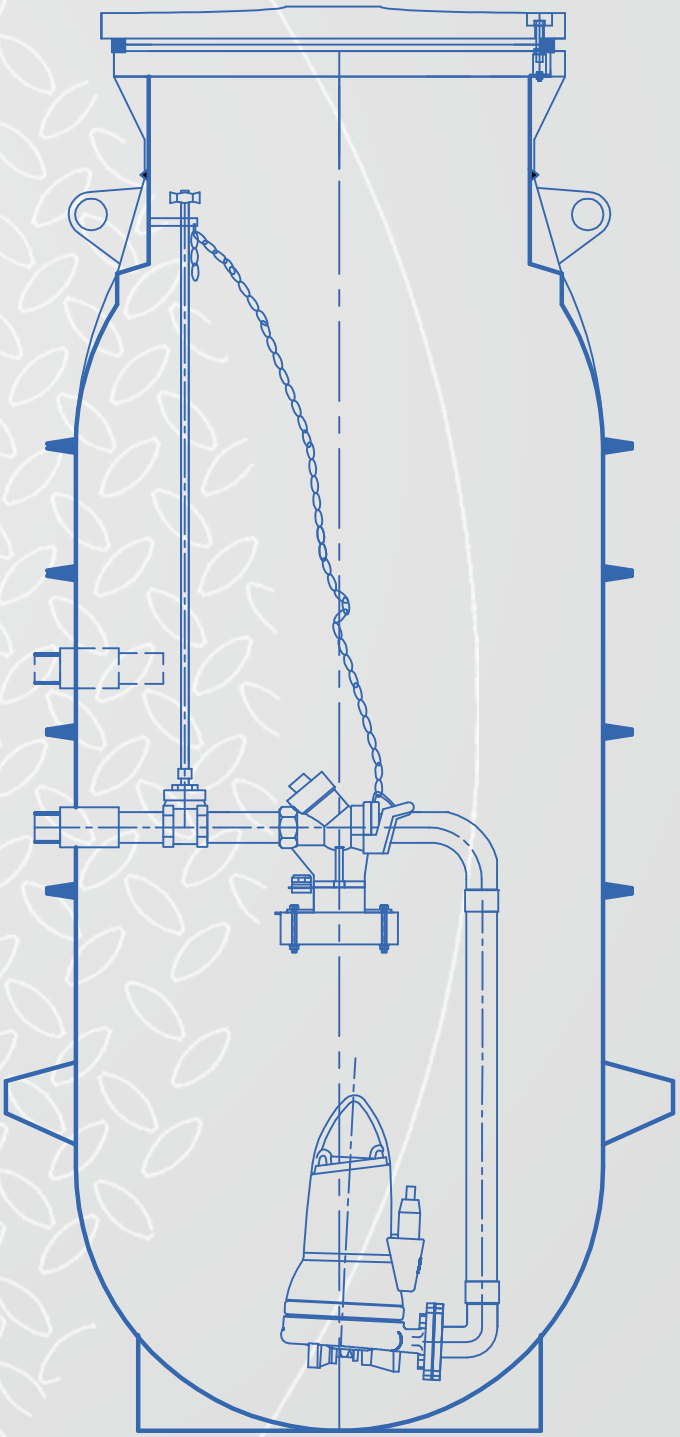
DOMESTIC SEWAGE PUMPING STATIONS

ESP



EKO-SYSTEM-POLSKA

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1. GENERAL INFORMATION

ESP household sewage pumping stations are designed for municipal, sanitation, drainage water, rainwater, dewatering and similar utilities discharge over longer distances. Lifting the sewages to a higher level is also possible. Pumping stations are delivered with complete accessories that ensure their automatic operation. Small size, simple design, installation and operation are further advantages of domestic sewage pumping stations. These devices are used especially where landform, high groundwater level or a large distance to the point of discharge, do not allow the use of gravity systems. They are also used as a sewage catchment within gravity and discharge system. The sewage flows from individual households, small neighboring communities, sports facilities, recreation centers or industrial plants to the pumping station's reservoir. Then, by using submersible pump, it is pumped through a pipeline to sewage system's cumulative collectors or directly to the sewage treatment plant.

2. ADVANTAGES OF ESP DOMESTIC SEWAGE PUMPING STATIONS OF PEHD/LLDPE

Countless advantages of domestic sewage pumping stations made of PEHD/LLDPE polyethylene make the number of their users constantly increasing. EKO-SYSTEM-POLSKA offers pumping stations made of PEHD/LLDPE polyethylene using rotational molding method, so called rotomoudling. It consists in spreading material placed inside the heated mold on its inner surface. Products made using this technology are free of internal stress (distortion).

The major advantages of ESP domestic sewage pumping stations include:

- Automated maintenance-free pumping operation
- Low installation and operating costs
- Can be used without additional downforce, under all soil and water conditions, even in the area of high ground water levels, due to its embedded anti-displacement flange
- Compact design of a complete facility
- Long-term sustainability of the pumping station reservoir of monolithic structure
- High mechanical and chemical resistance the pumping station's reservoir.
- Total tightness and impermeability - inlet seals located on connectors
- Resistance to aggressive environment
- Hemispherical or lenticular shape of the bottom and smooth internal walls to protect against sedimentation of sludge
- Possibility to execute different variants of the equipment
- Use in the construction of pumping stations of corrosion-resistant materials - complete stainless steel pipework type 0H18N9, cast iron valve and coupling hitch coated with protective coating

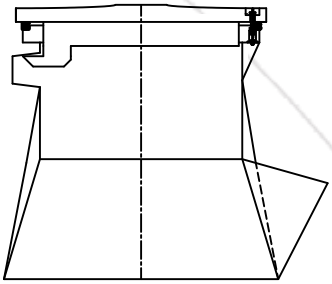
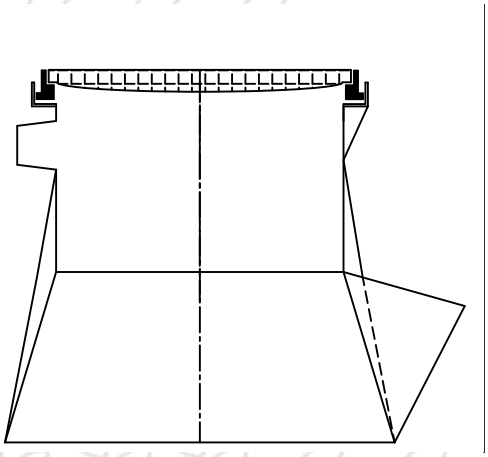
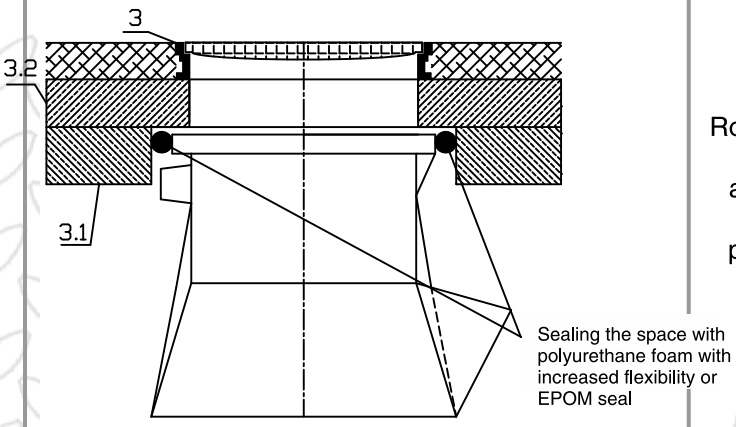
- High-quality pumps of reputable manufacturers for various types of sewage
- Checked control with full pump motor protection, easy to use
- High efficiency of the discharge system
- Easy and fast installation, limiting the ground and mounting works to a minimum
- They do not require constant maintenance
- Assured warranty and post-warranty service

ESP domestic sewage pumping stations are designed so that a lid of PEHD and A15 grade o B125 grade cast iron manhole can be fixed to them.

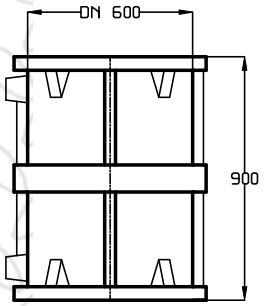
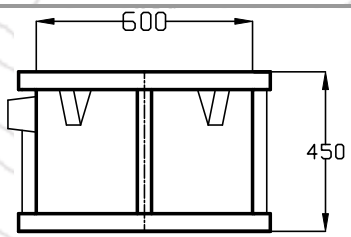
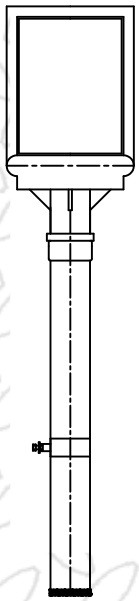
- PEHD DN600 manhole (**ESP-0914130**) with the closure of stainless steel, type at least 0H18N9 can be used in green areas - only for pedestrians.
- The round manhole made of high density PEHD polyethylene with EKO-SYSTEM-POLSKA company logo has a non-slip grooved surface which prevents the accumulation of water on the cover.

- It is possible to fill the manhole with polyurethane foam so that the manhole has a higher thermal insulation or fill it with concrete, which causes that the manhole has A class strength, confirmed by tests conducted by a certified external laboratory according to EN-124.

Summary of types of finials

Item	Type of the final	Range of Application	Catalogue No.
1.	PEHD DN 60 manhole with closure 	Development in green areas - only for pedestrians	ESP-0914130
1.1	PEHD manhole seal (OPTION) A		ESP-0914120
2.	DN 600 class A15 cast iron manhole with closure 	Surfaces for pedestrians and cyclists (EN-124)	ESP-0914131
3.	DN 600 class B125 cast iron manhole 	Roads and pedestrian areas, equivalent areas, car parks or passenger cars parking areas (EN-124)	ESP-0914132
3.1	DN 600 reinforced concrete load distribution ring		ESP-0914133
3.2	DN 600 reinforced concrete overlapping plate		ESP-091434

Where there is a need to increase the standard height of the well it is possible to use an extension.

