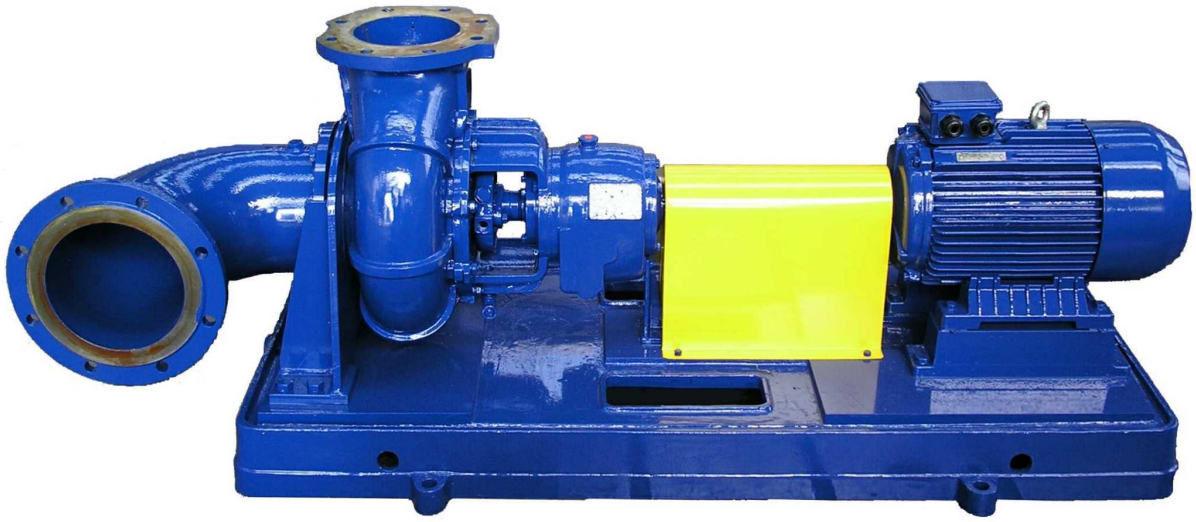
SIGMA GROUP a. s.

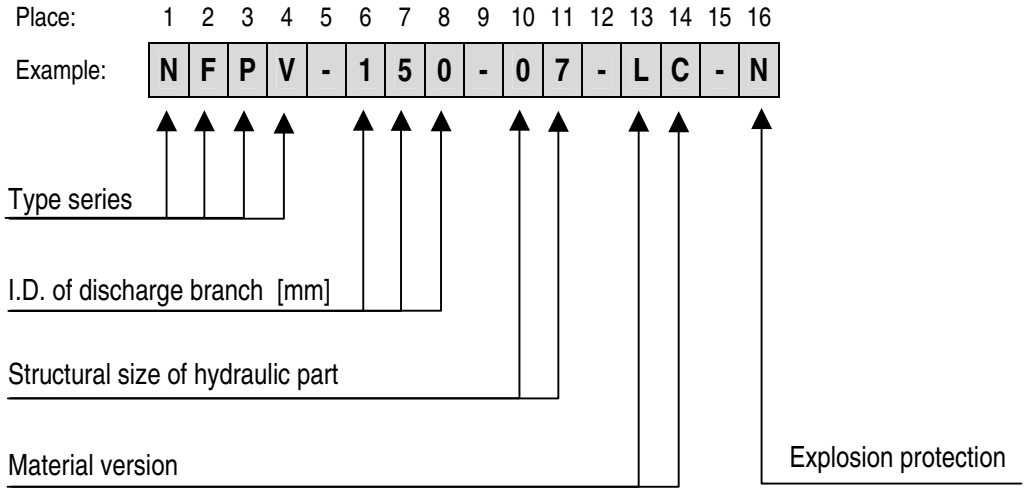
SEWAGE PUMPS

NFxH
NFxV



SYSTEM OF SEWAGE PUMPS DESIGNATION

Generally, pumps designation includes designation of type series, nominal inside diameter of the discharge branch and technical specifications.
The type series designation consists of letter denotation combined of four capital letters. Their understanding as well as technical specifications coding are stated hereinafter.



TYPE SERIES

1st place – basic design feature

N volute pump for dry pit installation

2nd place – meaning pursuant to pumped medium kind

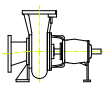
F sewage pump

3rd place – impeller type

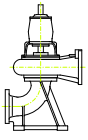
J single channel shrouded impeller
P two channel shrouded impeller
R vortex impeller
V multi-vane shrouded impeller

4th place – service location

H Stationary installation in dry pit mounted horizontally on bearing pedestal



V Stationary installation in dry pit mounted vertically on bearing pedestal



MATERIAL VERSIONS

13th and 14th places

	part	material
LC	stator parts, suction or discharge elbow	grey cast iron
	shaft and connecting material coming into contact with pumped liquid	stainless steel
	impeller	grey cast iron
	wear rings	chromium alloy
LU	stator parts, suction or discharge elbow	grey cast iron
	shaft and connecting material coming into contact with pumped liquid	stainless steel
	impeller	chromium cast steel
	wear rings	chromium alloy
JU	stator parts	special finish (e. g. grey cast iron with ceramic coating)
	other parts as in LU	

EXPLOSION PROTECTION

16th place

E Inexplosiveness version can be used in explosion hazard area
N Standard design is not intended for application in explosion hazard area

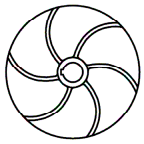
APPLICATION

The sewage pumps are designed for pumping waste water, faeces and raw sludge containing little non-abrasive solids and fibres such as paper, rags, bandage cloth, leftovers as well as various street drains, or lower content of sand, ash, lump wood and other materials coming into sewerage system.

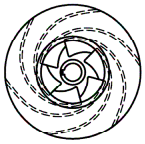
Maximal density of pumped liquid ..... 1200 kg/m^3
Maximal temperature of pumped liquid ..... 80 °C
Maximal temperature of air ..... 40 °C
Allowed range of pumped liquid pH-value
for material version LC ..... 6,5 – 9
for material version LU ..... 5 – 9

Other more unfavourable limiting factors and criteria shall be agreed upon by the purchaser and the manufacturer when considering particular service conditions.

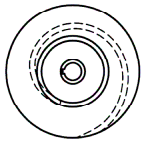
IMPELLER TYPE



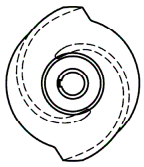
R In the sewage pumps provided with the **vortex-type** impeller, no heavy abrasive wear occurs owing to solids. They are successfully used when pumping waste water with dissolved gas and fibres, and sewage and sludge.



V Pump versions with **multi-vane** impeller are intended for pumping slightly contaminated water with content of non-abrasive solids up to 2 vol. percent. **They have the highest efficiency.**



J Pump versions with the **single channel** impeller are characterized by good-sized passing diameter for soft lump and fibrous contaminants.



P Due to sufficient passing diameter, the sewage pumps with **double channel** impeller can be used for pumping sludge and hydro-mixtures containing smaller solids. Compared with single channel impeller, it reaches **higher efficiency** and superior dynamic characteristics.

CASCADE CONNECTION

Pump application is extended by possibility to connect two pumps in serie for so-called **cascade pumping**. There are such situations, when single pump is not capable to overcome higher delivery heads. Therefore, it is favourable to connect two equivalent pumps by means of which considerably higher delivery head can be obtained – in practice double head with given capacity (flow rate). Total delivery head of the pumps connected in serie is limited by gauge pressure corresponding to PN 10.

