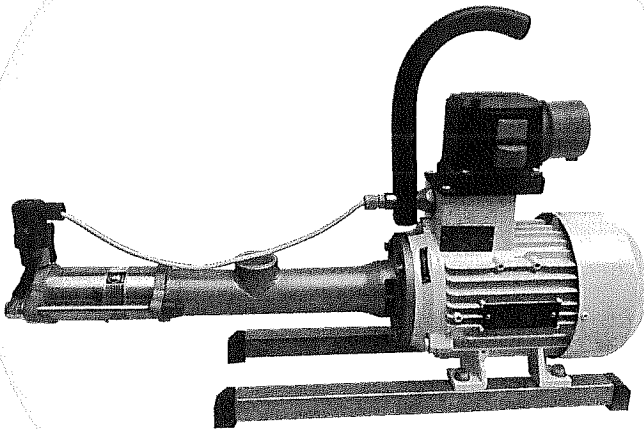


**SERVICE AND ASSEMBLY INSTRUCTIONS
FOR
STAINLESS PORTABLE
PROGRESSIVE CAVITY PUMPS**

EPD



ORIGINAL SERVICE AND ASSEMBLY INSTRUCTIONS

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Before assembly, please read up these Service and assembly instructions!
Comply thoroughly with all valid operation, installation and safety rules and standards.

Main provisions and regulations for stainless portable progressive cavity pump set EPD

ATTENTION!

1. The pump set must not be started-up and/or run dry!
2. During operation the right sense of rotation shall be observed!
3. Before every starting-up turn the motor clutch over for several times!

1.0 GENERAL DATA

1.1 Validity scope

Operating Instructions are destined for progressive cavity pump sets of the EPD type with performance data according to the Table 2, Paragraph 1.5.

1.2 Application

Pump set is destined for conveying liquids and other stuffs that can be thin, viscous, clean, as well as polluted and/or abrasive with a gas volume, liquids with tendency to foaming, or fibrous liquids and solids (max. sizes of solid particles are given in the Table 2, Paragraph 1.5).

Design and material options of this pump meet claims of food stuff industry, pharmaceutical, cosmetic and chemical industries.

Pump sets are used namely in:

- **Wine industry** for conveying all products during wine production
- **Food stuff industry** for conveying beverages, fruit juices, syrups, beer, distilled liquors, mineral waters, milk products, and so on.
- **Pharmaceutical and cosmetic industries** for conveying pastes, suspensions, and so on
- **Chemical industry** for conveying further products.

Pumped liquid or stuff

Pumped liquid or stuff cannot affect chemically on the pump material and temperature cannot exceed 70°C as for the pump standard version. Within passing through the pump no pumped liquid or a stuff may solidify and turn into sediment over time.

The chart "Through-flow characteristic" and the middle sliding velocity " v_{gm} " shows dependence of the rate of flow (Q), speed and the middle sliding velocity " v_{gm} " according to a pumped liquid or a stuff (see the Table 1). Thus chart serves to preliminary choice of the EPD pump size.

This equipment is not destined for using by persons (including children) whose physical, sensory or mental inadequacy and/or lack of experience and knowledge do not make possible to use this equipment in a safe way without supervision and initial briefing and training by a person responsible for their safety in respect of this equipment using.

It is necessary to watch the children and prevent their playing with this equipment.

THROUGH FLOW CHARACTERISTIC AND MIDDLE SLIDING VELOCITY „ v_{gm} “

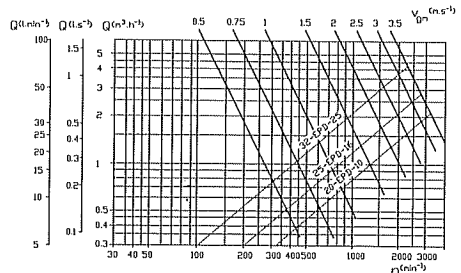


Table 1

v_{gm} (m.s ⁻¹)	Recommended liquids and stuffs
0,50 až 0,75	Highly abrasive and viscous stuffs (milk of lime, honey, cottage cheese, grease, and so on)
1,0 až 1,5	Abrasive and viscous stuffs (painter's colours, yoghurts, oils, and so on)
2,0 až 3,5	Lightweight liquids (water, milk, light oils, etc.)

