

# CHEMICAL EQUIPMENT

## Catalogue of the products

- *Pumps*
- *Valves*
- *Pipelines*
- *Tanks*



Группа компаний «Химагрегат»



Group of companies "Chemagregat"

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## PREFACE

CJSC Group of companies "CHEMAGREGAT" manufactures and supplies enterprises with equipment for storage, displacement, and shutoff of flows of different aggressive, corrosive, toxic, and hazardous liquids in a broad range of flow rates, pressures, and temperatures.

The following types of equipment with polymeric flow tube made of stainless steels and partially a carbon steel (some pumps and butterfly valves) are shown in the present catalogue.

- Electrically driven pumps (horizontal chemical pumps with mechanical and gland seals, leakproof pumps with magnetic clutches, special pumps, semisubmersible pumps)
- Stop and multipurpose valves: chemical butterfly valves with polymeric flow tube and elastic metallic seals (ЗПХ), chemical orifice valves (ВДХ), chemical ball cocks (КШХ), chemical check valves (КОХ)
- Pipeline elements (pipelines, hoses, and fittings lined with polymers)
- Nonstandard chemical equipment (reservoirs, reactors lined with polymers)

The following materials are used for manufacturing of equipment

- Polymers (Fluoroplastics of types: Ф-4(PTFE), Ф-50, Ф-40(ETFE), Ф-4МБ(FEP), Ф-2М (PVDF), polyethylene, polyethylene of ultra-high molecular weight (UHMWP), polypropylene, including frost-resisting polypropylene)
- Stainless steels of types SS 304, 321, 316L, by request – stainless alloys of types hastelloy
- Carbon steels (casings, embedded elements, some gates).

For correct selection of equipment that will suit your specific needs we ask you to fill questionnaires (independently for electrically driven pumps and fittings) that are located in the end of this document and to send them at our address via e-mail or fax +7-499-730-03-03. In the questionnaires it is necessary to fill all fields; in case of necessity you may specify additional information in a free form. Information about new models of equipment, company news, thematic articles, and other helpful information you may find at our web-site <http://www.himagregat.ru>.

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## PART 1. PUMPS

### Section 1. CHEMICAL PUMPS AXH

#### Pump seals

In chemical pumps of type AXH the following seals are used.

##### **Mechanical seals.**

WB-2 – is used in pumps AXH ...1, AXH ...2, AXH ...21, AXH ...5, AXH ...6, АХПН...1, АХПН...2.

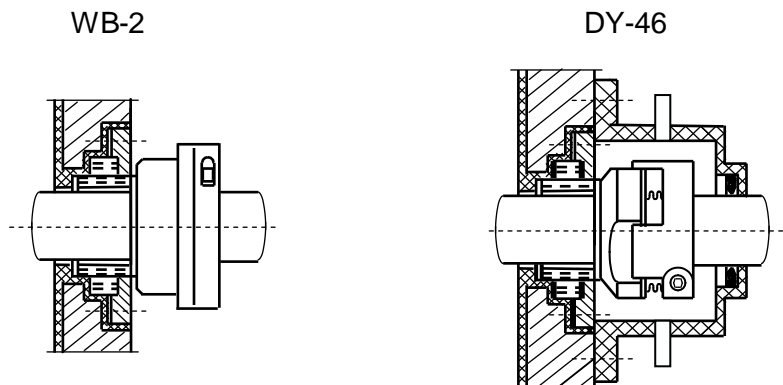
Single mechanical seal of type WB-2 consists of moving part mounted on a pump shaft and immovable ring mounted in the pump wall. Casing and rubbing element of the moving part are made of fluoroplastic Ф-4 and have steel split collar for mounting on the shaft. Mounting is performed by two screws with inner hexahedrons (5 mm). Sealing along the shaft is performed by fluoroplastic silphon. The immovable ring is made of silicon carbide (SiC).

DY-46 – is used in pumps AXH ...1, AXH ...2, AXH ...21, AXH ...5, AXH ...6 АХПН...1, АХПН...2.

Single mechanical seal with additional seal of type DY-46 consists of moving part mounted on a pump shaft and immovable ring mounted in the pump wall. Rubbing pair of seal is made of silicon carbide (SiC). The seal is installed in a casing to which cooling liquid is supplied. To avoid leakage of the liquid from the casing a rubber collar is installed. Sealing along the shaft is performed by rubber ring. For extremely aggressive environments the ring is lined with fluoroplastic Ф-4МБ. On the casing there are two connecting pipes 8 mm in diameter. Connection is performed by 1 or 2 screws with inner hexahedrons (5 mm).

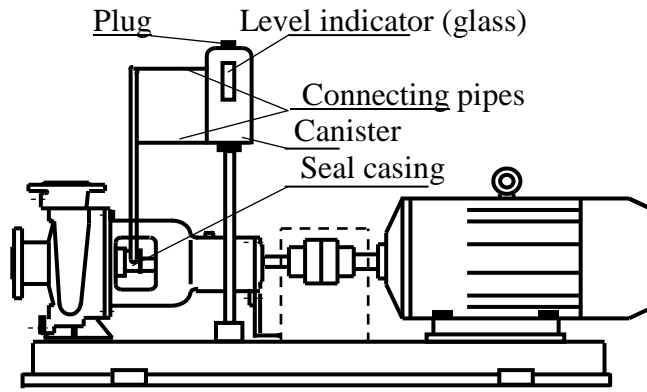
224 – is used in pumps AXH ...4, .

Details of double mechanical seal are made of stainless steel. Rubbing pairs are made of special alloy resistive to pumped liquids. The seal is installed in a casing to which cooling liquid is supplied. On the casing there are two connecting pipes 8 mm in diameter.



Seals of type DY-46 and 224 in the process of exploitation require supply of cooling liquid to flow tube with flow rate of 50 – 150 l/hour. Temperature of the cooling liquid coming from seal casing should not exceed 60°C.

If enterprise can not provide supply of the liquid to the seals it is recommended to use a thermal siphon – an autonomous device for supply and cooling of liquid.



The thermal siphon is supplied together with a pump. Capacity of thermal siphon canister is 5 – 15 l depending on pump characteristics.

The thermal siphon canister is filled with cooling liquid that is selected depending on its compatibility with pumped liquid. Since the system is leakproof reduction or increase of the level indicates poor state of the seal. In this case it is necessary to stop the pump and to check the seal.

If it is necessary to stop the pump because of seal failure (blocking) or reception of a signal about stoppage on operator's panel or in automated technological process control system in thermo siphon canister, it is possible to install by request sensors of maximum and (or) minimum level.

#### **Double gland seals**

Double gland seals are used in pumps AXH ...4, AXH ...10, AXH ... 12, AXH...15, AXПH...2. As sealing gland fluoroplastic or fluoroplastic with filler (graphitofluoroplastic, etc.) are used. For cooling and greasing cooling liquid is supplied to lantern ring of double gland seal. At temperature of pumped liquid below 80-90<sup>0</sup>C dead-end supply of cooling liquid is possible, at temperature over 90<sup>0</sup>C – the cooling liquid should be supplied through channel. On the casing there are two connecting pipes 8 mm in diameter.

In some cases in the specified pumps a self-cooling gland seal is used – liquid, pushed by the pump is supplied to lantern ring and is discharged to suction zone.

## Electrically driven pumps AXH Q/H.1

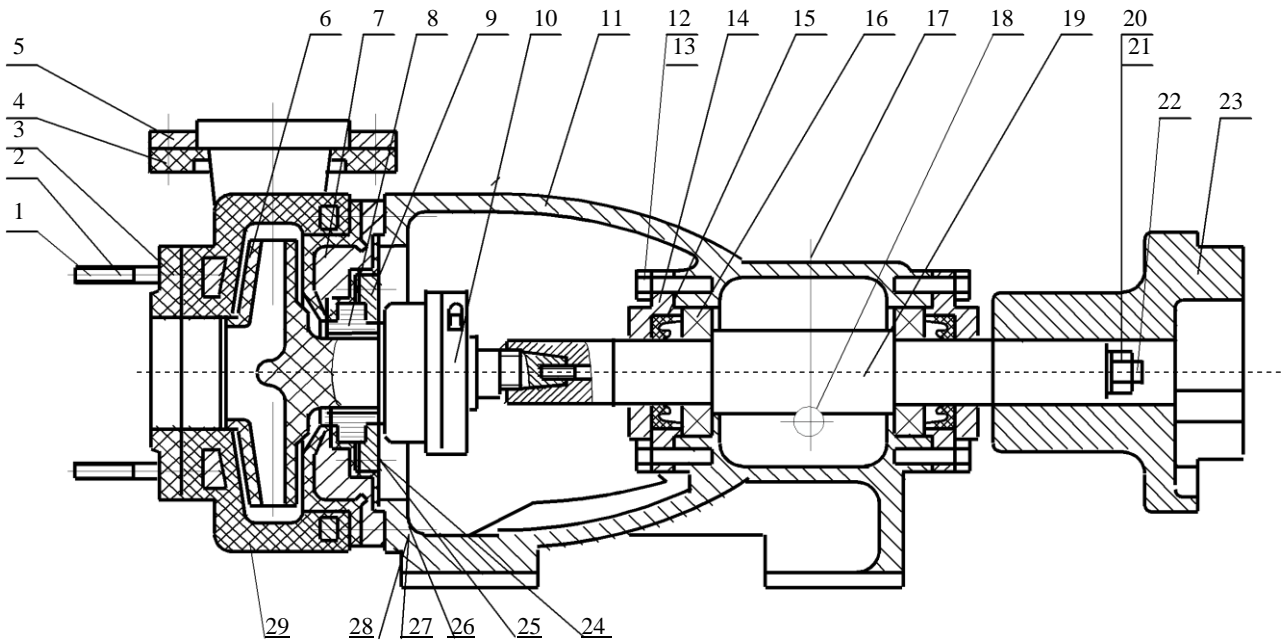
Pumps AXH Q/H.1 – are horizontal centrifugal pumps with casing and flow tube made of fluoroplastic  $\Phi$ -50. Seals are represented by single mechanical seals and mechanical seals with additional seals. The pumps are used for pumping of aggressive liquids with solid impurities up to 2 mm and bulk concentration up to 2-5%.

Range of liquid consumption is 1,5-100 m<sup>3</sup>/hour and range of heads is 10-50 m. Density of the pumped liquid is up to 1800 kg/m<sup>3</sup>. Minimal temperature of the pumped liquid is up to -60°C, maximum temperature is up to 180°C.

### Specification

Model	Pump parameters									
	Liquid consumption Q m <sup>3</sup> /hour	Head H m	Efficiency $\eta$ %	npsh m	Motors					
					Liquid density, kg/m <sup>3</sup>					
					1000		1350		1830	
					Type	N kW	Type	N kW	Type	N kW
2900 r/min										
AXH 1,5/10.1	1,5	10	29	6	90L2	2,2	90L2	2,2	90L2	2,2
AXH 3,5/18.1	3,6	18	27		90L2	2,2	90L2	2,2	90L2	2,2
AXH 5/15.1	5	15	51		90L2	2,2	90L2	2,2	90L2	2,2
AXH 10/20.1	10	20	47		90L2	2,2	90L2	2,2	100L2	3
AXH 10/30.1		30	55	90L2	2,2	100L2	3	112M2	4	
AXH 10/40.1		40	35	5,5	112M2	4	132SA2	5,5	132SB2	7,5
AXH 10/50.1		50	33		132SA2	5,5	132SB2	7,5	160MA2	11
AXH 15/20.1	15	20	55	6	90L2	2,2	100L2	3	112M2	4
AXH 15/25.1		25	53		100L2	3	112M2	4	132SA2	5,5
AXH 15/30.1		30	64		160MA2	3	112M2	4	132SA2	5,5
AXH 15/40.1		40	39	5,5	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 15/50.1		50	38		132SB2	7,5	160MA2	11	160MB2	15
AXH 25/20.1		25	20		65	6	112M2	4	132SA2	5,5
AXH 25/32.1	32		70	132SA2	5,5		132SB2	7,5	160MA2	11
AXH 25/40.1	40		53	5,5	132SB2	7,5	160MA2	11	160MB2	15
AXH 25/50.1	50		52		160MA2	11	160MB2	15	160L2	18,5
AXH 50/20.1	50		20		72	6	132SA2	5,5	132SB2	7,5
AXH 50/30.1		30	64	160MA2	11		160MA2	11	160MB2	15
AXH 50/34.1		34	65	160MA2	11		160MB2	15	160L2	18,5
AXH 50/40.1		40	67	5,5	160MA2	11	160MB2	15	160L2	18,5
AXH 50/50.1		50	65		160MB2	15	160L2	18,5	200LA2	30
AXH 100/40.1		100	40		74	6	180M2	22	200LA2	30
AXH 100/50.1	50		72	5,5	200LA2	30	200LB2	37	225M2	45

## Pump structure

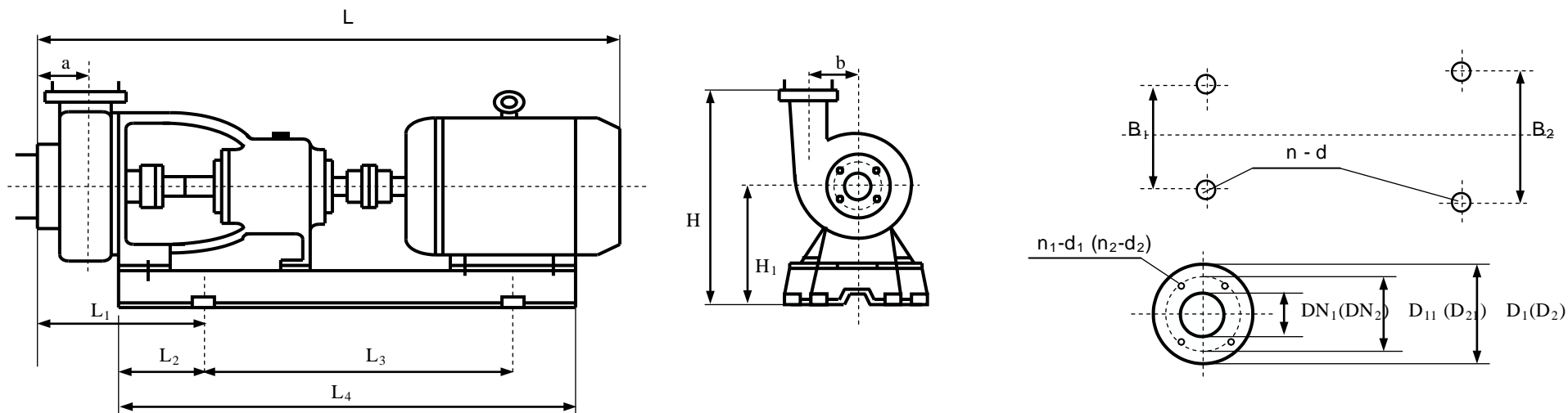


## Specification of pump details

No.	Name of details	Q-ty
1	Stud	4
2	Nut	4
3	Ring	1
4	Cap flange	1
5	Flange pad	1
6	Working wheel	1
7	Wall	1
8	Immovable ring of mechanical seal	1
9	Pad	1
10	Moving part of mechanical seal	1
11	Casing of undercarriage	1
12	Bolt	
13	Washer	
14	Lid of undercarriage	2
15	Collar	2
16	Bearing	2
17	Plug	1
18	Inspection hole	1
19	Shaft	1
20	Nut	1
21	Washer	1
22	Stud	1
23	Half-coupling	1
24	Screw	4
25	Washer	4
26	Stud	
27	Nut	
28	Washer	
29	Pump casing	1



### Overall and connecting dimensions



Model	DN <sub>1</sub>	D <sub>11</sub>	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	D <sub>2</sub>	n <sub>2</sub> -d <sub>2</sub>	a	b	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	B <sub>1</sub>	B <sub>2</sub>	H <sub>1</sub>	H <sub>2</sub>	n - d
AXH 1,5/10.1	25	75	100	4-10	20	75	100	4-10	45	65	910	215	150	455	730	250	310	190	320	4-15
AXH 3,6/18.1																				
AXH 5/15.1	40	100	130	4-14	32	100	130	4-14	58	80	920	245	150	455	730	250	310	210	352	4-15
AXH 10/20.1																				
AXH 10/30.1																				
AXH 10/40.1																				
AXH 10/50.1																				
AXH 15/20.1	50	125	165	4-17,5	32	125	160	4-17,5	62	110	936	245	150	500	825	365	365	230	410	4-20
AXH 15/25.1																				
AXH 15/30.1																				
AXH 15/40.1	65	150	185	4-16	50	135	160	4-16	75	95	1015	270	150	560	830	250	375	197	347	4-15
AXH 25/20.1																				
AXH 25/32.1																				
AXH 25/40.1																				
AXH 25/50.1	80	160	200	4-16	40	135	160	4-16	75	95	1015	270	150	560	830	250	375	197	347	4-15
AXH 50/20.1																				
AXH 50/30.1																				
AXH 50/34.1	100	180	220	8-17,5	50	125	165	8-17,5	69	122	1207	260	175	610	980	330	395	260	460	4-20
AXH 50/50.1																				
AXH 100/40.1																				
AXH 100/50.1					80	160	200	8-17,5	72	117	1215	270	175	620	990		425	275	475	
					65	145	185			125	1270			690	1060		470	295	495	

## Electrically driven pumps AXH Q/H.2

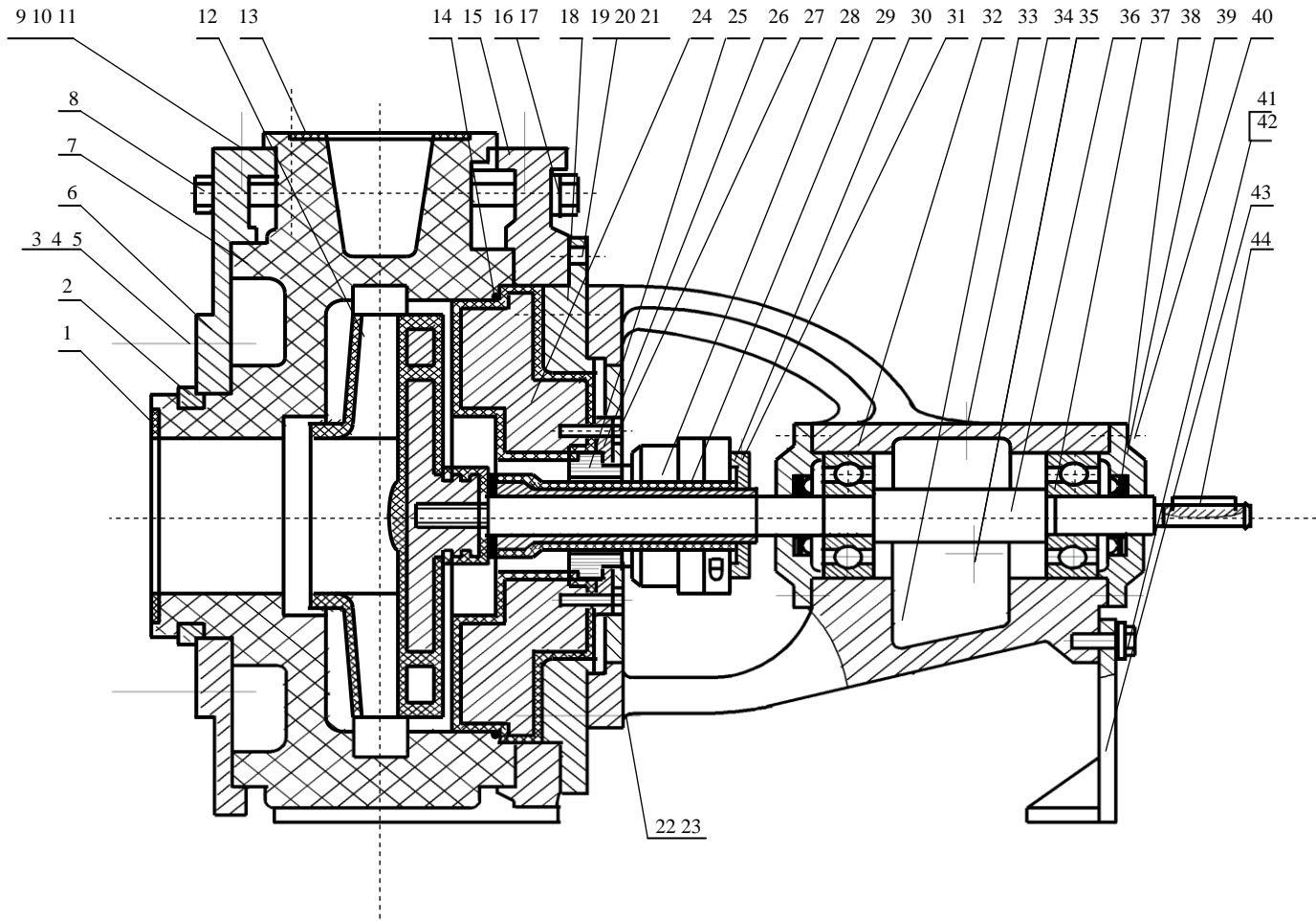
Pumps AXH Q/H.2 – are horizontal centrifugal pumps with flow tube made of fluoroplastic  $\Phi$ -50, inlet and outlet fittings are reinforced with steel plates. As seals single mechanical seals and mechanical seals with additional seal are used.

The pumps are meant for pumping of aggressive fluids with solid particles up to 2 mm and bulk concentration up to 1.5% at high abrasiveness and up to 10 % at medium abrasiveness. Range of flow rates is 6,3-400 m<sup>3</sup>/hour, range of heads is 5-80 m. Density of pumped fluid is up to 1800 kg/m<sup>3</sup>. Working temperature is from -40 to +150°C.

### Specification

Model	Inlet-outlet-impeller, mm	Pump parametrs									
		Liquid consumption, Q m <sup>3</sup> /hour	Head H m	Efficiency $\eta$ %	Npsh, M	Motors					
						Liquid density ( $\rho$ ), kg/m <sup>3</sup>					
						1000		1350		1830	
						Type	N kW	Type	N kW	Type	N kW
2900 r/min											
AXH 5/20.2	25-20-125	5	20	32	2	90S2	1,5	90L2	2,2	100L2	3
AXH 5/30.2	25-20-160	5	30	30	2	90L2	2,2	100L2	3	112M2	4
AXH 12,5/20.2	50-32-125	12,5	20	52	2	90L2	2,2	100L2	3	112M2	4
AXH 12,5/32.2	50-32-160	12,5	32	48	2	112M2	4	132SA2	5,5	132SB2	7,5
AXH 12,5/50.2	50-32-200	12,5	50	44	2	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 25/20.2	65-50-125	25	20	59	2	112M2	4	132SA2	5,5	132SB2	7,5
AXH 25/32.2	65-50-160	25	32	60	2	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 25/50.2	65-40-200	25	50	45	2,4	160MA2	11	160MB2	15	160L2	18,5
AXH 50/20.2	80-65-125	50	20	60	2,4	132SB2	7,5	160MA2	11	160MB2	15
AXH 50/32.2	80-65-160	50	32	65	2,4	160MA2	11	160MB2	15	160L2	18,5
AXH 50/50.2	80-50-200	50	50	63	2,4	160L2	18,5	180M2	22	200LA2	30
AXH 100/32.2	100-80-160	100	32	68	2,4	160L2	18,5	200LA2	30	200LB2	37
AXH 100/50.2	100-65-200	100	50	66	2,4	200LA2	30	200LB2	37	250M2	55
AXH 100/80.2	100-65-250	100	80	56	3,2	250M2	55	280S2	75	315S2	110
AXH 150/50.2	125-100-200	150	50	55	3,2	250M2	55	280S2	75	280M2	90
AXH 150/80.2	125-100-250	150	80	45	3,2	315S2	110	315M2	132	355SA2	185
AXH 250/20.2	150-125-125	250	20	60	3,2	200LA2	30	225M2	45	250M2	55
AXH 250/32.2	150-125-160	250	32	61	4,5	250M2	55	280S2	75	280M2	90
AXH 250/50.2	150-125-200	250	50	48	4,5	315S2	110	315M2	132	355SA2	185
AXH 250/80.2	150-125-250	250	80	47	4,8	315LA4	160	315LB2	200	355L2	315
AXH 400/20.2	200-150-125	400	20	50	4,8	250M2	55	280S2	75	315S2	110
AXH 400/32.2	200-150-160	400	32	53	5,0	280M2	90	315M2	132	315LA4	160
AXH 400/50.2	200-150-200	400	50	57	5,2	315M2	132	355SA2	185	355M2	250
AXH 400/80.2	200-150-250	400	80	45	5,6	355M2	250	355L2	315		
1450 r/min											
AXH 6,3/5.2	50-32-125	6,3	5	52	2	90S4	1,1	90S4	1,1	90S4	1,1
AXH 6,3/8.2	50-32-160	6,3	8	48	2	90S4	1,1	90S4	1,1	90S4	1,1
AXH 6,3/12,5.2	50-32-200	6,3	12,5	44	2	90S4	1,1	90S4	1,1	90L4	1,5
AXH 12,5/5.2	65-50-125	12,5	5	59	2	90S4	1,1	90S4	1,1	90S4	1,1
AXH 12,5/8.2	65-50-160	12,5	8	60	2	90S4	1,1	90S4	1,1	90L4	1,5
AXH 12,5/12,5.2	65-40-200	12,5	12,5	46	2	90L4	1,5	100LA4	2,2	100LB4	3
AXH 25/5.2	80-65-125	25	5	60	2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 25/8.2	80-65-160	25	8	65	2	90L4	1,5	100LA4	2,2	100LB4	3
AXH 25/12,5.2	80-50-200	25	12,5	63	2,5	100LA4	2,2	100LB4	3	112M4	4
AXH 50/8.2	100-80-160	50	8	68	2,5	100LB4	3	112M4	4	132S4	5,5
AXH 50/12,5.2	100-65-200	50	12,5	66	2,3	112M4	4	132S4	5,5	132M4	7,5
AXH 50/20.2	100-65-250	50	20	56	2,3	132M4	7,5	160M4	11	160L4	15
AXH 75/12,5.2	125-100-200	75	12,5	55	2,3	132M4	7,5	160M4	11	160L4	15
AXH 75/20.2	125-100-250	75	20	45	2,3	160L4	15	180M4	18,5	180L4	22
AXH 125/8.2	150-125-160	125	8	61	2,5	132M4	7,5	160M4	11	160L4	15
AXH 125/12,5.2	150-125-200	125	12,5	51	2,5	160L4	15	180M4	18,5	180L4	22
AXH 200/20.2	150-125-250	125	20	48	2,7	180L4	22	200L4	30	225S4	37
AXH 200/32.2	150-125-315	200	32	64	2,7	225S4	37	250M4	55	280S4	75
AXH 200/50.2	150-125-400	200	50	56	2,8	250M4	55	280S4	75	315S4	110
AXH 200/8.2	200-150-160	200	8	53	2,8	160M4	11	160L4	15	180L4	22
AXH 200/12,5.2	200-150-200	200	12,5	57	2,8	180M4	18,5	180L4	22	200L4	30
AXH 200/20.2	200-150-250	200	20	45	3,2	200L4	30	225M4	45	250M4	55
AXH 400/32.2	200-150-315	400	32	68	3,5	280S4	75	280M4	90	315LA4	132
AXH 400/50.2	200-150-400	400	50	63	3,8	315S4	110	315LA4	160	315LB4	200

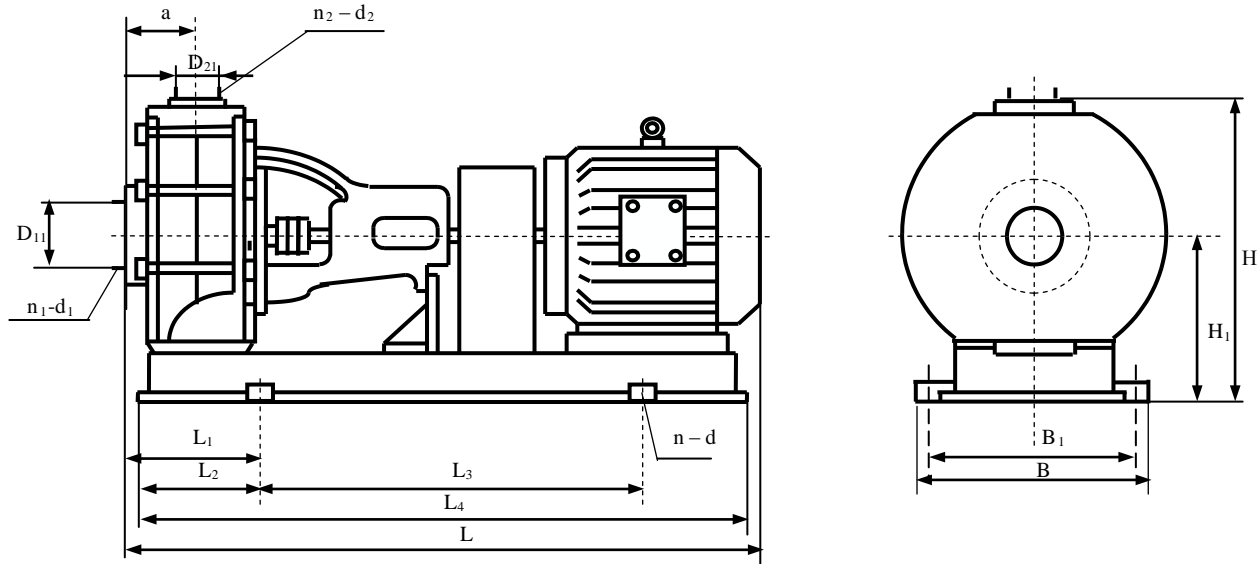
# Pump structure



### Specification of pump details

No.	Name of details	Q-ty
1	Insert	1
2	Ring	1
3	Stud	
4	Nut	
5	Washer	
6	Front pad	1
7	Scroll	1
8	Coupling bolt	
9	Stud	
10	Nut	
11	Washer	
12	Working wheel	1
13	Insert	1
14	Sealing ring	1
15	Back pad	1
16	Washer	
17	Nut	
18	Wall	1
19	Stud	
20	Nut	
21	Washer	
22	Nut	
23	Stud	
24	Casing of mechanical seal	1
25	Immovable ring of mechanical seal	1
26	Pad	1
27	Bolt	
28	Rotary part of mechanical seal	1
29	Protective collar	1
30	Bushing	1
31	Bolt	
32	Casing of undercarriage	1
33	Oil bath	1
34	Plug	1
35	Inspection glass (oil level)	1
36	Shaft	1
37	Bearing	2
38	Collar	2
39	Lid of oil bath	2
40	Lid bolt	
41	Bolt of rear support fastening	1
42	Washer	1
43	Rear support	1
44	Dowel	1

### Overall and connecting dimensions



Inlet-outlet-impeller, mm	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	B	B <sub>1</sub>	H <sub>1</sub>	H	n - d	
50-32-125	145	4-M16	110	4-M16	95	885	185	170	600	850	390	350	257	420	4-18,5	
50-32-160						905										
50-32-200	160	8-M16	125		100	985	205	190	660	950	450	400	300	495	4-24	
65-50-125						895	185	170	600	850	400	350	285	480	300	495
65-50-160					985	205	190	660	950	450	400					
65-40-200					1115	225	210	740	1070	490	440					
80-65-125					985	205	190	660	950	450	400					
80-65-160					1115	225	210	740	1070	490	440					
80-50-200					1160	225	210	740	1070	490	440					
100-80-160					210	8-M16	160	8-M16	130	1300	260	225	840	1200	540	490
100-65-200	180	1430	285	250			940			1310	610	550	425	705		
100-65-250									1470							
125-100-200		1655	1590													
125-100-250	1670															
150-125-160	280	8-M20	210	140	1670	300	290		1060	1620	660	600	360	685		
150-125-250															1695	
150-125-315				1805												
200-150-400	295	12-M20	240	8-M20	160	2050	370		360	1310	1970	830	750	525	875	

## Electrically driven pumps AXH Q/H.21

Pumps AXH Q/H.21 – are horizontal centrifugal pumps in steel casing with flow tube lined with polymers (fluoroplastic Φ-50, polypropylene, polyethylene, UHMWP). As seals single mechanical seals and mechanical seals with additional seal are used. The pumps are meant for pumping of aggressive fluids with solid particles up to 2 mm and concentration up to 15% (average). Lining thickness is 8 to 15 mm.

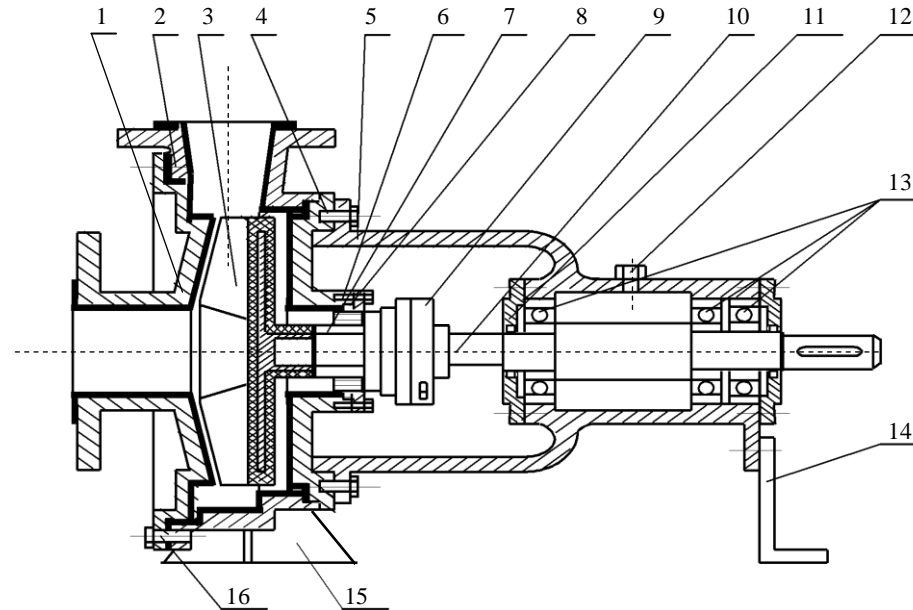
Range of flow rates is 5-400 m<sup>3</sup>/hour, range of heads is 5-125 m. Density of pumped fluid is up to 1830 kg/m<sup>3</sup>. Working temperature is from -40 to +160°C.

