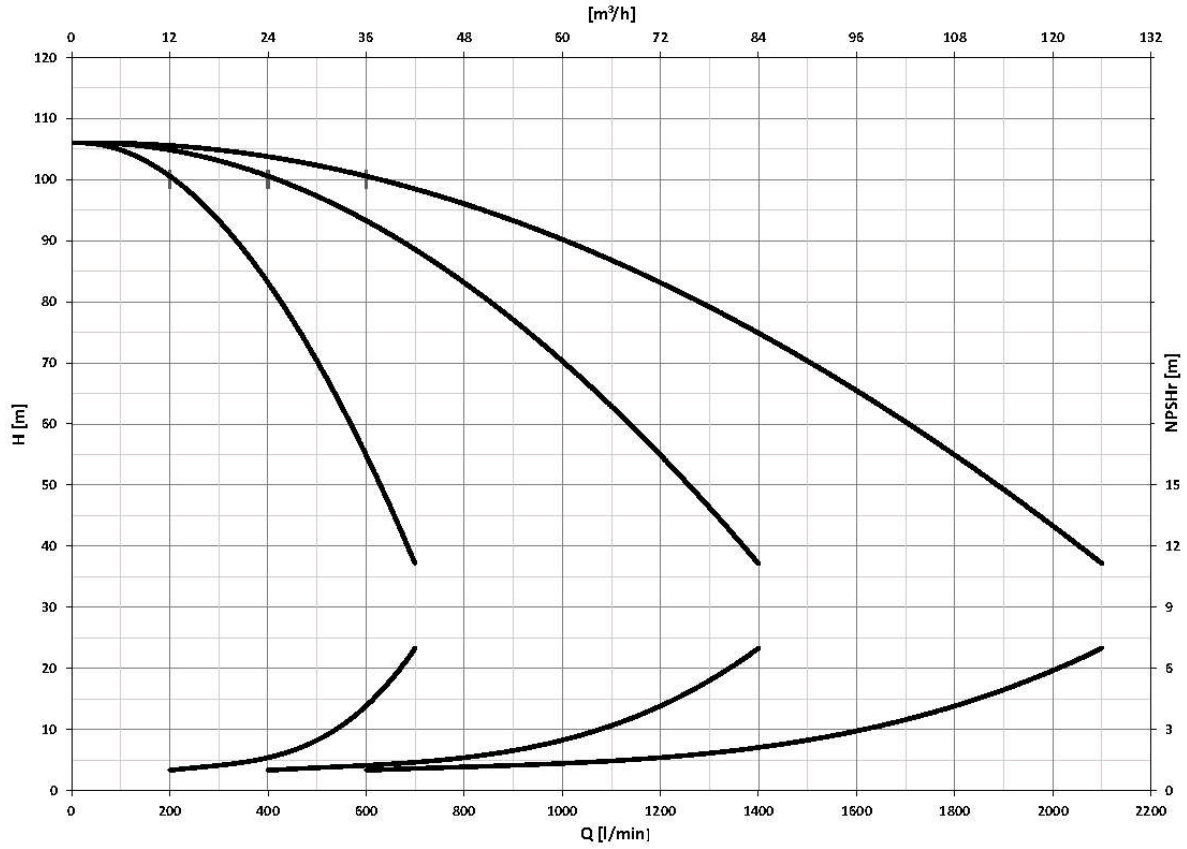


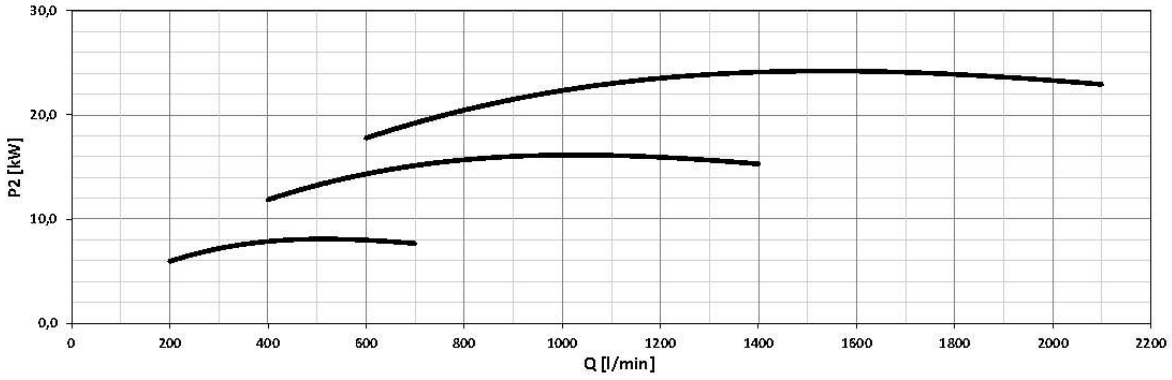


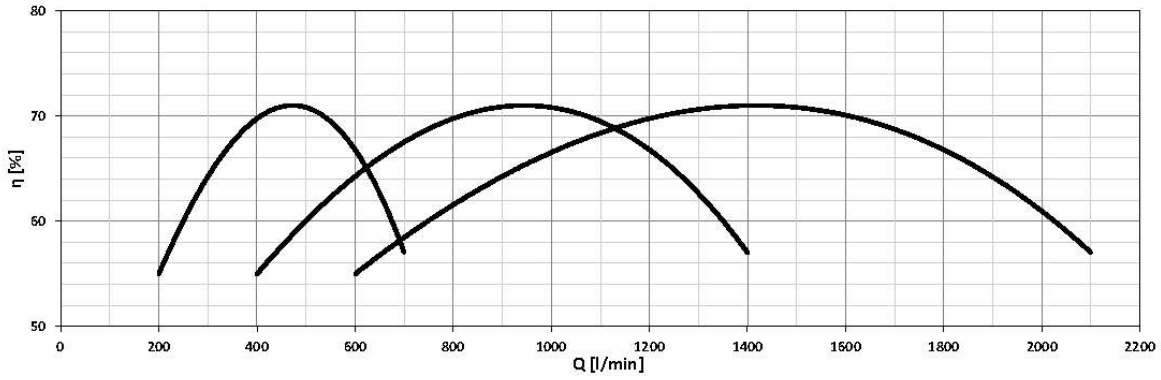


PERFORMANCE CURVE GP-GPE

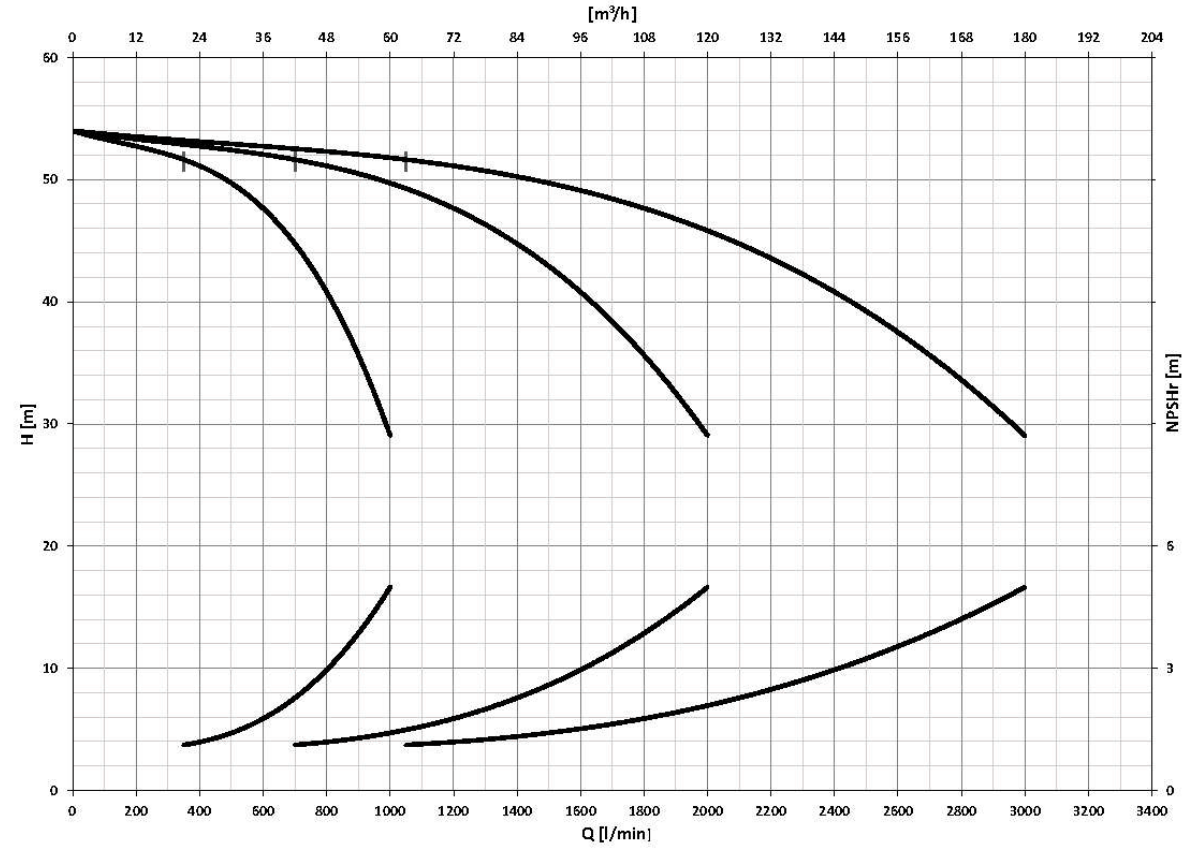
3GP(E) EVM 32 5-3/11

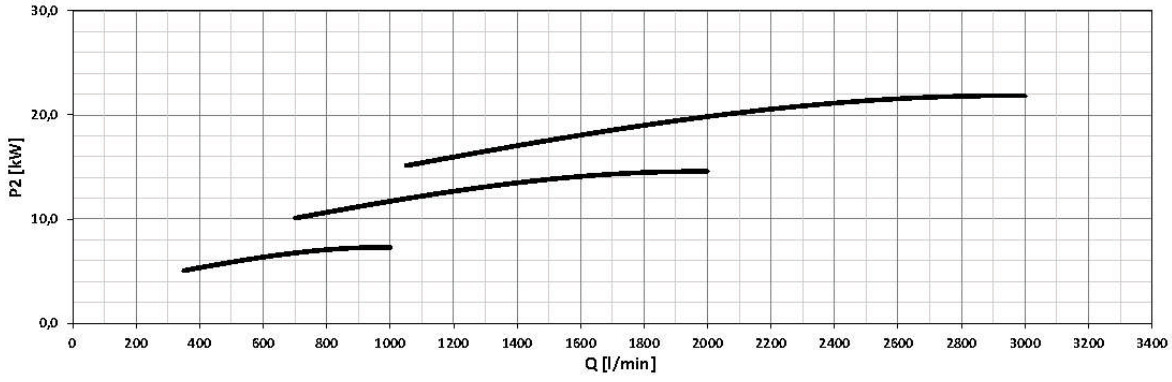


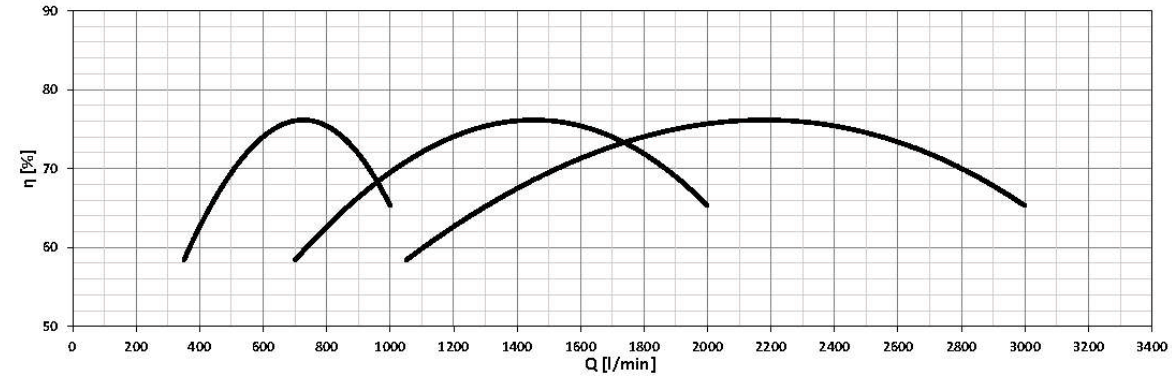




3GP(E) EVM 45 2-0/7.5

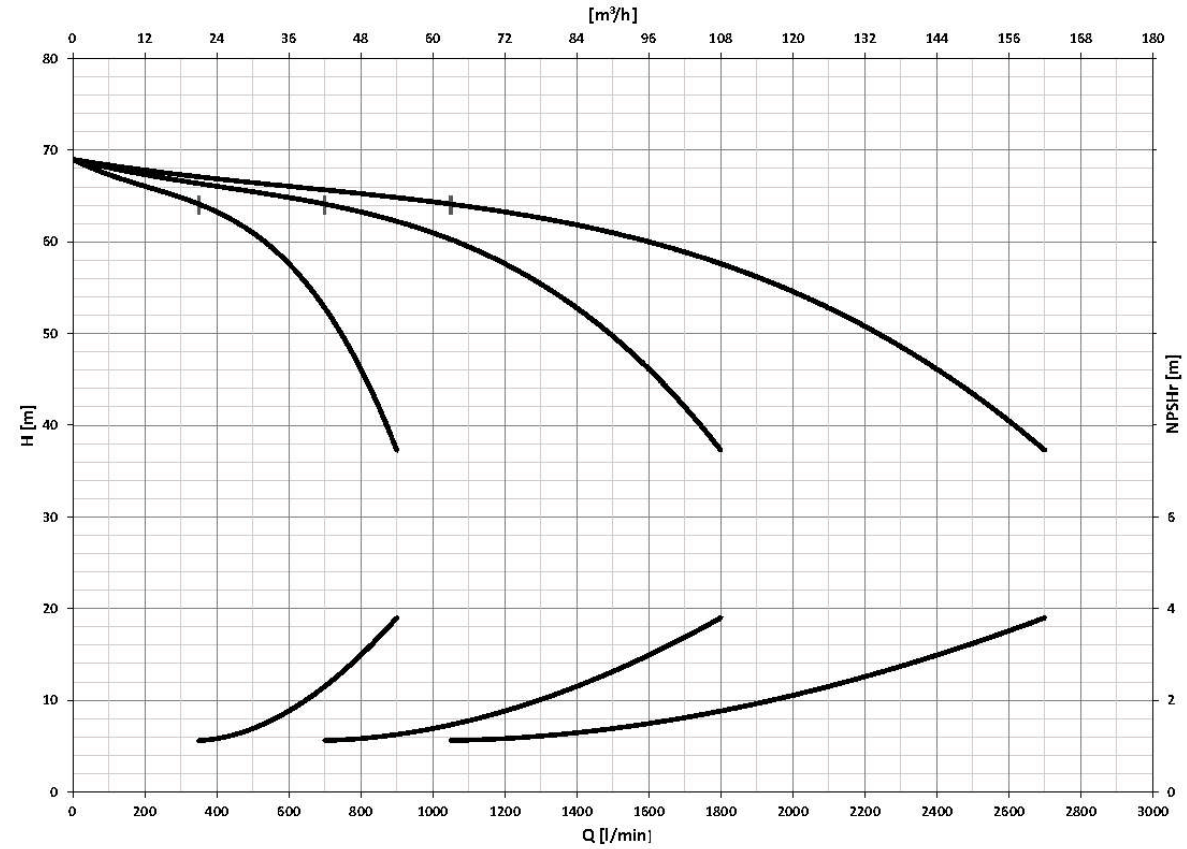


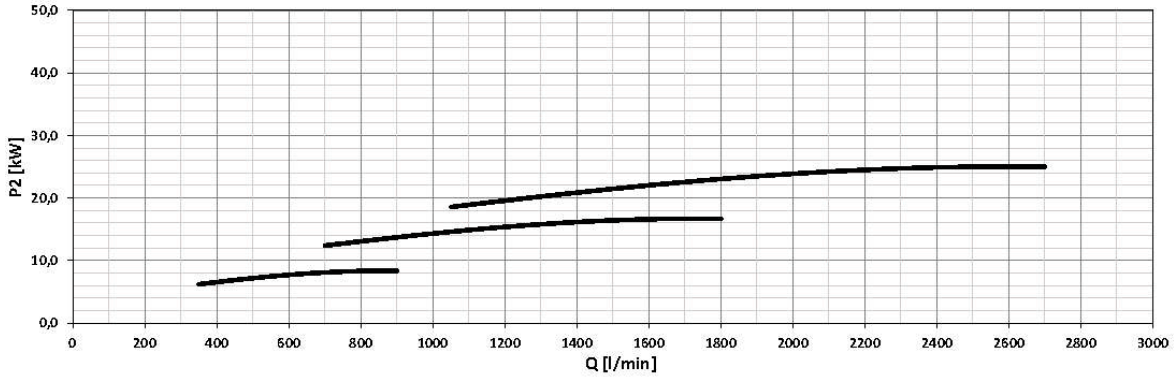


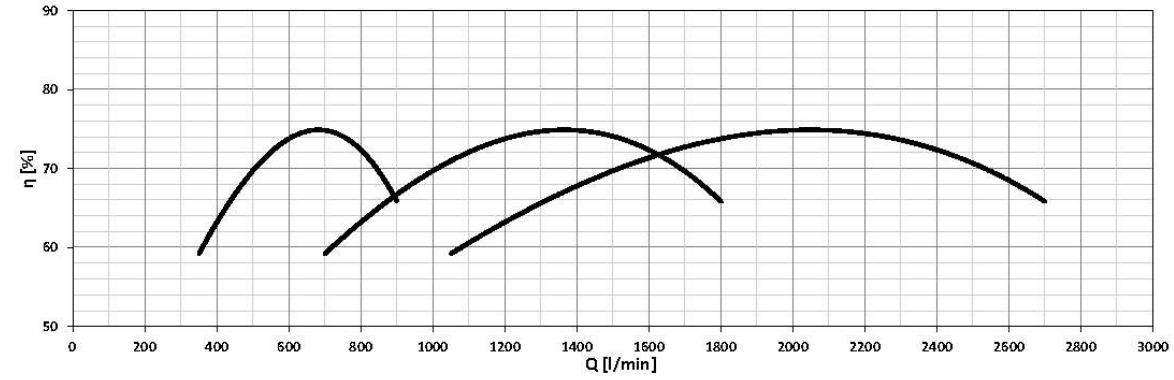


PERFORMANCE CURVE GP-GPE

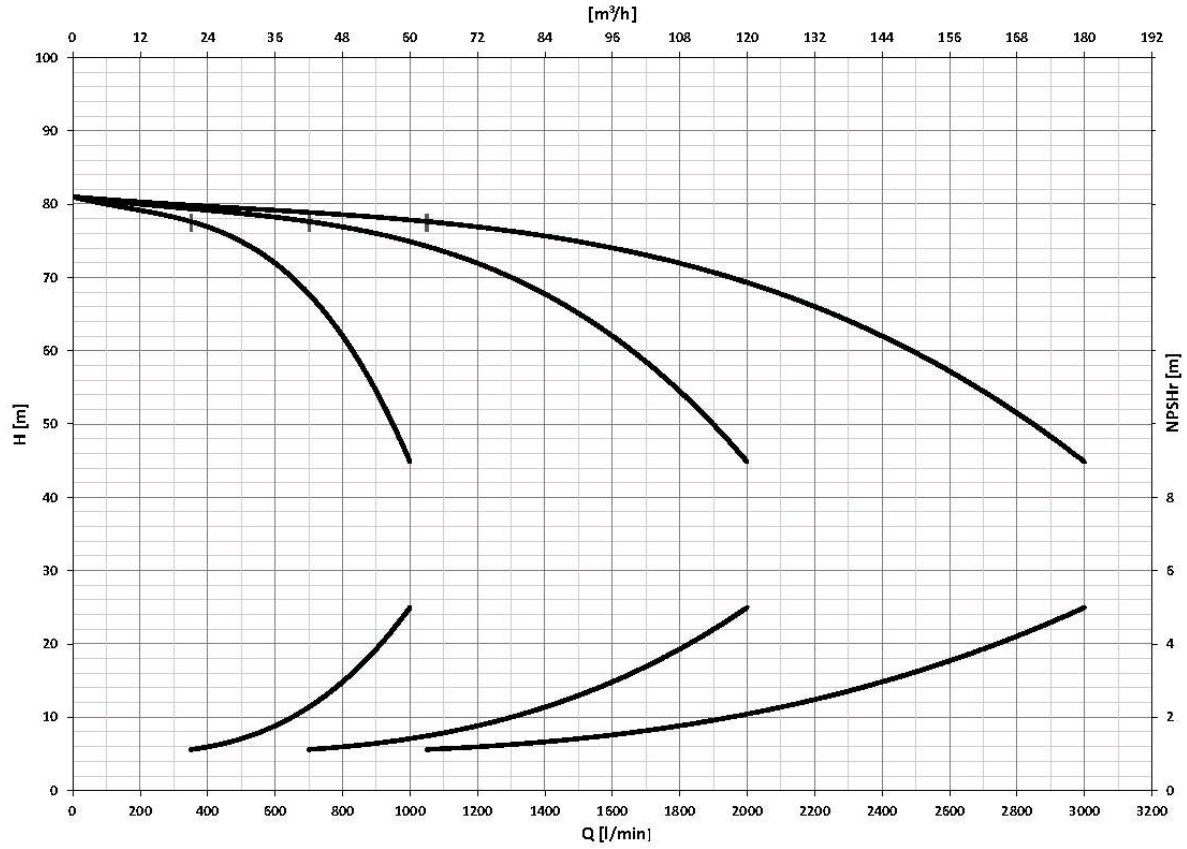
3GP(E) EVM 45 3-2/11

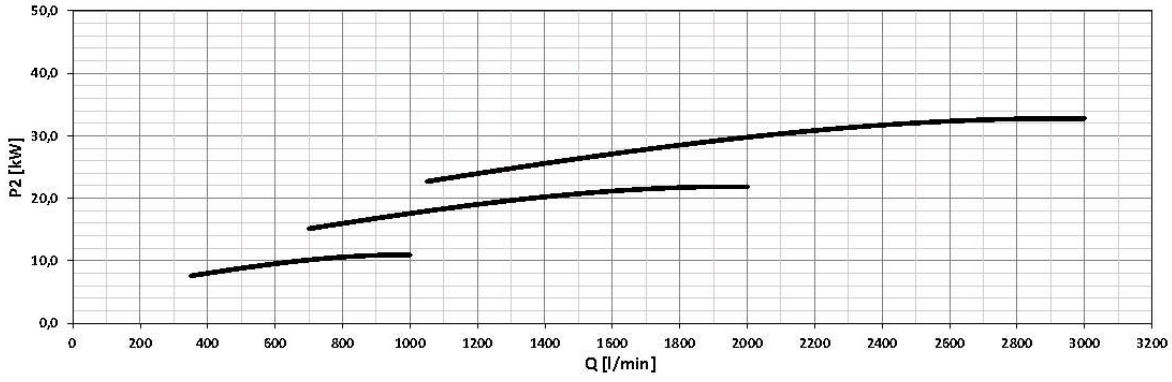


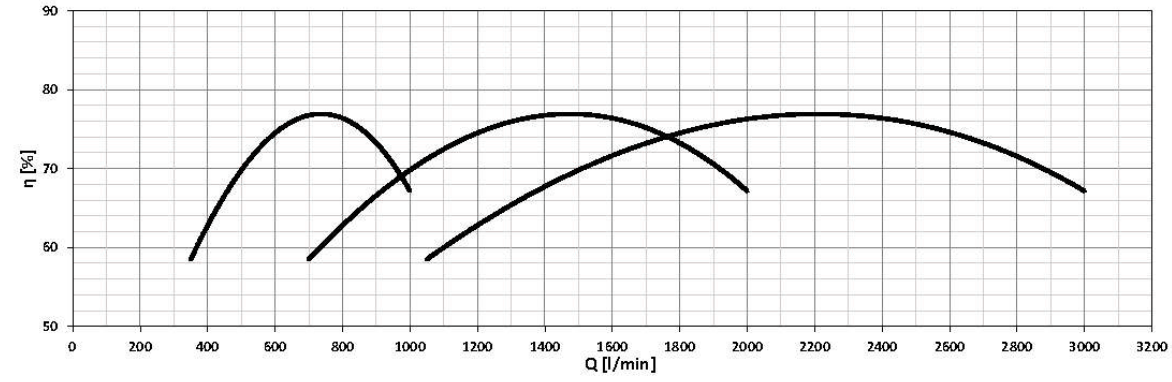




3GP(E) EVM 45 3-0/11

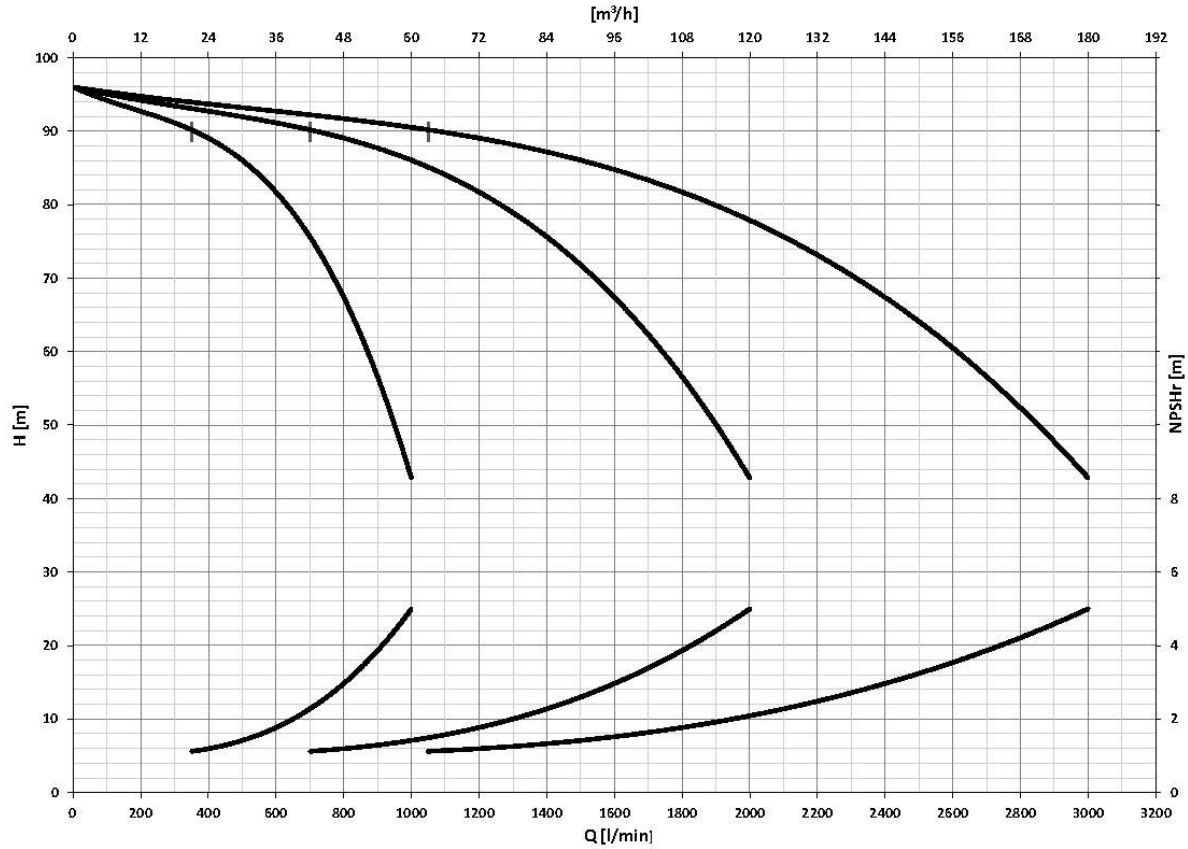


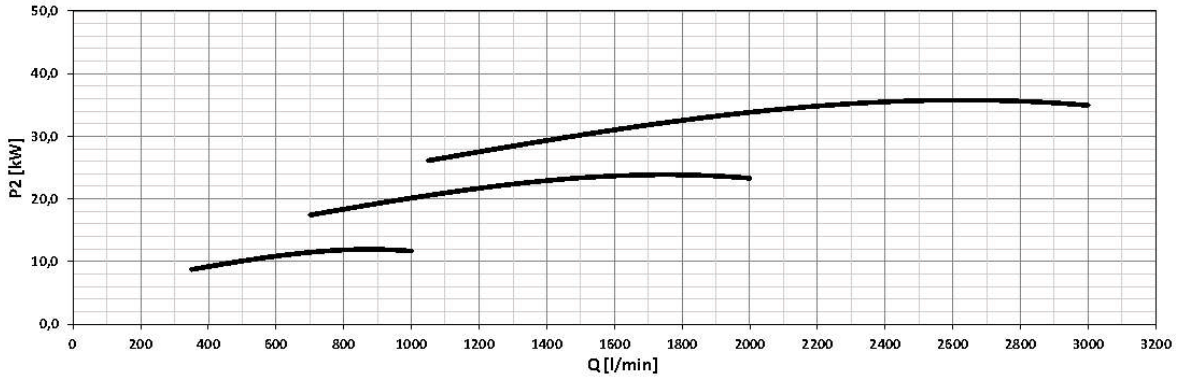


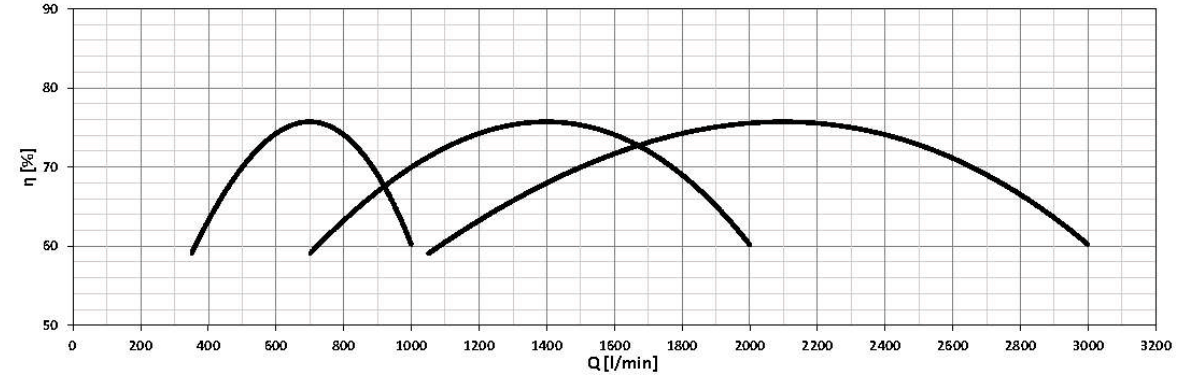


PERFORMANCE CURVE GP-GPE

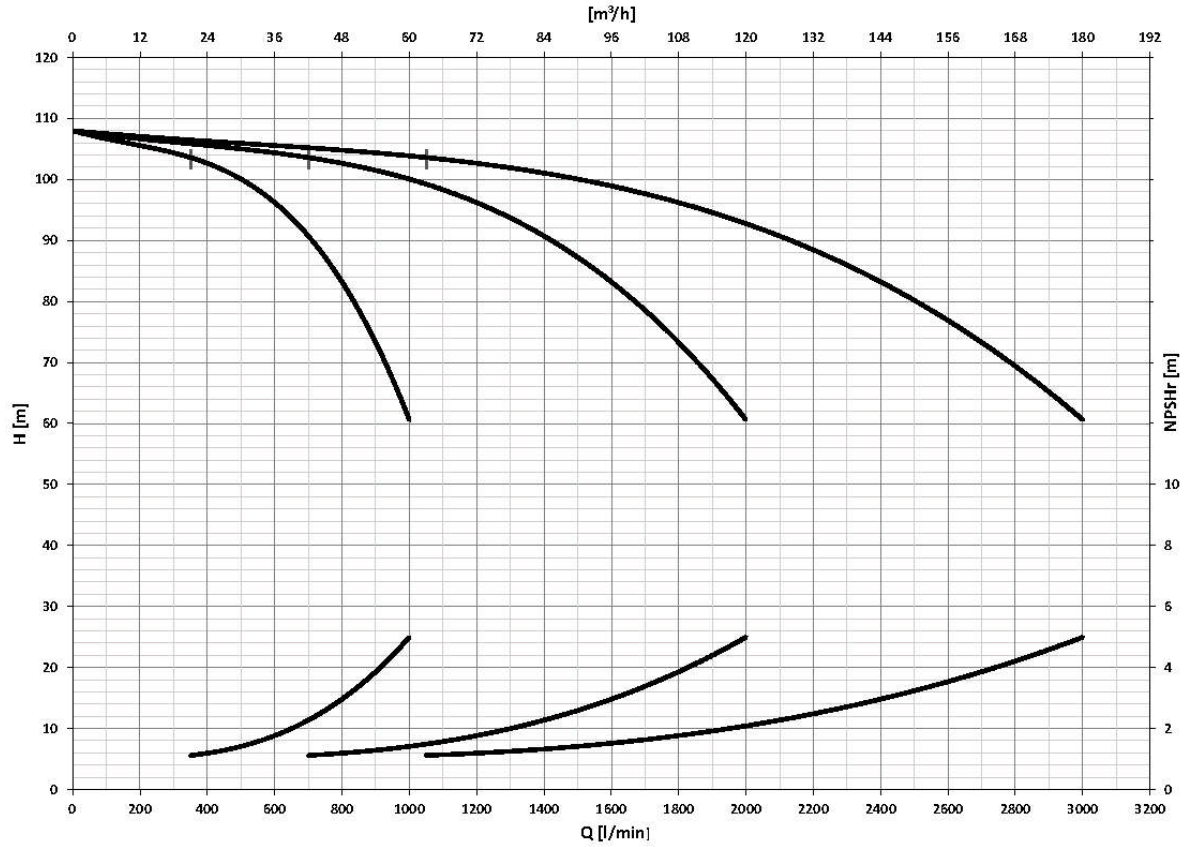
3GP(E) EVM 45 4-2/15

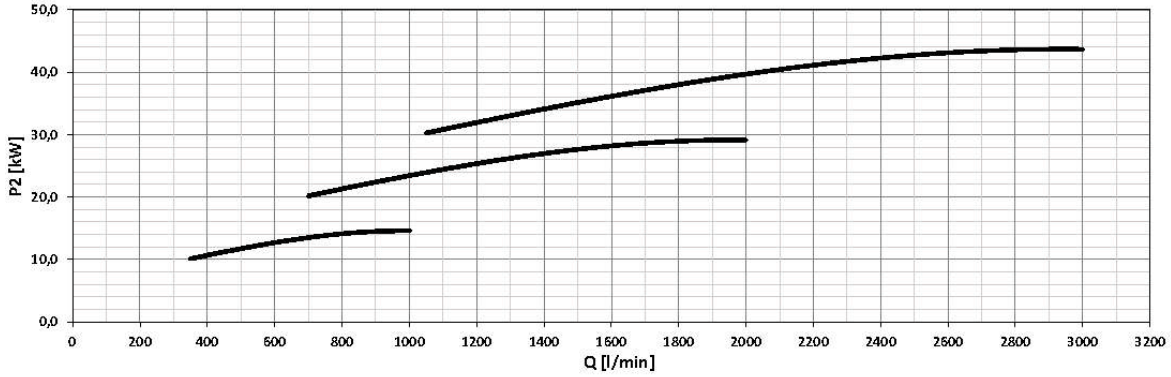


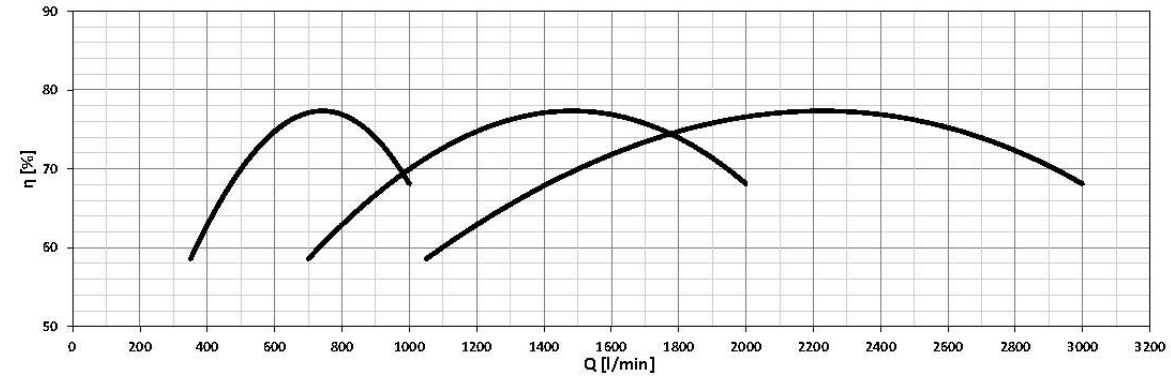




3GP(E) EVM 45 4-0/15

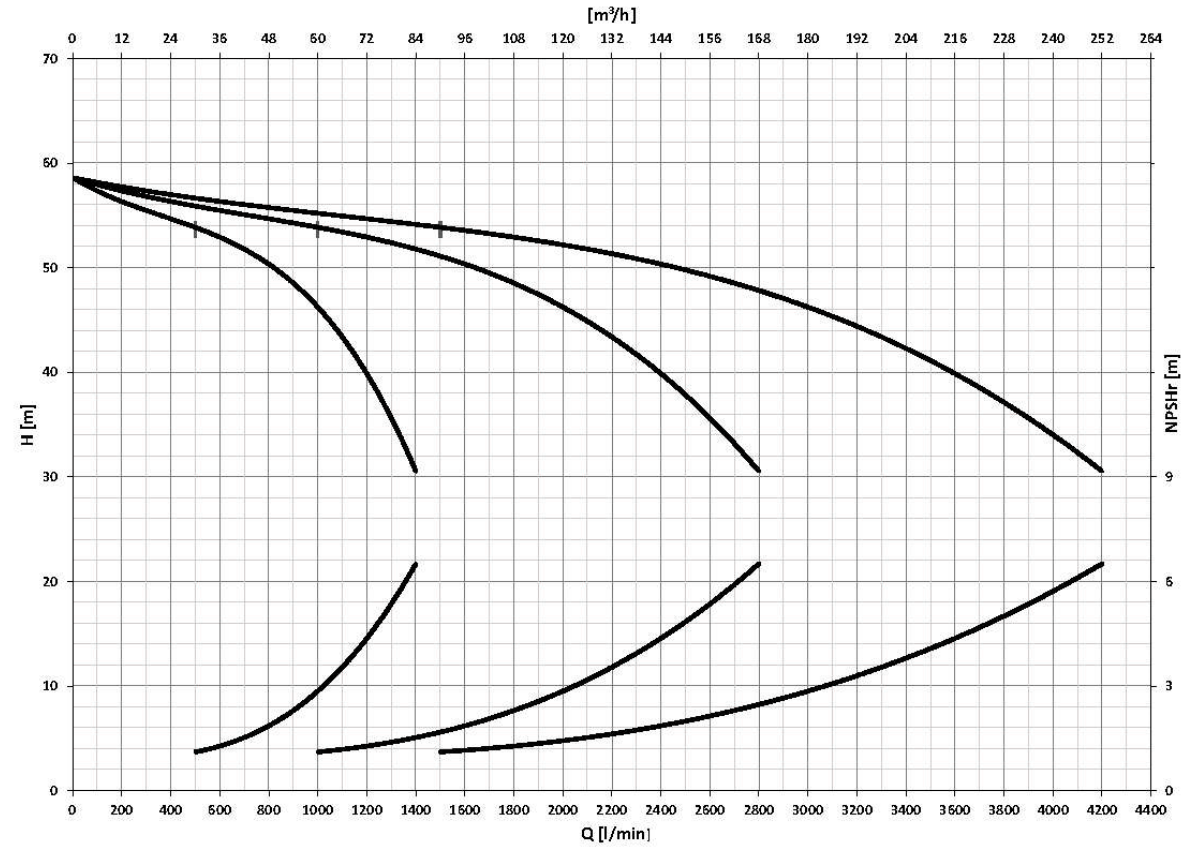


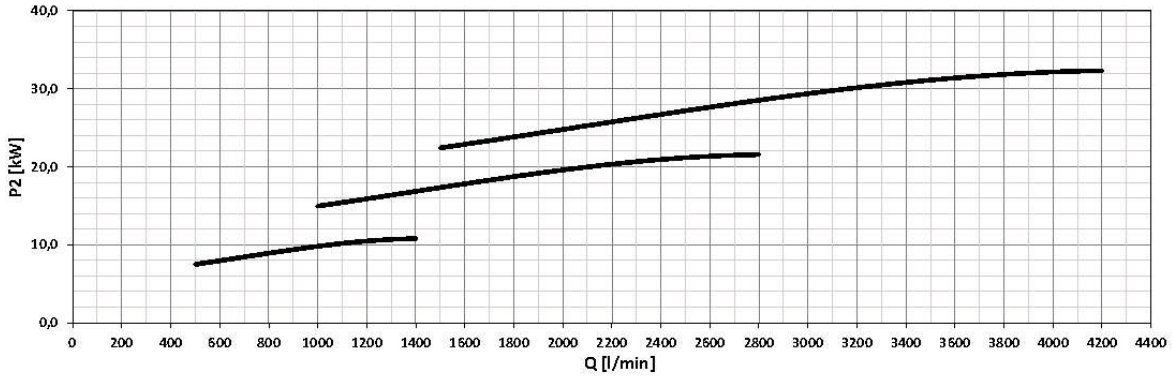