Item	Elements of additional equipment of the pumping station		Catalogue No.
1	DN 600, H = 900 mm extension		ESP-0914136
2.	DN 600, H = 450 mm extension		ESP-0914135
3.	Set for mounting extension on the site		ESP-0914119
4.	160 ∅ inlet seal		ESP-0914123
5.	200 ∅ inlet seal		ESP-0914124
	Set for mounting control cabinet: – PEHD housing – PCV DNI 10, thickness =5.3; L=1000 pipe – stainless steel handle – set of mounting screws – 110 ESP-0914122 ∅ seal		ESP-0914180
	Set for mounting control cabinet: – PEHD housing – PCV DNI 10 thickness =5,3; L=2000 pipe – stainless steel handle – set of mounting screws – 110 ESP-0914122 ∅ seal		ESP-0914181

3. PUMPING STATION TRANSPORT

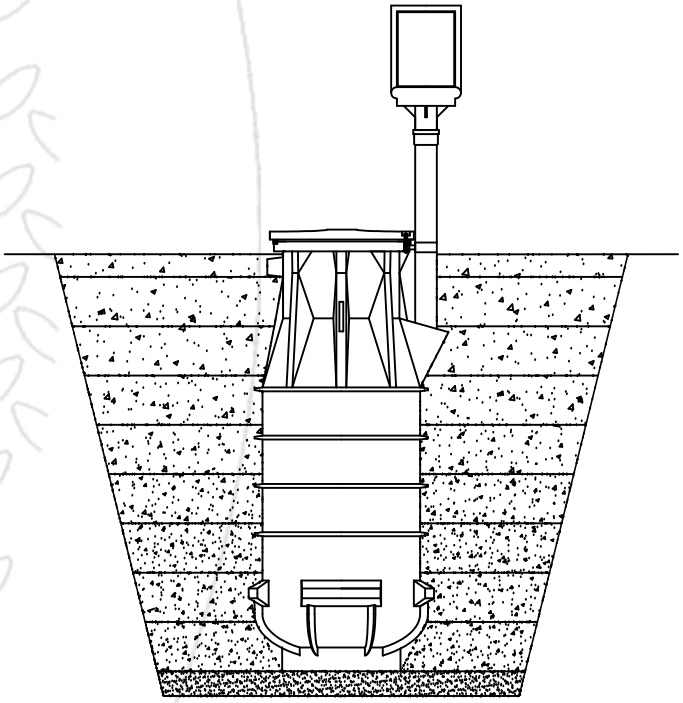
Reservoirs of ESP domestic sewage pumping station should be transported by means of transport equipped with adequate protections against damage to the cargo. Additional enclosure of reservoir using a non-metallic tape during the loading, unloading and assembly is required.

Pumping station shipment elements:

- Reservoir with internal installation
- Pump with mounting elements and control cabinet

4. INSTALLATION OF PUMPING STATION

- Before installation, the status of internal and external pumping station, especially the elements likely to be damaged during transport must be checked.
- Excavation and sand and cement backfill with a height of 15 cm must be executed.
- The pumping station reservoir must be set vertically on a leveled surface so that connection pipes with which they are equipped allow the connection with an external installation.
- After connecting external installation and checking the tightness of connections, the excavation must be refilled. The excavation must be executed with the layers precisely compacted around the circumference. Backfilling within the pipe connections must be executed with particular care and manually.
- Installation of the pump and control cabinet must be executed after installing the pumping station in the excavation.



In the course of loading - unloading, transport and installation activities the safety regulations applicable in this respect must be complied with.

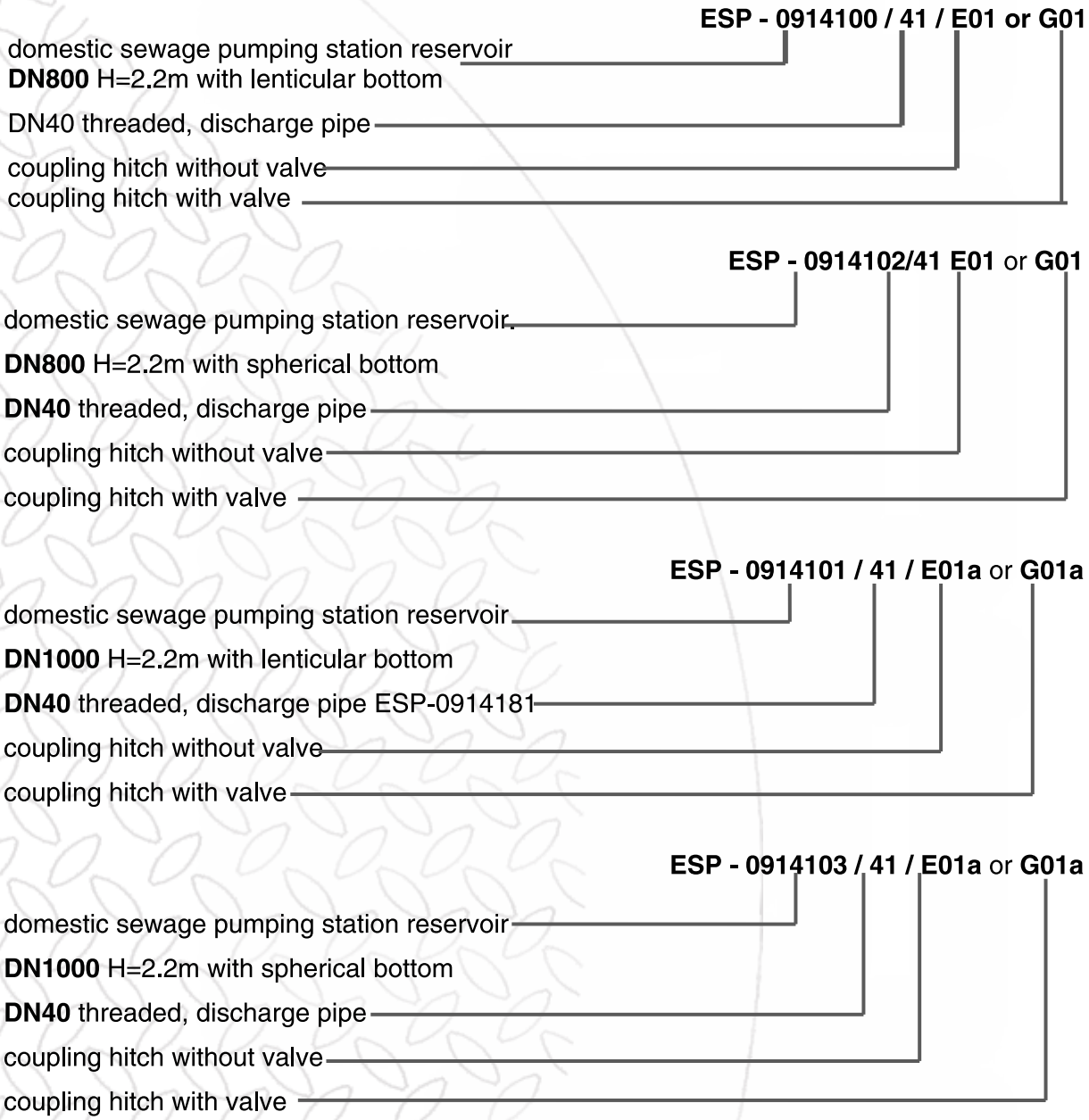
5. EQUIPMENT OF ESP DOMESTIC SEWAGE PUMPING STATION

EKO-SYSTEM-POLSKA offers ESP domestic pumping stations executed using rotational molding method, with diameters of DN800 and DNI000 with lenticular bottom of the height of H = 2200 mm and a novelty on the market - a reservoir with spherical bottom, a ring that allows adjustment of height, H = 1950, 2200, 2450 and 2700 mm. Additionally, the height may be adjusted using DN 600, H = 900 mm (**ESP - 0914136**) or DN 600, H = 450mm (**ESP - 0914135**) extensions.

The ESP domestic sewage pumping station includes:

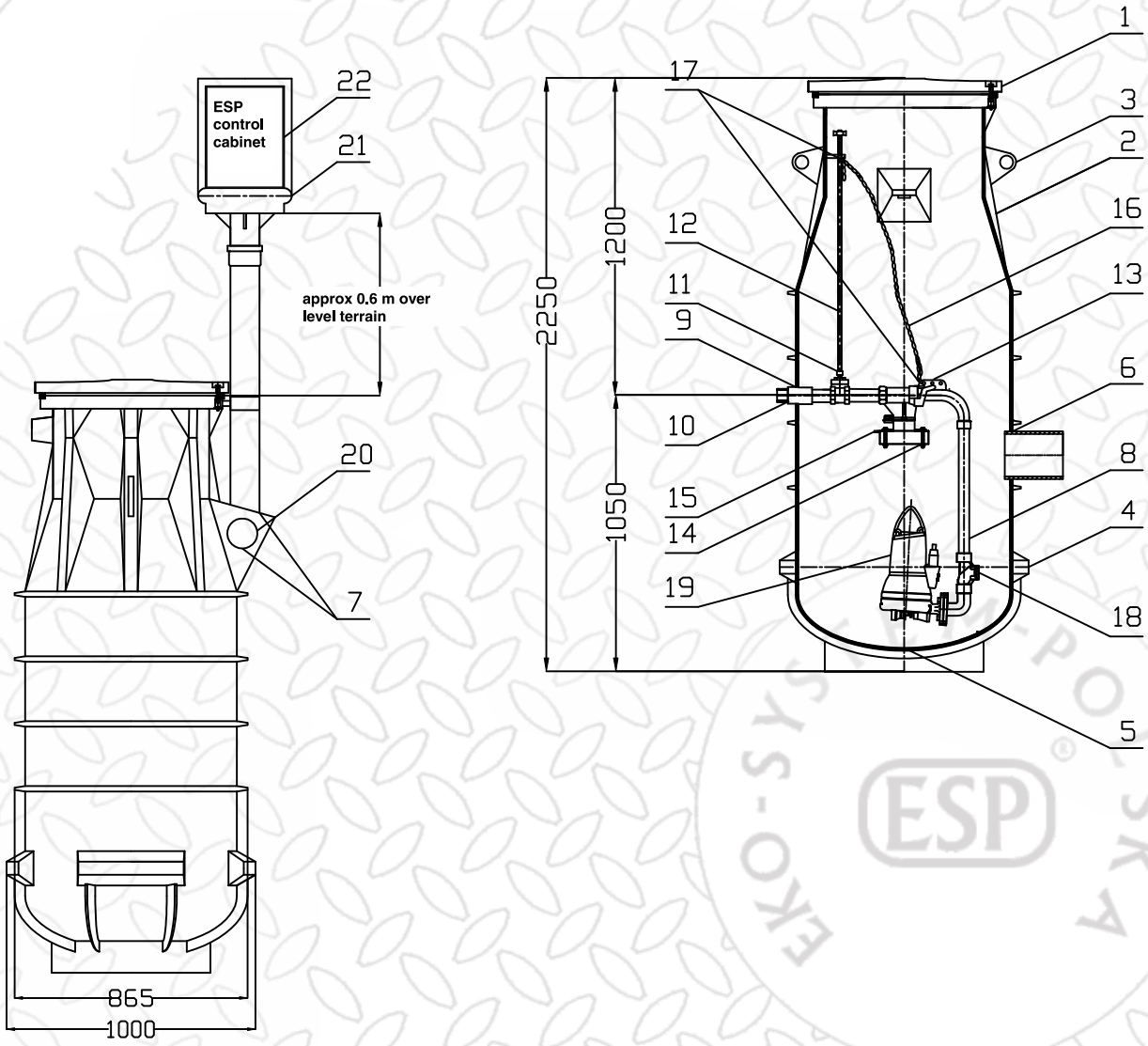
- PEHD reservoir
- manhole
- pump
- DN32, DN40 or DN50 discharge installation stainless steel, at least type 0H18N9
- control cabinet

