

**KIDH**  
Volute - casing pumps

# VOLUTE-CASING PUMPS KIDH

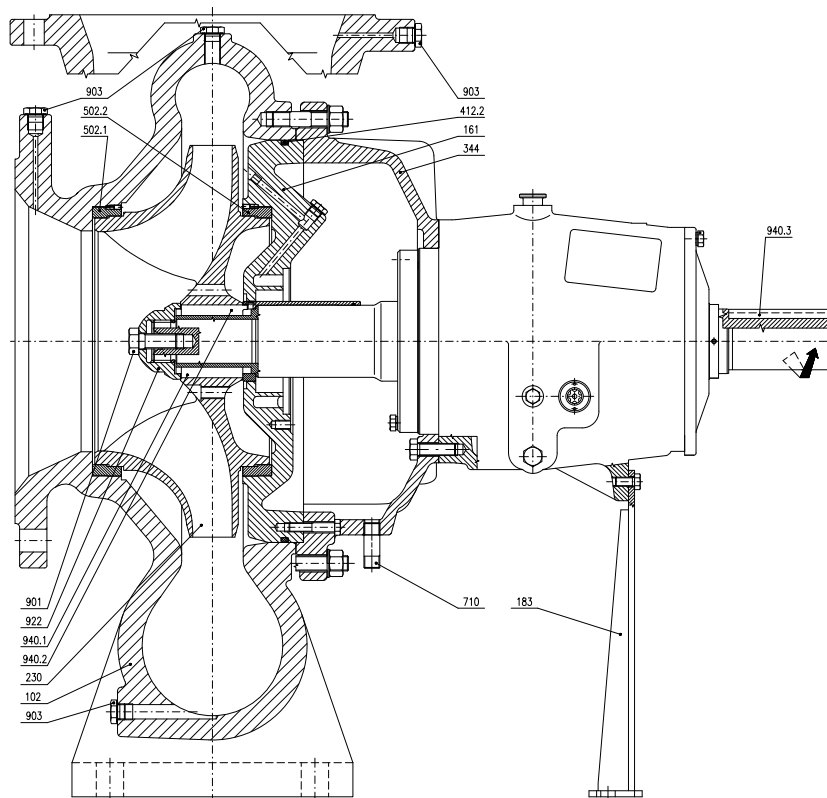
## APPLICATION

Vertical pumps KIDH are intended for pumping water in pumping stations within irrigation and drainage systems, cooling water in power and heat generation plants. They are also suited for water management in various industrial branches, water treatment plants, chemical industry, and so on.

## PUMPED MEDIA

Clean or slightly polluted water, waste or sea water, water containing detergents, and further, brine and hydrocarbons. Maximum temperature of pumped liquid is 140 °C.

## INFORMATORY CROSS-SECTIONAL ARRANGEMENT



102	Volute
161	Casing cover
183	Support
230	Impeller
344	Lantern

412.2	O-ring
502.1	Wearing ring of volute casing
502.2	Wearing ring of casing cover
710	Nipple
901	Screw

903	Plug
922	Impeller nut
940.1	Impeller key
940.2	Impeller key
940.3	Coupling key

## DESIGN

The KIDH pump is of single-stage, volute-casing single-suction impeller design. Discharge branch is located tangentially upright up, suction branch follows pump axis.

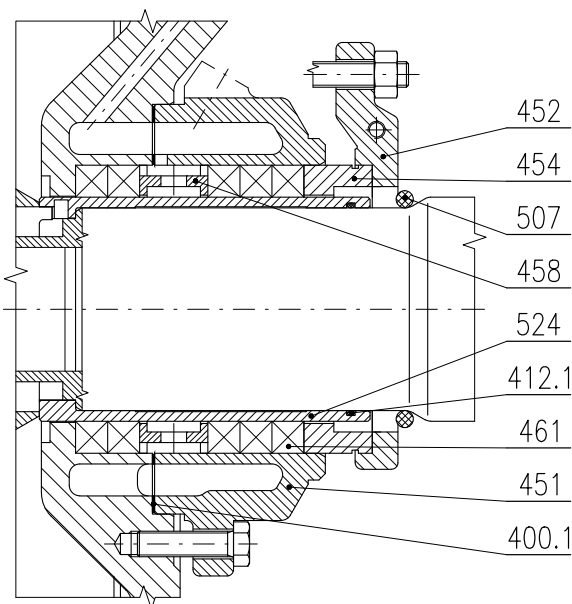
Pump stator consists of volute-casing, replaceable wearing rings, casing cover, and seal. Pump stator is tested through water hydrostatic pressure test.