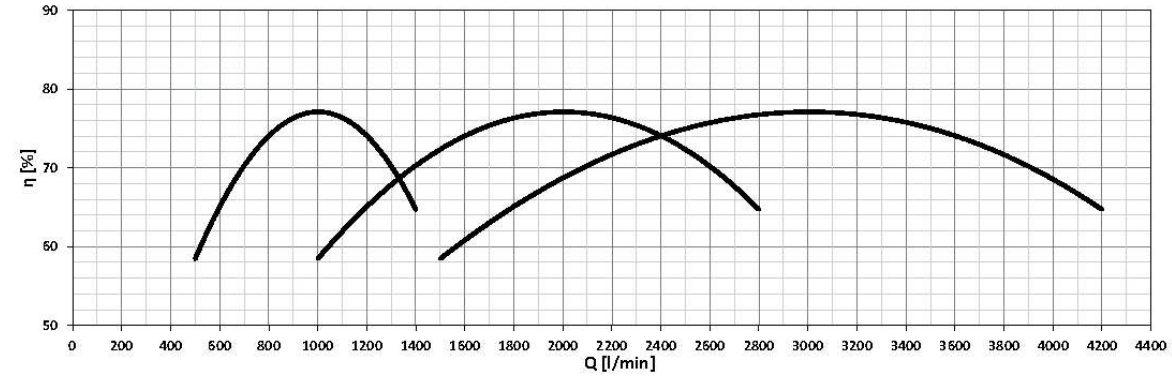


PERFORMANCE CURVE GP-GPE

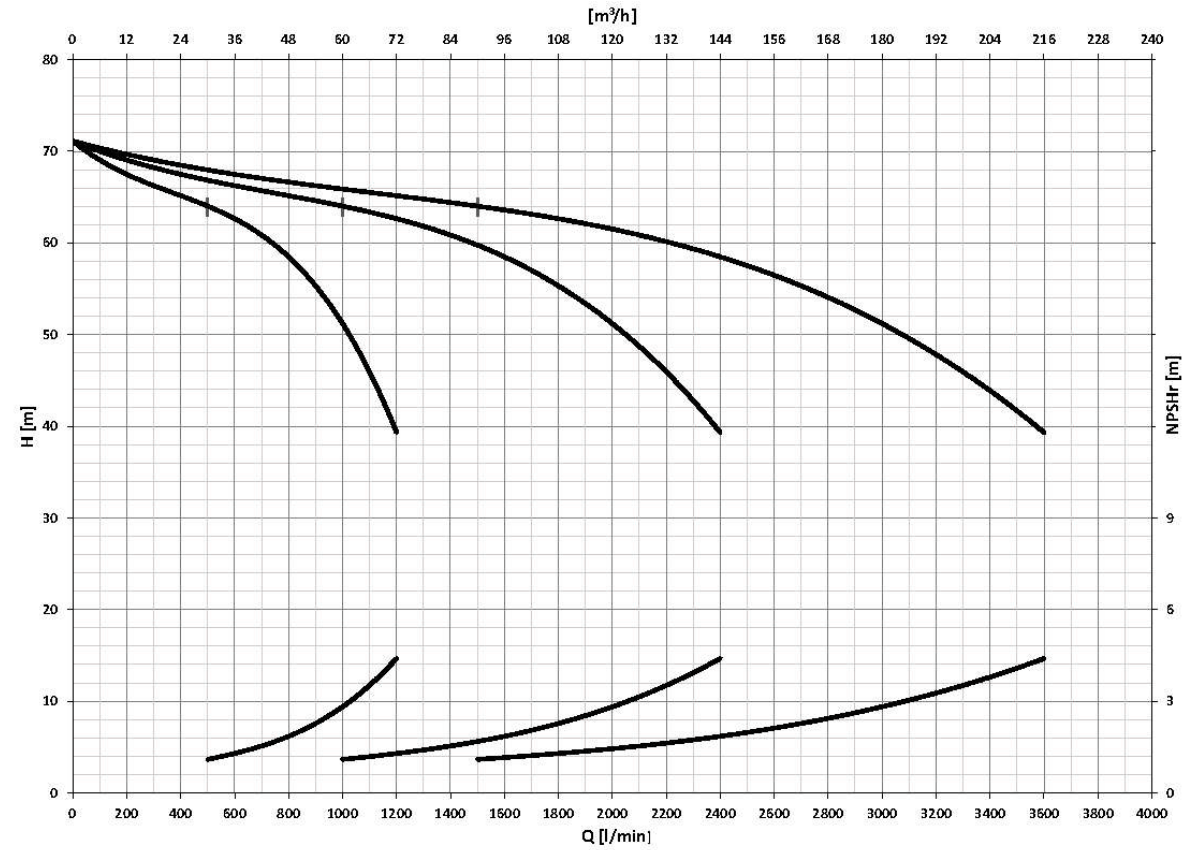
3GP(E) EVM 64 2-0/11

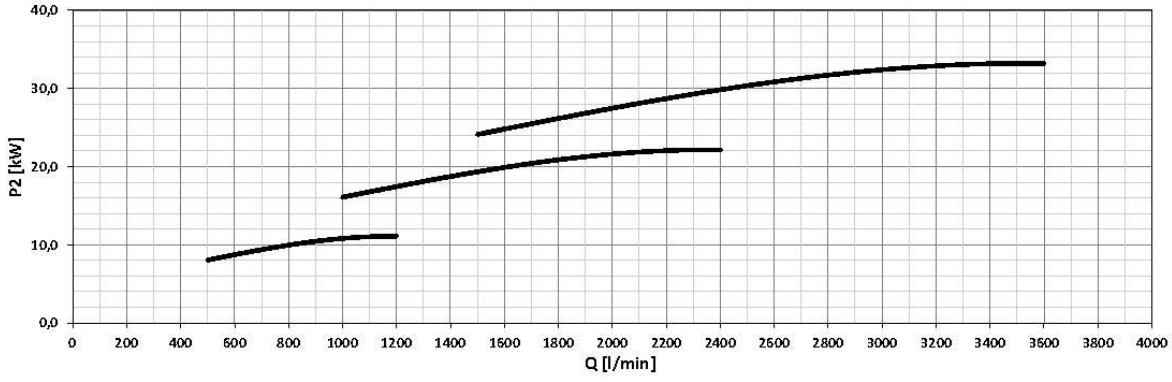


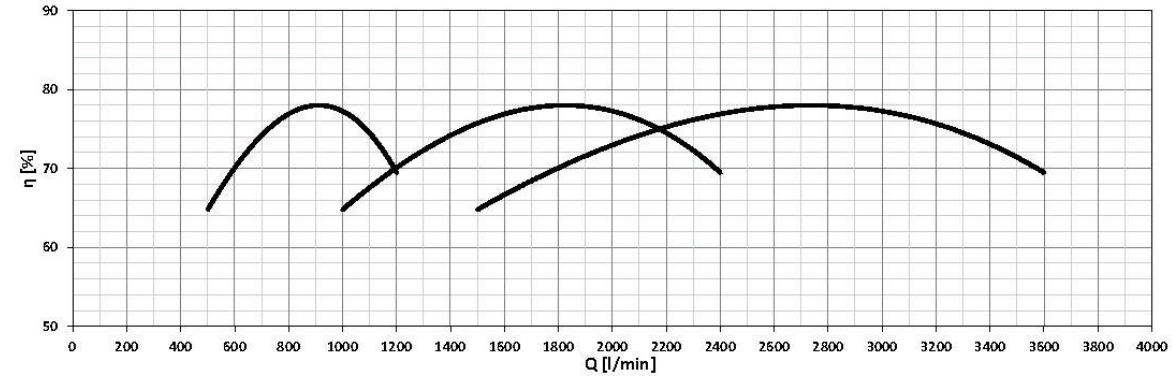




3GP(E) EVM 64 3-3/15

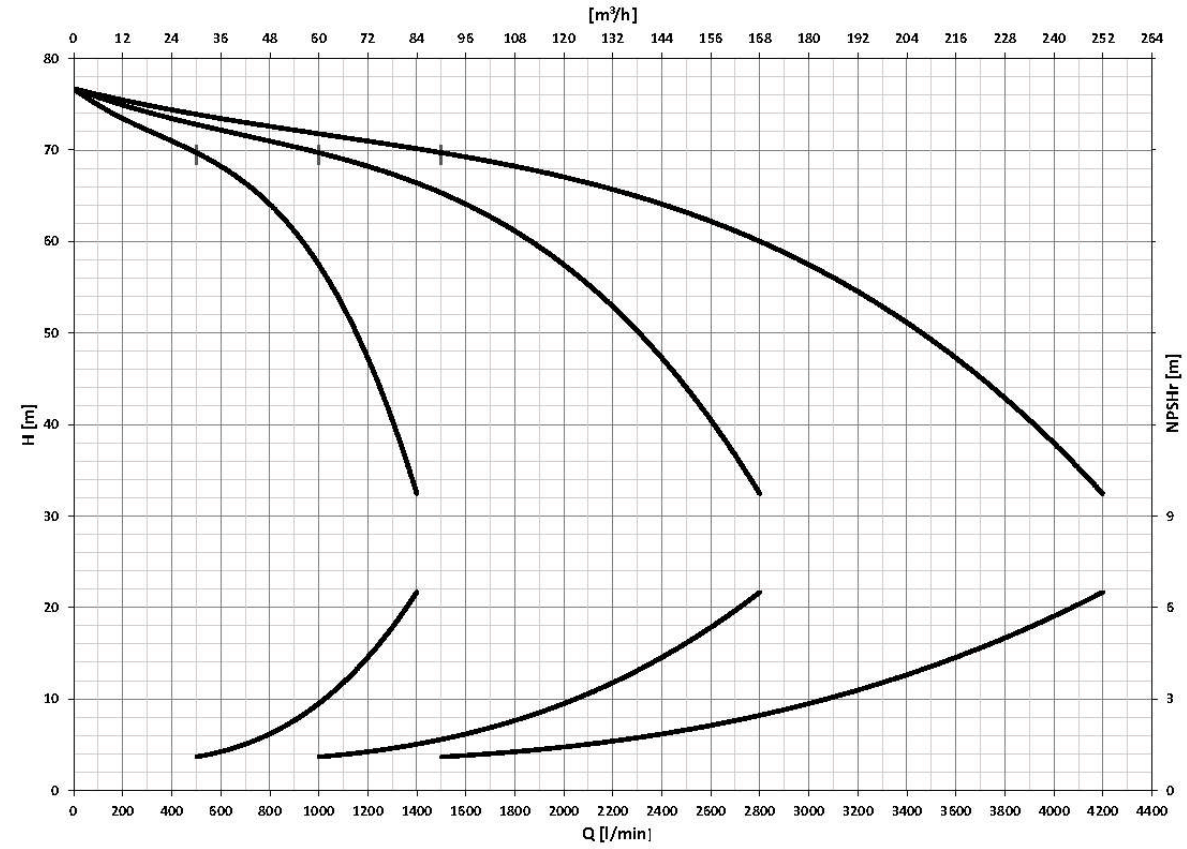


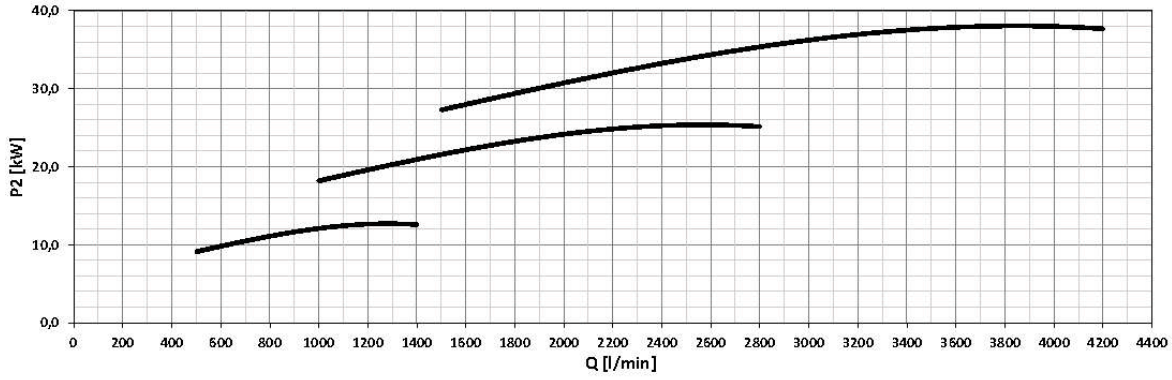


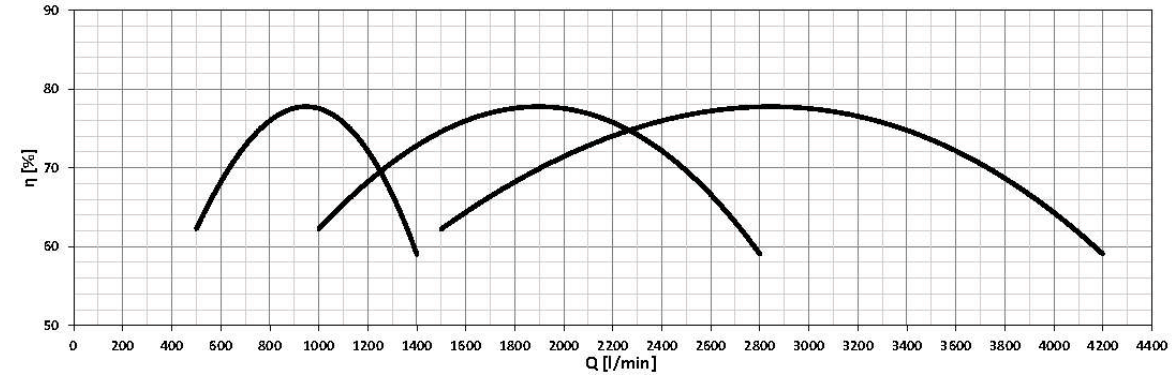


PERFORMANCE CURVE GP-GPE

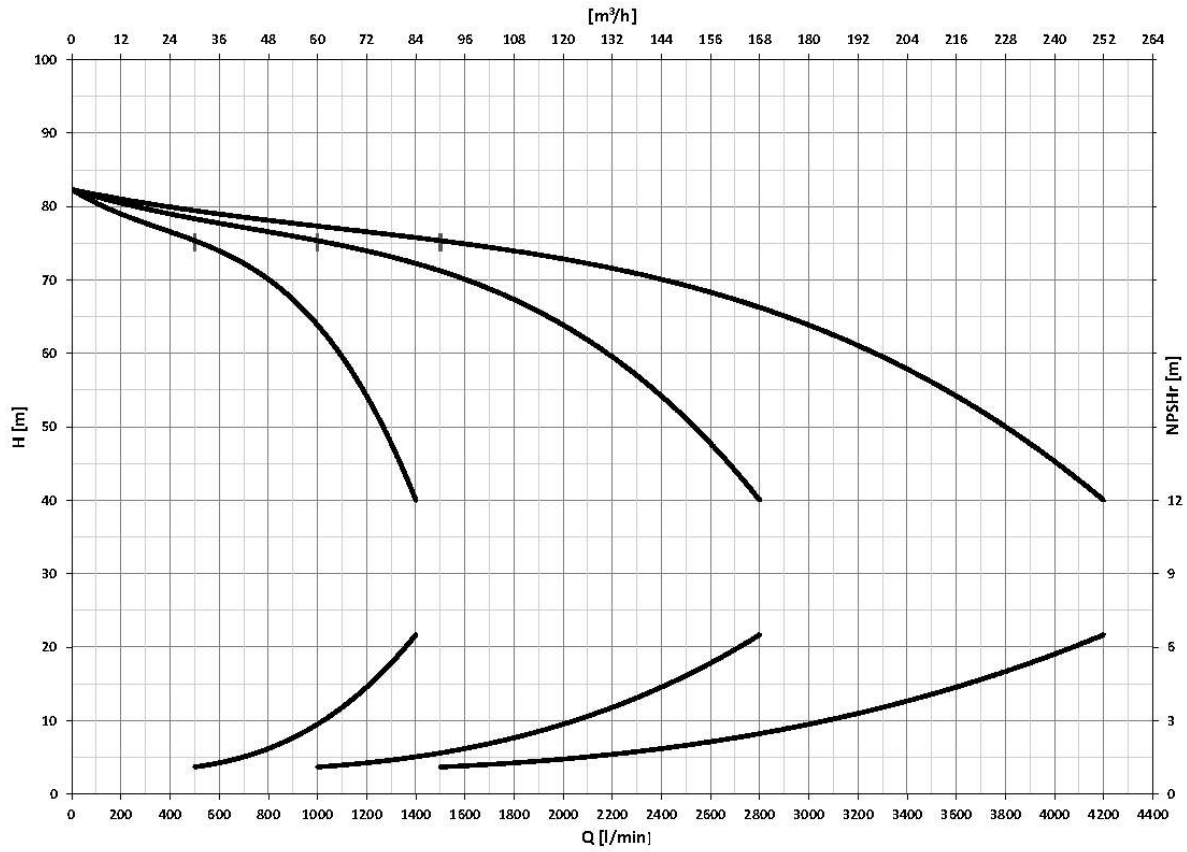
3GP(E) EVM 64 3-2/15

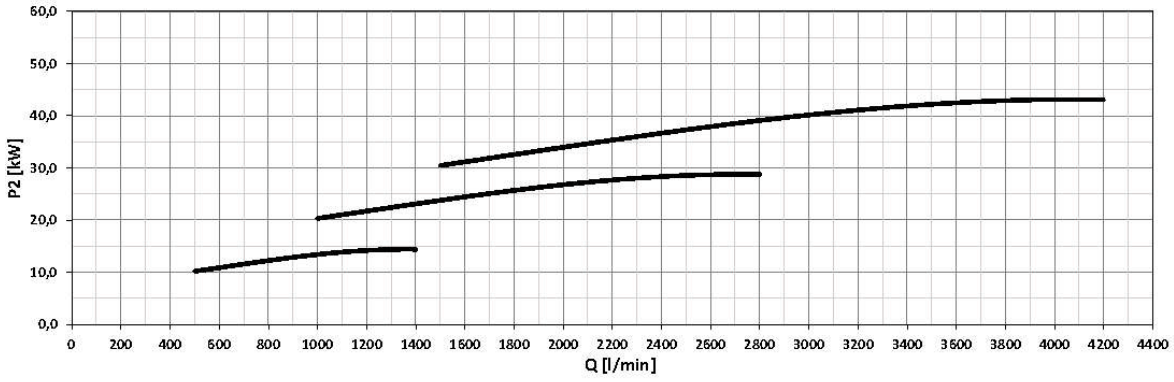


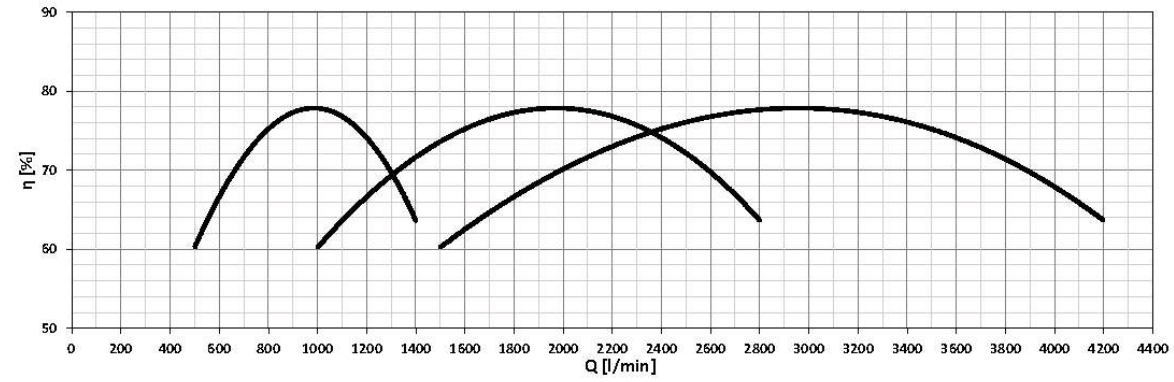




3GP(E) EVM 64 3-1/15

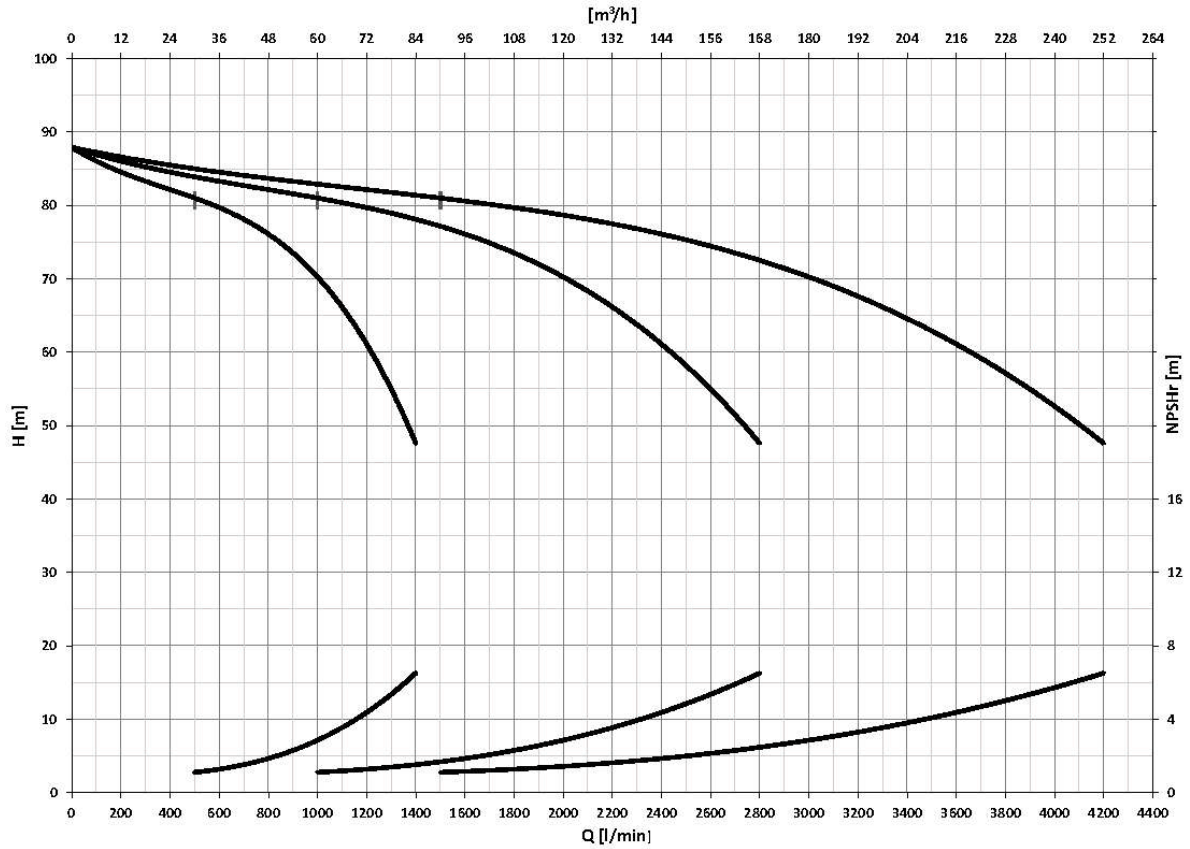


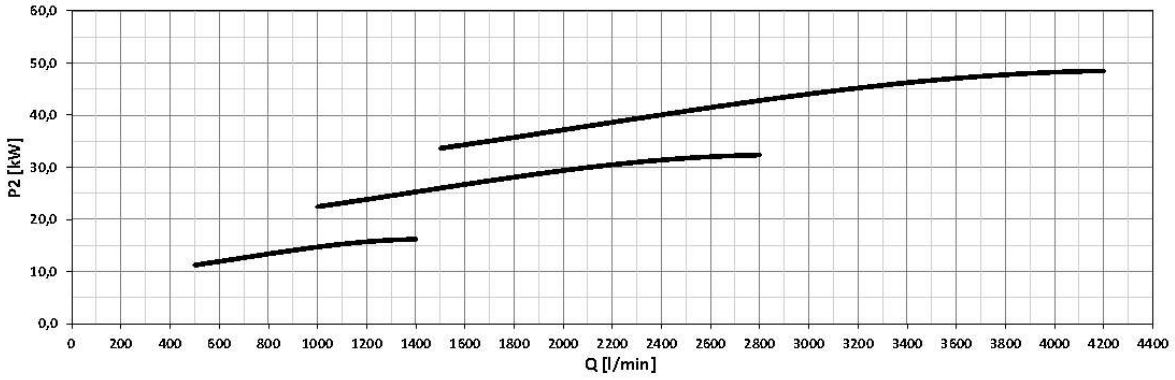


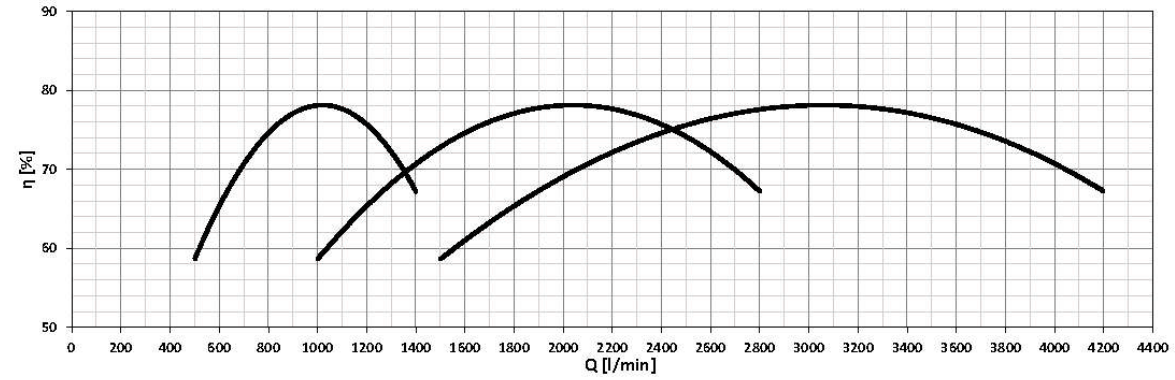


PERFORMANCE CURVE GP-GPE

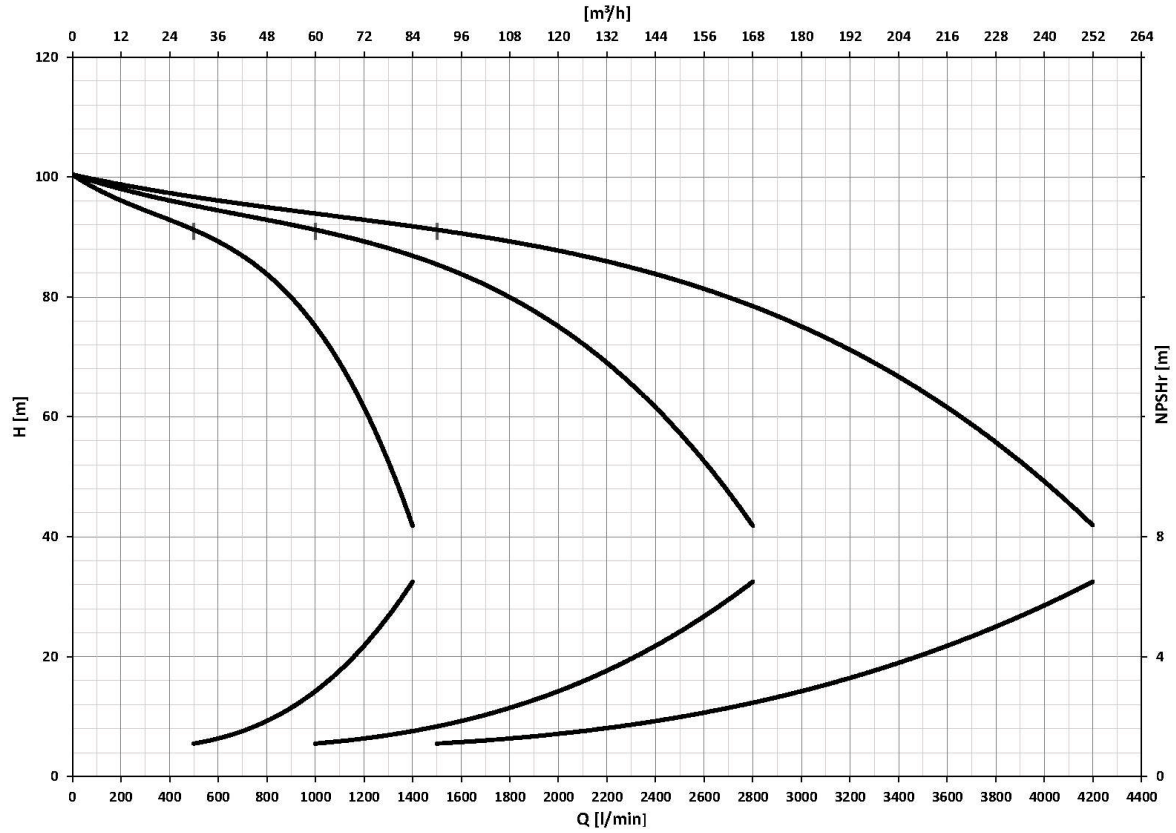
3GP(E) EVM 64 3-0/18.5

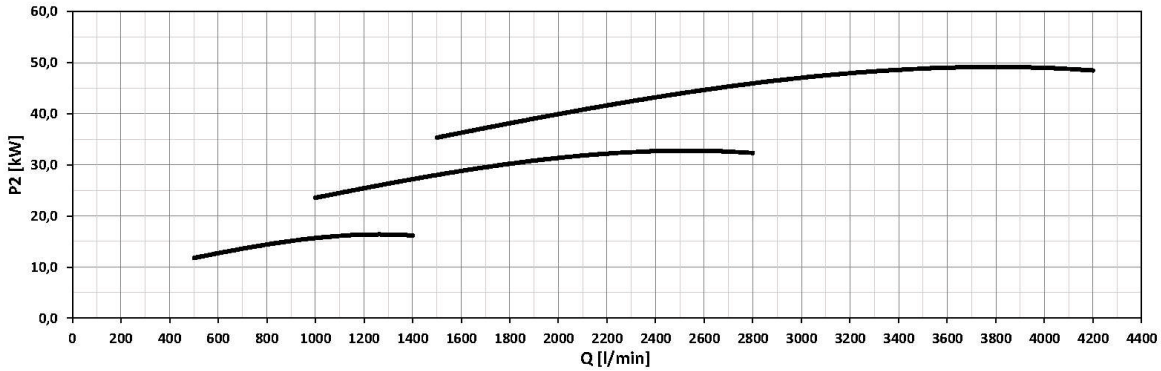


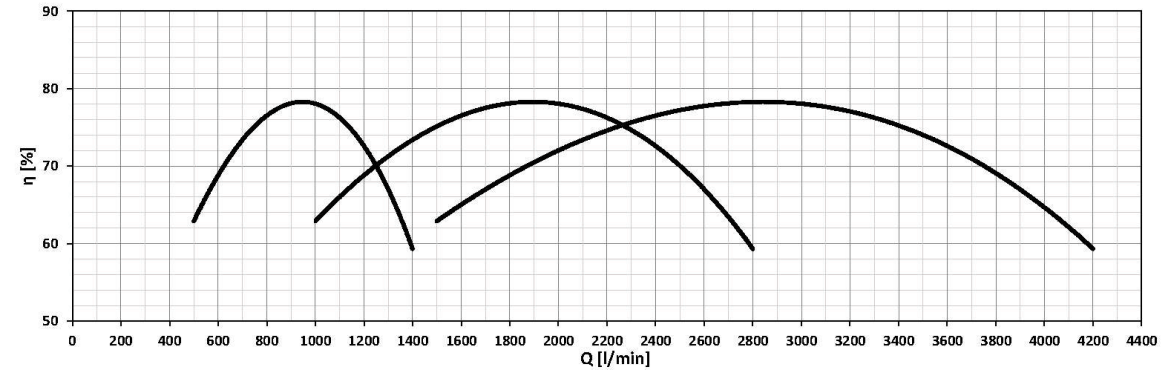




3GP(E) EVM 64 4-3/18.5

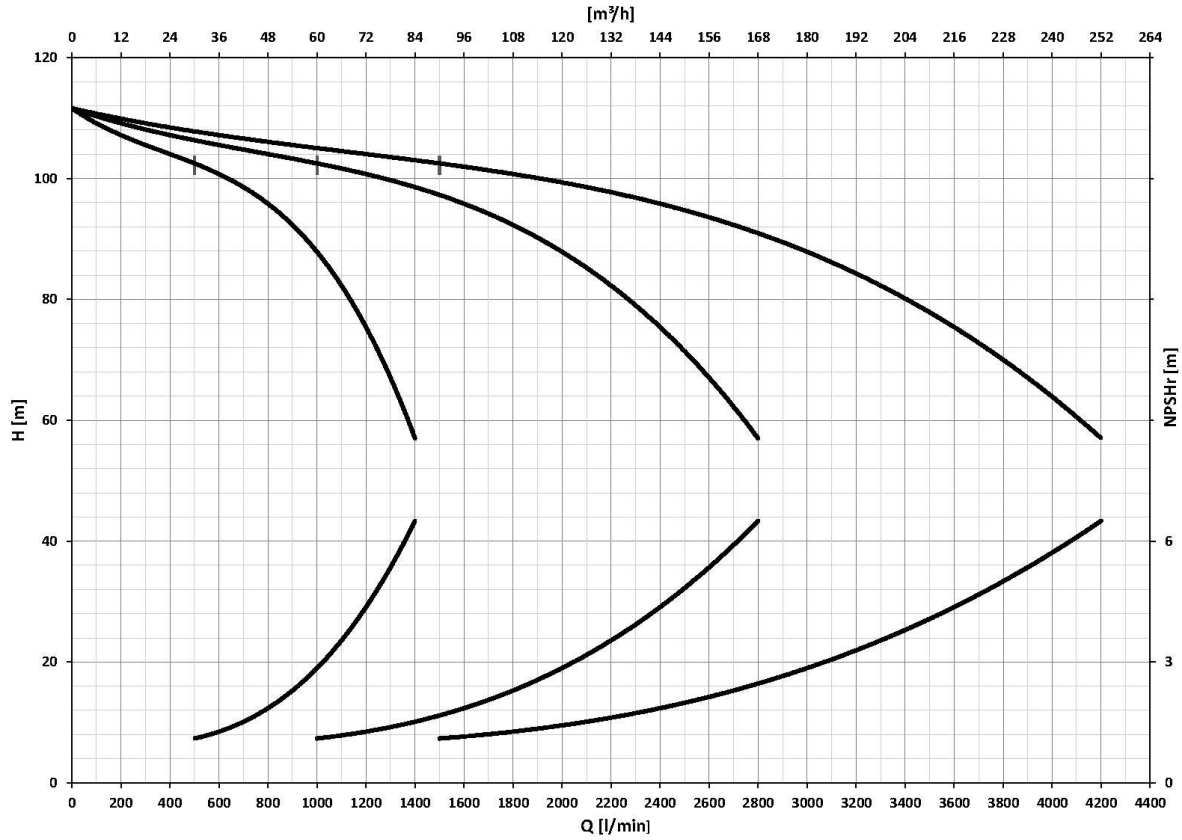


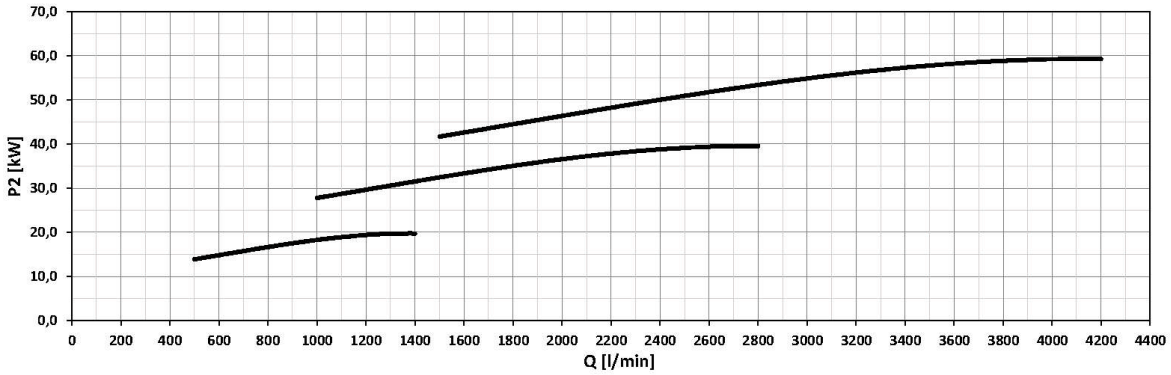


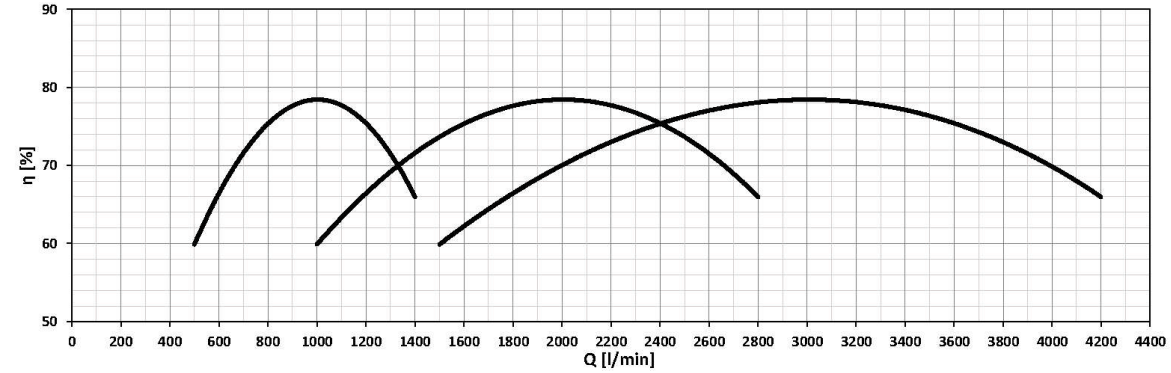


PERFORMANCE CURVE GP-GPE

3GP(E) EVM 64 4-1/22