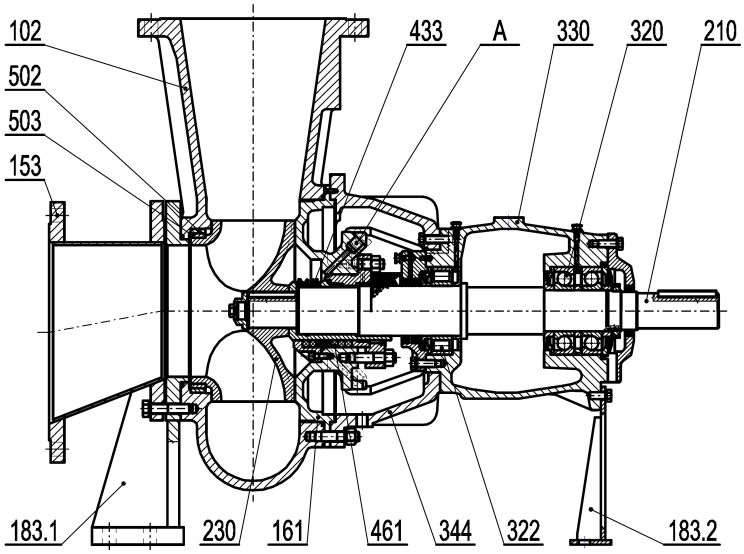
USING THE PUMPS IN POTENTIALLY EXPLOSIVE ATMOSPHERE

Potentially explosive atmosphere often appears in some industrial branches. For explosion environments hazardous due to inflammable gases, vapour or mist we deliver pumps provided with explosion protection of the Category 2G for the Zone 1 or the Category 3G for the Zone 2. When ordering a pump destined for such environments it is necessary to give also classification of ambient flammable atmosphere, i.e. its temperature classes (T1 to T6) and subgroups (IIA, IIB, IIC). We are able to deliver also pumps of the category M2 applicable in mines being at risk from methane and/or coal-dust and pumps of categories 2D or 3D destined for operation in environments with risk of inflammable dust appearance, in foodstuff or agricultural industries.
These pumps destined for operation in explosion hazard environments have got the symbol Ex and other necessary and related data in their rating plates.

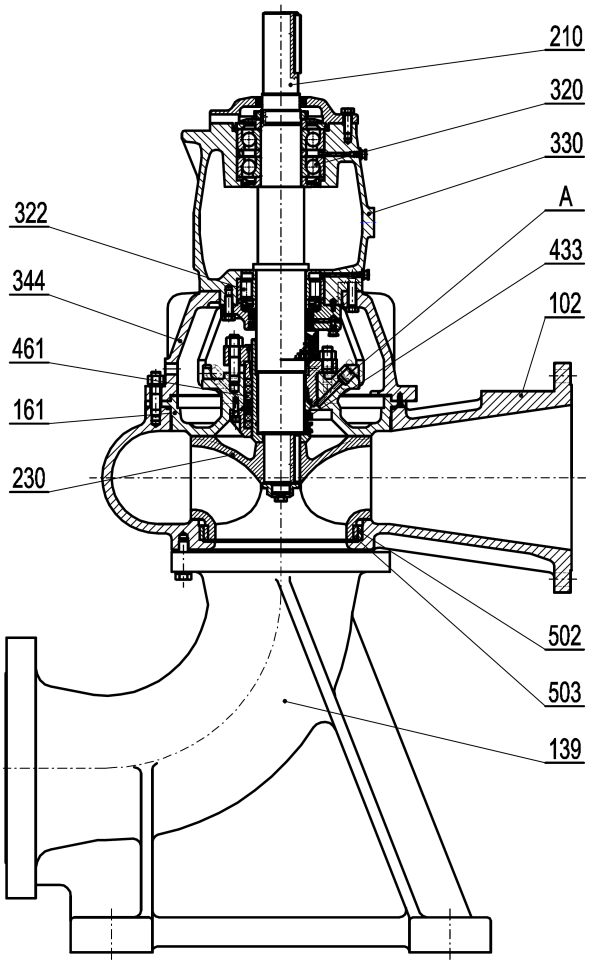
SEWAGE PUMPS DESIGN

The pump is intended for dry pit installation, it is designed in either horizontal or vertical version.
The pump is centrifugal single stage volute pump with optional impeller type. Bearings are grease-lubricated, with the horizontal version they are also oil-lubricated. Sealing is ensured with either soft cord packing or with mechanical seal. For flushing the seal, the pump is provided with G ½“ orifice; clean water with temperature of approx. 20 °C and pressure 0,4 MPa is used for the flushing.

INFORMATIVE SECTION VIEW OF HORIZONTAL PUMP



INFORMATIVE SECTION VIEW OF VERTICAL PUMP



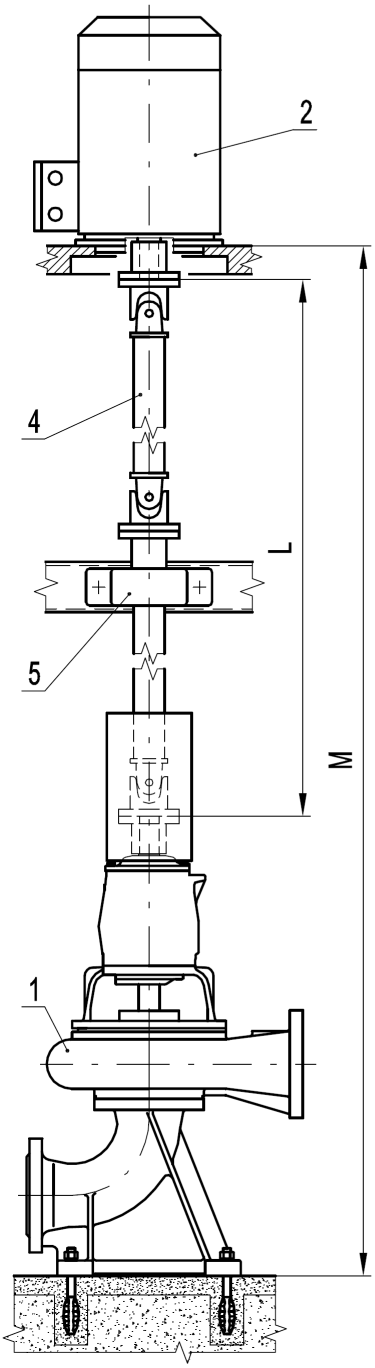
102	Volute
139	Suction elbow
153	Suction branch
161	Partition
183.1	Foot
183.2	Foot
210	Shaft
230	Impeller
320	Bearing
322	Bearing
330	Bearing housing
344	Lantern
433	Mechanical seal
461	Soft gland packing
502	Wear ring, volute
503	Wear ring, impeller
A	Seal flushing connection

PUMP SET

The pump is delivered either separately or in a pump set including the drive, the coupling and protective coupling guard. The pump set in horizontal version is delivered on the foundation frame.

The pump can be driven from an electric motor with frequency 50 Hz or 60 Hz, diesel engine or electric motor with frequency converter. Pump se maximum speed is 1770 min^{-1}.

For torque transmission to an longer distance the cardan shaft or coupling may be used. To avoid vibration of long-sized cardan shaft, the latter is assembled of several pieces, some of which are supported with a bearing or a number of bearings.