Cleansing liquid

It is recommended to use the cleansing solution NaOH of 2.5% or the solution HNO₃ of 2.5%. Another liquid used for cleaning must not affect chemically the pump materials and its temperature must not exceed 50°C for a longer time. For a short term (for max. 30 minutes) a solution temperature of 85°C is allowed.

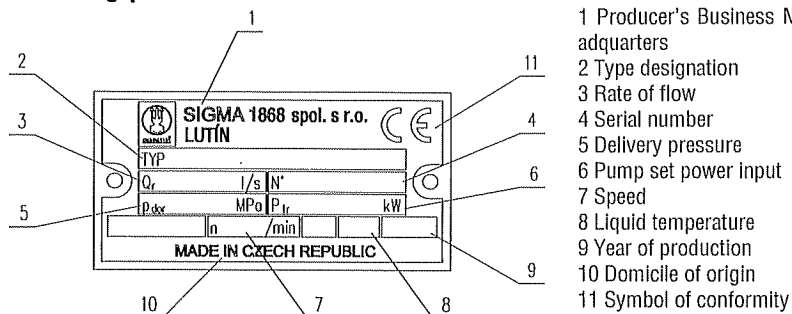
Classification of environmental conditions

These pump sets are destined for normal ambient conditions, **their using in explosion hazard atmosphere is not allowed!**

Operation methods

At intermittent running the pump set operating mode must be according to the ČSN 35 000 (IEC 34-1) S 3 – 90%.

1.3 Rating plate

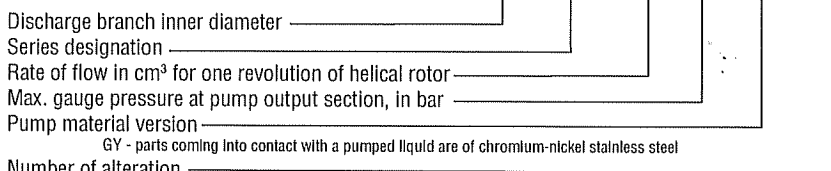


- 1 Producer's Business Name and Headquarters
- 2 Type designation
- 3 Rate of flow
- 4 Serial number
- 5 Delivery pressure
- 6 Pump set power input
- 7 Speed
- 8 Liquid temperature
- 9 Year of production
- 10 Domicile of origin
- 11 Symbol of conformity

1.4 Pump Model Key

Meaning of the given notation

20 - EPD - 10 - 6 - GY - 143



GY - parts coming into contact with a pumped liquid are of chromium-nickel stainless steel

Number of alteration

- | | | | |
|-------------------------|-----------------------------------|-------------------------|-----------------------|
| 1 st digit - | 0 - Three-phase electric motor | 3 rd digit - | 0 - Soft cord packing |
| | 1 - Single-phase electric motor | | 1 - Shaft ring |
| | | | 2 - Two shaft rings |
| 2 nd digit - | 4 - Sense of rotation to the left | | 3 - Mechanical seal |
| | | | 4 - Special packing |

1.5 Performance data

Table 2

Design version		20-EPD-10-6	25-EPD-16-6	32-EPD-25-6
Volume rate of flow	Q_n ($\text{cm}^3/\text{rev.}$)	10	16	25
Guaranteed rate of flow	Q_r (l.s^{-1})	0,47	0,8/0,7	0,6/1,1
Rated voltage	U (V)	230/400	230/400	400
Speed	n_1 (min^{-1})	2860	2850/2840	1395/2860
Gauge pressure in discharge branch	$P_{v, \text{man}}$ (MPa)	0,6	0,6	0,6
Gauge pressure in suction branch *)	$P_{s, \text{man}}$ (MPa)	-0,04 to +0,6	-0,04 to +0,6	-0,04 to +0,6
Guaranteed power input	P_{fr} (kW)	0,84-1ph / 0,75-3ph	1,2-1ph / 1,1-3ph	0,9/1,75
Max. size of solids in a pumped stuff	\varnothing/l (mm)	5/25	5/25	5/25
Pump set dimensions 1ph	h; w; l (mm)	300x200x650	300x200x680	---
Pump set dimensions 3ph	h; w; l (mm)	300x155x580	300x155x630	340X170x770
Dimensions of branches	DN (mm)	20	25	32
Pump set weight	G (kg)	19/17	19/17	16/20
Max. temperature of a pumped stuff	t ($^{\circ}\text{C}$)	70	70	70