5.1 Key of ESP domestic sewage pumping station designations



5.2 Sample solutions of ESP domestic sewage pumping stations

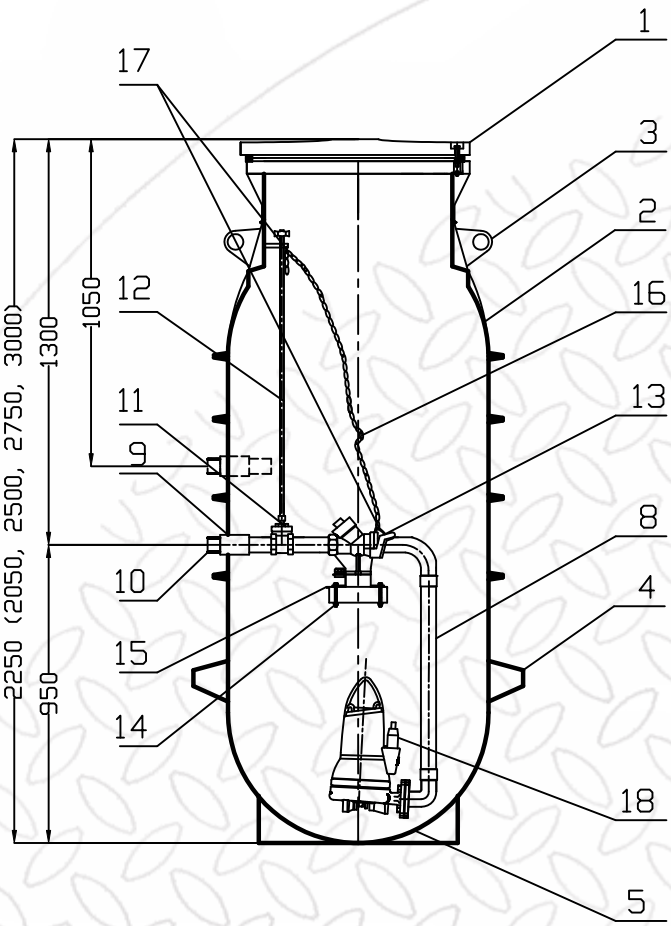
DN800 DOMESTIC PUMPING STATION
ESP-0914100/41/E01

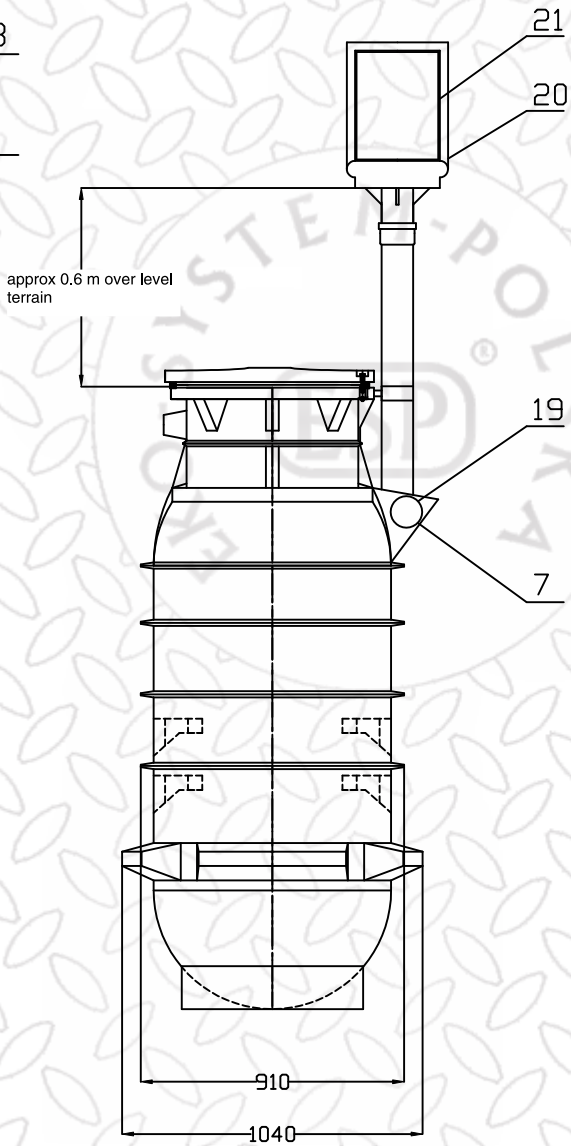


NOTE!!! It is possible to mount the pump on a coupling feet

Item	Description of elements of domestic sewage pumping station reservoir	Catalogue No.	Material	Number of pieces/sets	Option:
1	PEHD DN 600/740 manhole with closure	ESP-0914130	PEHD	1	
	DN 600 class A15 cast iron manhole with closure	ESP-0914131	cast iron		
2	DN800, H=2.2 pumping station reservoir rotationally moldable	ESP-0914100	PEHD	1	
3	Transport handles		PEHD	2	
4	Anti displacement flange		PEHD	1	
5	Lenticular bottom		PEHD	1	
6	Dz160 mm inlet seal for connecting gravitational connector pipe	ESP-0914123	EPDM	1	
7	Dz110 mm inlet seal for connecting the connector pipe to the supplying and vent pipes	ESP-0914122	EPDM	1	
8	DN40 discharge pipe, threaded connections	ESP-0914141/E01	0H18N9 stainless steel	1	
9	Dz48.3mm tight transition for discharge pipe	ESP-0914231	PEHD, EPDM	1	
10	Dz48.3 mm pressure connection pipe terminated with a 1 ½ thread „	ESP-0914241	0H18N9 stainless steel	1	
11	DN40 (48.3) stop valve	ESP-0914290	brass	1	
12	Housing until the valve with handle accessible from ground level	ESP-0914284	0H18N9 stainless steel	1	
13	DN40 (48.3) ESP coupling hitch	ESP-0914144	cast iron	1	
14	80x40 stiffening beam	ESP-0914182	0H18N9 stainless steel	1	
15	Mesh for floats	ESP-0914183	0H18N9 stainless steel	1	
16	Chain ∅3	ESP-0914307	0H18N9 stainless steel	1.5 m	
17	6 mm M8 269-4-6 shackles	ESP-0914314	0H18N9 stainless steel	2	
18	DN40 (48.3) check valve	ESP-0914296	cast iron	1	
19	Pump		cast iron	1	
20	Cork ∅110 grey	ESP-0914184	PP/PCV	1	
21	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 1000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914180	PEHD/PCV/ stainless steel 0H18N9	1	
	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 2000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914181	PEHD/PCV/ stainless steel 0H18N9		
22	ESP-1P3S 370x275x140/06 control cabinet	ESP-0914190		1	
	ESP-1P3S 370x275x140/07Z3/2pł control cabinet	ESP-0914191			
	ESP-1P3S 370x275x140/07Z3/2pł control cabinet	ESP-0914192			
23	DN 600 H=45 cm extension	ESP-0914135	PEHD	1	
	DN 600 H=90 cm extension	ESP-0914136	PEHD		

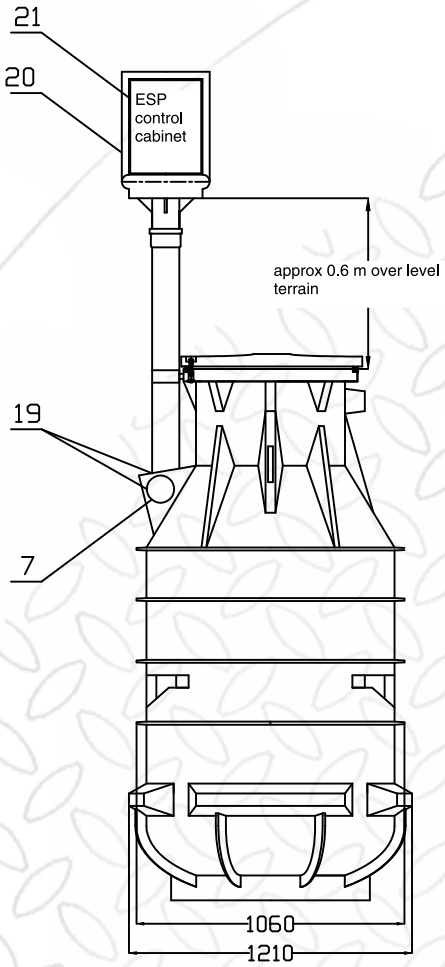
ESP DN 800 DOMESTIC PUMPING STATION
ESP-0914102/41/G01