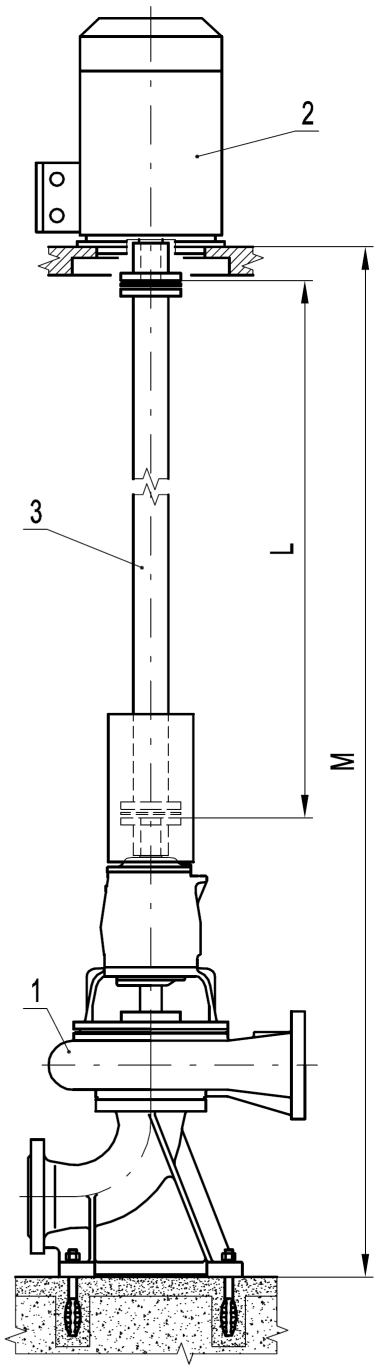
◄ Vertical pump setwith cardan shaft

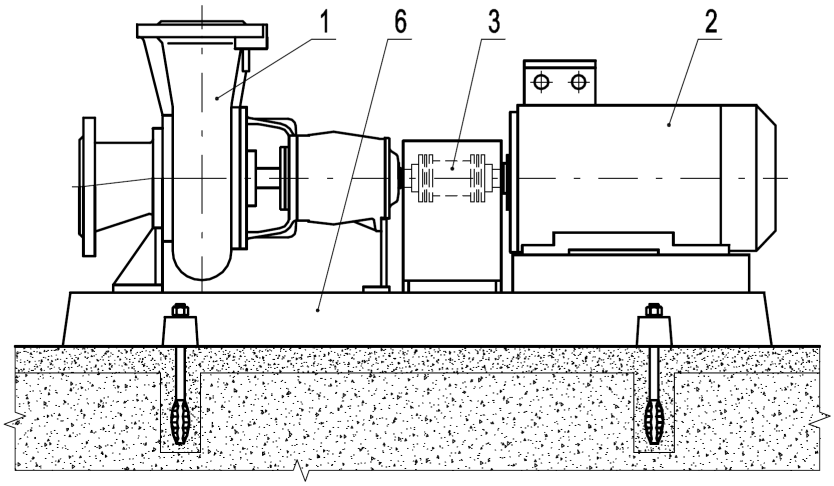
► Vertical pump set with long coupling

1 Pump
2 Electric motor
3 Coupling
4 Cardan shaft
5 Bearing
6 Foundation frame

L Cardan shaft or coupling lenght
M Floor height

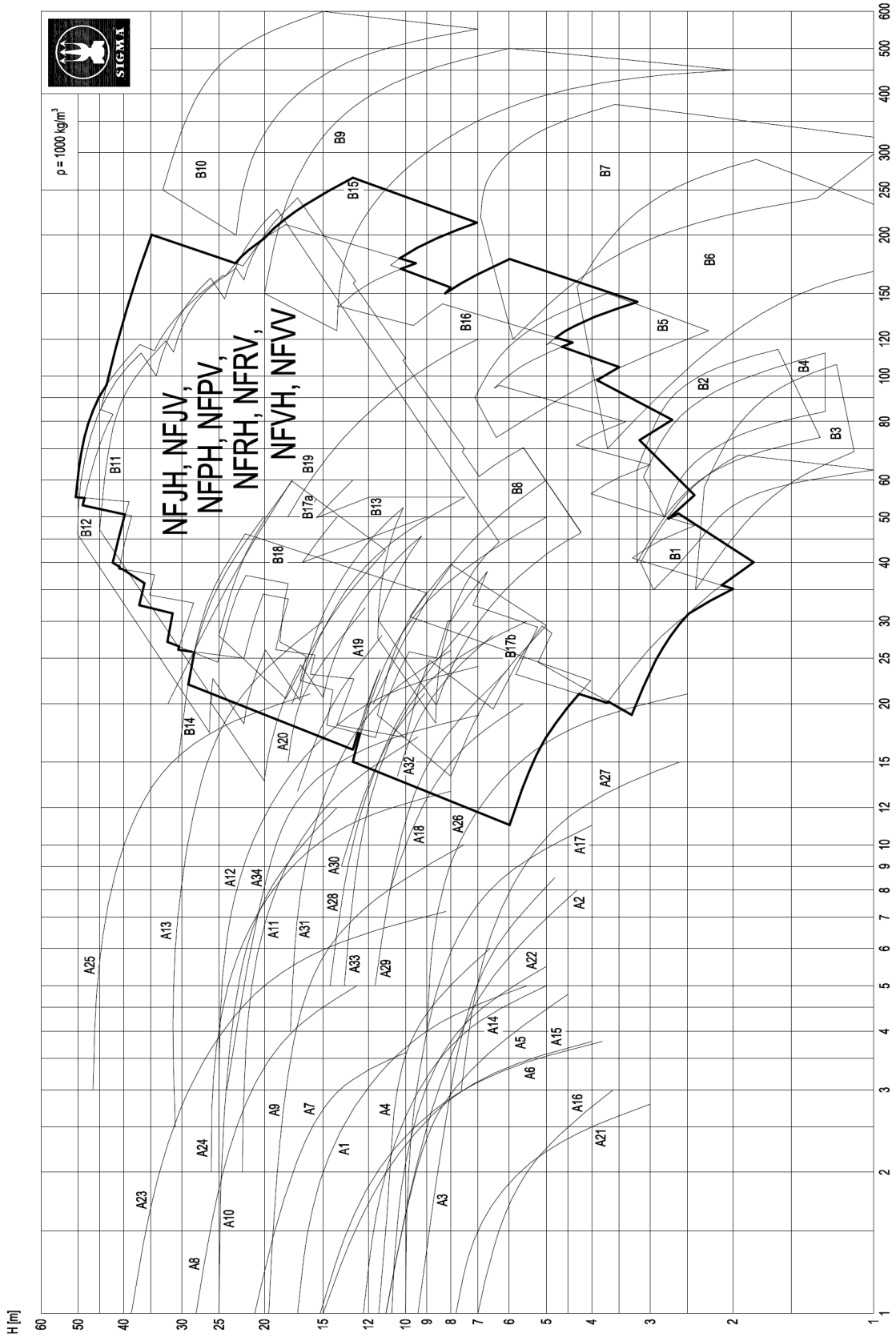
▼ Horizontal pump set on foundation frame





PERFORMANCE FIELDS COVERED BY HYDRODYNAMIC SEWAGE PUMPS

This leaflet gives details for bolded pumps only.
For other types there are separate leaflets!