*) according to stuffing box type

Values shown above are true to water pumping at temperatures up to 25°C with speed n , $p_{s, \text{man}} = -0,02$ MPa and $p_{v, \text{man}} = 0,6$ MPa. The highest value $p_{s, \text{man}}$ warranting the pump cavitation-free operation depends on properties and temperature of a pumped liquid, as well as on operation speed.

1.6 Delivery scope

This pump set can be delivered in the following workmanship versions:

- Basic
- Extended
- Special, optional – according to the customer request

Basic workmanship version

- Complete pump with a single-phase and/or three-phase motor
- Suction and discharge branches – stainless quick couplers
- Electric interlock switch (with a protection) + pressure switch
- Wrench for rotor turning

Extended workmanship version

- Basic workmanship version
- Suction hose of length 5m, with a screw joint and a suction strainer
- Delivery hose of length 12.5m with a screw joint
- Connecting cable in length of 16m with a plug

Special workmanship version

- Complete pump with a two-speed motor or a frequency converter
- Suction and discharge branches – food stuff fittings, according to the DIN 11 851, or other
- Suction and delivery hose in lengths according to the customer request
- Connecting cable in lengths according to the customer request

1.7 Data Needed for Order Application

When ordering it is necessary to give the following data:

- Delivery scope according to the Par. 1.6;
- Pump designation according to the par. 1.4;
- Number of units;
- Rate of flow;
- Required max. working pressure (gauge pressure in the pump discharge section);
- Required suction head
- Sort and properties of a pumped stuff (min. and max. temperature, consistency, viscosity, chemical properties, and so on);
- Stuffing box workmanship version;
- Pump packaging;
- Scope of spare parts;
- Documentation scope;
- Required accessories.

1.8 Producer's Address, Factory Authorized Guarantee Repairs and Service Centres

SIGMA 1868 spol. s r. o.,
Jana Sigmunda 79
783 50 Lutín

2.0 SAFETY

These Operating Instructions contain basic instructions that shall be observed within installation, operation and

maintenance of these pumps. That is why it is inevitable for competent and responsible workers and service staff to learn these Instructions carefully even before the pump installation and putting into operation. Keep this Manual handy for future reference at site.

Not only all general safety rules as given in this Clause but also other rules given in these Operating and Service Instructions shall be observed.

Safety rules included in these Operating and Service Instructions, breach of which could be a menace to people, are marked with the symbol



or in cases covering electric safety they are marked with the symbol



Safety rules that shall be considered due to safety working and protection of the pump set shall be provided with the advice

ATTENTION!

Safety rules, breach of which could endanger quality of human living environment, are marked with the symbol



3.0 TRANSPORT, PACKAGING AND STORING

3.1 Transport

Pump set is usually transported by rail or by trucks. During transport it is necessary to protect the pump set against shifting to prevent personal accidents and damage of products or transport means.

3.2 Packaging

ATTENTION!

Packaging of this pump set and its spare parts shall be provided in accordance with the customer wish applied in his order. Inlet and outlet branches of pumps are to be blinded to prevent penetration of impurities into the pump interior.