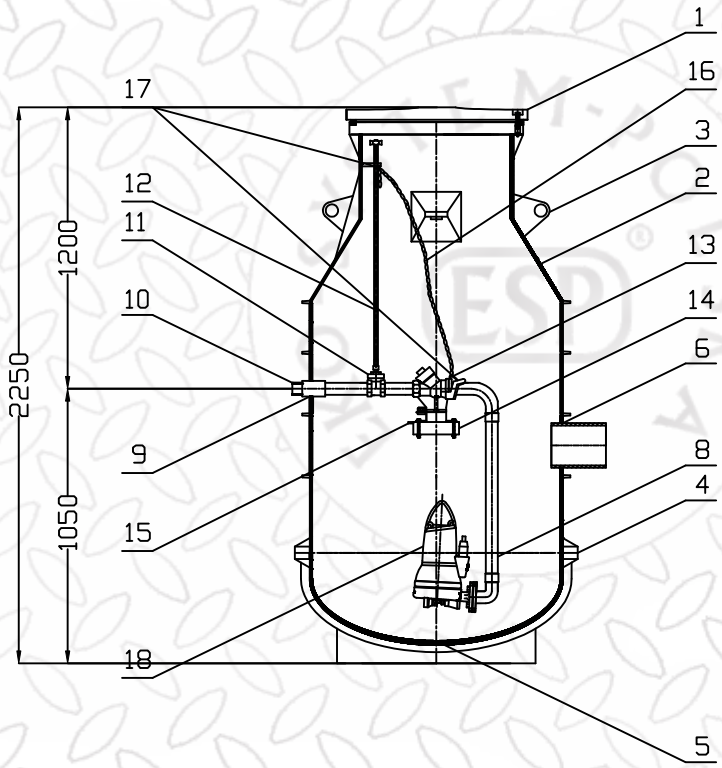




Item	Description of elements of domestic sewage pumping station reservoir	Catalogue No.	Material	Number of pieces/sets	Option:
1	PEHD DN 600/740 manhole with closure	ESP-0914130	PEHD	1	
	DN 600 class A15 cast iron manhole with closure	ESP-0914131	cast iron		
2	DN800, H=2.0; 2.2; 2.45; 2.7; 2.95 pumping station reservoir rotationally moldable	ESP-0914102	PEHD	1	
3	Transport handles		PEHD	2	
4	Anti displacement flange		PEHD	1	
5	Spherical bottom		PEHD		
6	Dz160 mm inlet seal for connecting gravitational connector pipe	ESP-0914123	EPDM	1	
7	Dz110 mm inlet seal for connecting the connector pipe to the supplying and vent pipes	ESP-0914122	EPDM	1	
8	DN40 (48.3) discharge pipe, threaded connections	ESP-0914141/G01	0H18N9 stainless steel	1	
9	Dz48.3mm tight transition for discharge pipe	ESP-0914231	PEHD, EPDM	1	
10	Dz48.3 mm pressure connection pipe terminated with a 1 ½ thread „	ESP-0914241	0H18N9 stainless steel	1	
11	DN40 (48.3) stop valve	ESP-0914290	brass	1	
12	Housing until the valve with handle accessible from ground level	ESP-0914284	0H18N9 stainless steel	1	
13	DN40 (48.3) ESP coupling hitch, with integrated return ball valve with cleaning hatch	ESP-0914145	cast iron	1	
14	80x40 stiffening beam	ESP-0914182	0H18N9 stainless steel	1	
15	Mesh for floats	ESP-0914183	0H18N9 stainless steel	1	
16	Chain ∅3	ESP-0914307	0H18N9 stainless steel	1.5 m	
17	6 mm M8 269-4-6 shackles	ESP-0914314	0H18N9 stainless steel	2	
18	Pump		cast iron	1	
19	Cork ∅110 grey	ESP-0914184	PP/PCV	1	
20	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 1000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914180	PEHD/PCV/ stainless steel 0H18N9	1	
	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 2000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914181	PEHD/PCV/ stainless steel 0H18N9		
21	ESP-1P3S 370x275x140/06 control cabinet	ESP-0914190		1	
	ESP-1P3S 370x275x140/07R3/2pł control cabinet	ESP-0914191			
	ESP-1P3S 370x275x140/07Z3/2pł control cabinet	ESP-0914192			
22	DN 600 H=45 cm extension	ESP-0914135	PEHD	1	
	DN 600 H=90 cm extension	ESP-0914136	PEHD		

ESP DN 1000 DOMESTIC PUMPING STATION
ESP-0914101/41/G01a



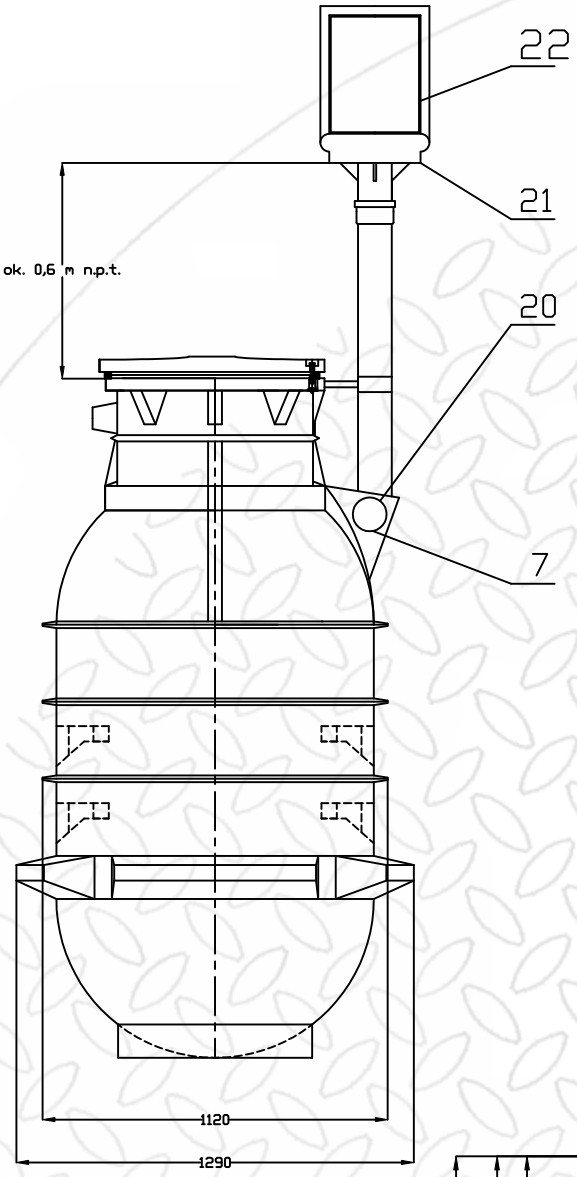


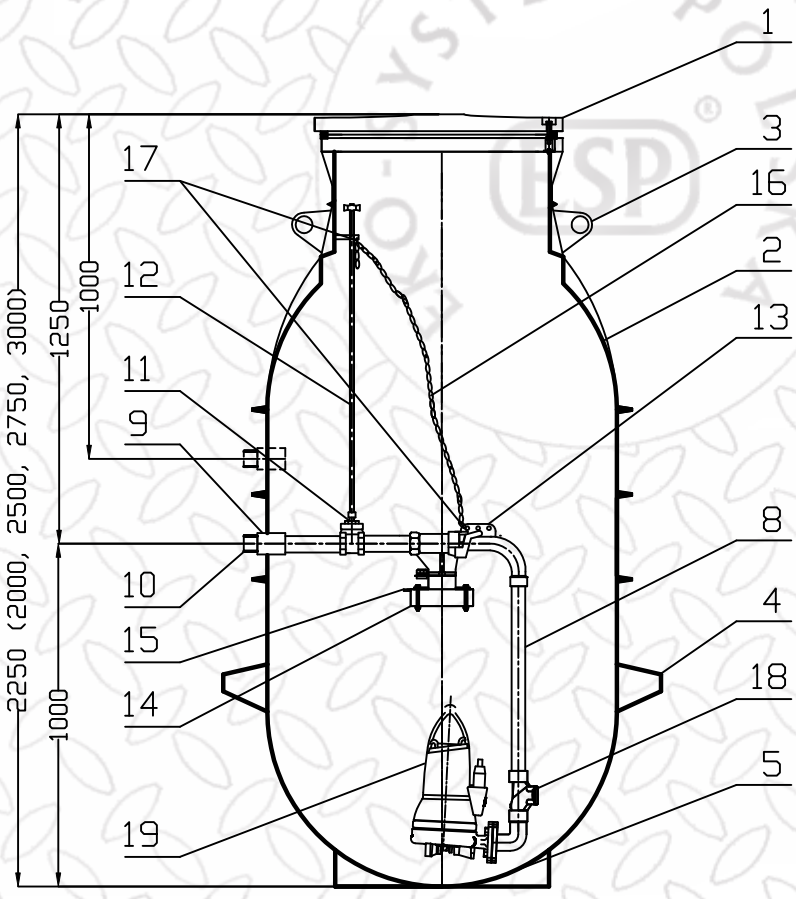
NOTE!!! It is possible to mount the pump on a coupling feet