**By request we can manufacture pumps with flow rate up to 2000 m<sup>3</sup>/hour at head of 20 – 60 m.**

### Specification

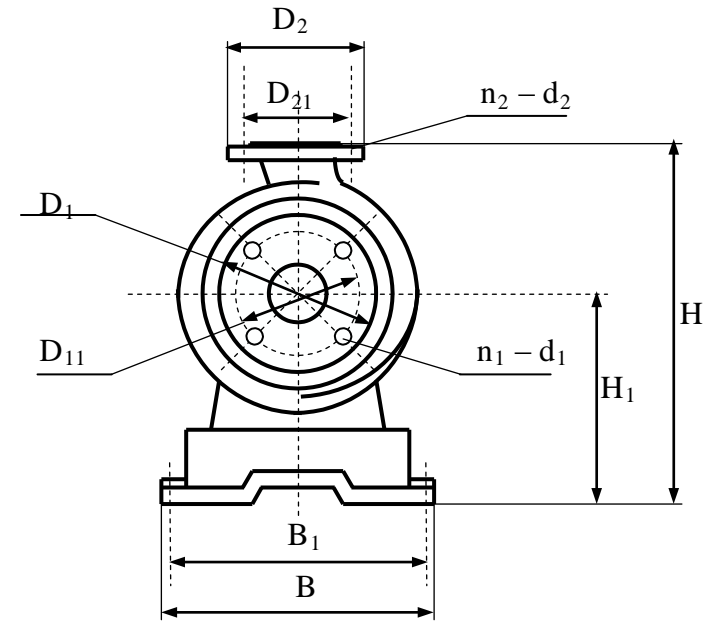
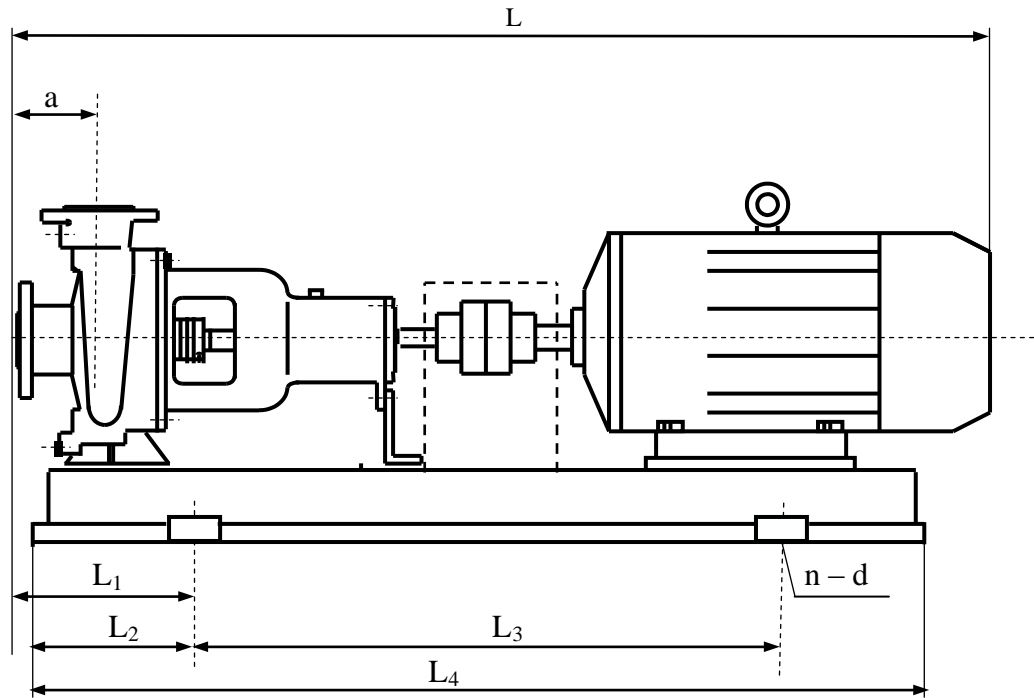
Model	Inlet-outlet-impeller, mm	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	Efficiency η %	Npsh M	Motors					
						Liquid density (ρ), kg/m <sup>3</sup>					
						1000		1350		1830	
						Type	N, kW	Type	N, kW	Type	N, kW
2900 r/min											
AXH 5/20.21	25-20-125	5	20	32	2	90S2	1,5	90L2	2,2	90L2	2,2
AXH 5/32.21	25-20-160	5	32	30	2	90L2	2,2	100L2	3	112M2	4
AXH 12,5/20.21	50-32-125	12,5	20	52	2	90L2	2,2	100L2	3	112M2	4
AXH 12,5/32.21	50-32-160	12,5	32	48	2	112M2	3	132SA2	4	132SB2	5,5
AXH 12,5/50.21	50-32-200	12,5	50	44	2	132SB2	7,5	160MA2	11	160MA2	11
AXH 12,5/80.21	50-32-250	12,5	80	38	2	160MA2	11	160MB2	15	160L2	18,5
AXH 25/20.21	65-50-125	25	20	59	2	112M2	4	132SA2	5,5	132SB2	7,5
AXH 25/32.21	65-50-160	25	32	60	2	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 25/50.21	65-40-200	25	50	45	2	160MA2	11	160MB2	15	160L2	18,5
AXH 30/80.21	65-40-250	30	80	41	2	180M2	22	200LA2	30	200LB2	37
AXH 30/125.21	65-40-315	30	125	30	2,4	225M2	45	250M2	55	280S2	75
AXH 50/20.21	80-65-125	50	20	60	2,4	132SB2	7,5	160MA2	11	160MB2	15
AXH 50/32.21	80-65-160	50	32	65	2,4	160MA2	11	160MB2	15	160L2	18,5
AXH 50/50.21	80-50-200	50	50	63	2,4	160MB2	15	160L2	18,5	200LA2	30
AXH 50/80.21	80-50-250	50	80	61	2,4	200LB2	37	225M2	45	250M2	55
AXH 50/125.21	80-50-315	50	125	50	2,4	225M2	45	250M2	55	280S2	75
AXH 100/32.21	100-80-160	100	32	68	3,2	160L2	18,5	180M2	22	200LA2	30
AXH 100/50.21	100-65-200	100	50	66	3,2	200LB2	37	225M2	45	250M2	55
AXH 100/80.21	100-65-250	100	80	56	3,2	280S2	75	280M2	90	280M2	90
AXH 100/125.21	100-65-315	100	125	52	3,2	280M2	90	315S2	110	315LA2	160
AXH 150/50.21	125-100-200	150	50	55	4,5	250M2	55	280S2	75	280M2	90
AXH 150/80.21	125-100-250	150	80	45	4,5	280M2	90	315M2	132	315LA2	160
AXH 250/20.21	150-125-125	250	20	60	4,8	200LB2	37	225M2	45	250M2	55
AXH 250/32.21	150-125-160	250	32	61	4,8	250M2	55	280S2	75	280M2	90
AXH 250/50.21	150-125-200	250	50	48	5,0	315S2	110	315M2	132	280M2	90
1450 r/min											
AXH 6,3/5.21	50-32-125	6,3	5	52	2	90L4	1,5	90L4	1,5	90L4	1,5
AXH 6,3/8.21	50-32-160	6,3	8	48	2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 6,3/12,5.21	50-32-200	6,3	12,5	44	2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 6,3/20.21	50-32-250	6,3	20	22	2	100LB4	3	112M4	4	132S4	5,5
AXH 12,5/5.21	65-50-125	12,5	5	59	2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 12,5/8.21	65-50-160	12,5	8	60	2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 12,5/12,5.21	65-40-200	12,5	12,5	46	2	100LA4	2,2	100LB4	3	112M4	4
AXH 15/20.21	65-40-250	15	20	45	2	100LB4	3	112M4	4	132S4	5,5
AXH 15/32.21	65-40-315	15	32	27	2,5	132M4	7,5	160M4	11	160L4	15
AXH 25/5.21	80-65-125	25	5	60	2,5	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 25/8.21	80-65-160	25	8	65	2,3	100LB4	3	112M4	4	132S4	5,5
AXH 25/12,5.21	80-50-200	25	12,5	63	2,3	100LB4	3	112M4	4	132S4	5,5
AXH 25/20.21	80-50-250	25	20	58	2,3	112M4	4	132S4	5,5	132M4	7,5
AXH 25/32.21	80-50-315	25	32	48	2,3	132M4	7,5	160M4	11	160L4	15
AXH 50/8.21	100-80-160	50	8	68	2,5	100LA4	2,2	100LB4	3	112M4	4
AXH 50/12,5.21	100-65-200	50	12,5	66	2,3	112M4	4	132S4	5,5	132M4	7,5
AXH 50/20.21	100-65-250	50	20	56	2,3	132M4	7,5	160M4	11	160L4	15
AXH 50/32.21	100-65-315	50	32	51	2,3	160L4	15	180M4	18,5	180L4	22
AXH 75/12,5.21	125-100-200	75	12,5	55	2,8	132M4	7,5	160M4	11	160L4	15
AXH 75/20.21	125-100-250	75	20	45	2,3	160L4	15	180M4	18,5	180L4	22
AXH 100/32.21	125-100-315	100	32	64	2,5	180L4	22	200L4	30	225S4	37
AXH 100/50.21	125-100-400	100	50	57	2,5	225S4	37	225M4	45	280S4	75
AXH 125/5.21	150-125-125	125	5	58	2,7	132S4	5,5	132M4	7,5	160M4	11
AXH 125/8.21	150-125-160	125	8	51	2,7	132M4	7,5	160M4	11	160L4	15
AXH 125/12,5.21	150-125-200	125	12,5	48	2,8	160L4	15	180L4	22	200L4	30
AXH 125/20.21	150-125-250	125	20	47	2,8	180L4	22	200L4	30	225S4	37
AXH 200/32.21	150-125-315	200	32	64	2,8	225M4	45	250M4	55	280S4	75
AXH 200/50.21	150-125-400	200	50	56	2,8	280S4	75	280M4	90	315S4	110
AXH 300/20.21	200-150-250	300	20	67	3,2	225S4	37	225M4	45	280S4	75
AXH 400/32.21	200-150-315	400	32	64	3,5	280S4	75	315S4	110	315LA4	132
AXH 400/50.21	200-150-400	400	50	61	3,8		132	315LA4	160	315LB4	200

## Pump structure



No.	Name of details	Q-ty
1	Casing lid	1
2	Pump casing	1
3	Working wheel	4
4	Bolt	
5	Undercarriage casing	1
6	Bolt	
7	Protective collar	1
8	Immovable ring of mechanical seal	6
9	Rotary part of mechanical seal	4
10	Shaft	4
11	Lid of bearing assembly	4
12	Plug	1
13	Bearings	
14	Rear support	1
15	Front support	1
16	Bolt	

### Overall and connecting dimensions





Overall and connecting dimensions

Model	Inlet-outlet-impeller, mm	DN <sub>1</sub>	D <sub>11</sub>	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	D <sub>2</sub>	n <sub>2</sub> -d <sub>2</sub>	1450 r/min										n-d	N, кВт
										a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>2</sub>	B <sub>3</sub>	H <sub>1</sub>	H		
AXH 6,3/5.21	50-32-125	50	125	165	4-18	32	110	145	4-18	112	142	130	640	900	900	350	390	270	441	4-20	1,5
AXH 6,3/8.21	50-32-160										118		685	945	940	414	454	303	505		2,2
AXH 6,3/12,5.21	50-32-200	118	198	190		640	1020	1017		1042	440	490	317	557	1,1						
AXH 6,3/20.21	50-32-250														660	1040	1082	339	589		2,2
AXH 12,5/5.21	65-50-125					131	161	170		640	1020	900	350	390	270	441	1,5				
AXH 12,5/8.21	65-50-160	182	645	985						980	442	492	310	525	1,5						
AXH 12,5/12,5.21	65-40-200	65	145	185		50	125	165		146	216	720	1090	1110	338	588	2,2				
AXH 15/20.21	65-40-250																128	198	190		790
AXH 15/32.21	65-40-315					143	213	190		910	1290	1380	395	685	7,5						
AXH 25/5.21	80-65-125	131	161	170						640	1020	900			350	390	270	441	1,5		
AXH 25/8.21	80-65-160				134	185	190	645	985	1040	442	492	310	525	4-23	4					
AXH 25/12,5.21	80-50-200	80	160	200				65	145	185	146	216	700	1080	1135	470	530	332	582	4-20	4
AXH 25/20.21	80-50-250				175	315	270													870	1410
AXH 25/32.21	80-50-315	145	240	210				580	1000	1490	430	480	329	564	5,5						
AXH 50/8.21	100-80-160				158	223	190			815					1195	1260	410	460	330	610	4
AXH 50/12,5.21	100-65-200	100	180	215				80	160		200	177	260	210							900
AXH 50/20.21	100-65-250				180	240	210			580					1000	1065	430	480	329	564	
AXH 50/32.21	100-65-315	177	260	210				900	1320		1435	590	660	420							755
AXH 75/12,5.21	125-100-200				125	210	250			100					210	250	180	245	230	900	
AXH 75/20.21	125-100-250	184	286	230				985	1405		1570	510	580	400							700
AXH 100/32.21	125-100-315				150	237	270			940					1400	1566	560	630	440	800	
AXH 100/50.21	125-100-400	145	240	210				900	1320		1435	430	480	335							585
AXH 125/8.21	150-125-160				180	245	210			980					1400	1520	430	480	335	620	
AXH 125/12,5.21	150-125-200	184	286	230				960	1420		1570	560	630	440							800
AXH 125/32.21	150-125-315				150	240	270			1240					1780	1820	704	774	530	975	
AXH 200/50.21	150-125-400	200	325	365				150	295		340	8-22	145	217							230
AXH 200/8.21	200-150-250				165	337	330			1260					1920	2025	720	790	530	975	
AXH 400/50.21	200-150-400	165	337	330				1260	1920		2025	720	790	530							975

Model	Inlet-outlet-impeller, mm	DN <sub>1</sub>	D <sub>11</sub>	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	D <sub>2</sub>	n <sub>2</sub> -d <sub>2</sub>	2900 r/min										n-d	N, кВт					
										a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>2</sub>	B <sub>3</sub>	H <sub>1</sub>	H							
AXH 5/20.21	25-20-125	28	100	140	4-18	22	85	115	4-18	104	134	130	620	880	896	350	390	270	441	4-20	2,2					
AXH 5/32.21	25-20-160										110		640	900	940			303	505		3					
AXH 12,5/20.21	50-32-125										142		685	945	960			270	441		3					
AXH 12,5/32.21	50-32-160	50	125	165		32	110	145		112	118	198	190	740	1120	1168	440	490	317	557	4-20	4				
AXH 12,5/50.21	50-32-200													414	454	303			505	7,5						
AXH 12,5/80.21	50-32-250													860	1240	1315			339	589		11				
AXH 25/20.21	65-50-125	65	145	185		50	125	165		131	161	170	170	685	1025	1030	350	390	270	441	4-23	5,5				
AXH 25/32.21	65-50-160										182					1195			442	492		310	525	7,5		
AXH25/50.21	65-40-200										146					276			250	780		1280	1340	338	588	11
AXH 30/80.21	65-40-250	65	145	185		36	110	150		128	258	250	780	1280	1395	470	530	339	589	4-20	22					
AXH 30/125.21	65-40-315										143				213			190	986		1410	1532	395	685	45	
AXH 50/20.21	80-65-125										80				160			200	65		145	185	131	161	170	170
AXH 50/32.21	80-65-160	134	205	190	768	1148	1255	442	492	310		525	11													
AXH 50/50.21	80-50-200	146	276	250	780	1280	1350	470	530	338		588	22													
AXH 50/80.21	80-50-250	80	160	200	8-18	50	180	175	275	230	230	980	1440	1586	530	610	380	663	4-20	18,5						
AXH 50/125.21	80-50-315								1002			1462	1635	560	640	395	685	45								
AXH 100/32.21	100-80-160								145			240	210	780	1200	1280	1335	430		480	329	564	15			
AXH 100/50.21	100-65-200	100	180	215	65	160	200	158	263	230	230	955	1415	1605	510	560	330	610	4-28	18,5						
AXH 100/80.21	100-65-250								429			380	820	1580	1730	600	680	420		755	45					
AXH 100/125.21	100-65-315								177			280	230	1210	1670	1805	1853	630		700	415	750	55			
AXH 150/50.21	125-100-200	125	210	250	8-23	100	210	250	180	265	230	1120	1580	1700	570	620	330	610	4-28	90						
AXH 150/80.21	125-100-250		236	389						300		1125	1725	1885	1935	650	720	400		700	75					
AXH 150/80.21	125-100-315		184	286						230		1150	1610	1812	640	710	445	805		90						
AXH 150/125.21	125-100-400	150	210	250	8-18	80	180	220	150	150	230	1150	1610	1812	640	710	445	805	4-28	75						
AXH 250/32.21	150-125-160		145	240						210										1160	1580	1730	580	650	335	585

## Electrically driven pumps AXH Q/H.4

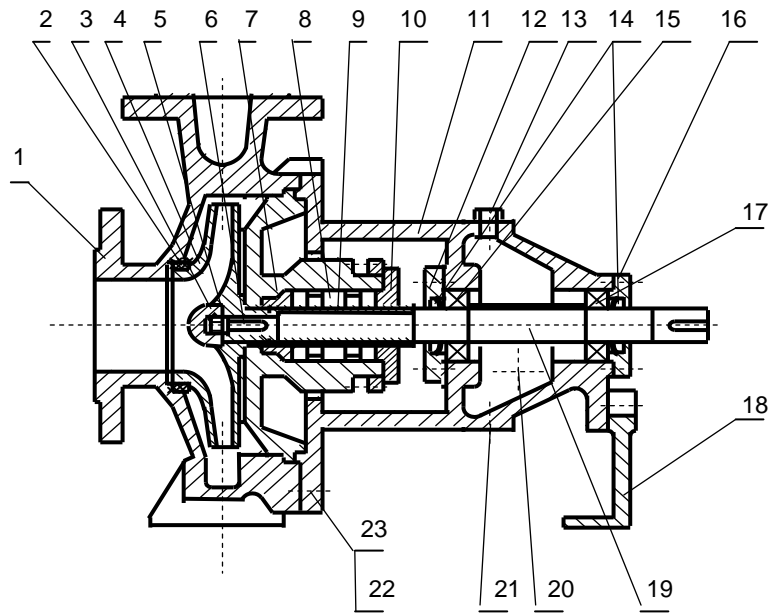
Electrically driven pumps AXH Q/H.4 have flow tube made of stainless steels and alloys of type 304, 316L. The pumps are meant for pumping of neutral and chemically active liquids with density no more than 1850 kg/m<sup>3</sup> and kinematic viscosity up to 30 cSt with volume content of solid particles up to 10%, particles should not be greater than 2 mm. The pumps are equipped with double mechanical seals and double gland seals.

Temperature range of the pumped fluid: -45 ... +180°C.

### Specification

Model	Inlet-outlet-impeller, mm	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	Efficiency η %	n <sub>psH</sub> M	Motors					
						Liquid density (ρ), kg/m <sup>3</sup>					
						1000		1350		1830	
						Type	N, kW	Type	N, kW	Type	N, kW
2900 r/min											
AXH 12,5/20.4	50-32-125	12,5	20	56	1.8	90L2	2,2	100L2	3	112M2	4
AXH 12,5/32.4	50-32-160	12,5	32	48	1.8	112M2	4	132SB2	7,5	132SB2	7,5
AXH 12,5/50.4	50-32-200	12,5	50	39	1.8	132SB2	7,5	160MA2	11	160MA2	11
AXH 12,5/80.4	50-32-250	12,5	80	30	1.8	160MB2	15	160L2	18,5	180M2	22
AXH 25/20.4	65-50-125	25	20	65	2	100L2	3	112M2	4	132SA2	5,5
AXH 25/32.4	65-50-160	25	32	61	2	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 25/50.4	65-40-200	25	50	53	2	160MA2	11	160MB2	15	160L2	18,5
AXH 25/80.4	65-40-250	25	80	43	2	180M2	22	200LA2	30	200LB2	37
AXH 25/125.4	65-40-315	25	125	34	2	200LB2	37	225M2	45	280S2	75
AXH 50/20.4	80-65-125	50	20	72	2,4	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 50/32.4	80-65-160	50	32	69	2,4	160MA2	11	160MB2	15	160L2	18,5
AXH 50/50.4	80-50-200	50	50	65	2,4	160MB2	15	180M2	22	200LA2	30
AXH 50/80.4	80-50-250	50	80	57	2,4	200LA2	30	200LB2	37	225M2	45
AXH 50/125.4	80-50-315	50	125	47	2,4	250M2	55	280S2	75	280M2	90
AXH 100/20.4	100-80-125	100	20	77	3,2	160MA2	11	160MB2	15	160L2	18,5
AXH 100/32.4	100-80-160	100	32	75	3,2	160L2	18,5	180M2	22	200LA2	30
AXH 100/50.4	100-65-200	100	50	72	3,2	200LA2	30	200LB2	37	225M2	45
AXH 100/80.4	100-65-250	100	80	68	3,2	225M2	45	250M2	55	280S2	75
AXH 100/125.4	100-65-315	100	125	60	3,2	280S2	75	315S2	110	315M2	132
AXH 200/50.4	125-100-200	200	50	77	4,5	225M2	45	280S2	75	280M2	90
AXH 200/80.4	125-100-250	200	80	74	4,5	280M2	90	315S2	110	315LA2	160
AXH 200/125.4	125-100-315	200	125	70	4,5	315M2	132	355SA2	185	335M2	250
1450 r/min											
AXH 6,3/5.4	50-32-125	6,3	5	51	1	80A4	0,55	80A4	0,55	80B4	0,75
AXH 6,3/8.4	50-32-160	6,3	8	43	1	80B4	0,75	90S4	1,1	90S4	1,1
AXH 6,3/12,5.4	50-32-200	6,3	12,5	34	1	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 6,3/20.4	50-32-250	6,3	20	26	1	100LA4	2,2	100LB4	3	112M4	4
AXH 12,5/5.4	65-50-125	12,5	5	60	1,2	80B4	0,75	90S4	1,1	90S4	1,1
AXH 12,5/8.4	65-50-160	12,5	8	56	1,2	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 12,5/12,5.4	65-40-200	12,5	12,5	48	1,2	90L4	1,5	100LA4	2,2	100LB4	3
AXH 12,5/20.4	65-40-250	12,5	20	39	1,2	100LB4	3	112M4	4	132S4	5,5
AXH 12,5/32.4	65-40-315	12,5	32	30	1,2	132S4	5,5	132M4	7,5	160M4	11
AXH 25/5.4	80-65-125	25	5	68	1,4	90S4	1,1	90L4	1,5	100LA4	2,2
AXH 25/8.4	80-65-160	25	8	65	1,4	90L4	1,5	100LA4	2,2	100LB4	3
AXH 25/12,5.4	80-50-200	25	12,5	61	1,4	100LB4	3	100LB4	3	112M4	4
AXH 25/20.4	80-50-250	25	20	53	1,4	112M4	4	132S4	5,5	132M4	7,5
AXH 25/32.4	80-50-315	25	32	43	1,4	132M4	7,5	160M4	11	160L4	15
AXH 50/5.4	100-80-125	50	5	74	1,8	90L4	1,5	100LA4	2,2	100LB4	3
AXH 50/8.4	100-80-160	50	8	72	1,8	100LB4	3	112M4	4	132S4	5,5
AXH 50/12,5.4	100-65-200	50	12,5	69	1,8	112M4	4	132S4	5,5	132M4	7,5
AXH 50/20.4	100-65-250	50	20	65	1,8	132M4	7,5	132S4	11	160L4	15
AXH 50/32.4	100-65-315	50	32	57	1,8	132S4	11	160L4	15	180M4	18,5
AXH 100/12,5.4	125-100-200	100	12,5	75	2,2	132M4	7,5	160M4	11	160L4	15
AXH 100/20.4	125-100-250	100	20	72	2,2	132S4	11	160L4	15	180L4	22
AXH 100/32.4	125-100-315	100	32	68	2,2	180M4	18,5	200L4	30	225S4	37
AXH 100/50.4	125-100-400	100	50	60	2,2	200L4	30	225M4	45	250M4	55
AXH 200/20.4	150-125-250	200	20	77	3,2	180L4	22	200L4	30	225S4	37
AXH 200/32.4	150-125-315	200	32	74	3,2	225S4	37	225M4	45	250M4	55
AXH 200/50.4	150-125-400	200	50	77	3,2	250M4	55	280S4	75	315S4	110
AXH 400/20.4	200-150-250	400	20	81	4,5	225S4	37	250M4	55	280S4	75
AXH 400/32.4	200-150-315	400	32	79	4,5	280S4	75	280M4	90	315S4	110
AXH 400/50.4	200-150-400	400	50	76	4,5	315S4	110	315M4	132	315LA4	160

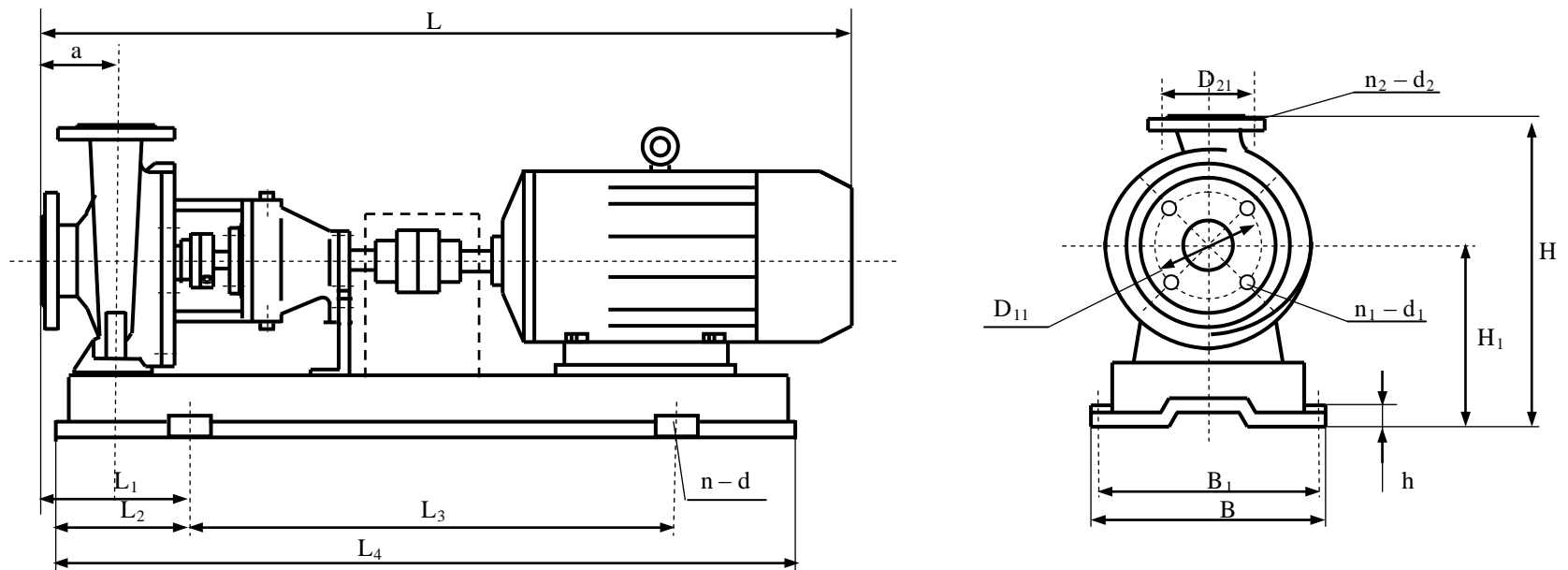
## Pump structure



### Specification of pump details

No.	Name	Q-ty
1	Pump casing	1
2	Supporting sealing ring	1
3	Nut	1
4	Working wheel (impeller)	1
5	Gasket	1
6	Dowel	1
7	Wall	1
8	Double mechanical seal	1
9	Bushing	1
10	Lid of mechanical seal casing	1
11	Undercarriage casing	1
12	Front bearing lid	1
13	Filling hole plug	1
14	Collar	2
15	Front bearing	1
16	Rear bearing lid	1
17	Rear bearing	1
18	Rear support	1
19	Shaft	1
20	Inspection hole	1
21	Discharge hole	1
22	Stud	
23	Washer	

## Overall and connecting dimensions



Model	ρ, kg/m <sup>3</sup>	DN <sub>1</sub>	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>1</sub>	B	h <sub>1</sub>	H <sub>1</sub>	H	n-d																									
		1450 r/min																																										
AXH 6,3/5.4	1000	50	125	4-17,5		100	4-17,5	80	150	130	540	800	850	320	360	25	237	377	4-18,5																									
	1350																																											
	1840																																											
AXH 6,3/8.4	1000																			80	150	130	540	800	850	320	360	25	237	377														
	1350																																											
	1840																																											
AXH 6,3/12,5.4	1000							80	150	130	540	800	850	320	360	25	237	377																										
	1350																																											
	1840																																											
AXH 6,3/20.4	1000																			100	195	170	660	1000	1080	400	450	30	305	530														
	1350																																											
	1840																																											
AXH 12,5/5.4	1000	65	145	4-17,5	50	125	4-17,5	80	150	130	540	800	850	320	360	25	237	377	4-18,5																									
	1350																																											
	1840																																											
AXH 12,5/8.4	1000																			80	150	130	540	800	850	320	360	25	237	377														
	1350																																											
	1840																																											
AXH 12,5/12,5.4	1000							80	150	130	540	800	850	320	360	25	237	377																										
	1350																																											
	1840																																											
AXH 12,5/20.4	1000																			100	190	150	600	900	940	350	390	30	285	470														
	1350																																											
	1840																																											
AXH 12,5/32.4	1000	100	195	170	660	1000	1080	400	450	30	305	530																																
	1350																																											
	1840																																											
AXH 12,5/5.4	1000												125	240	190	740	1120	1200	440	490	30	340	590																					
	1350																																											
	1840																																											
AXH 25/5.4	1000	80	160	8-17,5	65	145	4-17,5	100	170	130	540	800												870	320	360	25	257	417	4-18,5														
	1350																																											
	1840																																											
AXH 25/8.4	1000												80	160	8-17,5	65	145	4-17,5	100	170	130	540	800								895	320	360	25	257	417	4-18,5							
	1350																																											
	1840																																											
AXH 25/12,5.4	1000							80	160	8-17,5	65	145	4-17,5	100	190	150	600	900	965	350	390	30	285	465	4-18,5																			
	1350																																											
	1840																																											
AXH 25/20.4	1000																									80	160	8-17,5	65		145	4-17,5	100	220	170	660	1000	1125	400	450	30	305	530	4-24
	1350																																											
	1840																																											
AXH 25/32.4	1000	80	160	8-17,5	65	145	4-17,5	125	240	190	740	1120	1240	440	490	30	320	545	4-24																									
	1350																																											
	1840																																											
AXH 50/5.4	1000																			100	180	8-17,5	80	160	8-17,5	100	255	205	840	1250	1325	490	540	30	365	645	4-24							
	1350																																											
	1840																																											
AXH 50/5.4	1000	100	180	8-17,5	80	160	8-17,5	100	175	150	600	900	925	350	390	30	285	465	4-18,5																									
	1350																																											
	1840																																											

Model	ρ, kg/m <sup>3</sup>	DN <sub>1</sub>	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>1</sub>	B	h <sub>1</sub>	H <sub>1</sub>	H	n-d												
		1450 r/min																													
AXH 50/8.4	1000	100	180	8-17,5	80	160	8-17,5	100	195	170	660	1000	1080	400	450	30	285	485													
	1350												1145																		
	1840												1215																		
AXH 50/12,5.4	1000												1215							190	740	1120	1145	440	490						
	1350												1215																		
	1840												1240																		
AXH 50/20.4	1000				1225	240	205	840	1250	1240	490	540																			
	1350				1280																										
	1840				1365																										
AXH 50/32.4	1000				1395	265	230	940	1400	1395	550	610																			
	1350				1440																										
	1840				1465																										
AXH 100/12,5.4	1000				125	210	8-17,5	100	180	8-17,5	125	225	190	740	1120		1240	440		490	30	340	620	4-24							
	1350																1280														
	1840																1365														
AXH 100/20.4	1000																1410								280	230	940	1400	1410	550	610
	1350																1455														
	1840																1480														
AXH 100/32.4	1000	1455	300	270				1060	1600	1455	600	660																			
	1350	1520																													
	1840	1585																													
AXH 100/50.4	1000	1585	330	300				1200	1800	1630	670	730																			
	1350	1740																													
	1840	1740																													
AXH 200/20.4	1000	150	240	8-22				125	210	8-17,5	140	280	230	940	1400	1480	550	610	40	430		785	4-28								
	1350															1520															
	1840															1585															
AXH 200/32.4	1000															1630									300	270	1060	1600	1630	600	660
	1350															1740															
	1840															1740															
AXH 200/50.4	1000				1655	330	300	1200	1800	1655	670	730																			
	1350				1830																										
	1840				1960																										
AXH 400/20.4	1000				200	295	12-22	150	240	8-22	160	320	270	1060	1600	1690	600	660		50	480	855		6-28							
	1350															1715															
	1840															1800															
AXH 400/32.4	1000															1940									350	300	1200	1800	1940	670	730
	1350															2010															
	1840																														
AXH 400/50.4	1000																														
	1350																														
	1840																														
AXH 700/50.4	1000	250	350					200	295		270	400	300	920	2440	2430	950	1020	50		620	1200	6-28								
	1350															2570															
	1840															2680															

Model	ρ, kg/m <sup>3</sup>	DN <sub>1</sub>	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>1</sub>	B	h <sub>1</sub>	H <sub>1</sub>	H	n-d																							
		2900 r/min																																								
AXH 12,5/20.4 (50-32-125)	1000	50	125	4-17,5	32	100	4-17,5	80	170	150	600	900	920	350	390	30	237	377	4-18,5																							
	1350												945																													
	1840												965																													
AXH 12,5/32.4 (50-32-160)	1000												1040							400	450																					
	1350												210							190	740	1120	1120	440	490																	
	1840												210							190	740	1120	1120	440	490																	
AXH 12,5/50.4 (50-32-200)	1000								65	145	4-17,5	50	125	4-17,5	80		190	170		660	1000	1040	400	450	30	257	417	4-24														
	1350																					1165																				
	1840																					1185																				
AXH 12,5/80.4 (50-32-250)	1000																					230							190	740	1120	1185	440	490								
	1350																					205							840	1250	1300	490	540									
	1840																					255							1475													
AXH 25/20.4 (65-50-125)	1000	80	160	8-17,5	40	110	4-17,5	100				230	190		740	1120	1300	490	540	40	340	565	4-28																			
	1350																1500																									
	1840																1540																									
AXH 25/32.4 (65-50-160)	1000																280							230	940	1400	1500		550	610												
	1350																320							270	1060	1600	1655		600	660												
	1840																350							300	1200	1800	1850		670	730												
AXH 25/50.4 (65-40-200)	1000				100	180		8-17,5	50	125	4-17,5	125	255	205	840	1250	1395	490	540		30	340		565	4-24																	
	1350																1500																									
	1840																1540																									
AXH 25/80.4 (65-40-250)	1000																280									230	940	1400	1540	550	610											
	1350																320									270	1060	1600	1655	600	660											
	1840																350									300	1200	1800	1850	670	730											
AXH 25/125.4 (65-40-315)	1000	100	180	8-17,5			50		125	4-17,5		125	280	230	940	1400	1540	550	610	40		405	685	4-28																		
	1350																1540																									
	1840																1540																									
AXH 50/20.4 (80-65-125)	1000																100									180	8-17,5	80	160	8-17,5	100	210	170	660	1000	1060	400	450	30	257	417	4-24
	1350																																			1185						
	1840																																			1230						
AXH 50/32.4 (80-65-160)	1000				230	190	740	1120	1255		440	490																														
	1350				205	840	1250	1395	490		540																															
	1840				280	230	940	1400	1540		550	610																														
AXH 50/50.4 (80-50-200)	1000				100	180	8-17,5	80	160		8-17,5	100	210	170	660	1000		1060	400		450	30	257		417			4-24														
	1350																	1185																								
	1840																	1230																								
AXH 50/80.4 (80-50-250)	1000	230	190	740						1120								1255		440				490																		
	1350	205	840	1250						1395								490		540																						
	1840	280	230	940						1400								1540		550				610																		
AXH 50/125.4 (80-50-315)	1000	100	180	8-17,5				80	160	8-17,5		100	210	170	660	1000	1060	400	450	30	257		417	4-24																		
	1350																1185																									
	1840																1230																									
AXH 100/20.4 (100-80-125)	1000																100								180	8-17,5	80		160	8-17,5	100	210	170	660	1000	1060	400	450	30	257	417	4-24
	1350																																			1185						
	1840																																			1230						



Model	$\rho$ , kg/m <sup>3</sup>	DN <sub>1</sub>	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B <sub>1</sub>	B	h <sub>1</sub>	H <sub>1</sub>	H	n-d															
		2900 r/min																																
AXH 100/32.4 (100-80-160)	1000	100	180	8-17,5	80	160	8-17,5	100	230	205	840	1250	1300	490	540	30	320	520	4-24															
	1350								255	230	940	1400	1345	550	610		340	540																
	1840								230	205	840	1250	1410	490	540		360	585																
AXH 100/50.4 (100-65-200)	1000								255	230	940	1400	1515	550	610		380	630																
	1350								265	270	1060	1600	1580																					
	1840								305	270	1060	1600	1695							600	660	400	650											
AXH 100/80.4 (100-65-250)	1000				125	210			8-17,5	65	185	8-17,5	125	265	230	940	1400	1835	40	730	425	705	4-28											
	1350													335	300	1200	1800	1845						670	730	380	660							
	1840													335	300	1200	1800	1955										400	680					
AXH 100/125.4 (100-65-315)	1000													265	230	940	1400	1580												550	610	425	705	
	1350													270	270	1060	1600	1695						600	660									
	1840													335	300	1200	1800	1835						670	730	425	705							
AXH 200/50.4 (125-100-200)	1000	140	210	8-17,5			100	180		8-17,5	140			350	300	1200	1800	1850	670	730	425	705	4-28											
	1350													350	300	1200	1800	1860																
	1840																																	
AXH 200/80.4 (125-100-250)	1000																																	
	1350																																	
	1840																																	

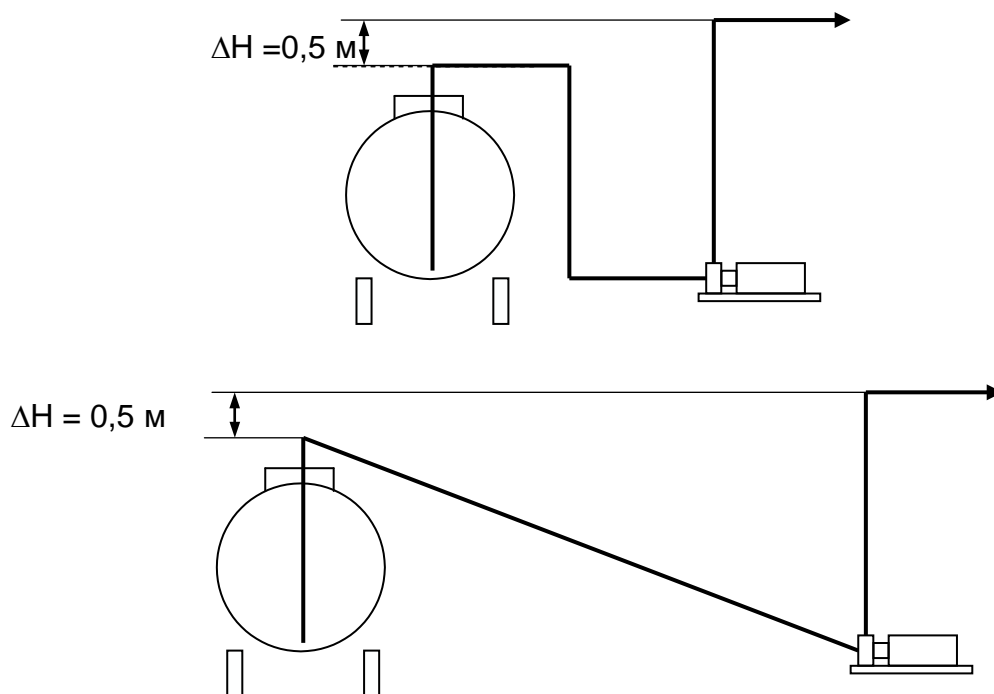
## Self-priming pumps

To ensure normal operation of self-priming pumps it is necessary to observe the following conditions (especially for schemes for pumping of fluids from reservoirs with top loading):

1. Suction tube should have diameter equal to diameter of inlet fitting of pumps AXH Q/H.5 or AXH Q/H.6.

2. Total permissible length of suction tube should not exceed  $250 DN_1$  ( $DN_{BC}$ ); the suction tube should not have more than 4 turns.

3. If suction tube is located above the pump axis (as a rule this happens during pumping from railway or truck tanks with top loading) than turn of vertical pressure line should be higher than maximum point of suction tube for  $\Delta H = 0,5-1$  m (see fig.)



4. If density of the fluid differs from water density ( $\rho = 1000 \text{ kg/m}^3$ ), than permitted length of suction tube should be divided into ratio of pumped fluid density and water density.

5. **Before the first launch the pump should be filled with fluid according to level «П.3.».**

6. During start-up of the pump

- If the pump is equipped with double mechanical seal it is necessary to supply make-up fluid to the seal
- If the pump is equipped with single mechanical seal during the first launch it is necessary to organize cooling of the mechanical seal with water (for example, from hose). If length of suction tube is less than  $100 DN_1$  ( $DN_{BC}$ ) cooling of single mechanical seal is not obligatory.

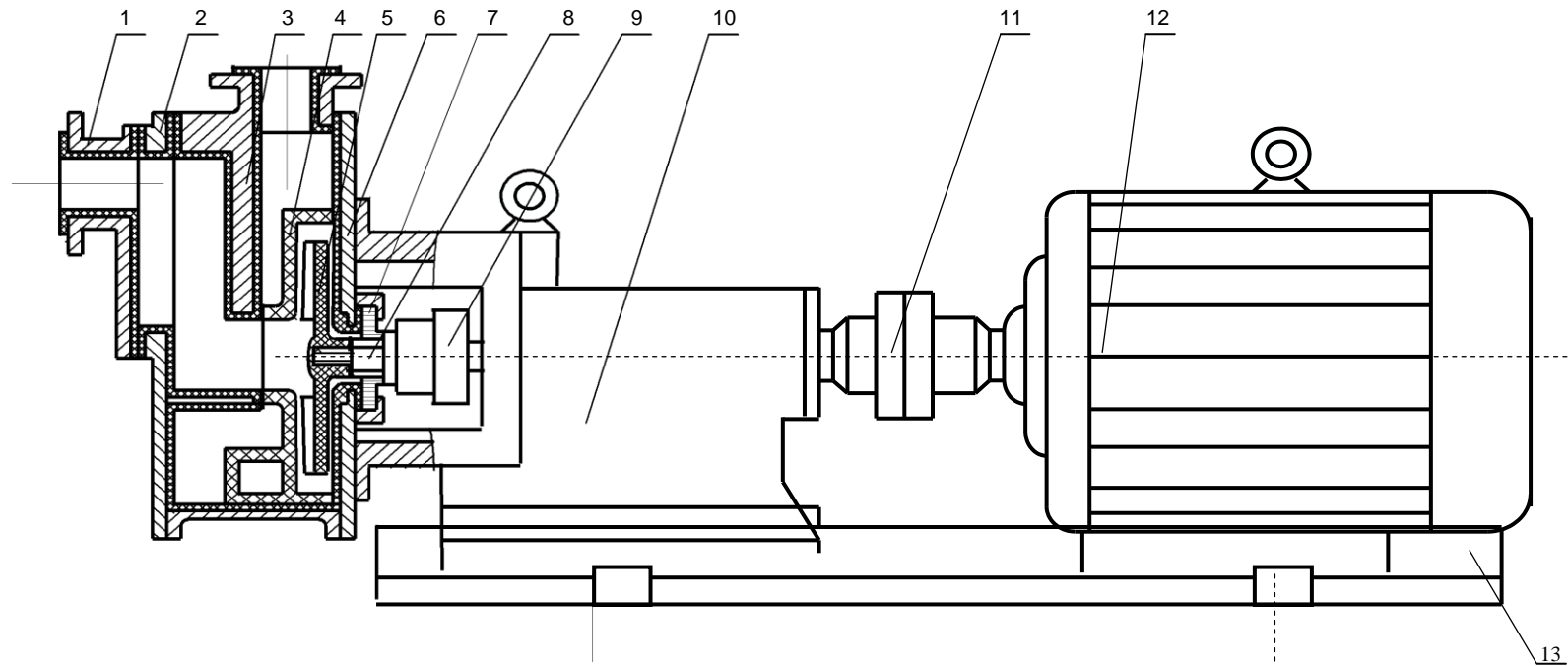
## Electrically driven pumps AXH Q/H.5

Self-priming pumps of type AXH Q/H.5 have flow tube lined with polymers (fluoroplastic  $\Phi$ -50, polypropylene, polyethylene of ultra-high molecular weight (UHMWP), equipped with single mechanical seals and mechanical seals with additional seal. The pumps are meant for pumping of aggressive fluids within temperature range (for fluoroplastic) from  $-40^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$ .