3.3 Storing – Preservation

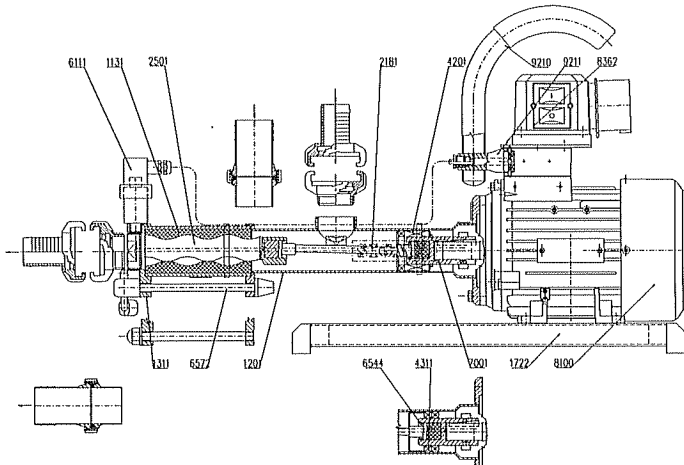
Pump set or its parts shall be stored in dry and dust-free rooms. As for the pump set temperature during its storing it may range from -8°C to 40°C . It is necessary to apply a protective coat on the stator cartridge (e.g. glycerine) with pumps destined for storing, and they

must be protected from direct solar radiation, from sudden changes of temperature, as well as from penetration of impurities and chemicals. Once a year, at

least, it is necessary to re-check the stator preservation condition. Maximum storage time for rubber parts is three (3) years since the date of production.

4.0 PRODUCT DESCRIPTION AND ITS ACCESSORIES

4.1 List of Pump Set Main Parts



- 1131 - Stator
- 1201 - Suction casing
- 1311 - Discharge casing
- 1722 - Frame
- 2181 - Connection rod
- 2501 - Helix
- 4201 - Mechanical seal
- 4311 - Shaft ring
- 6111 - Pressure switch
- 6544 - Retaining ring
- 6572 - Quick-closing fixture clamp
- 7001 - Shaft coupling
- 8100 - Electric motor
- 8362 - Interlock safety switch
- 9210 - Handle
- 9211 - Handle pin

4.2 Technical description of pump set

This pump set consists of:

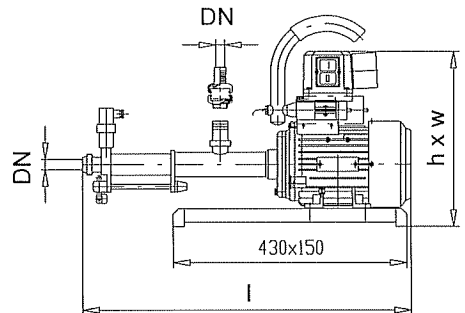
- Drive (8100)
- Hydraulic part
- Frame (1722)
- Carrier (9210)
- Electrical part according to the Par. 1.6

Hydraulic part consists of the stator (1131) and the helix (2501). The helix is connected through the connection rod (2181) and the shaft coupling (7001) to the drive. The suction casing (1201) and the discharge casing (1311) are in their basic workmanship versions provided with stainless quick couplers with hose connection, on the customer wish it is possible to deliver even foodstuff fittings, according to the DIN 11 851. The stator (1131) is fixed with two quick-closing fixture clamps (6572), so it is possible to carry out disassembly and sanitation quickly, without using tools. The shaft sealing is carried out either with the aid of two shaft rings (4311) or with the mechanical seal (4201). Both types of the seal are dimensionally interchangeable.

4.3 Material Options

Metallic details of the hydraulic part coming into contact with a pumped liquid and/or stuff are made of stainless steel. The stator and the joint guard are made of food grade rubber.

PUMP SET DIMENSIONS



4.4 Pump working

While the pump is running, a helix with a single thread is rotating in the stator cavity. In this way some spaces are created between the helix and the stator cavity into which a pumped stuff is sucked. These spaces filled up with a pumped stuff are shifted thanks to helix motion along the pump longitudinal axis and the stuff is transported from the suction space to the discharge side. On principle, the delivered volume depends only on the stator helix dimensions and the helix speed.

4.5 Drive and sense of rotation

This pump is driven by an electric motor.

ATTENTION!

Sense of rotation is marked with an arrow on the pump and it is inevitable to keep this sense of rotation during any operations.

