

APPLICATION

Pumps intended for hydraulic conveying of sand, gravel, stone, coal, slag, clay, whitewash and tailings as well as for pumping other heavily abrasive water mixtures with solid particles with a grain size to 52 mm and of mixture density to 1700 kg/m³.

Typical applications

- ➔ Mining plants - for hydraulic conveying of coal and tailings
- ➔ Ore and mineral raw materials mines - for hydraulic conveying of ores, gravel, sand and stone
- ➔ Power industry - for hydraulic conveying of slag and ash
- ➔ Steelworks - for pumping water with scale
- ➔ Cement plants - for pumping sand and production raw materials
- ➔ Sugar factories - for pumping industrial waste
- ➔ Sewage treatment plants - for forcing non treated sewage

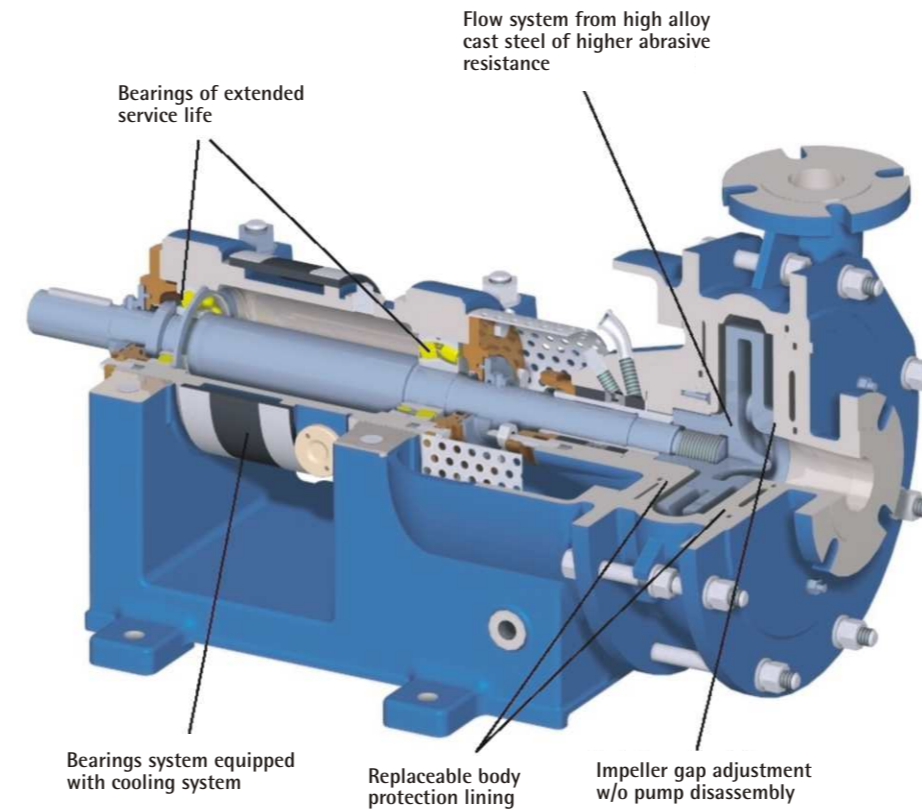
RATED PARAMETERS

Pump type	Rotary speed	Capacity	Delivery head	Motor power	S*
	n [min ⁻¹]	Q [m ³ /h]	H [m]	P [kW]	[mm]
PH-50W	3000	60	68	18	11
PH-65	3000	65	37	11,9	9
PH-80	2050	100	34	16,2	11
PH-100	1700	140	44	26,5	14
PH-100W	1500	130	88	64	14
PH-150	1500	400	56	110	42
PH-200	1500	580	82	190	50
PH-250	1500	820	76	245	52
PH-300	1000	1440	77	380	50

*) maximal size of solid particles in pumped utility

Note:

Due to specificity of operation with heavily abrasive utilities the pumps type PH are adopted to operation at the speeds different from synchronous, via a belt transmission or with a frequency inverter.