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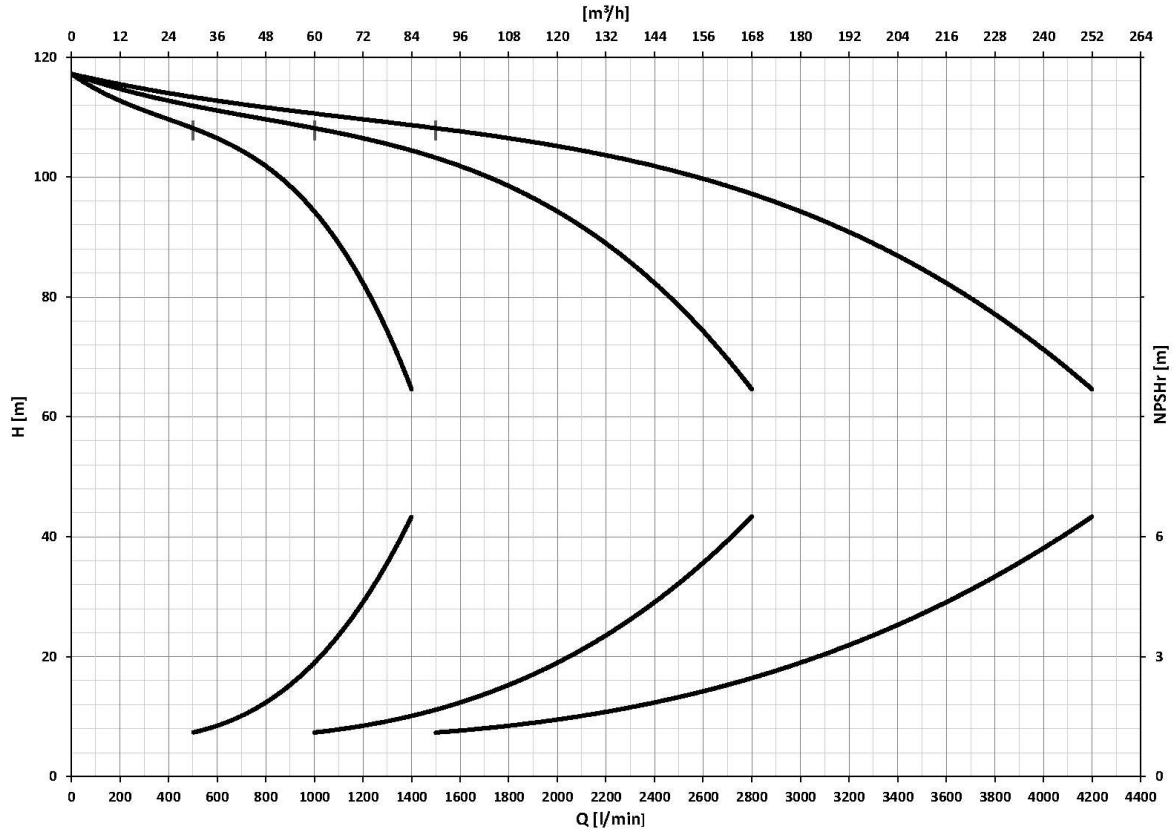
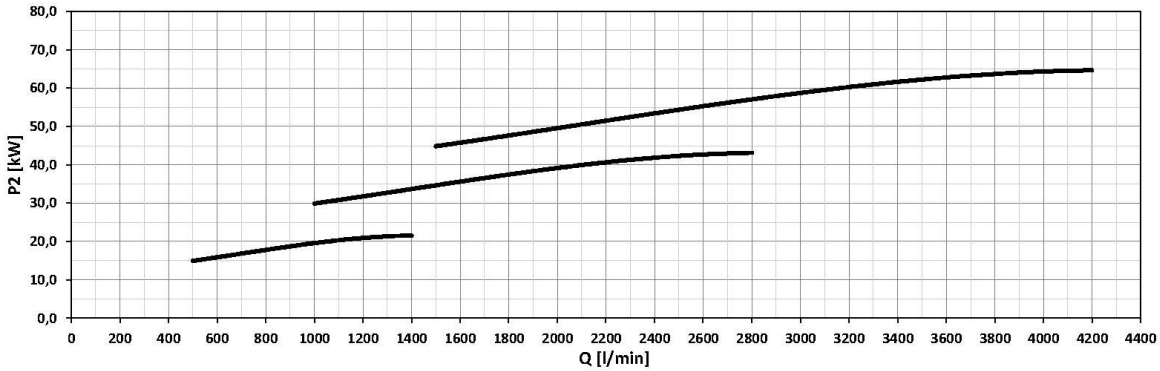
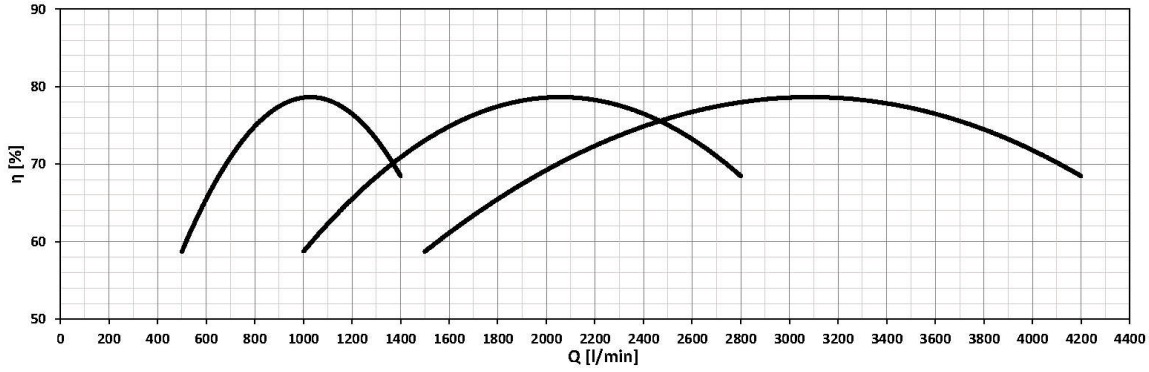


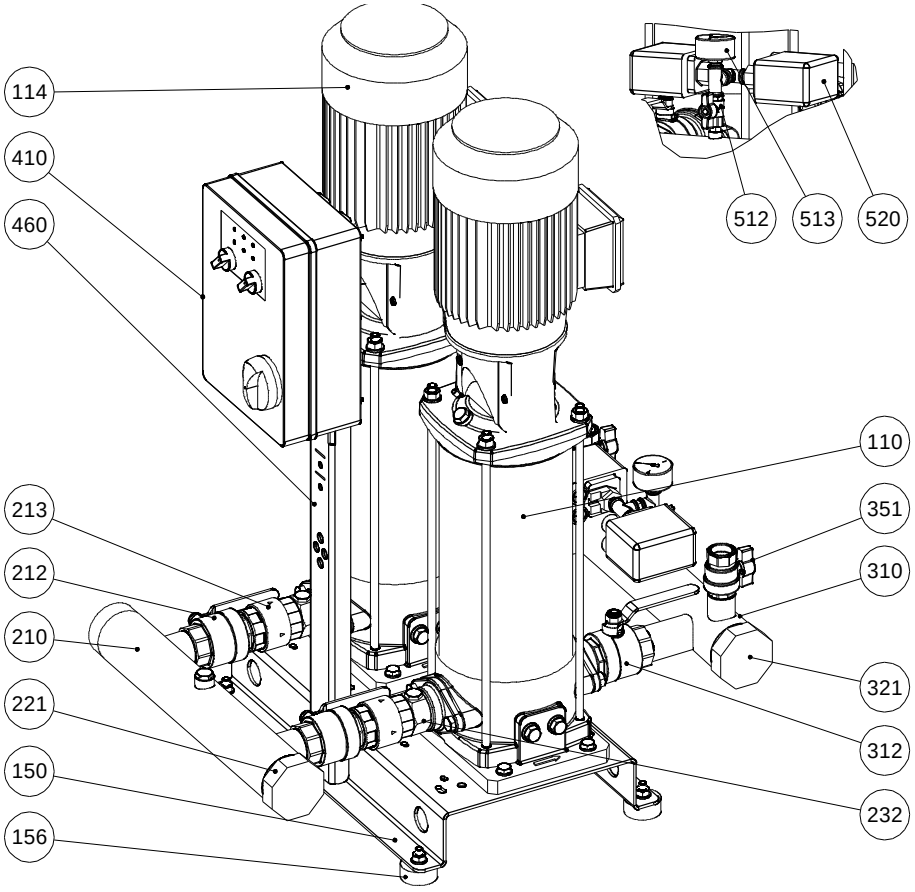




INTENTIONALLY EMPTY PAGE

2GP CONSTRUCTION

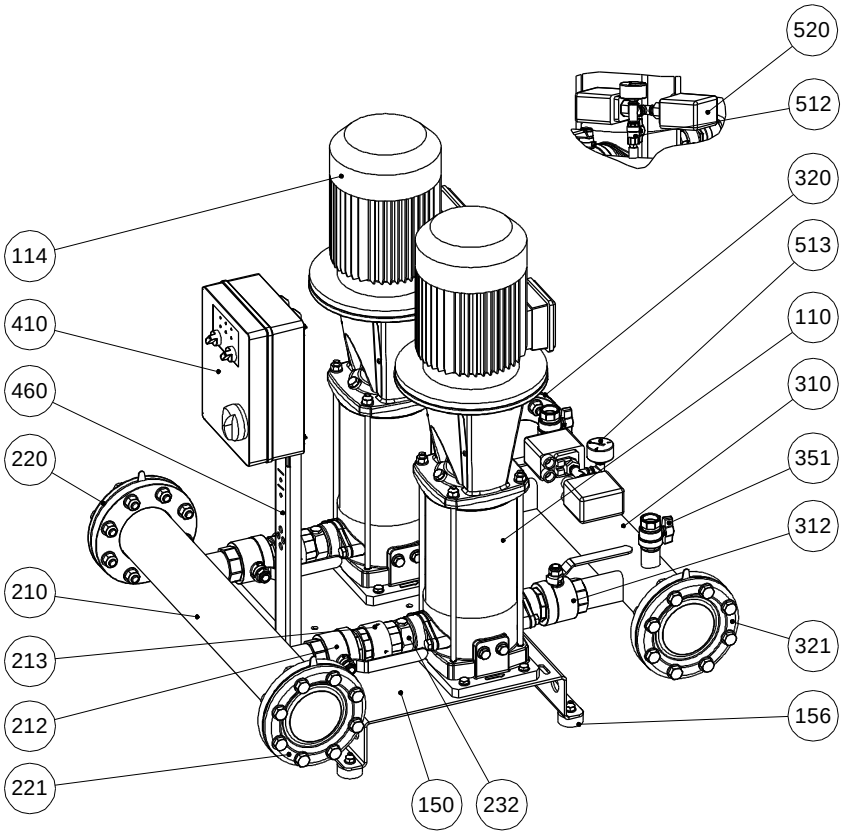
EXTERNAL VIEW 2GP EVMS(.) 3-5-10-15



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
213	Check valve	Brass / NBR	2
221	Threaded female cap	Yellow brass [1]	1
232	Nipple for air feeders	Yellow brass	2
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
321	Threaded female cap	Yellow brass [1]	1
351	Ball valve	CW617N / CW614N	2
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	2

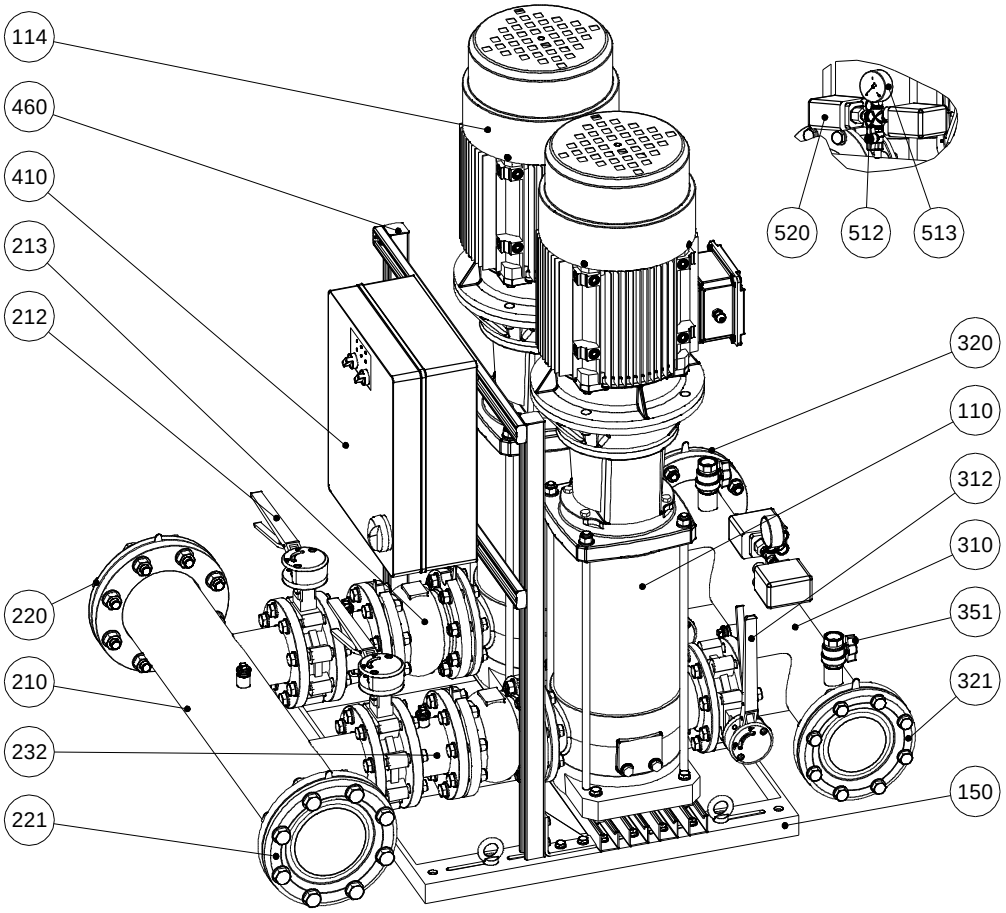
[1] Galvanized steel only for EVMS(.) 15

EXTERNAL VIEW 2GP EVMS(.) 20



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
213	Check valve	Brass / NBR	2
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Nipple for air feeders	Yellow brass	2
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	2
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	2