### Specification

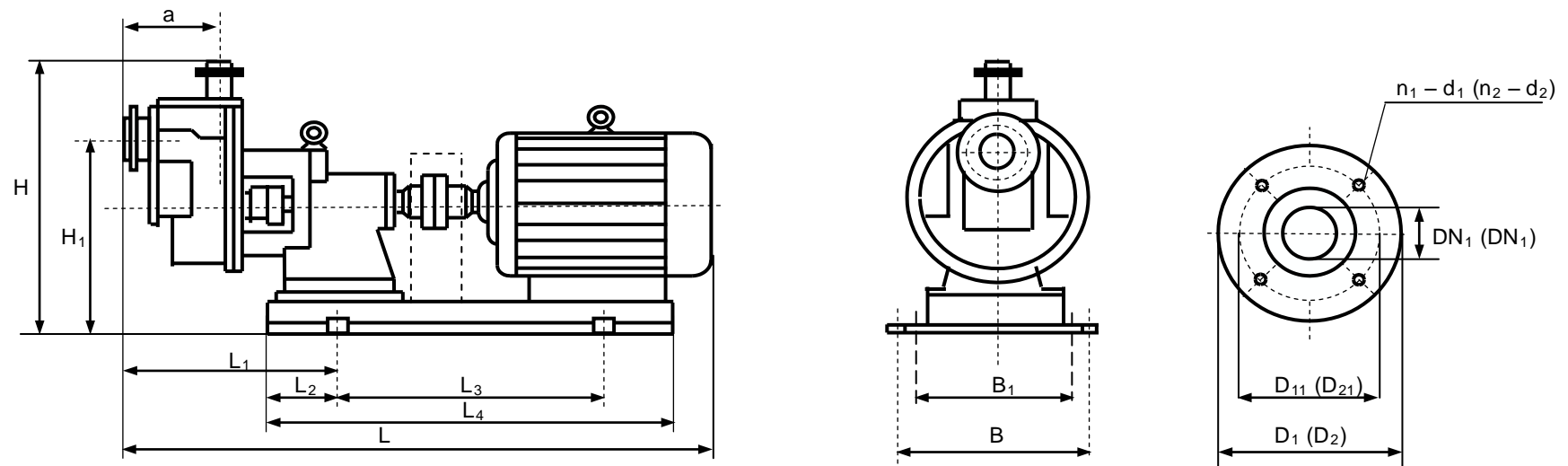
Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	Efficiency $\eta$ %	Npsh, M	Build-up time, min	Rate speed, r/min	N, kW							
							Liquid density ( $\rho$ ), kg/m <sup>3</sup>							
							1000		1350		1850			
							Type	N, kW	Type	N, kW	Type	N, kW		
AXH 10/20.5	10	20	35	6	0.5~1.5	2900	112M2	4	132SA2	5,5	132SB2	7,5		
AXH 10/30.5		30	39				112M2	4	132SB2	7,5	160MA2	11		
AXH 10/40.5		40	36				132SB2	7,5	160MA2	11	160MB2	15		
AXH 10/50.5		50	38				132SB2	7,5	160MA2	11	160MB2	15		
AXH 10/60.5		60	40				160MA2	11	160MA2	11	160MB2	15		
AXH 15/20.5	15	20	34				5	0.5~1.5	132SA2	5,5	132SB2	7,5	160MA2	11
AXH 15/30.5		30	40						132SB2	7,5	160MA2	7,5	160MA2	11
AXH 15/40.5		40	35						160MA2	11	160MB2	15	160L2	18,5
AXH 15/50.5		50	39						160MA2	11	160MB2	15	160L2	18,5
AXH 15/60.5		60	42						160MA2	11	160MB2	15	160L2	18,5
AXH 25/20.5	25	20	38	4	1~2				160MA2	11	160MA2	11	160L2	18,5
AXH 25/30.5		30	40						160MB2	15	160MB2	15	180M2	22
AXH 25/40.5		40	39						160MB2	15	160L2	18,5	200LA2	30
AXH 25/50.5		50	41						160L2	18,5	180M2	22	200LA2	30
AXH 25/60.5		60	43						180M2	22	200LA2	30	200LB2	37
AXH 50/20.5	50	20	39				4	1~2	160MB2	15	160L2	18,5	180M2	22
AXH 50/30.5		30	42						160L2	18,5	180M2	22	200LA2	30
AXH 50/40.5		40	39						180M2	22	200LA2	30	200LB2	37
AXH 50/50.5		50	43						200LA2	30	200LB2	37	225M2	45
AXH 50/60.5		60	45						200LA2	30	200LB2	37	250M2	55
AXH 100/20.5	100	20	48	4	1~2	180M2			22	200LA2	30	200LB2	37	
AXH 100/30.5		30	52			200LA2			30	200LB2	37	280S2	75	
AXH 100/40.5		40	45			200LB2			37	250M2	55	280S2	75	
AXH 100/50.5		50	50			225M2			45	250M2	55	280S2	75	
AXH 100/60.5		60	55			225M2			45	280S2	75	280M2	90	
AXH 150/20.5	150	20	51			4	1~2	200LA2	30	200LB2	37	225M2	45	
AXH 150/30.5		30	54					200LB2	37	225M2	45	280S2	75	
AXH 150/40.5		40	52					250M2	55	280S2	75	280M2	90	
AXH 150/50.5		50	55					250M2	55	280S2	75	315S2	110	
AXH 150/60.5		60	58					280S2	75	280M2	90	315S2	110	
AXH 200/20.5	200	20	53	4	1~2			200LB2	37	225M2	45	280S2	75	
AXH 200/30.5		30	56					250M2	55	280S2	75	280M2	90	
AXH 200/40.5		40	55					280S2	75	280M2	90	315S2	110	
AXH 200/50.5		50	58					280S2	75	280M2	90	315M2	132	
AXH 200/60.5		60	61					280M2	90	315S2	110	315LA2	160	

### Pump structure



No.	Name of details	Q-ty
1	Inlet fitting	1
2	Spacer	1
3	Pump casing	1
4	Separator	1
5	Working wheel	1
6	Wall	1
7	Immovable ring of mechanical seal	1
8	Shaft	1
9	Moving part of mechanical seal	1
10	Undercarriage	1
11	Coupling	1
12	Electric motor	1
13	Base	1

## Overall and connecting dimensions



Model	DN <sub>1</sub>	D <sub>11</sub>	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	DN <sub>2</sub>	D <sub>21</sub>	D <sub>2</sub>	n <sub>2</sub> -d <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	B <sub>1</sub>	B	n - d	H <sub>1</sub>	H			
AXH 10/20.5	40	110	150	4-18	32	100	140	4-18	1255	540	164	410	738	280	280	4-18	398	555			
AXH 10/30.5									1480	677	250	550	950	390	390		473	642			
AXH 10/40.5									1255	540	164	410	738	280	280		398	555			
AXH 10/50.5									1480	677	250	550	950	390	390		473	642			
AXH 10/60.5									1725	677	250	550	950	390	390		473	642			
AXH 15/20.5	50	125	165		40	110	150		4-18	1255	540	164	410	738	280		280	4-18	398	555	
AXH 15/30.5										1480	677	250	550	950	390		390		473	642	
AXH 15/40.5										1725	677	250	550	950	390		390		473	642	
AXH 15/50.5										1500	695	250	550	950	390		390		466	642	
AXH 15/60.5										1650	660	250	550	950	390		390		502	688	
AXH 25/20.5	65	145	185	50	125	165	4-18	1500		695	250	550	950	390	390	4-18	466		642		
AXH 25/30.5								1650		660	250	550	950	390	390		502		688		
AXH 25/40.5								1725		677	250	550	950	390	390		466		642		
AXH 25/50.5								1500		695	250	550	950	390	390		458		642		
AXH 25/60.5								1650		660	250	550	950	390	390		458		642		
AXH 50/20.5	80	160	200	8-18	65	145		185	8-18	1500	695	250	550	950	390		390	8-18	458	642	
AXH 50/30.5										1650	660	250	550	950	390		390		458	642	
AXH 50/40.5										1688	682	250	550	950	390		390		458	642	
AXH 50/50.5										1720	693	250	550	950	390		390		495	688	
AXH 50/60.5										1740	737	250	550	950	390		390		495	688	
AXH 100/20.5	100	180	220		80	160	200	8-18		1740	737	250	680	1110	440	440	8-18		513	716	
AXH 100/30.5										1835	737	250	680	1110	440	440			513	716	
AXH 100/40.5										1800	737	250	680	1110	390	440			4-18	500	716
AXH 100/50.5										1875	762	250	750	1178	450	500			4-22	527	730
AXH 100/60.5										1940	762	250	750	1178	450	500			4-22	527	730
AXH 150/20.5	125	210	250	100	180	220	8-18		1800	762	250	750	1178	450	500	8-18		515	730		
AXH 150/30.5									1875	762	250	750	1178	450	500			515	730		
AXH 150/40.5									1940	762	250	750	1178	450	500			515	730		
AXH 150/50.5									2258	958	325	885	1443	500	500			657	932		
AXH 150/60.5									2605	1105	375	1020	1865	520	580			657	932		
AXH 200/20.5	150	240	285	8-22	125	210		250	8-22	2258	958	325	885	1443	500		500	8-22	657	932	
AXH 200/30.5										2605	1105	375	1020	1865	520		580		657	932	
AXH 200/40.5										2685	1105	375	1100	1945	570		630		4-26	720	1075
AXH 200/50.5										2685	1105	375	1100	1945	570		630		4-26	720	1075
AXH 200/60.5										2685	1105	375	1100	1945	570		630		4-26	720	1075

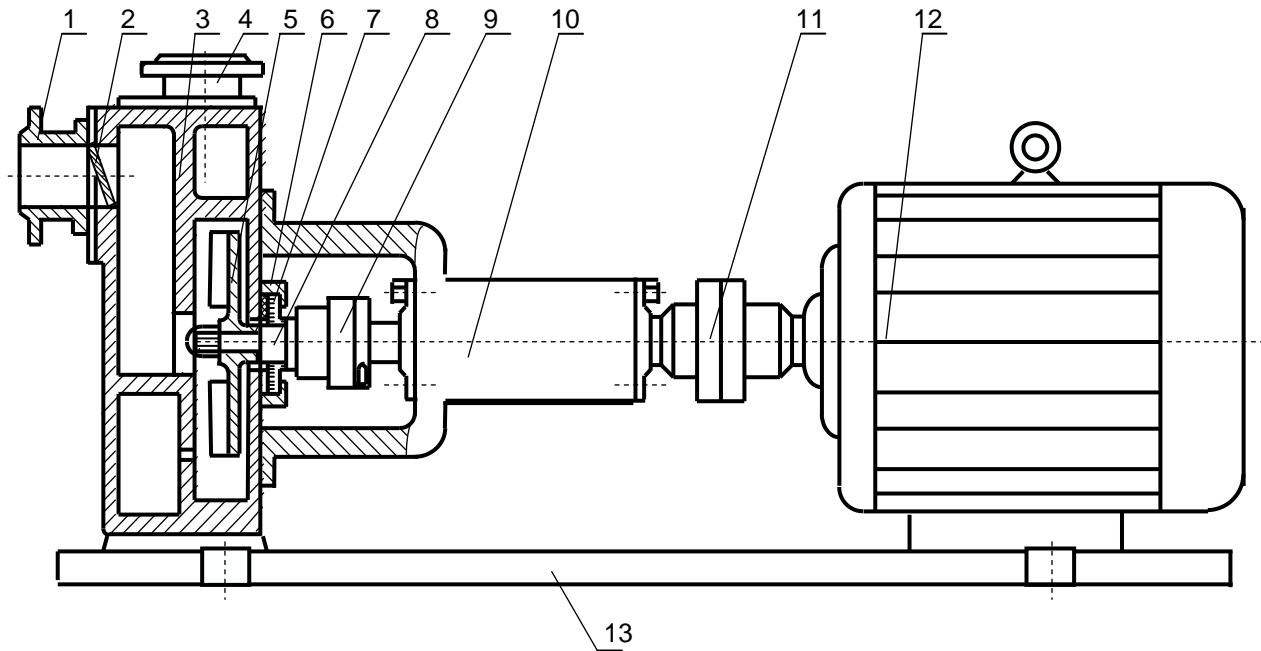
## Electrically driven pumps AXH Q/H.6

Self-priming pumps of type AXH Q/H.6 have flow tube made of stainless steel, are equipped with single and double mechanical seals, double gland seals. The pumps are meant for pumping of aggressive liquids within temperature range from -30°C to +110°C.

### Specification

Model	Inlet-outlet-impeller, mm	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	Efficiency η %	Npsh, M	Motors					
						Liquid density (ρ), kg/m <sup>3</sup>					
						1000		1350		1830	
						Type	N, kW	Type	N, kW	Type	N, kW
2900 r/min											
AXH 12,5/30.6	50-32-160	12,5	30	40	1.8	132SA2	5,5	132SA2	5,5	132SB2	7,5
AXH 12,5/48.6	50-32-200	12,5	48	34	1.8	132SB2	7,5	160MA2	11	160MB2	15
AXH 12,5/78.6	50-32-250	12,5	78	26	1.8	160MB2	15	180M2	22	200LA2	30
AXH 25/30.6	65-50-160	25	30	50	2	132SB2	7,5	160MA2	11	160MB2	15
AXH 25/48.6	65-40-200	25	48	48	2	160MA2	11	160MB2	15	160L2	18,5
AXH 25/78.6	65-40-250	25	78	39	2	180M2	22	200LA2	30	200LB2	37
AXH 25/123.6	65-40-315	25	123	30	2	225M2	45	250M2	55	280S2	75
AXH 50/30.6	80-65-160	50	30	60	2,4	160MA2	11	160MB2	15	180M2	22
AXH 50/48.6	80-65-200	50	48	59	2,4	160L2	18,5	180M2	22	200LA2	30
AXH 50/78.6	80-65-250	50	78	52	2,4	200LA2	30	225M2	45	250M2	55
AXH 50/123.6	80-65-315	50	123	28	2,4	280M2	90	315S2	110	315LA2	160
AXH 100/30.6	100-80-160	100	30	65	3,2	160L2	18,5	200LA2	30	200LB2	37
AXH 100/48.6	100-65-200	100	48	67	3,2	200LA2	30	200LB2	37	250M2	55
AXH 100/78.6	100-65-250	100	78	64	3,2	225M2	45	280S2	75	280M2	90
AXH 100/123.6	100-65-315	100	123	52	3,2	280M2	90	315M2	132	315LA2	160
AXH 200/48.6	125-100-200	200	48	72	4,5	250M2	55	280S2	75	315S2	110
AXH 200/78.6	125-100-250	200	78	69	4,5	280M2	90	315M2	132	315LA2	160
1450 r/min											
AXH 6,3/6.6	50-32-160	6,3	6	34	1	80A4	0,75	90S4	1,1	90L4	1,5
AXH 6,3/10.6	50-32-200	6,3	10	29	1	90L4	1,5	90L4	1,5	100LA4	2,2
AXH 6,3/18.6	50-32-250	6,3	18	22	1	100LB4	3	112M4	4	132S4	5,5
AXH 6,3/30.6	50-32-315	6,3	30	18	1	132S4	5,5	132M4	7,5	160M4	11
AXH 12,5/6.6	65-50-160	12,5	6	45	2	90S4	1,1	90L4	1,5	100LB4	3
AXH 12,5/10.6	65-40-200	12,5	10	43	2	90S4	1,5	100LA4	2,2	100LB4	3
AXH 12,5/18.6	65-40-250	12,5	18	33	2	112M4	4	132S4	5,5	132M4	7,5
AXH 12,5/30.6	65-40-315	12,5	30	24	2	132M4	7,5	160M4	11	160L4	15
AXH 25/6.6	80-65-160	25	6	55	2,4	90L4	1,5	100LA4	2,2	100LB4	3
AXH 25/10.6	80-50-200	25	10	54	2,4	100LB4	3	112M4	4	132S4	5,5
AXH 25/18.6	80-50-250	25	18	48	2,4	132S4	5,5	132M4	7,5	160M4	11
AXH 25/30.6	80-50-315	25	30	38	2,4	160M4	11	160L4	15	180M4	18,5
AXH 50/6.6	100-80-160	50	6	61	3,2	100LB4	3	112M4	4	132S4	5,5
AXH 50/10.6	100-65-200	50	10	64	3,2	112M4	4	132S4	5,5	132M4	7,5
AXH 50/18.6	100-65-250	50	18	60	3,2	132M4	7,5	160M4	11	160L4	15
AXH 50/30.6	100-65-315	50	30	52	3,2	160L4	15	180M4	18,5	180L4	22
AXH 100/10.6	125-100-200	100	10	68	2,2	132M4	7,5	160M4	11	160L4	15
AXH 100/18.6	125-100-250	100	18	67	2,2	160L4	15	160L4	15	180L4	22
AXH 100/30.6	125-100-315	100	30	63	2,2	180L4	22	200L4	30	225S4	37
AXH 200/10.6	150-125-200	200	10	72	3,2	160L4	15	180M4	18,5	180L4	22
AXH 200/18.6	150-125-250	200	18	70	3,2	180L4	22	200L4	30	225S4	37
AXH 200/30.6	150-125-315	200	30	69	3,2	225S4	37	225M4	45	280S4	75
AXH 200/48.6	150-125-400	200	48	62	3,2	280S4	75	280M4	90	315S4	110
AXH 400/18.6	200-150-250	400	18	72	4,5	225M4	45	250M4	55	280S4	75
AXH 400/30.6	200-150-315	400	30	70	4,5	280S4	75	280M4	90	315M4	132
AXH 400/48.6	200-150-400	400	48	68	4,5	315S4	110	315LA4	160	315LB4	200

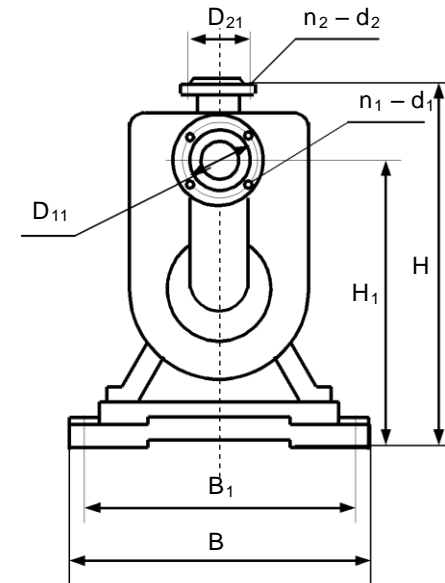
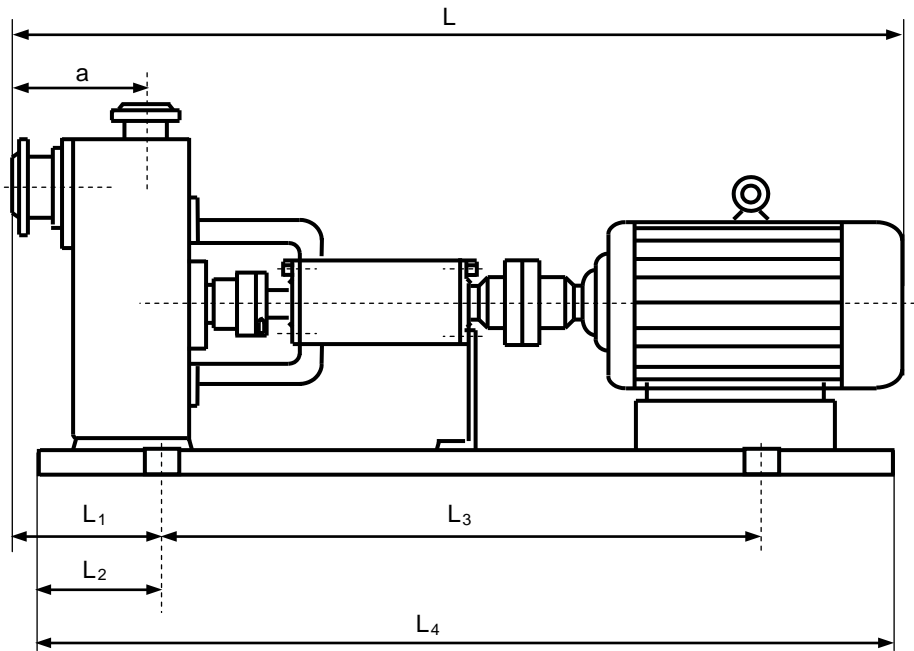
## Pump structure



No.	Name of details	Q-ty
1	Inlet fitting	1
2	Valve	1
3	Pump casing	1
4	Separator	1
5	Working wheel	1
6	Wall	1
7	Immovable ring of mechanical seal	1
8	Shaft	1
9	Moving part of mechanical seal	1
10	Undercarriage	1
11	Coupling	1
12	Electric motor	1
13	Base	1



### Overall and connecting dimensions



For each size of the pump first three lines - 1450 rev/min, second three lines – 2900 rev/min,

Inlet-outlet-impeller, mm	$\rho$ $\frac{\text{kg}}{\text{M}^3}$	$D_{11}$	$n_1-d_1$	$D_{21}$	$n_2-d_2$	a	L	$L_1$	$L_2$	$L_3$	$L_4$	B	$B_1$	$H_1$	H	n - d
50-32-160	1000	125	4-18	90	4-14	120	1050	170	140	540	800	360	320	360	480	4-24
	1350															
	1800															
	1000						200	170	600	850	390	350	380			
	1350															
	1800															
1230	210						180	660	900	490	440	395				
1100																
1150																
1190	200						180	660	1050	490	440	380				
1280																
1305																
1450	220						200	840	1180	540	490	395				
1350																
1380																
1400	200						180	660	900	490	440	380				
1450																
1490																
1500	200	180	660	900	490	440	380									
1230																
1400																
1470	125	4-18	125	4-18	200	1200	290	180	600	850	390	350	470	600	4-28	
1350																
1800																
1000						280	170	600	850	390	350	470				
1350																
1800																
1420	310	200	740	1180	490	440	510									
1480																
1520																
1150	310	200	740	1020	490	440	510									
1200																
1350																
1430	290	190	660	1160	450	400	470									
1340																
1400																
1000	320	220	840	1250	540	490	510									
1350																
1800																
1580	350	250	940	1280	610	550	530									
1640																
1700																
1340	300	200	840	1020	540	490	510									
1360							560									
1400																
1000	400	300	1200	1650	730	670		560								
1350							610									
1800																
2100	610															
2250																
2305																

\* only 1450 rev/min

Inlet-outlet-impeller, mm	$\rho$ $\frac{\text{kg}}{\text{M}^3}$	$D_{11}$	$n_1-d_1$	$D_{21}$	$n_2-d_2$	a	L	$L_1$	$L_2$	$L_3$	$L_4$	B	$B_1$	$H_1$	H	n - d
80-65-160	1000	160	8-18	145	8-18	250	1350	340	180	740	1050	490	440	510	720	4-19
	1350															
	1800															
	1000						360	200	1200	570						
	1350															
	1800															
80-50-200	1000	160	8-18	125	8-18	250	1150	340	180	600	980	390	350	550	720	4-19
	1350															
	1800															
	1000						360	200	740	1050	490	440	570			
	1350															
	1800															
80-50-250	1000	160	8-18	125	8-18	250	1350	350	250	940	1350	610	550	570	720	4-28
	1350															
	1800															
	1000						400	250	940	1350	610	550	570			
	1350															
	1800															
80-50-315	1000	160	8-18	125	8-18	250	1450	350	200	840	1150	540	490	500	720	4-24
	1350															
	1800															
	1000						490	340	1200	1800	950	880	660			
	1350															
	1800															
100-80-160	1000	180	8-18	160	8-18	280	1300	340	180	660	980	450	400	590	800	4-24
	1350															
	1800															
	1000						410	250	940	1350	610	550	640			
	1350															
	1800															
100-65-200	1000	180	8-18	160	8-18	280	1450	360	200	740	1050	490	440	590	800	4-24
	1350															
	1800															
	1000						410	250	940	1200	610	550	620			
	1350															
	1800															
100-65-250	1000	180	8-18	160	8-18	280	1200	410	250	800	1180	550	490	620	800	4-24
	1350															
	1800															
	1000						500	340	1200	1500	730	670	660			
	1350															
	1800															
100-65-315	1000	180	8-18	160	8-18	280	1760	460	300	1000	1750	660	600	620	800	4-24
	1350															
	1800															
	1000						560	400	1200	1880	960	880	660			
	1350															
	1800															

Inlet-outlet-impeller, mm	ρ kg M <sup>3</sup>	D <sub>11</sub>	n <sub>1</sub> -d <sub>1</sub>	D <sub>21</sub>	n <sub>2</sub> -d <sub>2</sub>	a	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	B	B <sub>1</sub>	H <sub>1</sub>	H	n - d									
125-100-200	1000	210	8-18	180	8-18	320	1400	450	250	800	1180	550	490	660	920	4-24									
	1350						1655																		
	1800						1765																		
	1000						2055																		
	1350						2105										500	300	1200	1750	660	600	735		
	1800						2200																		
125-100-250*	1000						1640	470	270	940	1480	620	550	705		735	920	4-24							
	1350																								
	1800																								
	1000																		2200						
	1350																		2260	540	340	1400	1800	950	880
	1800																		2400						
125-100-315*	1000						1640	470	270	1280	620	550	735	920		4-28									
	1350																								
	1800																								
	1000																1700								
150-125-200*	1000						240	8-22	210	8-18	450	1750	600	940		620	550	850	1160						
	1350											1780													
	1800	1820																							
150-125-250*	1000	2050	630	300	1505	1200						660	600	900	1200	4-28									
	1350																2130								
	1800																2200								
150-125-315*	1000	2150	680	350	1060	1620						660	600	900	1200	4-28									
	1350																2320								
	1800																2560								
150-125-400*	1000	2600	710	380	1650	910						860	935	1250	1300	4-28									
	1350																2780								
	1800																2840								
200-150-250*	1000	295	12-22	240	8-22	580						2450	830	400	1730	730	670	980	1300						
	1350											2600													
	1800											2780													
200-150-315*	1000											2450	860	430	1820	910	860	1015	1350	1400					
	1350																				2650				
	1800																				2780				
200-150-400*	1000						2805	880	450	1950	910	860	1015	1350	1400										
	1350															2960									
	1800															3050									

\* only 1450 rev/min

## SPECIAL PUMPS

### Electrically driven pumps AXH Q/H.10

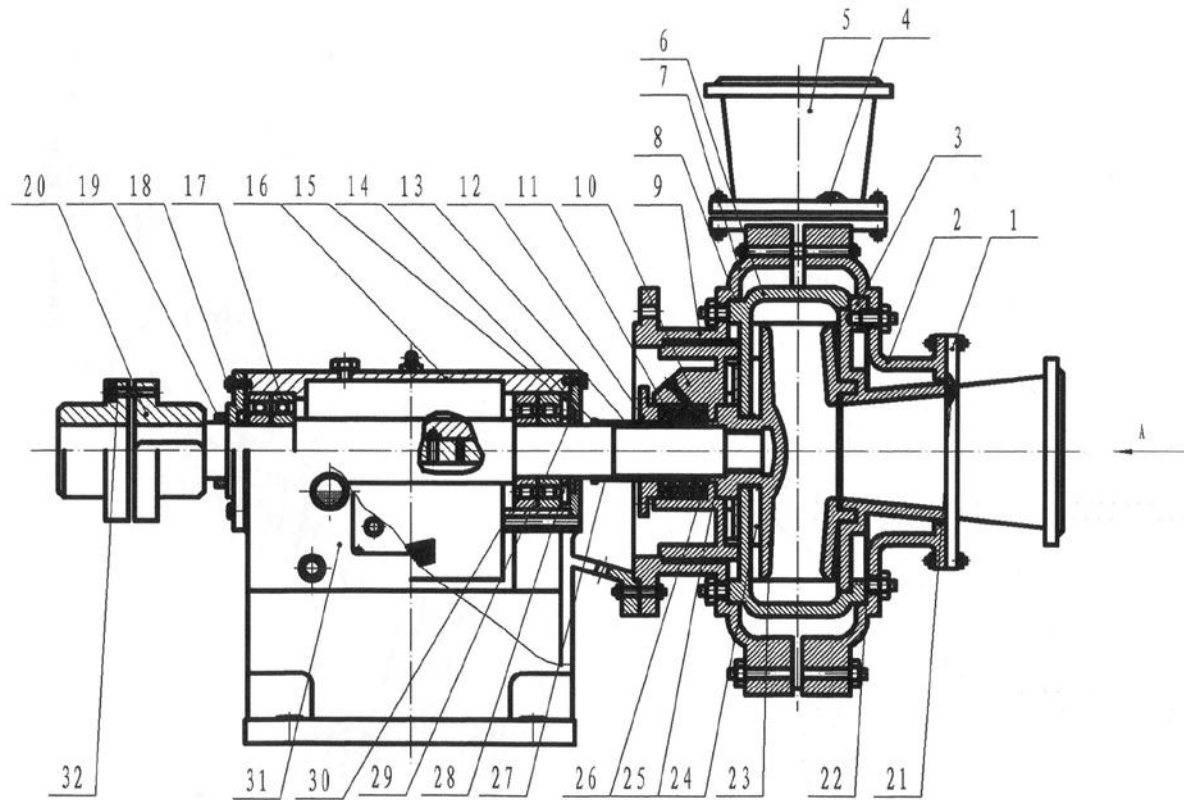
Electrically driven pumps AXH Q/H.10 are meant for pumping of neutral and chemically active fluids with density no more than 1850 kg/m<sup>3</sup> and kinematic viscosity up to 30 cSt with volume content of solid particles up to 50%, if their size does not exceed 40 mm at high abrasiveness. In basic version the pumps have flow tube made of steel 07X16H6 that is highly wear-resistive. The pumps may be manufactured from stainless steels and alloys of type 304, 316L (SS 304, 321, 316L), but this will lead to reduction of wear resistivity. The pumps are equipped with double gland seals. The pumps have replaceable casing.

Temperature range of pumped fluid: -20 ... +105<sup>0</sup>C.

#### Specification

Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	Rate speed, r/min	Efficiency η %	Npsh, M	Size of solid particles, mm
AXH 10/30.10	5-20	7.0-33.6	1480-2890	53.0	2.5	≤10
AXH 35/40.10	35	40	1440	41.0	2,5	≤10
AXH 60/30.10	23-80	7.4-35.8	700-1480	63.5	3.0	≤11
AXH 200/60.10	61-260	13.3-70.6	700-1480	67.8	3.5	≤13
AXH 200/40.10	61-245	9.1-48.6	700-1480	76.0	3.6	≤20
AXH 200/50.10	63-255	12.6-61.2	700-1480	71.3	3.9	≤20
AXH 250/70.10	79-331	17.1-86.0	700-1480	71.3	4.1	≤19
AXH 250/80.10	86-360	20.2-101.6	700-1480	71.3	4.1	≤19
AXH 300/15.10	119-364	4.4-17.8	590-980	68.1	3,2	≤19
AXH 450/50.10	137-550	15.4-64.5	500-980	77.5	3.8	≤27
AXH 450/60.10	154-600	18.9-78.5	500-980	75.0	3.9	≤27
AXH 750/80.10	230-900	24.0-103.7	500-980	74.5	4.5	≤ 3
AXH 750/60.10	240-950	17.2-74.0	500-980	79.3	4.3	≤ 3
AXH 1200/60.10	473-1378	35.0-80.0	500-730	79.0	5.3	≤ 4
AXH 1200/90.10	384-1504	31.4-129.8	500-980	77.0	5.1	≤ 4
AXH 1200/85.10	375-1468	30.0-123.8	500-980	77.0	5.1	≤ 4
AXH 1100/80.10	361-1415	27.8-115.0	500-980	77.0	5.0	≤ 4
AXH 1000/60.10	280-1341	18.3-80.9	500-980	81.6	4.8	≤ 4

# Pump structure



## Specification of pump details

No.	Name of details	Q-ty
1	Inlet fitting	1
2	Casing lid	1
3	Front half of casing	4
4	Stud	
5	Outlet fitting	4
6	Inner casing	1
7	Back half of casing	1
8	Sealing ring	1
9	Sealing ring	1
10	Wall	1
11	Gland packing	
12	Closing sleeve	1
13	Shaft	1
14	Clamp	1
15	Front bearing	2
16	Undercarriage casing	1
17	Back bearings	2
18	Back bearings lid	1
19	Collar	1
20	Half-coupling	1
21	Sealing ring	1
22	Gasket	1
23	Working wheel	1
24	Impeller	1
25	Gasket	1
26	Lantern ring	1
27	Protective collar	4
28	Thrust ring	1
29	Collar	1
30	Front bearing	1
31	Column	2
32	Pin	

Overall and connecting dimensions are determined after ordering of specific electrically driven pump.

## Electrically driven pumps AXH Q/H.12

Pumps AXH Q/H.12 – are horizontal piston pumps with cam drive for pumping of fluids with high viscosity (mazuts, coal-tar resins, etc.) with viscosity of 0,02 – 100 Pa/s (20 – 100000 cP). Engine power in the tables is specified for fluid density of 1000 kg/m<sup>3</sup>. The pumps are characterized by high reliability due to low rotational frequency (see table “Specification”). Flow tube of the pumps is made of carbon steels. Sealing is represented by gland seal.

Range of flow rates is 5-500 m<sup>3</sup>/ hour and range of heads is 0,6-3,2 MPa. Minimal temperature of pumped fluid is up to -45°C, maximum is up to 150°C. By special order it is possible to manufacture pumps with temperature up to 300°C, and with water cooling (heating) jacket. Climate version and category of location - Y2 according to ГOCT 15150-69.

### Specification

Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H MPa	Viscosity, Pa s	Temperature, °C	Inlet diameter, mm	motors		Rate speed, r/min	Efficiency η %	Mass, kg
						Type	N, kW			
AXH 5/0,6.12	5	0,6	0,02 100	150 300	50	100LA4	2,2	327	61	660
AXH 8/0,6.12	8				65	100LB4	3			730
AXH 10/0,6.12	10				80			112M4	4	130
AXH 12,5/0,6.12	12,5					132M4	7,5	158	930	
AXH 20/0,6.12	20				100	160M4	11	148	67	1600
AXH 25/0,6.12	25									150
AXH 36/0,6.12	36				200	180M4	18,5	148	70	2200
AXH 50/0,6.12	50									180L4
AXH 63/0,6.12	63				300	225M4	45	148	73	2850
AXH 80/0,6.12	80									200L4
AXH 100/0,6.12	100				500	280S4	75	130	75	3050
AXH 125/0,6.12	125									225S4
AXH 160/0,6.12	160				500	280M4	90	148	75	5300
AXH 200/0,6.12	200									400
AXH 250/0,6.12	250				500	315M4	132	148	75	5850
AXH 300/0,6.12	300									500
AXH 400/0,6.12	400									
AXH 500/0,6.12	500									

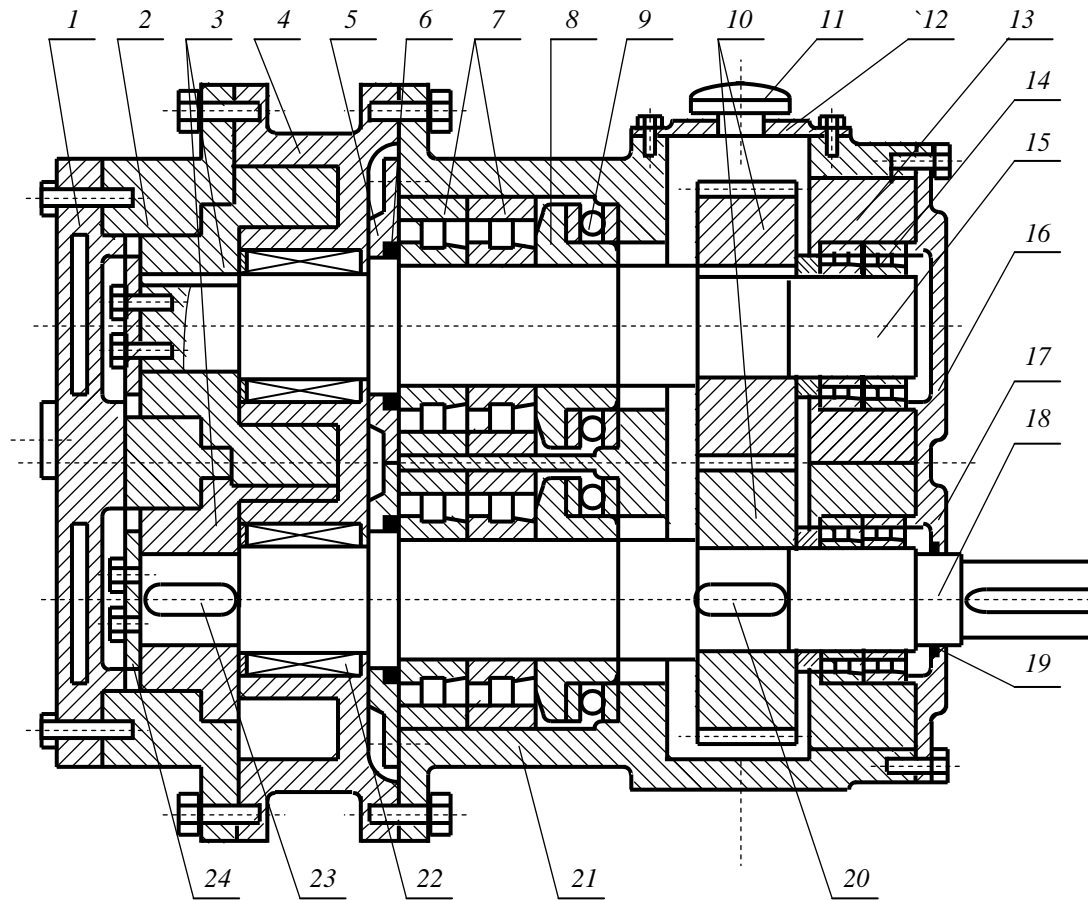


Model	Liquid consumption, $Q$ $m^3$ /hour	Head $H$ MPa	Viscosity, $\rho$ Pa s	Temperature, $t$ °C	motors		Rate speed, $n$ r/min	Efficiency $\eta$ %	Mass, $G$ kg	
					Type	N, kW				
AXH 5/1,0.12	5	1,0	0,02 100	150 300	112M4	4	327	61	700	
AXH 8/1,0.12	8				132S4	5,5			750	
AXH 10/1,0.12	10				132M4	7,5	130	64	980	
AXH 12,5/1,0.12	12,5				160M4	11	158		1000	
AXH 20/1,0.12	20				160L4	15	148	67	1680	
AXH 25/1,0.12	25				180M4	18,5			1700	
AXH 36/1,0.12	36				180L4	22	158	70	1750	
AXH 50/1,0.12	50				200L4	30			2320	
AXH 63/1,0.12	63				225S4	37	148	2450		
AXH 80/1,0.12	80				225M4	45	130	73	2950	
AXH 100/1,0.12	100				250M4	55	148		3600	
AXH 125/1,0.12	125				280S4	75			3680	
AXH 160/1,0.12	160				280M4	90			5100	
AXH 200/1,0.12	200				315S4	110			5350	
AXH 250/1,0.12	250				315M4	132	5650			
AXH 300/1,0.12	300				148	160	75	5850		
AXH 400/1,0.12	400							315LA4	160	6490
AXH 500/1,0.12	500							355MA4	220	8100

Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H MPa	Viscosity, Pa s	Temperature, °C	Motors		Rate speed, r/min	Efficiency η %	Mass, kg
					Type	N, kW			
AXH 5/1,6.12	5	1,6	0,02 100	150 300	132S4	5,5	158	59	900
AXH 8/1,6.12	8				132M4	7,5			1020
AXH 10/1,6.12	10				160M4	11			148
AXH 12,5/1,6.12	12,5						158	1050	
AXH 20/1,6.12	20				180M4	18,5	238	62	1800
AXH 25/1,6.12	25				180L4	22	158	65	1900
AXH 36/1,6.12	36				200L4	30			2100
AXH 50/1,6.12	50				225S4	37			3300
AXH 63/1,6.12	63				225M4	45	181	68	3500
AXH 80/1,6.12	80				250M4	55	158		430
AXH 100/1,6.12	100				280S4	75		158	71
AXH 125/1,6.12	125				280M4	90	5100		
AXH 160/1,6.12	160				315S4	110	158		
AXH 200/1,6.12	200				315M4	132		5560	

Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H MPa	Viscosity, Pa s	Temperature, °C	Motors		Rate speed, r/min	Efficiency η %	Mass, kg	
					Type	N. kW				
AXH 5/2,5.12	5	2,5	0,02 100	150 300	132M4	7,5	181	57	1020	
AXH 8/2,5.12	8				160L4	15	238		181	1050
AXH 10/2,5.12	10						1250			
AXH 12,5/2,5.12	12,5				180M4	18,5	209	59	1300	
AXH 20/2,5.12	20				200L4	30	181		2215	
AXH 25/2,5.12	25				225S4	37	209	63	2400	
AXH 36/2,5.12	36				225M4	45	181		2620	
AXH 50/2,5.12	50				280S4	75		3700		
AXH 80/2,5.12	80				315S4	110		5100		
AXH 5/3,2.12	5	3,2	0,02 100	150 300			181	57	1050	
AXH 8/3,2.12	8				160L4	15	238		1100	
AXH 10/3,2.12	10				180M4	18,5	181		1320	
AXH 12,5/3,2.12	12,5				200L4	30	209	59	1560	
AXH 20/3,2.12	20				225S4	37	181		2250	
AXH 25/3,2.12	25				225M4	45	209	63	2316	
AXH 36/3,2.12	36				280S4	75	181		2600	
AXH 50/3,2.12	50							3770		
AXH 80/3,2.12	80							315M4	132	5700
AXH 36/4,0.12	36	4,0	0,02 100	150 300	280S4	75	209	63	3100	
AXH 50/4,0.12	50				315S4	110	181	66	3770	