DESIGN DESCRIPTION

Stationary, single-stage, centrifugal, horizontal pumps with closed impellers. The suction stub pipe is positioned horizontally along the shaft axis while the forcing stub pipe vertically upwards. The pump body is protected from the outside with replaceable abrasive resistant lining. The axial force is transmitted via a thrust bearing. Anti-friction bearings are lubricated in machine oil bath. The pumps (exclusive of PH-65 and PH-65A) have a water cooled oil chamber (special water cooler). The shaft is sealed with a cord type packing with a water seal. The rotary assembly can be shifted along axial direction to adjust a choking gap on the front impeller disk. The pumps of a size of 100 and greater have the outriggers for easy assembling and disassembling of the flow system. Direct power feed via a belt transmission.

Pumps marking

PH - 150 A / 440 - Ex

series of type name

forcing stub pipe diameter [mm]

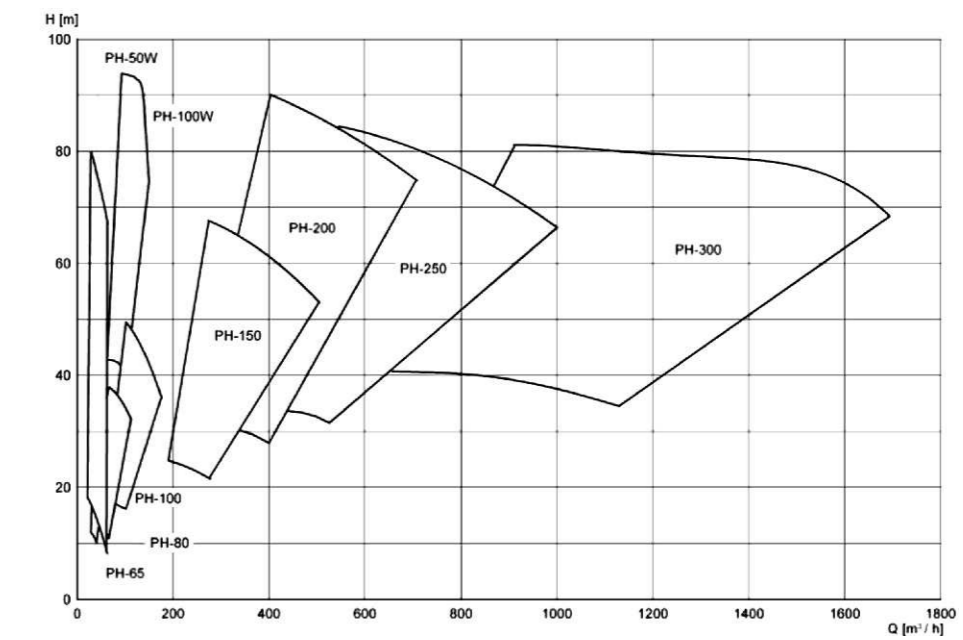
pump design version

- A - for single operation
- W - increased delivery head
- G - for hot liquid
- K - channel type impeller

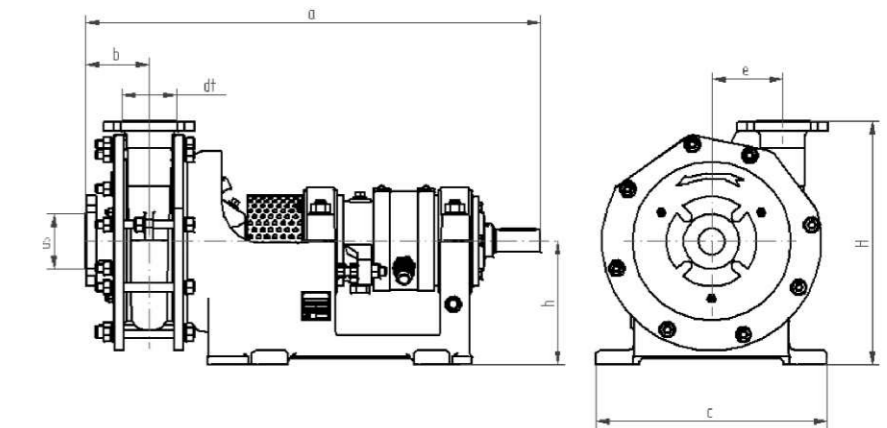
impeller outside diameter [mm]