5.0 PUTTING THE PUMP SET INTO OPERATION

Pump set is delivered in complete-assembled state, including electric interconnection of an interlock safety switch and the drive unit terminal board. Before putting into operation the operating personal shall proceed as follows:

5.1 Pump set preparation for operation



At first it is necessary to carry out external inspection of the pump set and its supply cable. If it is damaged it is necessary to replace it by a specialist qualified in electrical engineering and in accordance with relative rules and regulations.

Value setting-up for the current-limiting switch is realized in the manufacturing plant. Then it is also necessary to set up also value of the pressure valve bypass pressure, according to the working pressure. Pump suction and discharge spaces are to be filled up with clean water or a pumped liquid.

ATTENTION!

Pump set cannot be put into operation or be operated "dry", because the stator rubber lining or pump other parts may be damaged or destroyed within very short time.



Re-check the pump sense of rotation. It is necessary to keep the adjusted sense of rotation, because the pump set has been designed just for this sense of rotation! Variation of sense of rotation may cause the pump failure.

Pump set provided with a single-phase electric motor has been adjusted for the given sense of rotation in the manufacturing plant. As for the pump set with a three-phase electric motor, it is necessary to re-check sense of rotation (incorrectly-phased plug socket) in this manner:

- Suction branch (closer to the motor) and the discharge branch (further from the motor) shall be filled up with water. Turn the shaft coupling (7000) twice in accordance with the arrow direction, using a spanner hook. This operation shall be carried out whenever the pump set is putting out of operation for a longer time. Insert the cable plug into the socket outlet, start-up the pump set for a short time

using push buttons of protective switches I and O and watch the pump branches with care.

- If water is spraying out of the discharge branch the pump set is connected in the right manner.
- In such case water is spraying out of the suction branch the pump set has not been connected correctly. So it is necessary to interchange the phases. After it re-fill water into branches and start the motor for a short time.

If the connection is right then the pump set sense of rotation corresponds to the arrows direction marked on the pump suction casing. After making certain of right sense of rotation re-fill the pump set with a pumped water, connect the suction and discharge (be sure whether packing in screwed connection was not damaged) and the pump set is ready-to-start.

Immerse the suction pipe in a liquid and then put the pump set into operation.

ATTENTION!



We must point out the fact, that electrical package for the pump set drive, including the motor phasing shall be carried out by the person properly qualified in electrical engineering. At any manipulation with the pump set (handling, helix rotor turning, dismantling) it is necessary to disconnect it from mains, preventing a possibility of its connection to mains by mistake.

ATTENTION!

For the pump discharge no control elements of a liquid small rate of flow may be used (e.g. a shut-off valve).

Before rotation of the shaft coupling (7001) by hand with the aid of a wrench it is necessary to make sure the pump set has been disconnected from mains! There is a real risk of hurt due to a tool ejection at unexpected and unwanted starting-up!

5.2 Inadmissible ways of this pump set using

- Pump set cannot be used in explosion hazard environments
- Pump set cannot be applied to basically different purposes than those given in the Clause 1.2, hence it is forbidden to convey flammable liquids, and so on.
- Pump must not run dry
- This pump has got a limited and definite purpose of its application given by its name, design and application as defined in the Clause 1.2 and it is not supposed to use it for other purposes wittingly, accidentally or due to ignorance for reasons of observance the safety of work

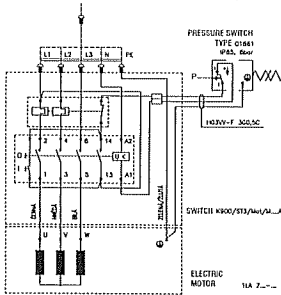
5.3 Analysis of residual risks:

- In the pump set suction casing - pos.1201 – see the Clause 4.1 – there are at point of the shaft coupling - pos. 7001 – narrow holes serving for the coupling turning with the aid of a wrench.