The pump A1 etc. are manufactured and delivered by Sigma 1868

A1	40 / 50-GFDU	A9	65-KDFU-130-10	A17	50-GFHU-105-70	A25	KDDF-080-02	A33	GFVP / NFVU-100-02
A2	50-GFEU	A10	80-KDFU-150-9,5	A18	80-GFHU-220-60	A26	GFJP-080-02	A34	GFZP-080-03
A3	50-GFLU	A11	80-KDFU-130-13	A19	100-GFHU-250-60	A27	GFRP-080-02		
A4	50-GFRU	A12	100-KDFU-150-13,5	A20	100-GFHU-270-60	A28	GFJP-080-04		
A5	50-GFSU	A13	125-KDFU-170-17	A21	GFRF-032-41	A29	GFRP-080-04		
A6	40 / 50-GFZU	A14	40-GFPU-105-15	A22	32-GFTU-95-11	A30	GFPP / NFPU-065-01		
A7	GFZP-050-02	A15	40-GFPU-105-8-2	A23	KDDF-050-51	A31	GFVP / NFVU-065-01		
A8	GFZP-050-03	A16	40-GFPU-105-8	A24	KDDF-080-01	A32	GFPP / NFPU-100-02		

The pump B1 etc. are manufactured and delivered by Sigma Group, divize Průmyslová čerpadla

B1	150-AFHU	B9	400-GDVU (744 rpm)	B14	GFRx / NFRM / NFRU		
B2	GFAP / NFAU-200-02	B10	400-GDVU (985 rpm)		(pump series)		
B3	200-AFG-120	B11	GFPx / NFPM / NFPU	B15	NFPH / NFPV (pump series)		
B4	200 AFG-67,5 (980 rpm)		(pump series)	B16	NFVH / NFVV (pump series)		
B5	200-AFG-67,5 (1455 rpm)	B12	GFVx / NFVM / NFVU	B17	NFJH / NFJV (pump series)		
B6	300-AFG-58,5 (740 rpm)		(pump series)	B18	NFRH / NFRV (pump series)		
B7	300-AFG-58,5 (980 rpm)	B13	GFJx / NFJM / NFJU	B19	GFEP-150-05		
B8	150-GFHU-320		(pump series)				

PUMP TECHNICAL SPECIFICATIONS

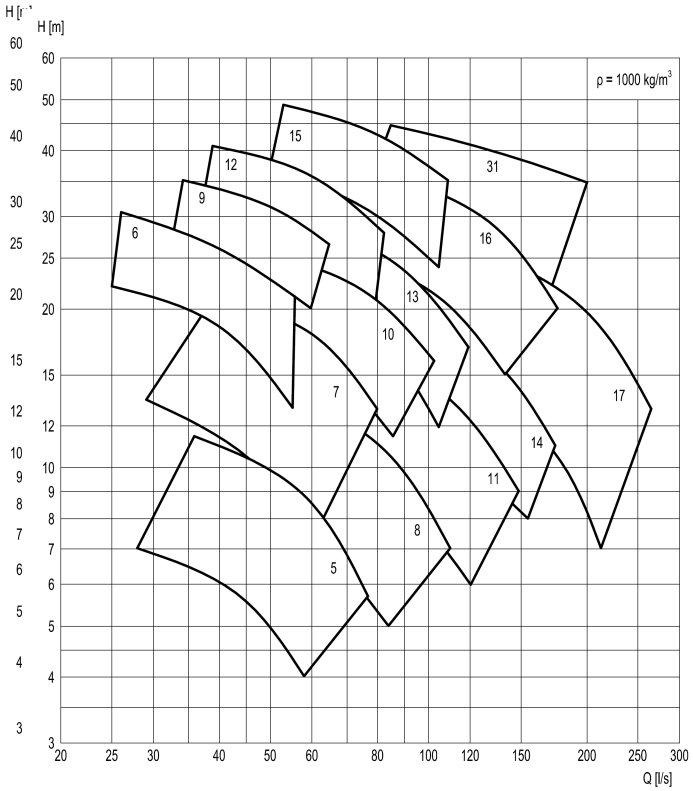
Pump type	Capacity Q_{opt} [l.s^{-1}]		Head H_{opt} [m]		Input P [kW]		Impeller passageway [mm]
	at motor speed n [rpm]						
	1450	980	1450	980	1450	980	
NFPH, NFPV 150-05	57	38,5	9	4	7	2,2	71x67
NFVH, NFVV 150-05	53	36	10	4,5	7	2,2	20x53
NFPH, NFPV 100-06	40	27	26	12	15	4,6	62x49
NFVH, NFVV 100-06	40	27,5	29	13,2	15	4,6	14x10
NFPH, NFPV 150-07	60	40,5	18	8	15	4,6	66x61
NFVH, NFVV 150-07	62	41,5	22	10	16	5	17x48
NFPH, NFPV 200-08	81	55	11	5	14	4,3	ø70
NFVH, NFVV 200-08	73	50	12,5	5,6	14	4,3	20x45
NFPH, NFPV 125-09	52,5	35,5	30,5	14	22	6,8	66x52
NFVH, NFVV 125-09	52,5	34,5	31,5	14,5	20	6,2	17x43
NFJH, NFJV 100-09	43,5	29,5	21,5	10	15	4,6	90x90
NFRH, NFRV 100-09	34	23	26	11,5	16	5	ø66
NFPH, NFPV 150-10	76	51	21,5	10	22	6,8	71x67
NFVH, NFVV 150-10	72	49	23	10,5	20	6,2	20x53
NFPH, NFPV 200-11	110	74	13,5	6,3	18	5,6	90x87
NFVH, NFVV 200-11	102	69	14,5	6,6	19	5,9	25x67
NFPH, NFPV 125-12	60	40,5	36	16,5	28	8,7	71x57
NFVH, NFVV 125-12	65	41,5	36	17	28	8,7	27x46
NFPH, NFPV 150-13	88	59,5	24	11	28	8,7	74x69
NFVH, NFVV 150-13	85	58	28,5	13	30	9,3	20x53
NFPH, NFPV 200-14	133	90	16	7,2	32	10	ø100
NFVH, NFVV 200-14	123	83,5	17	7,8	32	10	ø41
NFPH, NFPV 150-15	80	54	43	19,5	52	16	ø61
NFVH, NFVV 150-15	90	58	45	21	52	16	ø29
NFPH, NFPV 200-16	132	89	29	13,5	52	16	ø77
NFVH, NFVV 200-16	121	82	33	15	52	16	ø35
NFPH, NFPV 250-17	196	132	20	9,5	54	17	ø105
NFVH, NFVV 250-17	183	124	22	10	54	17	ø74
NFPH, NFPV 200-31	175	130	37	16	82	26	ø100

Table data refer to density of 1000 kg/m^3.

The pictures show the pumps of series NFPH and NFVH in production plant during making ground coat, after making top coat and before sending to customer.

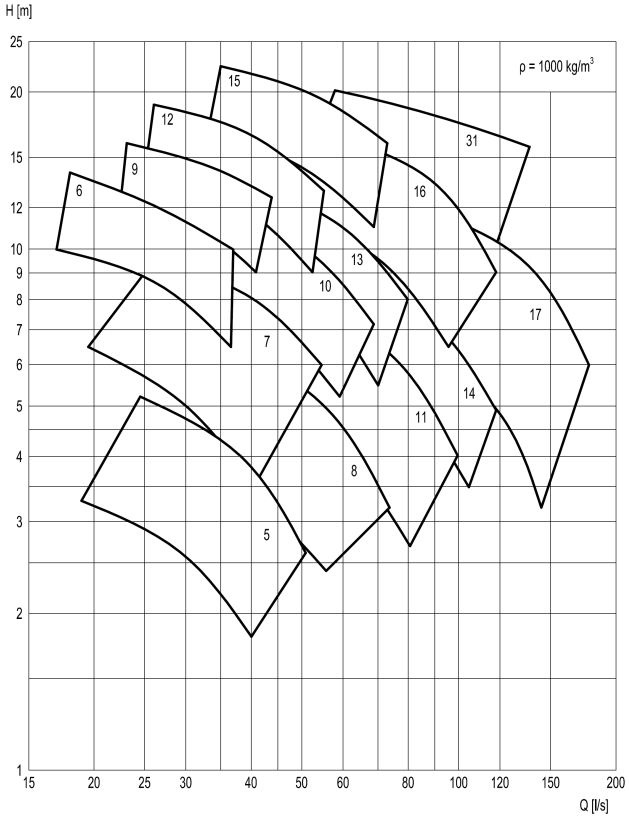
SELECTION CHART FOR PUMPS SERIES NFPx – 1450 rpm