### Pump structure

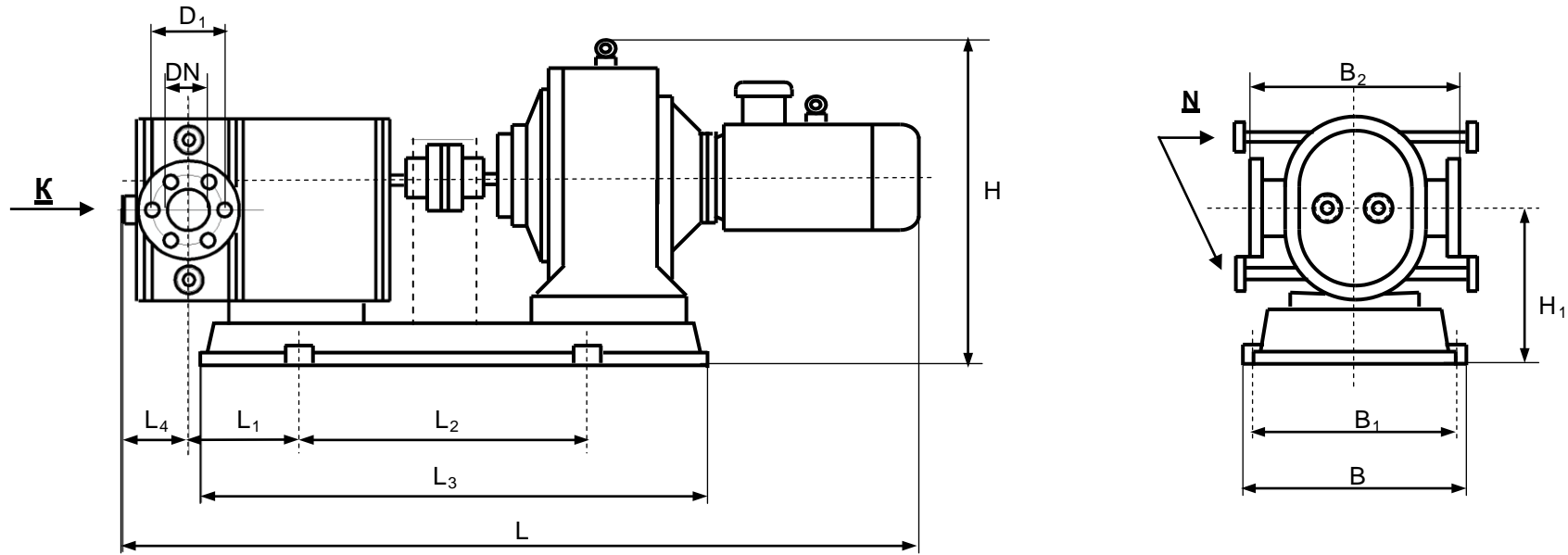


### Specification of pump details

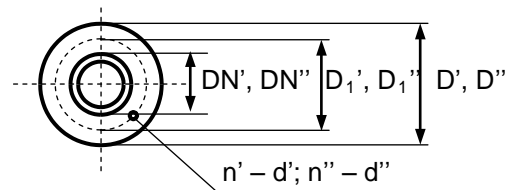
No.	Name	Q-ty
1	Lid with cavity for heating (cooling) liquid	1
2	Lid of rotors chamber	1
3	Top and down rotors	2
4	Casing of rotors chamber	1
5	Pad	2
6	Collar	2
7	Bearings	4
8	Thrust bushing	2
9	Thrust bearings	2
10	Gears	2
11	Plug of oil hole	1
12	Lid of oil chamber	1
13	Casing of back bearings	2
14	Back bearings	4
15	Top shaft	1
16	Lid of top shaft	1
17	Lid of down shaft	1
18	Down shaft	1
19	Collar	2
20	Dowel	2
21	Undercarriage	1
22	Gland packing	
23	Dowel	2
24	Pad	2

### Mounting dimensions

Diameters of inlet and outlet fittings for pumped and heating (cooling) environments are the same

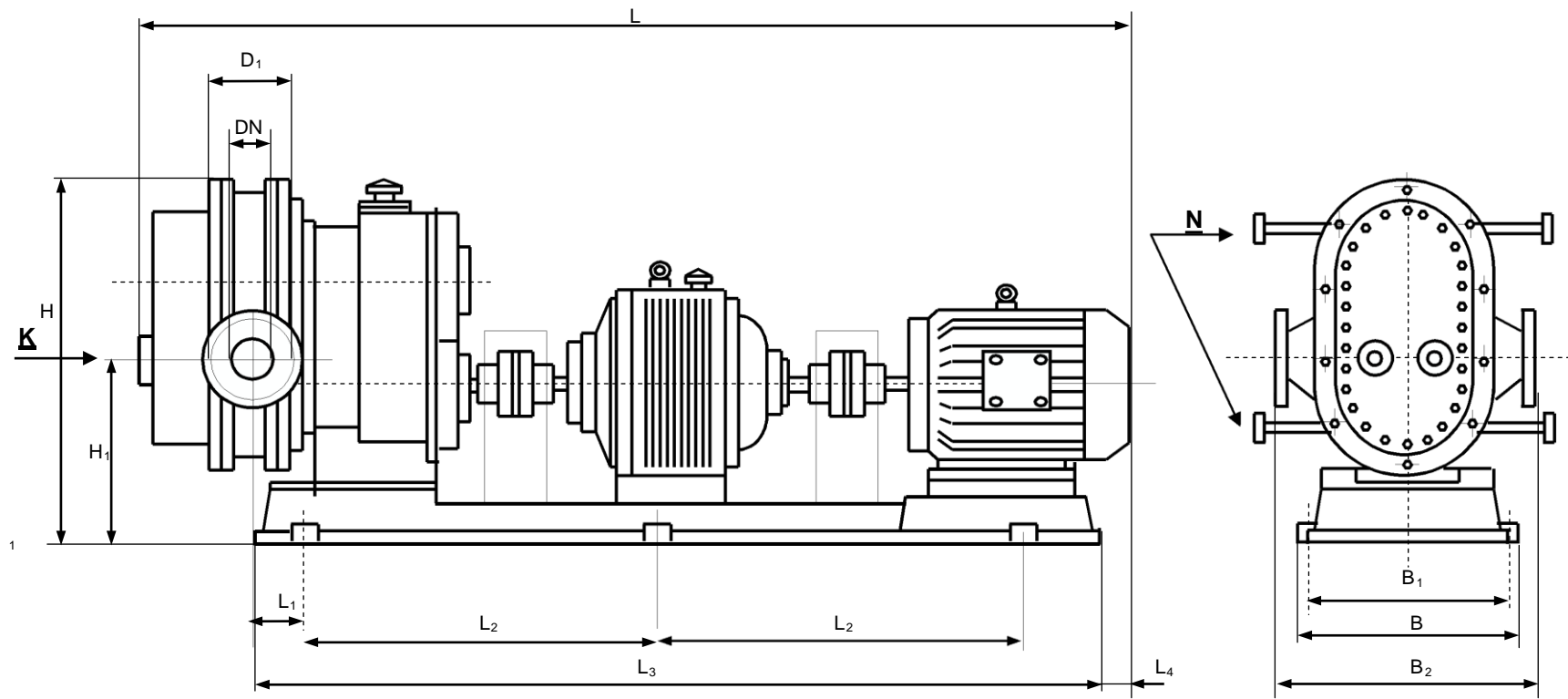


**K** ( $DN'$ ,  $D_1'$ ,  $D'$ ,  $n' - d'$ ); **N** ( $DN''$ ,  $D_1''$ ,  $D''$ ,  $n'' - d''$ )

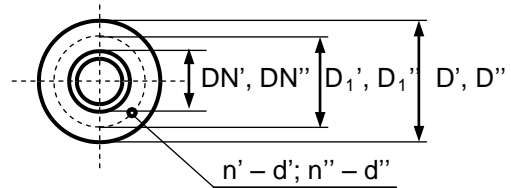


	$DN', DN''$	$D_1', D_1''$	$D', D''$	$n' - d'; n'' - d''$
AXH 5/(0,6-1,0).12	20	60	80	4-12
AXH 8/(0,6-1,0).12		75	100	
AXH 8/(1,6-3,2).12				
AXH 10/(0,6-2,5).12	25	60	80	
AXH 12,5/(0,6-1,6).12				
AXH 20/(0,6-1,0).12		75	100	
AXH 25/(0,6-1,0).12				
AXH 36/0,6.12				

	<b>DN</b>	<b>D<sub>1</sub></b>	<b>n<sub>1</sub>-d<sub>1</sub></b>	<b>L</b>	<b>L<sub>1</sub></b>	<b>L<sub>2</sub></b>	<b>L<sub>3</sub></b>	<b>L<sub>4</sub></b>	<b>B</b>	<b>B<sub>1</sub></b>	<b>B<sub>2</sub></b>	<b>H</b>	<b>H<sub>1</sub></b>	<b>n-d</b>
AXH 5/(0,6-1,0).12	50	125	4-18	1658	190	707	1071	162	540	480	384	589	316	4-20
AXH 5/(1,6-3,2).12				1558	237	568	961	194	560		474	573	398	4-30
AXH 8/(0,6-1,0).12	65	145		1658	190	707	1071	162	540		384	589	316	4-20
AXH 8/(1,6-3,2).12	50	125	8-18	1708	237	568	961	194	560	630	552	660	398	4-30
AXH 10/(0,6-2,5).12	80	160		1748										
AXH 12,5/(0,6-1,6).12				1708										
AXH 20/(0,6-1,0).12				1970	260	660	1100	210	710					
AXH 25/(0,6-1,0).12	100	190		225										
AXH 36/0,6.12	150	250	8-26	2000	275									



**K** ( $DN'$ ,  $D_1'$ ,  $D'$ ,  $n' - d'$ ); **N** ( $DN''$ ,  $D_1''$ ,  $D''$ ,  $n'' - d''$ )





	DN', DN''	D <sub>1</sub> ', D <sub>1</sub> ''	D', D''	n' - d'; n'' - d''
AXH 5/(1,6-3,2).12	25	60	80	4-12
AXH 8/(1,6-3,2).12				
AXH 10/3,2.12				
AXH 12,5/(2,5-3,2).12				
AXH 20/(1,6-2,5).12				
AXH 20/3,2.12				
AXH 25/(1,6-3,2).12		75	100	4-14
AXH 36/(1,6-2,5).12				
AXH 50/(0,6-3,2).12				
AXH 63/(0,6-1,6).12		75	100	4-12
AXH 80/(0,6-3,2).12				
AXH 100/(0,6-1,6).12				
AXH 125/(0,6-1,6).12				
AXH 200/(0,6-1,6).12		85	115	4-14
AXH 300/(0,6-1,6).12				
AXH 400/(0,6-1,6).12				
AXH 500/(0,6-1,6).12				

	DN	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B	B <sub>1</sub>	B <sub>2</sub>	H	H <sub>1</sub>	n-d
AXH 10/3,2.12	80	160	8-18	2183	238	690	1860	69		640	550	474	695	398	6-30
AXH 12,5/2,5.12				2203				89							
AXH 12,5/3,2.12				2183				69							
AXH 20/1,6.12				2258				144							
AXH 20/2,5.12	2556	800	2350	-25	850	750	930	572							
AXH 20/3,2.12	100	190	8-18	2287	322	700	2030	20	720	630	552	755	477		
AXH 25/1,6.12				2390				116				835			
AXH 25/2,5.12				2581				800				2350	0	850	
AXH 25/3,2.12	150	250	8-26	2317	337	600	2350	20	850	750	552	755	477		
AXH 36/1,0.12				2546				-65				815			
AXH 36/1,6.12				2611				0				930	572		
AXH 36/2,5.12				2751				140				1015			
AXH 36/3,2.12	200	310	12-M20	2480	348	715	2200	-26	740	650	600	726	470		
AXH 50/0,6.12				2500				-6				855	519		
AXH 50/1,0.12				2759				-25				940	470		
AXH 50/1,6.12				2930				140				726	470		
AXH 50/(2,5-3,2).12	200	310	12-M20	2500	338	715	2200	-6	740	650	600	835	519		
AXH 63/0,6.12				2720				-65				855	519		
AXH 63/1,0.12				2784				0				855	519		
AXH 63/1,6.12															

	DN	D <sub>1</sub>	n <sub>1</sub> -d <sub>1</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	B	B <sub>1</sub>	B <sub>2</sub>	H	H <sub>1</sub>	n-d										
AXH 80/0,6.12	200	310	12-25	2830	162	880	2900	-91		850	750	850	925	633	6-30										
AXH 80/1,0.12				2870									945												
AXH 80/1,6.12				2960									1000												
AXH 80/2,5.12		320	12-30	3540		1000	3280	238		1000	900		1240	703											
AXH 80/3,2.12				3620				318																	
AXH 100/0,6.12		310	12-25	2830		162	880	2900	-91		850		750	850		925	633	6-30							
AXH 100/1,0.12				2895												1014									
AXH 100/1,6.12				3035												1030									
AXH 125/0,6.12				2870												950									
AXH 125/1,0.12				2960												1000									
AXH 125/1,6.12	3085								1030																
AXH 160/0,6.12	300			450	16-33				3034	220		1060			2790	-52				1000	900	900	1040	718	6-30
AXH 160/1,0.12									3174														1125		
AXH 160/1,6.12		3611	334				1205																		
AXH 200/0,6.12		310	12-26	3100	220	1060	2790	13		1000	900		900	1095	718	6-30									
AXH 200/1,0.12				3224	334				1125																
AXH 200/1,6.12				3691					1205																
AXH 250/0,6.12				3416					1045																
AXH 250/1,0.12				3676	366				1205																
AXH 300/0,6.12				3466					1050																
AXH 300/1,0.12				3756					1205																
AXH 400/0,6.12	400	525	16-30	3776	416	1060	3360	180		1180	1080	900	1335	818	6-30										
AXH 400/1,0.12				3930									1350												
AXH 500/0,6.12	500	650	20-33	4100	300		1150	3480	350		1200		1100	1080		1350	944	6-30							
AXH 500/1,0.12				4300						3600						480				1450					

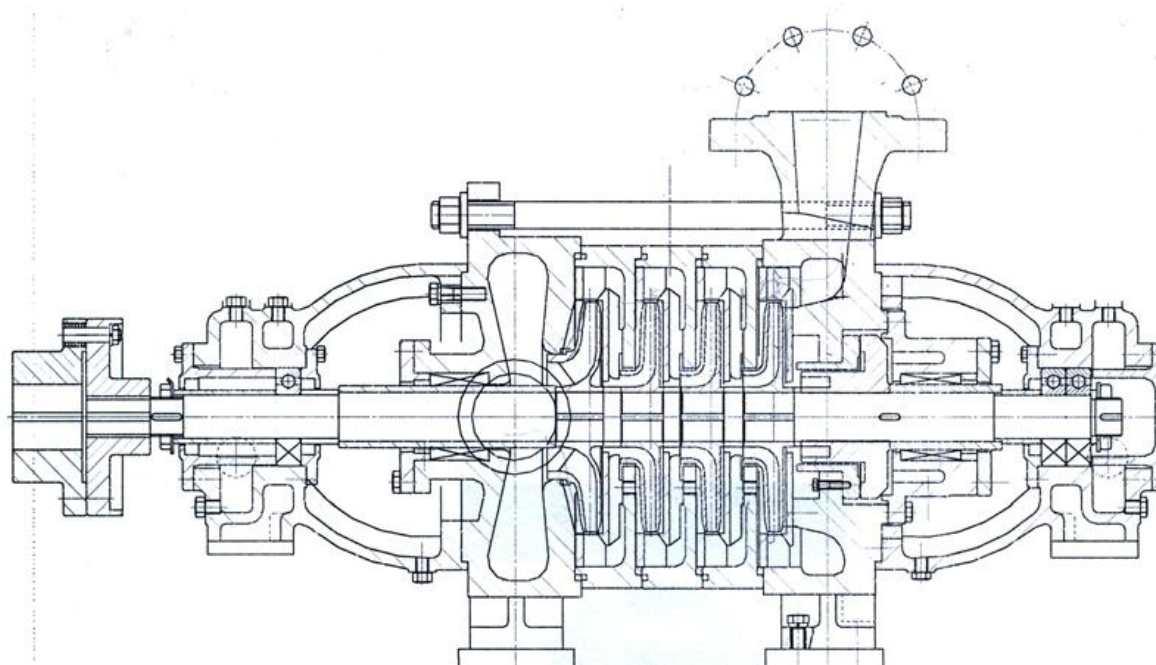
## Electrically driven pumps AXH Q/H.15

Electrically driven pumps AXH Q/H.15 – are high-pressure multisectional pumps meant for pumping of neutral and chemically active fluids with density no higher than  $1850 \text{ kg/m}^3$  and kinematic viscosity up to 30 cSt with volume content of solid particles up to 0.5 % if they are not greater than 2 mm. Electrically driven pumps AXH Q/H.15 have flow tube made of carbon steel or stainless steels of type 304, 316L. The pumps are equipped with gland seals.

Range of flow rates of pumps AXH Q/H.15 is 5 – 200  $\text{m}^3/\text{hour}$ , range of heads is 150 – 700 m.

Specification and overall and connecting dimensions are determined after ordering of specific electrically driven pump.

There is an example of design of 4-stage pump on picture below.



## Section 2. Leakproof chemical pumps GXH

### Electrically driven pumps GXH Q/H.1(4)

Pumps GXH Q/H.1(4) – are horizontal leakproof centrifugal pumps without seals, which permit presence in pumped fluid of solid particles up to 0.2 mm and bulk concentration up to 0.1 %. Leakproofness of the pumps is ensured by use of magnetic couplings for drive of pumping part. Range of flow rates is 2,5-400 m<sup>3</sup>/hour, range of heads is 2-50 m. Density of pumped fluid is up to 1800 kg/m<sup>3</sup>, viscosity is up to 30 cSt. Minimal temperature of pumped liquid is up to -30°C, maximum temperature is up to 110°C.

Pumps GXH Q/H.1 and GXH Q/H.4 are similar by design.

Pumps GXH Q/H.1 are made in metallic casing with lining of flow tube with fluoroplastic  $\Phi$ -50, modified polyethylene 5 – 10 mm thick.

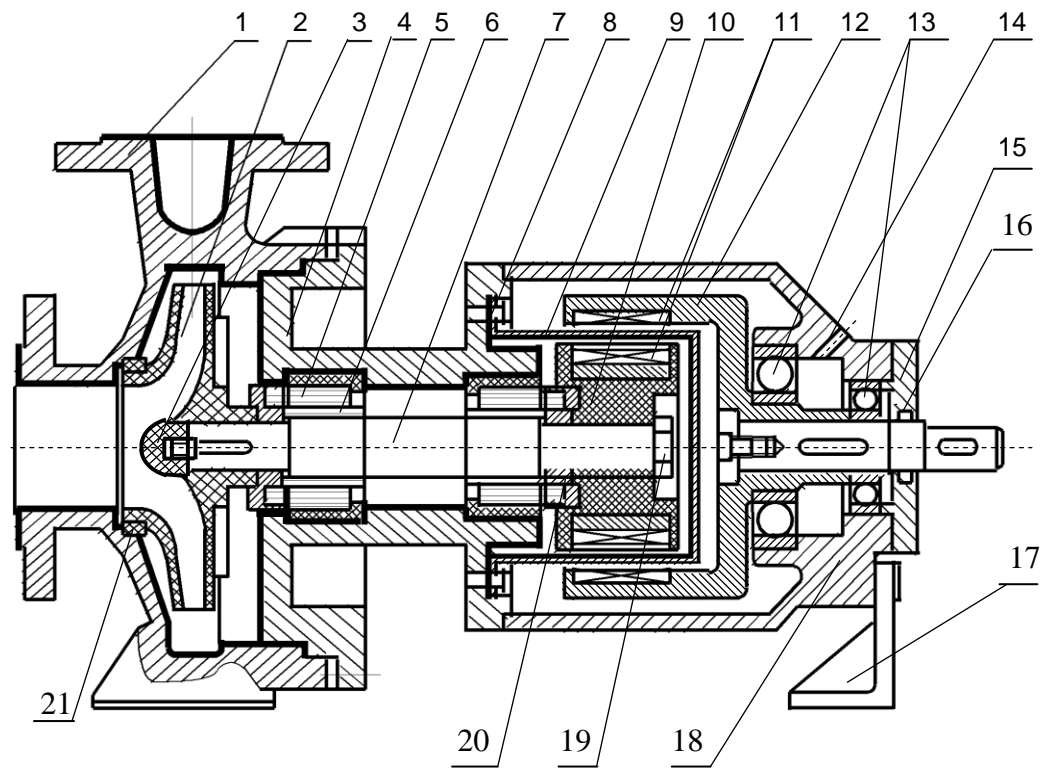
Pumps GXH Q/H.4 are made in casings made of stainless steels of types 304 and 316L.

#### Specification

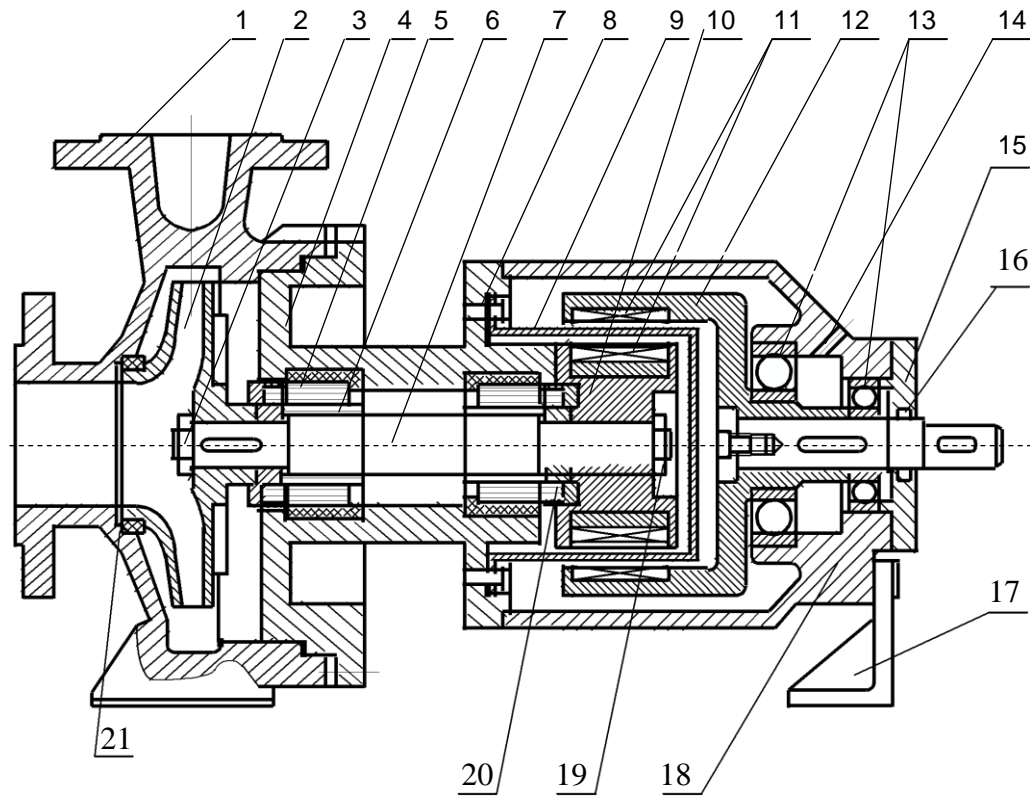
Model	Inlet-outlet-impeller, mm	Liquid consumption, Q m <sup>3</sup> /hour	Head H M	$\eta$ %	Npsh, M	Motors					
						Liquid density ( $\rho$ ), kg/m <sup>3</sup>					
						1000		1350		1800	
2900 r/min											
GXH 2,5/15.1(4)	25-20-110	2,5	15	28	2	80A2	0,75	80B2	1,1	80B2	1,1
GXH 2,5/20.1(4)	25-20-125	2,5	20	24	2	80B2	1,1	80B2	1,1	90S2	1,5
GXH 2,5/32.1(4)	25-20-160	2,5	32	19	2	90L2	2,2	90L2	2,2	100L2	3
GXH 4/15.1(4)	32-25-110	4	15	36	2	80B2	1,1	80B2	1,1	90S2	1,5
GXH 4/20.1(4)	32-25-125	4	20	30	2	80B2	1,1	90S2	1,5	90L2	2,2
GXH 4/32.1(4)	32-25-160	4	32	26	2	90L2	2,2	100L2	3	112M2	4
GXH 6,3/20.1(4)	40-25-125	6,3	20	36	2	90S2	1,5	90L2	2,2	100L2	3
GXH 6,3/32.1(4)	40-25-160	6,3	32	33	2	100L2	3	112M2	4	132SA2	5,5
GXH 6,3/50.1(4)	40-25-200	6,3	50	28	2	132SA2	5,5	132SA2	5,5	132SB2	7,5
GXH 12,5/20.1(4)	50-32-125	12,5	20	46	2	90L2	2,2	100L2	3	112M2	4
GXH 12,5/32.1(4)	50-32-160	12,5	32	41	2	112M2	4	132SA2	5,5	132SB2	7,5
GXH 12,5/50.1(4)	50-32-200	12,5	50	35	2	132SB2	7,5	160MA2	11	160MB2	15
GXH 12,5/80.1(4)	50-32-250	12,5	80	30	2	160MB2	15	180M2	22	200LA2	30
GXH 25/20.1(4)	65-50-125	25	20	59	2	112M2	4	132SA2	5,5	132SB2	7,5
GXH 25/32.1(4)	65-50-160	25	32	55	2	132SA2	5,5	132SB2	7,5	160MA2	11
GXH 25/50.1(4)	65-40-200	25	50	48	2	160MA2	11	160MB2	15	160L2	18,5
GXH 25/80.1(4)	65-40-250	25	80	39	2	160L2	18,5	200LA2	30	200LB2	37
GXH 25/125.4	65-40-315	25	125	31	2,4	200LB2	37	225M2	45	280S2	75
GXH 50/20.1(4)	80-65-125	50	20	65	2,4	132SA2	5,5	132SB2	7,5	160MA2	11
GXH 50/32.1(4)	80-65-160	50	32	62	2,4	160MA2	11	160MB2	15	160L2	18,5
GXH 50/50.1(4)	80-50-200	50	50	58	2,4	160MB2	15	180M2	22	200LA2	30
GXH 50/80.1(4)	80-50-250	50	80	51	2,4	200LA2	30	200LB2	37	250M2	55
GXH 50/125.4	80-50-315	50	125	42	2,4	250M2	55	280S2	75	280M2	90
GXH 100/20.1(4)	100-80-125	100	20	69	3,2	160MA2	11	160MB2	15	180M2	22
GXH 100/32.1(4)	100-80-160	100	32	67	3,2	160L2	18,5	200LA2	30	200LB2	37
GXH 100/50.1(4)	100-65-200	100	50	62	3,2	200LA2	30	200LB2	37	250M2	55
GXH 100/80.1(4)	100-65-250	100	80	61	3,2	225M2	45	280S2	75	280M2	90
GXH 100/125.4	100-65-315	100	125	54	3,2	280M2	90	315S2	110	315LA2	160
GXH 200/50.1(4)	125-100-200	200	50	69	4,5	280S2	75	280M2	90	315M2	132
GXH 200/80.1(4)	125-100-250	200	80	66	4,5	280M2	90	315S2	110	315LA2	160
GXH 200/125.4	125-100-315	200	125	65	4,5	315M2	132	315LB2	200	355M2	250

Model	Inlet-outlet-impeller, mm	Liquid consumption, (Q) m <sup>3</sup> /hour	Head H M	η %	Npsh, M	Motors					
						Liquid density (ρ), kg/m <sup>3</sup>					
						1000		1350		1800	
1450 r/min											
ГХН 6,3/5.1(4)	50-32-125	6,3	5	46	2	80A4	0,55	80B4	0,75	90S4	1,1
ГХН 6,3/8.1(4)	50-32-160	6,3	8	39	2	80B4	0,75	90S4	1,1	90L4	1,5
ГХН 6,3/12,5.1(4)	50-32-200	6,3	12,5	31	2	90S4	1,1	90S4	2,2	100LB4	3
ГХН 6,3/20.1(4)	50-32-250	6,3	20	24	2	90S4	2,2	100LB4	3	112M4	4
ГХН 12,5/5.1(4)	65-50-125	12,5	5	54	2	80B4	0,75	90S4	1,1	90S4	1,1
ГХН 12,5/8.1(4)	65-50-160	12,5	8	50	2	90S4	1,1	90L4	1,5	100LA4	2,2
ГХН 12,5/12,5.1(4)	65-40-200	12,5	12,5	43	2	90L4	1,5	100LA4	2,2	100LB4	3
ГХН 12,5/20.1(4)	65-40-250	12,5	20	35	2	112M4	4	132S4	5,5	132M4	7,5
ГХН 12,5/32.1(4)	65-40-315	12,5	32	28	2,5	132S4	5,5	132M4	7,5	160M4	11
ГХН 25/5.1(4)	80-65-125	25	5	61	2,5	90S4	1,1	90L4	1,5	100LA4	2,2
ГХН 25/8.1(4)	80-65-160	25	8	59	2,3	90L4	1,5	100LA4	2,2	100LB4	3
ГХН 25/12,5.1(4)	80-50-200	25	12,5	55	2,3	100LB4	3	112M4	4	132S4	5,5
ГХН 25/20.1(4)	80-50-250	25	20	48	2,3	112M4	4	132S4	5,5	132M4	7,5
ГХН 25/32.1(4)	80-50-315	25	32	39	2,3	132M4	7,5	160M4	11	160L4	15
ГХН 50/5.1(4)	100-80-125	50	5	67	2,5	100LA4	2,2	100LA4	2,2	100LB4	3
ГХН 50/8.1(4)	100-80-160	50	8	65	2,5	100LB4	3	112M4	4	132S4	5,5
ГХН 50/12,5.1(4)	100-65-200	50	12,5	62	2,3	112M4	4	132S4	5,5	132M4	7,5
ГХН 50/20.1(4)	100-65-250	50	20	59	2,3	132M4	7,5	160M4	11	160L4	15
ГХН 50/32.1(4)	100-65-315	50	32	51	2,3	160L4	15	180M4	18,5	180L4	22
ГХН 100/12,5.1(4)	125-100-200	100	12,5	68	2,8	132M4	7,5	160M4	11	160L4	15
ГХН 100/20.1(4)	125-100-250	100	20	65	2,3	160L4	15	180M4	18,5	180L4	22
ГХН 100/32.1(4)	125-100-315	100	32	60	2,5	180L4	22	200L4	30	225S4	37
ГХН 100/50.1(4)	125-100-400	100	50	52	2,5	225S4	37	225M4	45	280S4	75
ГХН 200/20.1(4)	150-125-250	200	20	63	2,8	180L4	22	200L4	30	225M4	45
ГХН 200/32.1(4)	150-125-315	200	32	62	2,8	225S4	37	250M4	55	280S4	75
ГХН 200/50.1(4)	150-125-400	200	50	56	2,8	280S4	75	280M4	90	315S4	110
ГХН 400/20.1(4)	200-150-250	400	20	67	3,2	225M4	45	250M4	55	280S4	75
ГХН 400/32.1(4)	200-150-315	400	32	67	3,5	280S4	75	280M4	90	315M4	132
ГХН 400/50.1(4)	200-150-400	400	50	61	3,8	315S4	110	315LA4	160	315LB4	200

### Structure of pump ГХН Q/H.1



### Structure of pump GXH Q/H.4

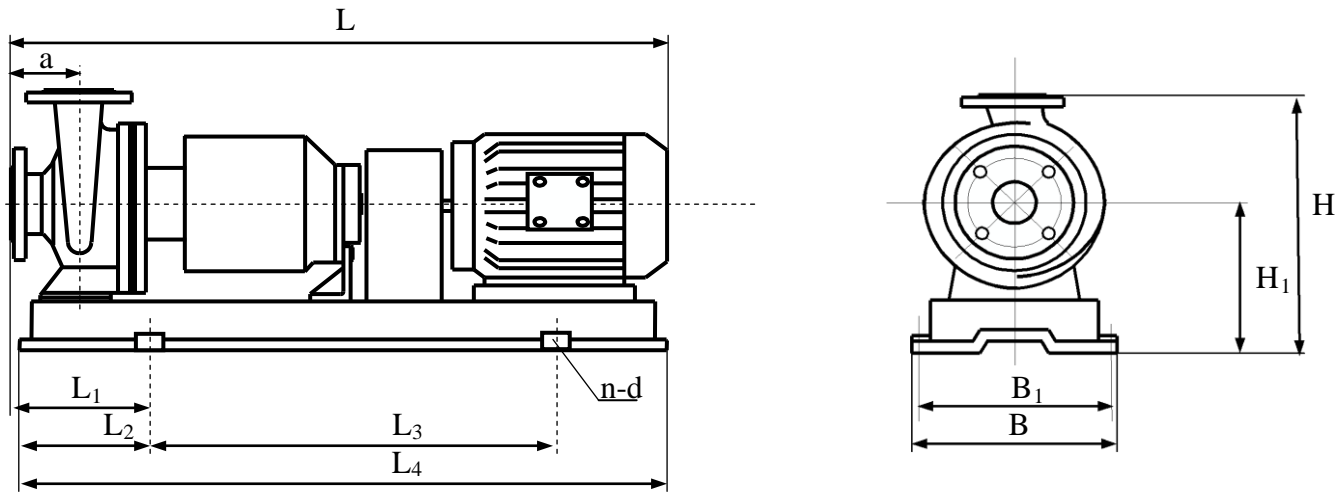


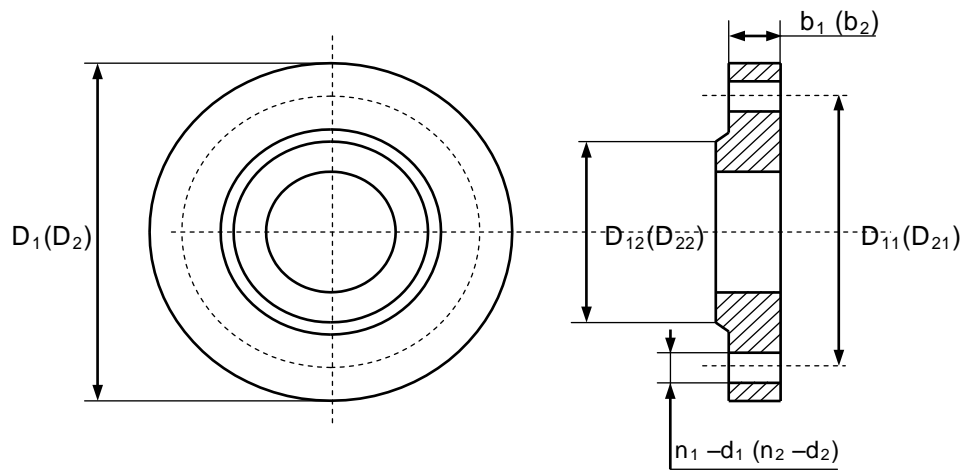
### Specification of pump details

No.	Name of details	Q-ty
1	Pump casing	1
2	Working wheel	1
3	Nut	1
4	Wall	1
5	Liner	2
6	Bushing	2
7	Shaft	1
8	Screw of screen fastening	
9	Screen	1
10	Driven half-coupling	1
11	Magnets	
12	Driving half-coupling	1
13	Bearings	
14	Pressure lubricator	1
15	Undercarriage lid	1
16	Collar	1
17	Rear support	1
18	Undercarriage casing	1
19	Nut	1
20	Thrust bearing	2
21	Thrust ring	1



### Overall and connecting dimensions





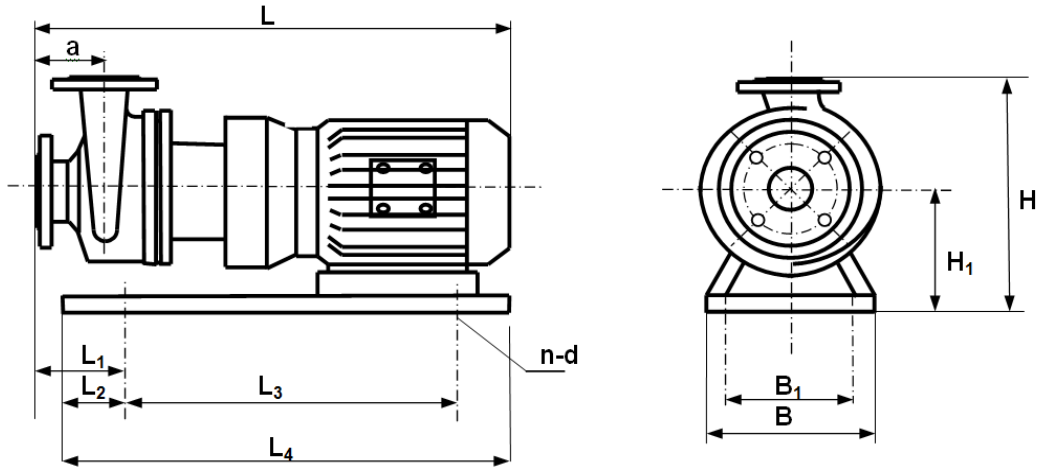
	Inlet diameter, mm						Outlet diameter, mm					
	DN <sub>1</sub>	D <sub>1</sub>	D <sub>11</sub>	D <sub>12</sub>	b <sub>1</sub>	n <sub>1</sub> - d <sub>1</sub>	DN <sub>2</sub>	D <sub>2</sub>	D <sub>21</sub>	D <sub>22</sub>	b <sub>2</sub>	n <sub>2</sub> - d <sub>2</sub>
25-20-110	25	100	75	60	17	4-12	20	95	65	50	15	4-12
25-20-125												
25-20-160												
32-25-110	32	120	90	70	17	4-14	25	100	75	62	15	4-12
32-25-125												
32-25-160												
40-25-125	40	150	110	88	20	4-18	25	115	85	65	18	4-14
40-25-160												
40-25-200												
50-32-125	50	165	125	102	20	4-18	32	140	100	78	18	4-18
50-32-160												
50-32-200												
50-32-250												
65-50-125	65	185	145	122	20	4-18	50	165	125	102	20	4-18
65-50-160												
65-40-200	65	185	145	122	20	4-18	40	150	110	88	20	4-18
65-40-250												
65-40-315												
80-65-125	80	200	160	133	22	8-18	65	185	145	122	20	4-18
80-65-160												
80-50-200	80	200	160	133	22	8-18	50	165	125	102	20	4-18
80-50-250												
80-50-315												
100-80-125												
100-80-160	100	220	180	158	24	8-18	80	200	160	133	22	8-18
100-65-200												
100-65-250												
100-65-315	100	220	180	158	24	8-18	65	185	145	122	20	4-18
125-100-200												
125-100-250												
125-100-315	125	250	210	184	26	8-18	100	220	180	158	24	8-18
150-125-250												
150-125-315												
150-125-400	150	280	240	212	28	8-22	125	250	210	184	26	8-18
200-150-250												
200-150-315												
200-150-400	200	335	295	268	32	8-22	150	280	240	212	28	8-22