Item	Description of elements of domestic sewage pumping station reservoir	Catalogue No.	Material	Number of pieces/sets	Option:
1	PEHD DN 600/740 manhole with closure	ESP-0914130	PEHD	1	
	DN 600 class A15 cast iron manhole with closure	ESP-0914131	cast iron		
2	DN1000, H=2.2 pumping station reservoir rotationally moldable	ESP-0914101	PEHD	1	
3	Transport handles		PEHD	2	
4	Anti displacement flange		PEHD	1	
5	Lenticular bottom		PEHD	1	
6	Dz160 mm inlet seal for connecting gravitational connector pipe	ESP-0914123	EPDM	1	
7	Dz110 mm inlet seal for connecting the connector pipe to the supplying and vent pipes	ESP-0914122	EPDM	1	
8	DN40 (48.3) discharge pipe, threaded connections	ESP-0914141/G01a	0H18N9 stainless steel	1	
9	Dz48.3mm tight transition for discharge pipe	ESP-0914231	PEHD, EPDM	1	
10	Dz48.3 mm pressure connection pipe terminated with a 1 ½ thread „	ESP-0914241	0H18N9 stainless steel	1	
11	DN40 (48.3) stop valve	ESP-0914290	brass	1	
12	Housing until the valve with handle accessible from ground level	ESP-0914284	0H18N9 stainless steel	1	
13	DN40 (48.3) ESP coupling hitch, with integrated return ball valve with cleaning hatch	ESP-0914145	cast iron	1	
14	80x40 stiffening beam	ESP-0914182	0H18N9 stainless steel	1	
15	Mesh for floats	ESP-0914183	0H18N9 stainless steel	1	
16	Chain ∅3	ESP-0914307	0H18N9 stainless steel	1.5 m	
17	6 mm M8 269-4-6 shackles	ESP-0914314	0H18N9 stainless steel	2	
18	Pump		cast iron	1	
19	Cork ∅110 grey	ESP-0914184	PP/PCV	1	
20	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 1000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914180	PEHD/PCV/ stainless steel 0H18N9	1	
	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 2000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914181	PEHD/PCV/ stainless steel 0H18N9		
21	ESP-1P3S 370x275x140/06 control cabinet	ESP-0914190		1	
	ESP-1P3S 370x275x140/07R3/2pł control cabinet	ESP-0914191			
	ESP-1P3S 370x275x140/07Z3/2pł control cabinet	ESP-0914192			
22	DN 600 H=45 cm extension	ESP-0914135	PEHD	1	
	DN 600 H=90 cm extension	ESP-0914136	PEHD		

ESP DN 1000 DOMESTIC PUMPING STATION

ESP-0914103/41/E01a





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Item	Description of elements of domestic sewage pumping station reservoir	Catalogue No.	Material	Number of pieces/sets	Option:
1	PEHD DN 600/740 manhole with closure	ESP-0914130	PEHD	1	
	DN 600 class A15 cast iron manhole with closure	ESP-0914131	cast iron		
2	DN1000, H=1.95; 2.2; 2.45; 2.7; 2.95 pumping station reservoir rotationally moldable	ESP-0914103	PEHD	1	
3	Transport handles		PEHD	2	
4	Anti displacement flange		PEHD	1	
5	Spherical bottom		PEHD		
6	Dz160 mm inlet seal for connecting gravitational connector pipe	ESP-0914123	EPDM	1	
7	Dz110 mm inlet seal for connecting the connector pipe to the supplying and vent pipes	ESP-0914122	EPDM	1	
8	DN40 (48.3) discharge pipe, threaded connections	ESP-0914141/E01a	0H18N9 stainless steel	1	
9	Dz48.3mm tight transition for discharge pipe	ESP-0914231	PEHD, EPDM	1	
10	Dz48.3 mm pressure connection pipe terminated with a 1 ½ thread „	ESP-0914241	0H18N9 stainless steel	1	
11	DN40 (48.3) stop valve	ESP-0914290	brass	1	
12	Housing until the valve with handle accessible from ground level	ESP-0914284	0H18N9 stainless steel	1	
13	DN40 (48.3) ESP coupling hitch	ESP-0914144	cast iron	1	
14	80x40 stiffening beam	ESP-0914182	0H18N9 stainless steel	1	
15	Mesh for floats	ESP-0914183	0H18N9 stainless steel	1	
16	Chain ∅3	ESP-0914307	0H18N9 stainless steel	1.5 m	
17	6 mm M8 269-4-6 shackles	ESP-0914314	0H18N9 stainless steel	2	
18	DN40 (48.3) check valve	ESP-0914296	cast iron	1	
19	Pump		cast iron	1	
20	Cork ∅110 grey	ESP-0914184	PP/PCV	1	
21	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 1000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914180	PEHD/PCV/ stainless steel 0H18N9	1	
	Set for mounting control cabinet (PEHD housing, PCV DN110 L= 2000 mm pipe, stainless steel handle, set of mounting screws)	ESP-0914181	PEHD/PCV/ stainless steel 0H18N9		
22	ESP-1P3S 370x275x140/06 control cabinet	ESP-0914190		1	
	ESP-1P3S 370x275x140/07R3/2pł control cabinet	ESP-0914191			
	ESP-1P3S 370x275x140/07Z3/2pł control cabinet	ESP-0914192			
23	DN 600 H=45 cm extension	ESP-0914135	PEHD	1	
	DN 600 H=90 cm extension	ESP-0914136	PEHD		

6. SUBMERSIBLE PUMPS

The standard ESP domestic sewage pumping station is equipped with a submersible pump which is mounted on connector hook. Depending on the type of pumped sewage and the required performance and lifting height, ESP pumping stations are equipped with the following pumps of reputable manufacturers:

- ✓ with free passage
- ✓ with a shredder

The below presented pumps allow the use of PEHD pipes on the pressure side, with small nominal diameter (Dz 40 ÷ Dz 63), which significantly reduces the costs of materials and installation.

List of parameters of the most commonly used pumps:

Item	Manufacturer of the pump	Type of the pump	Type of rotor	Pumps parameters		
				Performance Q [dm^3/s]	Lifting height H [m]	Ns motor power [kW]
1.	GRUDNFOS	AP35B	vortex	0.0 ÷ 5.7	0.0 ÷ 12.5	0.66 ÷ 0.78
		AP50B	vortex	0.0 ÷ 8.9	0.0 ÷ 18.2	0.74 ÷ 1.5
		SEG	with a shredder	0.0 ÷ 5.25	0.0 ÷ 46	0.9 ÷ 4.0
2.	ABS	PIRANIA	with a shredder	0.0 ÷ 6.7	2.0 ÷ 72	0.8 ÷11
3.	KSB	Amarex N S	with a shredder	0.0 ÷ 5.7	0.04 ÷ 49	1.3 ÷4.2
		Ama Porter S	with a shredder	0.0 ÷4.7	0.0 ÷ 21	1.5
		Ama Porter	open	0.0 ÷11	1.0 ÷16	0.55 ÷ 1.5
4.	LFP	Drena Mix	with a shredder	0.0 ÷ 8.2	1.0 ÷ 53	0.9 ÷ 7.2
		IS	vortex	0.0 ÷ 10	0.0 ÷ 15	0.37 ÷ 1.5
5.	SIGMA	1 ½ EFRU	with a shredder	0.7	50	1.1
6.	HYDROVACUUM	FZR/FZX	with a shredder	0.0 ÷ 9.7	1.0 ÷ 40	1.5 ÷ 3.0
7.	FLYGT	MP	with a shredder	0.0 ÷ 10	2.0 ÷ 42	1.5 ÷ 7.4
8.	EBARA	DW	one channel	0.0 ÷ 15	2.2 ÷ 20	0.55 ÷ 2.2
		DWVOX	vortex	0.0 ÷15	1.6 ÷ 15.7	0.55 ÷ 2.2
		RIGHT	open	0.0 ÷ 5.0	2.0 ÷ 9.5	0.55 ÷ 0.75

7. CONTROL SYSTEM

7.1 General information

Control system of the ESP domestic pumping station provides trouble-free operation of the pumping station. Our control cabinets provide comfort to their operators and users of the sewage system. The implement the automatic pumping station operation without constant maintenance. The housing of the cabinet is made of plastic with IP65 protection class and 2nd insulation class.

Ways of mounting the cabinet:

- In a housing made of PEHD on the pumping station reservoir,

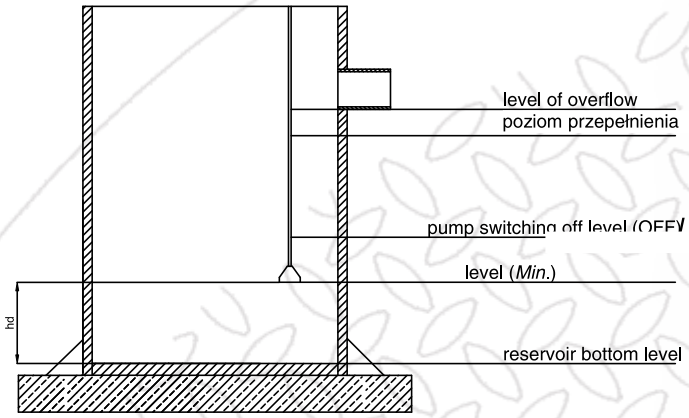
- on a separate foundation next to the pumping station

- on a building or a fence

The distance from the cabinet to the pumping station should not exceed 5 m, which is related to the length of tubes of the pumps. The connecting wires from the pump and floats or hydrostatic level meter are supplied to the cabinet by sealing the casing pipe. In case of location of the cabinet at a distance greater than 5 m, longer connection tubes should be ordered.

7.2 Operation program of the pumping station

Operation program of domestic pumping station with hydrostatic level meter



level of overflow -switches off light and sound signaling device (this value is set in menu “service options”).

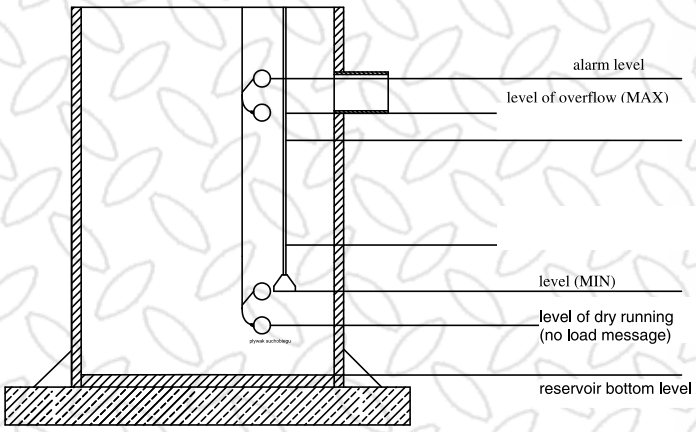
*level of switching on of the pomp (**ON**)* - the pomp switches on (this value is set in menu “service options”).