Pump type	Field
NFPH, NFPV 150-05	5
NFPH, NFPV 100-06	6
NFPH, NFPV 150-07	7
NFPH, NFPV 200-08	8
NFPH, NFPV 125-09	9
NFPH, NFPV 150-10	10
NFPH, NFPV 200-11	11
NFPH, NFPV 125-12	12
NFPH, NFPV 150-13	13
NFPH, NFPV 200-14	14
NFPH, NFPV 150-15	15
NFPH, NFPV 200-16	16
NFPH, NFPV 250-17	17
NFPH, NFPV 200-31	31



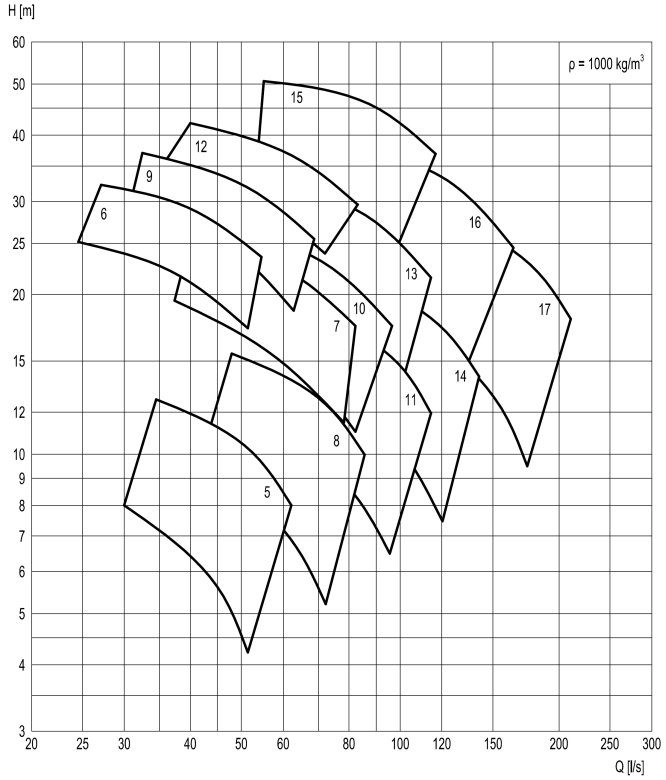
SELECTION CHART FOR PUMPS SERIES NFPx – 980 rpm

Pump type	Field
NFPH, NFPV 150-05	5
NFPH, NFPV 100-06	6
NFPH, NFPV 150-07	7
NFPH, NFPV 200-08	8
NFPH, NFPV 125-09	9
NFPH, NFPV 150-10	10
NFPH, NFPV 200-11	11
NFPH, NFPV 125-12	12
NFPH, NFPV 150-13	13
NFPH, NFPV 200-14	14
NFPH, NFPV 150-15	15
NFPH, NFPV 200-16	16
NFPH, NFPV 250-17	17
NFPH, NFPV 200-31	31



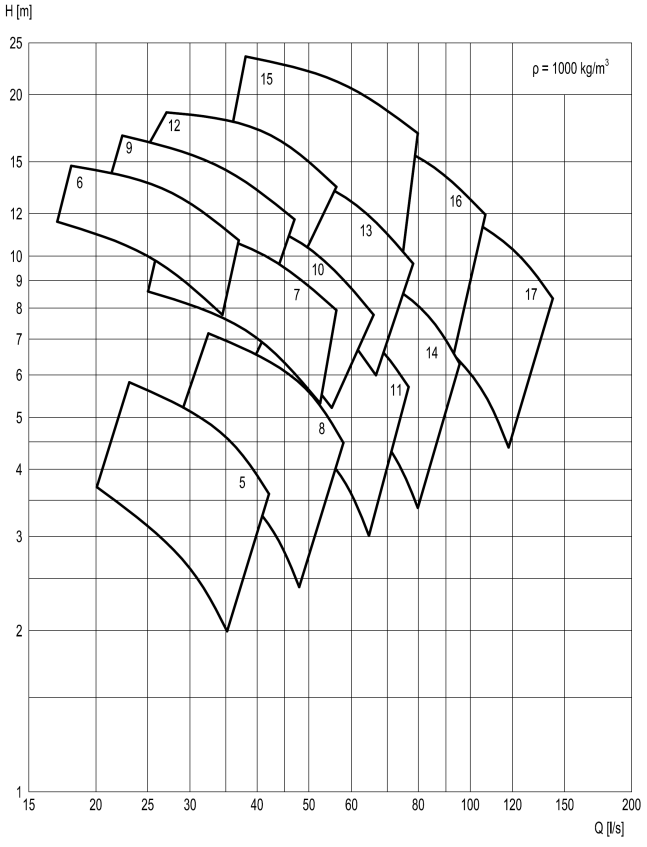
SELECTION CHART FOR PUMPS SERIES NFVx – 1450 rpm

Pump type	Field
NFVH, NFVV 150-05	5
NFVH, NFVV 100-06	6
NFVH, NFVV 150-07	7
NFVH, NFVV 200-08	8
NFVH, NFVV 125-09	9
NFVH, NFVV 150-10	10
NFVH, NFVV 200-11	11
NFVH, NFVV 125-12	12
NFVH, NFVV 150-13	13
NFVH, NFVV 200-14	14
NFVH, NFVV 150-15	15
NFVH, NFVV 200-16	16
NFVH, NFVV 250-17	17



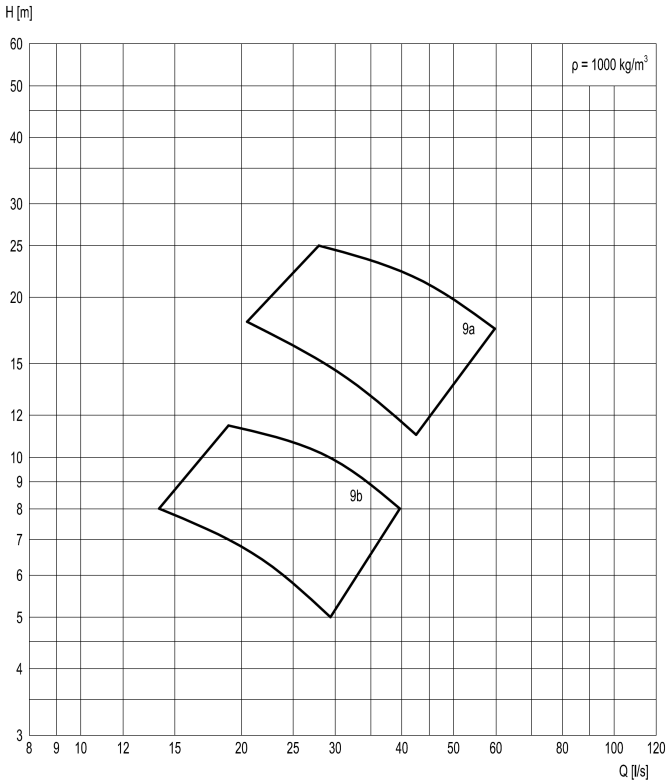
SELECTION CHART FOR PUMPS SERIES NFVx – 980 rpm