Model, Inlet-outlet-impeller	ρ kg/m <sup>3</sup>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	a	B	B <sub>1</sub>	H <sub>1</sub>	H	n-d									
													2900r/min								
ГХН 6,3/20.1(4) 40-25-125	1000	150	150	540	820	895	80	360	320	197	337	4-18									
	1350																				
	1840																				
ГХН 6,3/32.1(4) 40-25-160	1000	170	170	600	920	995	80	360	320	217	377		4-18								
	1350																				
	1840																				
ГХН 6,3/50.1(4) 40-25-200	1000			170	170	660	1000	1025	80	450	400			260	440	4-18					
	1350																				
	1840																				
ГХН 12,5/20.1(4) 50-32-125	1000					170	170	600	920	950	80			390	350		197	337	4-18		
	1350																				
	1840																				
ГХН 12,5/32.1(4) 50-32-160	1000							170	170	600	920	995		80	390		350	217		377	4-18
	1350																				
	1840																				
ГХН 12,5/50.1(4) 50-32-200	1000	170	170							660	1000	1075	80	450	400		260	440		4-24	
	1350																				
	1840																				
ГХН 12,5/80.1(4) 50-32-250	1000			220	220					740	1200	1220	100	540	490	300	480	4-24			
	1350																				
	1840																				
ГХН 25/20.1(4) 65-50-125	1000					170	170			600	920	1025	80	390	350	197	337		4-18		
	1350																				
	1840																				
ГХН 25/32.1(4) 65-50-160	1000							170	170	660	1000	1075	80	450	400	217	377				4-24
	1350																				
	1840																				
ГХН 25/50.1(4) 65-40-200	1000	240	220							740	1200	1240	100	490	440	300	480			4-24	
	1350																				
	1840																				
ГХН 25/80.1(4) 65-40-250	1000			240	220					740	1200	1240	100	490	440	300	480	4-24			
	1350																				
	1840																				
ГХН 25/125.4 65-40-315	1000					260	230			840	1460	1528	125	540	490	340	565		4-28		
	1350																				
	1840																				
ГХН 50/20.1(4) 80-65-125	1000							190	170	660	1000	1095	100	450	400	232	392				4-24
	1350																				
	1840																				
ГХН 50/32.1(4) 80-65-160	1000	240	220							740	1200	1240	100	490	440	300	480			4-24	
	1350																				
	1840																				
ГХН 50/50.1(4) 80-50-200	1000			240	220					740	1200	1240	100	490	440	300	480	4-24			
	1350																				
	1840																				
ГХН 50/80.1(4) 80-50-250	1000					260	230			840	1460	1528	125	610	550	340	565		4-28		
	1350																				
	1840																				
ГХН 50/125.4 80-50-315	1000							320	290	1060	1820	1735	125	730	670	430	705				4-28
	1350																				
	1840																				

Model, Inlet-outlet-impeller	ρ	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	a	B	B <sub>1</sub>	H <sub>1</sub>	H	n-d						
	kg/m <sup>3</sup>	2900 r/min																
ГХН 100/20.1(4) 100-80-125	1000	225	220	740	1200	1240	100	490	440	300	480	4-24						
	1350					1280												
	1840																	
ГХН 100/32.1(4) 100-80-160	1000	230	225	840	1290	1395		610	540	490	320		520					
	1350					1430					340		540					
	1840					1503					560							
ГХН 100/50.1(4) 100-65-200	1000	235	230	940	1530	1700		610	550	360	430		655	4-28				
	1350					1543									660	600	410	655
	1840														610	550	385	635
ГХН 100/80.1(4) 100-65-250	1000	245	230	840	1460	1635		610	550	385	635		610		4-28			
	1350					1775	660					600				410	655	
	1840						660					600				410	655	
ГХН 100/125.4 100-65-315	1000	335	320	1200	1820	1805	125	730	670	460	710	4-28						
	1350					2065							460			740		
	1840					2195							495			775		
ГХН 200/50.1(4) 125-100-200	1000	305	290	1060	1620	1700	140	660	600	430	710		4-28					
	1350					1775								660		600	430	710
	1840					1855								460		740		
ГХН 200/80.1(4) 125-100-250	1000	350	230	1200	1820	1820	730	670	430	710	495			4-28				
	1350					2065									430	710		
	1840					2145									495	775		
ГХН 200/125.4 125-100-315	1000	350	320	1200	1820	2235	140	730	670	495	775				4-28			
	1350					2145						495				775		
	1840					2235						495				775		
1450 r/min																		
ГХН 6,3/5.1(4) 50-32-125	1000	150	150	540	820	895	80	360	320	197	337	4-18						
	1350												217			377		
	1840												260			440		
ГХН 6,3/8.1(4) 50-32-160	1000	150	150	540	820	895	80	360	320	217	377		4-18					
	1350													260		440		
	1840													260		440		
ГХН 6,3/12,5.1(4) 50-32-200	1000	170	170	600	920	925	100	390	350	260	440			4-18				
	1350					950									260	440		
	1840					950									260	440		
ГХН 6,3/20.1(4) 50-32-250	1000	225	220	740	1140	1230	100	450	400	305	530				4-24			
	1350											1230				305	530	
	1840											1230				305	530	
ГХН 12,5/5.1(4) 65-50-125	1000	150	150	540	820	895	80	360	320	197	337	4-18						
	1350												217			377		
	1840												217			377		
ГХН 12,5/8.1(4) 65-50-160	1000	170	170	600	920	925	100	390	350	217	377		4-18					
	1350					950								217		377		
	1840					950								217		377		
ГХН 12,5/12,5.1(4) 65-40-200	1000	190	170	600	920	945	100	390	350	245	425			4-24				
	1350					970									245	425		
	1840					1015									245	425		
ГХН 12,5/20.1(4) 65-40-250	1000	225	220	740	1140	1230	125	450	400	305	505				4-24			
	1350					1260						305				505		
	360					1260						305				505		
ГХН 12,5/32.1(4) 65-40-315	1000	250	225	840	1290	1380	125	490	440	340	590	4-24						
	1350					1275							340			590		
	1840					1380							340			590		
ГХН 25/5.1(4) 80-65-125	1000	150	170	540	820	915	100	540	490	360	610		4-24					
	1350													945		360	610	
	1840													945		360	610	

Model, Inlet-outlet-impeller	ρ	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L		B	B <sub>1</sub>	H <sub>1</sub>	H	n-d
	kg/m <sup>3</sup>											
ГХН 25/8.1(4) 80-65-160	1000	170	220	600	920	1015	100	390	350	245	425	4-18
	1350											
	1840											
ГХН 25/12.5.1(4) 80-50-200	1000	250	220	740	1140	1275	125	450	400	305	405	4-28
	1350											
	1840											
ГХН 25/20.1(4) 80-50-250	1000	255	225	840	1290	1420	100	540	490	385	665	4-18
	1350											
	1840											
ГХН 25/32.1(4) 80-50-315	1000	225	220	740	1140	1220	100	450	400	285	500	4-24
	1350											
	1840											
ГХН 50/5.1(4) 100-80-125	1000	240	225	840	1290	1215	140	540	490	360	610	4-28
	1350											
	1840											
ГХН 50/8.1(4) 100-80-160	1000	245	230	840	1460	1450	140	540	490	385	665	4-24
	1350											
	1840											
ГХН 50/12.5.1(4) 100-65-200	1000	260	230	840	1460	1540	140	540	490	410	725	4-28
	1350											
	1840											
ГХН 50/20.1(4) 100-65-250	1000	300	290	1068	1620	1655	140	660	600	460	815	4-28
	1350											
	1840											
ГХН 50/32.1(4) 100-65-315	1000	300	290	1060	1620	1680	140	660	600	460	815	4-28
	1350											
	1840											
ГХН 100/12.5.1(4) 125-100-200	1000	330	320	1200	1820	1820	180	730	670	495	895	4-28
	1350											
	1840											
ГХН 100/20.1(4) 125-100-250	1000	320	290	1060	1620	1740	180	660	600	460	835	4-28
	1350											
	1840											
ГХН 100/50.1(4) 125-100-400	1000	350	320	1200	1820	1945	180	730	600	495	895	4-28
	1350											
	1840											
ГХН 200/20.1(4) 150-125-250	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											
ГХН 200/32.1(4) 150-125-315	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											
ГХН 200/50.1(4) 150-125-400	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											
ГХН 400/20.1(4) 200-150-250	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											
ГХН 400/32.1(4) 200-150-315	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											
ГХН 400/50.1(4) 200-150-400	1000	390	360	1250	1930	2530	180	730	600	495	945	4-28
	1350											
	1840											

## Overall and connecting dimensions ГХН Q/H.1(4) in monoblock execution



Pump type Dimension	$\rho$ кг/м <sup>3</sup>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L	a	B <sub>1</sub>	B	H <sub>1</sub>	H	4-d
		2900 об/мин										
ГХН 2,5/15.1(4) 25-20-110	1000	70		400	480	480	50	125	165	91	180	d10
	1350											
	1840											
ГХН 2,5/20.1(4) 25-20-125	1000	70		400	480	500	50	125	165	100	190	d12
	1350											
	1840											
ГХН 2,5/32.1(4) 25-20-160	1000	85	50	400	480	530	65	140	180	130	230	d12
	1350											
	1840											
ГХН 4/15.1(4) 32-25-110	1000	78	50	450	530	500	58	125	165	100	190	d12
	1350											
	1840											
ГХН 4/20.1(4) 32-25-125	1000	78	50	450	530	500	58	125	165	100	190	d12
	1350											
	1840											
ГХН 4/32.1(4) 32-25-160	1000	78	50	450	530	580	58	140	180	130	230	d12
	1350											
	1840											
ГХН 6,3/20.1(4) 40-25-125	1000	110	110	500	630	755	80	320	360	186	479	d18,5
	1350											
	1840											
ГХН 6,3/32.1(4) 40-25-160	1000	110	110	500	630	800	80	320	360	206	506	d18,5
	1350											
	1840											
ГХН 6,3/50.1(4) 40-25-200	1000	110	110	500	630	820	80	350	390	211	511	d18,5
	1350											
	1840											
ГХН 12,5/20.1(4) 50-32-125	1000	150	150	380	510	741	80	236	276	187	472	d18,5
	1350											
	1840											
ГХН 12,5/32.1(4) 50-32-160	1000	150	150	380	510	775	80	286	326	212	512	d18,5
	1350											
	1840											
ГХН 12,5/32.1(4) 50-32-160	1000	150	150	540	670	863	80	340	380	217	575	d24
	1350											
	1840											

## Electrically driven pumps GXH Q/H.2

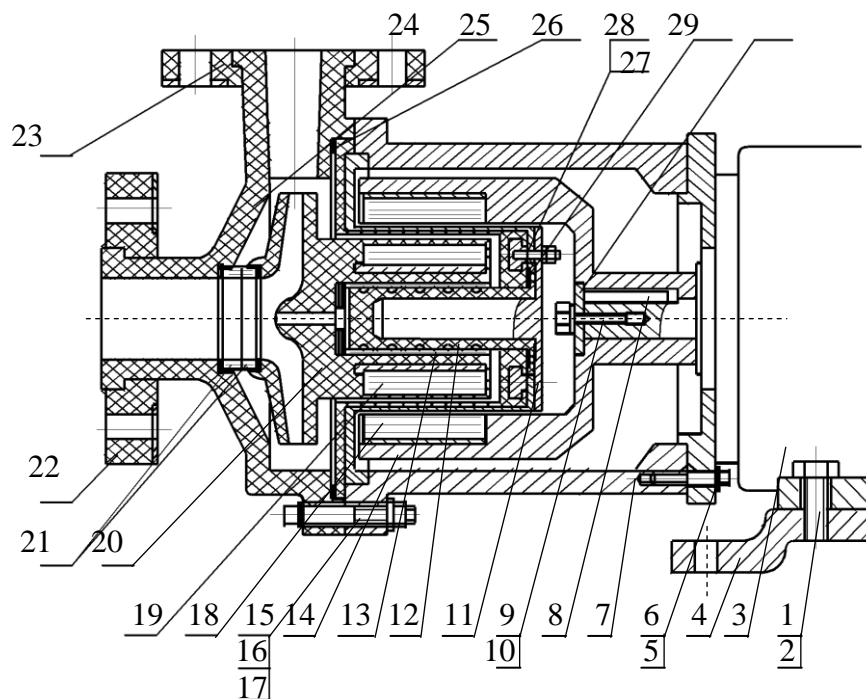
Pumps GXH Q/H.2 are horizontal leakproof single block centrifugal pumps meant for pumping of chemically active, hazardous and toxic fluids. The pumps do not have seals and allow presence in the pumped fluid of solid particles no greater than 0.1 mm with bulk concentration up to 0.2%. Leakproofness of the pumps is provided by use of magnetic couplings for drive of pumping part.

The pumps are manufactured in completely polymeric casing made of fluoroplastic  $\Phi$ -50. Range of flow rates is 0,4-25 m<sup>3</sup>/hour and range of heads is 3,2-32 m. Density of the pumped fluid is up to 1500 kg/m<sup>3</sup>. Minimal temperature of the pumped fluid is up to -30°C, maximum is up to 110°C.

### Specification

Model	Inlet-outlet-impeller, mm	Pump parametrs				
		Liquid consumption, (Q) m <sup>3</sup> /hour	Head H m	$\eta$ %	Npsh, m	N, kW
ГХН 0,4/3,2,2	15-10-65	0,4	3,2	15	7,8	0,12
ГХН 0,8/5,2	20-12-75	0,8	5	19	6	0,18
ГХН 1,6/12,5,2	25-15-105	1,6	12,5	22,5	6	0,55
ГХН 3,2/12,5,2	32-20-105	3,2	12,5	25	6	0,9
ГХН 6,3/20,2	40-25-125	6,3	20	25	5	2,2
ГХН 12,5/20,2	50-32-125	12,5	20	38	3,5	3
ГХН 12,5/32,2	50-32-160	12,5	32	28	3,5	4-5,5

### Pump structure



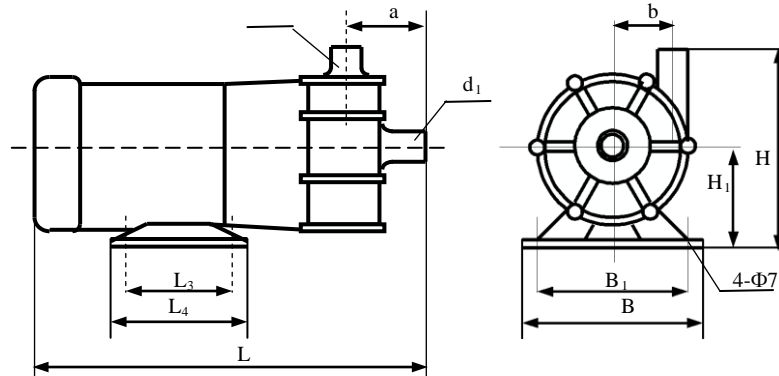
### Specification of pump details

No.	Name of details	Q-ty
1	Screw	
2	Washer	
3	Flanged electric motor	1
4	Base	1
5	Washer	
6	Washer	
7	Undercarriage casing	1
8	Dowel	1
9	Screw	
10	Washer	
11	Two-layer screen	1
12	Bushing	1
13	Liner	
14	Driving magnetic coupling	1
15	Bolt	
16	Nut	
17	Washer	
18	Magnets of driving coupling	
19	Magnets of rotor	
20	Rotor	1
21	Thrust ring	2
22	Cap flange of suction connection	1
23	Cap flange of discharge connection	1
24	Pump casing	1
25	Gasket	1
26	Stud	
27	Nut	
28	Gasket	1
29	Pad	1



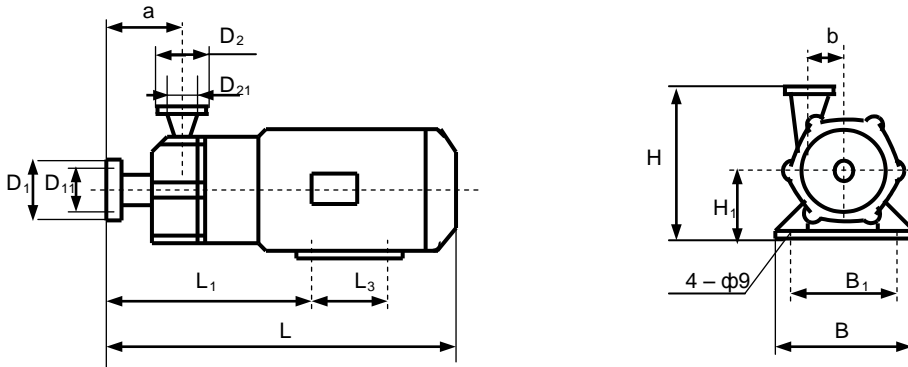
## Overall and connecting dimensions ГХН

0,4/3,2.2 (15-10-65), ГХН 0,8/5.2 (20-12-75)  $d_2$



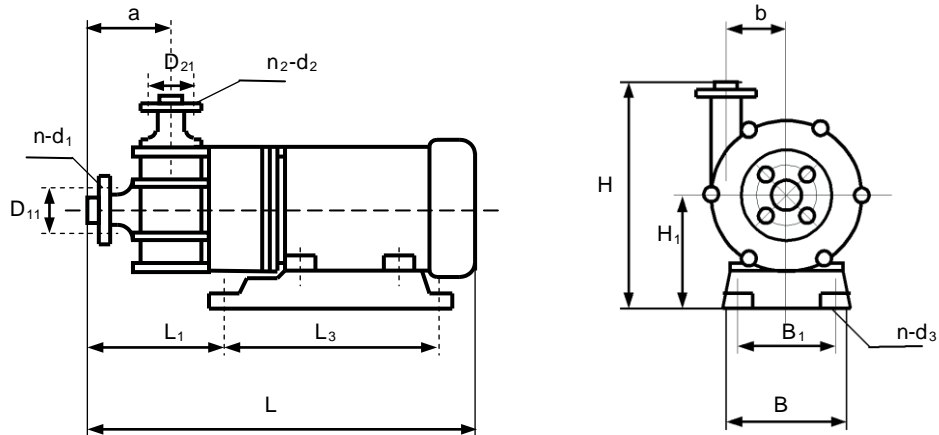
	$d_1$	$d_2$	$L_3$	$L_4$	$L$	$a$	$b$	$B$	$B_1$	$H$	$H_1$
ГХН 0,4/3,2.2	22	22	71	88	290	40	25	112	90	130	56
ГХН 0,8/5.2	27	22	71	88	310	52	38	112	90	130	56

ГХН 0,8/5.2 (20-12-75), ГХН 1,6/12,5.2 (25-15-105)



	$D_1$	$D_{11}$	$D_2$	$D_{21}$	$L_1$	$L_3$	$L$	$a$	$b$	$B$	$B_1$	$H$	$H_1$
ГХН 0,8/5.2	90	55	80	55	176	71	310	52	38	112	90	141	56
ГХН 1,6/12,5.2	100	75	90	75	200	80	355	52	49	130	100	163	63

ГХН 3,2/12,5.2 (32-20-105), ГХН 6,3/20.2 (40-25-125), ГХН 12,5/20.2 (50-32-125)



	$D_{11}$	$n-d_1$	$D_{21}$	$n-d_2$	$L_1$	$L_3$	$L$	$a$	$b$	$B$	$B_1$	$H$	$H_1$	$n-d_3$
ГХН 3,2/12,5.2	90	4-14	65	4-11	162	200	483	85	60	148	118	211	100	4-12
ГХН 6,3/20.2	110	4-14	85	4-14	207	235	528	85	76	180	140	254	120	4-12
ГХН 12,5/20.2	125	4-14	90	4-14	207	260	528	85	76	180	140	264	120	4-12

## Electrically driven pumps ГХН Q/H.3

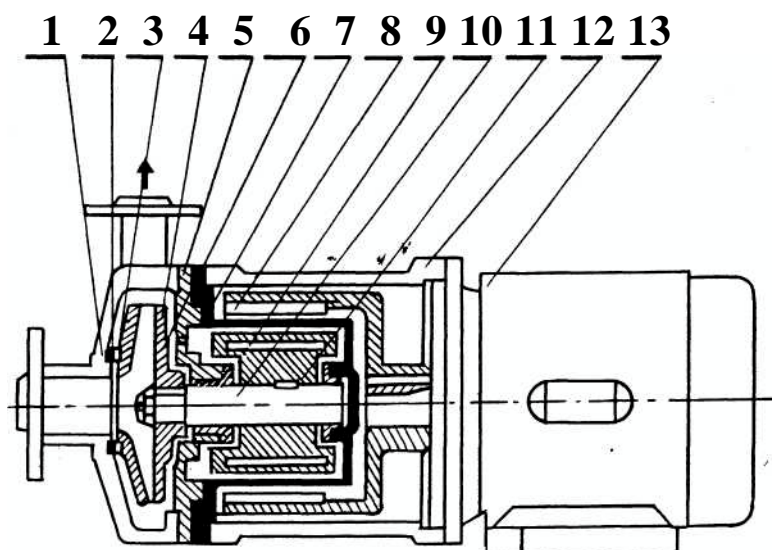
Pumps ГХН Q/H.3 – are horizontal leakproof single block centrifugal pumps without seals; they allow presence in the pumped fluid of solid particles no greater than 0.1 mm with bulk concentration up to 0.2 %. Leakproofness of the pumps is provided by use of magnetic half-couplings separated by screen for drive of pumping part. Pumps of small dimension-types are manufactured with manifolds for welding.

The pumps are manufactured in casing made of steels of types 304 and 316L. Range of flow rates is 0,9-50 m<sup>3</sup>/hour and range of heads is 2-50 m. Density of the pumped fluid is up to 1600 kg/m<sup>3</sup>. Minimal temperature of the pumped fluid is up to -30<sup>0</sup>C, maximum is up to 110<sup>0</sup>C.

### Specification

Model	Liquid consumption, Q m <sup>3</sup> /hour	Head H м	Npsh, м	Rate speed, r/min	Diameter, mm		N, kW	Supply voltage, V
					Inlet	outlet		
ГХН 0,9/2.3	0,9	2	2	2800	8	6	0,055	220
ГХН 1,1/3.3	1,1	3	2,5		10	10	0,09	220
ГХН 1,2/5.3	1,2	5	3		14	10	0,18	220 или 380
ГХН 1,8/8.3	1,8	8	3		16	12	0,37	220 или 380
ГХН 3/12,5.3	3,0	12,5	4		20	12	0,75	220 или 380
ГХН 6,3/15.3	6,3	15	4		25	20	1,5	380
ГХН 6,3/15.3	6,3	15	4		32	25	1,5	
ГХН 6,3/25.3	6,3	25	4		32	25	3	
ГХН 12,5/20.3	12,5	20	7,5		40	32	3	
ГХН 12,5/32.3	12,5	32	8		40	32	5,5	
ГХН 15/25.3	15	25	8,3		50	40	5,5	

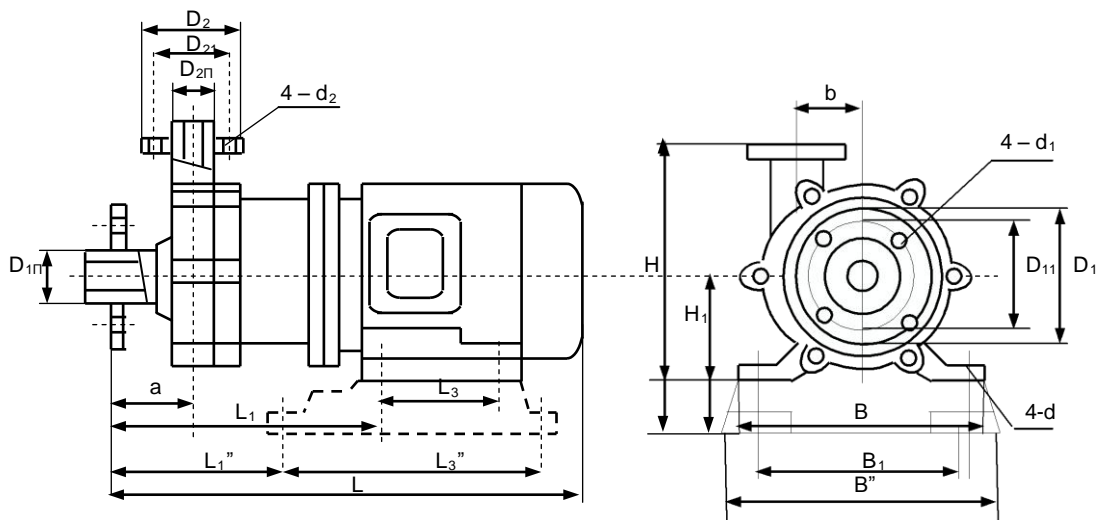
### Устройство насоса



## Specification of pump details

No.	Name of details	Q-ty
1	Pump casing	1
2	Thrust ring	1
3	Thrust ring of working wheel	1
4	Working wheel	1
5	Wall	1
6	Hub	1
7	Screen	1
8	Driving magnetic half-coupling	1
9	Driven magnetic half-coupling	1
10	Shaft	1
11	Dowel	1
12	Undercarriage casing	1
13	Electric motor	1

## Overall and connecting dimensions



Starting from electric motor power  $N = 1,5$  kW the pumps are equipped with a frame.

	$D_1$	$D_{1n}$	$D_{11}$	$d_1$	$D_2$	$D_{2n}$	$D_{21}$	$d_2$	$L_1$ ( $L_1''$ )	$L_3$ ( $L_3''$ )	$L$	$a$	$b$	$B_1$	$B$ ( $B''$ )	$H$	$H_1$	$d$
ГХН 1,2/5.3		18				16			160	71	270	53	37	90	130	120	56	7
ГХН 1,8/8.3		22				18			180	70	320	55	40		115	160	65	11
ГХН 3/12,5.3		26							189	80	340	59	65	100	130		73	12
ГХН 6,3/15.3	100		75	12	90		65	10	256	100	460	67	71	125	160	205	90	
ГХН 6,3/15.3	120		90		100	75	230											
ГХН 6,3/25.3																		
ГХН 12,5/20.3	130		100	14			90	14	310	120	545	75	78	140	180	220	100	
ГХН 12,5/32.3											351	140	620	80	91	190	245	
ГХН 15/25.3					120		90	14										

## Section 3. Semisubmersible chemical pumps АХПН

### Electrically driven pumps АХПН Q/H.1

Pumps АХПН Q/H.1 – are vertical semisubmersible centrifugal pumps. They allow presence in the pumped fluid of solid particles no greater than 2.0 mm with bulk concentration up to 0.5 %. To avoid steam-out single mechanical seals and mechanical seals with additional seal are installed above support plate.

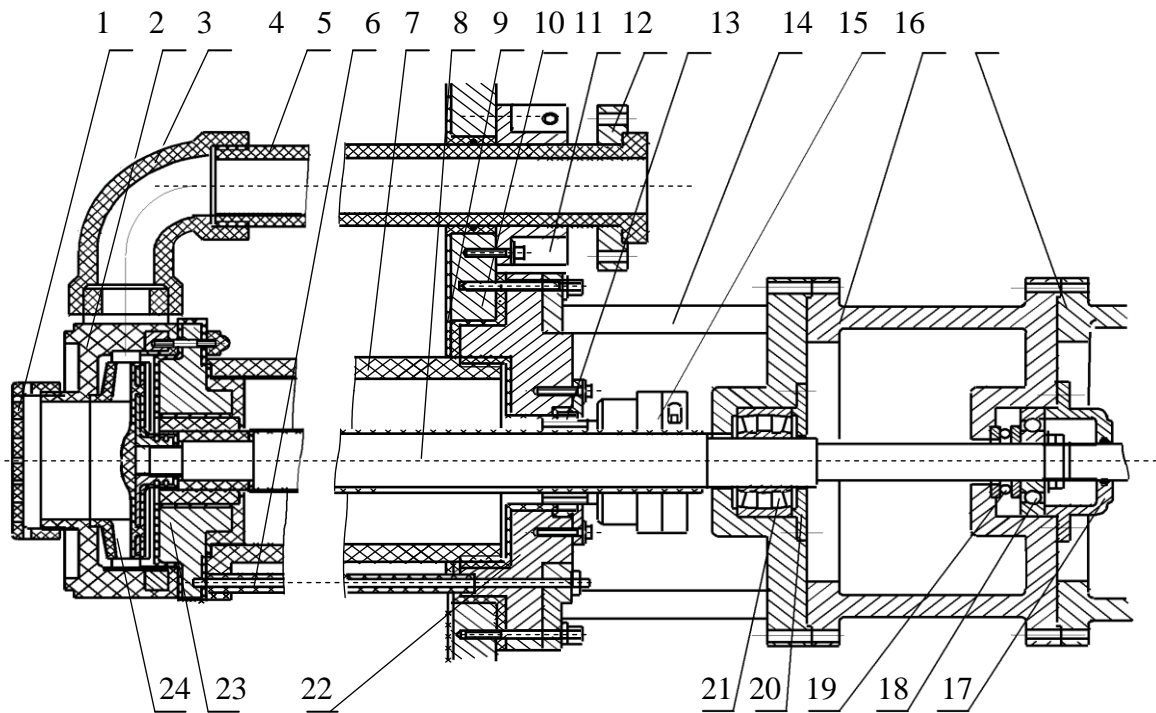
Flow tube of the pumps is made of fluoroplastic  $\Phi$ -50. Range of flow rates is 1,5-50 m<sup>3</sup>/hour and range of heads is 10-50 m. Density of the pumped fluid is up to 1800 kg/m<sup>3</sup>. Minimal temperature of the pumped fluid is up to -85°C, maximum temperature is up to 120°C. Immersion depth is up to 2 m. Filter length is up to 0,5 m.

By special order it is possible to manufacture pumps with other specification (immersion depth, plate size – according to customer's drawings, temperature range).

#### Specification

Model	Pump parametrs					
	Liquid consumption (Q), m <sup>3</sup> /hour	Head H m	D <sub>in</sub>	D <sub>out</sub>	N kW	Rate speed, r/min
АХПН 1,5/10.1	1,5	10	25	20	4	2900
АХПН 3,6/18.1	3,6	18	25	20	4	
АХПН 15/20.1	15	20	50	40	5,5	
АХПН 15/25.1	15	25	50	40	5,5	
АХПН 10/40.1	10	40	50	32	11	
АХПН 12,5/50.1	12,5	50	50	32	15	
АХПН 40/20.1	40	20	80	65	11	
АХПН 50/30.1	50	30	80	65	11	
АХПН 40/40.1	40	40	80	50	15	
АХПН 50/50.1	50	50	80	50	18,5	

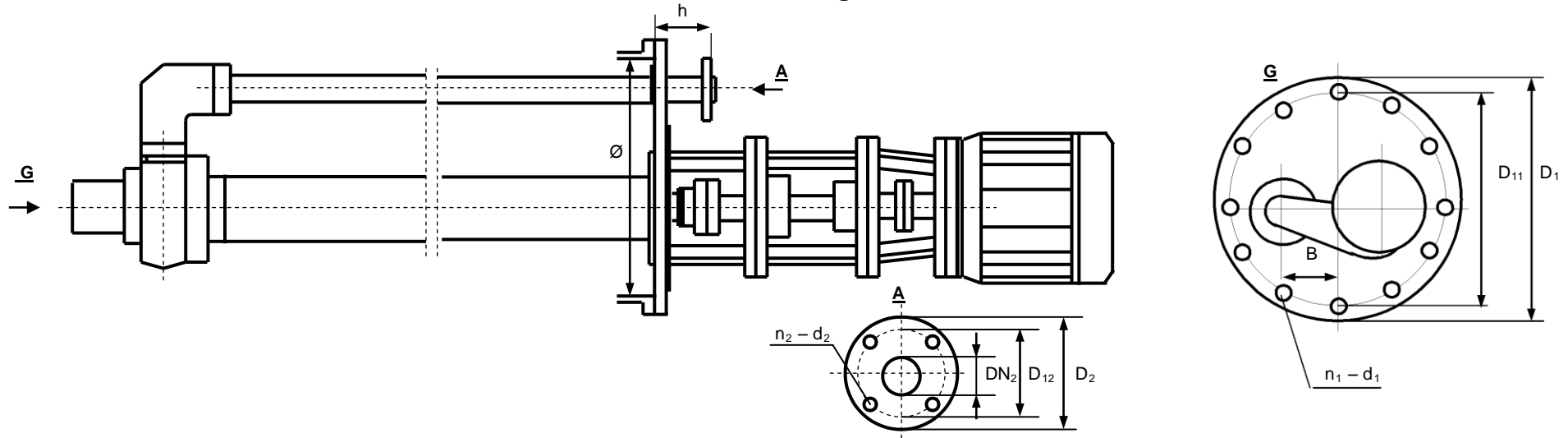
## Pump structure



## Specification of pump details

No.	Name	Q-ty
1	Filter	1
2	Pump casing	1
3	Tapered pipe	1
4	Discharge pipe	1
5	Stud	4
6	Dipper tube	1
7	Shaft	1
8	Polymeric coating of support plate	1
9	Support plate	1
10	Clamp	1
11	Cap flange	1
12	Immovable ring of mechanical seal	1
13	Lower casing	1
14	Moving part of mechanical seal	1
15	Undercarriage casing	1
16	Electric motor base	1
17	Top bearing lid	1
18	Top bearing	1
19	Thrust bearing	1
20	Low bearing lid	1
21	Low bearing	1
22	Seal casing	1
23	Wall	1
24	Working wheel (impeller)	1

### Overall and connecting dimensions



Model	Overall and connecting dimensions, mm								
	DN <sub>2</sub>	D <sub>2</sub>	D <sub>12</sub>	D <sub>1</sub>	D <sub>11</sub>	Ø	h	n <sub>2</sub> - d <sub>2</sub>	n <sub>1</sub> - d <sub>1</sub>
АХПН 1,5/10.1	20	100	75	530	490	440	120	04.дек	12 – 18
АХПН 3,6/18.1	20	100	75	530	490		120	04.дек	12 – 18
АХПН 15/20.1	40	128	100	530	490		120	апр.14	12 – 18
АХПН 15/25.1	40	128	100	530	490		120	апр.14	12 – 18
АХПН 10/40.1	32	128	100	700	650	590	120	апр.14	16 – 18
АХПН 12,5/50.1	32	128	100	700	650		120	апр.14	16 – 18
АХПН 40/20.1	65	160	135	700	650		120	апр.14	16 – 18
АХПН 50/30.1	65	160	135	700	650		120	апр.14	16 – 18
АХПН 40/40.1	50	160	135	700	650		120	апр.14	16 – 18
АХПН 50/50.1	50	160	135	700	650		120	апр.14	16 – 18

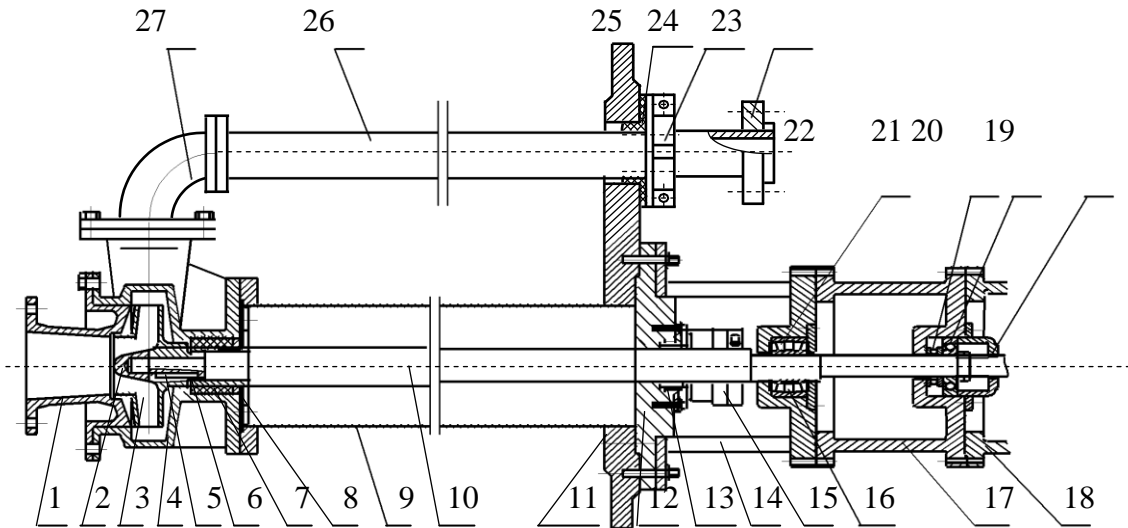
## Electrically driven pumps АХПН Q/H.2

Pumps АХПН Q/H.2 – are vertical semisubmersible centrifugal pumps. They allow presence in the pumped fluid of solid particles no greater than 2.00 mm with bulk concentration up to 0.5 %. Immersion depth from support plate is 4 m. On suction connection it is possible to mount a filter up to 0.5 m long. Pumps for aggressive fluids are made with mechanical or gland seals of shaft above the support plate. Flow tube of the pumps is made of stainless steel of types 304 and 316L. Range of flow rates is 3,6-400 m<sup>3</sup>/hour and range of heads is 15-60 m. Density of the pumped fluid is up to 1800 kg/m<sup>3</sup>.

Minimal temperature of the pumped fluid is up to -20<sup>0</sup>C, maximum temperature is up to 105<sup>0</sup>C.