*of switching off of the pomp (**OFF**)* -the pomp switches off (this value is set in menu “service options”).

*level (**MIN**)* - the edge of hydrostatic level meter is set at this level.

hd -distance between the bottom of the pumping station (technological)**, and the lower edge of the meter. That distance** depends on type of the pump and is determined by the pumps manufacturer **in technical and maintenance documentation (**typical settings from 10 to 50 cm).

Operation program of domestic pumping station with hydrostatic level meter and 2 floats



alarm level makes an emergency switch on of the pomp and switches on the light and sound signaling devices, and the display shows the following message ”*alarm level”. **OPTION***

*level of overflow (**MAX**)* -switches on light and sound signaling device (this value is set in menu “*service options*”).

*level of switching on of the pomp (**ON**)* -the pomp switches on (this value is set in menu “*service options*”).

*level of switching off of the pomp (**OFF**)* -the pomp switches off (*this value is set in menu “service options*”).

level of dry running - makes an emergency switch off of the pomp and switches on the light and sound signaling devices, and the display shows the following message ”*no-load* "

*level (**MIN**)* - the edge of hydrostatic level meter is set at this level.

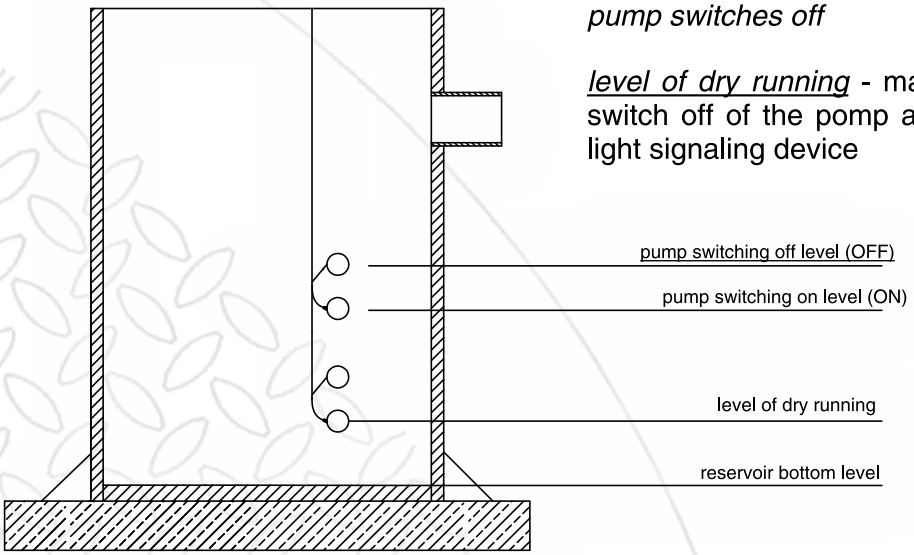
hd -distance between the bottom of the pumping station (technological)**,** and the lower edge of the meter. That distance depends on type of the pump and is determined by the pumps manufacturer in technical and maintenance documentation (typical settings from 10 to 50 cm).

Operation program of domestic pumping station with 2 floats

*level of switching on the pomp (**ON**)* - the pump switches on and operates until the sewage level falls to OFF level.

*the pump switching off level (**OFF**) –the pump switches off*

level of dry running - makes an emergency switch off of the pomp and switches on the light signaling device



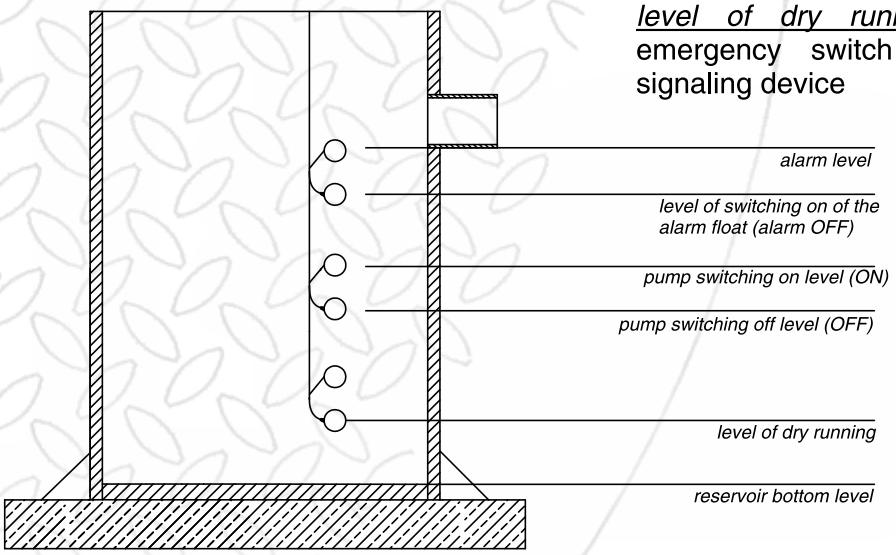
Operation program of a domestic pumping station with 3 floats (ADDITIONAL OPTION)

alarm level - the light signaling device switches on and the pump operates until the sewage level falls to OFF level (**alarm OFF**) *OPTION*

*level of switching on the pomp (**ON**)* - the pump switches on and operates until the sewage level falls to OFF level.

*level of switching off the pomp (**OFF**)* – the pump switches off

level of dry running - makes an emergency switch off of the light signaling device



ESP-1P3S - 370x275x140/06 CONTROL CABINET DESCRIPTION

ESP – 0914190

Elements of equipment, deportations and alarms	***Basic functions***
1. IP65 plastic housing, 2nd class insulation, 370x275x140mm **2.** IP65 external optical signaling device (pulse or continuous signaling) **3.** ESP-2/1P3S controller, mounting on a terminal block **4.** S303 C10A circuit breaker **5.** S301B10A C10A overcurrent circuit breaker **6.** S301B6A overcurrent circuit breaker **7.** contactor **8.** CKF phase sequence and failure sensor **9.** 230V/10A socket **10.** buttons to choose the type of operation manual /automatic **11.** 85dBA pulse or continuous sound signaling **12.** controller menu in Polish (clear and easy operation) **13.** illuminated display **14.** real-time clock (hrs. min. sec.) **15.** pump short-circuit protection **16.** pump thermal protection **17.** pump overload protection **18.** protection against loss or change of phases **19.** alarm after exceeding the overflow level **20.** alarm at the time of motor pump overload **21.** alarm at the time of thermal overload relay activation **22.** alarm at the time of leakage occurring in the measuring system **23.** alarm at the time of failure or voltage asymmetry between the phases **24.** alarm at the time of no load **25.** alarm when exceeding the operation time during one cycle **26.** alarm when the limit of switchings in the daily cycle is exceeded **27.** alarm when exceeding the pump service time **28.** alarm at the time of S303 C10A overcurrent circuit breaker activation	**1.** auto signalization of the operation (green LED) **2.** pump operation signalization (yellow LED) **3.** failure signaling (red LED) **4.** power signaling (green and red LED) **5.** sewage level measurement using hydrostatic sewage level meter **6.** pump switching off level smooth adjustment **7.** pump switching on level smooth adjustment **8.** pump overflow level smooth adjustment **9.** meter reaction level shift depending on the mounting height **10.** measurement system autocalibration **11.** detecting leakage occurring in the measuring system **12.** switching on the pump for 1 sec. after a long stoppage, in order to lubricate the bearings and sealing the pump **13.** delay of the pump switching on alarm at the time of power failure within the range 0 ÷180 sec. (to prevent simultaneous starting of larger amount of pumps within the pressure sewerage system) at the power supply switching on, the set delay time is displayed on the display and counted down in seconds up to zero until switching off of the pump (in accordance with PN-EN 1671 Section 5.4.5.) **14.** automatic switching off of manual control after the specified time **15.** automatic transition to operation status (after switching off the power supply or after operation under manual control mode) **16.** automatic transition to factory settings, alarm at the time of wrong setting of levels **17.** counting the hours of operation of the pump **18.** recording number of switchings of the pump **19.** measuring the power consumption of the pump **20.** test of external signaling device, LEDs and sound signaling **21.** record of all failures in the facility in 5_19 nonvolatile memory with recording and printing possibility **22.** access to service options via PIN and PUK **23.** ability to read the data on PC, using RS 232 port, by means of Windows XP
Additional options	
1. residual current circuit breaker **2.** B/C overvoltage protection, one-module **3.** moisture sensor **4.** float of dry running **5.** float of alarm level	
Elements of equipment for use with monitoring systems	
1. RS 232 **2.** potential-free failure signals outlets	
ALL ITEMS USED IN THE CONTROL SYSTEM HAVE CE MARK	

THE COMPANY HAS:

1. Quality Management System Certificate, according to ISO 9001:2008 issued by SGS United Kingdom Ltd Systems & Services Certification.
2. Certificate No. B/12/275/06 issued by BBJ - SEP Warszawa authorizing to mark control cabinets with safety sign
3. Certificate No. B/12/275/06 issued by BBJ - SEP Warszawa authorizing to mark control cabinets with „CE" sign
4. PN-EN 12050-1 sewage pumping stations in buildings and their surroundings
5. PN-EN 1671 External pressure sewerage systems

ESP-1P3S - 370x275x140/07R3/2pł CONTROL CABINET
ESP - 0914191

Elements of equipment and protections	Alarms and basic functions
1. IP65 plastic housing, 2nd insulation class, 370x275x140mm 2. IP65 external optical signaling device (continuous signaling) 3. 25A/30mA residual current circuit breaker 4. manual/auto operation mode switch 5. S301 overcurrent circuit breaker 6. CKF phase sequence and failure sensor 7. motor switch 8. contactor 9. float of operation 10. float of dry running 11. float of alarm level (OPTION for extra charge) 12. residual current protection 13. pump short-circuit protection 14. pump overload protection 15. pump thermal protection (OPTION depending on type of the pump) 16. protection against loss or change of phases	1. alarm at the time of motor pump overload 2. alarm at the time of thermal overload relay activation **OPTION** depending on type of the pump) 3. alarm at the time of failure or voltage asymmetry between the phases 4. alarm at the time of 25A/30mA residual current circuit breaker activation 5. alarm at the time of motor switch activation 6. alarm at the time of float of dry running activation 7. alarm at the time of alarm level activation (OPTION) 8. power signaling (green and red LED)
ALL ITEMS USED IN THE CONTROL SYSTEM HAVE CЄ MARK	