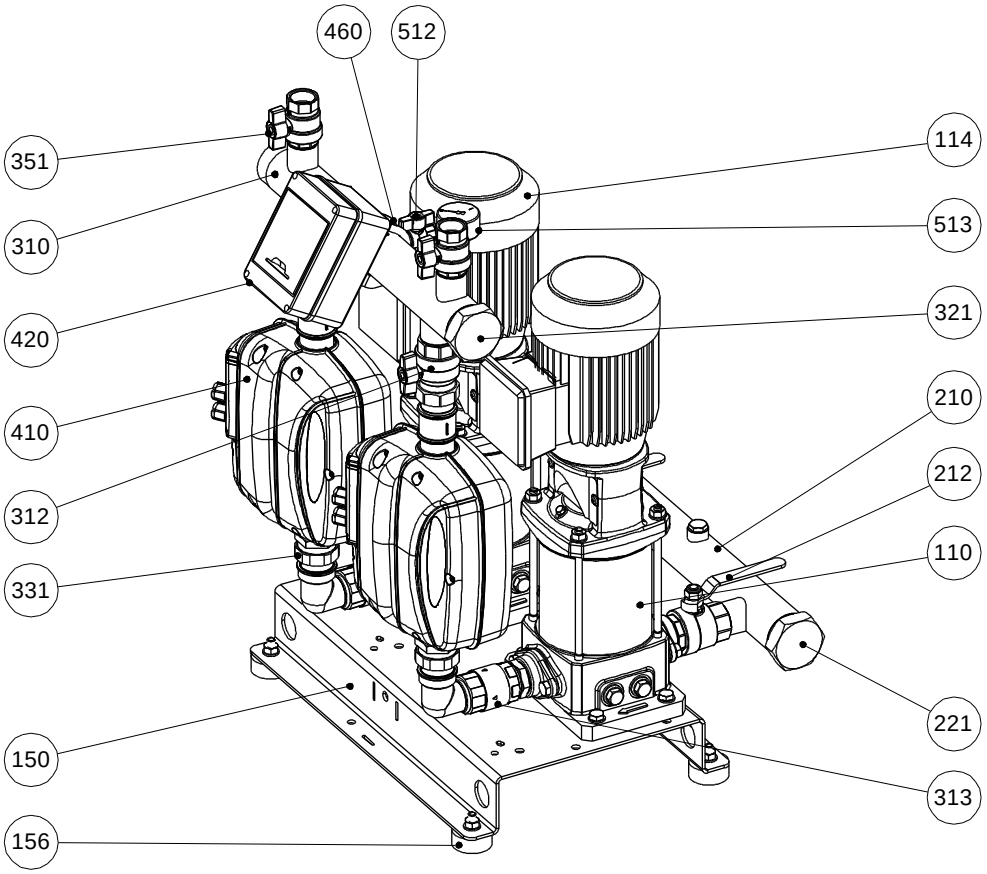
EXTERNAL VIEW 2GP EVM(.) 32-45-64



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Frame	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	2
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Flanged pipe for air feeders	Galvanized steel	2
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	2
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	2

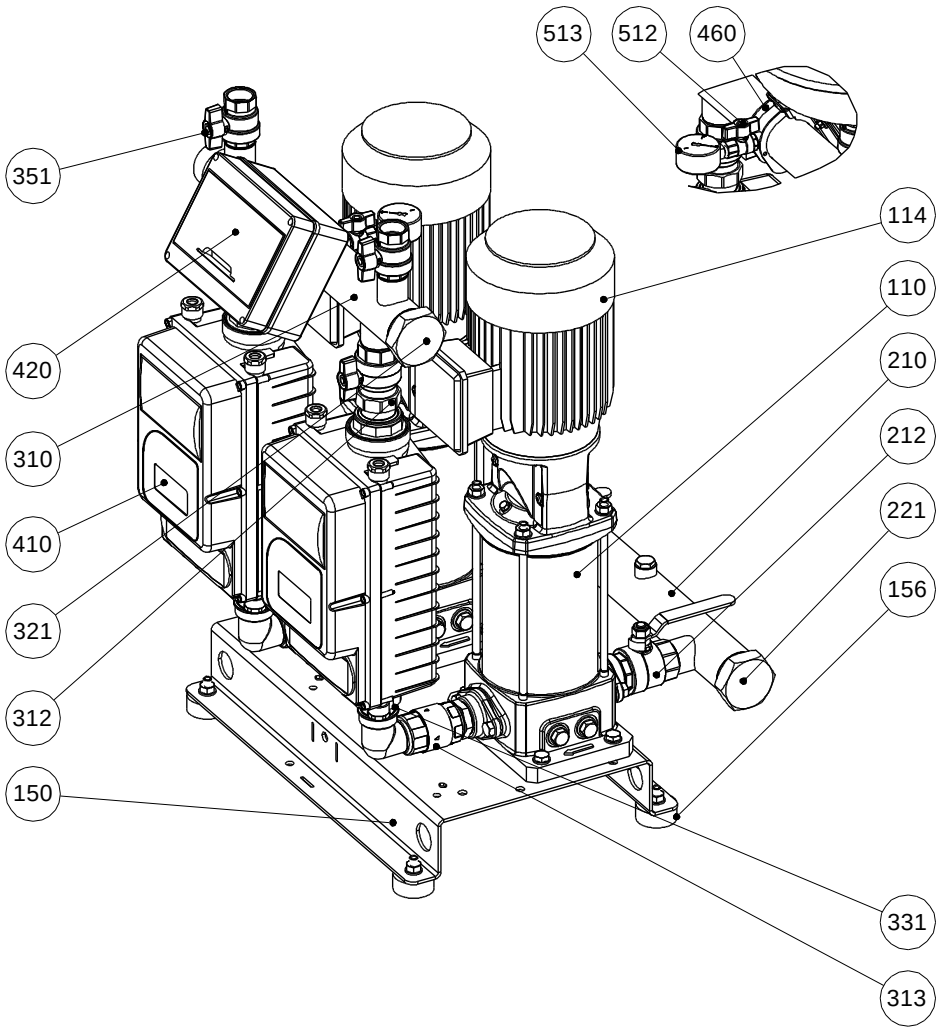
2GPE CONSTRUCTION

EXTERNAL VIEW 2GPE EVMS(.) E-POWER



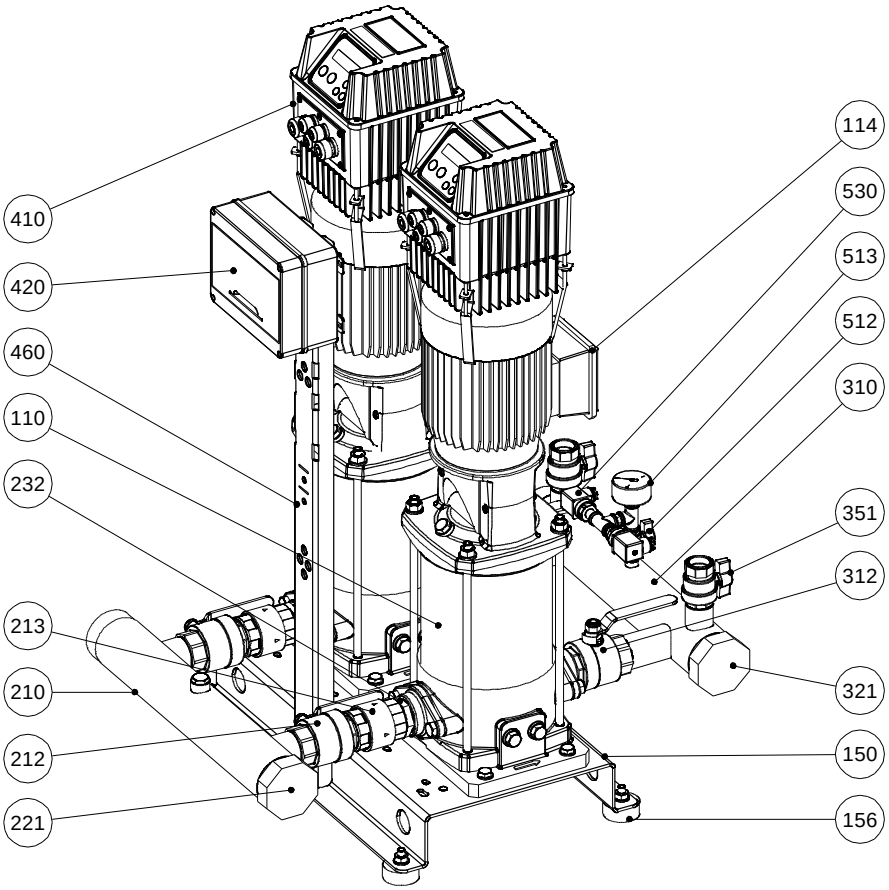
N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
221	Threaded female cap	Yellow brass	1
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
313	Check valve	Brass / NBR	2
321	Threaded female cap	Yellow brass	1
331	Union 3pcs.	Yellow brass	2
351	Ball valve	CW617N / CW614N	2
410	E-power	-	2
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1

EXTERNAL VIEW 2GPE EVMS(.) HYDROCONTROLLER



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
221	Threaded female cap	Yellow brass	1
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
313	Check valve	Brass / NBR	2
321	Threaded female cap	Yellow brass	1
331	Union 3pcs.	Yellow brass	2
351	Ball valve	CW617N / CW614N	2
410	Hydrocontroller	-	2
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1

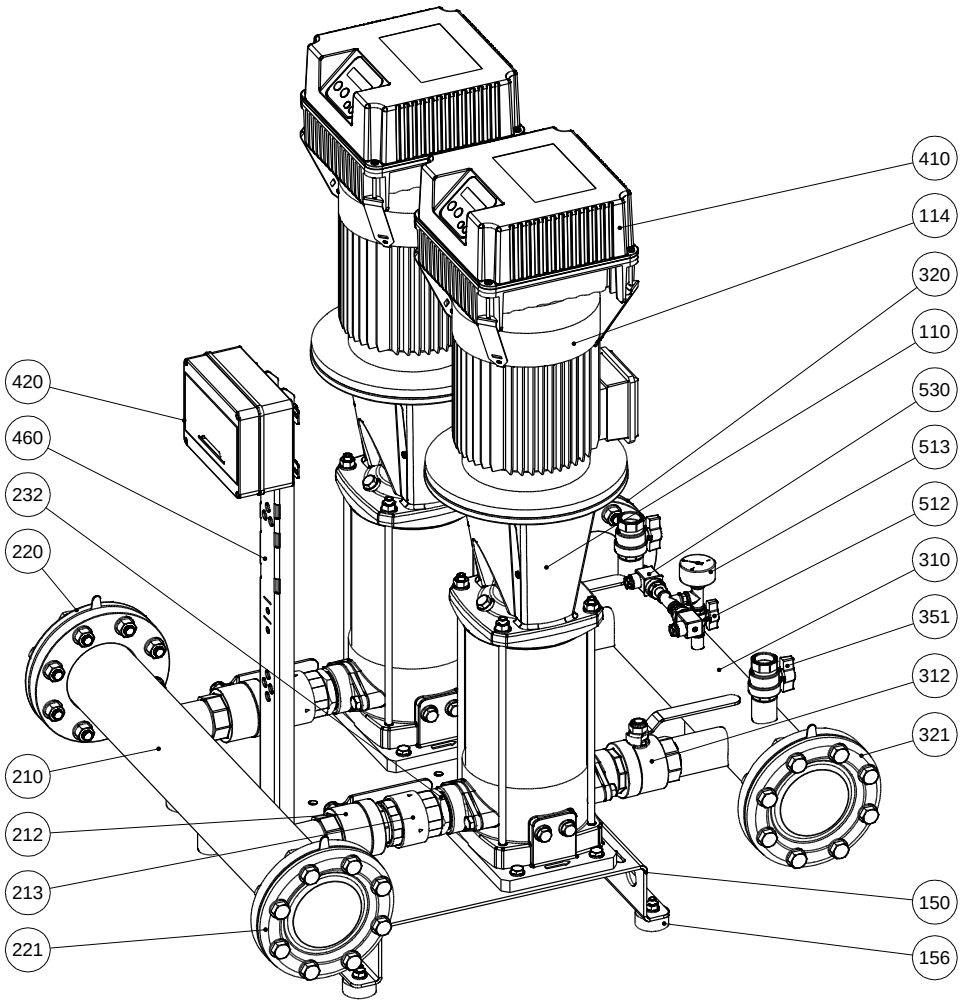
EXTERNAL VIEW 2GPE EVMS(.) 3-5-10-15 E-DRIVE



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
213	Check valve	Brass / NBR	2
221	Threaded female cap	Yellow brass [1]	1
232	Nipple	Yellow brass	2
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
321	Threaded female cap	Yellow brass [1]	1
351	Ball valve	CW617N / CW614N	2
410	E-Drive	-	2
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	2

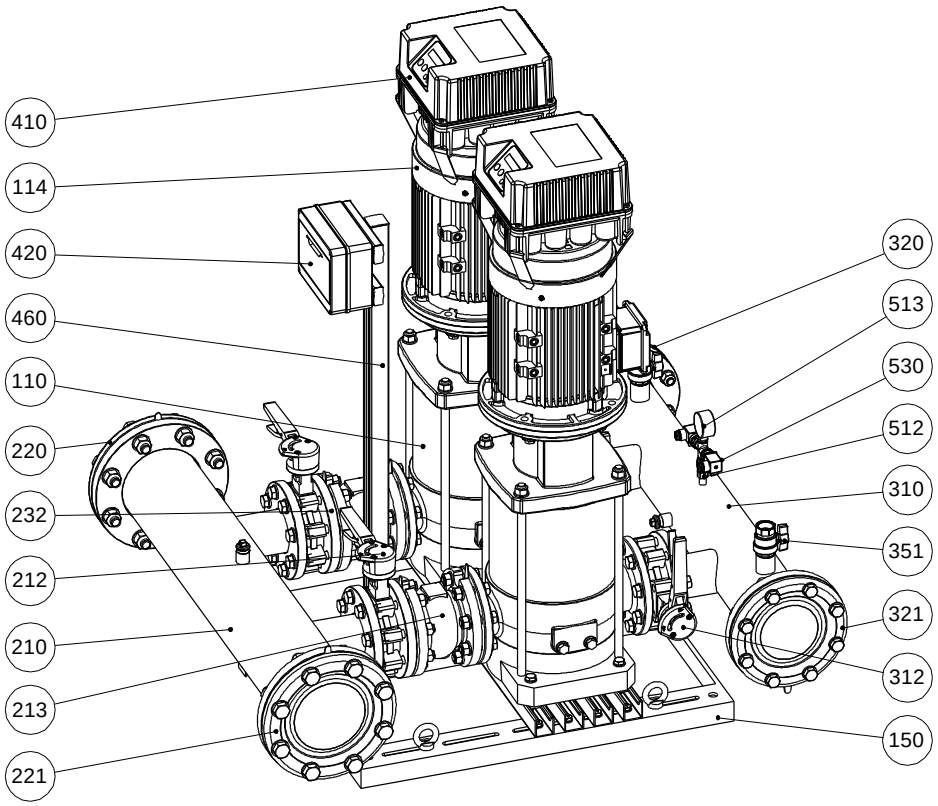
[1] Galvanized steel only for EVMS(.) 15

EXTERNAL VIEW 2GPE EVMS(.) 20 E-DRIVE



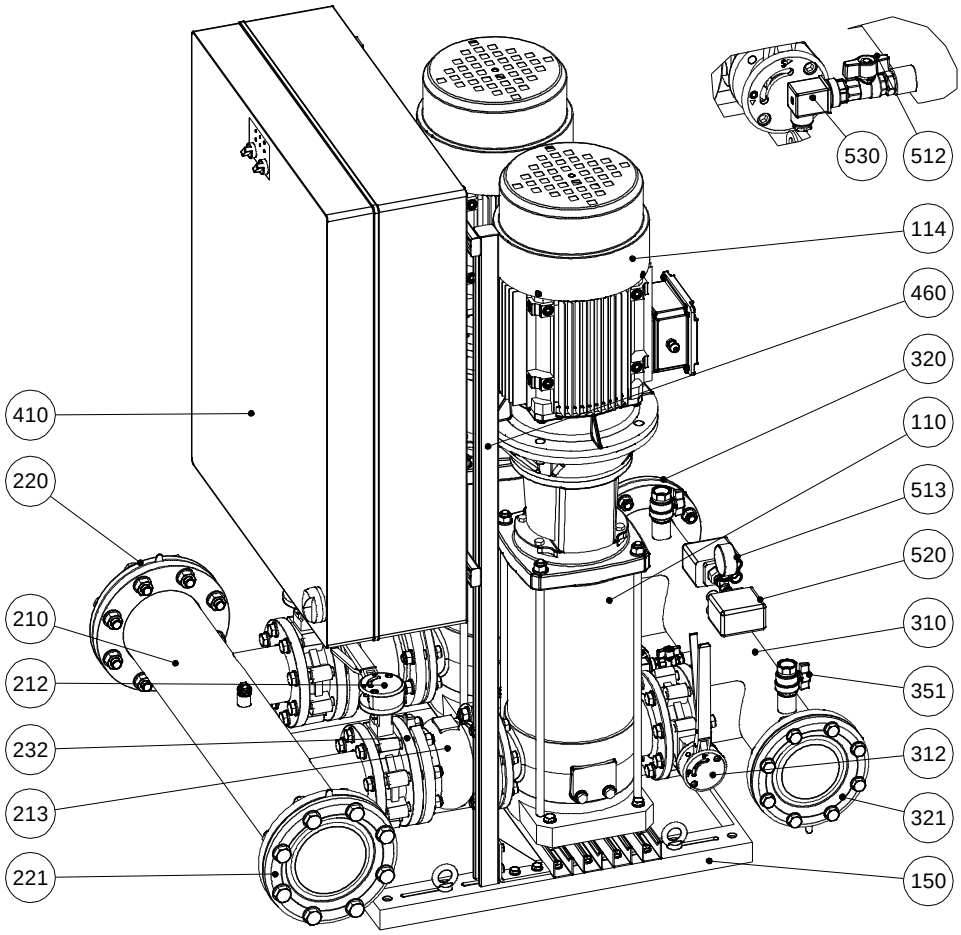
N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
156	Basement foot	SBR	4
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	2
213	Check valve	Brass / NBR	2
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Nipple	Yellow brass	2
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	2
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	2
410	E-Drive	-	2
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	2

EXTERNAL VIEW 2GPE EVM(.) 32-45-64 E-DRIVE



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Basement	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	2
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Spacer flange	Galvanized steel	2
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	2
410	E-Drive	-	2
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	1
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	2

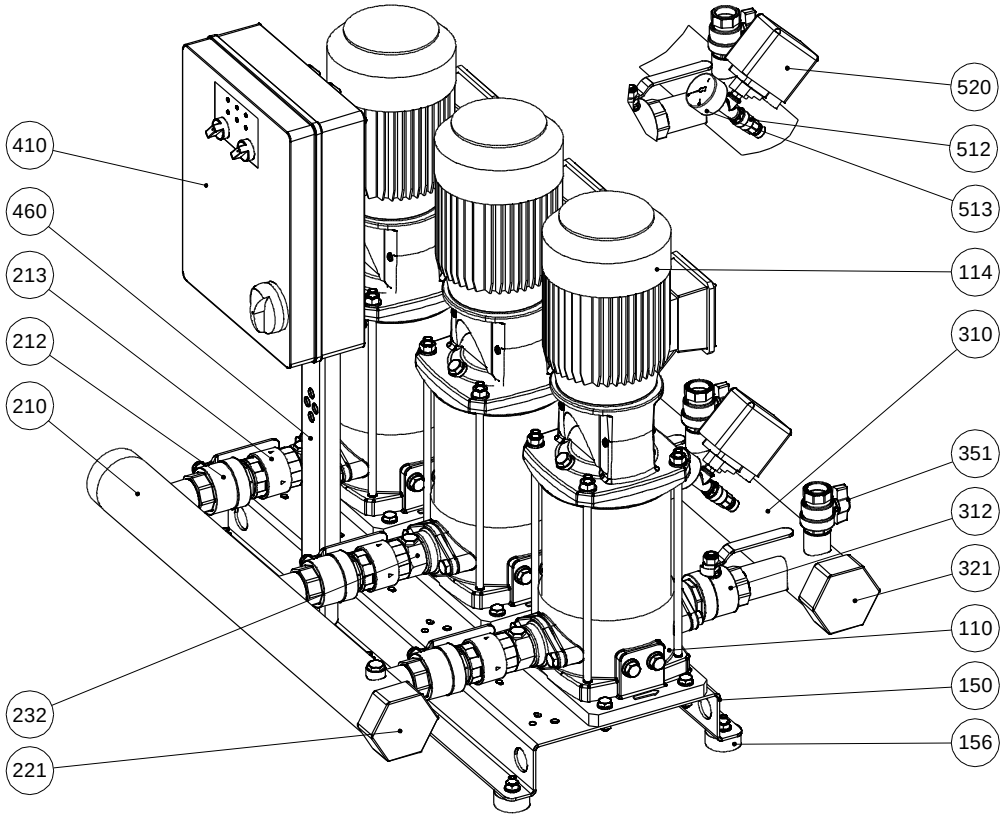
EXTERNAL VIEW 2GPE EVM(.) 32-45-64 EFC/MFC



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	2
114	Electric motor	-	2
150	Frame	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	2
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Spacer flange	Galvanized steel	2
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	2
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	2
530	Pressure transmitter	-	1

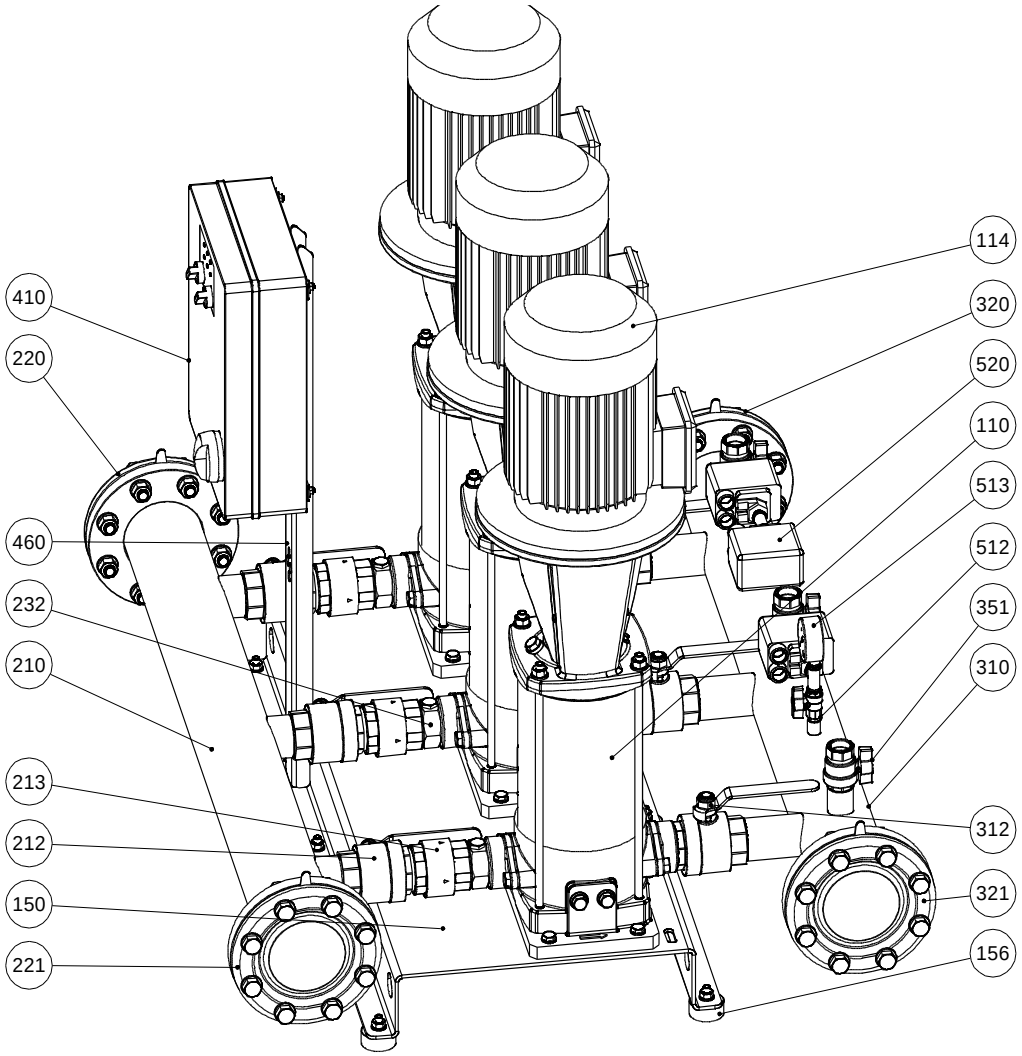
3GP CONSTRUCTION

EXTERNAL VIEW 3GP EVMS(.) 3-5-10



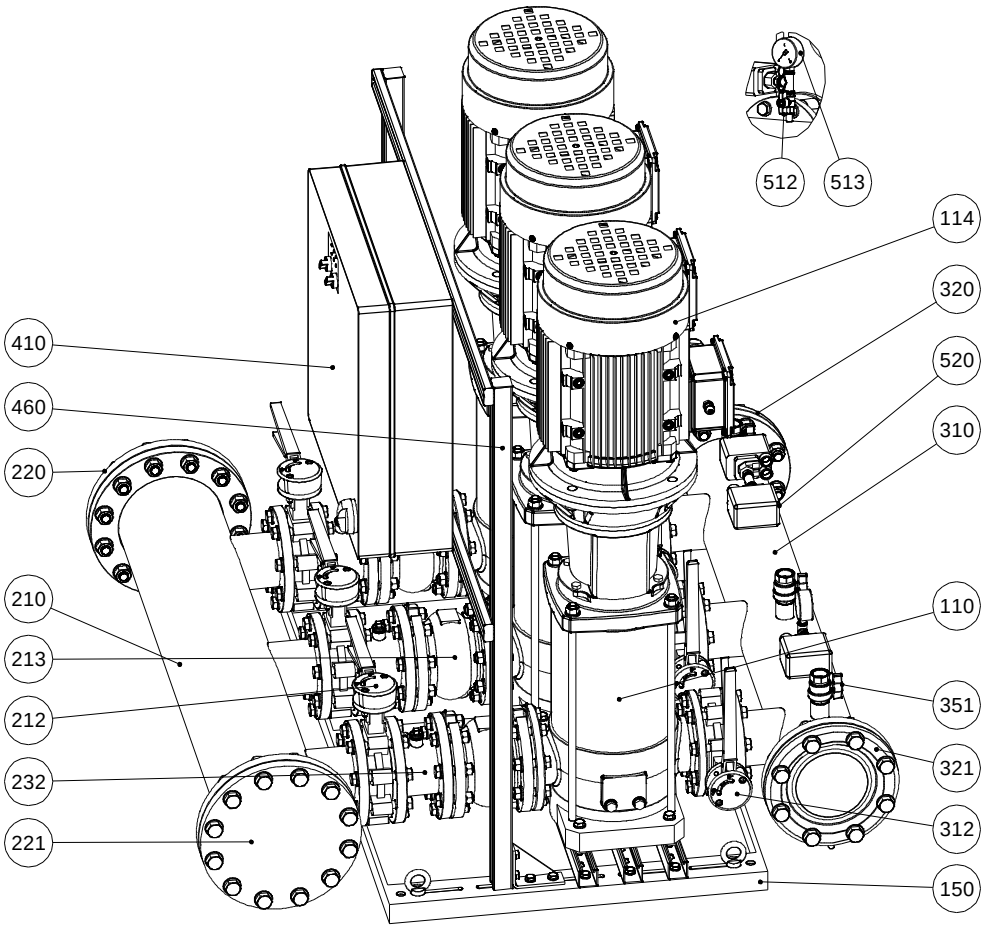
N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Basement	Galvanized steel	1
156	Basement foot	SBR	6
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	3
213	Check valve	Brass / NBR	3
221	Threaded female cap	Yellow brass	1
232	Nipple for air feeders	Yellow brass	3
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	3
321	Threaded female cap	Yellow brass	1
351	Ball valve	CW617N / CW614N	3
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	3

EXTERNAL VIEW 3GP EVMS(.) 15-20



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Basement	Galvanized steel	1
156	Basement foot	SBR	6
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	3
213	Check valve	Brass / NBR	3
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Nipple for air feeders	Yellow brass	3
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	3
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	3
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	3

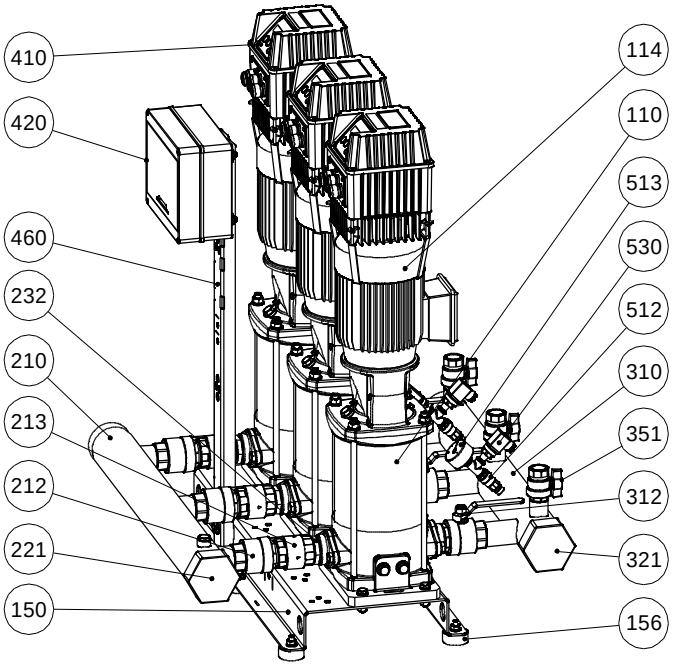
EXTERNAL VIEW 3GP EVM(.) 32-45-64



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Frame	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	3
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Threaded socket for air feeders	Galvanized steel	3
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	3
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	3