explosion proof execution

OPERATING RANGE



PUMPS OVERALL DIMENSIONS



Pump type	a	b	c	d _s	d _i	e	H	h	Mass [kg]
PH - 50W	826,5	115,5	420	50	50	129	445	225	182
PH - 65	630	108	320	70	70	112,5	340	160	94
PH - 80	843	127	420	80	80	162	445	225	194
PH - 100	1026	158	560	100	100	208	565	280	359
PH - 150	1236	202	590	200	150	256	735	335	720
PH - 200	1467	244	690	200	200	347	975	475	1230
PH - 250	1593	255	690	250	250	365	1080	560	1522
PH - 300	1817	286	910	300	300	453	1200	630	2646

USED MATERIALS

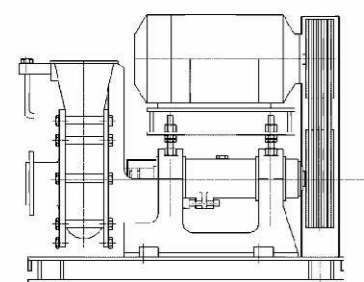
Flow system components in standard execution:

- MTL-26 - high-alloy cast steel of higher abrasion-resistance

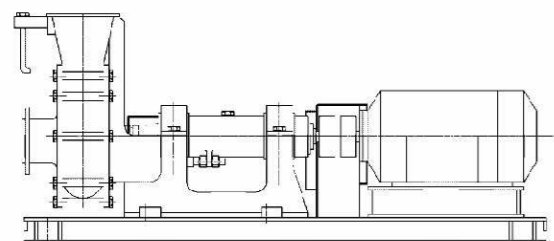
Special execution:

- Mechanical packing
- Packing cooler (G version)
- Free flow impeller

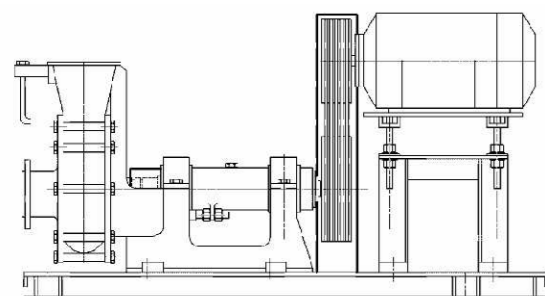
TYPICAL MOUNTING METHODS



Pump set in A-execution -power feed via a belt transmission (motor situated above the pump)

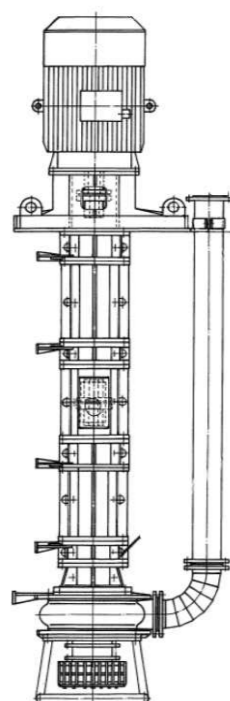


Pump set in C-execution - direct power feed via a flexible coupling



Pump set in D-execution -power feed via a belt transmission (motor situated on a separate rack).

Special execution



PHP - 150 :
Shaft pump, vertical version
of PH -150 pump

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PUMPS
TYPE PH

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