Pump rotor consists of shaft, impeller, impeller nut and sealing bushing. Rotor is laid in rolling bearings, located in removable bearing housing.

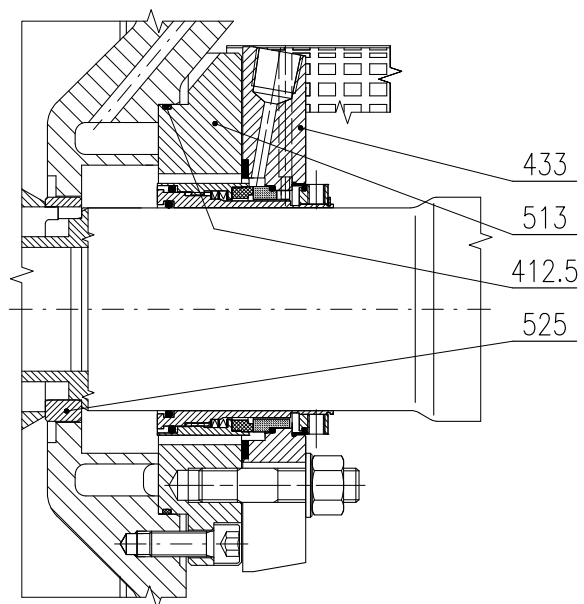
## SEAL

Pump seals are available in two basic versions, that is, gland packing or a mechanical seal. Detailed version of the seal corresponds to pumped liquid specific characteristics. With pumping liquids of higher temperatures the stuffing box is flushed.

### Gland packing version



### Mechanical seal version



400.1	Cooling chamber gasket
412.1	O-ring
451	Cooling chamber
452	Sealing flange
454	Sealing ring

458	Flooding ring
461	Wear ring
507	Thrower ring
524	Seal bushing

412.5	O - ring
433	Mechanical seal
513	Mechanical seal insert
525	Spacer

# VOLUTE-CASING PUMPS KIDH

## Bearing housing

The bearing body is designed in order to cover several pump sizes of the whole series. Service life of bearings is 40,000 working hours. They are grease - or oil - lubricated.

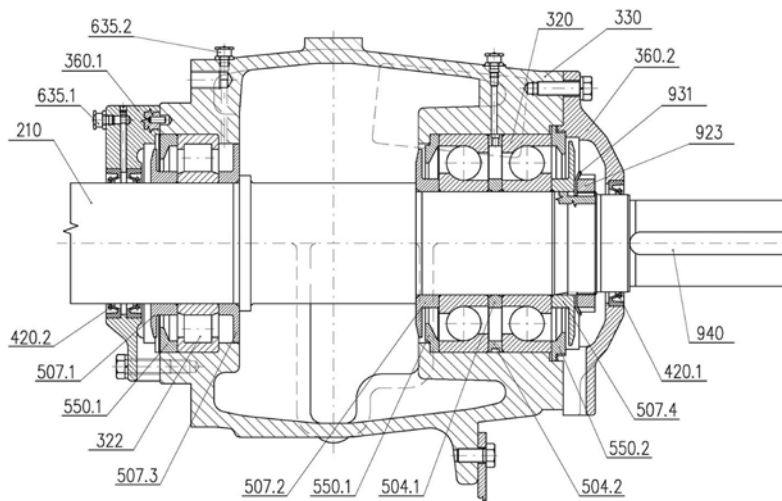
In case of grease lubrication the stuffing of bearing space is made with the help of simmer-rings. In order to avoid overgrase the bearings are equipped with thrower rings, which throw surplus grease away from the bearing space. In case of oil lubrication the stuffing of bearing space is made with special labyrinth touchless

stuffing, which perfectly avoids oil leak and entering of dirt into bearing housing.

## MATERIAL VERSION

Main pump parts are in default version made from ductile iron, shaft from stainless steel, protecting bushings from corrosion-proof steel. Upon requirement and following operational conditions, the above mentioned parts may be made from other materials as well.