ESP-1P3S - 370x275x140/07Z3/2pł CONTROL CABINET
ESP – 0914192

Elements of equipment and protections	Alarms and basic functions
1. IP65 plastic housing, 2nd class insulation, 370x275x140mm 2. IP65 external optical signaling device (continuous signaling) 3. S303 C10A main switch 4. manual/auto operation mode switch 5. S301 overcurrent circuit breaker 6. CKF phase sequence and failure sensor 7. motor switch 8. contactor 9. float of operation 10. float of dry running 11. alarm level float (additional payment **OPTION**) 12. pump short-circuit protection 13. pump overload protection 14. pump thermal protection (**OPTION** depending on type of the pump) 15. protection against loss or change of phases	1. alarm at the time of motor pump overload 2. alarm at the time of the pump thermal overload relay activation (**OPTION** depending on type of the pump) 3. alarm at the time of failure or voltage asymmetry between the phases 4. alarm at S 303 C10A main switch activation 5. alarm at the time of motor switch activation 6. alarm at the time of float of dry running activation 7. alarm at the time of the alarm level activation (**OPTION**) 8. power signaling (green and red LED)
ALL ITEMS USED IN THE CONTROL SYSTEM HAVE CЄ MARK	

8. STANDARDS, APPROVALS, CERTIFICATES

1. Quality Management System Certificates, according to ISO 9001:2008 issued by SGS United Kingdom Ltd Systems & Services Certification.
2. Certificate No. B/12/12/275/06 issued by BBJ - SEP Warszawa authorizing to mark control cabinets with safety sign
3. Certificate No. B/12/275/06 issued by BBJ - SEP Warszawa authorizing to mark control cabinets with “CE” sign
4. PN-EN 12050-1 sewage pumping stations in buildings and their surroundings
5. PN-EN 1671 External pressure sewerage systems
6. IBDiM (Road and Bridge Research Institute) Technical Approval – Warsaw No. AT/2007-03-1310

BIURO BADAWCZE ds. JAKOŚCI
STOWARZYSZENIA ELEKTRYKÓW POLSKICH

JEDNOSTKA CERTYFIKUJĄCA WYROBY
04-703 Warszawa ul. Pożaryskiego 28
tel.(+48 22) 812 69 38 fax: (+48 22)815-65-80
e-mail: bbj@bbj-sep.com.pl

CERTYFIKAT Nr B/12/275/06

uprawniający do oznaczania wyrobu znakiem bezpieczeństwa

Nazwa i adres posiadacza certyfikatu:	P.P.H. „EKO-SYSTEM-POLSKA" Szarnecka – Placko Dorota 36-002 Jasionka 74 A
Nazwa i adres producenta:	P.P.H. „EKO-SYSTEM-POLSKA" Szarnecka – Placko Dorota 36-002 Jasionka 74 A
Nazwa wyrobu:	Szafy sterownicze
Typ (odmiany):	ESP-1P3S - 370x275x140/...; ESP-1P3S - 530x430x200/...; ESP-2P3S - 370x275x140/...; ESP-2P3S - 530x430x200/...; ESP-2P3S - 745x535x300/...; ESP-2P3Sp - 745x535x300/... .
Podstawowe parametry:	napięcie znamionowe izolacji U_i: 500 V; napięcie znamionowe łączeniowe U_e: 230/400 V; prąd znamionowy: 1 x 6,3 A lub 2 x 6,3 A - obwody sterownicze; 1 x 100 A lub 2 x 100 A - obwody główne; stopień ochrony: IP54; klasa ochronności: II.
Wyrób spełnia wymagania bezpieczeństwa zawarte w:	PN-EN 60439-1:2003 +A1:2006, EN 60439-1:1999 +A1:2004
Nr sprawozdania:	TA 6.89
Model certyfikacji:	MODEL 5 ISO

Prawo do oznaczania w okresie od 2006-06-21 do 2011-06-20
dotyczy wyłącznie egzemplarzy wyrobu posiadających identyczne właściwości (parametry) jak przedstawiony do badań wzór (wzory) i odpowiadających wymaganiom określonym powyżej.
Prawa i obowiązki obu stron wynikające z niniejszego certyfikatu określa odrębna umowa.

Dyrektor
inż. Piotr Gondek

Warszawa, dnia 2006-06-21

BIURO BADAWCZE ds. JAKOŚCI
STOWARZYSZENIA ELEKTRYKÓW POLSKICH
JEDNOSTKA CERTYFIKUJĄCA WYROBY
04-703 Warszawa, ul. Pożaryskiego 28
tel. (+48 22) 812 69 38, tel./fax 815 65 80
e-mail: bbj@bbj-sep.com.pl

CERTYFIKAT ZGODNOŚCI CE

Nr certyfikatu: CE/12/025/06

Dostawca: *(Nazwa i adres)* P.P.H. „EKO-SYSTEM-POLSKA" Szarnecka – Placko Dorota 36-002 Jasionka 74 A

Producent: *(Nazwa i adres)* P.P.H. „EKO-SYSTEM-POLSKA" Szarnecka – Placko Dorota 36-002 Jasionka 74 A

Nazwa wyrobu: Szafy sterownicze

Typ (model): ESP-1P3S - 370x275x140/...; ESP-1P3S - 530x430x200/...; ESP-2P3S - 370x275x140/...; ESP-2P3S - 530x430x200/...; ESP-2P3S - 745x535x300/...; ESP-2P3Sp - 745x535x300/... .

Dane techniczne: napięcie znamionowe izolacji U_i: 500 V;
napięcie znamionowe łączeniowe U_e: 230/400 V;
prąd znamionowy: 1 x 6,3 A lub 2 x 6,3 A - obwody sterownicze;
1 x 100 A lub 2 x 100 A - obwody główne;
stopień ochrony: IP54;
klasa ochronności: II.

Zbadana próbka wyrobu wymienionego powyżej wykazała zgodność z wymaganiami normy zharmonizowanej:

Norma(y)	Raport(y) z badań Nr	Wydany(e) przez
PN-EN 60439-1:2003+A1:2006 EN 60439-1:1999+A1:2004	TA 6.89	BBJ-SEP

Spełnienie wymagań powyższej normy zharmonizowanej daje domniemanie zgodności z zasadniczymi wymaganiami określonymi w:

- Dyrektywie Unii Europejskiej 73/23/EWG + 93/68/EWG (wdrożonej do prawa polskiego rozporządzeniem MG z dnia 15 grudnia 2005r. Dz.U. Nr 259 poz. 2172)

stanowiąc niezbędny warunek do oznakowania CE.

Certyfikat niniejszy dotyczy wyłącznie egzemplarzy wyrobu mających identyczne właściwości (parametry) jak wzór przedstawiony do badań i spełniających wymagania wyżej wymienionych(ej) norm(y).

Znakowanie CE na wyrobach wymaga ponadto od producenta sporządzenia niezbędnej dokumentacji technicznej oraz wystawienia deklaracji zgodności WE, zgodnie z wymaganiami ww. dyrektywy (rozporządzenia).

Dyrektor

inż. Piotr Gondek

Warszawa, dnia 2006-06-21

CE

Tłumaczenie certyfikatu HU10/5022

System zarządzania funkcjonujący w

ESP

Przedsiębiorstwo Produkcyjno-Handlowe "EKO-SYSTEM-POLSKA" Szarnecka-Placko Dorota

Siedziba: 36-002 Jasionka 74 a, Polska

Zakład Produkcyjny: 39-120 Sielec 51 E, Polska

został oceniony i certyfikowany jako spełniający wymagania zawarte w

ISO 9001:2008

Zakres rejestracji

- produkcja kompletnych przepompowni ścieków z automatyką sterującą
- produkcja zbiorników i studni z PEHD
- produkcja rur i kształtek z PEHD

W celu uzyskania dalszych wyjaśnień dotyczących zakresu certyfikacji i zastosowania wymogów normy ISO 9001:2008 proszę skontaktować się z Organizacją

Certyfikat ważny od 31 maja 2010 do 30 maja 2013 oraz pozostaje ważny z zastrzeżeniem uzyskiwania pozytywnych wyników auditów nadzoru. Audit recertyfikacyjny należy przeprowadzić przed 30 kwietnia 2013. Wydanie 1. Certyfikowany od 31 maja 2010.

Autoryzacja

UKAS MANAGEMENT SYSTEMS 005

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Rossmore Business Park Ellesmere Port Cheshire CH65 3EN UK
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Strona 1 z 1

INSTYTUT BADAWCZY DRÓG I MOSTÓW
03-301 Warszawa, ul. Jagiellońska 80
tel.: (0-22) 811 03 83, fax (0-22) 811 17 92

APROBATA TECHNICZNA IBDiM
Nr AT/2007-03-1310

Nazwa wyrobu: **Studzienki kanalizacyjne ESP z polietylenu (PE) lub z polipropylenu (PP)**

Wnioskodawca: **Przedsiębiorstwo Produkcyjno-Handlowe „EKO-SYSTEM-POLSKA”**
Szarnecka-Placko Dorota
36-002 Jasionka 74 A

Termin ważności: **2012 – 07 – 10**

(Wydanie II)

9. MARKING AND MATERIAL SELECTION OF ESP DOMESTIC SEWAGE PUMPING STATIONS

KEY OF ESP DOMESTIC SEWAGE PUMPING STATION DESIGNATIONS

ESP – 0914**100** – domestic pumping station reservoir **DN800** H=2.2m with lenticular bottom

ESP – 0914**101** – domestic pumping station reservoir **DN1000** H=2.2m with lenticular bottom

ESP – 0914**102** – domestic pumping station reservoir **DN800** H=2.2m with spherical bottom and a ring adjusting height of the reservoir

ESP – 0914**103** – domestic pumping station reservoir **DN1000** H=2.2m with spherical bottom and a ring adjusting height of the reservoir

ESP – 0914100/**40** – with **DN32** threaded discharge pipe

ESP – 0914100/**41** – with **DN40** threaded discharge pipe

ESP – 0914100/**42** – with **DN50** threaded discharge pipe

ESP – 0914100/41/**S** – on coupling foot

ESP – 0914100/41/**E** – on coupling hitch

ESP – 0914100/41/**G** – on coupling hitch, with integrated return ball valve with cleaning hatch

ESP – 0914100/41/G**01** – with nipple

ESP – 0914100/41/G**02** – with a screw connection

ESP – 0914100/41/G**03** – with cleanout

ESP – 0914100/41/G**04** – with cleanout and screw connection

ESP – 0914**101**/41/G01**a** – in DN1000 reservoir

ESP – 0914**101**/41/G01**a** – in DN1000 reservoir

e.g.