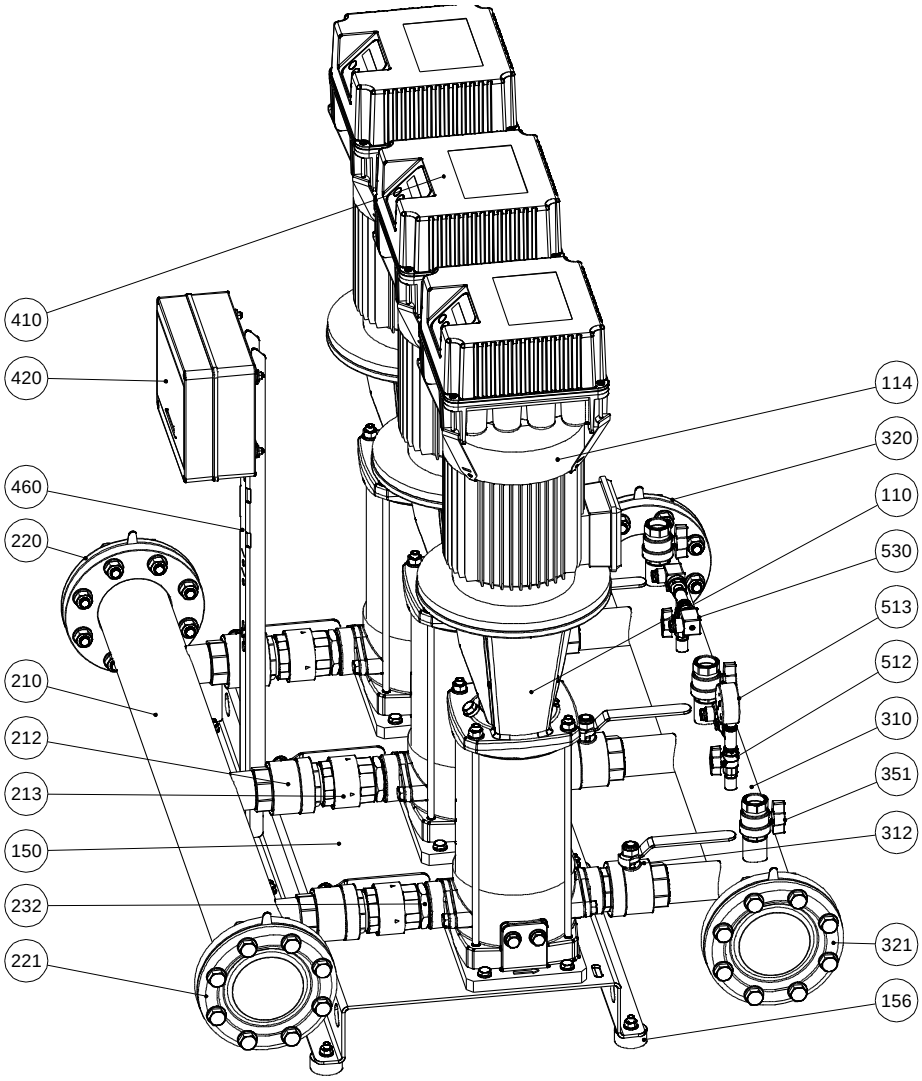
3GPE CONSTRUCTION

EXTERNAL VIEW 3GPE EVMS(.) 3-5-10 E-DRIVE



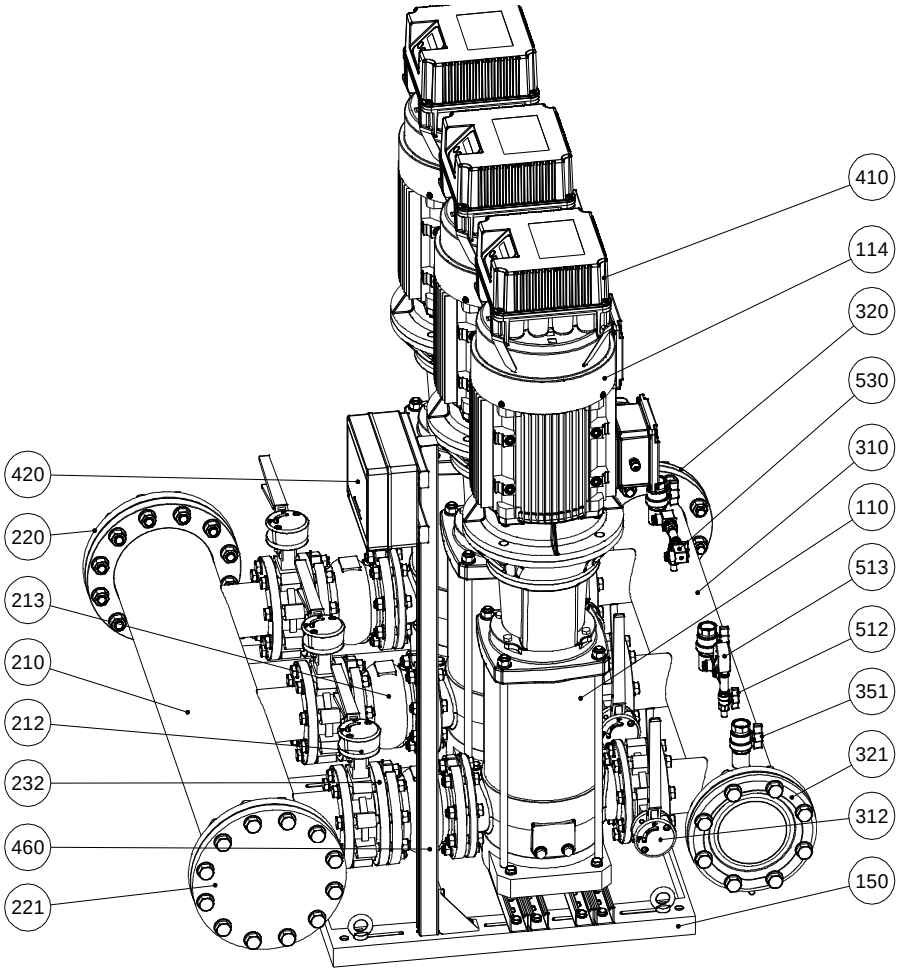
N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Basement	Galvanized steel	1
156	Basement foot	SBR	6
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	3
213	Check valve	Brass / NBR	3
221	Threaded female cap	Yellow brass	1
232	Nipple	Yellow brass	3
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	3
321	Threaded female cap	Yellow brass	1
351	Ball valve	CW617N / CW614N	3
410	E-Drive	-	3
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	3

EXTERNAL VIEW 3GPE EVMS(.) 15-20 E-DRIVE



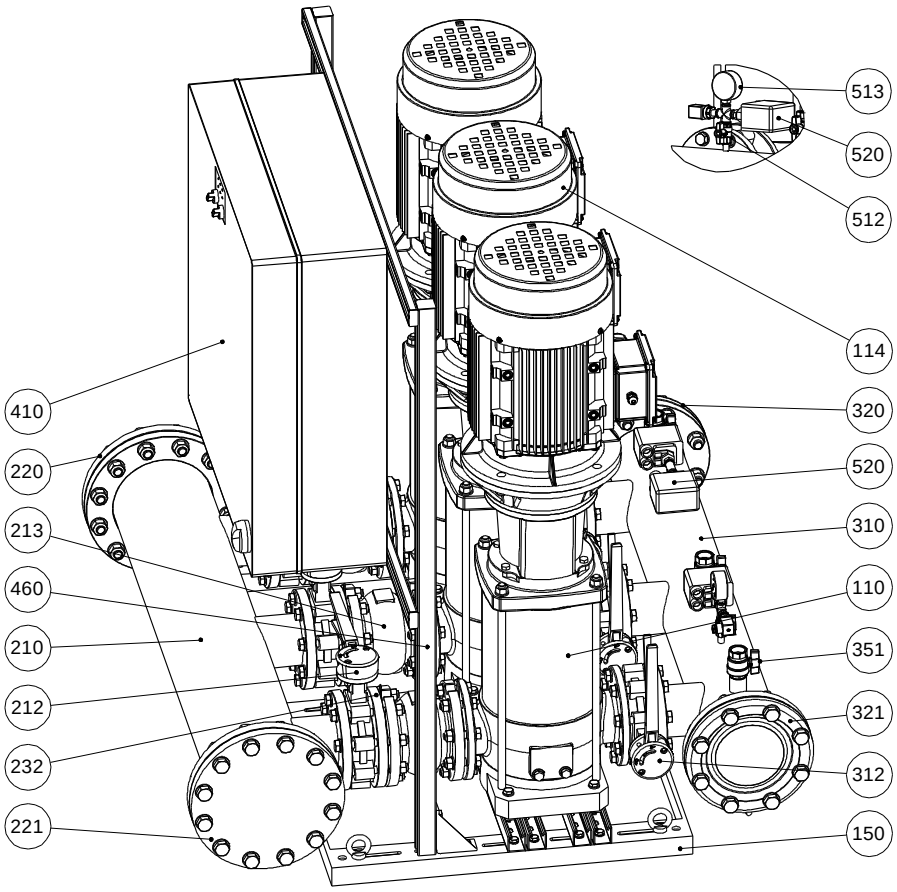
N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Basement	Galvanized steel	1
156	Basement foot	SBR	6
210	Suction manifold	Galvanized steel	1
212	Ball valve	CW617N / CW614N	3
213	Check valve	Brass / NBR	3
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Nipple	Yellow brass	3
310	Discharge manifold	Galvanized steel	1
312	Ball valve	CW617N / CW614N	3
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	3
410	E-Drive	-	3
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	3

EXTERNAL VIEW 3GPE EVM(.) 32-45-64 E-DRIVE



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Basement	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	3
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Spacer flange	Galvanized steel	3
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	3
410	E-Drive	-	3
420	Protection panel	-	1
460	Protection panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
530	Pressure transmitter	-	3

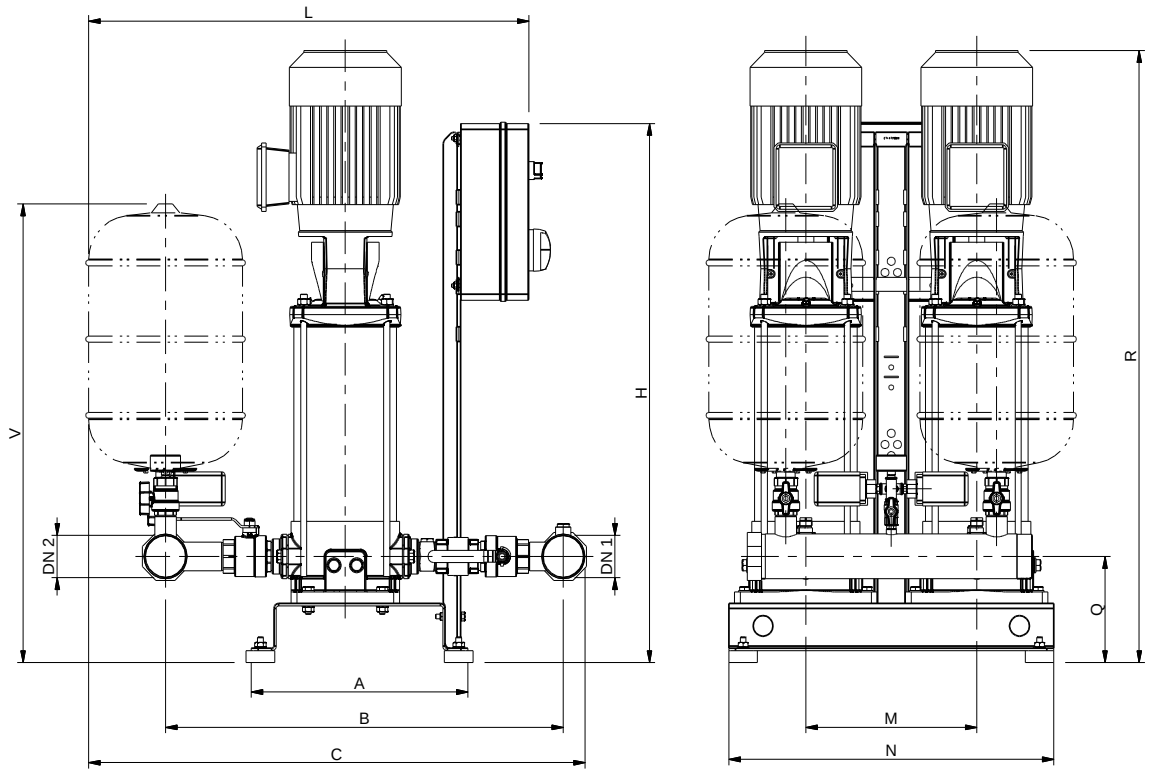
EXTERNAL VIEW 3GPE EVM(.) 32-45-64 EFC/MFC



N°	PART NAME	MATERIAL	Quantity
110	Principal pump	-	3
114	Electric motor	-	3
150	Frame	Galvanized steel	1
210	Suction manifold	Galvanized steel	1
212	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
213	Check valve (Clapet)	Cast iron EN 1561 EN-GJL-250	3
220	Counterflange	Galvanized steel	1
221	Blind counterflange	Galvanized steel	1
232	Spacer flange	Galvanized steel	3
310	Discharge manifold	Galvanized steel	1
312	Butterfly valve (Lug)	Cast iron EN GJL 250 (JL 1040)	3
320	Counterflange	Galvanized steel	1
321	Blind counterflange	Galvanized steel	1
351	Ball valve	CW617N / CW614N	3
410	Control panel	-	1
460	Control panel frame	Galvanized steel	1
512	Ball valve	CW617N / CW614N	2
513	Pressure gauge	Copper alloy / plastic	1
520	Pressure switches	-	3
530	Pressure transmitter	-	1

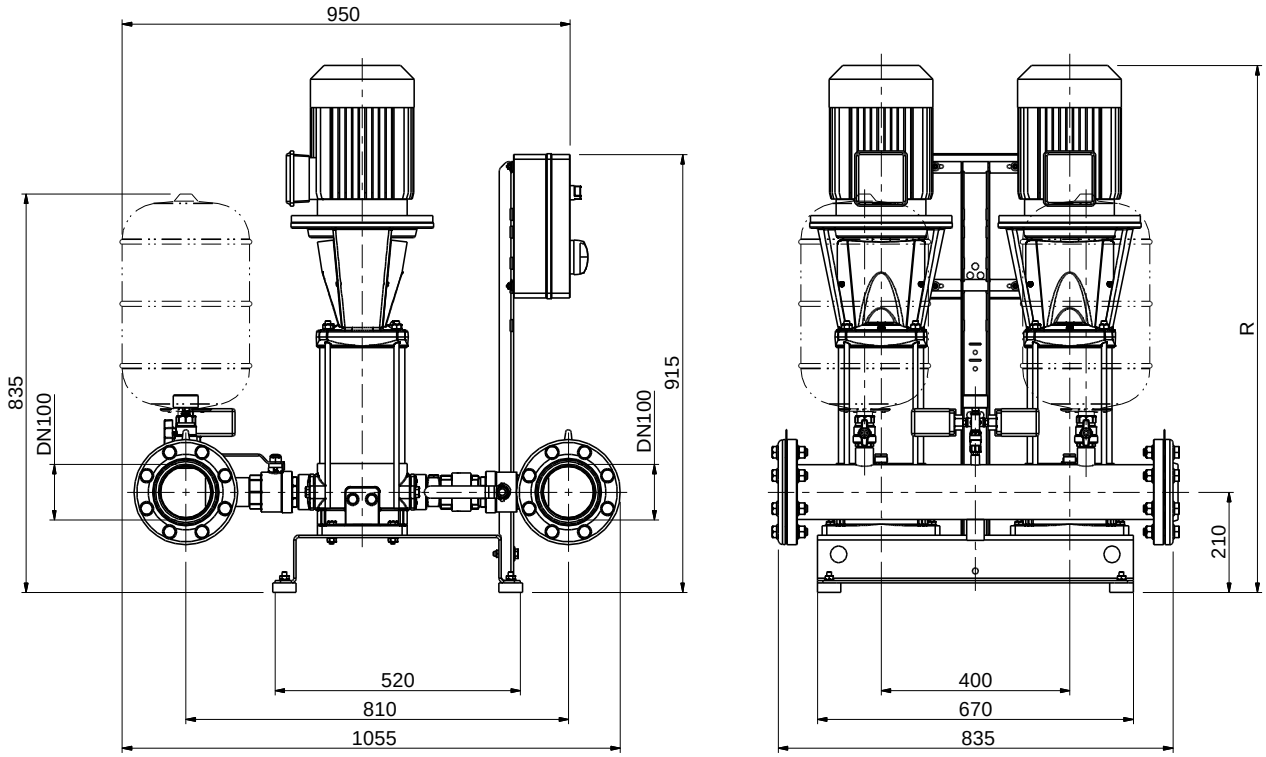
OVERALL DIMENSIONS 2GP BOOSTER SET

2GP EVMS(.) 3-5-10-15



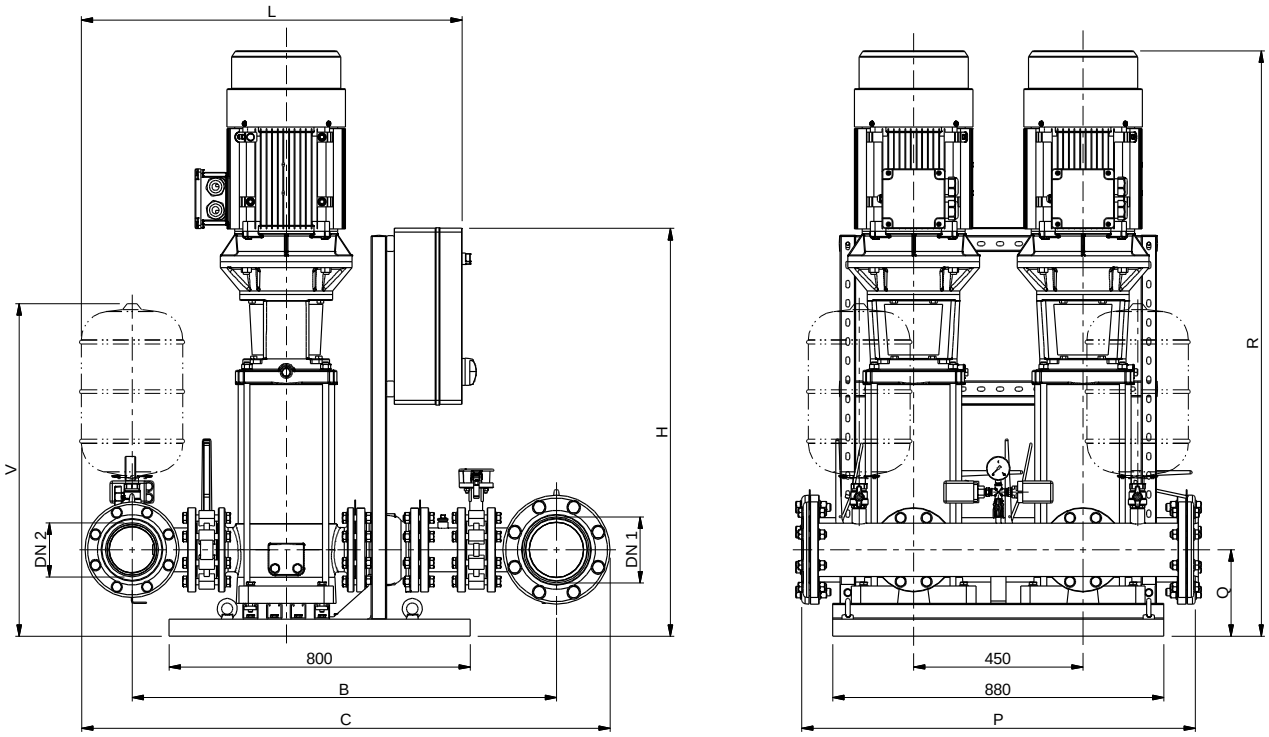
Booster Type	Dimensions [mm]														Weight [kg]	
	DN1	DN2	A	B	C	H	L 1~	L 3~	M	N	Q	R 1~	R 3~	V	1~	3~
2GP EVMSG 3 7N5/0,75 (M)	G1 ½	G1 ½	380	595	755	915	745	775	300	550	150	700	700	735	65	66
2GP EVMSG 3 9N5/1,1 (M)	G1 ½	G1 ½	380	595	755	915	745	775	300	550	150	740	750	735	70	71
2GP EVMSG 3 16N5/1,5 (M)	G1 ½	G1 ½	380	595	755	915	745	775	300	550	150	930	955	735	81	82
2GP EVMSG 3 19N5/2,2	G1 ½	G1 ½	380	595	755	915	-	775	300	550	150	-	1020	735	-	91
2GP EVMSG 5 4N5/0,75	G 2	G 2	380	630	795	915	-	790	300	550	150	-	665	740	-	74
2GP EVMSG 5 5N5/1,1	G 2	G 2	380	630	795	915	-	790	300	550	150	-	700	740	-	78
2GP EVMSG 5 6N5/1,5 (M)	G 2	G 2	380	630	795	915	760	790	300	550	150	765	785	740	81	82
2GP EVMSG 5 7N5/1,5 (M)	G 2	G 2	380	630	795	915	760	790	300	550	150	790	815	740	83	84
2GP EVMSG 5 9N5/2,2 (M)	G 2	G 2	380	630	795	915	790	790	300	550	150	850	870	740	92	91
2GP EVMSG 5 11N5/2,2	G 2	G 2	380	630	795	915	-	790	300	550	150	-	925	740	-	93
2GP EVMSG 5 15N5/3	G 2	G 2	380	630	795	915	-	790	300	550	150	-	1100	740	-	113
2GP EVMSG 10 4N5/2,2 (M)	G2 ½	G2 ½	380	700	870	915	770	770	300	550	180	780	805	780	107	106
2GP EVMSG 10 6N5/2,2 (M)	G2 ½	G2 ½	380	700	870	915	770	770	300	550	180	840	865	780	111	110
2GP EVMSG 10 8N5/3	G2 ½	G2 ½	380	700	870	915	-	770	300	550	180	-	985	780	-	126
2GP EVMSG 10 11N5/4	G2 ½	G2 ½	380	700	870	915	-	770	300	550	180	-	1095	780	-	148
2GP EVMSG 10 14N5/5,5	G2 ½	G2 ½	520	700	870	915	-	900	400	670	200	-	1340	800	-	206
2GP EVMSG 15 4N5/4	G 3	G 3	520	805	985	915	-	960	400	670	210	-	960	815	-	102
2GP EVMSG 15 6N5/5,5	G 3	G 3	520	805	985	915	-	960	400	670	210	-	1175	815	-	124
2GP EVMSG 15 7N5/7.5	G 3	G 3	520	805	985	915	-	960	400	670	210	-	1235	815	-	142
2GP EVMSG 15 8N5/7,5	G 3	G 3	520	805	985	915	-	960	400	670	210	-	1405	815	-	139

2GP EVMS(.) 20



Booster Type	Dimensions [mm] R	Weight [kg]
2GP EVMSG 20 4N5/5,5	1095	229
2GP EVMSG 20 6N5/7,5	1195	246

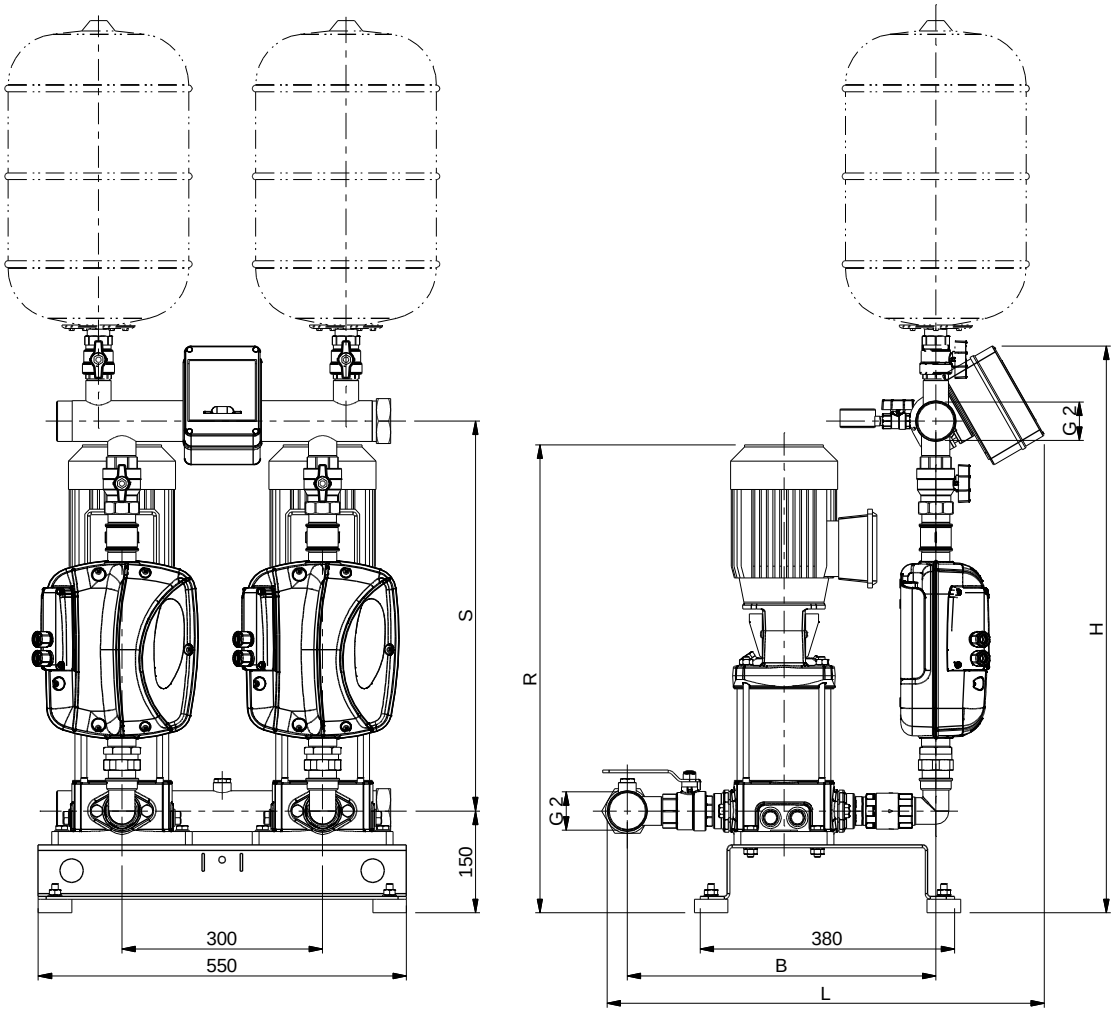
2GP EVM(.) 32-45-64



Booster Type	Dimensions [mm]										Weight [kg]
	DN1	DN2	B	C	H	L	P	Q	R	V	
2GP EVMG 32 3-3F5/5.5	DN125	DN100	1005	1260	850	900	1040	190	985	820	394
2GP EVMG 32 3-1F5/5.5	DN125	DN100	1005	1260	850	900	1040	190	985	820	394
2GP EVMG 32 4-3F5/7.5	DN125	DN100	1005	1260	850	900	1040	190	1035	820	404
2GP EVMG 32 4-1F5/7.5	DN125	DN100	1005	1260	850	900	1040	190	1035	820	404
2GP EVMG 32 5-3F5/11	DN125	DN100	1005	1260	1065	960	1040	190	1360	820	494
2GP EVMG 45 2-0 F5/7.5	DN150	DN125	1085	1360	850	945	1045	225	1030	870	436
2GP EVMG 45 3-2 F5/11	DN150	DN125	1085	1360	1065	1005	1045	225	1380	870	523
2GP EVMG 45 3-0 F5/11	DN150	DN125	1085	1360	1065	1005	1045	225	1380	870	523
2GP EVMG 45 4-2 F5/15	DN150	DN125	1085	1360	1245	1065	1045	225	1475	870	594
2GP EVMG 45 4-0 F5/15	DN150	DN125	1085	1360	1245	1065	1045	225	1475	870	594
2GP EVMG 64 2-0F5/11	DN150	DN125	1130	1405	1065	1010	1045	225	1310	870	544
2GP EVMG 64 3-3F5/15	DN150	DN125	1130	1405	1065	1010	1045	225	1405	870	608
2GP EVMG 64 3-2F5/15	DN150	DN125	1130	1405	1065	1010	1045	225	1405	870	608
2GP EVMG 64 3-1F5/15	DN150	DN125	1130	1405	1065	1010	1045	225	1405	870	608
2GP EVMG 64 3-0F5/18.5	DN150	DN125	1130	1405	1065	1010	1045	225	1450	870	638
2GP EVMG 64 4-3F5/18.5	DN150	DN125	1130	1405	1065	1010	1045	225	1520	870	656
2GP EVMG 64 4-1F5/22	DN150	DN125	1130	1405	1065	1010	1045	225	1555	870	797
2GP EVMG 64 4-0F5/22	DN150	DN125	1130	1405	1065	1010	1045	225	1555	870	797

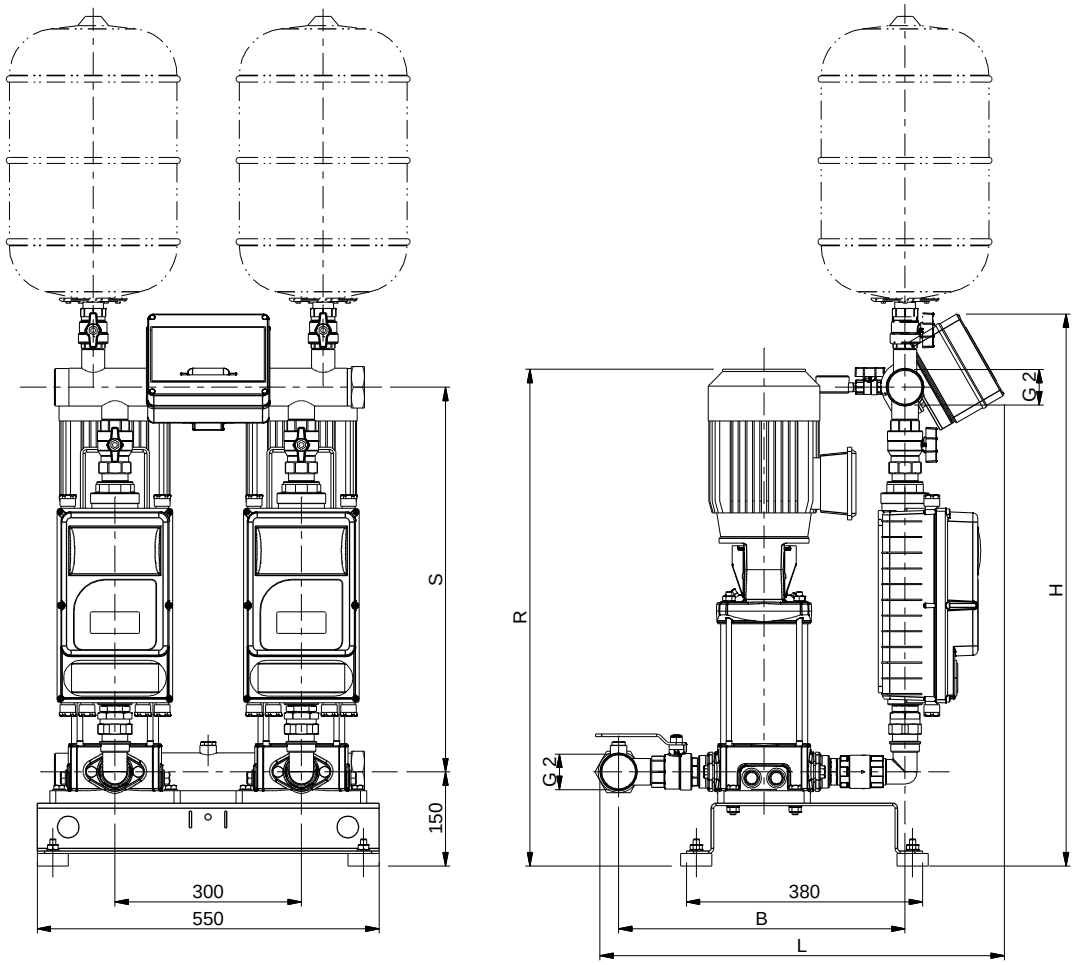
OVERALL DIMENSIONS 2GPE BOOSTER SET

2GPE EVMS(.) E-POWER



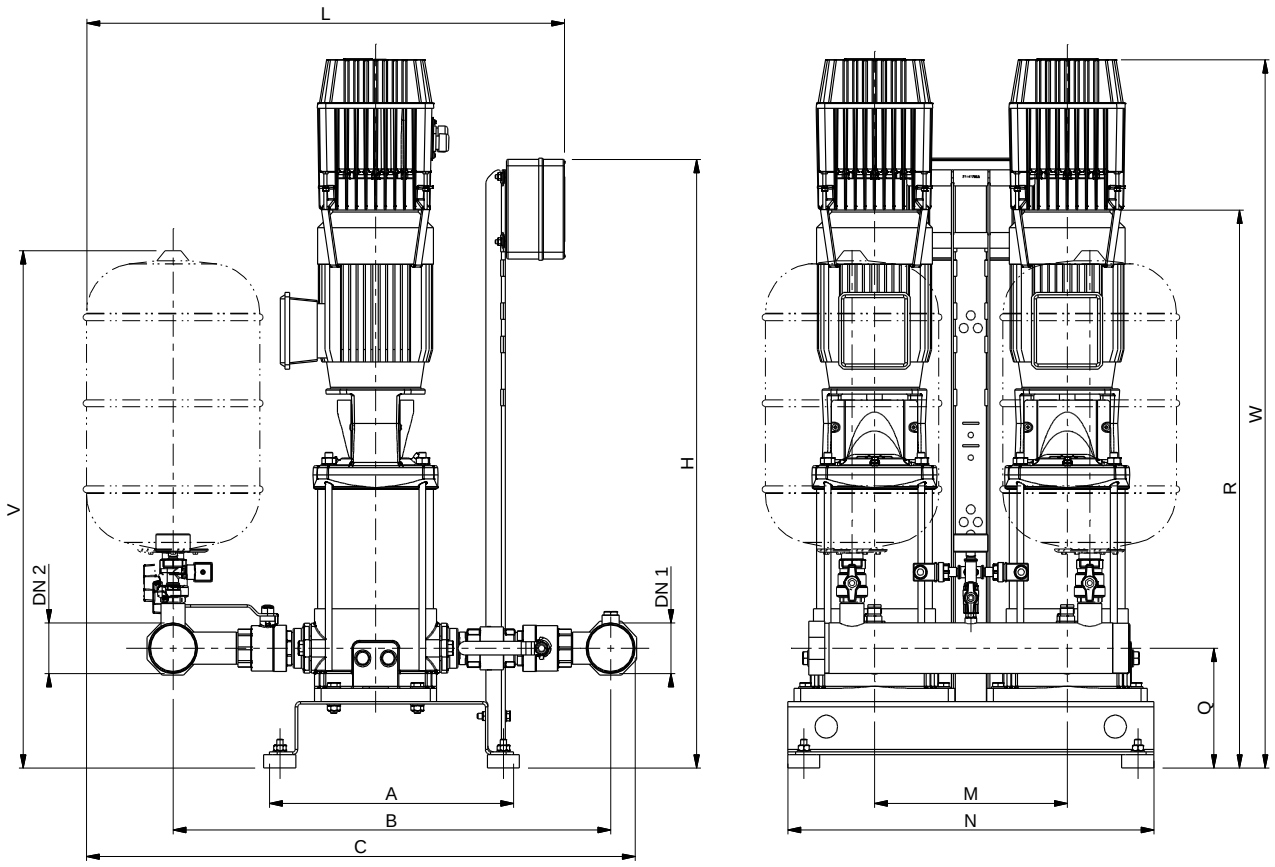
Booster Type	Dimensions[mm]					Weight
	B	L	R	S	H	[kg]
2GPE EVMSG 3-7N/0,75 EPW	445	640	700	580	845	69
2GPE EVMSG 3-9N/1,1 EPW	445	640	750	580	845	74
2GPE EVMSG 5-4N/0,75 EPW	460	655	665	575	840	74
2GPE EVMSG 5-5N/1,1 EPW	460	655	700	575	840	79
2GPE EVMSG 5-6N/1,5 EPW	460	655	785	575	840	83
2GPE EVMSG 5-7N/1,5 EPW	460	655	815	575	840	84
2GPE EVMSG 5-9N/2,2 EPW	460	655	870	575	840	92