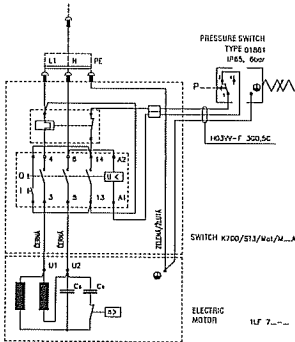
With doing that it is necessary to observe all safety rules given in the Clause 5.1, that is, the pump set disconnection from mains as well as preventing its unwanted switching-on. So, any contact with a rotating coupling during its operation by thin instruments, e.g. a screw-driver, wire, etc. presents a bad risk.

So, it is forbidden to insert any instruments into holes!

SCHEMATIC WIRING DIAGRAM (three-phase)



SCHEMATIC WIRING DIAGRAM (single-phase)



6.0 OPERATION AND MAINTENANCE



Monitor the pump set run during its operation, detect any vibration by touch, monitor noisiness by ear and re-check its full run.

It is not allowed to use the supply cable for the pump set transporting.

ATTENTION!

Every time after pumping it is necessary to flush the pump set, hoses and other used accessories by clean water or to carry out sanitation, according to the Par. 1.2!

ATTENTION!



We would like to draw your attention to the Act on pollution of watercourses. When pumping chemicals, sewages, health hazardous liquids, as well as during any disassembly it is inevitable to observe personal hygiene carefully (risk of infection). Use protective devices and protective clothing!

ATTENTION!

Inasmuch as some rubber details and parts as well as rubber hoses are used with the pump set, it is necessary to take care of their storage!

For storing the pump set and its accessories (hoses, suction hoses) a cold, dark and a dustproof room is the best, with temperatures not exceeding 25°C, neither dropping below -10 °C, as well as without any temperature sudden changes. During storing it is necessary to prevent exposure of the pump set and its hoses to radiant heat, direct sunlight and/or daylight. In the room where the pump set is stored no rubber solutions, engine fuels, lubricants, acids and other chemicals can be stored together with it, because they could attack and damage the pump rubber parts due to their fumes and vapours.

6.1 Pump Set Stopping

Pump stopping is carried out by pressing the push button "0" on the interlock safety switch.



It is inadmissible to shut suction or delivery valves before pump stopping, due to prevention of possible damage of the pump or the motor.

6.2 Pump Disassembly

ATTENTION!

When handling the pump or any drive units (disassembly, and so on) it is inevitable to make certain of the pump set disconnection from mains to prevent starting-up by mistake!

If it is more advantageous for handling it is also possible to disconnect suction and delivery lines.

Pump disassembly due to its sanitation

Because the pump hydraulic part mounting is carried out with the aid of the quick-acting fixture clamp (6572) its disassembly can be realized without using any tools. Remove a slip-on connector of the pressure switch (6111). With loosening the quick-acting fixture clamp the pump

hydraulic part is separated to the discharge casing (1311), the stator (1131) and the rotor part with a drive. And now the pump sanitation can be realized according to the Par. 1.2.

Pump disassembly due to replacement of stuffing boxes and joints

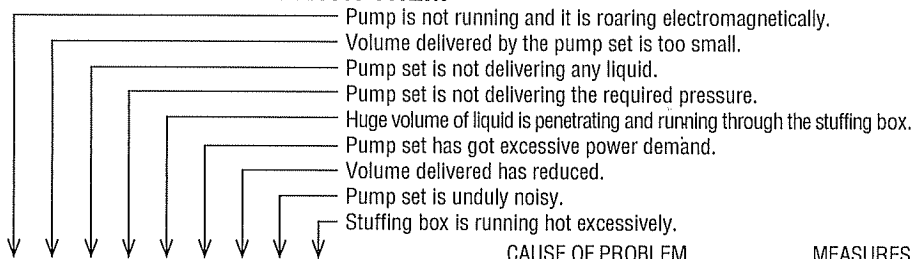
The first part of disassembly can be carried out according to the instruction given in the previous paragraph. Then loose the bolt for the purpose of separating the suction casing (1201) from the electric motor (8100), as well as the stuffing box – shaft rings (4311) or the seat and the ring of the mechanical seal (4101). Disassembly of joints is to be carried out by removing

retaining rings (6544.1) applying a screwdriver. Shaft rings (4311) dismantling out of the suction casing (1201) can be carried out by their forcing-off from the side of stator. Accordingly, also the mechanical seal (4201) seat can be removed. Now the shaft ring of mechanical seal shall be removed off the shaft coupling (7001).