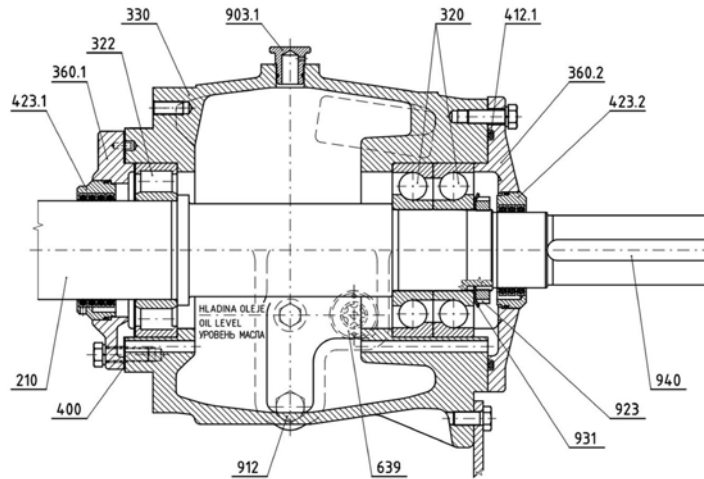
## Grease lubrication version



210	Shauf
320	Thrust bearing
322	Journal bearing
330	Bearing housing
360.1	Front cover
360.2	Rear cover
420.1	Simmerring
420.2	Simmerring
504.1	Inner insert ring
504.2	Outer insert ring
507.1	Front thrower ring

507.2	Front thrower ring - thrust
507.3	Rear thrower ring
507.4	Rear thrower ring - thrust
550.1	Thrower ring washer
550.2	Bearing ring
635.1	Lubrication head
635.2	Lubrication head
923	Nut KM
931	Safety washer
940	Coupling key