2GPE EVMS(.) HYDROCONTROLLER



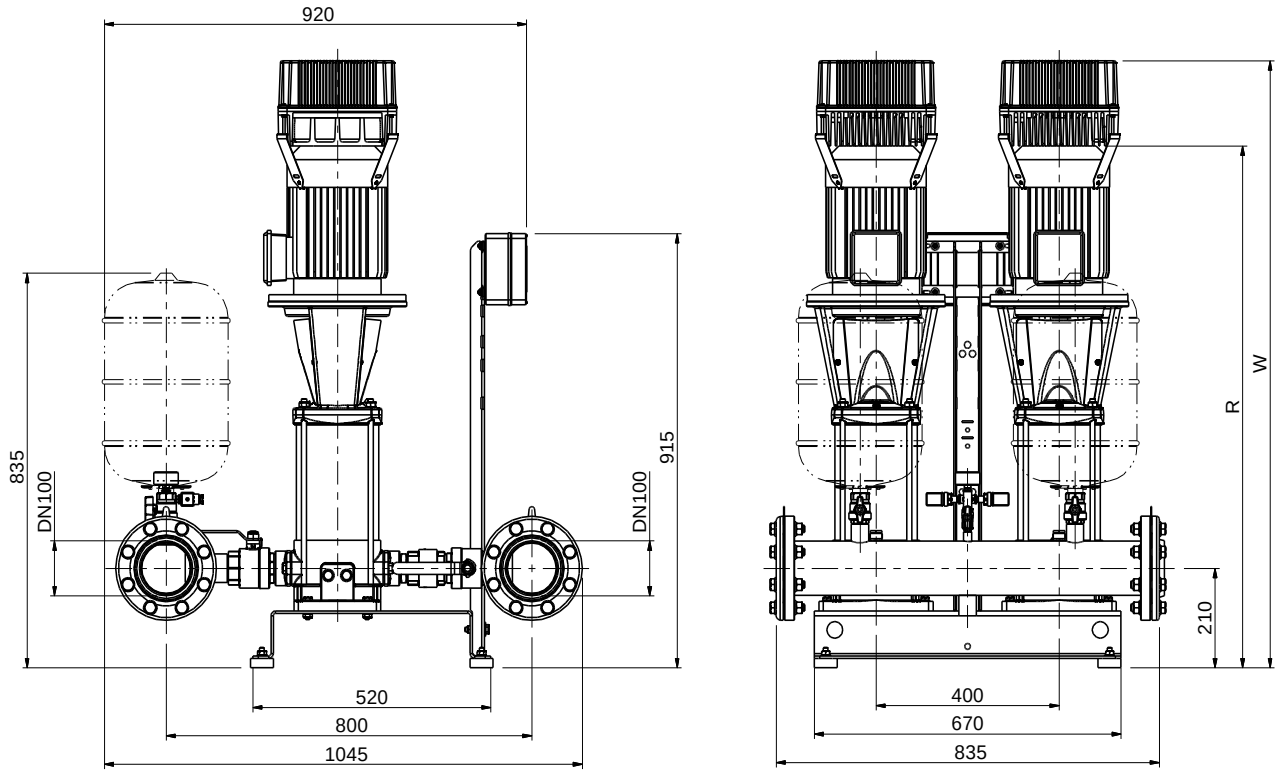
Booster Type	Dimensions [mm]					Weight
	B	H	L	R	S	[kg]
2GPE EVMSG 3-7N/0,75 HYD	445	865	635	700	595	70
2GPE EVMSG 3-8N/0,75 HYD	445	865	635	720	595	77
2GPE EVMSG 3-9N/1,1 HYD	445	865	635	750	595	74
2GPE EVMSG 3-10N/1,1 HYD	445	865	635	770	595	75
2GPE EVMSG 5-4N/0,75 HYD	460	880	650	665	610	76
2GPE EVMSG 5-5N/1,1 HYD	460	880	650	700	610	80
2GPE EVMSG 5-6N/1,5 HYD	460	880	650	785	610	85
2GPE EVMSG 5-7N/1,5 HYD	460	880	650	815	610	86
2GPE EVMSG 5-8N/2,2 HYD	460	880	650	845	610	92
2GPE EVMSG 5-9N/2,2 HYD	460	880	650	870	610	93
2GPE EVMSG 5-11N/2,2 HYD	460	880	650	925	610	96

2GPE EVMS(.) 3-5-10-15 E-DRIVE



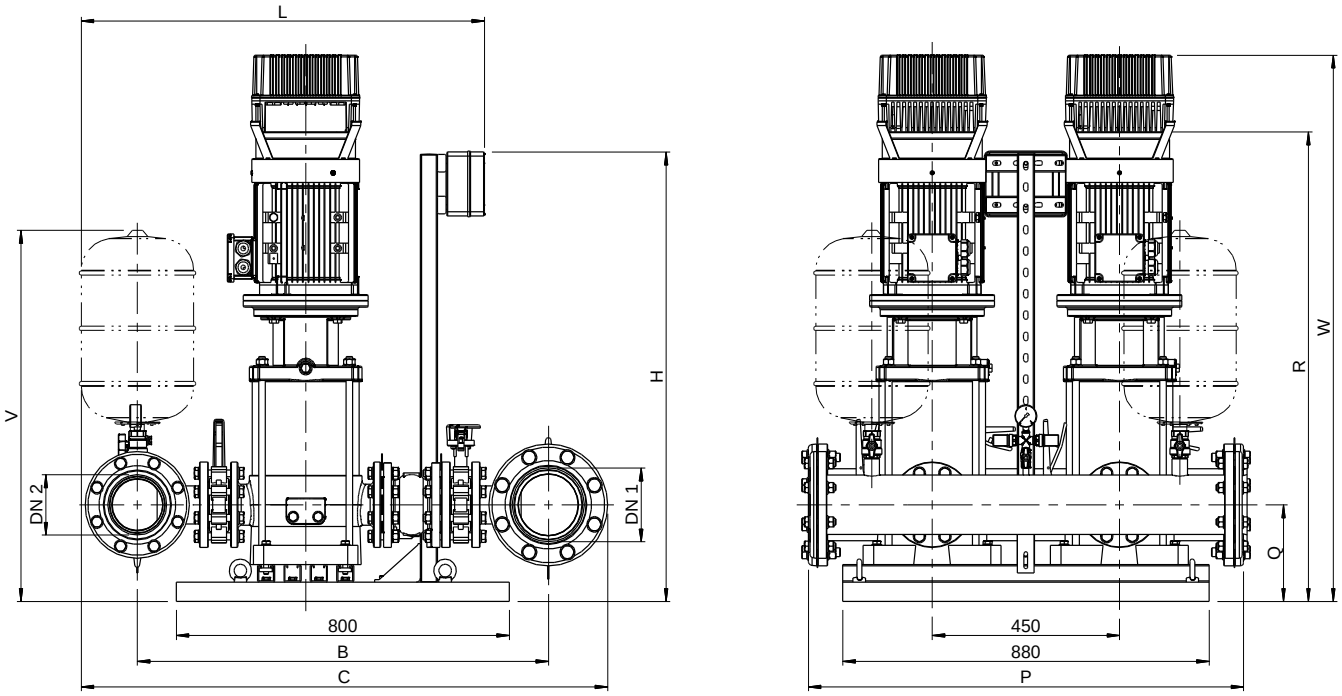
Booster Type	Dimensions [mm]													Weight
	DN1	DN2	A	B	C	H	L	M	N	Q	R	W	V	[kg]
2GPE EVMSG 3 10N5/1.1 EDM	G 1 ½	G 1 ½	380	580	735	910	745	300	550	150	770	1000	735	75
2GPE EVMSG 5 7N5/1.5 EDM	G 2	G 2	380	615	775	910	760	300	550	150	815	1045	740	80
2GPE EVMSG 5 8N5/2.2 EDT	G 2	G 2	380	615	775	915	760	300	550	150	845	1070	740	95
2GPE EVMSG 5 9N5/2.2 EDT	G 2	G 2	380	615	775	915	760	300	550	150	870	1100	740	96
2GPE EVMSG 10 6N5/2,2 EDT (EDM)	G 2 ½	G 2 ½	380	680	855	910	740	300	550	180	865	1090	780	127
2GPE EVMSG 10 7N5/3 EDT	G 2 ½	G 2 ½	380	680	855	915	745	300	550	180	955	1185	780	129
2GPE EVMSG 10 8N5/3 EDT	G 2 ½	G 2 ½	380	680	855	915	745	300	550	180	985	1215	780	131
2GPE EVMSG 10 11N5/4 EDT	G 2 ½	G 2 ½	380	680	855	915	745	300	550	180	1095	1325	780	153
2GPE EVMSG 10 14N5/5,5 EDT	G 2 ½	G 2 ½	520	680	855	915	885	400	670	200	1340	1520	800	216
2GPE EVMSG 15 4N5/4 EDT	G 3	G 3	520	795	975	915	930	400	670	210	960	1145	815	147
2GPE EVMSG 15 5N5/5,5 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1135	1315	815	172
2GPE EVMSG 15 6N5/5,5 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1175	1355	815	174
2GPE EVMSG 15 7N5/7,5 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1235	1415	815	192
2GPE EVMSG 15 8N5/7,5 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1275	1455	815	189
2GPE EVMSG 15 9N5/11 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1365	1545	815	225
2GPE EVMSG 15 10N5/11 EDT	G 3	G 3	520	795	975	915	930	400	670	210	1405	1585	815	227

2GPE EVMS(.) 20 E-DRIVE



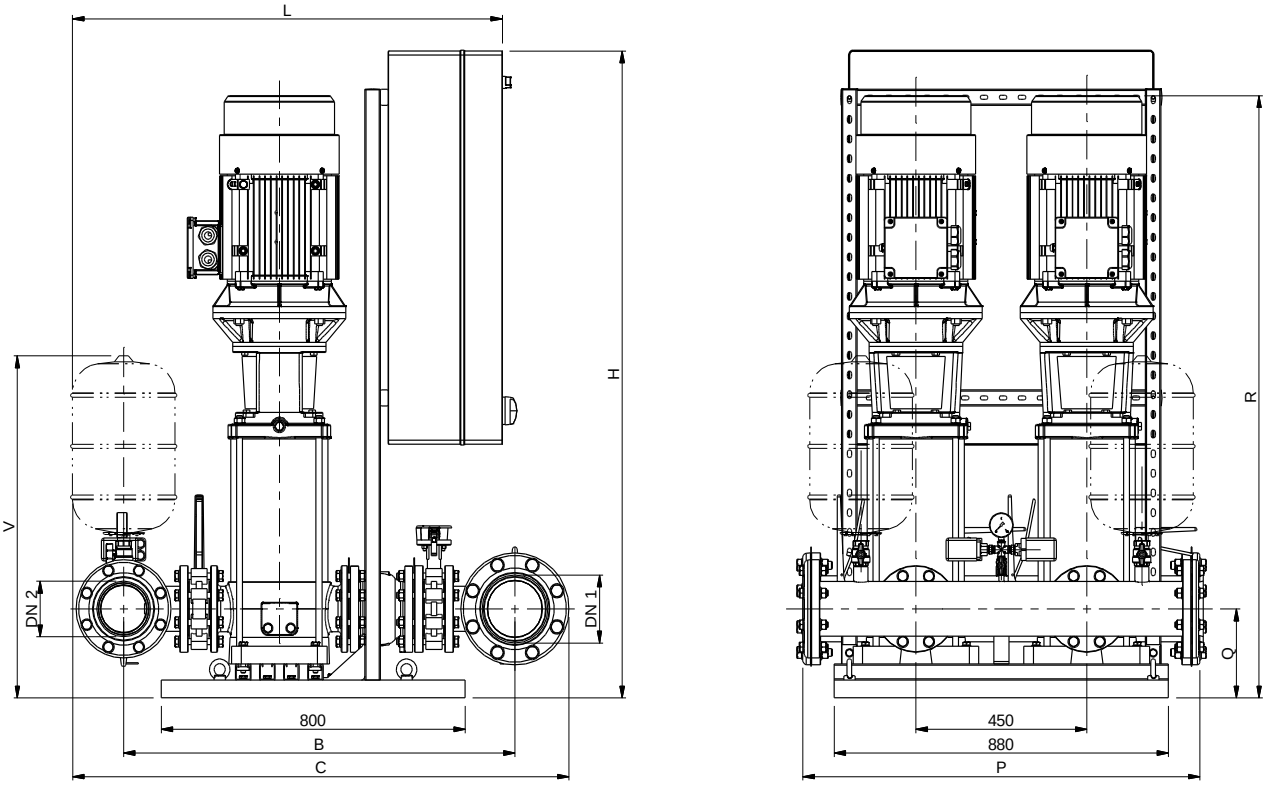
Booster Type	Dimensions [mm]		Weight
	R	W	[kg]
2GPE EVMSG 20 4N5/5,5 EDT	1095	1275	239
2GPE EVMSG 20 6N5/7,5 EDT	1195	1375	256
2GPE EVMSG 20 8N5/11 EDT	1325	1505	320

2GPE EVM(.) 32-45-64 E-DRIVE



Booster Type	Dimensions [mm]											Weight [kg]
	DN1	DN2	B	C	H	L	P	Q	R	W	V	
2GPE EVMG 32 3-3F5/5.5 EDT	DN125	DN100	895	1150	855	895	1040	190	985	1165	830	392
2GPE EVMG 32 3-1F5/5.5 EDT	DN125	DN100	895	1150	855	895	1040	190	985	1165	830	392
2GPE EVMG 32 4-3F5/7.5 EDT	DN125	DN100	895	1150	1050	895	1040	190	1035	1215	830	402
2GPE EVMG 32 4-1F5/7.5 EDT	DN125	DN100	895	1150	1050	895	1040	190	1035	1215	830	402
2GPE EVMG 32 5-3F5/11 EDT	DN125	DN100	895	1150	1050	895	1040	190	1360	1540	830	484
2GPE EVMG 45 2-0F5/7.5 EDT	DN150	DN125	985	1265	1050	965	1045	225	1030	1210	870	433
2GPE EVMG 45 3-2F5/11 EDT	DN150	DN125	985	1265	1110	965	1045	225	1380	1560	870	514
2GPE EVMG 45 3-0F5/11 EDT	DN150	DN125	985	1265	1110	965	1045	225	1380	1560	870	514
2GPE EVMG 45 4-2F5/15 EDT	DN150	DN125	985	1265	1110	965	1045	225	1475	1655	870	584
2GPE EVMG 45 4-0F5/15 EDT	DN150	DN125	985	1265	1110	965	1045	225	1475	1655	870	584
2GPE EVMG 64 2-0F5/11 EDT	DN150	DN125	1030	1305	1255	1000	1045	225	1310	1490	870	532
2GPE EVMG 64 3-3F5/15 EDT	DN150	DN125	1030	1305	1255	1000	1045	225	1405	1585	870	596
2GPE EVMG 64 3-2F5/15 EDT	DN150	DN125	1030	1305	1255	1000	1045	225	1405	1585	870	596
2GPE EVMG 64 3-1F5/15 EDT	DN150	DN125	1030	1305	1255	1000	1045	225	1405	1585	870	596

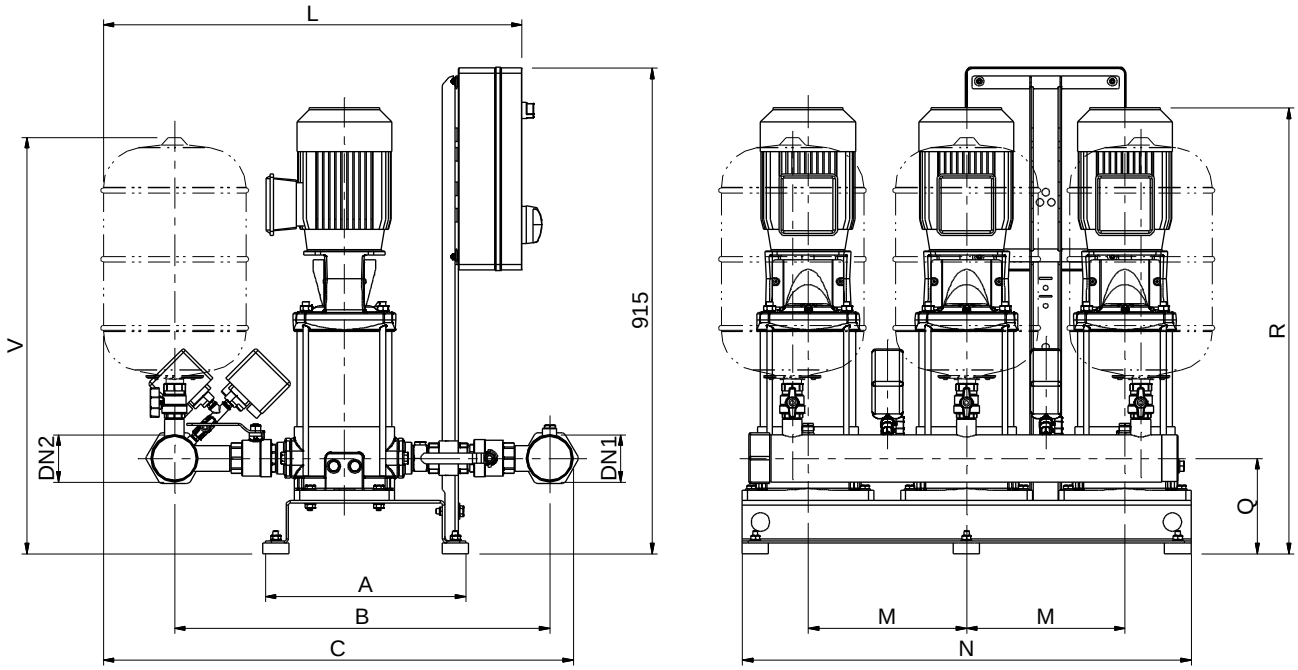
2GPE EVM(.) 32-45-64 EFC/MFC



Booster Type	Dimensions [mm]										Weight [kg]
	DN1	DN2	B	C	H	L	P	Q	R	V	
2GPE EVMG 32 3-3F5/5.5 EFC	DN125	DN100	895	1150	1045	980	1040	190	985	830	410
2GPE EVMG 32 3-1F5/5.5 EFC	DN125	DN100	895	1150	1045	980	1040	190	985	830	410
2GPE EVMG 32 4-3F5/7.5 EFC	DN125	DN100	895	1150	1045	980	1040	190	1035	830	419
2GPE EVMG 32 4-1F5/7.5 EFC	DN125	DN100	895	1150	1045	980	1040	190	1035	830	419
2GPE EVMG 32 5-3F5/11 EFC	DN125	DN100	895	1150	1545	1080	1040	190	1360	830	506
2GPE EVMG 45 2-0F5/7.5 EFC	DN150	DN125	985	1260	1045	1025	1045	225	1030	870	451
2GPE EVMG 45 3-2F5/11 EFC	DN150	DN125	985	1260	1545	1125	1045	225	1380	870	536
2GPE EVMG 45 3-0F5/11 EFC	DN150	DN125	985	1260	1545	1125	1045	225	1380	870	536
2GPE EVMG 45 4-2F5/15 EFC	DN150	DN125	985	1260	1545	1125	1045	225	1475	870	607
2GPE EVMG 45 4-0F5/15 EFC	DN150	DN125	985	1260	1545	1125	1045	225	1475	870	607
2GPE EVMG 64 2-0F5/11 EFC	DN150	DN125	1030	1305	1545	1130	1045	225	1310	870	554
2GPE EVMG 64 3-3F5/15 EFC	DN150	DN125	1030	1305	1545	1130	1045	225	1405	870	618
2GPE EVMG 64 3-2F5/15 EFC	DN150	DN125	1030	1305	1545	1130	1045	225	1405	870	618
2GPE EVMG 64 3-1F5/15 EFC	DN150	DN125	1030	1305	1545	1130	1045	225	1405	870	618
2GPE EVMG 64 3-0F5/18.5 EFC	DN150	DN125	1030	1305	1645	1130	1045	225	1450	870	648
2GPE EVMG 64 4-3F5/18.5 EFC	DN150	DN125	1030	1305	1645	1130	1045	225	1520	870	666
2GPE EVMG 64 4-1F5/22 EFC	DN150	DN125	1030	1305	1645	1130	1045	225	1555	870	804
2GPE EVMG 64 4-0F5/22 EFC	DN150	DN125	1030	1305	1645	1130	1045	225	1555	870	804

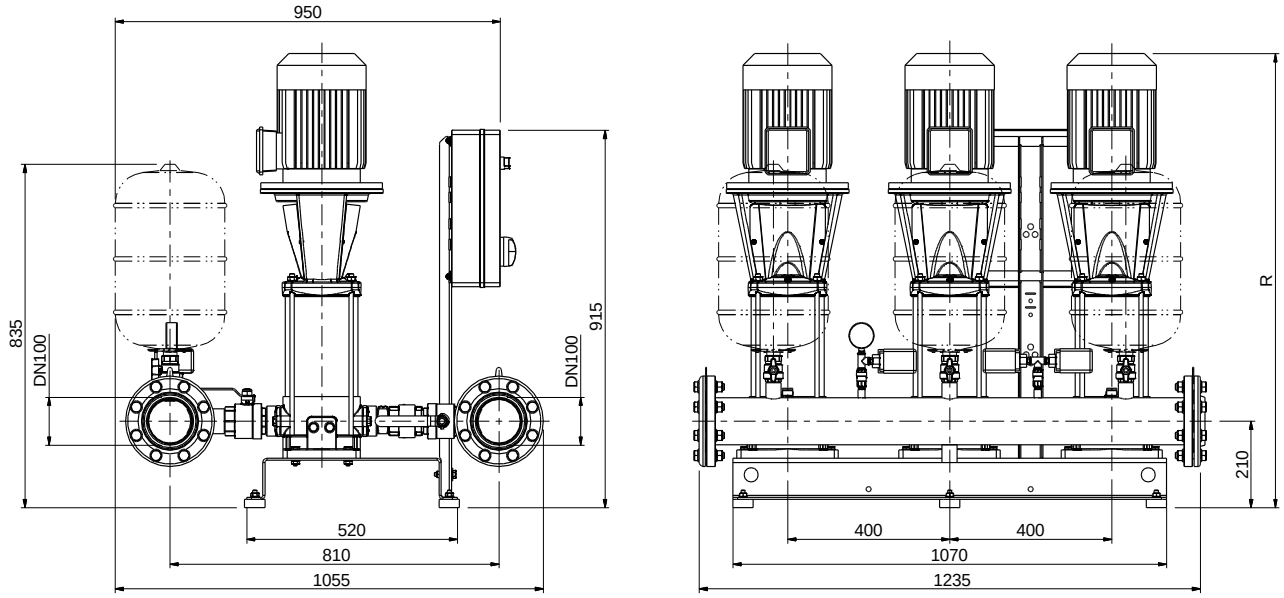
OVERALL DIMENSIONS 3GP BOOSTER SET

3GP EVMS(.)3-5-10



Booster Type	Dimensions [mm]											Weight
	DN1	DN2	A	B	C	L	M	N	Q	R	V	[kg]
3GP EVMSG 3 7N5/0,75	G 2	G 2	380	610	775	780	300	850	150	700	740	104
3GP EVMSG 3 9N5/1,1	G 2	G 2	380	610	775	780	300	850	150	750	740	112
3GP EVMSG 3 10N5/1,1	G 2	G 2	380	610	775	780	300	850	150	770	740	112
3GP EVMSG 3 16N5/1,5	G 2	G 2	380	610	775	780	300	850	150	955	740	129
3GP EVMSG 3 19N5/2,2	G 2	G 2	380	610	775	780	300	850	150	1020	740	143
3GP EVMSG 5 4N5/0,75	G 2 ½	G 2 ½	380	645	815	795	300	850	150	665	750	116
3GP EVMSG 5 5N5/1,1	G 2 ½	G 2 ½	380	645	815	795	300	850	150	700	750	122
3GP EVMSG 5 6N5/1,5	G 2 ½	G 2 ½	380	645	815	795	300	850	150	785	750	129
3GP EVMSG 5 7N5/1,5	G 2 ½	G 2 ½	380	645	815	795	300	850	150	815	750	131
3GP EVMSG 5 8N5/2,2	G 2 ½	G 2 ½	380	645	815	795	300	850	150	845	750	142
3GP EVMSG 5 9N5/2,2	G 2 ½	G 2 ½	380	645	815	795	300	850	150	870	750	143
3GP EVMSG 5 11N5/2,2	G 2 ½	G 2 ½	380	645	815	795	300	850	150	925	750	147
3GP EVMSG 5 15N5/3,0	G 2 ½	G 2 ½	380	645	815	795	300	850	150	1100	750	176
3GP EVMSG 10 4N5/2,2	G 3	G 3	380	710	890	790	300	850	180	805	785	167
3GP EVMSG 10 6N5/2,2	G 3	G 3	380	710	890	790	300	850	180	865	785	172
3GP EVMSG 10 7N5/3,0	G 3	G 3	380	710	890	790	300	850	180	955	785	196
3GP EVMSG 10 8N5/3,0	G 3	G 3	380	710	890	790	300	850	180	985	785	217
3GP EVMSG 10 11N5/4,0	G 3	G 3	380	710	890	790	300	850	180	1095	785	318
3GP EVMSG 10 14N5/5,5	G 3	G 3	520	710	890	895	400	1070	200	1340	805	113

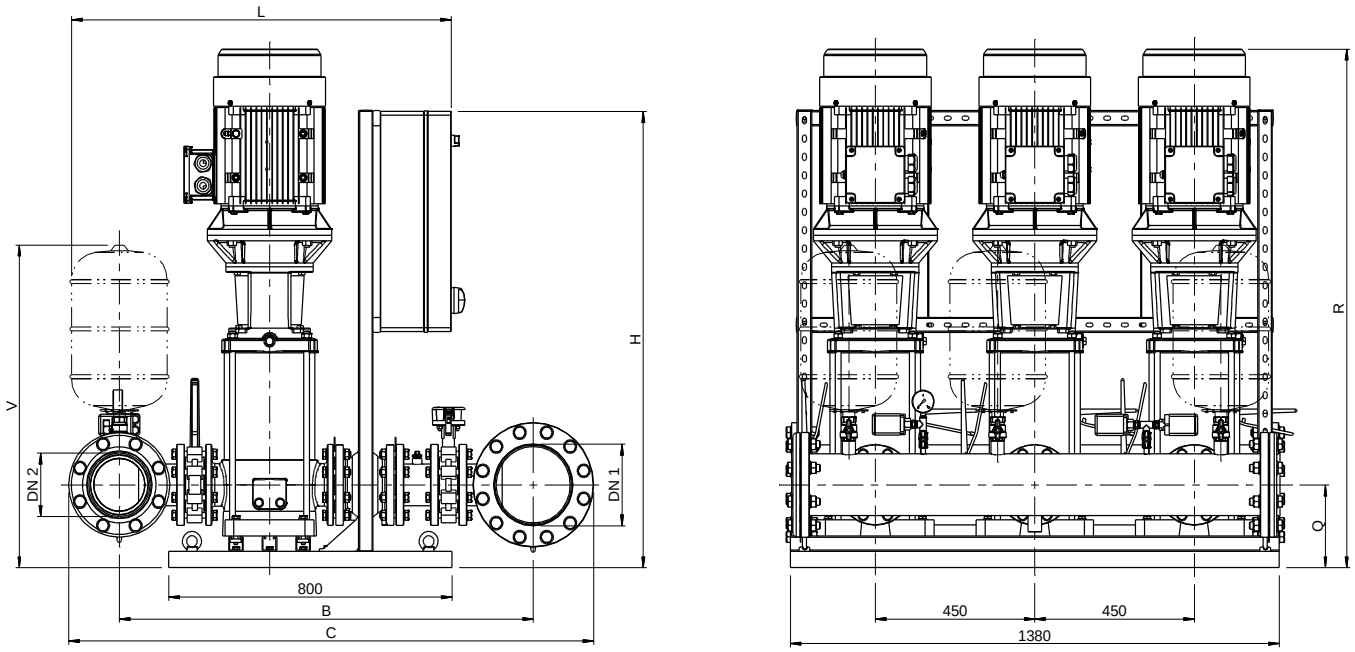
3GP EVMS(.)15-20



Booster Type	Dimensions [mm] R	Weight [kg]
3GP EVMSG 15 4N5/4,0	960	203
3GP EVMSG 15 5N5/5,5	1135	231
3GP EVMSG 15 6N5/5,5	1175	234
3GP EVMSG 15 7N5/7,5	1235	261
3GP EVMSG 15 8N5/7,5	1275	258
3GP EVMSG 15 10N5/11	1405	266
3GP EVMSG 20 4N5/5,5	1095	332
3GP EVMSG 20 6N5/7,5	1195	358
3GP EVMSG 20 8N5/11	1325	467