Model	Liquid consumption, (Q) m <sup>3</sup> /hour	Head H м	η %	Motors			
				Liquid density (ρ), kg/m <sup>3</sup>			
				1350		1800	
				2900 r/min			
АХПН 3,6/16.2	3,6	16	22	90S2	1,5	90L2	2,2
АХПН 3,6/25.2		25	21	100L2	3	100L2	3
АХПН 3,6/41.2		41	16	100L2	3	112M2	4
АХПН 6,3 /12,5.2	6,3	12,5	42	90S2	1,5	90L2	2,2
АХПН 7,2/16.2	7,2	16	40	90L2	2,2	100L2	3
АХПН 7,2//26.2		26	35	100L2	3	112M2	4
АХПН 7,2/40.2		40	31	132SA2	5,5	100L2	7,5
АХПН 14/16.2	14	16	53	100L2	3	112M2	4
АХПН 14/25.2		25	50	112M2	4	132SA2	5,5
АХПН 14/40.2		40	42	132SB2	7,5	160MA2	11
АХПН 29/16.2	29	16	58	132SA2	5,5	132SB2	7,5
АХПН 29/25.2		25	55	132SB2	7,5	160MA2	11
АХПН 29/40.2		40	52	160MA2	11	160MB2	15
АХПН 54/15.2	54	15	66	132SB2	7,5	160MA2	11
АХПН 54/24.2		24	65	160MA2	11	160MB2	15
АХПН 54/38.2		38	58	160L2	18,5	180M2	22
АХПН 100/23.2	100	23	68	160L2	18,5	180M2	22
АХПН 100/37.2		37	69	180M2	22	200LA2	30
АХПН 100/57.2		57	63	200LA2	30	225M2	45
АХПН 190/22.2	190	22	72	160MB2	30	200LB2	37
АХПН 190/35.2		35	72	225M2	45	250M2	55
АХПН 400/16.2		400	16	78	225M2	45	250M2
АХПН 320/10.2	10		61	180M2	22	200LA2	30

## Pump structure

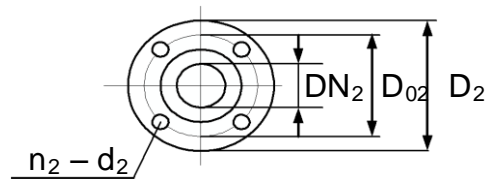
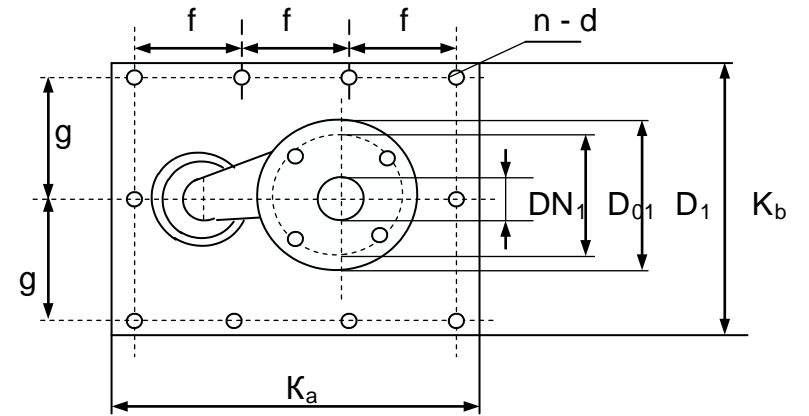
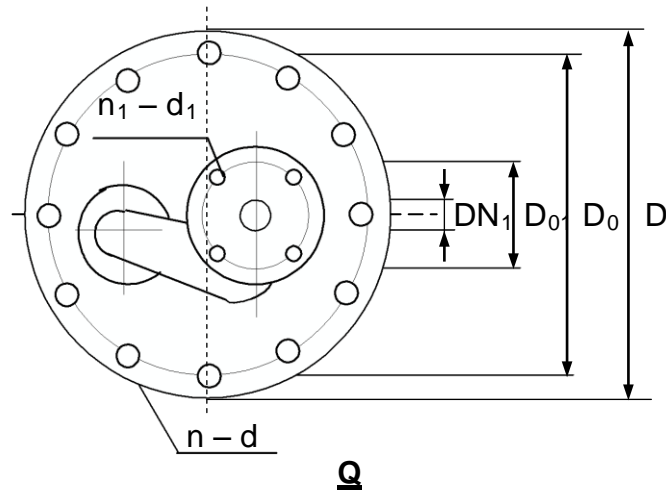
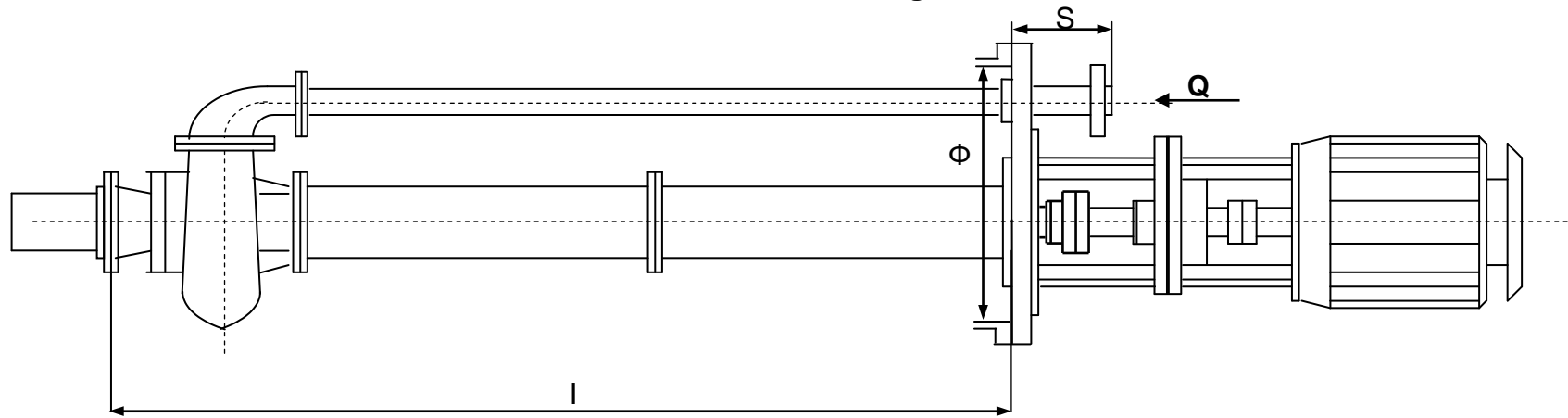


## Specification of pump details

No.	Name	Q-ty
1	Inlet fitting	1
2	Nut	1
3	Working wheel	1
4	Pump casing	1
5	Dowel	1
6	Liner	1
7	Bushing	1
8	Pad	1
9	Dipper tube	1
10	Shaft	1
11	Support plate	1
12	Base	1
13	Immovable ring of mechanical seal	1
14	Lower casing	1
15	Moving part of mechanical seal	1
16	Lower bearing	1
17	Undercarriage casing	1
18	Electric motor base	1
19	Top bearing lid	1
20	Top bearing	1
21	Thrust bearing	1
22	Lower bearing	1
23	Flange of discharge connection	1
24	Clamp	1
25	Gasket	1
26	Discharge connection	1
27	Transition	1



### Overall and connecting dimensions



Model	Overall and connecting dimensions													
	S	B <sub>1</sub>	Ø	D <sub>0</sub>	D	n - d	DN <sub>1</sub>	D <sub>1</sub>	D <sub>01</sub>	n <sub>1</sub> - d <sub>1</sub>	DN <sub>2</sub>	D <sub>2</sub>	D <sub>02</sub>	n <sub>2</sub> - d <sub>2</sub>
АХПН 3,6/16.2	154	18	415	510	560	8-20	25	100	75	4 - 12	25	100	75	4 - 12
АХПН 3,6/25.2		23												
АХПН 3,6/41.2		35												
АХПН 6,3 /12,5.2	200	35	450	525	565	12-18	65	160	130	авр.14	50	160	125	4 - 18
АХПН 7,2/16.2	170	62	425	540	580	12 - 18	40	130	100	4 - 12	40	130	100	4 - 14
АХПН 7,2/26.2		31												
АХПН 7,2/40.2		31												
АХПН 14,4/16.2	195	40	440	540	580	12 - 18	50	140	110	4 - 14	40	145	110	4 - 18
АХПН 14,4/25.2	109													
АХПН 14,4/40.2	109													
АХПН 28,8/16.2	200	32	450	525	565	12 - 18	65	160	130	4 - 14	50	160	125	4 - 18
АХПН 28,8/25.2		35												
АХПН 28,8/40.2		35												
АХПН 54,0/15.2	168	40	530	650	700	16 - 18	80	185	150	4 - 14	65	185	145	4 - 18
АХПН 54,0/24.2														
АХПН 54,0/38.2														
АХПН 100,8/23.2	203	42	580	650	700	16 - 18	100	205	170	4 - 18	80	205	160	4 - 18
АХПН 100,8/37.2														
АХПН 100,8/57.2														
АХПН 190/22.2	250	40	900x350	1080	1020	10-24	150	260	225	авр.18	125	240	200	8-18
АХПН 190/35.2			1080x680	1220	1160		200	320	280	авр.16	200	320	280	
АХПН 400/16.2														
АХПН 320/10.2														

Immersion depth I and presence of extension filter are determined by customer

Ø – minimal diameter (size) of a hatch in reservoir

Round (by request – rectangular) support plates are manufactured according to customer's dimensions with consideration of minimal diameter Φ (specify dimensions of plates K<sub>a</sub>, K<sub>b</sub>, g, f, n - d)

## Electrically driven pumps HB-D-1M (NV-D-1M)

Pumps HB-D-1M – are oil vertical semisubmersible centrifugal pumps meant for pumping of oil, oil products, volatile flammable liquids, water with oil and (or) solid impurities. Immersion depth from support plate is up to 6 m. Immersion depth required by customer is reached by connection of several suspension brackets. On suction connection it is possible to mount a filter up to 0.5 m long. Oil pumps are manufactured with a “dry” tube – double mechanical seal with a chamber filled with oil is mounted above the pump casing. Above top casing of the mechanical seal in “dry” tube it is necessary to install emergency level sensor which will give a signal about destruction or wearing of the mechanical seal or in case of emergency ingress of water from outside.

Flow tube of the pumps is made of steels of type 20X13 or other ferrous and non-ferrous metals, as well as of stainless steel 12X18H9T under the agreement with customer. Density of the pumped fluid is up to 1200 kg/m<sup>3</sup>. Minimal temperature of the pumped fluid is up to -60°C, maximum is up to 150°C.

For connection with reservoir fitting the support plate (DN = 600 mm, DN = 700 mm, DN = 800 mm) is manufactured in version 5 according to ГОСТ 12815-80 (or other standard under the agreement with customer).

The pumps are manufactured in version УХЛ1, УХЛ2 according to ГОСТ 15150-69.

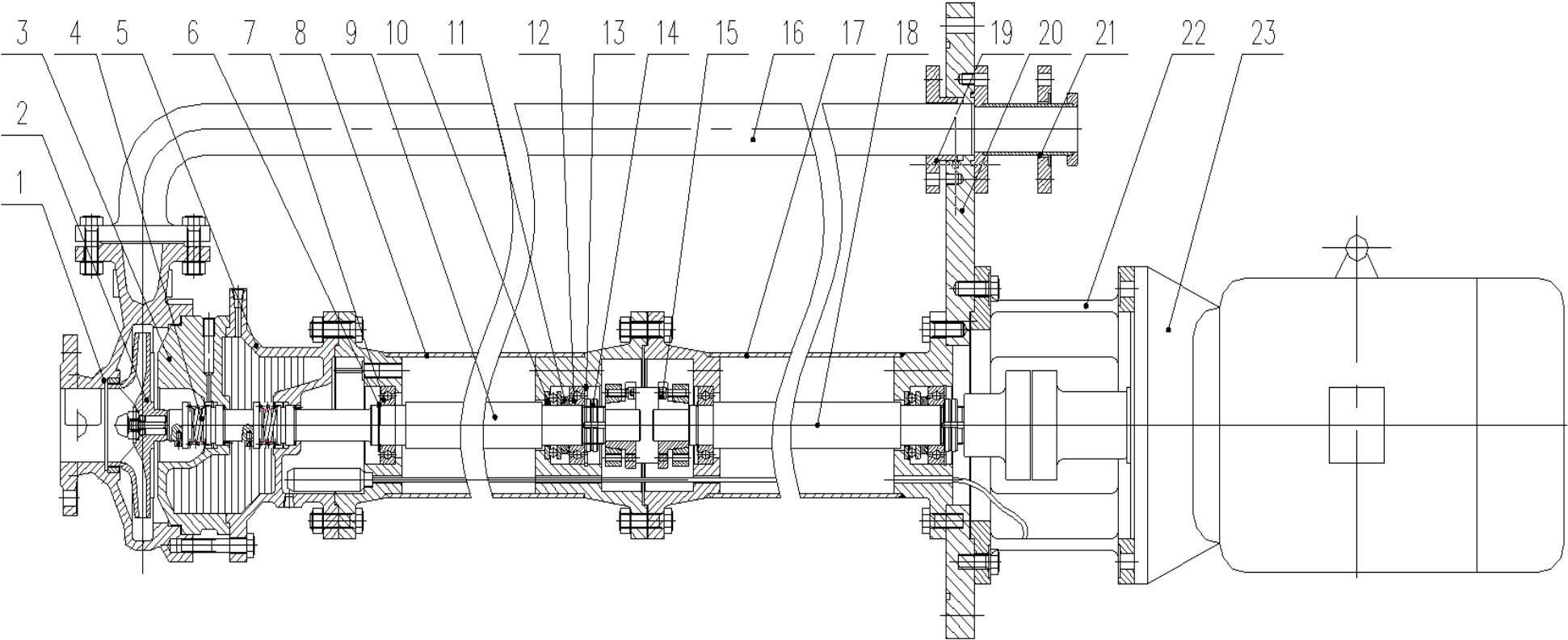
### Specification

Type of pump	Supply, m <sup>3</sup> /hour	Head, m	Suction head, m	n, rpm	Efficiency, %	Solid particles		N, kW
						Size, mm	Volume concentration, %	
NV-D-1M 12,5/32	12,5	32	3	2900	43	Up to 5	Up to 3	5,5
NV-D-1M 12,5/50	12,5	50	3	2900	48			5,5
NV-D-1M 12,5/80	12,5	80	5	2900	45			11
NV-D-1M 50/50	50	50	3	2900	53	Up to 10		15
NV-D-1M 50/80	50	80	5	2900	50			30
NV-D-1M 25/20	25	20	5	1450	45			5,5

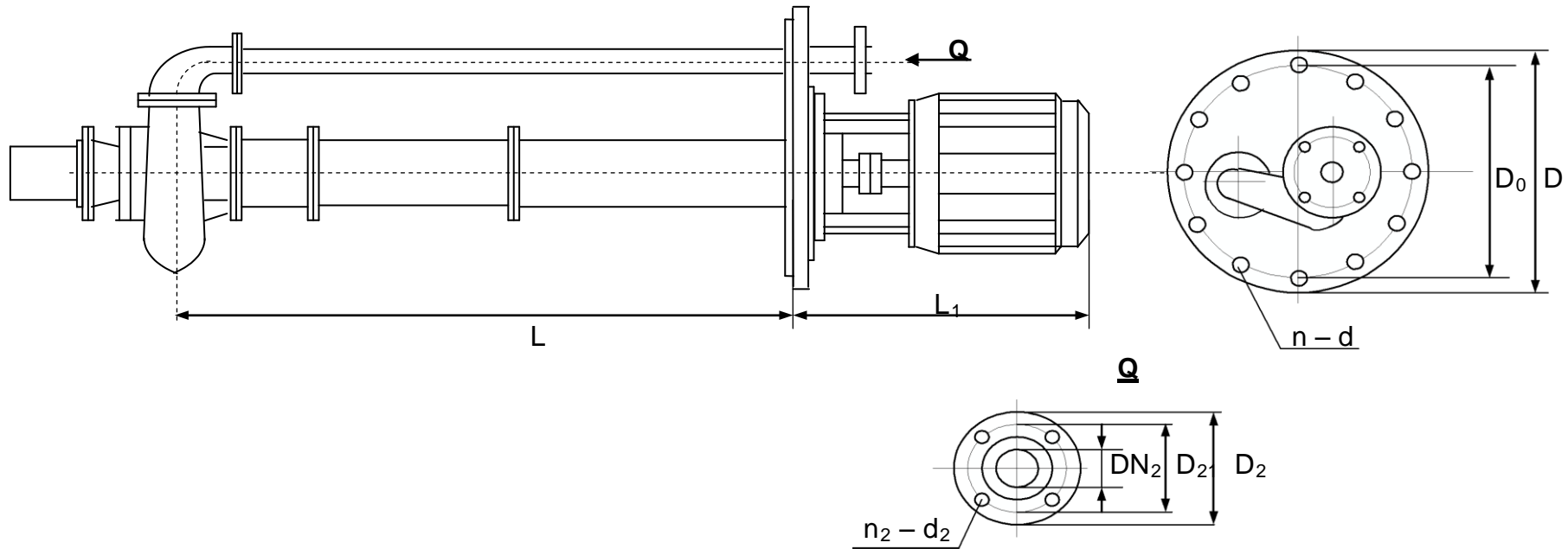
### Specification of pump details

No.	Name of parts	Q-ty
1	Pump casing	1
2	Working wing (propeller)	1
3	Wall	1
4	Rotating part of end sealing	2
5	Oil chamber casing	1
6	Retaining ring	
7	Lower bearing	
8,17	Suspension	
9,18	Shaft	
10	Thrust bearing	
11	Spacer ring	
12	Upper bearing	
13	Suspension bearings casing	
14	Nut	
15	Flexible coupling lag screw	
16	Tap	1
19	Closing sleeve	1
20	Supporting plate	1
21	Pressure tube	1
22	Support	1
23	Electric motor	1

**Structure of electrically driven pump НВ-Д-1М**



### Overall and connecting dimensions



Pump type	DN = 600 mm			DN = 700 mm			DN = 800 mm			$L_1$
	$D_0$	$D$	$n-d$	$D_0$	$D$	$n-d$	$D_0$	$D$	$n-d$	
NV-D-1M 12,5/32	705	755	20-26	810	860	24-26	920	975	24-30	790
NV-D-1M 12,5/50										
NV-D-1M 12,5/80										
NV-D-1M 50/50										
NV-D-1M 50/80										
NV-D-1M 50/80										
NV-D-1M 25/20										

## PART 2. CHEMICAL FITTINGS

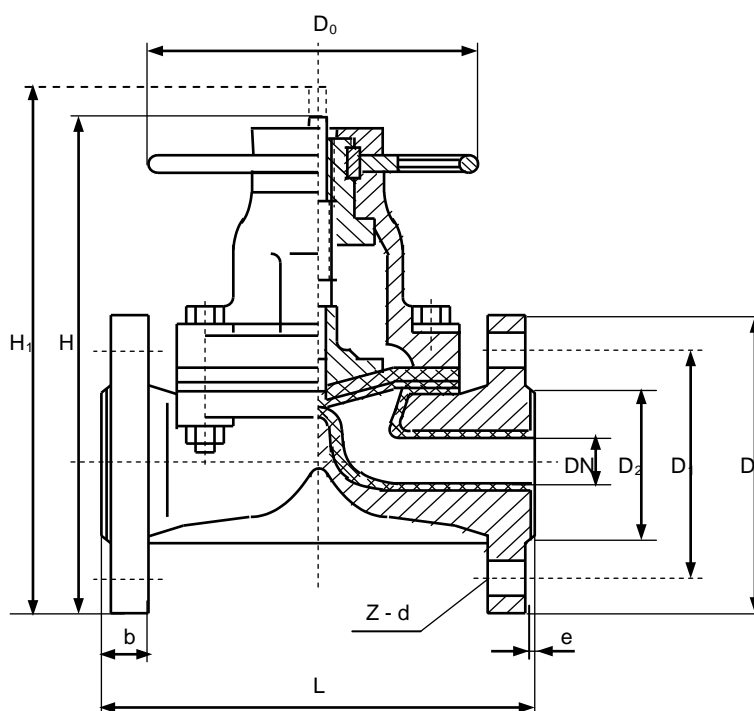
Chemical stop and control valves made by CJSC Group of companies "CHEMAGREGAT" are meant for shutoff and regulation of flows of aggressive fluids. Leakproofness class of the valves is "A" according to ГOCT 9544-93. For manually driven valves (handwheel, handle), as well as for valves with manual reducing drives and electric alternates closing force should comply with OCT 26-07-420-83.

By special order it is possible to manufacture valves with specification that differs from specification specified in the tables (in particular concerning temperature ranges).

### Section 1. Chemical orifice valves ВДХ DN/PN.1,2,3

A casing is made of carbon (.1), stainless steel 304 (.2), or completely of polymeric materials (.3;  $DN \leq 50$  mm). Flow tube of valves ВДХ DN/PN.1,2 is lined with fluoroplastic Ф-4МБ (FEP).

Operating temperature is from  $-50$  to  $150^{\circ}\text{C}$ , PN = 0,6; 1,0; 1,6 MPa.



Model	Overall and connecting dimensions, mm											Mass kg
	DN	L	D	D <sub>1</sub>	D <sub>2</sub>	b	e	z - d	H	H <sub>1</sub>	D <sub>0</sub>	
PN = 0,6 MPa (6 bar)												
ВДХ 15/6.1,2	15	125	80	55	40	14	2	4 - 12	156	166	100	3
ВДХ 20/6.1,2	20	135	90	65	50	16	2	4 - 12	161	171	100	3,5
ВДХ 25/6.1,2	25	145	100	75	60	16	2	4 - 12	177	190	140	5,5
ВДХ 32/6.1,2	32	160	120	90	70	16	3	4 - 14	192	209	140	7
ВДХ 40/6.1,2	40	180	130	100	80	16	3	4 - 14	220	240	160	9
ВДХ 50/6.1,2	50	210	140	110	90	16	3	4 - 14	232	258	160	12,5
ВДХ 65/6.1,2	65	250	160	130	110	16	3	4 - 14	276	310	200	20
ВДХ 80/6.1,2	80	300	185	150	125	18	3	4 - 18	313	355	240	26
ВДХ 100/6.1,2	100	350	205	170	145	18	3	4 - 18	375	428	240	36
ВДХ 125/6.1,2	125	400	235	200	175	20	3	8 - 18	450	515	280	60
ВДХ 150/6.1,2	150	460	260	225	200	20	3	8 - 18	502	580	320	80
ВДХ 200/6.1,2	200	570	315	280	255	22	3	8 - 18	654	758	360	125
ВДХ 250/6.1,2	250	680	370	335	310	24	4	12 - 18	755	885	400	240
PN = 1,0 MPa (10 bar)												
ВДХ 15/10.1,2	15	125	95	65	45	14	2	4 - 14	164	174	100	3
ВДХ 20/10.1,2	20	135	105	75	55	16	2	4 - 14	169	179	100	3,5
ВДХ 25/10.1,2	25	145	115	85	65	16	2	4 - 14	185	198	140	5,5
ВДХ 32/10.1,2	32	160	135	100	78	16	3	4 - 18	200	217	140	7
ВДХ 40/10.1,2	40	180	145	110	85	17	3	4 - 18	228	248	160	9
ВДХ 50/10.1,2	50	210	160	125	100	18	3	4 - 18	252	268	160	12,5
ВДХ 65/10.1,2	65	250	180	145	120	20	3	4 - 18	296	320	200	20
ВДХ 80/10.1,2	80	300	195	160	135	22	3	4 - 18	318	360	240	26
ВДХ 100/10.1,2	100	350	215	180	155	22	3	8 - 18	380	433	240	36
ВДХ 125/10.1,2	125	400	245	210	185	24	3	8 - 18	455	520	280	60
ВДХ 150/10.1,2	150	460	280	240	210	24	3	8 - 23	512	590	320	80
ВДХ 200/10.1,2	200	570	335	295	265	26	3	8 - 23	664	768	360	125
ВДХ 250/10.1,2	250	680	390	350	320	28	4	12 - 23	765	895	400	240
PN = 1,6 MPa (16 bar)												
ВДХ 15/16.1,2	15	130	95	65	45	15	2	4 - 14	164	174	100	3
ВДХ 20/16.1,2	20	150	105	75	55	16	2	4 - 14	169	179	100	3,5
ВДХ 25/16.1,2	25	160	115	85	65	16	2	4 - 14	185	198	140	5,5
ВДХ 32/16.1,2	32	180	135	100	78	16	3	4 - 18	200	217	140	7
ВДХ 40/16.1,2	40	200	145	110	85	17	3	4 - 18	228	248	160	9
ВДХ 50/16.1,2	50	230	160	125	100	18	3	4 - 18	252	268	160	12,5
ВДХ 65/16.1,2	65	290	180	145	120	20	3	8 - 18	296	320	200	20
ВДХ 80/16.1,2	80	310	195	160	135	22	3	8 - 18	318	360	240	26
ВДХ 100/16.1,2	100	350	215	180	155	24	3	8 - 18	380	433	240	36
ВДХ 125/16.1,2	125	400	245	210	185	26	3	8 - 18	455	520	280	60
ВДХ 150/16.1,2	150	480	280	240	210	28	3	8 - 23	512	590	320	80
ВДХ 200/16.1,2	200	600	335	295	265	30	3	12 - 23	664	768	360	125
ВДХ 250/16.1,2	250	730	390	355	320	30	4	12 - 25	773	903	400	240

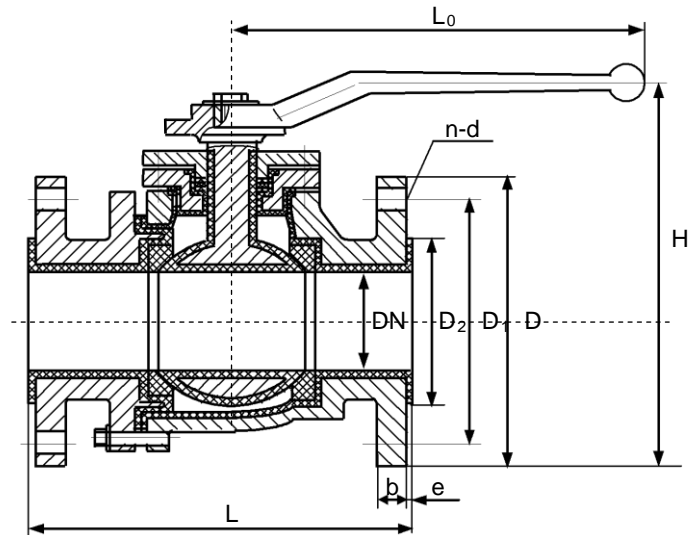


## Section 2. Chemical ball cocks

Chemical ball cocks may be equipped with electric or pneumatic actuators.

### Chemical ball cocks KЩX DN/PN.1,2

Casing is made of carbon (.1) or stainless steel 304 (.2), or completely of polymeric materials (.3). Flow tube of metallic cocks is made of fluoroplastic  $\Phi$ -4МБ (FEP), PN = 0,6; 1,0; 1,6 MPa. Temperature range: T = -50<sup>0</sup>C – 150<sup>0</sup>C



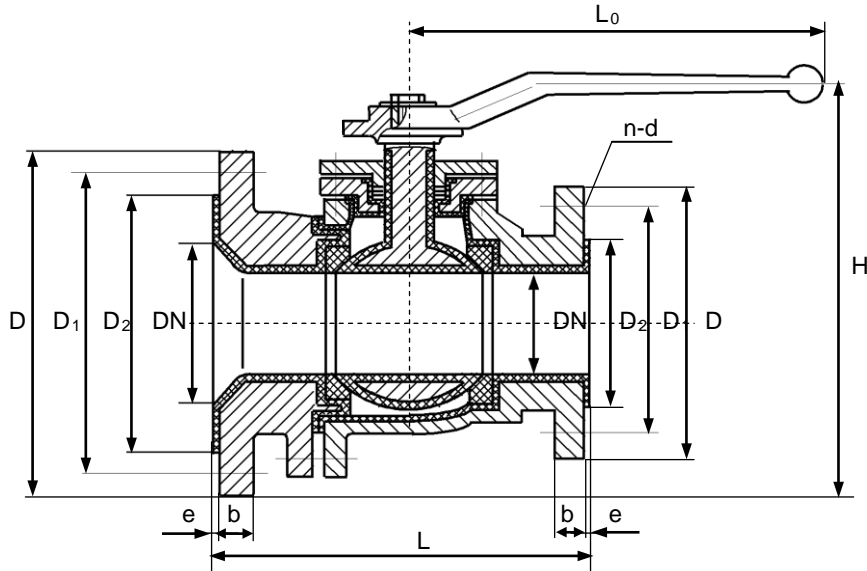
Model	Overall and connecting dimensions, mm								Mass kg
	DN	L	D	D <sub>1</sub>	D <sub>2</sub>	z - d	H	L <sub>0</sub>	
PN = 0,6 MPa (6 bar)									
KЩX 15/6.1,2	15	132	80	55	40	4 - 12	140	140	3
KЩX 20/6.1,2	20	142	90	65	50	4 - 12	150	140	3,5
KЩX 25/6.1,2	25	150	100	75	60	4 - 12	160	160	5,5
KЩX 32/6.1,2	32	165	120	90	70	4 - 14	175	250	7
KЩX 40/6.1,2	40	180	130	100	80	4 - 14	190	250	9
KЩX 50/6.1,2	50	200	140	110	90	4 - 14	220	250	12,5
KЩX 65/6.1,2	65	220	160	130	110	4 - 14	235	300	20
KЩX 80/6.1,2	80	250	185	150	125	4 - 18	295	400	26
KЩX 100/6.1,2	100	280	205	170	145	4 - 18	335	400	36
KЩX 125/6.1,2	125	325	235	200	175	8 - 18	365	450	60
KЩX 150/6.1,2	150	360	260	225	200	8 - 18	405	450	80
KЩX 200/6.1,2	200	400	315	280	255	8 - 18	470	550	125
KЩX 250/6.1,2	250	450	370	335	310	12 - 18	545	550	240

Model	Overall and connecting dimensions, mm								Mass kg
	DN	L	D	D <sub>1</sub>	D <sub>2</sub>	z - d	H	L <sub>0</sub>	
PN = 1,0 MPa (10 bar)									
KШX 15/10.1,2	15	132	95	65	45	4 - 14	150	140	3,5
KШX 20/10.1,2	20	142	105	75	55	4 - 14	160	140	4
KШX 25/10.1,2	25	150	115	85	65	4 - 14	165	160	5,5
KШX 32/10.1,2	32	165	135	100	78	4 - 18	180	250	7
KШX 40/10.1,2	40	180	145	110	88	4 - 18	195	250	9
KШX 50/10.1,2	50	200	160	125	102	4 - 18	205	250	15,5
KШX 65/10.1,2	65	220	180	145	122	4 - 18	215	300	20
KШX 80/10.1,2	80	250	195	160	133	4 - 18	280	400	30
KШX 100/10.1,2	100	280	215	180	158	8 - 18	330	400	40
KШX 125/10.1,2	125	325	245	210	185	8 - 18	375	450	56
KШX 150/10.1,2	150	360	280	240	210	8 - 23	425	450	80
KШX 200/10.1,2	200	400	335	295	265	8 - 23	495	550	119
KШX 250/10.1,2	250	450	390	350	320	12 - 23	565	550	145

Model	Overall and connecting dimensions, mm								Mass kg
	DN	L	D	D <sub>1</sub>	D <sub>2</sub>	z - d	H	D <sub>0</sub>	
PN = 1,6 MPa (16 bar)									
KШX 15/16.1,2	15	132	95	65	45	4 - 14	150	140	3,5
KШX 20/16.1,2	20	142	105	75	55	4 - 14	160	140	4
KШX 25/16.1,2	25	150	115	85	65	4 - 14	170	160	5,5
KШX 32/16.1,2	32	165	135	100	78	4 - 18	200	250	7
KШX 40/16.1,2	40	180	145	110	88	4 - 18	210	250	9
KШX 50/16.1,2	50	200	160	125	102	4 - 18	225	250	15,5
KШX 65/16.1,2	65	220	180	145	122	4 - 18	245	300	20
KШX 80/16.1,2	80	250	195	160	133	4 - 18	310	400	30
KШX 100/16.1,2	100	280	215	180	158	8 - 18	345	400	40
KШX 125/16.1,2	125	325	245	210	185	8 - 18	380	450	60
KШX 150/16.1,2	150	360	280	240	210	8 - 23	435	450	80
KШX 200/16.1,2	200	400	335	295	265	12 - 23	500	550	121
KШX 250/16.1,2	250	450	405	355	320	12 - 25	575	550	159

### Chemical ball cocks KШХ DN/PN.3

Casing is metallic, flow tube is made of fluoroplastic Ф-4МБ (FEP), PN = 1,0 MPa. Temperature range is  $T = -50^{\circ}\text{C} - 150^{\circ}\text{C}$ .



DN	L	D	D <sub>1</sub>	D <sub>2</sub>	n - d	e	b	H	L <sub>0</sub>	M, kg
25/50	120	115/140	85/110	65/90	4-14/4-14	2/3	14/16	180	140	5,5
32/65	130	135/160	100/130	78/110	4-18/4-14	3/3	16/16	210	200	7
40/65	140	145/160	110/130	85/110	4-18/4-14	3/3	16/16	215	200	9
40/80	150	145/180	110/150	85/125	4-18/4-18	3/3	16/18	225	200	9
50/80	150	160/180	125/150	100/125	4-18/4-18	3/3	16/18	235	250	15,5
50/100	150	160/200	125/170	100/145	4-18/4-18	3/3	16/18	245	250	15,5
65/100	170	180/200	145/170	120/145	4-18/4-18	3/3	18/18	255	250	19,5
65/125	170	180/245	145/200	120/175	4-18/8-18	3/3	18/20	278	250	19,5
80/125	203	195/245	160/200	135/175	4-18/8-18	3/3	20/20	332	350	30
80/150	203	195/260	160/225	135/200	4-18/8-18	3/3	20/20	340	350	30
100/150	229	215/260	180/225	155/200	8-18/8-18	3/3	20/20	365	350	40
100/20	229	215/315	180/280	155/255	8-18/8-18	3/4	20/22	390	350	40

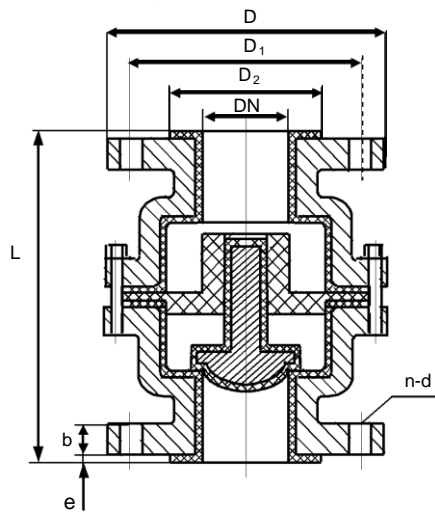
### Section 3. Chemical check valves KOX DN/6,10,16.1,2

Casing is made of carbon (.1) or stainless steel 304 (.2), flow tube is made of fluoroplastic  $\Phi$ -4МБ (FEP), PN = 0,6; 1,0; 1,6 MPa.

Temperature range is  $T = -50^{\circ}\text{C} - 150^{\circ}\text{C}$ .

At the order it is necessary to specify valve type: for vertical or horizontal pipelines.

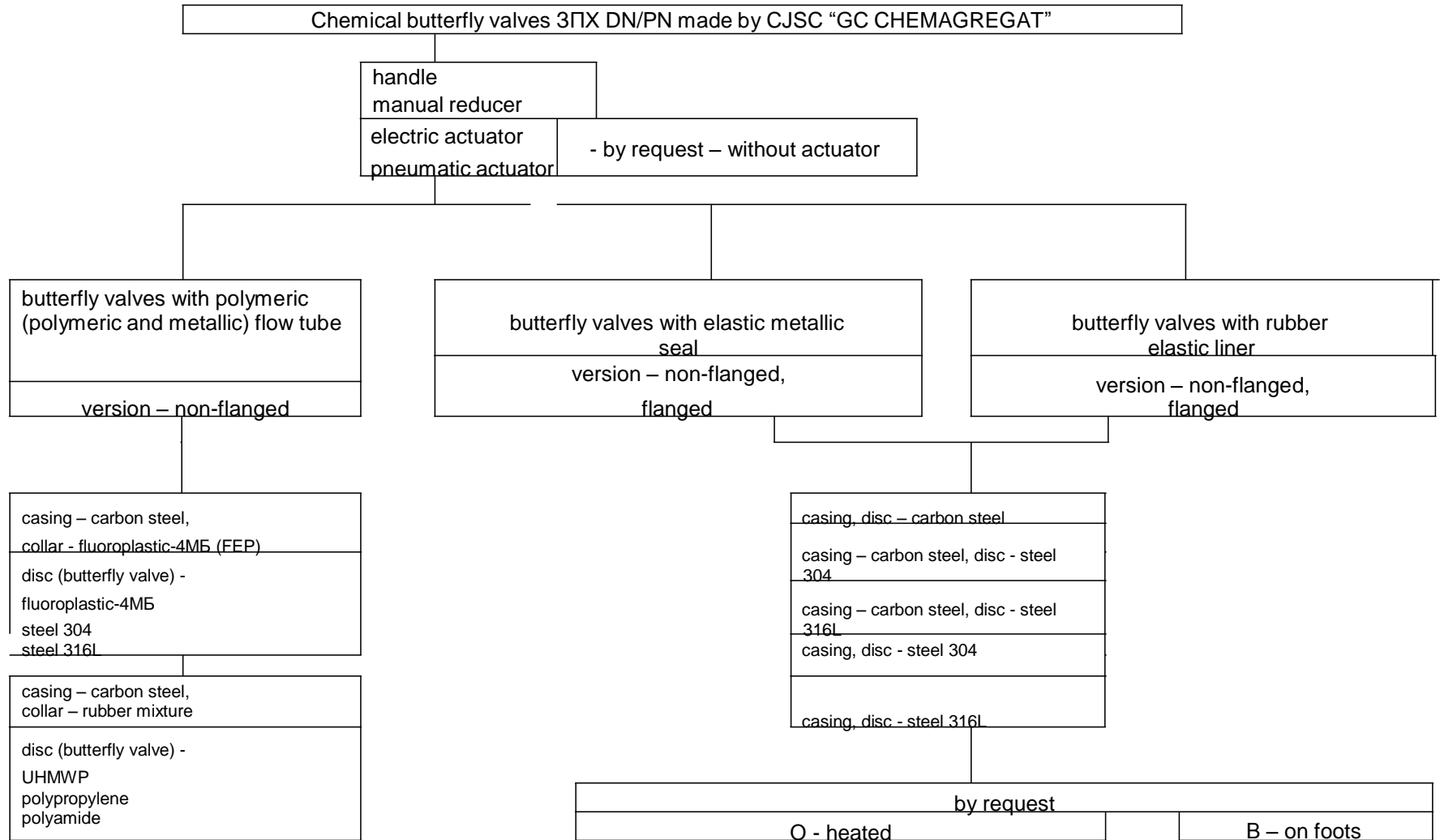
Check valves backpressure valve is protective fittings. The main function of the backpressure valve is the prevention of change of the direction of a stream of a working environment. Valves the return chemical productions of JSC HIMAGREGAT Group of Companies the most admissible level of leak (DN/25)  $\times 3 \text{ cm}^3/\text{min}$ . according to the ZBJ16006-90 standard.



PN = 0,6 MPa (6 bar)								
DN (mm)	L	D	D <sub>1</sub>	D <sub>2</sub>	n - d	e	b	Mass, kg
15	130	80	55	40	4-11	2	12	4
20	150	90	65	50	4-11	2	14	5
25	160	100	75	60	4-11	2	14	6
32	180	120	90	70	4-14	3	16	7,5
40	200	130	100	80	4-14	3	16	9,5
50	230	140	110	90	4-14	3	16	13
65	290	160	130	110	4-14	3	16	19,5
80	310	185	150	125	4-18	3	18	27
100	350	205	170	145	4-18	3	18	35
125	400	235	200	175	8-18	3	18	56
150	480	260	225	200	8-18	3	18	75
200	500	315	280	265	8-18	3	20	118
250	620	370	335	310	12-18	4	22	165
PN = 1,0/1,6 MPa (10/16 bar)								
15	130	95	65	45	4-14	2	14	4
20	150	105	75	55	4-14	2	14	5
25	160	115	85	65	4-14	2	14	6
32	180	135	100	78	4-18	3	16	7,5
40	200	145	110	85	4-18	3	16	9,5
50	230	160	125	100	4-18	3	16	13
65	290	180	145	120	4-18	3	18	19,5
80	310	195	160	135	4-18	3	20	27
100	350	215	180	155	8-18	3	22	35
125	400	245	210	185	8-18	3	22	56
150	480	280	240	210	8-23	3	24	75
200	500	335	295	265	12-23	3	24/26	118
250	620	390/405	350/355	320	12-22 12-25	4	26/28	165

### Section 4. Chemical butterfly valves 3ПХ DN/PN

Chemical butterfly valves are made with diameter 32 – 2000 mm for pressures PN = 0,6; 1,0; 1,6; 2,5; 4,0 MPa. On scheme below there is a classification of chemical butterfly valves made by CJSC “GC CHEMAGREGAT”



## Procedure of butterfly valves ordering

Ordering butterfly valves is executed like the following:

- Butterfly valves of flanged or non-flanged version are selected by customer in compliance with customer's requirements to weight and dimensions characteristics; for DN > 500 mm it is recommended to use butterfly valves in flanged version
- For selection of butterfly valve according to actuator and material of flow tube it is necessary to send to CJSC "GK CHEMAGREGAT" filled questionnaires and to specify required characteristics of a actuator (see Appendix). According to data of the questionnaires specialists of the firm will select a butterfly valve type
- Customer could select a butterfly valve type independently. In this case in request it is necessary to specify indication of the butterfly valve, additional characteristics in compliance with tables and required characteristics of a actuator. It is possible to completely describe characteristics of a butterfly valve (like in Complete description)
- Butterfly valves may be equipped with electric and pneumatic actuators or may be supplied without them.