## Oil lubrication version

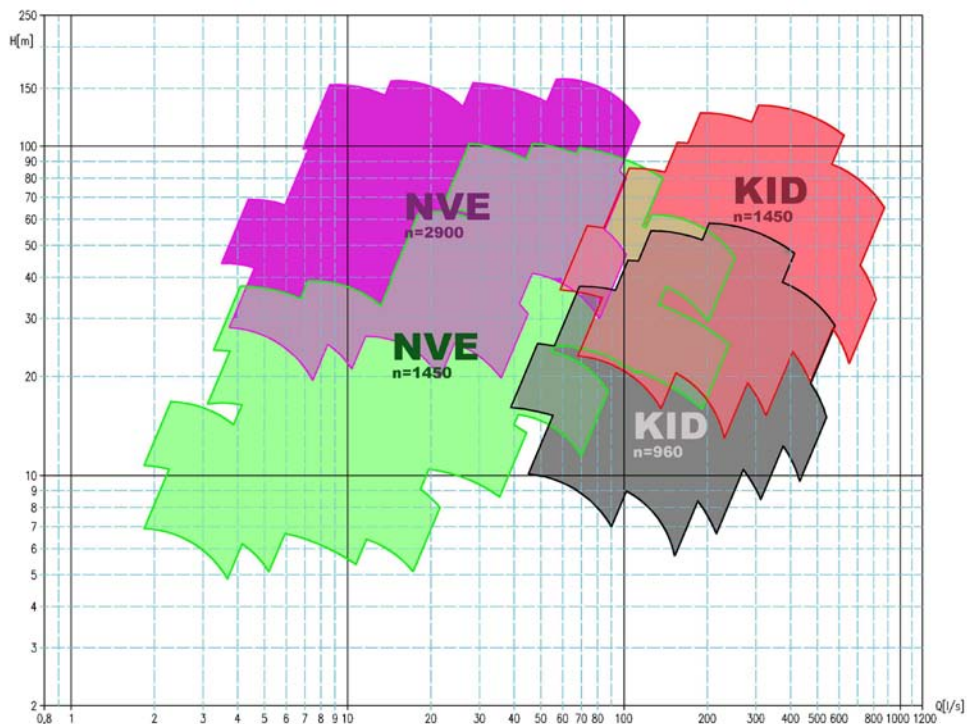


210	Shaft
320	Thrust bearing
322	Journal bearing
330	Bearing housing
360.1	Front cover
360.2	Rear cover

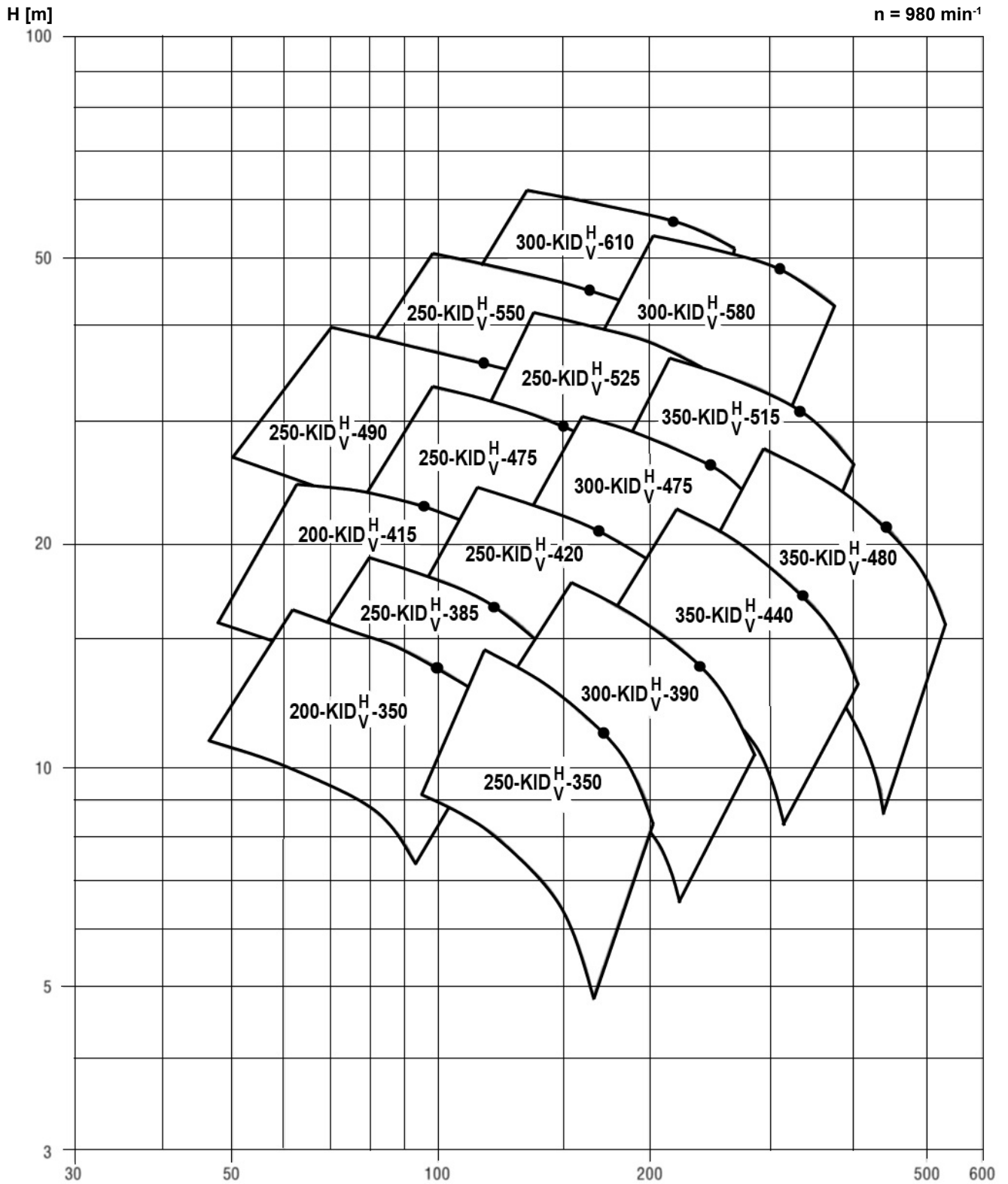
400	Front sealing
412.1	O-ring
423.1	Front labyrinth ring
423.2	Rear labyrinth ring
639	Oil gauge
903.1	Plug