DIMENSION AND WEIGHT GP-GPE

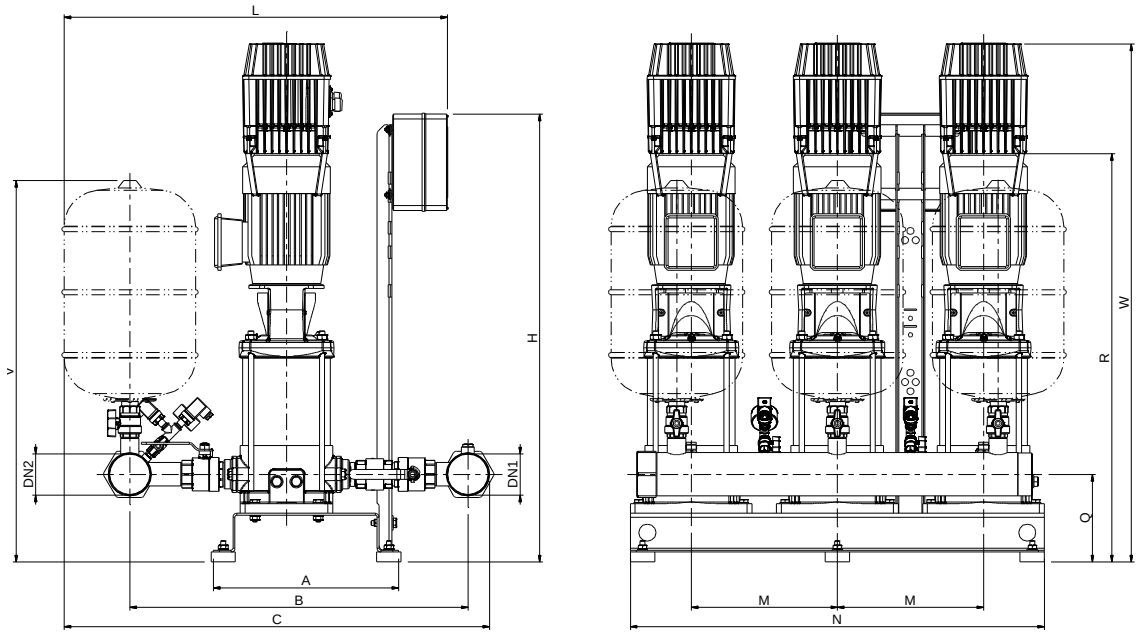
3GP EVM(.) 32-45-64



Booster Type	Dimensions [mm]									Weight [kg]
	DN1	DN2	B	C	H	L	Q	R	V	
3GP EVMG 32 3-3F5/5.5	DN150	DN125	1030	1305	1050	945	190	985	830	582
3GP EVMG 32 3-1F5/5.5	DN150	DN125	1030	1305	1050	945	190	985	830	582
3GP EVMG 32 4-3F5/7.5	DN150	DN125	1030	1305	1050	945	190	1035	830	597
3GP EVMG 32 4-1F5/7.5	DN150	DN125	1030	1305	1050	945	190	1035	830	597
3GP EVMG 32 5-3F5/11	DN150	DN125	1030	1305	1245	1025	190	1360	830	736
3GP EVMG 45 2-0 F5/7.5	DN200	DN150	1225	1540	1050	985	225	1030	880	674
3GP EVMG 45 3-2 F5/11	DN200	DN150	1225	1540	1245	1065	225	1380	880	810
3GP EVMG 45 3-0 F5/11	DN200	DN150	1225	1540	1245	1065	225	1380	880	810
3GP EVMG 45 4-2 F5/15	DN200	DN150	1225	1540	1245	1065	225	1475	880	922
3GP EVMG 45 4-0 F5/15	DN200	DN150	1225	1540	1245	1065	225	1475	880	922
3GP EVMG 64 2-0F5/11	DN200	DN150	1170	1485	1245	1070	225	1310	880	838
3GP EVMG 64 3-3F5/15	DN200	DN150	1170	1485	1245	1070	225	1405	880	940
3GP EVMG 64 3-2F5/15	DN200	DN150	1170	1485	1245	1070	225	1405	880	940
3GP EVMG 64 3-1F5/15	DN200	DN150	1170	1485	1245	1070	225	1405	880	940
3GP EVMG 64 3-0F5/18.5	DN200	DN150	1170	1485	1245	1070	225	1450	880	985
3GP EVMG 64 4-3F5/18.5	DN200	DN150	1170	1485	1245	1070	225	1520	880	1012
3GP EVMG 64 4-1F5/22	DN200	DN150	1170	1485	1545	1120	225	1555	880	1217
3GP EVMG 64 4-0F5/22	DN200	DN150	1170	1485	1545	1120	225	1555	880	1217

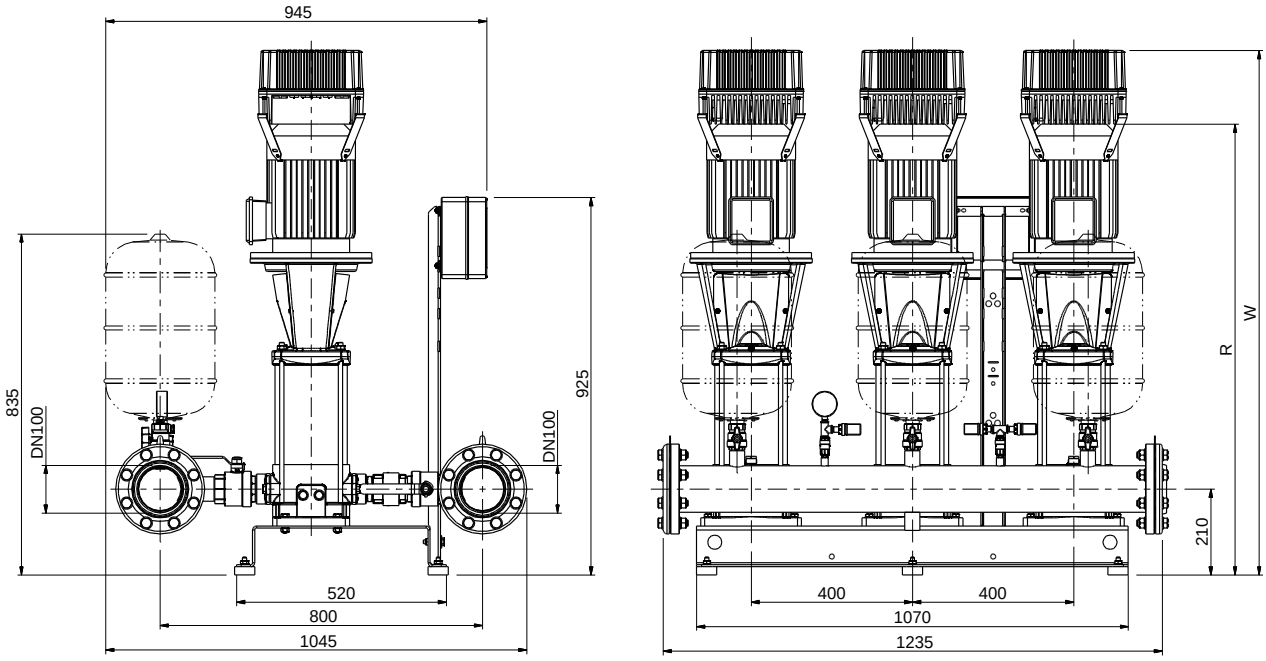
OVERALL DIMENSIONS 3GPE BOOSTER SET

3GPE EVMS(.) 3-5-10 E-DRIVE



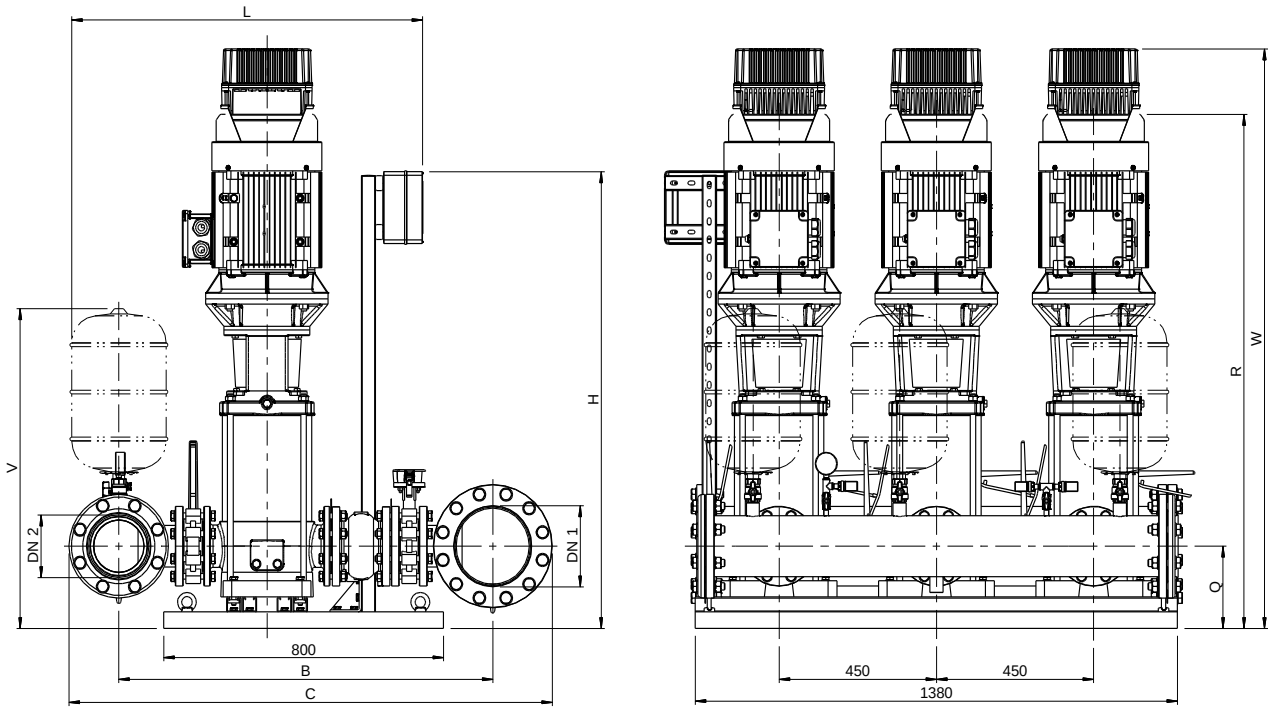
Booster Type	Dimensions [mm]													Weight
	DN1	DN2	A	B	C	H	L	M	N	Q	R	W	V	[kg]
3GPE EVMSG 3 7N5/0,75 EDT	G 2	G 2	380	590	755	920	775	300	850	150	700	925	740	108
3GPE EVMSG 3 9N5/1,1 EDT	G 2	G 2	380	590	755	920	775	300	850	150	750	980	740	115
3GPE EVMSG 3 10N5/1,1 EDT	G 2	G 2	380	590	755	920	775	300	850	150	770	1000	740	117
3GPE EVMSG 3 16N5/1,5 EDT	G 2	G 2	380	590	755	920	775	300	850	150	955	1185	740	133
3GPE EVMSG 3 19N5/2,2 EDT	G 2	G 2	380	590	755	920	775	300	850	150	1020	1245	740	147
3GPE EVMSG 5 4N5/0,75 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	665	890	750	120
3GPE EVMSG 5 5N5/1,1 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	700	930	750	126
3GPE EVMSG 5 6N5/1,5 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	785	1015	750	132
3GPE EVMSG 5 7N5/1,5 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	815	1045	750	135
3GPE EVMSG 5 8N5/2,2 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	845	1070	750	146
3GPE EVMSG 5 9N5/2,2 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	870	1100	750	147
3GPE EVMSG 5 11N5/2,2 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	925	1155	750	151
3GPE EVMSG 5 15N5/3,0 EDT	G 2 ½	G 2 ½	380	630	800	920	790	300	850	150	1100	1330	750	180
3GPE EVMSG 10 4N5/2,2 EDT	G 3	G 3	380	695	875	920	785	300	850	180	805	1030	785	171
3GPE EVMSG 10 6N5/2,2 EDT	G 3	G 3	380	695	875	920	785	300	850	180	865	1090	785	176
3GPE EVMSG 10 7N5/3,0 EDT	G 3	G 3	380	695	875	920	785	300	850	180	955	1185	785	197
3GPE EVMSG 10 8N5/3,0 EDT	G 3	G 3	380	695	875	920	785	300	850	180	985	1215	785	199
3GPE EVMSG 10 11N5/4,0 EDT	G 3	G 3	380	695	875	920	785	300	850	180	1095	1325	785	232
3GPE EVMSG 10 14N5/5,5 EDT	G 3	G 3	520	695	875	920	890	400	1070	200	1340	1520	805	328

3GPE EVMS(.) 15-20 E-DRIVE



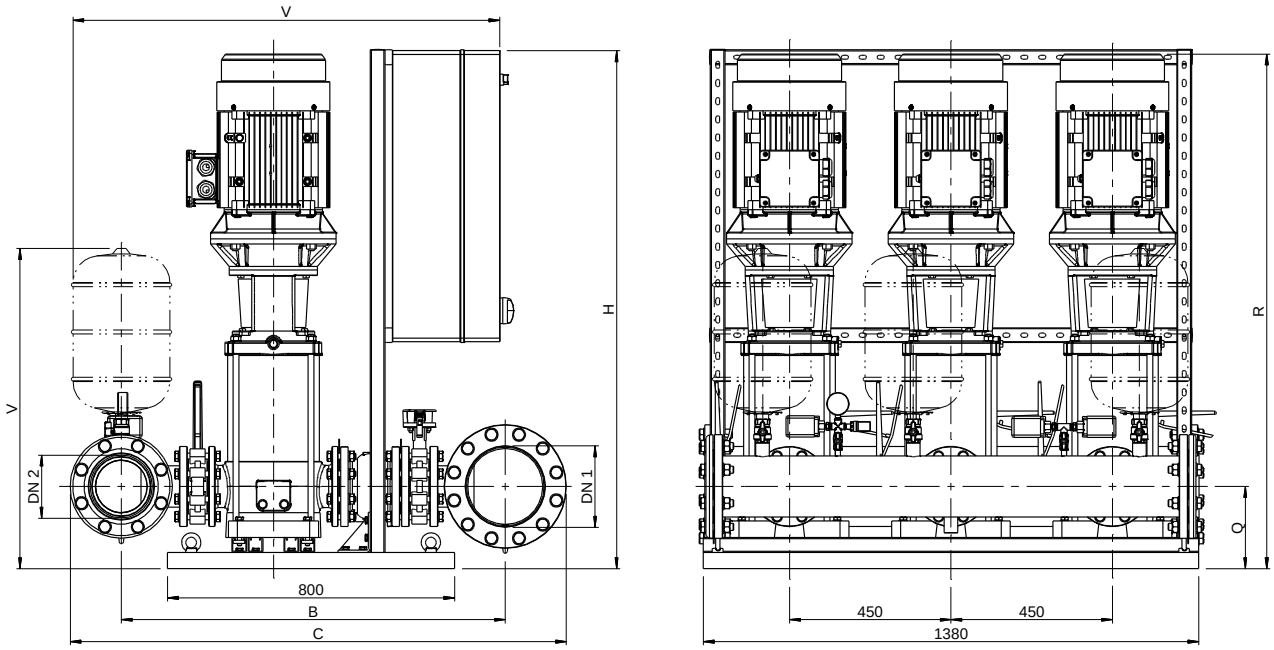
Booster Type	Dimensions [mm]		Weight
	R	W	[kg]
3GPE EVMSG 15 4N5/4,0 EDT	960	1190	206
3GPE EVMSG 15 5N5/5,5 EDT	1135	1315	242
3GPE EVMSG 15 6N5/5,5 EDT	1175	1355	246
3GPE EVMSG 15 7N5/7,5 EDT	1235	1415	273
3GPE EVMSG 15 8N5/7,5 EDT	1275	1455	269
3GPE EVMSG 15 9N5/11 EDT	1365	1545	323
3GPE EVMSG 15 10N5/11 EDT	1405	1585	262
3GPE EVMSG 20 4N5/5,5 EDT	1095	1275	343
3GPE EVMSG 20 6N5/7,5 EDT	1195	1375	369
3GPE EVMSG 20 8N5/11 EDT	1325	1505	463

3GPE EVM(.) 32-45-64 E-DRIVE



Booster Type	Dimensions [mm]										Weight [kg]
	DN1	DN2	B	C	H	L	Q	R	W	V	
3GPE EVMG 32 3-3F5/5.5 EDT	DN150	DN125	920	1195	855	895	190	985	1165	830	575
3GPE EVMG 32 3-1F5/5.5 EDT	DN150	DN125	920	1195	855	895	190	985	1165	830	575
3GPE EVMG 32 4-3F5/7.5 EDT	DN150	DN125	920	1195	1050	895	190	1035	1215	830	590
3GPE EVMG 32 4-1F5/7.5 EDT	DN150	DN125	920	1195	1050	895	190	1035	1215	830	590
3GPE EVMG 32 5-3F5/11 EDT	DN150	DN125	920	1195	1050	895	190	1360	1540	830	713
3GPE EVMG 45 2-0F5/7.5 EDT	DN200	DN150	1025	1335	1050	965	225	1030	1210	880	667
3GPE EVMG 45 3-2F5/11 EDT	DN200	DN150	1025	1335	1110	965	225	1380	1560	880	787
3GPE EVMG 45 3-0F5/11 EDT	DN200	DN150	1025	1335	1110	965	225	1380	1560	880	787
3GPE EVMG 45 4-2F5/15 EDT	DN200	DN150	1025	1335	1110	965	225	1475	1655	880	893
3GPE EVMG 45 4-0F5/15 EDT	DN200	DN150	1025	1335	1110	965	225	1475	1655	880	893
3GPE EVMG 64 2-0F5/11 EDT	DN200	DN150	1070	1385	1255	1000	225	1310	1490	880	812
3GPE EVMG 64 3-3F5/15 EDT	DN200	DN150	1070	1385	1255	1000	225	1405	1585	880	907
3GPE EVMG 64 3-1F5/15 EDT	DN200	DN150	1070	1385	1255	1000	225	1405	1585	880	907
3GPE EVMG 64 3-2F5/15 EDT	DN200	DN150	1070	1385	1255	1000	225	1405	1585	880	907

3GPE EVM(.) 32-45-64 EFC/MFC



Booster Type	Dimensions [mm]									Weight [kg]
	DN1	DN2	B	C	H	L	Q	R	V	
3GPE EVMG 32 3-3F5/5.5 EFC	DN150	DN125	920	1195	1475	1175	190	985	830	593
3GPE EVMG 32 3-1F5/5.5 EFC	DN150	DN125	920	1195	1475	1175	190	985	830	593
3GPE EVMG 32 4-3F5/7.5 EFC	DN150	DN125	920	1195	1475	1175	190	1035	830	608
3GPE EVMG 32 4-1F5/7.5 EFC	DN150	DN125	920	1195	1475	1175	190	1035	830	608
3GPE EVMG 32 5-3F5/11 EFC	DN150	DN125	920	1195	1475	1225	190	1360	830	736
3GPE EVMG 45 2-0F5/7.5 EFC	DN200	DN150	1025	1335	1575	1250	225	1030	880	685
3GPE EVMG 45 3-2F5/11 EFC	DN200	DN150	1025	1335	1575	1300	225	1380	880	810
3GPE EVMG 45 3-0F5/11 EFC	DN200	DN150	1025	1335	1575	1300	225	1380	880	810
3GPE EVMG 45 4-2F5/15 EFC	DN200	DN150	1025	1335	1575	1300	225	1475	880	916
3GPE EVMG 45 4-0F5/15 EFC	DN200	DN150	1025	1335	1575	1300	225	1475	880	916
3GPE EVMG 64 2-0F5/11 EFC	DN200	DN150	1070	1385	1575	1170	225	1310	880	835
3GPE EVMG 64 3-3F5/15 EFC	DN200	DN150	1070	1385	1575	1170	225	1405	880	930
3GPE EVMG 64 3-2F5/15 EFC	DN200	DN150	1070	1385	1575	1170	225	1405	880	930
3GPE EVMG 64 3-1F5/15 EFC	DN200	DN150	1070	1385	1575	1170	225	1405	880	930
3GPE EVMG 64 3-0F5/18.5 EFC	DN200	DN150	1070	1385	1775	1170	225	1450	880	976
3GPE EVMG 64 4-3F5/18.5 EFC	DN200	DN150	1070	1385	1775	1170	225	1520	880	1003
3GPE EVMG 64 4-1F5/22 EFC	DN200	DN150	1070	1385	1775	1170	225	1555	880	1208
3GPE EVMG 64 4-0F5/22 EFC	DN200	DN150	1070	1385	1775	1170	225	1555	880	1208

PACKING

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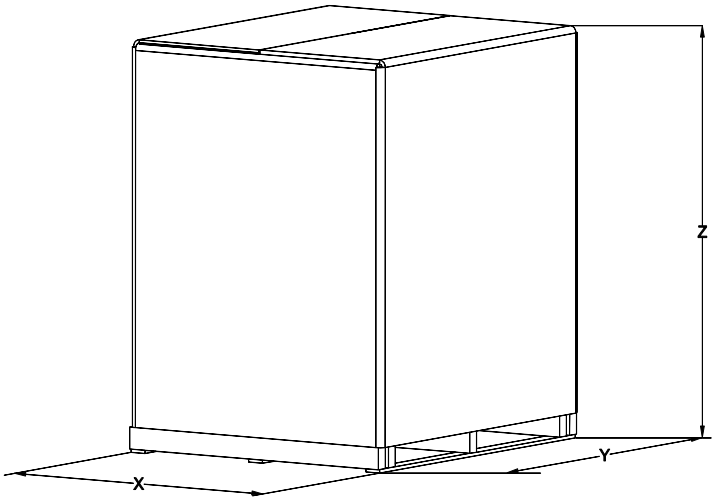

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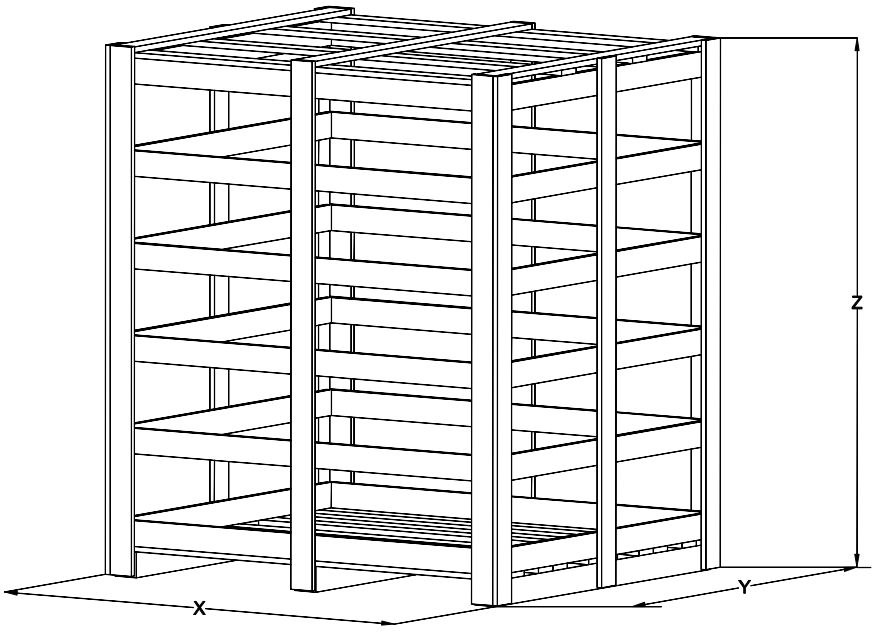


2GP(E) EVMS(.) 3-5-10-15-20

	Booster type	Overall dimensions packing X	Y	Z	Booster+packing Weight [kg]	Packing type
2GP	2GP EVMSG 3 7N5/0,75 (M)	1230	830	1365	90	1
	2GP EVMSG 3 9N5/1,1 (M)				95	
	2GP EVMSG 3 16N5/1,5 (M)				106	
	2GP EVMSG 3 19N5/2,2				116	
	2GP EVMSG 5 4N5/0,75				98	
	2GP EVMSG 5 5N5/1,1				102	
	2GP EVMSG 5 6N5/1,5 (M)				106	
	2GP EVMSG 5 7N5/1,5 (M)				108	
	2GP EVMSG 5 9N5/2,2 (M)				116	
	2GP EVMSG 5 11N5/2,2				118	
	2GP EVMSG 5 15N5/3				139	
	2GP EVMSG 10 4N5/2,2 (M)				131	
	2GP EVMSG 10 6N5/2,2 (M)				135	
	2GP EVMSG 10 8N5/3				152	
	2GP EVMSG 10 11N5/4				166	
	2GP EVMSG 10 14N5/5,5	1235	1135	1790	224	
	2GP EVMSG 15 4N5/4				174	
	2GP EVMSG 15 6N5/5,5				196	
	2GP EVMSG 15 7N5/7,5				214	
	2GP EVMSG 15 8N5/7,5				211	
	2GP EVMSG 20 4N5/5,5				261	
	2GP EVMSG 20 6N5/7,5				270	
2GPE E-POWER	2GPE EVMSG 3-7N/0,75 EPW	690	780	1215	82	1
	2GPE EVMSG 3-9N/1,1 EPW				87	
	2GPE EVMSG 5-4N/0,75 EPW				87	
	2GPE EVMSG 5-5N/1,1 EPW				92	
	2GPE EVMSG 5-6N/1,5 EPW				96	
	2GPE EVMSG 5-7N/1,5 EPW				97	
	2GPE EVMSG 5-9N/2,2 EPW				106	
2GPE HYDROCONTROLLER	2GPE EVMSG 3-7N/0,75 HYD	690	780	1215	83	1
	2GPE EVMSG 3-8N/0,75 HYD				90	
	2GPE EVMSG 3-9N/1,1 HYD				87	
	2GPE EVMSG 3-10N/1,1 HYD				88	
	2GPE EVMSG 5-4N/0,75 HYD				89	
	2GPE EVMSG 5-5N/1,1 HYD				93	
	2GPE EVMSG 5-6N/1,5 HYD				98	
	2GPE EVMSG 5-7N/1,5 HYD				99	
	2GPE EVMSG 5-8N/2,2 HYD				106	
	2GPE EVMSG 5-9N/2,2 HYD				107	
	2GPE EVMSG 5-11N/2,2 HYD				110	
2GPE E-DRIVE	2GPE EVMSG 3 10N5/1.1 EDM	690	780	1215	89	1
	2GPE EVMSG 5 7N5/1.5 EDM	1230	830	1365	111	
	2GPE EVMSG 5 8N5/2.2 EDT				120	
	2GPE EVMSG 5 9N5/2.2 EDT				121	
	2GPE EVMSG 10 6N5/2,2 EDT (EDM)				140	
	2GPE EVMSG 10 7N5/3 EDT				155	
	2GPE EVMSG 10 8N5/3 EDT	1235	1135	1790	157	
	2GPE EVMSG 10 11N5/4 EDT				185	
	2GPE EVMSG 10 14N5/5,5 EDT				248	
	2GPE EVMSG 15 4N5/4 EDT				179	
	2GPE EVMSG 15 5N5/5,5 EDT				204	
	2GPE EVMSG 15 6N5/5,5 EDT				206	
	2GPE EVMSG 15 7N5/7,5 EDT				224	
	2GPE EVMSG 15 8N5/7,5 EDT				213	
	2GPE EVMSG 15 9N5/11 EDT				249	
	2GPE EVMSG 15 10N5/11 EDT				219	
	2GPE EVMSG 20 4N5/5,5 EDT				271	
	2GPE EVMSG 20 6N5/7,5 EDT				280	
	2GPE EVMSG 20 8N5/11 EDT				354	

2GP(E) EVM(.) 32-45-64

	Booster	Overall dimensions packing X	Y	Z	Booster+packing Weight [kg]	Packing type
2GP	2GP EVM(.)32 3-3F5/5.5	1585	1350	1790	446	1
	2GP EVM(.)32 3-1F5/5.5				446	
	2GP EVM(.)32 4-3F5/7.5				456	
	2GP EVM(.)32 4-1F5/7.5				456	
	2GP EVM(.)32 5-3F5/11				546	
	2GP EVM(.)45 2-0F5/7.5				488	
	2GP EVM(.)45 3-2F5/11				575	
	2GP EVM(.)45 3-0F5/11				575	
	2GP EVM(.)45 4-2F5/15				646	
	2GP EVM(.)45 4-0F5/15				646	
	2GP EVM(.)64 2-0F5/11				596	
	2GP EVM(.)64 3-3F5/15				660	
	2GP EVM(.)64 3-2F5/15				660	
	2GP EVM(.)64 3-1F5/15				660	
	2GP EVM(.)64 3-0F5/18.5				690	
	2GP EVM(.)64 4-3F5/18.5				708	
	2GP EVM(.)64 4-1F5/22				849	
	2GP EVM(.)64 4-0F5/22				849	
2GPE (EFC)	2GPE EVM(.)32 3-3F5/5.5	1585	1350	1790	462	1
	2GPE EVM(.)32 3-1F5/5.5				462	
	2GPE EVM(.)32 4-3F5/7.5				471	
	2GPE EVM(.)32 4-1F5/7.5				471	
	2GPE EVM(.)32 5-3F5/11				558	
	2GPE EVM(.)45 2-0F5/7.5				503	
	2GPE EVM(.)45 3-2F5/11				588	
	2GPE EVM(.)45 3-0F5/11				588	
	2GPE EVM(.)45 4-2F5/15				659	
	2GPE EVM(.)45 4-0F5/15				659	
	2GPE EVM(.)64 2-0F5/11				606	
	2GPE EVM(.)64 3-3F5/15				670	
	2GPE EVM(.)64 3-2F5/15				670	
	2GPE EVM(.)64 3-1F5/15				670	
	2GPE EVM(.)64 3-0F5/18.5				700	
	2GPE EVM(.)64 4-3F5/18.5				718	
	2GPE EVM(.)64 4-1F5/22				856	
	2GPE EVM(.)64 4-0F5/22				856	
2GPE (EDT)	2GPE EVM(.)32 3-3F5/5.5 EDT	1585	1350	1790	444	1
	2GPE EVM(.)32 3-1F5/5.5 EDT				444	
	2GPE EVM(.)32 4-3F5/7.5 EDT				454	
	2GPE EVM(.)32 4-1F5/7.5 EDT				454	
	2GPE EVM(.)32 5-3F5/11 EDT				536	
	2GPE EVM(.)45 2-0F5/7.5 EDT				485	
	2GPE EVM(.)45 3-2F5/11 EDT				566	
	2GPE EVM(.)45 3-0F5/11 EDT				566	
	2GPE EVM(.)45 4-2F5/15 EDT				636	
	2GPE EVM(.)45 4-0F5/15 EDT				636	
	2GPE EVM(.)64 2-0F5/11 EDT				584	
	2GPE EVM(.)64 3-3F5/15 EDT				648	
	2GPE EVM(.)64 3-2F5/15 EDT				648	
	2GPE EVM(.)64 3-1F5/15 EDT				648	