### Indication of butterfly valves

Butterfly valve are indicated 3ПХ DN/PN.n<sub>1</sub>n<sub>2</sub>: n<sub>1</sub> = 1..4, n<sub>2</sub> = 1..4,

n<sub>1</sub> – indicates drive type

1 – a handle, butterfly valves up to DN = 150 mm and manufactured with handles

2 – manual reducing drive

3 – electric actuator

4 – pneumatic actuator

- 3ПХ DN/PN.1..4 Butterfly valves of non-flanged version with polymeric (polymeric and metallic) flow tube,  
 3ПХ DN/PN.11..41 Butterfly valves of non-flanged version with casing made of carbon steel  
 3ПХ DN/PN.12..42 Butterfly valves of non-flanged version with casing made of stainless steels 304 or 316L  
 3ПХ DN/PN.13..43 Butterfly valves of flanged version with casing made of carbon steel  
 3ПХ DN/PN.14..44 Butterfly valves of flanged version with casing made of stainless steels 304 or 316L

### Additional characteristics of butterfly valves

	3ПХ DN/PN.1..4	
Collar	Fluoroplastic Ф-4(PTFE)	Rubber mixture
Disc	Carbon steel lined with fluoroplastic Ф-4МБ; 304, 316L	Carbon steel lined with: - UHMWP (polyethylene of ultra-high molecular weight) -polypropylene -nylon

	3ПХ DN/PN.11..41		3ПХ DN/PN.12..42	
Casing	Carbon steel		304	
			316L	
Seal	Type 1	Type 2	Type 1	Type 2
Elastic elements	Made of stainless alloys (may not be specified during ordering)	Made of elastomer (rubber mixture)	Made of stainless alloys (may not be specified during ordering)	Made of elastomer (rubber mixture)
Disc	Carbon steel 304 316L		304*	
			316L*	

\* disc is made of the same steel that is used for casing

	3ПХ DN/PN.13..43		3ПХ DN/PN.14..44	
Casing	Carbon steel		304	
			316L	
Seal	Type 1	Type 2	Type 1	Type 2
Elastic element	Made of stainless alloys (may not be specified during ordering)	Made of elastomer (rubber mixture)	Made of stainless alloys (may not be specified during ordering)	Made of elastomer (rubber mixture)
Disc	Carbon steel 304 316L		304*	
			316L*	

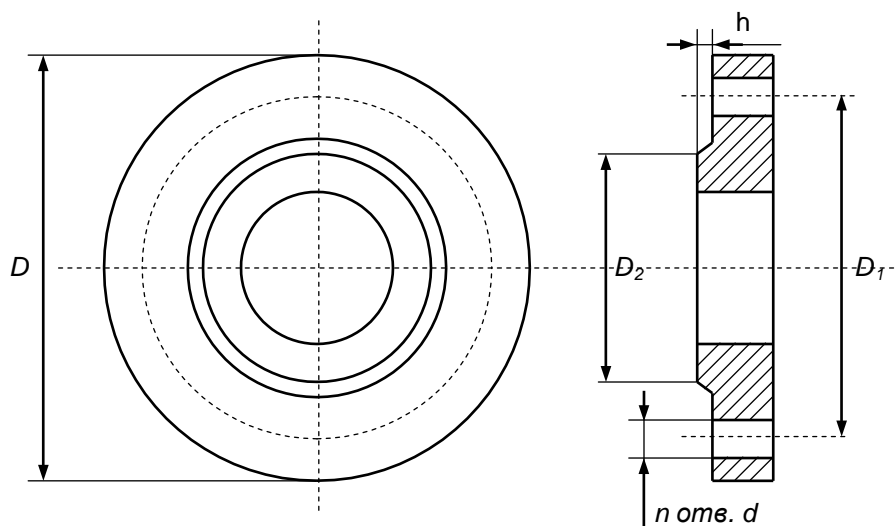
\* disc is made of the same steel that is used for casing

### Examples of order

Example of order	Complete description
3ПХ DN/PN.1, Collar, disc - fluoroplastic	Butterfly valve in non-flanged version with handle and fluoroplastic flow tube
3ПХ DN/PN.3, Collar – rubber mixture, disc - nylon Electric actuator, U = 380 V, reverse signal 4-20 mA	Butterfly valve in non-flanged version with electric actuator, collar made of rubber mixture, disc with nylon coating U = 380 V, reverse signal 4-20 mA
3ПХ DN/PN.22, Seal of type 1, disk made of steel 304	Butterfly valve in non-flanged version with manual reducer actuator, casing and disk made of steel 304 and elastic metallic seal of type 1
3ПХ DN/PN.43, Seal of type 2, disk made of steel 316L Pneumatic actuator with block of end switches and pneumatic distributor of two-side action in explosion-proof version ExdIIBT4	Butterfly valve in flanged version with casing made of carbon steel, disc made of steel 316L and elastic metallic seal of type 2 Pneumatic actuator with block of end switches and pneumatic distributor of two-side action in explosion-proof version ExdIIBT4

## Connecting dimensions

Connecting dimensions (connection with pipeline) for all types of valves comply with ГОСТ 12815-80 (version 1).



Proportions, mm

DN	D	D <sub>1</sub>	D <sub>2</sub>	d	n	h	Bolts DN		D	D <sub>1</sub>	D <sub>2</sub>	d	n	h	Bolts DN	
							PN = 0,6 MPa (6 bar)								PN = 1,0 MPa (10 bar)	
10	75	50	35	11	4	2	M10		90	60	42	14	4	2	M12	
15	80	55	40						95	65	47					
20	90	65	50						105	75	58					
25	100	75	60						115	85	68					
32	120	90	70	14	4	M12		135	100	78	18	4	3	M16		
40	130	100	80					145	110	88						
50	140	110	90					160	125	102						
65	160	130	100					180	145	122						
80	185	150	128	18	8	M16		195	160	133	22	8	3	M20		
100	205	170	148					215	180	158						
125	235	200	178					245	210	184						
150	260	225	202					280	240	212						
(175)	290	255	232	22	12	M20		310	270	242	26	12	4	M24		
200	315	280	258					335	295	268						
(225)	340	305	282					365	325	295						
250	370	335	312					390	350	320						
300	435	395	365	26	16	M20		440	400	370	20	16	4	M27		
350	485	445	415					500	460	430						
400	535	495	465					565	515	482						
(450)	590	550	520					615	565	532						
500	640	600	570	30	20	M24		670	620	585	26	20	5	M30		
600	755	705	670					780	725	685						
(700)	860	810	775					895	840	800						
800	975	920	880					1010	950	905						
(900)	1075	1020	980	33	24	M27		1110	1050	1005	33	24	5	M36		
1000	1175	1120	1080					1220	1160	1110						
1200	1400	1340	1295					1455	1380	1330						
1400	1620	1560	1510					1675	1590	1530						
1600	1820	1760	1710	40	36	M33		1915	1820	1750	40	36	5	M42		
(1800)	2045	1970	1920					2115	2020	1950						
2000	2265	2180	2125					2325	2230	2150						



DN	D	D <sub>1</sub>	D <sub>2</sub>	d	n	h	Bolts DN	D	D <sub>1</sub>	D <sub>2</sub>	d	n	h	Bolts DN
PN = 1,6 MPa (16 bar)							PN = 2,5 MPa (25 bar)							
10	90	60	42	14	4	2	M12	90	60	42	14	4	2	M12
15	95	65	47					05	65	47				
20	105	75	58					105	75	58				
25	115	85	68					115	85	68				
32	135	100	78	18	4	3	M16	135	100	78	18	8	3	M16
40	145	110	88					115	110	88				
50	160	125	102					160	125	102				
65	180	145	122					180	145	122				
80	195	160	133					195	160	133				
100	215	180	158					230	190	158				
125	245	210	184	22	8	3	M20	270	220	184	26	12	3	M20
150	280	240	212					300	250	212				
(175)	310	270	242					330	280	242				
200	335	295	268					360	310	278				
(225)	365	325	295	26	12	4	M24	395	340	305	30	16	4	M24
250	405	355	320					425	370	335				
300	460	410	370					485	430	390				
350	520	470	430					550	490	450				
400	580	525	482	33	16	4	M27	610	550	505	33	20	4	M27
(450)	640	585	532					660	600	555				
500	710	650	585					730	660	615				
600	840	770	685					840	770	720				
(700)	910	840	800	39	24	5	M30	960	875	820	45	24	5	M30
800	1020	950	905					1075	990	930				
(900)	1120	1050	1005					1185	1090	1030				
1000	1255	1170	1110					1315	1210	1140				
1200	1485	1390	1330	52	28	5	M36	1525	1420	1350	56	32	5	M36
1400	1685	1590	1530					1750	1640	1560				
1600	1925	1820	1750					1975	1860	1780				
(1800)	2130	2020	1950					2195	2070	1980				
2000	3685	2230	2150	56	48	5	M42	2425	2300	2210	70	48	5	M42
								1750	1640	1560				
								1975	1860	1780				
								2195	2070	1980				
				56	44	5	M48	2425	2300	2210	70	48	5	M48
								1750	1640	1560				
				56	44	5	M52	1975	1860	1780	70	48	5	M52
								2195	2070	1980				
				56	48	5	M56	2425	2300	2210	70	48	5	M56
								1750	1640	1560				

## Types of actuators

Chemical butterfly valves are equipped with electric actuators or pneumatic actuators.

Power of electric motors of electric actuators is specified in tables. Supply voltage U = 380, 220 V. Electric actuators are supplied with end switches. Time of opening/closing of the valves is 30-360 seconds. By request electric actuators are equipped with rheostat sensor or block with current output 4-20 mA.

Supply air pressure for pneumatic actuators: 0,4 – 0,7 MPa. On valves it is possible to install pneumatic actuators of double and single action with returning spring («NC», «NO.»). Pneumatic actuators may be equipped with blocks of end switches, pneumatic distributors of single and double action, positioners.

## Chemical butterfly valves with polymeric flow tube

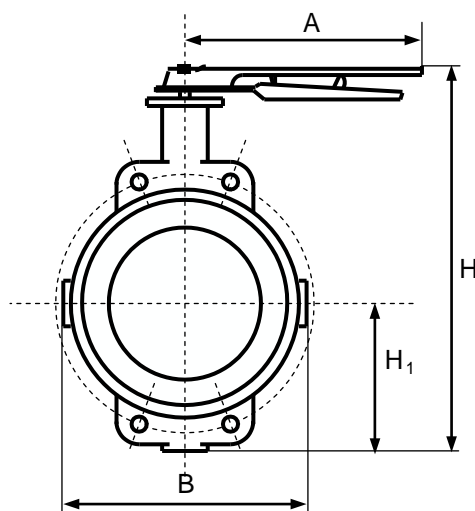
### Chemical butterfly valves 3ПХ DN/6;10;16.1...4 with polymeric flow tube

Chemical butterfly valves 3ПХ DN/6;10;16.1...4 have non-flanged version in casing made of carbon steel with flow tube:

- collar and disc made of fluoroplastic Ф-4МБ, disc may be manufactured of stainless steels 304 or 316L (DN = 40-800 mm)

- collar made of rubber mixtures, discs are lined with ultra-high molecular weight polyethylene (UHMWP), polypropylene, nylon (DN = 40-1000 mm)

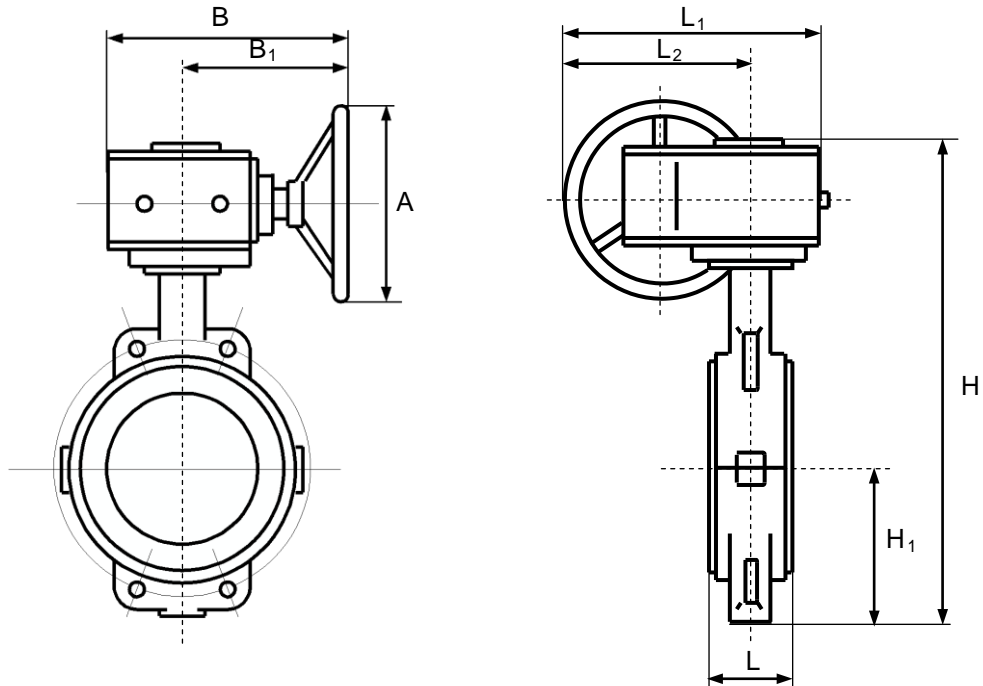
### Chemical butterfly valves 3ПХ DN/6;10;16.1



Model	DN mm	P MPa	L	H	H <sub>1</sub>	B	A	kg
3ПХ 40/6,10,16.1	40	0,6 1,0 1,6	40	212	50	98	267	4
3ПХ 50/6,10,16.1	50		43	230	65	112	267	5
3ПХ 65/6,10,16.1	65		45	253	80	122	267	6
3ПХ 80/6,10,16.1	80		45	285	90	150	267	8,5
3ПХ 100/6,10,16.1	100		53	325	110	175	267	10,5
3ПХ 125/6,10,16.1	125		53	345	115	222	267	13
3ПХ 150/6,10,16.1	150		57	380	135	248	267	16

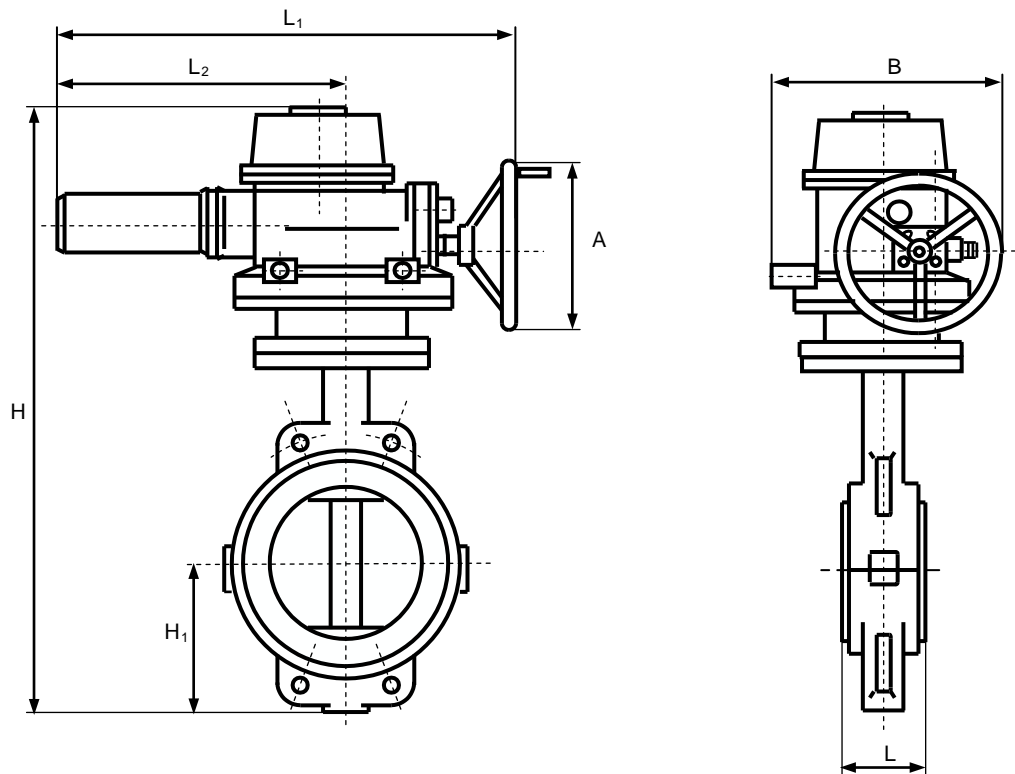
L – factory length of butterfly valve

### Chemical butterfly valves 3ПХ DN/6;10;16.2



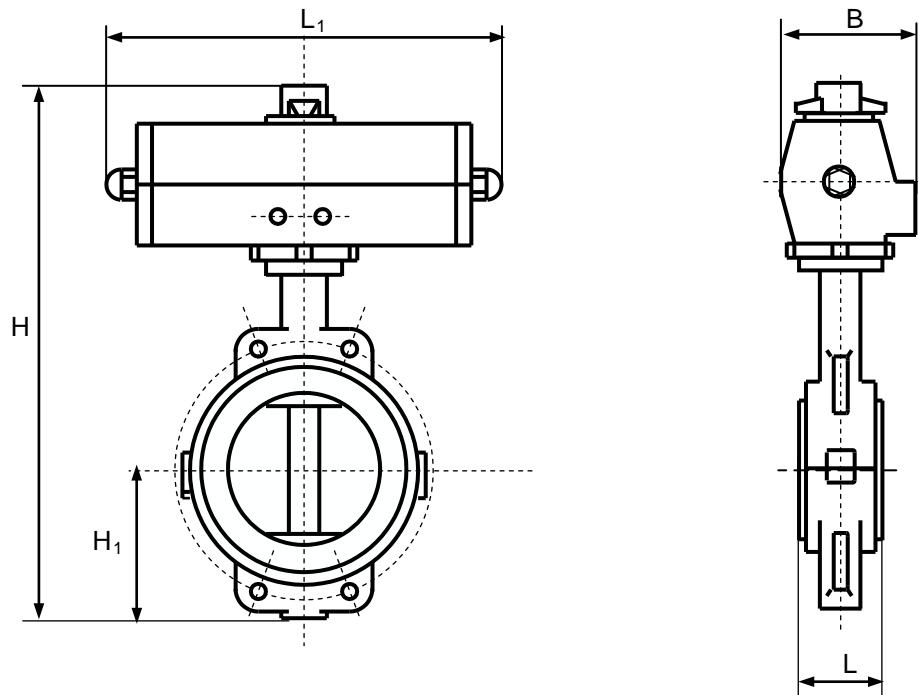
	DN mm	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	B <sub>1</sub>	A	kg
3ПХ 50/6,10,16.2	50	0,6 1,0 1,6	43	180	130	350	65	200	150	150	11
3ПХ 65/6,10,16.2	65		46	180	130	370	80	200	150	150	12,5
3ПХ 80/6,10,16.2	80		46	180	130	380	90	200	150	150	14
3ПХ100/6,10,16.2	100		53	180	130	420	110	200	150	150	17
3ПХ125/6,10,16.2	125		53	180	162	460	115	200	150	215	20
3ПХ150/6,10,16.2	150		57	270	200	555	135	280	210	215	30
3ПХ200/6,10,16.2	200		70	270	200	605	175	280	210	215	33
3ПХ250/6,10,16.2	250		75	270	212	680	260	280	210	240	53
3ПХ300/6,10,16.2	300		78	380	280	800	310	420	265	315	70
3ПХ350/6,10,16.2	350		78	380	280	835	360	420	295	315	92
3ПХ400/6,10,16.2	400		102	450	350	915	400	470	295	315	135
3ПХ450/6,10,16.2	450		114	480	370	960	420	490	310	315	170
3ПХ500/6,10,16.2	500		127	480	370	1020	460	490	310	415	203
3ПХ600/6,10,16.2	600		130	480	370	1225	540	490	310	415	340
3ПХ700/6,10,16.2	700		165	640	510	1355	570	660	420	415	520
3ПХ800/6,10,16.2	800		190	640	510	1470	620	660	420	415	740
3ПХ900/6,10,16.2	900		203	640	510	1540	670	860	550	415	880
3ПХ1000/6,10,16.2	1000		216	640	510	1795	750	860	550	415	1050

### Chemical butterfly valves 3ПХ DN/6;10;16.3



	DN mm	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	A	N kW	kg
3ПХ 40/6,10,16.3	40	0,6 1,0 1,6	40	470	250	427	50	270	200	0,06	25
3ПХ 50/6,10,16.3	50		43	470	250	453	65	270	200		27
3ПХ 65/6,10,16.3	65		46	470	250	486	80	270	200	0,09	30
3ПХ 80/6,10,16.3	80		46	470	250	498	90	270	200		34
3ПХ100/6,10,16.3	100		53	470	250	538	110	270	200	0,12	39
3ПХ125/6,10,16.3	125		53	470	250	558	115	270	200		53
3ПХ150/6,10,16.3	150		57	473	297	637	135	315	200	0,18	62
3ПХ200/6,10,16.3	200		70	473	297	732	175	315	200		93
3ПХ250/6,10,16.3	250		75	473	297	770	260	315	200	0,25	108
3ПХ300/6,10,16.3	300		78	473	297	851	310	315	200		135
3ПХ350/6,10,16.3	350		78	585	360	974	360	332	300	0,55	165
3ПХ400/6,10,16.3	400		102	585	360	1020	400	332	300		195
3ПХ450/6,10,16.3	450		114	585	360	1170	420	332	300		350
3ПХ500/6,10,16.3	500		127	585	360	1260	460	332	300	0,55	410
3ПХ600/6,10,16.3	600		154	729	469	1390	540	518	457		615
3ПХ700/6,10,16.3	700		165	729	469	1470	570	518	457	1,1	685
3ПХ800/6,10,16.3	800		190	729	469	1540	620	518	457		890
3ПХ900/6,10,16.3	900		203	755	530	3421	1180	782	457	1,5	1150
3ПХ1000/6,10,16.3	1000		216	755	530	3685	1280	782	457		1550

### Chemical butterfly valves 3ПХ DN/6;10;16.4



	DN mm	PN MPa	L	L <sub>1</sub>	H	H <sub>1</sub>	B	kg
3ПХ 40/6,10,16.4	40	0,6 1,0 1,6	40	305	290	50	100	15
3ПХ 50/6,10,16.4	50		43	305	315	65	100	16
3ПХ 65/6,10,16.4	65		46	305	348	80	100	18
3ПХ 80/6,10,16.4	80		46	305	360	90	100	20
3ПХ100/6,10,16.4	100		53	365	445	110	118	25
3ПХ125/6,10,16.4	125		53	365	465	115	118	40
3ПХ150/6,10,16.4	150		57	365	500	135	118	48
3ПХ200/6,10,16.4	200		70	450	620	175	143	60
3ПХ250/6,10,16.4	250		75	525	706	260	178	85
3ПХ300/6,10,16.4	300		78	525	787	310	178	105
3ПХ350/6,10,16.4	350		78	640	947	360	248	135
3ПХ400/6,10,16.4	400		102	640	998	400	248	215
3ПХ450/6,10,16.4	450		114	640	1053	420	248	280
3ПХ500/6,10,16.4	500		127	640	1260	460	248	440
3ПХ600/6,10,16.4	600		154	850	1455	540	355	525
3ПХ700/6,10,16.4	700		165	850	1585	570	355	730
3ПХ800/6,10,16.4	800		190	850	1700	620	355	960
3ПХ900/6,10,16.4	900		203	1250	1965	690	520	1380
3ПХ1000/6,10,16.4	1000		216	1250	2115	750	520	1700

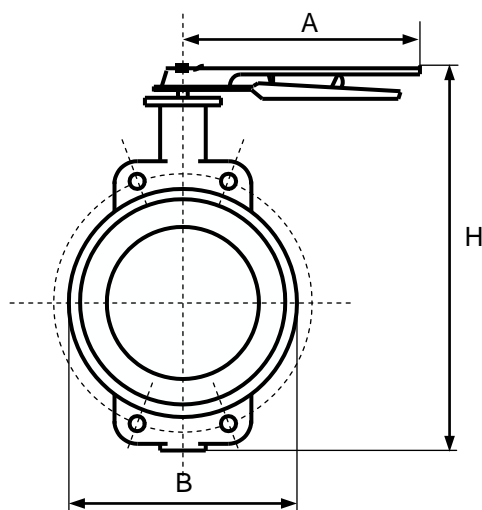
## Butterfly valves with elastic metallic seals

Chemical butterfly valves 3ПХ DN/10;16;25.(1...4)(1,2) in non-flanged version are manufactured in casings made of carbon steel (1) or stainless steels 304 and 316L (2).

Chemical butterfly valves 3ПХ DN/10;16;25.(1...4)(3,4) in flanged version are manufactured in casings made of carbon steel (3) or stainless steels 304 and 316L (4).

### Chemical butterfly valves 3ПХ DN/6;10;16.(1...4)(1,2) In non-flanged version

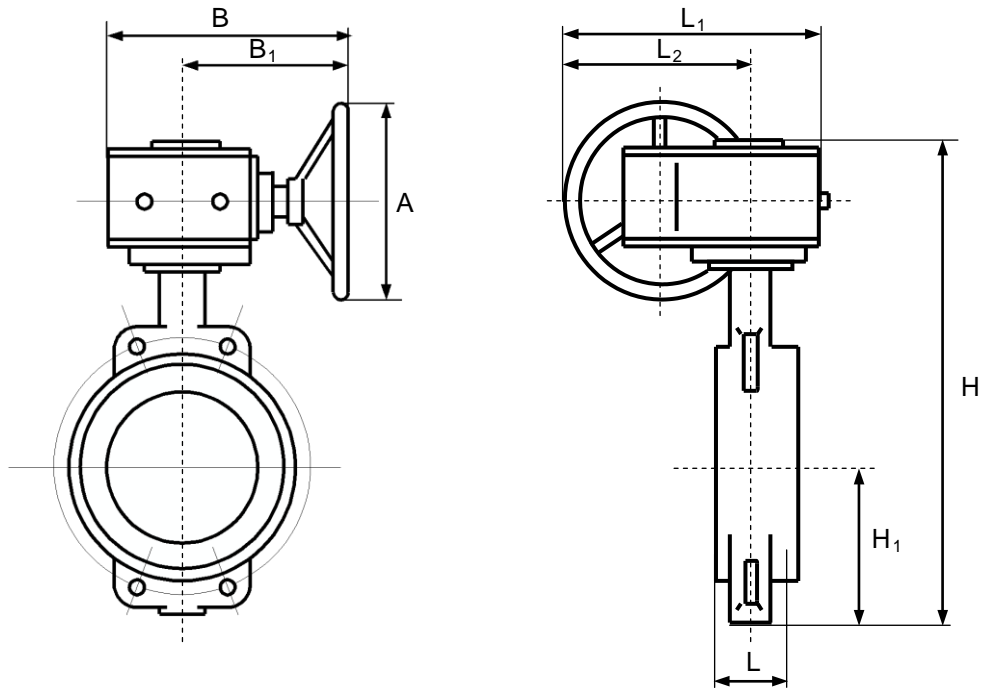
#### Chemical butterfly valves 3ПХ DN/6;10;16.1(1,2)



Model	DN mm	P MPa	L	H	H <sub>1</sub>	B	A	kg
3ПХ 40/6,10,16.1(1,2)	40	0,6 1,0 1,6	40	212	50	98	267	4
3ПХ 50/6,10,16.1(1,2)	50		43	230	65	112	267	5
3ПХ 65/6,10,16.1(1,2)	65		46	253	80	122	267	6
3ПХ 80/6,10,16.1(1,2)	80		64	285	90	150	267	8,5
3ПХ 100/6,10,16.1(1,2)	100		64	325	110	175	267	10,5
3ПХ 125/6,10,16.1(1,2)	125		70	345	115	222	267	13
3ПХ 150/6,10,16.1(1,2)	150		76	380	135	248	267	16

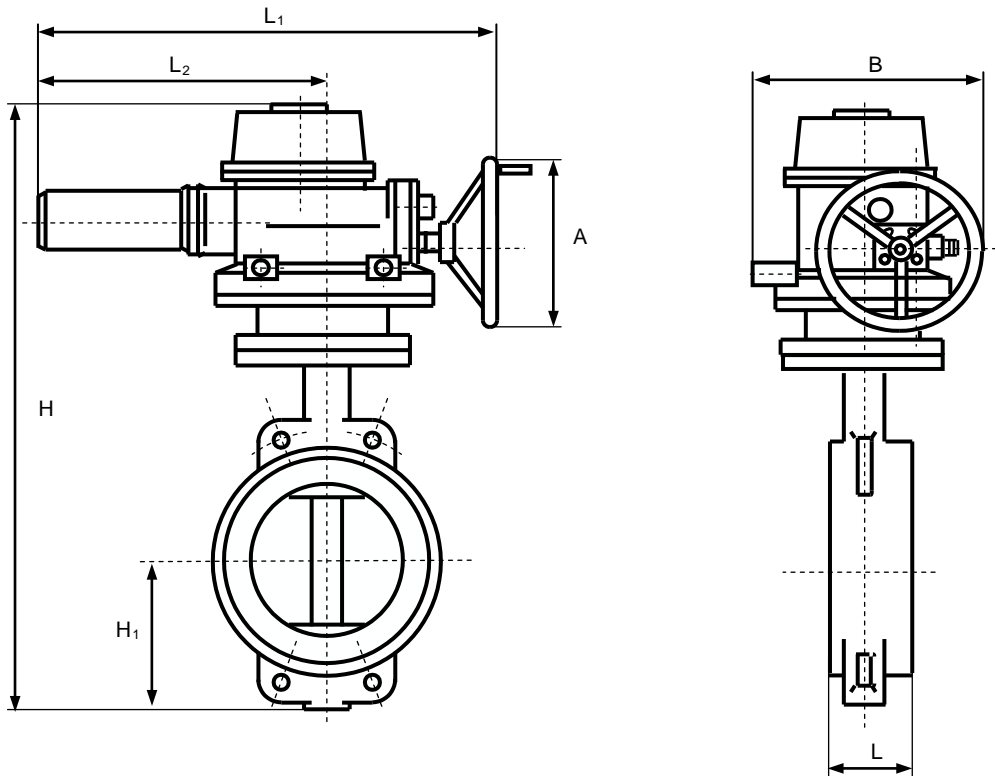
L – factory length of butterfly valve

### Chemical butterfly valves 3ПХ DN/6;10;16.2(1,2)



	DN mm	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	B <sub>1</sub>	A	kg
3ПХ 50/6,10,16.2(1,2)	50	0,6 1,0 1,6	43	180	130	350	65	200	150	150	11
3ПХ 65/6,10,16.2(1,2)	65		46	180	130	370	80	200	150	150	12,5
3ПХ 80/6,10,16.2(1,2)	80		64	180	130	380	90	200	150	150	14
3ПХ100/6,10,16.2(1,2)	100		64	180	130	420	110	200	150	150	17
3ПХ125/6,10,16.2(1,2)	125		70	180	162	460	115	200	150	215	20
3ПХ150/6,10,16.2(1,2)	150		76	270	200	555	135	280	210	215	30
3ПХ200/6,10,16.2(1,2)	200		89	270	200	605	175	280	210	215	33
3ПХ250/6,10,16.2(1,2)	250		114	270	212	680	260	280	210	240	53
3ПХ300/6,10,16.2(1,2)	300		114	380	280	800	310	420	265	315	70
3ПХ350/6,10,16.2(1,2)	350		127	380	280	835	360	420	295	315	92
3ПХ400/6,10,16.2(1,2)	400		140	450	350	915	400	470	295	315	135
3ПХ450/6,10,16.2(1,2)	450		152	480	370	960	420	490	310	315	170
3ПХ500/6,10,16.2(1,2)	500		152	480	370	1020	460	490	310	415	203
3ПХ600/6,10,16.2(1,2)	600		154	480	370	1275	540	490	310	415	340
3ПХ700/6,10,16.2(1,2)	700		165	640	510	1355	570	660	420	415	520
3ПХ800/6,10,16.2(1,2)	800		190	640	510	1470	620	660	420	415	740
3ПХ900/6,10,16.2(1,2)	900		203	640	510	1600	670	660	420	415	880
3ПХ1000/6,10,16.2(1,2)	1000		216	640	510	1795	750	660	420	415	1050
3ПХ1200/6,10,16.2(1,2)	1200		254	780	620	1965	850	860	550	457	1400
3ПХ1400/6,10,16.2(1,2)	1400		279	780	620	2230	965	860	550	457	1900
3ПХ1600/6,10,16.2(1,2)	1600	318	780	620	2485	1065	860	550	457	290	
3ПХ1800/6,10,16.2(1,2)	1800	356	940	730	2715	1180	1050	720	457	4000	
3ПХ2000/6,10,16.2(1,2)	2000	406	940	730	3155	1280	1050	720	457	5300	

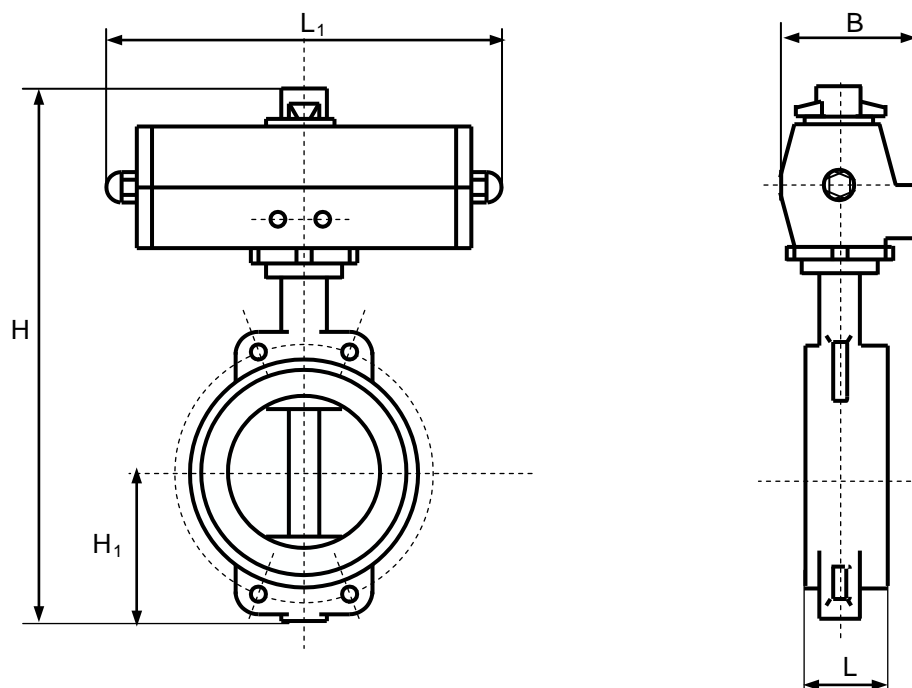
## Chemical butterfly valves 3ПХ DN/6;10;16.3(1,2)



	DN мм	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	A	N kW	kg
3ПХ 50/6,10,16.3(1,2)	50	0,6 1,0 1,6	43	470	250	453	65	270	200	0,06	27
3ПХ 65/6,10,16.3(1,2)	65		46	470	250	486	80	270	200	0,09	30
3ПХ 80/6,10,16.3(1,2)	80		64	470	250	498	90	270	200		0,12
3ПХ100/6,10,16.3(1,2)	100		64	470	250	538	110	270	200	0,18	
3ПХ125/6,10,16.3(1,2)	125		70	470	250	558	115	270	200		0,25
3ПХ150/6,10,16.3(1,2)	150		76	473	297	637	135	315	200	0,55	
3ПХ200/6,10,16.3(1,2)	200		89	473	297	732	175	315	200		1,1
3ПХ250/6,10,16.3(1,2)	250		114	473	297	770	260	315	200	1,5	
3ПХ300/6,10,16.3(1,2)	300		114	473	297	851	310	315	200		1,5
3ПХ350/6,10,16.3(1,2)	350		127	585	360	974	360	332	300	1,5	
3ПХ400/6,10,16.3(1,2)	400		140	585	360	1020	400	332	300		1,5
3ПХ450/6,10,16.3(1,2)	450		152	585	360	1170	420	332	300	1,5	
3ПХ500/6,10,16.3(1,2)	500		152	585	360	1260	460	332	300		1,5
3ПХ600/6,10,16.3(1,2)	600		154	729	469	1390	540	518	457	1,5	
3ПХ700/6,10,16.3(1,2)	700		165	729	469	1510	570	518	457		1,5
3ПХ800/6,10,16.3(1,2)	800		190	729	469	1725	620	518	457	1,5	
3ПХ900/6,10,16.3(1,2)	900		203	755	530	2255	670	782	457		1,5
3ПХ1000/6,10,16.3(1,2)	1000		216	755	530	2380	750	782	457	1,5	
3ПХ1200/6,10,16.3(1,2)	1200		254	755	530	2640	850	782	457		1,5
3ПХ1400/6,10,16.3(1,2)	1400		279	755	530	2886	965	782	457	1,5	
3ПХ1600/6,10,16.3(1,2)	1600	318	755	530	3158	1065	782	457	1,5		4700
3ПХ1800/6,10,16.3(1,2)	1800	356	755	530	3421	1180	782	457		1,5	6450
3ПХ2000/6,10,16.3(1,2)	2000	406	755	530	3685	1280	782	457	1,5		8450



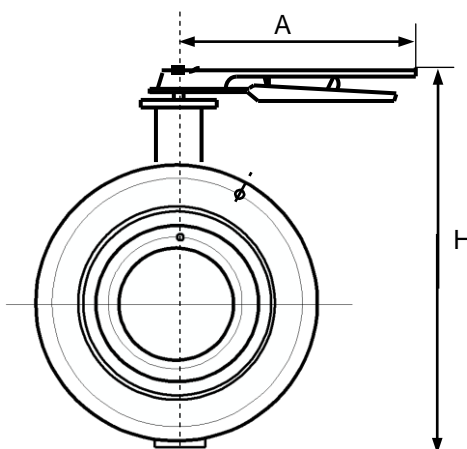
### Chemical butterfly valves 3ПХ DN/6;10;16.4(1,2)



	DN мм	PN MPa	L	L <sub>1</sub>	H	H <sub>1</sub>	B	kg
3ПХ 40/6,10,16.4(1,2)	40	0,6 1,0 1,6	40	305	290	50	100	15
3ПХ 50/6,10,16.4(1,2)	50		43	305	315	65	100	16
3ПХ 65/6,10,16.4(1,2)	65		46	305	348	80	100	18
3ПХ 80/6,10,16.4(1,2)	80		46	305	360	90	100	20
3ПХ100/6,10,16.4(1,2)	100		53	365	445	110	118	25
3ПХ125/6,10,16.4(1,2)	125		53	365	465	115	118	40
3ПХ150/6,10,16.4(1,2)	150		57	365	500	135	118	48
3ПХ200/6,10,16.4(1,2)	200		70	450	620	175	143	60
3ПХ250/6,10,16.4(1,2)	250		75	525	706	260	178	85
3ПХ300/6,10,16.4(1,2)	300		78	525	787	310	178	105
3ПХ350/6,10,16.4(1,2)	350		78	640	947	360	248	135
3ПХ400/6,10,16.4(1,2)	400		102	640	998	400	248	215
3ПХ450/6,10,16.4(1,2)	450		114	640	1053	420	248	280
3ПХ500/6,10,16.4(1,2)	500		127	640	1260	460	248	440
3ПХ600/6,10,16.4(1,2)	600		154	850	1455	540	355	525
3ПХ700/6,10,16.4(1,2)	700		165	850	1585	570	355	730
3ПХ800/6,10,16.4(1,2)	800		190	850	1700	620	355	960
3ПХ900/6,10,16.4(1,2)	900		300	1250	1965	690	520	1380
3ПХ1000/6,10,16.4(1,2)	1000		300	1250	2115	750	520	1700

**Chemical butterfly valves 3ПХ DN/10;16;25.(1...4)(3,4)  
in flanged version**

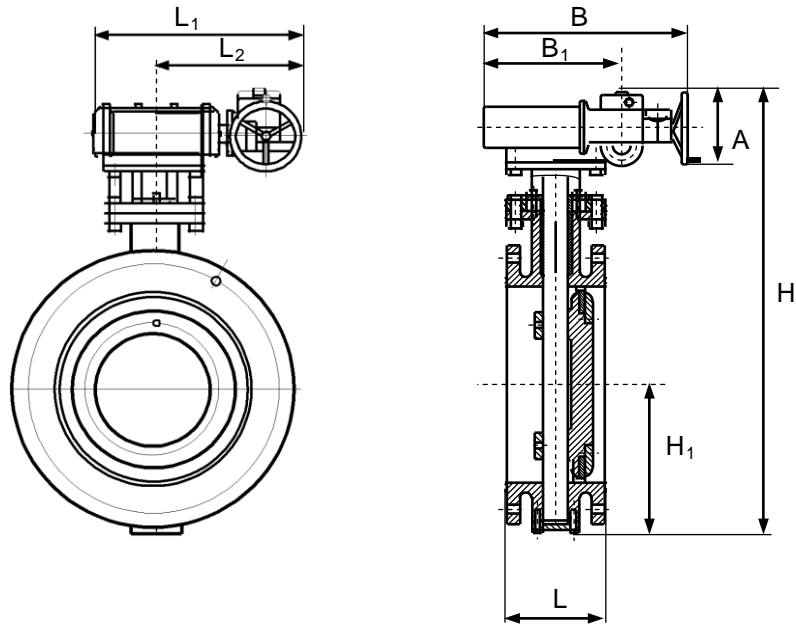
**Chemical butterfly valves 3ПХ DN/10;16;25.1(3,4)**