912	Plug
923	Nut KM
931	Safety washer
940	Coupling key

## INFORMATIVE WORKING RANGE OF KID PUMPS IN COMPARISON WITH OTHER SERIES OF SIGMA VOLUTE-CASING PUMPSA



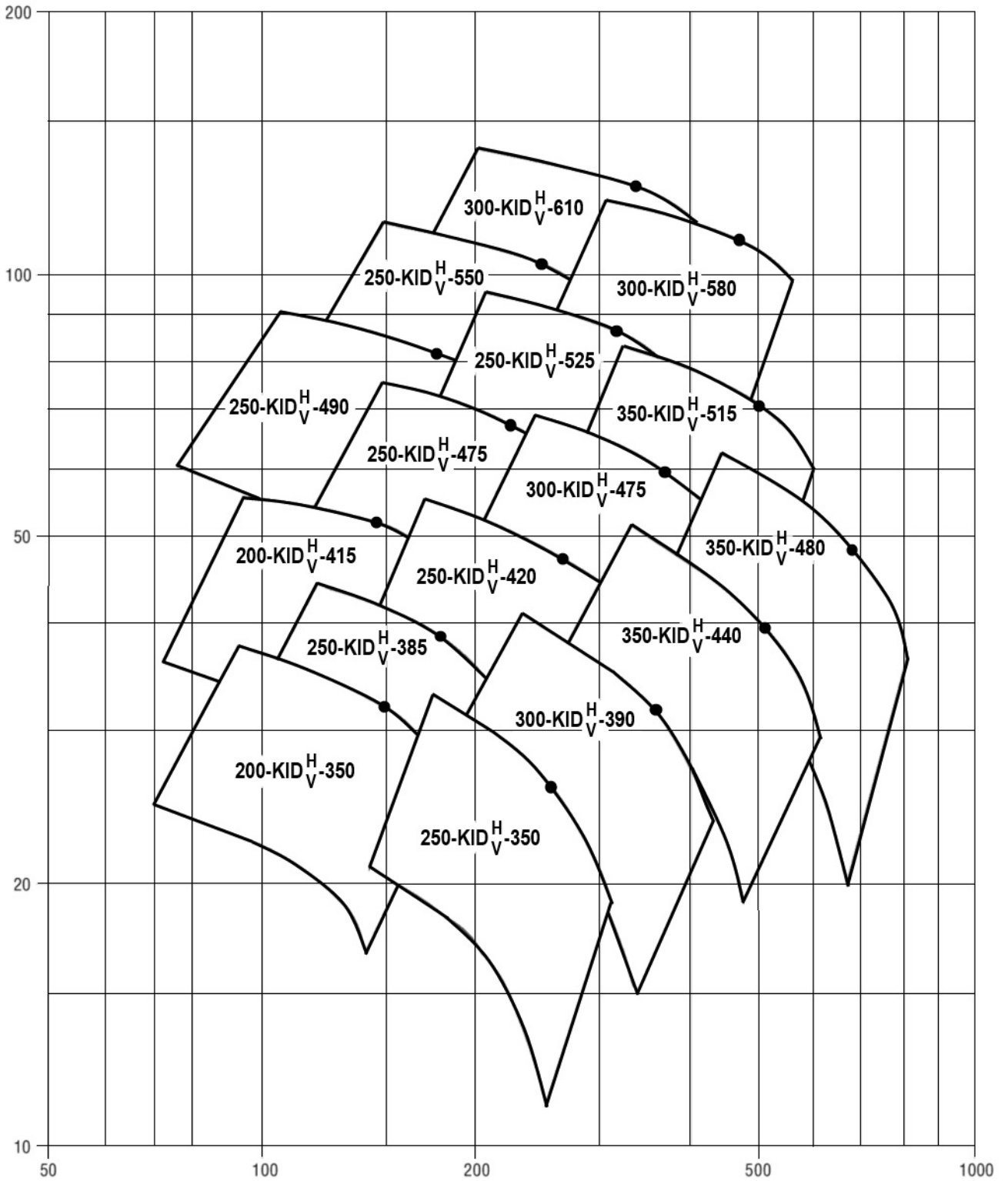
# INFORMATIVE WORKING RANGE OF KIDH PUMPS