3GP(E) EVMS(.) 3-5-10-15-20

	Booster	Overall dimensions packing X	Y	Z	Booster+packing Weight [kg]	Packing type
3GP	3GP EVMSG 3 7N5/0,75	1230	830	1365	129	1
	3GP EVMSG 3 9N5/1,1				137	
	3GP EVMSG 3 10N5/1,1				137	
	3GP EVMSG 3 16N5/1,5				154	
	3GP EVMSG 3 19N5/2,2				168	
	3GP EVMSG 5 4N5/0,75	1235	1135	1790	141	
	3GP EVMSG 5 5N5/1,1				147	
	3GP EVMSG 5 6N5/1,5				154	
	3GP EVMSG 5 7N5/1,5				156	
	3GP EVMSG 5 8N5/2,2				167	
	3GP EVMSG 5 9N5/2,2				168	
	3GP EVMSG 5 11N5/2,2				172	
	3GP EVMSG 5 15N5/3,0				203	
	3GP EVMSG 10 4N5/2,2	1235	1135	1790	206	
	3GP EVMSG 10 6N5/2,2				211	
	3GP EVMSG 10 7N5/3,0				237	
	3GP EVMSG 10 8N5/3,0				258	
	3GP EVMSG 10 11N5/4,0				347	
	3GP EVMSG 10 14N5/5,5				143	
	3GP EVMSG 15 4N5/4,0	1585	1350	1790	247	
	3GP EVMSG 15 5N5/5,5				276	
	3GP EVMSG 15 6N5/5,5				279	
	3GP EVMSG 15 7N5/7,5				306	
	3GP EVMSG 15 8N5/7,5				303	
	3GP EVMSG 15 10N5/11				313	
	3GP EVMSG 20 4N5/5,5				377	
	3GP EVMSG 20 6N5/7,5				390	
	3GP EVMSG 20 8N5/11				514	
3GPE E-DRIVE	3GPE EVMSG 3 7N5/0,75 EDT	1235	1135	1790	133	1
	3GPE EVMSG 3 9N5/1,1 EDT				140	
	3GPE EVMSG 3 10N5/1,1 EDT				142	
	3GPE EVMSG 3 16N5/1,5 EDT				158	
	3GPE EVMSG 3 19N5/2,2 EDT				172	
	3GPE EVMSG 5 4N5/0,75 EDT	1235	1135	1790	145	
	3GPE EVMSG 5 5N5/1,1 EDT				151	
	3GPE EVMSG 5 6N5/1,5 EDT				157	
	3GPE EVMSG 5 7N5/1,5 EDT				160	
	3GPE EVMSG 5 8N5/2,2 2 EDT				171	
	3GPE EVMSG 5 9N5/2,2 EDT				172	
	3GPE EVMSG 5 11N5/2,2 EDT				176	
	3GPE EVMSG 5 15N5/3,0 EDT	1235	1135	1790	207	
	3GPE EVMSG 10 4N5/2,2 EDT				210	
	3GPE EVMSG 10 6N5/2,2 EDT				215	
	3GPE EVMSG 10 7N5/3,0 EDT				238	
	3GPE EVMSG 10 8N5/3,0 EDT				240	
	3GPE EVMSG 10 11N5/4,0 EDT				261	
	3GPE EVMSG 10 14N5/5,5 EDT				358	
	3GPE EVMSG 15 4N5/4,0 EDT	1585	1350	1790	250	
	3GPE EVMSG 15 5N5/5,5 EDT				287	
	3GPE EVMSG 15 6N5/5,5 EDT				291	
	3GPE EVMSG 15 7N/7,5 EDT				318	
	3GPE EVMSG 15 8N5/7,5 EDT				314	
	3GPE EVMSG 15 9N5/11 EDT				368	
	3GPE EVMSG 15 10N5/11 EDT				270	
	3GPE EVMSG 20 4N5/5,5 EDT				388	
	3GPE EVMSG 20 6N5/7,5 EDT				401	
	3GPE EVMSG 20 8N5/11 EDT				510	

3GP(E) EVM(.) 32-45-64

	Booster	Overall dimensions packing X	Y	Z	Booster+packing Weight [kg]	Packing Type
3GP	3GP EVM(.)32 3-3F5/5.5	1860	1560	2070	708	2
	3GP EVM(.)32 3-1F5/5.5				708	
	3GP EVM(.)32 4-3F5/7.5				723	
	3GP EVM(.)32 4-1F5/7.5				723	
	3GP EVM(.)32 5-3F5/11				862	
	3GP EVM(.)45 2-0F5/7.5				800	
	3GP EVM(.)45 3-2F5/11				936	
	3GP EVM(.)45 3-0F5/11				936	
	3GP EVM(.)45 4-2F5/15				1048	
	3GP EVM(.)45 4-0F5/15				1048	
	3GP EVM(.)64 2-0F5/11				964	
	3GP EVM(.)64 3-3F5/15				1066	
	3GP EVM(.)64 3-2F5/15				1066	
	3GP EVM(.)64 3-1F5/15				1066	
	3GP EVM(.)64 3-0F5/18.5				1111	
	3GP EVM(.)64 4-3F5/18.5				1138	
	3GP EVM(.)64 4-1F5/22				1343	
	3GP EVM(.)64 4-0F5/22				1343	
3GPE (EFC)	3GPE EVM(.)32 3-3F5/5.5	1860	1560	2070	719	2
	3GPE EVM(.)32 3-1F5/5.5				719	
	3GPE EVM(.)32 4-3F5/7.5				734	
	3GPE EVM(.)32 4-1F5/7.5				734	
	3GPE EVM(.)32 5-3F5/11				862	
	3GPE EVM(.)45 2-0F5/7.5				811	
	3GPE EVM(.)45 3-2F5/11				936	
	3GPE EVM(.)45 3-0F5/11				936	
	3GPE EVM(.)45 4-2F5/15				1042	
	3GPE EVM(.)45 4-0F5/15				1042	
	3GPE EVM(.)64 2-0F5/11				961	
	3GPE EVM(.)64 3-3F5/15				1056	
	3GPE EVM(.)64 3-2F5/15				1056	
	3GPE EVM(.)64 3-1F5/15				1056	
	3GPE EVM(.)64 3-0F5/18.5				1102	
	3GPE EVM(.)64 4-3F5/18.5				1129	
	3GPE EVM(.)64 4-1F5/22				1334	
	3GPE EVM(.)64 4-0F5/22				1334	
3GPE (EDT)	3GPE EVM(.)32 3-3F5/5.5 EDT	1860	1560	2070	701	2
	3GPE EVM(.)32 3-1F5/5.5 EDT				701	
	3GPE EVM(.)32 4-3F5/7.5 EDT				716	
	3GPE EVM(.)32 4-1F5/7.5 EDT				716	
	3GPE EVM(.)32 5-3F5/11 EDT				839	
	3GPE EVM(.)45 2-0F5/7.5 EDT				793	
	3GPE EVM(.)45 3-2F5/11 EDT				913	
	3GPE EVM(.)45 3-0F5/11 EDT				913	
	3GPE EVM(.)45 4-2F5/15 EDT				1019	
	3GPE EVM(.)45 4-0F5/15 EDT				1019	
	3GPE EVM(.)64 2-0F5/11 EDT				938	
	3GPE EVM(.)64 3-3F5/15 EDT				1033	
	3GPE EVM(.)64 3-2F5/15 EDT				1033	
	3GPE EVM(.)64 3-1F5/15 EDT				1033	

INTENTIONALLY EMPTY PAGE

CONTROL PANEL FIXED SPEED

2EP SPECIFICATION

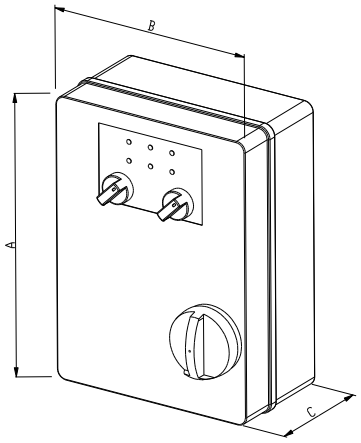
- **SERIES 2EP M UA (single-phase power output)**
- **SERIES 2EP T UA (three-phase power output)**
- **SERIES 2EP SD UA (star/delta starting)**

Electrical panel (protection and control) for two electropumps. Manual or automatic operation through pressure switches or floats. The panel is configured to start the two pumps alternately in stand-by to pressure switch / float switch enable signals. The electrical panel protects the motors against overload and phase failure. Any protection devices that intervene are signalled on the panel itself and remotely through no voltage contacts. The protection device against overload and phase failure resets automatically three times, and manually after the fourth intervention (any interventions, from 1 to 3, are cancelled one hour after the last intervention).

TECHNICAL FEATURES

• P.MIN= Operation against dry running (tripped by a level float or minimum pressure switch) with automaticreset once water supply is restored, with warning lamp.
• PR1= Pump n. 1 start/stop
• PR2= Pump n. 2 start/stop
• Automatic start sequence alternation
• Motor protection against overload with automatic reset for three times and manual reset the fourth time
• Motor line protection against short-circuits with fuses for motor startup
• Transformer and auxiliary circuit protection with fuses
• Remote signalling, through NC-NO no voltage contact, of the protection devices that intervene

Version		2EP M UA	2EP T UA / 2EP SD UA
Power source	Frequency	50/60 Hz	
	Phase	Single-phase	Three-phase
	Voltage	230 V ± 10%	400 V ± 10%
	Power	0.37 ÷ 2.2 kW	T UA 0.37 ÷ 7.5 kW SD UA 11 ÷ 37 kW
Others	Protection degree	IP 55	
	Ambient Temperature	-5°C + 40°C	
	Pressurisation units	2 pumps	
	Relative humidity	50% a 40°C MAX (90% a 20°C)	
	Max altitude	1000 m (a.s.l.)	
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)		



2EP M UA MODELS TABLE

Model	Single pump Power [kW]	I Calibration [A]	Range Protection* [A]	Motor fuse	Dimensions AxBxC [mm]	Weight [kg]
2EP 0,37 M	0,37	2x3	1÷12	4A aM (10.3x38)	240 x 190 x 90	1,5
2EP 0,55 M	0,55	2x4,5	1÷12	6A aM (10.3x38)	240 x 190 x 90	1,5
2EP 0,75 M	0,75	2x7	1÷12	8A aM (10.3x38)	240 x 190 x 90	1,5
2EP 1,1 M	1,1	2x9	1÷12	10A aM (10.3x38)	240 x 190 x 90	1,5
2EP 1,5 M	1,5	2x12	1÷12	12A aM (10.3x38)	240 x 190 x 90	1,5
2EP 2,2 M	2,2	2x16	12÷24	20A aM (10.3x38)	300 x 220 x 120	2,2

- * Unipolar amperometric protection

2EP T UA MODELS TABLE

Model	Single pump Power [kW]	I Calibration [A]	Range Protection* [A]	Motor fuse	Dimensions AxBxC [mm]	Weight [kg]
2EP 0,37 T	0,37	2x1,5	1÷12	6A am (10.3x38)	300 x 220 x 120	3,5
2EP 0,55 T	0,55	2x2	1÷12	6A am (10.3x38)	300 x 220 x 120	3,5
2EP 0,75 T	0,75	2x2	1÷12	6A am (10.3x38)	300 x 220 x 120	3,5
2EP 1,1 T	1,1	2x3	1÷12	6A am (10.3x38)	300 x 220 x 120	3,5
2EP 1,5 T	1,5	2x4	1÷12	8A am (10.3x38)	300 x 220 x 120	3,5
2EP 2,2 T	2,2	2x6	1÷12	12A am (10.3x38)	300 x 220 x 120	3,5
2EP 3 T	3	2x8	1÷12	16A am (10.3x38)	300 x 220 x 120	3,5
2EP 4 T	4	2x9	1÷12	20A am (10.3x38)	300 x 220 x 120	3,5
2EP 5,5 T	5,5	2x12	12÷24	25A am (10.3x38)	300 x 220 x 120	3,5
2EP 7,5 T	7,5	2x16	12÷24	20A am (10.3x38)	300 x 220 x 120	3,5

- * Electronic amperometric protection (measured current on one phase)

2EP SD UA MODELS TABLE

Model	Single pump Power [kW]	I Calibration** [A]	Range Protection* [A]	Motor fuse	Dimensions AxBxC [mm]	Weight [kg]
2EP 11 SD	11	12	9÷15	25A aM (14x51)	460x380x180	11
2EP 15 SD	15	18	14÷23	40A aM (14x51)	460x380x180	11
2EP 18,5 SD	18	21	14÷23	50A aM (14x51)	460x380x180	11
2EP 22 SD	22	29	20÷33	63A aM (NH00)	500x500x200	18
2EP 30 SD	30	36	28÷42	80A aM (NH00)	600x600x200	40
2EP 37 SD	37	45	30÷50	100A aM (NH00)	1000x800x300	50

- * Termal tripolar, bimetallic type
- ** Delta connection current measured

3EP SPECIFICATION

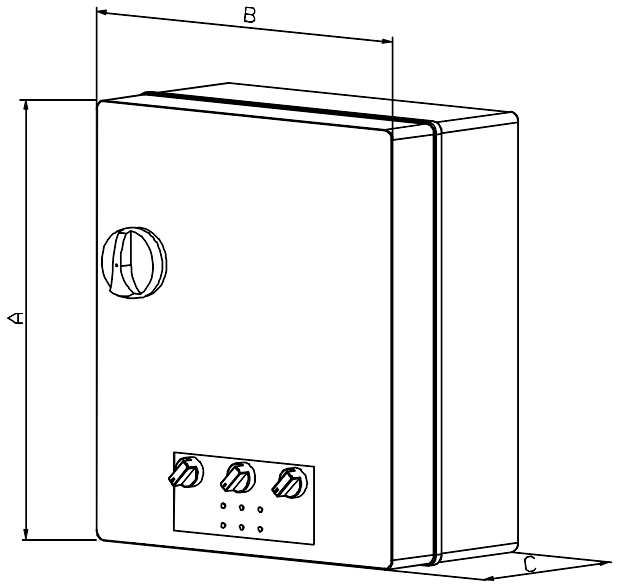
- **SERIES 3EP T UA (three-phase power output)**
- **SERIES 3EP SD UA (star/delta starting)**

Electrical enclosure (protection and control) for three electropumps. Manual or automatic operation through pressure switches or floats. The panel is configured to start the three pumps alternately in repose to pressure switch / float switch enable signals.The electrical panel protects the motors against overload and phase failure. Any protection devices that intervene are signalled on the panel itself and remotely through no voltage contacts. The protection device against overload and phase failure resets automatically three times, and manually after the fourth intervention (any interventions, from 1 to 3, are cancelled one hour after the last intervention).

TECHNICAL FEATURES

• P.MIN= Operation against dry running (tripped by a level float or minimum pressure switch) with automaticreset once water supply is restored, with warning lamp.
• PR1= Electropump/s start/stop
• Automatic start sequence alternation
• Motor protection against overload with automatic reset for three times and manual reset the fourth time
• Motor line protection against short-circuits with fuses for motor startup
• Transformer and auxiliary circuit protection with fuses
• Transformer and auxiliary circuit protection with fuses
• Remote signalling, through NC-NO no voltage contact, of the protection devices that intervene

Version		3 EP T UA	3 EP SD UA
Power source	Frequency	50/60 Hz	
	Phase	Three-phase	
	Voltage	400 V ± 10%	
	Power	0.55 ÷ 37kW	
Others	Protection degree	IP 55	
	Ambient Temperature	-5°C + 40°C	
	Relative humidity	50% a 40°C MAX (90% a 20°C)	
	Relative humidity	1000 m (a.s.l.)	
	Pressurisation units	3 pumps	
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)		



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3EP T UA MODELS TABLE

Model	Single pump Power [kW]	I Calibration [A]	Range Protection* [A]	Motor fuse	Dimensions AxBxC [mm]	Weight [kg]
3EP 0,55 T	0,55	3x1,5	1÷5	6A aM (10.3x38)	380x300x120	9,5
3EP 1,1 T	1,1	3x2,5	1÷5	6A aM (10.3x38)	380x300x120	9,5
3EP 1,5 T	1.5	3x3,5	1÷5	6A aM (10.3x38)	380x300x120	9,5
3EP 2,2 T	2,2	3x5	3,2÷16	8A aM (10.3x38)	380x300x120	9,5
3EP 3,7 T	3,7	3x8	3,2÷16	12A aM (10.3x38)	380x300x120	9,5
3EP 5,5 T	5,5	3x12	3,2÷16	16A aM (10.3x38)	380x300x120	9,5
3EP 7,5 T	7,5	3x16	3,2÷16	20A aM (10.3x38)	380x300x120	9,5

- * Large scale amperometric protection

3EP SD UA MODELS TABLE

Model	Single pump Power [kW]	I Calibration [A]	Range Protection* [A]	Motor fuse	Dimensions AxBxC [mm]	Weight [kg]
3EP 7,5 SD	7,5	9,5	6÷10	20A am (10,3x38)	600x600x200	25
3EP 11 SD	11	15	9÷15	25A am (14x51)	600x600x200	25
3EP 15 SD	15	18	14÷23	25A am (14x51)	600x600x200	31
3EP 18,5 SD	18,5	21	14÷23	40A am (14x51)	600x600x200	31
3EP 22 SD	22	29	20÷33	50A am (14x51)	800x600x250	35
3EP 37 SD	37	44	30÷42	63A am (NH00)	1000x800x300	54

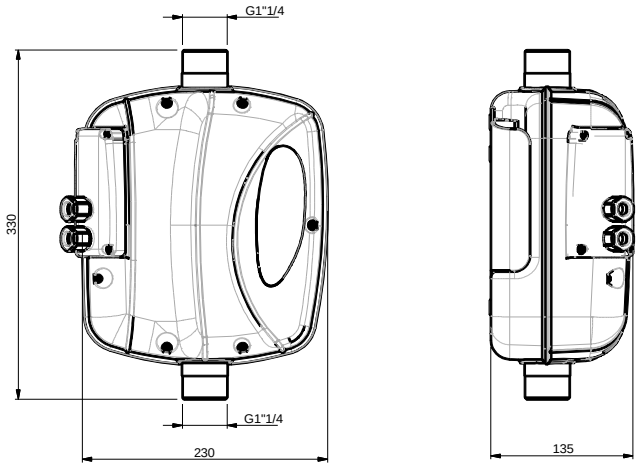
- * Bipolar thermal protection

CONTROL PANEL VARIABLE SPEED

E-POWER SPECIFICATION

In-line electronic device for controlling electropumps, employing inverter technology. Starts and stops the pump and modulates the speed of the motor in relation to the water demand on the system, to maintain the operating pressure setting. Provides excellent comfort for the end user, significant energy savings and increased service life, the typical advantages of inverter controlled autoclave systems.
E-power use the Master /slave mode that allowes to connect two inverters on the same system in order to improve its performance in a coordinate mode.The connection for this mode is made by communication line ON/OFF.

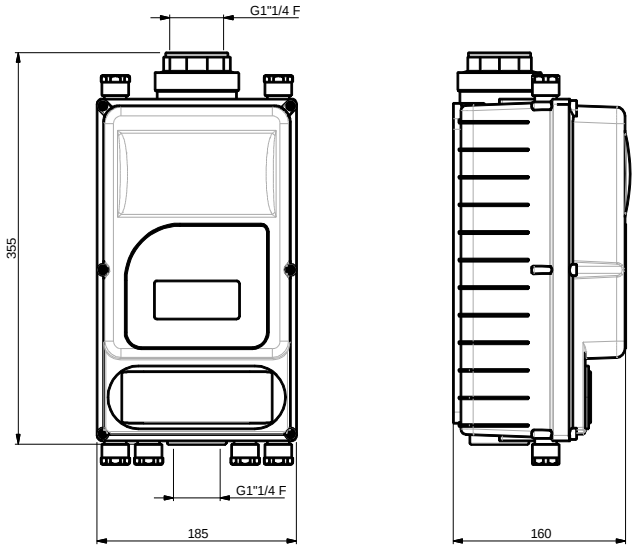
E-POWER MT		
Power	Power Voltage	Single-phase 230 V
	Output Voltage (pump)	Three-phase 230 V
	Phase current	Max 10 A
	Output frequence	5 ÷ 60Hz
	Maximum pump power	2.2 kW
Others	Pressure setpoint	0.3 ÷ 8 bar
	Max overpressure	12 bar
	Protection degree	IP 65
	Ambient Temperature	0 ÷ 40°C
	Liquid temperature	+1 ÷ 40°C
	Liquid type	Water with no chemical add (ph 5÷9) and no debris
	Pressurisation units	2 pumps
	Hydraulic Connection	G1”1/4 Male
	Weight	2 kg
	Protection	Dry-running
		Over/under voltage
		Short-circuit
		Overload
		Overtemperature
		Low pressure
		Pressure sensor fault
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)	



HYDROCONTROLLER SPECIFICATION

Professional in-line electronic device for controlling electropumps, employing inverter technology.
Starts and stops the pump and modulates the speed of the motor in relation to the water demand on the system, to maintain the operating pressure setting. Suited to creating pressurisation units up to 8 pumps. Provides excellent comfort for the end user, significant energy savings and increased service life, the typical advantages of inverter controlled autoclave systems.
Hydrocontroller is connected in multipumps configuration composed from an inverter master that can drive up to 7 inverters Slave.

HYDROCONTROLLER TT		
Power	Power Voltage	Three-phase 400 V
	Output Voltage (pump)	Three-phase 400 V
	Phase current	Max 6 A
	Output frequence	10 ÷ 60Hz
	Maximum pump power	2.2 kW
Others	Pressure setpoint	0.3 ÷ 7.5 bar (±0.2)
	Max overpressure	12 bar
	Protection degree	IP 65
	Ambient Temperature	0 ÷ 40°C
	Liquid temperature	+1 ÷ 40°C
	Liquid type	Water with no chemical add (ph 5÷9) and no debris
	Pressurisation units	2 pumps
	Hydraulic Connection	G1”1/4 Female
	Weight	4 kg
	Protection	Dry-running
		Over/under voltage
		Short-circuit
		Overload
		Overtemperature
		Low pressure
		Pressure sensor fault
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)	

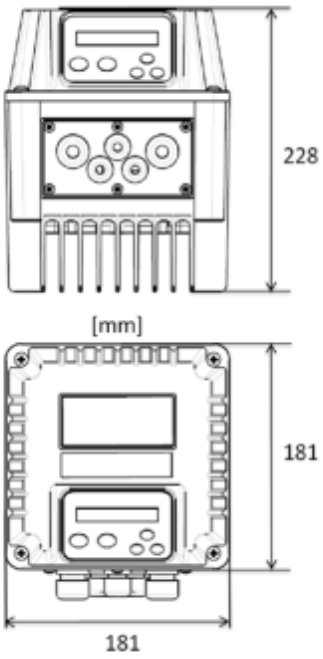


E-DRIVE SPECIFICATION

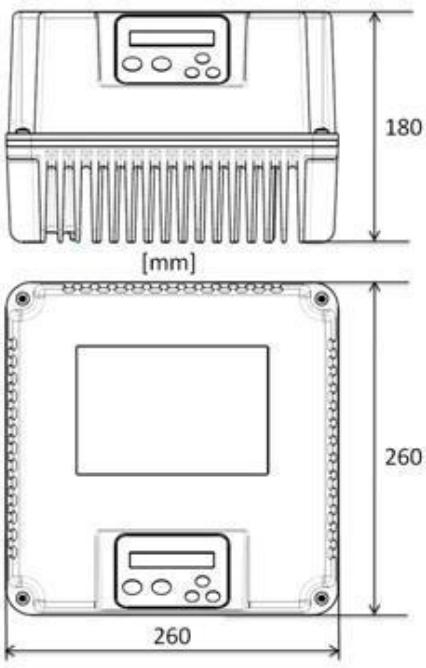
Electronic device with external control for controlling electropumps, employing inverter technology. Starts and stop the pump and modulates the speed of the motor in relation to the water demand on the system, to optimise system operation. Provides excellent comfort for the end user, significant energy savings and increased service life, the typical advantages of inverter controlled autoclave systems.

E-DRIVE									
Version		EDM		EDT					
		1500	3000	2200	4000	5500	7500	11000	15000
Power	Power Voltage	Single-phase 230V		Three-phase 400V					
	Output Voltage (pump)	Three-phase 230V		Three-phase 400V					
	Output frequence	5 ÷ 60 Hz							
	Maximum pump power	1.5kW	3kW	2.2kW	4kW	5.5kW	7.5kW	11kW	15kW
	Max I in	15 A	20 A	10 A	13.5 A	16 A	21 A	31 A	35 A
	Max I out	7 A	11 A	6 A	9 A	14 A	18 A	25 A	30 A
Others	Pressure sensor	0 ÷ 16 or 0 ÷ 25 Bar							
	Protection degree	IP 55							
	Temperature range	Max 40°C							
	Pressurisation units	Up to 8 pumps							
	Weight	4	4.3	4.4	4.4	7	7	7	7.2
	Analogue inputs	4-20mA (10 or 15Vdc)							
	Digital outputs	NO or NC for: Running motor signal and Alarm							
	Digital inputs	NO or NC for: Start and stop motor							
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)								

E-Drive 1500; 2200; 3000; 4000.



E-Drive 5500; 7500; 11000; 15000.



SP (EFC and MFC) SPECIFICATION

The control panels SP EFC/MFC series inverters modulate the operation of electropumps in response to control by the pressure transducer (transducer measuring flow or other external signal 4-20 mA), regulating the speed of the electropumps to keep system demand constant. If the electronic controller or pressure transducer fails, a system of pressure switches controls the pumps directly (if present).

VERSION
• "EFC": Control panel for two or more electric pumps, with a single inverter with pump exchange
• "MFC": Control panel for two or more electric pumps, with an inverter for each individual electropump

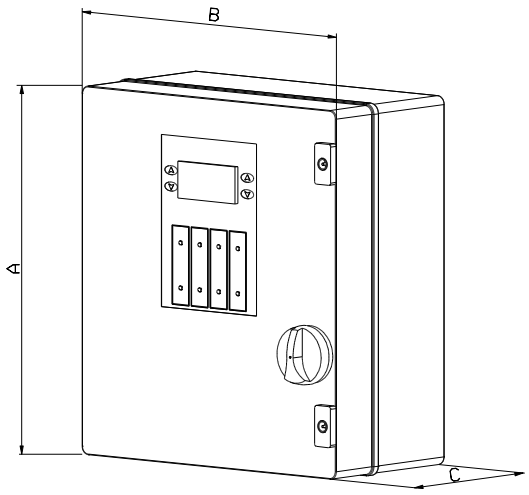
EFC / MFC		
Power	Power Voltage	Three-phase 400 V
	N° phases	Three phase without the use of neutral
	Frequence	50/60Hz
	Pump power	From 2.2kW up to 22kW
	Protection degree	IP55 up to 2.2kW IP44 3kW and above
	Ambient Temperature	-10°C + 40°C
	Pressurisation units	2 or 3 pumps
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)	

Single inverter with exchange pump (SP EFC)

Panel type	Pump motor power (Three-phase)	Starting (Emergency / fixed speed pumps)	Option
2/3 pumps	1.5÷7.5 kW	Direct	Inverter pump Exchange
	11÷30kW	Star-Delta	

Multi-inverter: one inverter for each pump (SP MFC)

Panel type	Pump motor power (Three-phase)	Starting (Emergency / fixed speed pumps)
2/3 pumps	5.5 - 7,5 kW	Inverter ramp
	11 - 30 KW	Inverter ramp



2SP EFC MODELS TABLE

Model	N° Pumps	Motor power [kW]	Dimensions A-B-C [mm]	Current [A]	Weight [Kg]
2SP EFC 1,5T-2	2	2x1.5	450x400x200	2x3,7	25
2SP EFC 2,2T-2		2x2.2	450x400x200	2x5,3	25
2SP EFC 3T-2		2x3	450x400x250	2x7,2	25
2SP EFC 4T-2		2x4	450x400x250	2x9	25
2SP EFC 5,5T-2		2x5.5	450x400x250	2x12	27
2SP EFC 7,5T-2		2x7.5	450x400x250	2x15,5	27
2SP EFC 11SD-2		2x11	800x800x300	2x23	32
2SP EFC 15SD-2		2x15	800x800x300	2x31	32
2SP EFC 18,5SD-2		2x18.5	1000x800x300	2x37	32
2SP EFC 22SD-2		2x22	1000x800x300	2x43	36
2SP EFC 30SD-2		2x30	1200x800x300	2x61	36

3SP EFC MODELS TABLE

Model	N° Pumps	Motor power [kW]	Dimensions A-B-C [mm]	Current [A]	Weight [Kg]
2SP EFC 1,5T-2	3	2x1.5	450x400x200	2x3,7	25
2SP EFC 2,2T-2		2x2.2	450x400x200	2x5,3	25
2SP EFC 3T-2		2x3	450x400x250	2x7,2	25
2SP EFC 4T-2		2x4	450x400x250	2x9	25
3SP EFC 5,5T-2		3x5.5	450x400x250	3x12	33
3SP EFC 7,5T-2		3x7.5	450x400x250	3x15,5	33
3SP EFC 11SD-2		3x11	800x800x300	3x23	38
3SP EFC 15SD-2		3x15	800x800x300	3x31	38
3SP EFC 18,5SD-2		3x18.5	1000x800x300	3x37	38
3SP EFC 22SD-2		3x22	1000x800x300	3x43	42
3SP EFC 30SD-2		3x30	1200x800x300	3x61	42

2SP MFC MODELS TABLE

Model	N° Pumps	Motor power [kW]	Dimensions A-B-C [mm]	Current [A]	Weight [Kg]
2SP EFC 1,5T-2	2	2x1.5	500x400x200	2x3.7	28
2SP EFC 2,2T-2		2x2.2	500x400x200	2x5.3	28
2SP EFC 3T-2		2x3	500x400x250	2x7.2	28
2SP EFC 4T-2		2x4	600x400x250	2x9	28
2SP MFC 5,5T-2		2x5.5	600x400x250	2x12	28
2SP MFC 7,5T-2		2x7.5	600x600x250	2x15,5	28
2SP MFC 11T-2		2x11	800x600x300	2x23	60
2SP MFC 15T-2		2x15	800x600x300	2x31	60
2SP MFC 18,5T-2		2x18.5	800x600x300	2x37	60
2SP MFC 22T-2		2x22	800x800x300	2x43	65
2SP MFC 30T-2		2x30	1600x800x400	2x61	65

3SP MFC MODELS TABLE

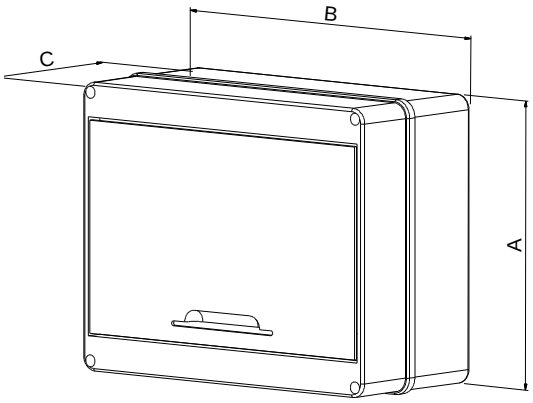
Model	N° Pumps	Motor power [kW]	Dimensions A-B-C [mm]	Current [A]	Weight [Kg]
3SP MFC 1,5T-2	3	3x1.5	800x600x250	3x3.7	33
3SP MFC 2,2T-2		3x2.2	800x600x250	3x5.3	33
3SP MFC 3T-2		3x3	800x600x250	3x7.2	33
3SP MFC 4T-2		3x4	800x600x250	3x9	33
3SP MFC 5,5T-2		3x5.5	800x600x250	3x12	33
3SP MFC 7,5T-2		3x7.5	800x600x250	3x15,5	33
3SP MFC 11T-2		3x11	800x800x300	3x23	75
3SP MFC 15T-2		3x15	1000x800x300	3x31	75
3SP MFC 18,5T-2		3x18.5	1200x800x300	3x37	75
3SP MFC 22T-2		3x22	1200x800x400	3x43	83
3SP MFC 30T-2		3x30	1600x1000x400	3x61	83

PROTECTION PANEL SPECIFICATION

Connection box for inverter :

- Connects the inverters with the power supply point.
- Equipped with circuit breakers on individual lines

Power source	Frequency	50/60 Hz	
	Phase	Single-phase	Three-phase
	Voltage	230 V ± 10%	400 V ± 10%
	Power	0.37 ÷ 3 kW	0.37 ÷ 15 kW
Others	Protection degree	IP 55	
	Ambient Temperature	-5°C + 40°C	
	Pressurisation units	2 pumps	
	Relative humidity	50% a 40°C MAX (90% a 20°C)	
	Max altitude	1000 m (a.s.l.)	
Directives	2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS)		



Model	N° Pumps	Power [kW]	Dimensions A-B-C [mm]	Max Current [A]
PROT 2E-DR 1.5-3M	2	2x3	160x120x90	2x20
PROT 2E-DR 4T		2x4	160x200x90	2x16
PROT 2E-DR 5.5T		2x5.5	160x200x90	2x20
PROT 2E-DR 7.5T		2x7.5	160x200x90	2x25
PROT 2E-DR 15T		2x15	160x200x90	2x32
PROT 3E-DR 1.5-3M	3	3x3	160x120x90	3x20
PROT 3E-DR 4T		3x4	200x250x110	3x16
PROT 3E-DR 5.5T		3x5.5	200x250x110	3x20
PROT 3E-DR 7.5T		3x7.5	200x250x110	3x25
PROT 3E-DR 15T		3x15	200x250x110	3x32

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