Model	DN мм	P MPa	L	H	H <sub>1</sub>	A	kg
3ПХ 40/10,16,25.1(3,4)	40	1,0 1,6 2,5	104	212	50	267	6
3ПХ 50/10,16,25.1(3,4)	50		108	230	65	267	7
3ПХ 65/10,16,25.1(3,4)	65		112	253	80	267	9
3ПХ 80/10,16,25.1(3,4)	80		114	285	90	267	12
3ПХ 100/10,16,25.1(3,4)	100		127	325	110	267	15
3ПХ 125/10,16,25.1(3,4)	125		140	345	115	267	23
3ПХ 150/10,16,25.1(3,4)	150		140	380	135	267	32

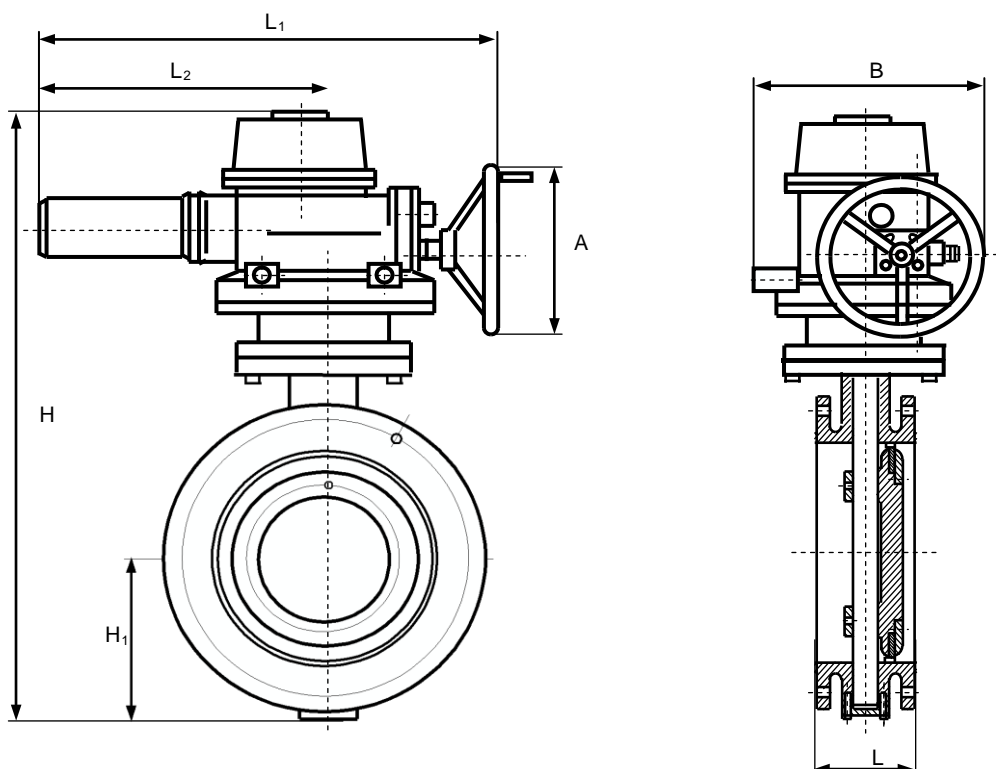
L – factory length of butterfly valve

### Chemical butterfly valves 3ПХ DN/10;16;25.2(3,4)



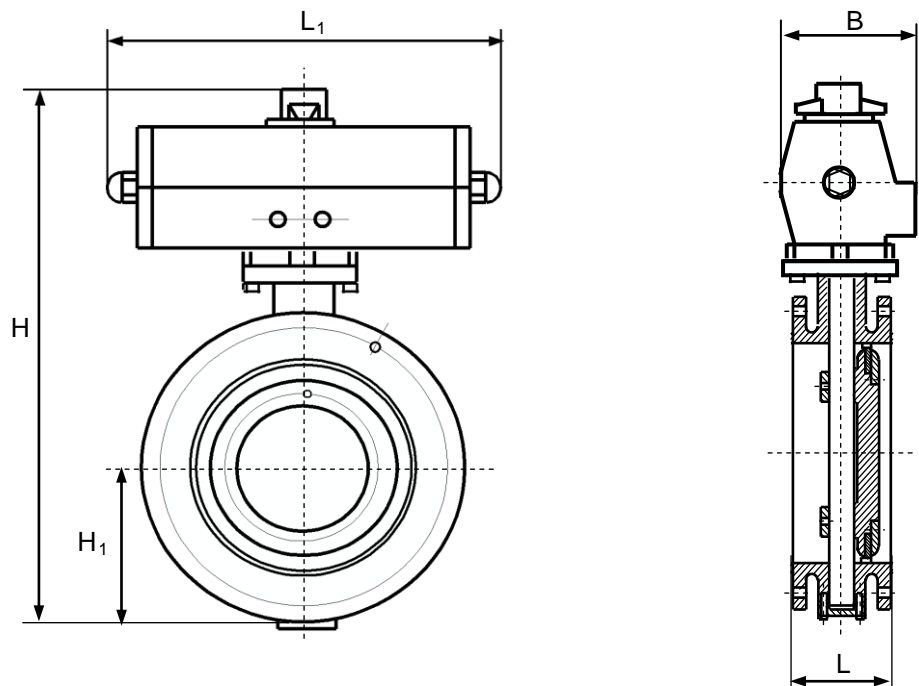
	DN mm	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	B <sub>1</sub>	A	kg
3ПХ 50/10,16,25.2(3,4)	50	1,0 1,6 2,5	108	180	130	350	65	190	150	150	11
3ПХ 65/10,16,25.2(3,4)	65		112	180	130	370	80	200	150	150	12,5
3ПХ 80/10,16,25.2(3,4)	80		114	180	130	380	90	210	150	150	14
3ПХ100/10,16,25.2(3,4)	100		127	180	130	420	110	236	150	150	17
3ПХ125/10,16,25.2(3,4)	125		140	180	162	460	115	245	150	215	20
3ПХ150/10,16,25.2(3,4)	150		140	270	200	555	135	258	210	215	30
3ПХ200/10,16,25.2(3,4)	200		152	270	200	605	175	300	210	215	33
3ПХ250/10,16,25.2(3,4)	250		165	270	212	680	260	360	210	240	53
3ПХ300/10,16,25.2(3,4)	300		178	380	280	800	310	414	265	315	70
3ПХ350/10,16,25.2(3,4)	350		190	380	280	835	360	500	265	315	92
3ПХ400/10,16,25.2(3,4)	400		216	450	350	915	400	522	295	315	135
3ПХ450/10,16,25.2(3,4)	450		222	480	370	960	420	580	310	315	170
3ПХ500/10,16,25.2(3,4)	500		229	480	370	1020	460	650	310	415	203
3ПХ600/10,16,25.2(3,4)	600		267	480	370	1275	540	710	310	415	340
3ПХ700/10,16,25.2(3,4)	700		292	640	510	1355	570	810	420	415	520
3ПХ800/10,16,25.2(3,4)	800		318	640	510	1470	620	920	420	415	740
3ПХ900/10,16,25.2(3,4)	900		330	640	510	1600	670	1030	420	415	880
3ПХ1000/10,16,25.2(3,4)	1000		410	640	510	1795	750	1140	420	415	1050
3ПХ1200/10,16,25.2(3,4)	1200		470	780	620	1965	850	1380	500	457	1400
3ПХ1400/10,16,25.2(3,4)	1400		530	780	620	2230	965	1600	500	457	1900
3ПХ1600/10,16,25.2(3,4)	1600	600	780	620	2485	1065	1800	500	457	290	
3ПХ1800/10,16,25.2(3,4)	1800	670	940	730	2715	1180	2030	590	457	4000	
3ПХ2000/10,16,25.2(3,4)	2000	760	940	730	3155	1280	2260	590	457	5300	

### Chemical butterfly valves 3ПХ DN/10;16;25.3(3,4)



	DN mm	PN MPa	L	L <sub>1</sub>	L <sub>2</sub>	H	H <sub>1</sub>	B	A	N kW	kg
3ПХ 50/10,16,25.3(3,4)	50	1,0 1,6 2,5	108	470	250	453	65	270	200	0,06	27
3ПХ 65/10,16,25.3(3,4)	65		112	470	250	486	80	270	200	0,09	30
3ПХ 80/10,16,25.3(3,4)	80		114	470	250	498	90	270	200	0,12	34
3ПХ100/10,16,25.3(3,4)	100		127	470	250	538	110	270	200	0,18	39
3ПХ125/10,16,25.3(3,4)	125		140	470	250	558	115	270	200	0,25	53
3ПХ150/10,16,25.3(3,4)	150		140	473	297	637	135	315	200	0,55	62
3ПХ200/10,16,25.3(3,4)	200		152	473	297	732	175	315	200	1,1	93
3ПХ250/10,16,25.3(3,4)	250		165	473	297	770	260	315	200	1,5	108
3ПХ300/10,16,25.3(3,4)	300		178	473	297	851	310	315	200	1,5	135
3ПХ350/10,16,25.3(3,4)	350		190	585	360	974	360	332	300	1,5	165
3ПХ400/10,16,25.3(3,4)	400		216	585	360	1020	400	332	300	1,5	195
3ПХ450/10,16,25.3(3,4)	450		222	585	360	1170	420	332	300	1,5	350
3ПХ500/10,16,25.3(3,4)	500		229	585	360	1260	460	332	300	1,5	410
3ПХ600/10,16,25.3(3,4)	600		267	729	469	1390	540	518	457	1,5	615
3ПХ700/10,16,25.3(3,4)	700		292	729	469	1510	570	518	457	1,5	685
3ПХ800/10,16,25.3(3,4)	800		318	729	469	1725	620	518	457	1,5	890
3ПХ900/10,16,25.3(3,4)	900		330	755	530	2255	670	782	457	1,5	950
3ПХ1000/10,16,25.3(3,4)	1000		410	755	530	2380	750	782	457	1,5	1550
3ПХ1200/10,16,25.3(3,4)	1200		470	755	530	2640	850	782	457	1,5	2050
3ПХ1400/10,16,25.3(3,4)	1400		530	755	530	2886	965	782	457	1,5	2900
3ПХ1600/10,16,25.3(3,4)	1600	600	755	530	3158	1065	782	457	1,5	4700	
3ПХ1800/10,16,25.3(3,4)	1800	670	755	530	3421	1180	782	457	1,5	6450	
3ПХ2000/10,16,25.3(3,4)	2000	760	755	530	3685	1280	782	457	1,5	8450	

### Chemical butterfly valves 3ПХ DN/10;16;25.4(3,4)



	DN мм	PN MPa	L	L <sub>1</sub>	H	H <sub>1</sub>	B	kg
3ПХ 50/10,16,25.4(3,4)	50	1,0 1,6 2,5	108	305	315	65	100	16
3ПХ 65/10,16,25.4(3,4)	65		112	305	348	80	100	18
3ПХ 80/10,16,25.4(3,4)	80		114	305	360	90	100	20
3ПХ100/10,16,25.4(3,4)	100		127	365	445	110	118	25
3ПХ125/10,16,25.4(3,4)	125		140	365	465	115	118	40
3ПХ150/10,16,25.4(3,4)	150		140	365	500	135	118	48
3ПХ200/10,16,25.4(3,4)	200		152	450	620	175	143	60
3ПХ250/10,16,25.4(3,4)	250		165	525	706	260	178	85
3ПХ300/10,16,25.4(3,4)	300		178	525	787	310	178	105
3ПХ350/10,16,25.4(3,4)	350		190	640	947	360	248	135
3ПХ400/10,16,25.4(3,4)	400		216	640	998	400	248	215
3ПХ450/10,16,25.4(3,4)	450		222	640	1053	420	248	280
3ПХ500/10,16,25.4(3,4)	500		229	640	1260	460	248	440
3ПХ600/10,16,25.4(3,4)	600		267	850	1455	540	355	525
3ПХ700/10,16,25.4(3,4)	700		292	850	1585	570	355	730
3ПХ800/10,16,25.4(3,4)	800		318	850	1700	620	355	960
3ПХ900/10,16,25.4(3,4)	900		330	1250	1965	690	520	1380
3ПХ1000/10,16,25.4(3,4)	1000	410	1250	2115	750	520	1700	

## PART 3. PIPELINES, FILTERS, AND RESERVOIRS

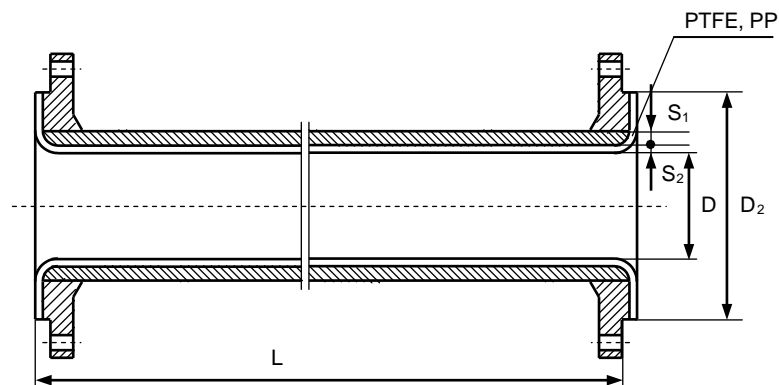
### Section 1. PIPELINES ELEMENTS

CJSC “Group of companies CHEMAGREGAT” offers:

- Pipeline elements made of carbon or stainless steel lined with fluoroplastic  $\Phi$ -4 (PTFE). Working range of temperatures from  $-85^{\circ}\text{C}$  to  $220^{\circ}\text{C}$ . Length is up to 4 m. For operation in softer conditions (from  $-25^{\circ}\text{C}$  to  $100^{\circ}\text{C}$ ) pipelines lined with polypropylene are proposed. Length from 0.2 to 6 m
- Fiberglass pipes lined with fluoroplastic  $\Phi$ -4 (PTFE). Working range of temperatures from  $-25^{\circ}\text{C}$  to  $105^{\circ}\text{C}$ . Length from 0.2 to 6 m.

Flanges are manufactured according to ГOCT 12815-80, free flanges on welded ring – according to ГOCT 12822-80

### Pipelines

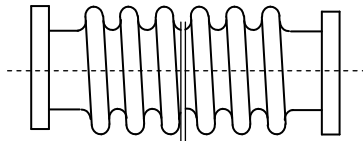


DN	S <sub>1</sub>	S <sub>2</sub>	D	D <sub>2</sub>
25	2,9	2	21	55
32	2,9	2	28	68
40	2,9	2	36	80
50	3,2	2,5	45	90
65	4,5	2,5	60	105
80	4,5	3	74	125
100	5	3	94	150
125	5	3,5	118	185
150	5,6	3,5	143	215
200	6,3	4,5	191	258
250	6,3	4,5	241	312
300	6,3	5	290	365
350	6,3	5	340	415
400	6,3	5	390	465
450	9	6	438	520
500	9	7	486	570
600	9	8	584	670

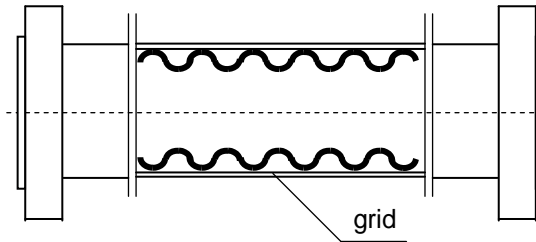
## Corrugated hoses

Corrugated hoses are made of fluoroplastic Ф-4 (PTFE).

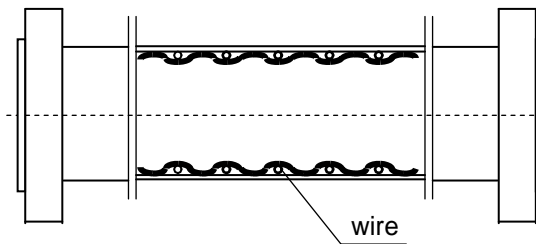
A. Corrugated hoses. DN from 15 to 150 mm. Length is from 0.2 to 3 m. Wall thickness is 1.5 – 2.2 mm.



Б. Corrugated hoses reinforced with steel grid 304. DN from 25 to 200 mm. Length from 0.2 to 3 m. One flange is free

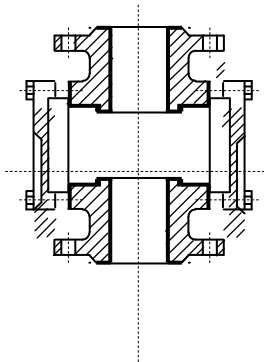


В. Corrugated hoses reinforced with steel grid 304. DN from 25 to 200 mm. Length from 0.2 to 3 m. One flange is free



DN),	15	20	25	32	40	50	65	80	100	125	150	200
Wall thickness (2, 3), mm	1,5		1,6	2,0				2,1	2,5	2,6	3,0	
Terminator length, mm	~40		~50		~60	~70		~80	~130			
Pressure, MPa	A	0,6		0,5		0,3	0,2		0,08	0,07	0,07	
	B	1,6						1,2	1,0		0,8	
	C	2,0						1,5		1,2	1,0	
Minimum bending radius, DN	A	≥ 5,0		≥ 4,5		≥ 4,0		≥ 3,0		5		
	B	5								6		
	C	5								6		
Working temperature, °C	A	-10 – +150								0 – +80		
	B	-10 – +180			-10 – +160			-5 – +150		0 – +80		
	C	-5 – +180			-5 – +170			-5 – +150		0 – +80		

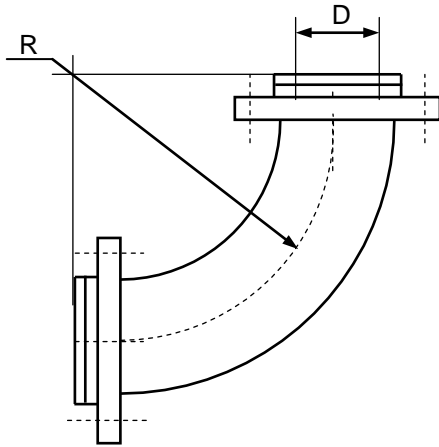
## Run-down boxes



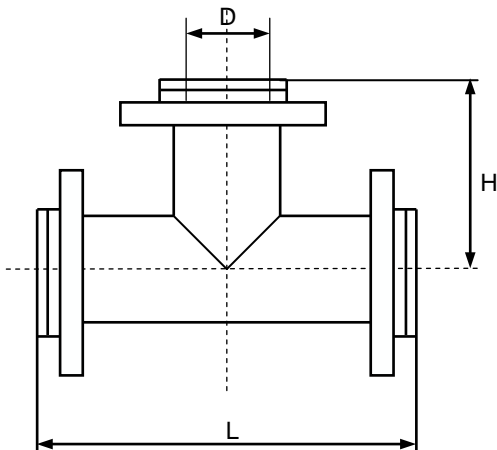
Model	DN	Overall dimensions		Glass	
		H	L	diameter	thickness
SF-2-25	DN25	160	90	70	15
SF-2-32	DN32	180	90	70	15
SF-2-40	DN40	200	110	80	15
SF-2-50	DN50	230	130	110	15
SF-2-65	DN65	290	170	140	20
SF-2-80	DN80	310	190	160	20
SF-2-100	DN100	350	234	180	20

Connecting dimensions of flanges according to ГОСТ 12815-80.

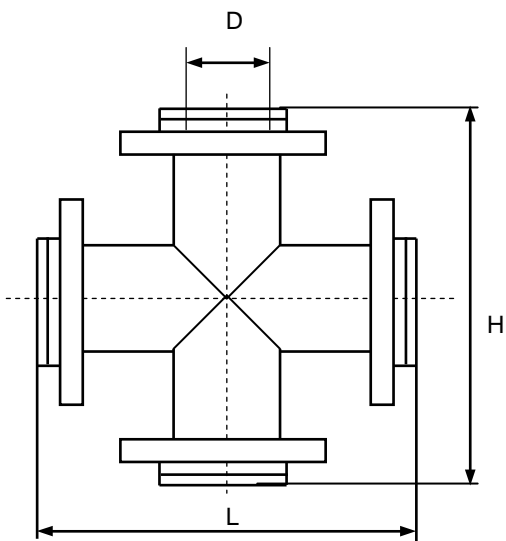
## Fittings



DN	R	D
25	95	21
32	105	28
40	112	36
50	122	45
65	134	60
80	141	74
100	153	94
125	170	118
150	188	143
200	217	191
250	254	241
300	282	290
350	350	340
400	380	390
450	420	438
500	460	486
600	500	584

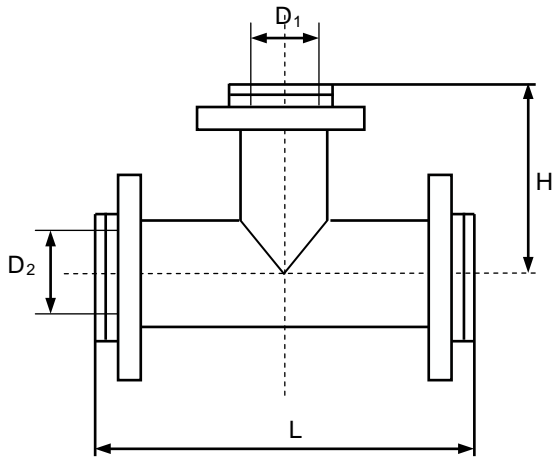


DN	L	H	D
25	190	95	21
32	210	105	28
40	224	112	36
50	244	122	45
65	268	134	60
80	282	141	74
100	306	153	94
125	340	170	118
150	376	188	143
200	434	217	191
250	508	254	241
300	564	282	290
350	700	350	340
400	760	380	390
450	840	420	438
500	920	460	486
600	1000	500	584

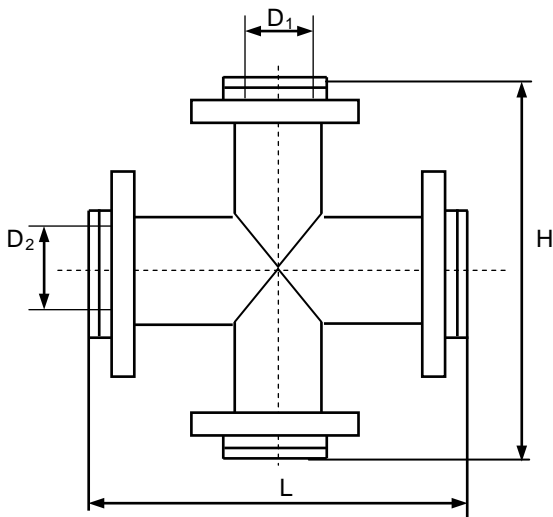


DN	L	H	D
25	190	190	21
32	210	210	28
40	224	224	36
50	244	244	45
65	268	268	60
80	282	282	75
100	306	306	94
125	340	340	118
150	376	376	143
200	434	434	191
250	508	508	241
300	564	564	290
350	700	700	340
400	760	760	390
450	840	840	438
500	920	920	486
600	1000	1000	584

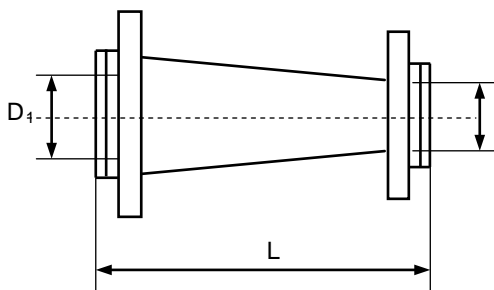




DN	L	H	D <sub>1</sub>	D <sub>2</sub>	DN	L	H	D <sub>1</sub>	D <sub>2</sub>
50x25	244	122	21	45	300x150	564	282	143	290
65x50	268	134	45	60	300x200	564	282	191	290
80x50	282	141	45	74	300x250	564	282	241	290
80x65	282	141	60	74	350x200	700	350	191	340
100x50	306	153	45	94	350x250	700	350	241	340
100x65	306	153	60	94	350x300	700	350	290	340
100x80	306	153	74	94	400x250	760	380	241	390
125x65	340	170	60	118	400x300	760	380	290	390
125x80	340	170	74	118	400x350	760	380	340	390
125x100	340	170	94	118	450x300	840	420	290	438
150x80	376	188	74	143	450x350	840	420	340	438
150x100	376	188	94	143	450x400	840	420	390	438
150x125	376	188	118	143	500x350	920	460	340	486
200x100	434	217	94	191	500x400	920	460	390	486
200x125	434	217	118	191	500x450	920	460	438	486
200x150	434	217	143	191	600x300	1000	500	290	584
250x125	508	254	118	241	600x400	1000	500	390	584
250x150	508	254	143	241	600x450	1000	500	438	584
250x200	508	254	191	241	600x500	1000	500	486	584



DN	L	H	D <sub>1</sub>	D <sub>2</sub>	DN	L	H	D <sub>1</sub>	D <sub>2</sub>
50x25	244	244	21	45	300x150	564	564	143	290
65x50	268	268	45	60	300x200	564	564	191	290
80x50	282	282	45	74	300x250	564	564	241	290
80x65	282	282	60	74	350x200	700	700	191	340
100x50	306	306	45	94	350x250	700	700	241	340
100x65	306	306	60	94	350x300	700	700	290	340
100x80	306	306	74	94	400x250	760	760	241	390
125x65	340	340	60	118	400x300	760	760	290	390
125x80	340	340	74	118	400x350	760	760	340	390
125x100	340	340	94	118	450x300	840	840	290	438
150x80	376	376	74	143	450x350	840	840	340	438
150x100	376	376	94	143	450x400	840	840	390	438
150x125	376	376	118	143	500x350	920	920	340	486
200x100	434	434	94	191	500x400	920	920	390	486
200x125	434	434	118	191	500x450	920	920	438	486
200x150	434	434	143	191	600x300	1000	1000	290	584
250x125	508	508	118	241	600x400	1000	1000	390	584
250x150	508	508	143	241	600x450	1000	1000	438	584
250x200	508	508	191	241	600x500	1000	1000	486	584



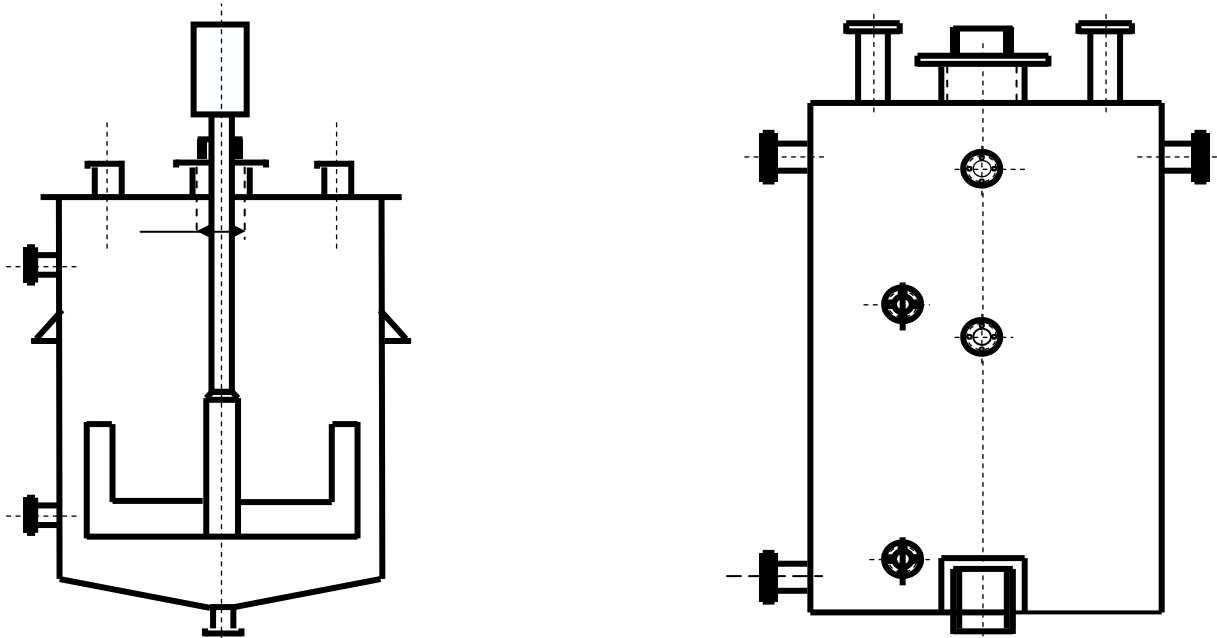
DN	L	D <sub>1</sub>	D <sub>2</sub>	DN	L	D <sub>1</sub>	D <sub>2</sub>
50x25	120	21	45	300x150	240	143	290
65x50	120	45	60	300x200	240	191	290
80x50	120	45	74	300x250	240	241	290
80x65	120	60	74	350x200	240	191	340
100x50	120	45	94	350x250	240	241	340
100x65	120	60	94	350x300	240	290	340
100x80	120	74	94	400x250	240	241	390
125x65	180	60	118	400x300	240	290	390
125x80	180	74	118	400x350	300	340	390
125x100	180	94	118	450x300	300	290	438
150x80	180	74	143	450x350	300	340	438
150x100	180	94	143	450x400	300	390	438
150x125	180	118	143	500x350	300	340	486
200x100	180	94	191	500x400	300	390	486
200x125	180	118	191	500x450	300	438	486
200x150	180	143	191	600x300	300	290	584
250x125	180	118	241	600x400	300	390	584
250x150	240	143	241	600x450	300	438	584
250x200	240	191	241	600x500	300	486	584

D<sub>2</sub>

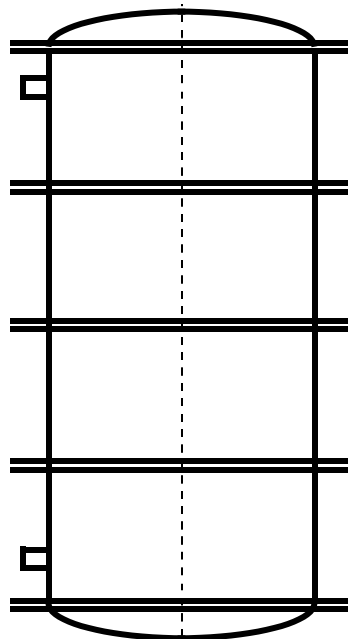
## Section 2. INDUSTRIAL RESERVOIRS LINED WITH POLYMERS (AEP)

To order the reservoirs it is necessary to submit to CJSC "GC CHEMAGREGAT" a drawing of AEP with specification of dimensions and connecting fittings, material of lining, pressure and temperature of working fluid, and place of installation (premise, outdoor).

Group of companies "CHEMAGREGAT" offers manufacturing of non-standard equipment – bulk-capacity industrial reservoirs made of carbon or stainless (304) steels lined with polymers – fluoroplastic  $\Phi$ -4 (PTFE), fluoroplastic  $\Phi$ -40 (ETFE) and polypropylene (PP). Reservoirs are made of cylindrical or rectangular shape. Lining thickness is 2 – 8 mm. Maximum volume of lined AEP is 6 m<sup>3</sup>. Working temperature is -50 – 150°C. Permitted pressure is up to 1,6 MPa.



AEP of large volume are mounted from clamping rings with diameter up to 3000 mm and height up to 1500 mm. Lining  $\Phi$ -4 is 2-4 mm thick. Working temperature is -50 – 150°C. Permitted pressure is up to 1,6 MPa.



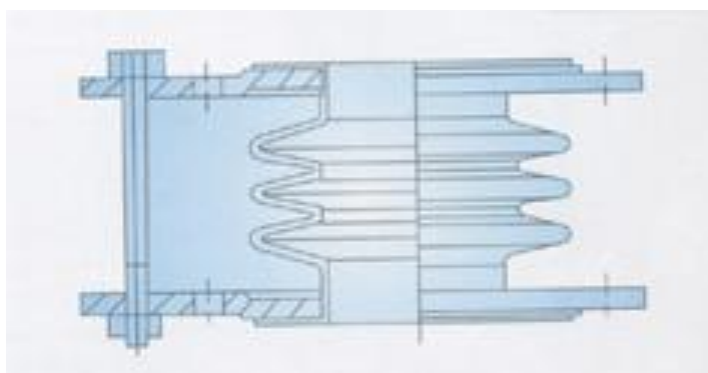
## PIPELINE JACKS

### Appointment

Pipeline jacks regulate changes of the sizes of the pipeline, вызванньк temperature changes, and иакже reduce transfer of vibrations between different types of the equipment.

### Main technical characteristics

Pipeline jacks represent bellow valves from stainless steel 304, inside F-4 (PTFE). Working pressure  $\leq 1,0$  MPa, operational temperature of  $-25$  °C -  $150$  °C, the sizes: DN25 – DN300.



Nominal diameter	Length, mm	Admissible lengthening, mm ( $\pm\Delta X$ )	Admissible radial deviation, mm ( $\pm\Delta Y$ )	Admissible angle of rotation	Quntyity crimp (piece)	Tol-tire F4
DN25	65	12	8	20	3	2,5
DN32	70	14	12	20	3	2,5
DN40	75	17	16	25	3	2,5
DN50	82	20	20	25	3	2,5
DN65	88	22	22	30	3	3
DN80	92	24	24	30	3	3
DN100	95	26	25	30	3	3
DN125	105	29	25	30	3	3
DN150	115	32	20	25	3	3
DN200	125	40	20	25	3	3,5
DN250	135	42	12	15	3	3
DN300	145	44	10	10	3	3,5

### Section 3. FILTERS

#### Chemical filter F-1-DN

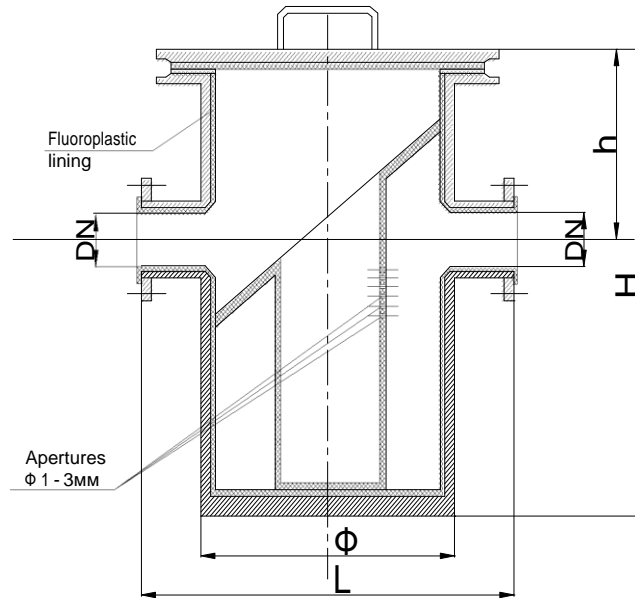
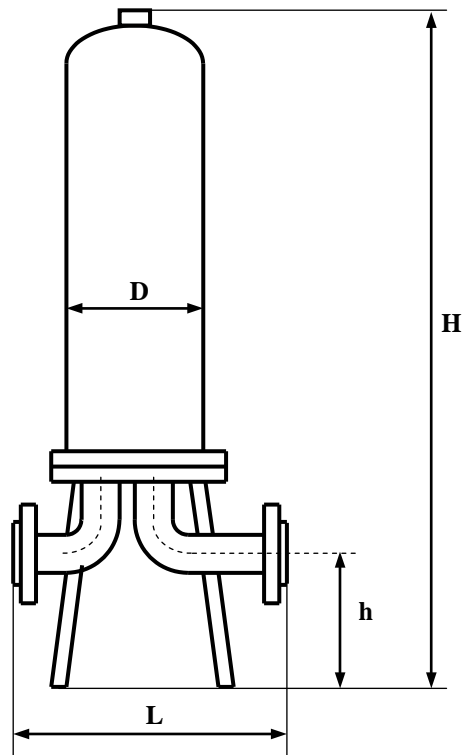


Table of filters dimensions.

Model	DN	L	H	Φ	h
F-1-25	DN25	190	275	50	110
F-1-32	DN32	210	300	50	120
F-1-40	DN40	224	320	65	130
F-1-50	DN50	244	345	80	140
F-1-65	DN65	268	380	100	155
F-1-80	DN80	282	400	125	165

Filter elements is a grid bucket made of stainless steel, polypropylene, or fluoroplastic depending on operating environment. Diameter of openings in filter-bag is 1-3 mm.

## Chemical filter F-2-DN



Filter with filter element model F-2-DN

Model	Filer element		Filter capacity (T/h)	Overall dimensions			
	Number	Length		D	L	H	h
F-2-25	1	250	0,5	90	200	470	100
F-2-32	1	500	1	90	200	850	180
F-2-40	3	500	3	219	306	880	220
F-2-50	5	500	5	273	400	920	230
F-2-65	9	500	10	325	450	960	240
F-2-80	13	500	15	426	510	1200	240

Note. During installation pay attention to the following moments: 1) during installation observe direction of the arrow; 2) avoid contact of filter elements with oil stains and other substances that may block micro pores; 3) in case of pressure drop for > 0,03 MPa or clear reduction of consumption this means that filter is contaminated and should be timely washed or you should replace filter element.

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**CHEMICAL PUMP EQUIPMENT**  
*(questionnaire)*

1. Purpose of pump equipment (technological process, line)

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2. Types of pumps you need

Leakproof chemical ГХН  chemical АХН  semisubmersible chemical АХПН

3. Required pump parameters in nominal mode

3.1. Flow rate, m<sup>3</sup>/hour \_\_\_\_\_

3.2. Head, m \_\_\_\_\_

3.3. Pumped environment

• Chemical composition \_\_\_\_\_

• Solid particles

- size (mm) \_\_\_\_\_

- bulk concentration (%) \_\_\_\_\_

- abrasiveness \_\_\_\_\_

3.4. Operating temperature (min, max), °C \_\_\_\_\_

3.5. Density at operating temperature (max), kg/m<sup>3</sup> \_\_\_\_\_

3.6. Pressure at pump input (min, max), kg/cm<sup>2</sup> \_\_\_\_\_

3.7. Immersion depth for submersible pumps, m \_\_\_\_\_

3.8. Place of installation (premise, outdoors) \_\_\_\_\_

3.9. Other \_\_\_\_\_

4. Specific working conditions (category of explosion safety, toxic level and etc.)

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5. Wishes concerning completeness

• with frame and motor \_\_\_\_\_

• without frame and motor \_\_\_\_\_

6. Need in pumps (one-time order, pcs.; pcs/year) \_\_\_\_\_

7. Required terms of delivery \_\_\_\_\_

8. Profile of your enterprise and types of manufactured products

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9. Name and address of your enterprise \_\_\_\_\_

10. Full name and post of your specialist \_\_\_\_\_

Signature \_\_\_\_\_

Telephone, fax \_\_\_\_\_

Additional information or consultation on filling the questionnaires in Group of Companies 'CHEMAGREGAT' may be obtained at Vladimir Litvinov.

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**CHEMICAL STOP AND CONTROL VALVES**  
*(questionnaire)*

1. Purpose of stop and control valves (technological process, line) \_\_\_\_\_

2. Types of equipment you need

Orifice valves,  butterfly valves,  check valves,  
 Ball cocks,  other

3. Version (non-flanged, flanged, etc.) \_\_\_\_\_

4. Type of drive (manual, pneumatic, electric) \_\_\_\_\_

5. Required parameters

5.1. Dy, mm \_\_\_\_\_

5.2. Flow rate, m<sup>3</sup>/h \_\_\_\_\_

5.3. Maximum operating pressure, kg/cm<sup>3</sup> \_\_\_\_\_

5.4. Pumped environment (chemical composition) \_\_\_\_\_

5.5. Solid particles \_\_\_\_\_

Size of solid particles, mm \_\_\_\_\_

Bulk concentration of solid particles, %(volume) \_\_\_\_\_

5.6. Operating temperature, °C (min, max) \_\_\_\_\_

5.7. Density at working temperature, kg/m<sup>3</sup> \_\_\_\_\_

5.8. Place of installation (premise, outdoor) \_\_\_\_\_

5.9. Other \_\_\_\_\_

6. Demand, pcs./year \_\_\_\_\_

7. Required terms of delivery (quarterly) \_\_\_\_\_

8. Profile of your enterprise and types of manufactured products  
\_\_\_\_\_

9. Name and address of your enterprise \_\_\_\_\_

10. Full name and post of your specialist for contact \_\_\_\_\_

Signature \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Additional information or consultation on filling the questionnaires in group of companies "CHEMAGREGAT" may be obtained at Litvinov Vladimir Dmitrievych.

If valves are required with electric or pneumatic actuators we ask you to describe characteristics of the actuators in details.