ESP – 0914100/41/G – i.e., ESP domestic pumping station, DN800 H=2.2, with DN40 discharge pipe, on coupling hitch, with integrated return ball valve with cleaning hatch (with nipple)

ESP – 0914101/41/G01a – i.e., ESP domestic pumping station, DN1000 H=2.2, with DN40 discharge pipe, on coupling hitch, without valve

KEY OF SYMBOLS OF ESP DISCHARGE PIPES

ESP – 0914**140** – **DN32** threaded, discharge pipe

ESP – 0914**141** – **DN40** threaded, discharge pipe

ESP – 0914**142** – **DN50** threaded, discharge pipe

ESP – 0914141**/S** – on coupling foot

ESP – 0914141**/E** – on coupling hitch

SP – 0914141**/G** – on coupling hitch, with integrated return ball valve with cleaning hatch

ESP – 0914141/G**01** – with nipple

ESP – 0914141/G**02** – with a screw connection

ESP – 0914141/G**03** – with cleanout

ESP – 0914141/G**04** – with cleanout and screw connection

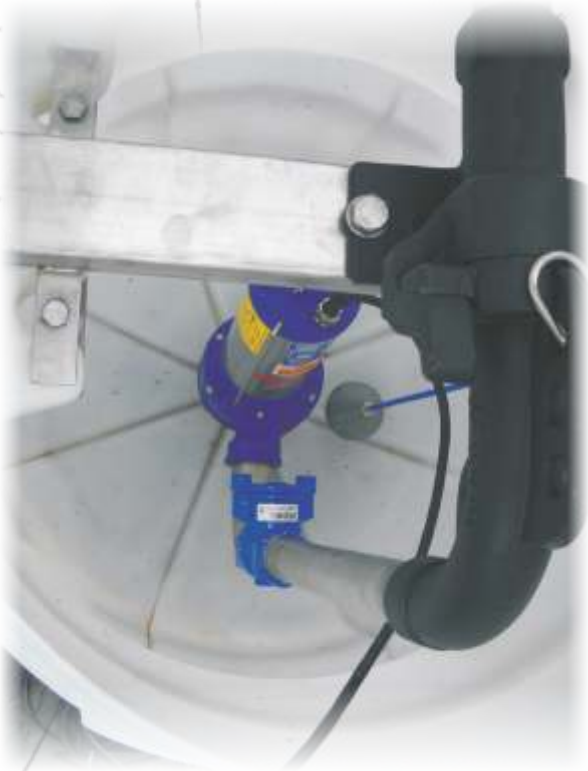
ESP – 0914141/G01 – in DN800 reservoir

ESP – 0914141/G01**a** – in DN1000 reservoir

e.g.

ESP – 0914141/E01 – i.e., DN40 discharge pipe, threaded on coupling hitch, without valve

ESP – 0914141/E01a – i.e. DN40 discharge pipe on coupling hitch, with integrated return ball valve, with cleaning hatch, in DN1000 reservoir



SPECIFICATION OF THE PUMPING STATION EQUIPMENT

ESP – 0914333 DN50 flushing connector

ESP – 0914100/41/E01 DN800 rotomoulded pumping station reservoir, H=2.2 with DN40 discharge pipe on coupling hitch, without valve

ESP – 0914141/E01 – DN40 discharge pipe, on coupling hitch, without valve

ESP – 0914141/E03 – DN40 discharge pipe, on coupling hitch, without valve,

ESP – 0914141/E04 – DN40 discharge pipe, on coupling hitch, without valve, with DN40 cleanout and screw connection

ESP – 091414100/G01 – rotomoulded pumping station reservoir, DN800 H=2.2, with DN40 discharge pipe, on coupling hitch, with integrated return ball valve with cleaning hatch

ESP – 0914141/G01 DN40 discharge pipe, on coupling hitch, with integrated return ball valve, with cleaning hatch

ESP – 0914141/G02 DN40 discharge pipe, on coupling hitch, with integrated return ball valve, with cleaning hatch and screw connection

ESP – 0914101/41/G01a rotomoulded pumping station reservoir, DN1000 H=2.2, with DN40 discharge pipe, on coupling hitch, with integrated ball valve with cleaning hatch

ESP – 0914141/G01a DN40 discharge pipe, on coupling hitch, with integrated return ball valve, with cleaning hatch

ESP – 0914141/G02a DN50 discharge pipe, on coupling hitch, with integrated return ball valve, with cleaning hatch and screw connection

ESP – 0914101/41/G04a rotomoulded pumping station reservoir, DN1000 H=2.2, with DN40 discharge pipe, on coupling hitch, with integrated return ball valve with cleaning hatch and DN50 flushing connection

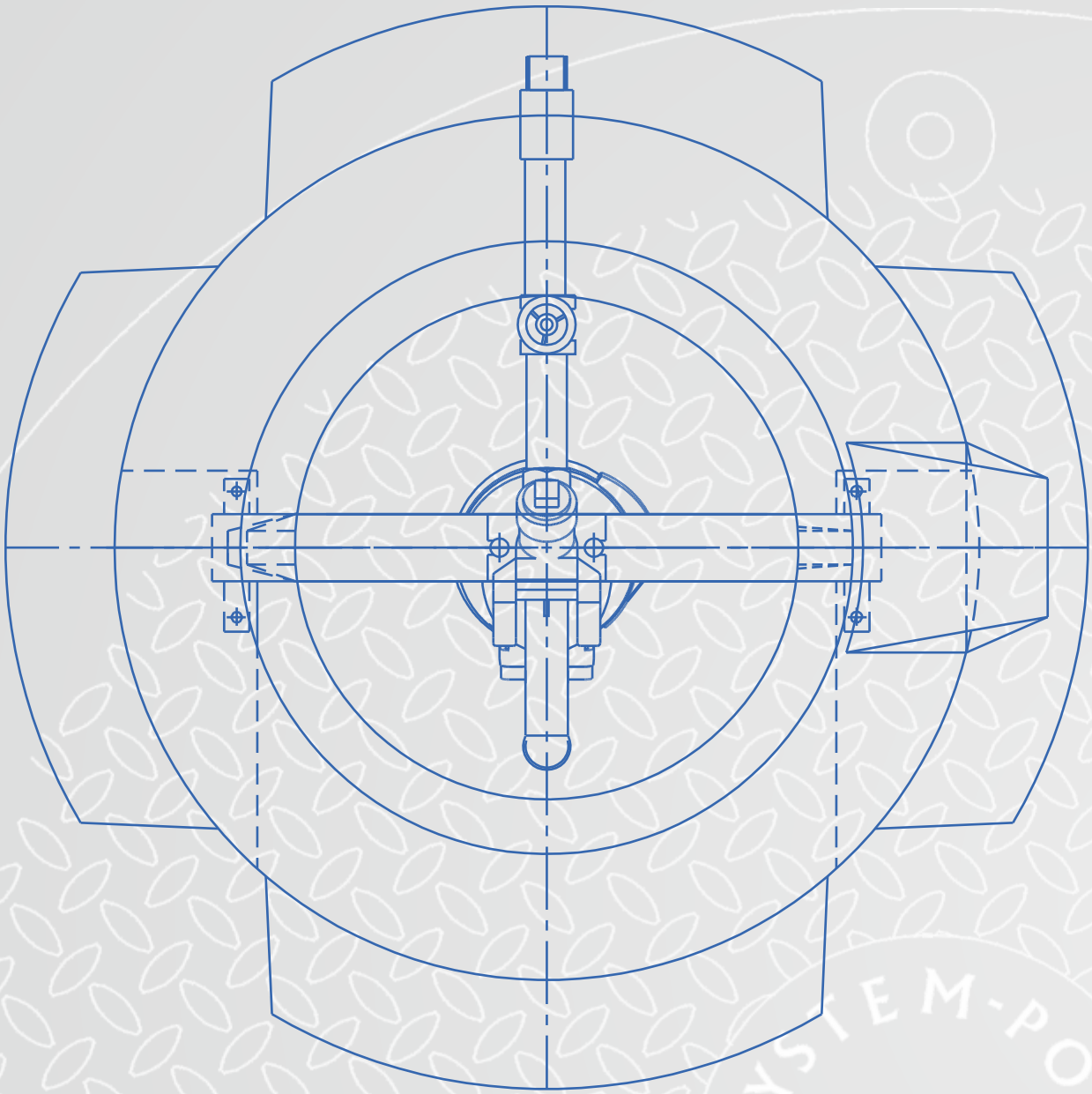
ESP – 0914141/G04a DN40 discharge pipe, on coupling hitch, with integrated return ball valve, with cleaning hatch, DN50 flushing connection and screw connection

P.P.H. EKO-SYSTEM-POLSKA
SALES OFFICE, SERVICE:
36-002 JASIONKA 74A, near Rzeszow
Tel. 48 17 77-24-997; 77-23-406
Tel. 48 17 77-24-400

PRODUCTION, PREFABRICATION
39-120 SIELEC 51E near Sędziszow Młp.
Tel./Fax: 48 17 74-52-232

ESP
ISO 9001:2008

www.esp.com.pl; e-mail: esp@esp.com.pl



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ESP®

ISO 9001:2008

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