Pump type	Field
NFVH, NFVV 150-05	5
NFVH, NFVV 100-06	6
NFVH, NFVV 150-07	7
NFVH, NFVV 200-08	8
NFVH, NFVV 125-09	9
NFVH, NFVV 150-10	10
NFVH, NFVV 200-11	11
NFVH, NFVV 125-12	12
NFVH, NFVV 150-13	13
NFVH, NFVV 200-14	14
NFVH, NFVV 150-15	15
NFVH, NFVV 200-16	16
NFVH, NFVV 250-17	17



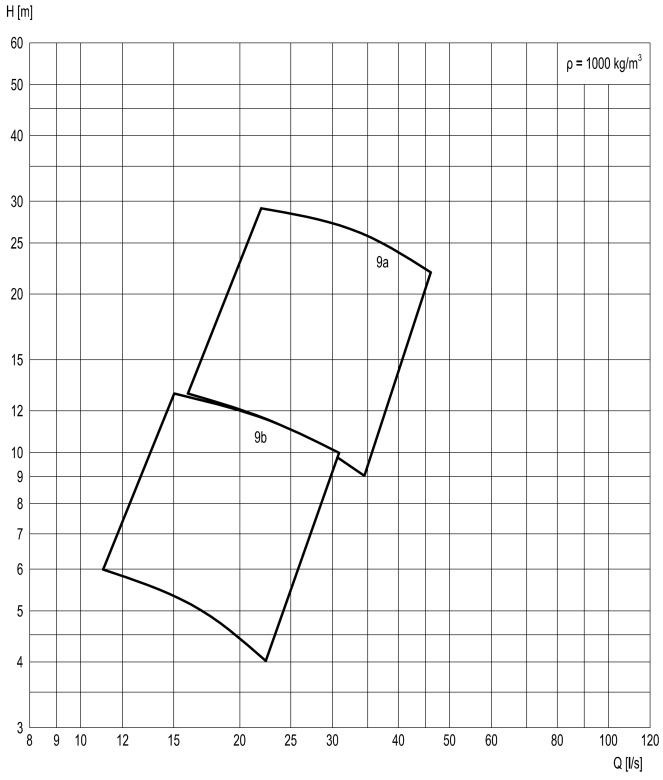
SELECTION CHART FOR PUMPS SERIES NFJx – 1450 and 980 rpm

Pump type	Field	
	Speed [rpm]	
	1450	980
NFJH, NFJV 100-09	9a	9b

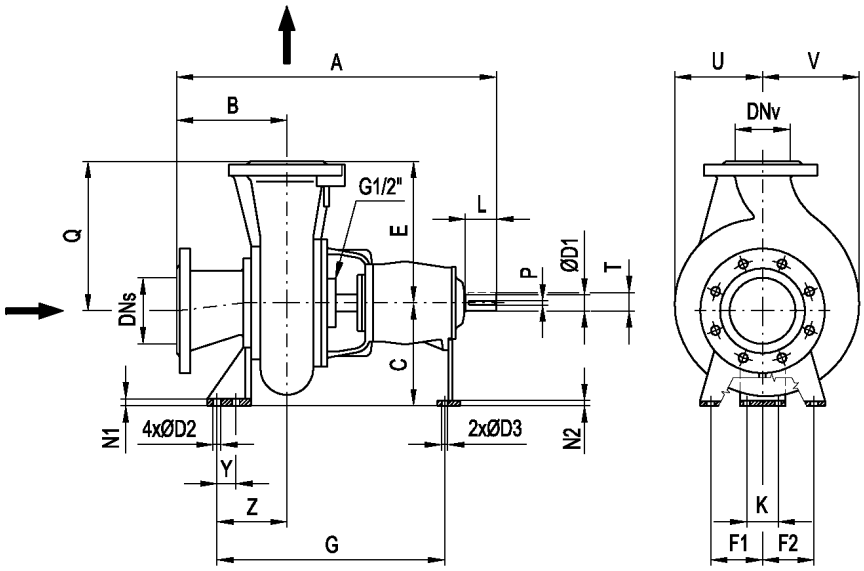


SELECTION CHART FOR PUMPS SERIES NFRx – 1450 a 980 rpm

Pump type	Field	
	Speed [rpm]	
	1450	980
NFRH, NFRV 100-09	9a	9b



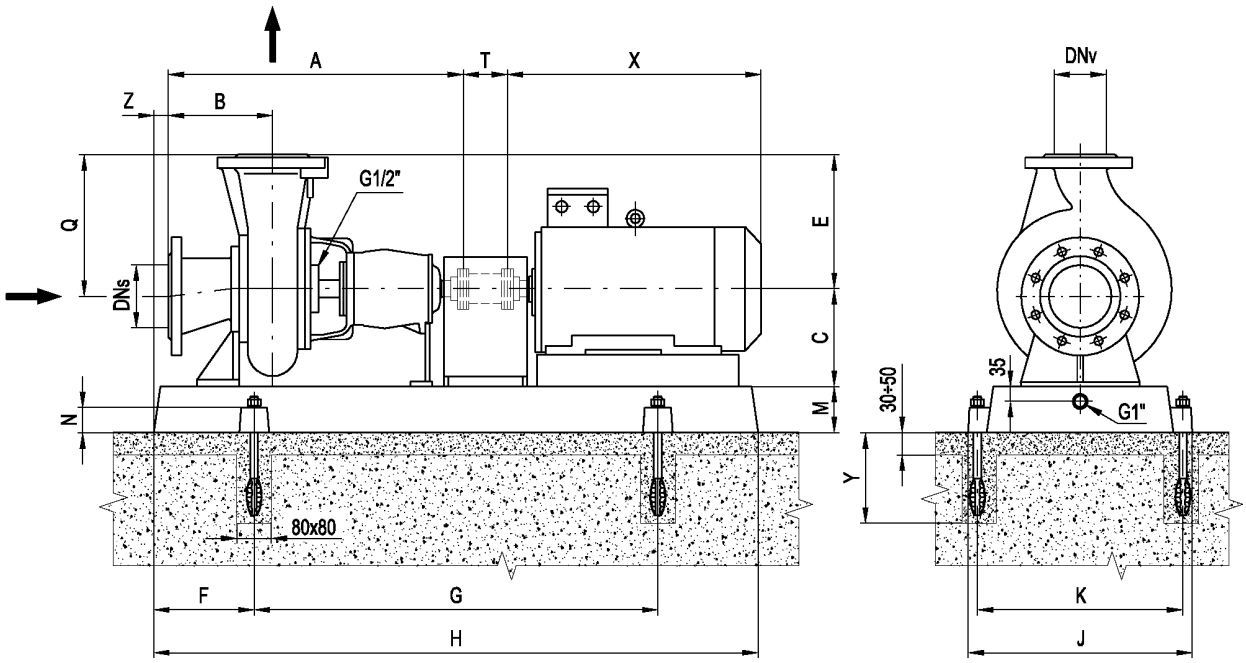
DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFxH



Pump type	DNs	DNv	A	B	C	D1	D2	D3	E	F1	F2	G	K	L	N1	N2	P	Q	T	U	V	Y	Z	Pump weight [kg]
NFPH 150-05	150	150	940	292	280	42	23	14	400	250	250	668	65	110	15	8	12	420	45,1	246	288	60	210	200
NFVH 150-05	200	150	940	292	280	42	23	14	400	250	250	668	65	110	15	8	12	420	45,1	246	288	60	210	195
NFPH 100-06	125	100	858	232	280	42	23	14	315	200	200	599	65	110	20	8	12	323	45,1	204	220	60	191	205
NFVH 100-06	150	100	808	211	280	42	23	14	315	200	200	599	65	110	20	8	12	322	45,1	204	220	60	191	200
NFPH 150-07	150	150	873	242	280	42	23	14	375	225	225	649	65	110	15	8	12	388	45,1	220	260	60	208	220
NFVH 150-07	200	150	873	292	280	42	23	14	375	225	225	599	65	110	15	8	12	398	45,1	220	260	60	208	215
NFPH 200-08	200	200	903	280	280	42	23	14	360	260	260	658	65	110	20	8	12	395	45,1	223	303	60	224	260
NFVH 200-08	200	200	903	280	280	42	23	14	360	260	260	658	65	110	20	8	12	395	45,1	223	303	60	224	260
NFJH 100-09	150	100	1049	290	280	48	23	14	300	170	170	814	80	110	20	8	14	318	51,5	198	217	60	245	210
NFRH 100-09	150	100	1049	290	280	48	23	14	300	170	170	814	80	110	20	8	14	318	51,5	198	217	60	245	205
NFPH 125-09	125	125	1012	237	315	48	23	14	370	285	285	726	80	82	20	8	14	380	51,5	222	240	60	197	270
NFVH 125-09	150	125	905	221	315	48	23	14	370	285	285	726	80	82	20	8	14	372	51,5	222	240	60	197	265
NFPH 150-10	150	150	1024	242	280	48	23	14	400	250	250	807	80	110	20	8	14	406	51,5	242	290	60	215	280
NFVH 150-10	200	150	902	292	280	42	23	14	400	250	250	635	80	110	20	8	12	420	45,1	242	290	60	215	275
NFPH 200-11	250	200	1062	320	315	48	23	14	420	285	285	789	80	110	20	8	14	448	51,5	228	315	60	236	282
NFVH 200-11	250	200	1062	320	315	48	23	14	420	285	285	789	80	110	20	8	14	448	51,5	228	315	60	236	282
NFPH 125-12	150	125	1011	236	315	48	23	14	390	285	285	799	80	82	20	8	14	403	51,5	238	256	60	200	350
NFVH 125-12	200	125	973	286	315	48	23	14	390	285	285	732	80	82	20	8	14	412	51,5	238	256	60	200	345
NFPH 150-13	150	150	1029	245	355	48	23	14	400	270	270	812	80	110	20	8	14	410	51,5	253	306	80	218	360
NFVH 150-13	200	150	899	295	355	42	23	14	400	270	270	632	80	110	20	8	12	414	45,1	253	306	80	218	355
NFPH 200-14	250	200	1036	292	355	48	23	14	440	325	325	797	80	110	20	8	14	460	51,5	249	345	80	243	407
NFVH 200-14	250	200	1036	292	355	48	23	14	440	325	325	797	80	110	20	8	14	460	51,5	249	345	80	243	406
NFPH 150-15	150	150	1023	200	355	60	28	18	440	250	250	838	90	140	20	10	18	446	64,2	264	284	80	250	390
NFVH 150-15	200	150	1060	260	355	60	28	18	440	270	270	819	90	140	20	10	18	453	64,2	264	284	80	250	387
NFPH 200-16	200	200	1093	270	355	60	28	18	480	325	325	848	90	140	20	10	18	501	64,2	292	352	80	254	400
NFVH 200-16	250	200	1000	270	355	48	28	18	480	325	325	755	90	110	20	10	14	526	51,5	292	352	80	254	395
NFPH 250-17	300	250	1198	444	400	60	28	18	520	320	320	851	140	105	20	8	18	553	64,2	284	394	80	281	380
NFVH 250-17	300	250	1198	444	400	60	28	18	520	320	320	851	140	105	20	8	18	553	64,2	284	394	80	281	379
NFPH 200-31	250	200	1135	320	355	60	28	18	500	270	270	853	90	140	20	10	18	520	64,2	304	344	80	269	414

Flanges of both two DNs DNv branches are provided for PN 10 according to ČSN EN 1092-2.

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFxH



Pump type	DNs	DNv	A	B	C	E	Q	T	Pump weight [kg]
NFPH 150-05	150	150	940	292	280	400	420	140	200
NFVH 150-05	200	150	940	292	280	400	420	140	195
NFPH 100-06	125	100	858	232	280	315	323	140	205
NFVH 100-06	150	100	808	211	280	315	322	140	200
NFPH 150-07	150	150	873	242	280	375	388	140	220
NFVH 150-07	200	150	873	292	280	375	398	140	215
NFPH 200-08	200	200	903	280	280	360	395	180	260
NFVH 200-08	200	200	903	280	280	360	395	180	260
NFJH 100-09	150	100	1049	290	280	300	318	180	210
NFRH 100-09	150	100	1049	290	280	300	318	140	205
NFPH 125-09	125	125	1012	237	315	370	380	140	270
NFVH 125-09	150	125	905	221	315	370	372	140	265
NFPH 150-10	150	150	1024	242	280	400	406	140	280
NFVH 150-10	200	150	902	292	280	400	420	140	275
NFPH 200-11	250	200	1062	320	315	420	448	180	282
NFVH 200-11	250	200	1062	320	315	420	448	180	282
NFPH 125-12	150	125	1011	236	315	390	403	180	350
NFVH 125-12	200	125	973	286	315	390	412	140	345
NFPH 150-13	150	150	1029	245	355	400	410	180	360
NFVH 150-13	200	150	899	295	355	400	414	140	355
NFPH 200-14	250	200	1036	292	355	440	460	180	407
NFVH 200-14	250	200	1036	292	355	440	460	140	406
NFPH 150-15	150	150	1023	200	355	440	446	180	390
NFVH 150-15	200	150	1060	260	355	440	453	140	387
NFPH 200-16	200	200	1093	270	355	480	501	140	400
NFVH 200-16	250	200	1000	270	355	480	526	140	395
NFPH 250-17	300	250	1198	444	400	520	553	140	380
NFVH 250-17	300	250	1198	444	400	520	553	140	379
NFPH 200-31	250	200	1135	320	355	500	520	180	414

Pump type	Number of foundation frame for electric motor axial size										Z for electric motor axial size									
	100	112	132	160	180	200	225	250	280	315	100	112	132	160	180	200	225	250	280	315
NFPH 150-05		2	2	2								140	110	50						
NFVH 150-05	2	2	2	2							150	140	110	50						
NFPH 100-06			1	1	1								150	80	50					
NFVH 100-06			1	1	1								170	115	50					
NFPH 150-07			2	2	2								140	70	50					
NFVH 150-07			2	2	2	3	3						140	70	50	150	120			
NFPH 200-08			2	2	2								150	80	0					
NFVH 200-08			2	2	2								150	80	0					
NFJH 100-09			1	3	3								50	140	60					
NFRH 100-09			1	3	3	3							60	160	80	70				
NFPH 125-09				3	3	3								160	80	60				
NFVH 125-09				1	3	3								70	150	150				
NFPH 150-10				2	3	3								50	90	80				
NFVH 150-10				2	3	3								60	150	142				
NFPH 200-11			2	3	3	3							60	130	70	60				
NFVH 200-11			2	3	3	3							60	130	70	60				
NFPH 125-12				3	3	3	3							160	70	70	50			
NFVH 125-12				2	3	3	3							70	150	150	100			
NFPH 150-13				3	3	3	3							150	60	60	50			
NFVH 150-13				2	3	3	3	3	3					60	150	140	120	110	110	
NFPH 200-14				4	4	4	4							190	100	90	70			
NFVH 200-14			4	4	4	4	4						280	210	120	110	90			
NFPH 150-15					3	3	3	3	3						70	60	50	50	0	
NFVH 150-15					3	3	3	3	3						130	130	100	90	40	
NFPH 200-16					4	4	4	4	4						90	90	60	50	0	
NFVH 200-16					4	4	4	4	4						140	130	100	60	0	
NFPH 250-17				4	4	4	4	4	4					160	160	50	50	50	0	
NFVH 250-17				4	4	4	4	4	4					160	160	50	50	50	0	
NFPH 200-31				3	3	3	3	3	3	5				160	130	130	100	90	40	70

