Submersible Sewage Pump with Cutting Mechanism

GFZP/GFZF-080-03-N

Application

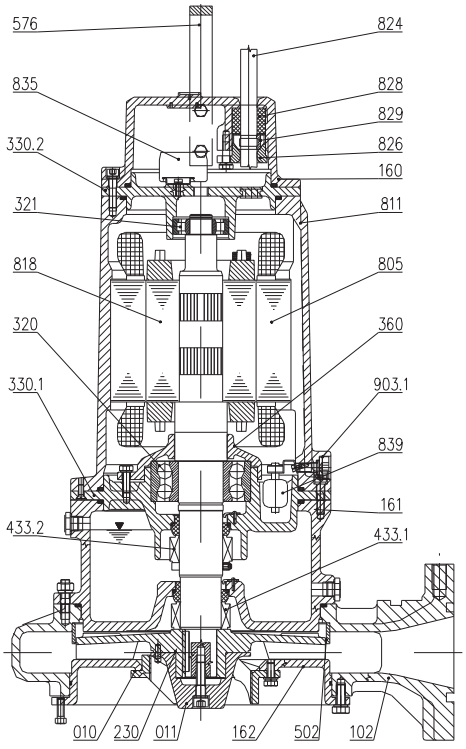
Pumps GFZP/F-080-03-N are destined for installation into wet sumps.
Driving unit is of the "N" version, so these pumps are destined for explosion-proof environments.
Pumps GFZP, GFZF with multi-vane impeller and a disintegrator – grinder are destined for pumping waste water, sewage, untreated sludge and for disintegrating stuffs contained in them, as scraps of rags, sanitary pads, fragmentary and fibrous stuffs of non-abrasive character forming 5% of volume of a pumped liquid, at most.

Pumped liquid

Max. density .....up to 1200 kg.m^{-3}
Max. temperature of a pumped liquid ..... 40 ˚C
Max. temperature of ambience ..... 40 ˚C
Permissible range of pH of a pumped liquid..... 6.5 to 9

Desingn

Pumps are of centrifugal vertical submersible single stage type, of close-coupled design, with the three-phase asynchronous motor in its basic "N"-version.
Against water penetration from the hydraulic part the motor is protected by two mechanical seals cooled and lubricated by oil filling charge. In the motor winding there are bimetallic thermal receptors that can disconnect the electric motor from mains if permissible temperature was exceeded. In the motor compartment there is a float sensor for monitoring a liquid leakage that is able to disconnect the electric motor / the pump from mains the moment of a liquid penetration into the motor compartment.
Hydraulic part is designed with a multi-vane impeller in the volute with a cutting mechanism.
The cable is resistant to waste water containing hydrocarbons and oily liquids.



010	Cutting ring	502	Wear ring
011	Cutting tool	576	Lifting eye
102	Volute	805	Electric motor
160	Terminal board cover	811	Guard hood of motor case
161	Bush	818	Rotor
162	Suction cover	824	Cable
230	Impeller	826	Bushing
320	Bearing	828	Rubber liner
321	Bearing	829	Clamping ring
330.1	Bearing lower housing	835	Terminal board
330.2	Bearing upper housing	839	Float
360	Throttle cover	903.1	Check screw
433.1,2	Mechanical seal		

Pump instlation

GFZP pumps are installed into a wet sump with the aid of a lowering gear. To the pump volute a holder is attached with the aid of which the pump can be attached to a fast built-in delivery line during the pump lowering into a sump.
GFZF pumps are installed right at the sump bottom, or they can be hung on a chain above the sump bottom. These pumps are provided with a frame and an elbow is attached to the volute branch for connecting a hose or pipeline.

Material options

- Castings - grey cast iron
- Shaft nuts, bolts and screws - stainless steel
- Impeller - special cast iron or steel
- Cutting tool, cutting ring - special steel

Pump set control

Electric equipment for control and protection of the pumps can be resolved within the overall project of a pumping station or the whole construction work.
More detailed information related to protection is given in the Pump Service and Assembly Instructions

Accessories

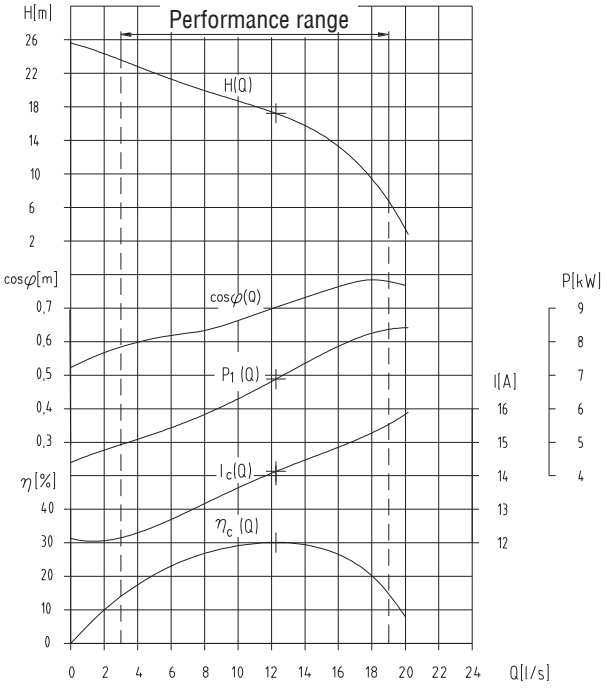
The following equipment is a part of the pump deliveries:
Rubber cable of the total length 15, 20, 25, 30, 35 m, according to the customer's request
As for the GFZP model
- Lowering gear (upper foot, pipeline, holder)