If there is a need to replace even the shaft coupling (7001), loosen the lock-adjusting screw and force the coupling off the electric motor shaft.

Assembly of all above mentioned parts is to be carried out, following the procedure outlined under disassembly.

7.0 NOTES PREPARED TO HELP YOU PREVENT PROBLEMS AS WELL AS DEAL WITH THEM



CAUSE OF PROBLEM

MEASURES

X	X				X	X	Air is sucking through the suction pipeline	1
	X						Pump has not been primed by a pumped liquid before its starting-up	2
X	X						Suction head is too high	3
	X						Opposite direction of rotation	4
X	X					X	Excessive resistances in suction pipeline	5
X	X	X			X		Worn-out hydraulic part (helix and stator)	6
	X						Suction line has been closed up	7
		X		X	X		Helix seizes in a stator	8
X				X	X		Change of a pumped stuff viscosity	9
	X			X			Too large overhang between the helix and stator	10
X		X					Pressure switch has not been set correctly	11
				X		X	Pump or electric motor have not been fastened sufficiently	12
	X		X			X	Damage of mechanical seal packing rings, as well as damaged shaft rings	13
	X		X		X		Drop of driving motor speed	14
X		X		X			Damaged driving motor (it is not working)	15
					X		Suction head has increased	16
	X			X	X		Rise of resistances on the discharge side	17
X							The mains without voltage	18
X							Electrical interlock safety switch has been switched off	19
X							One of the phases has been interrupted	20

7.1 Some Measures on Defects and Failures Clearing
All detected defects and failures of pumps shall be solely cleared by the service centre given in the Certificate of Warranty.



Electrical system installation, including any modifications may be solely carried out by a person properly qualified in electrical engineering, respectively in accordance with standards in operations and with local regulations and rules.

In case of some difficulties showing and finding-out during the pump set start-up, as well as during its operation it is necessary to take measures depending on trouble symptoms that are given in the table of the Chapter 7.0 and designed according to the numerical code given in the table right column:

1. Re-check packing. Retighten pipeline joints. Increase the suction level of a pumped stuff, eliminate swirling at inlet.
2. Stop the pump, water it, add and integrate a non-return flap valve or a suction basket into suction pipeline, which can ensure the suction pipeline flooding.
3. Re-set for original values. Increase the suction level of a pumped liquid and/or stuff.
4. Stop the pump immediately, change circuitry.
5. Clean the suction screen. Clean up suction pipeline. Reduce resistances in the suction pipeline
6. Replace damaged details and/or components for new ones.
7. Stop the pump set without delay. Open fully the valve in suction piping.
8. Stop the pump set promptly. Dismantle the helix, detect a cause of seizing, replace damaged parts for new ones.
9. Measure viscosity of a pumped liquid and compare it with a value given in the Order. Re-set for original, required values.
10. a) Turn the helix in the determined direction of rotation with the motor being disconnected from mains!

ATTENTION! Prevent the electric motor starting-up during its turning.

b) Dismantle the pump, lubricate both the helix and stator with a suitable liquid (considering a rubber used in the stator), and turn the helix over in the stator cavity for several times.
c) Replace the stator.

11. Set the bypass pressure of the safety valve according to the max. working pressure values.
12. Re-tighten fastening bolts of the pump and electric motor.
13. Replace the shaft wear rings. Replace the mechanical seal.
14. Detect a source of it. The cause can be found out in the measures given in subparagraphs 8, 9, 10, and so on.