Number of foundation frame	F	G	H	J	K	M	N	Y	Foundation bolt		Frame weight [kg]
									Dimension	Number	
1	377	1000	1754	706	650	150	50	330	M24x400	4	270
2	377	1000	1754	836	780	150	50	330	M24x400	4	290
3	352	1400	2104	836	780	150	50	430	M24x500	4	420
4	392	1400	2184	1006	950	150	50	430	M24x500	4	530
5	150	2x 1075	2450	905	840	180	17	365	M20x400	6	350

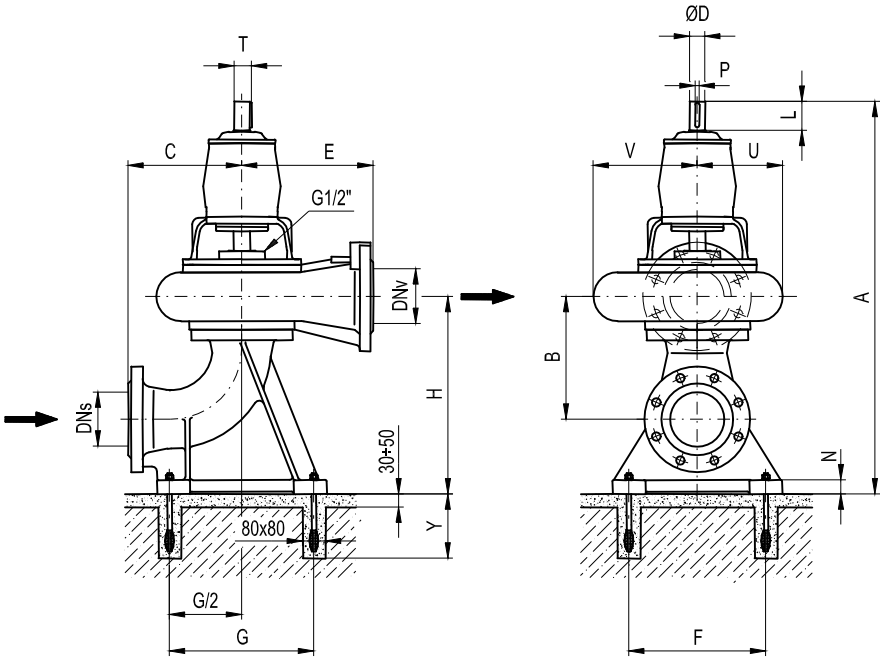
Flanges of both two DNs, DNv branches are provided for PN 10 according to ČSN EN 1092-2.

Length X of the electric motor is to be determined as in the catalogue of electric motor.

Pump-set weight is determined as sum of the following weights:

pump (as tabled)
electric motor (as given in catalogue of electric motor)
foundation frame (as tabled)
other accessories (i. e. coupling, coupling guard, motor pads, bolts etc.), usually ranging from 30 to 80 kg, dependent on type.

DIMENSIONAL OUTLINE DRAWING OF PUMPS SERIES NFxV



Pump type	DNs	DNv	A	B	C	D	E	F	G	H	L	N	P	T	U	V	Y	Foundation bolt	Pump weight [kg]
NFPV 150-05	150	150	1170	342	250	42	400	400	400	522	110	20	12	45,1	246	288	280	M16x320	250
NFVV 150-05	200	150	1185	342	250	42	400	400	400	537	110	20	12	45,1	246	288	280	M20x320	245
NFPV 100-06	125	100	1083	307	225	42	315	340	340	457	110	20	12	45,1	204	220	280	M16x320	260
NFVV 100-06	150	100	1088	332	250	42	315	400	400	512	110	20	12	45,1	204	220	280	M16x320	255
NFPV 150-07	150	150	1151	340	250	42	375	400	400	520	110	20	12	45,1	220	260	280	M16x320	280
NFVV 150-07	200	150	1116	340	250	42	375	400	400	535	110	20	12	45,1	220	260	280	M20x320	275
NFPV 200-08	200	200	1189	363	250	42	360	400	400	558	110	20	12	45,1	223	303	280	M20x320	300
NFVV 200-08	200	200	1189	363	250	42	360	400	400	558	110	20	12	45,1	223	303	280	M20x320	295
NFJV 100-09	150	100	1311	372	250	48	300	400	400	552	110	20	14	51,5	198	217	280	M16x320	300
NFRV 100-09	150	100	1311	372	250	48	300	400	400	552	110	20	14	51,5	198	217	280	M16x320	295
NFPV 150-10	150	150	1304	342	250	48	400	400	400	522	110	20	14	51,5	242	290	280	M16x320	350
NFVV 150-10	200	150	1147	342	250	42	400	400	400	537	110	20	12	45,1	242	290	280	M20x320	345
NFPV 125-09	125	125	1340	346	225	48	370	500	500	565	82	17	14	51,5	222	240	280	M16x320	380
NFVV 125-09	150	125	1238	386	250	48	370	500	500	635	82	17	14	51,5	222	240	280	M16x320	375
NFPV 200-11	250	200	1514	466	250	48	420	550	550	709	110	17	14	51,5	328	315	280	M20x320	395
NFVV 200-11	250	200	1564	461	350	48	420	550	550	759	110	17	14	51,5	328	315	280	M20x320	390
NFPV 125-12	150	125	1434	386	225	48	390	550	550	659	110	17	14	51,5	238	256	280	M20x320	450
NFVV 125-12	200	125	1344	441	250	42	390	550	550	739	110	17	12	45,1	238	256	280	M20x320	445
NFPV 150-13	150	150	1452	395	250	48	400	550	550	668	110	17	14	51,5	253	306	280	M20x320	460
NFVV 150-13	200	150	1352	450	300	42	400	550	550	748	110	17	12	45,1	253	306	280	M20x320	455
NFPV 200-14	250	200	1503	461	350	48	440	550	550	759	110	17	14	51,5	249	345	280	M20x320	507
NFVV 200-14	250	200	1503	461	350	48	440	550	550	759	110	17	14	51,5	249	345	280	M20x320	506
NFPV 150-15	150	150	1535	396	250	60	440	600	600	712	140	17	18	64,2	264	284	280	M20x320	540
NFVV 150-15	200	150	1442	451	250	48	440	600	600	712	110	17	14	51,5	264	284	280	M20x320	535
NFPV 200-16	200	200	1560	461	250	60	480	600	600	737	140	17	18	64,2	292	352	280	M20x320	550
NFVV 200-16	250	200	1567	576	350	48	480	600	600	837	110	17	14	51,5	292	352	280	M20x320	545
NFPV 250-17	300	250	1592	572	400	48	520	600	600	862	110	17	14	51,5	284	394	280	M20x320	530
NFVV 250-17	300	250	1592	597	400	48	520	600	600	862	110	17	14	51,5	284	394	280	M20x320	529
NFPV 200-31	250	200	1560	470	250	60	500	600	600	740	140	17	18	64,2	304	344	280	M20x320	550

Flanges of both two DNs, DNv branches are provided for PN 10 according to ČSN EN 1092-2.
Besides pictured basic position of the suction branch towards the discharge branch another positions there are available turning the pump towards the suction elbow by 45° respectively.

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