As for GFZF model
- Volute frame
- Elbow
- Hose

Basic technical data

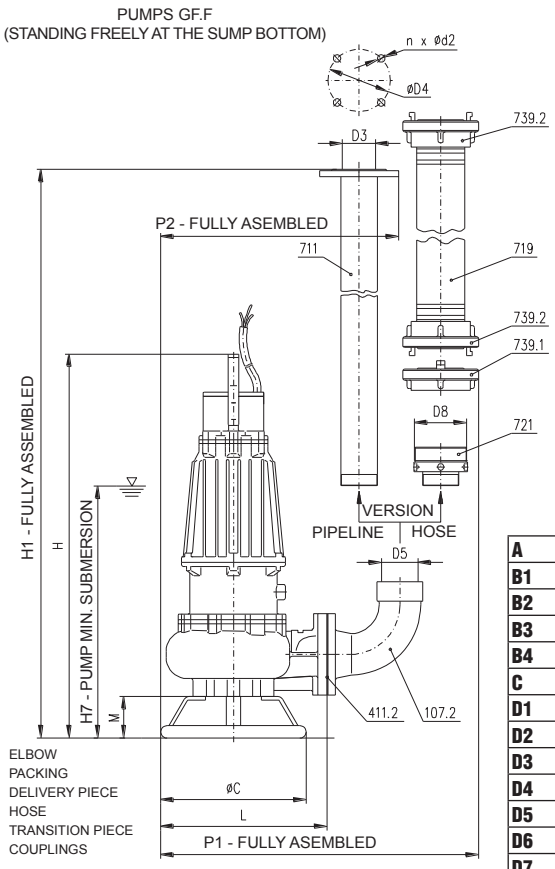
Volume delivered	Q_r (l.s^{-1})	12
Delivedry head	H_r (m)	17.2
Impeller throughlet	(mm)	15
Maximum submersion	(m)	10
Pump weight without a cable	(kg)	129
Weight of 1 m of cable	(kg)	0.47
Electric motor		Definite-purpose
Power output	P_{mot} (kW)	7.5
Stator connection		D
Speed	n(min^{-1})	1450
Voltage	U (V)	400
Frequency	f (Hz)	50
Class of winding insulation		F
Motor protection		IP (68)
Max. number of switching an hour		15x
Cable of „N“ - motor		HO7RN-F 7G 2,5
Level of acoustic power	L_{PA} (dB)	75
Oil filling charge	(l)	3,5

Pump informative characteristic
GFZP-080-03
GFZF-080-03

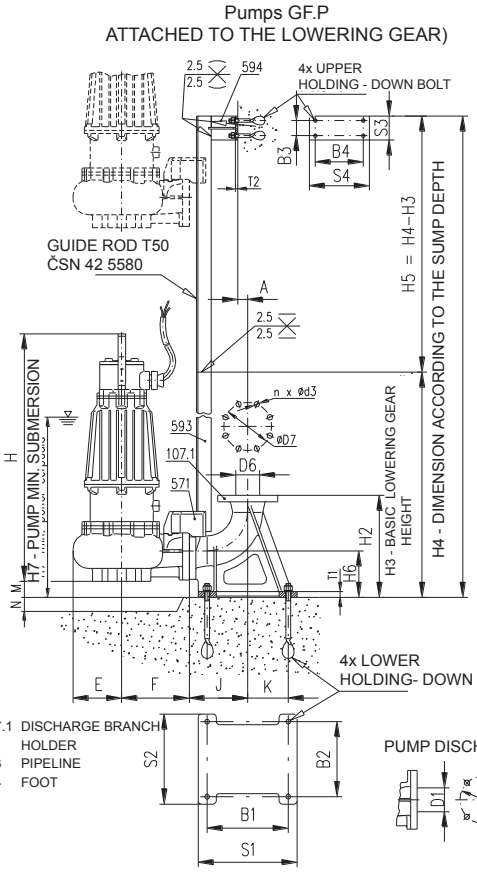


Total performance characteristic of the pump is given in the informative diagram. Informative total characteristic Q-H corresponds to pumping clean water of density p = 1,000 kg.m^{-3}. With increasing density of a pumped liquid the power input P_1 could increase too.

Dimensional drawing

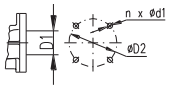


107.2 ELBOW
411.2 PACKING
711 DELIVERY PIECE
719 HOSE
721 TRANSITION PIECE
739.1,2 COUPLINGS



107.1 DISCHARGE BRANCH
571 HOLDER
593 PIPELINE
594 FOOT

PUMP DISCHARGE BRANCH



	GFZP-080-03-N	GFZF-080-03-N
A	33	-
B1	270	-
B2	250	-
B3	50	-
B4	160	-
C	-	420
D1	DN80	DN80
D2	160	160
D3	-	DN80
D4	-	150
D5	-	G3“
D6	DN80	-
D7	160	-
nxd1	4 x Ø18	4 x Ø18
nxd2		4 x Ø18
nxd3	8 x Ø18	-
E	210	-
F	280	-
H	780	875
H1	-	920
H2	340	-
H3	1220	-
H6	155	-
H7	650	-
J	195	-
K	135	-
L	-	500
M	95	95
N	50	-
P1	-	767
P2	-	771
S1	330	-
S2	300	-
S3	80	-
S4	200	-
T1	20	-
T2	8	-

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