15. Re-check (even electric current supply), remove the detected fault.
16. Re-set to the original value. Raise the liquid level in the suction tank.
17. Detect a source of it (some sediments in the discharge pipeline, a throttled valve on the discharge side), remove the fault.
18. Contact the service engineer, the specialist in electric engineering.
19. Re-check the interlock safety switch setting, detect and remove the source of it.
20. Get the electric motor repaired in the authorized / contract service centre

8.0 LIST OF DOCUMENTS

Together with the pump set the under-mentioned documents are delivered on a regular basis:

- Pump service manual;
- Certificate of Warranty;
- Service manual for sub-delivery;

On request given in an order it is delivered:

- Pump diagram;
- Dimensional drawing;
- Pump assembly drawing;

9.0 NÁHRADNÍ DÍLY

When ordering spare parts it is necessary to give:

- Pump set model;
- Pump set serial number
- Number of a part position according to the Paragraph 4.1;
- Name designation of a part;
- Number of units;
- If possible, it is recommended to give also the Order Number according to which the pump original delivery was realized.

Pump model and its serial number are given in the rating plate attached to the pump.

RECOMMENDED SPARE PARTS

Pos.	Name	Basic set Pos/2.000 hours	Extended set Pos/3.500 hours
1131	Stator	1	2
2181	Connection rod	-	1
2501	Helix	1	2
4201	Mechanical seal	-	1
4311	Shaft ring	2	4
6544	Retaining ring	-	2
7001	Shaft coupling	-	1

10.0 WARRANTY

Warranty terms for pumps are given in the Certificate of Warranty being delivered together with every pump. During the warranty period the pump dismantling may be carried out solely by the manufacturer or by the authorized service centre with the agreement of the manufacturer.

11.0 DISPOSAL OF WASTE

Directions to disposal of waste generating during life cycle of the pump (by course of § 10, Cl. 3 of the Law of Wastes No. 185/2001 of the Code of Law, as amended).

1. Household appliances

Sort of waste	Code ¹⁾	Category ¹⁾	Method of disposal
Paper and/or cardboard packages	15 01 01	0	Other waste - Utilizable waste – through sorted refuse collection In communities it is necessary to hand it over to a person authorized to waste disposal ³⁾ .
Scrapped/disabled electrical and electronic devices – pumps	20 01 36	0	Entirely worn-out electric devices shall be passed (free of charge) in a place destined for it (collection spot). In no case it may be disposed together with normal municipal waste! ⁴⁾

2. Pump parts for industry

Sort of waste	Code ¹⁾	Category ¹⁾	Method of disposal
Waste of electrical and electronic devices - scrapped/ disabled parts	16 02 14	0	Other waste – Utilizable waste – after sorting it is necessary to hand it over to a person authorized for purchase of waste or secondary raw material.
Paper and/or cardboard packages	15 01 01	0	
Other scraped devices – metallic components of pumps (without any oil remains)	17 04 07	0	
Other scraped devices – non-metallic components of pumps (e.g. of carbon, carbide, ceramics)	16 02 16	0	Other waste – it is necessary to collect and hand it over to a waste dump operator.
Other scrapped materials – rubber elements of pumps	16 02 05	0	Other waste – it is necessary to collect and hand it over to disposal in a waste incineration plant.
Wood packing	15 01 03	0	
Plastic packages– foil of PE	15 01 02	0	
Small plastic objects ²⁾	16 02 16	0	
Other motor, gearbox and/or lubrication oils	13 02 08	N	Hazardous waste – it is necessary to collect and hand it over to disposal by an authorized person.
Solvents and their mixtures with preservative products (except of organic-decomposable)	14 06 01 14 06 02 14 06 03	N	

1) See the Public Notice No. 381/2001 of the Code of Law, in which the Catalogue of waste was published

0 – Other waste

N – Hazardous waste

- 2) **ATTENTION!** Polytetrafluoroethylene (Teflon, PTFE) shall not be incinerated elsewhere than in a waste incineration plant due to their toxicity!



3)

Re-acceptance and re-usage of waste of packages is guaranteed within the scope of the collective system EKO-KOM by course of requirements of the Law No. 185/2001 of the Code of Law, of waste, as amended. Information on collection, selection and utilization of waste of packages are given at the internet site www.ekokom.cz.



4)

It is not allowed to handle this equipment in the same way as household refuse. This product shall be disposed by its carrying to a collection spot destined for recycling electrical and electronic equipment. To obtain more detailed information as for this product recycling please contact workers of a yard waste collection or employees of the store you have purchased the product.

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