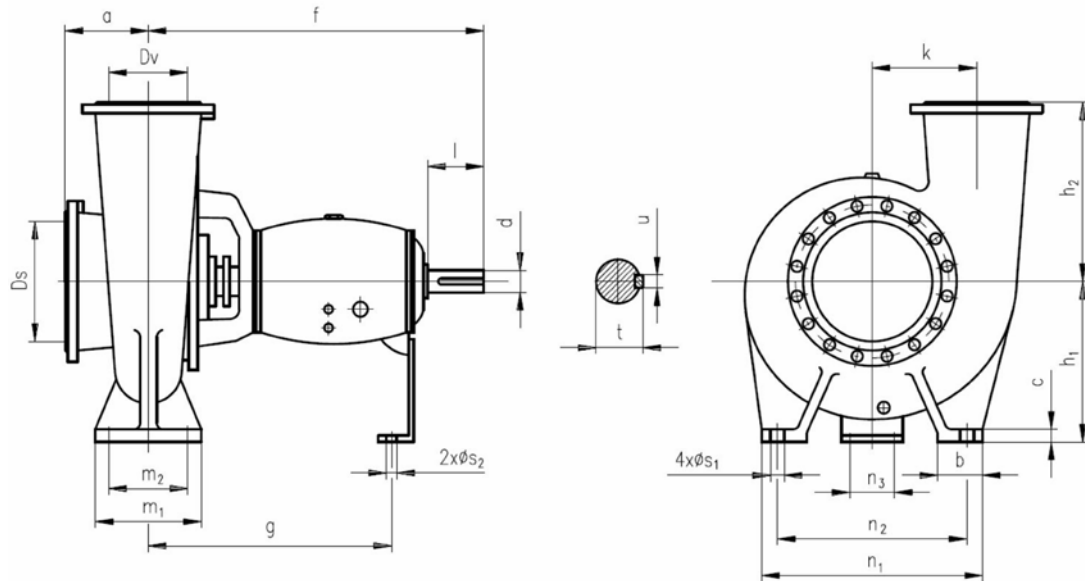


H [m]

n = 1480 min<sup>-1</sup>



# PUMP DIMENSIONS



Pump type	200	200	250	250	250	250	250	300	300	250	250	350	350	350	300	300	
	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	KIDH	
Shaft ø	42		48					60					75			90	
Branch	D <sub>s</sub>	250	250	300	300	300	250	350	350	300	300	400	400	400	350	350	
	D <sub>v</sub>	200	200	250	250	250	250	300	300	250	250	350	350	350	300	300	
	PN suction	10	10	10	10	10	16	16	16	10	16	16	16	10	16	16	
	PN discharge	10	10	10	10	10	16	16	16	10	16	16	16	10	16	16	
Pump	a	190	170	220	220	250	200	200	230	280	220	230	260	300	300	250	250
	b	110	120	120	140	140	120	120	150	150	140	140	175	175	175	160	160
	c	30	30	35	35	35	30	40	40	40	35	35	45	45	45	40	40
	f	570	695	705	695	745	765	755	755	827	822	815	820	890	875	1030	1015
	g	380	505	515	505	555	534	525	525	597	522	515	520	590	575	764	748
	h <sub>1</sub>	365	350	400	450	450	460	450	500	500	530	450	600	600	650	580	50
	h <sub>2</sub>	350	400	400	450	350	500	450	500	400	540	500	550	400	450	600	600
	k	270	270	300	330	320	350	320	370	350	410	350	410	390	430	450	400
	m <sub>1</sub>	255	250	280	300	300	250	290	350	350	280	290	370	370	370	330	330
	m <sub>2</sub>	170	180	190	210	210	180	200	250	250	210	210	270	270	270	250	250
	n <sub>1</sub>	600	550	650	700	700	720	590	780	780	780	700	850	920	920	880	780
	n <sub>2</sub>	500	450	550	580	580	610	480	650	650	660	580	700	770	770	770	650
	n <sub>3</sub>	125	140	140	140	140	140	140	140	140	140	140	140	140	140	140	180
	s <sub>1</sub>	M24	M27	M27	M30	M24	M24	M27	M30	M30	M27	M27	M30	M30	M30	M30	M30
s <sub>2</sub>	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	M16	
Shaft end	d	42	48	48	48	48	60	60	60	60	75	75	75	75	75	90	90
	l	110	110	110	110	110	140	140	140	140	140	140	140	140	140	170	170
	t	45	51,5	51,5	51,5	51,5	64	64	64	64	79,5	79,5	79,5	79,5	79,5	95	95
	u	12	14	14	14	14	18	18	18	18	20	20	20	20	20	25	25
	1	liters	2	2,7	2,7	2,7	2,7	3,3	3,3	3,3	3,3	4	4	4	4	8	8
2	kg	370	350	470	580	560	585	520	800	730	730	680	1080	960	1200	1110	1100
3	cast iron	1,65	2,7	2,5	3,5	2,8	9,3	5,3	6,8	3,95	15,1	9,2	9,9	6,73	6,5	23,8	16
	bronze	2	3,3	3	4,2	3,4	11,1	6,3	8	4,83	18	11	11,7	8,23	7,95	28,6	19

### Dimensions given in mm

1	oil fill amount
2	weight of cast iron pump without coupling
3	GD <sup>2</sup> (kgm <sup>2</sup> ) holds for pump without coupling







**SIGMA GROUP a. s.**  
Jana Sigmunda 79  
783 50 Lutín, Česká republika  
+420 585 652 011, +420 585 652 060  
+420 585 652 051, +420 585 944 294  
info@sigma.cz  
2013

[www.sigma.cz](http://www.sigma.cz)