

CHOOSING A PUMP

Hawk high-pressure piston pumps are positive displacement pumps. The main parameters that determine your choice of Hawk pump are flow rate, pressure, rotation speed and power consumption.

The flow rate is given in litres per minute and is directly proportional to the speed of rotation (*the flow rate can be altered by altering the number of rpm, but do not exceed the rated value*).

The speed of rotation is given as revolutions per minute (*the number of pump rpm can be altered by means of pulleys, gearbox or motors with different rotations to the rated value for the pump. Do not exceed the rated value*).

The pressure is given in bars and is the maximum pressure that the pump was designed to reach. (*The pump does not generate pressure itself. The pressure is the result of the flow rate passing through the nozzle. The pressure can be lowered by using a different nozzle but do not run the pump at pressures above the rated value*).

The power consumption is shown in kW and is the absorption required to achieve the maximum flow rate and pressure indicated. (*The label on each pump states the power consumption at the rated values, which are the maximum values for the pump. The pump can be operated at lower values. In this case, the power consumption can be calculated using the formula below*).

When coupled with a heat engine, the power of the engine should be at least 30% above the value indicated in the catalogue.

The power consumed by the pump in KW is the product of:

$$kW = \frac{l/min * bar}{520}$$

The table below shows the power (kW) referred to the pressure (bar) and flow rate (l/min). The Leuco range is in yellow

The flow rate Q and the revolutions per minute RPM are directly in proportion.

The nominal flow rate refers to the plate rating of the RPM.

If the RPM is higher or lower than the plate rating, the flow rate Q will be higher or lower respectively in proportion to the variation in the RPM, according to the formula:

$$Q_2 = \frac{Q_{plate} * RPM_{plate}}{RPM_2}$$

where RPM_2 is the desired revolutions per minute

		PRESSURE (BAR)																		
		50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500
FLOW (L/MIN)	1	0,10	0,14	0,19	0,24	0,29	0,34	0,38	0,43	0,48	0,53	0,58	0,63	0,67	0,72	0,77	0,82	0,87	0,91	0,96
	2	0,19	0,29	0,38	0,48	0,58	0,67	0,77	0,87	0,96	1,06	1,15	1,25	1,35	1,44	1,54	1,63	1,73	1,83	1,92
	4	0,38	0,58	0,77	0,96	1,15	1,35	1,54	1,73	1,92	2,12	2,31	2,50	2,69	2,88	3,08	3,27	3,46	3,65	3,85
	6	0,58	0,87	1,15	1,44	1,73	2,02	2,31	2,60	2,88	3,17	3,46	3,75	4,04	4,33	4,62	4,90	5,19	5,48	5,77
	8	0,77	1,15	1,54	1,92	2,31	2,69	3,08	3,46	3,85	4,23	4,62	5,00	5,38	5,77	6,15	6,54	6,92	7,31	7,69
	8,5	0,82	1,23	1,63	2,04	2,45	2,86	3,27	3,68	4,09	4,50	4,90	5,31	5,72	6,13	6,54	6,95	7,36	7,76	8,17
	10	0,96	1,44	1,92	2,40	2,88	3,37	3,85	4,33	4,81	5,29	5,77	6,25	6,73	7,21	7,69	8,17	8,65	9,13	9,62
	11	1,06	1,59	2,12	2,64	3,17	3,70	4,23	4,76	5,29	5,82	6,35	6,88	7,40	7,93	8,46	8,99	9,52	10,05	10,58
	12	1,15	1,73	2,31	2,88	3,46	4,04	4,62	5,19	5,77	6,35	6,92	7,50	8,08	8,65	9,23	9,81	10,38	10,96	11,54
	12,5	1,20	1,80	2,40	3,00	3,61	4,21	4,81	5,41	6,01	6,61	7,21	7,81	8,41	9,01	9,62	10,22	10,82	11,42	12,02
	13	1,25	1,88	2,50	3,13	3,75	4,38	5,00	5,63	6,25	6,88	7,50	8,13	8,75	9,38	10,00	10,63	11,25	11,88	12,50
	14	1,35	2,02	2,69	3,37	4,04	4,71	5,38	6,06	6,73	7,40	8,08	8,75	9,42	10,10	10,77	11,44	12,12	12,79	13,46
	15	1,44	2,16	2,88	3,61	4,33	5,05	5,77	6,49	7,21	7,93	8,65	9,38	10,10	10,82	11,54	12,26	12,98	13,70	14,42
	17	1,63	2,45	3,27	4,09	4,90	5,72	6,54	7,36	8,17	8,99	9,81	10,63	11,44	12,26	13,08	13,89	14,71	15,53	16,35
	18	1,73	2,60	3,46	4,33	5,19	6,06	6,92	7,79	8,65	9,52	10,38	11,25	12,12	12,98	13,85	14,71	15,58	16,44	17,31
	21	2,02	3,03	4,04	5,05	6,06	7,07	8,08	9,09	10,10	11,11	12,12	13,13	14,13	15,14	16,15	17,16	18,17	19,18	20,19
	22	2,12	3,17	4,23	5,29	6,35	7,40	8,46	9,52	10,58	11,63	12,69	13,75	14,81	15,87	16,92	17,98	19,04	20,10	21,15
	25	2,40	3,61	4,81	6,01	7,21	8,41	9,62	10,82	12,02	13,22	14,42	15,63	16,83	18,03	19,23	20,43	21,63	22,84	24,04
	27	2,60	3,89	5,19	6,49	7,79	9,09	10,38	11,68	12,98	14,28	15,58	16,88	18,17	19,47	20,77	22,07	23,37	24,66	25,96
	30	2,88	4,33	5,77	7,21	8,65	10,10	11,54	12,98	14,42	15,87	17,31	18,75	20,19	21,63	23,08	24,52	25,96	27,40	28,85
33	3,17	4,76	6,35	7,93	9,52	11,11	12,69	14,28	15,87	17,45	19,04	20,63	22,21	23,80	25,38	26,97	28,56	30,14	31,73	
35	3,37	5,05	6,73	8,41	10,10	11,78	13,46	15,14	16,83	18,51	20,19	21,88	23,56	25,24	26,92	28,61	30,29	31,97	33,65	
36	3,46	5,19	6,92	8,65	10,38	12,12	13,85	15,58	17,31	19,04	20,77	22,50	24,23	25,96	27,69	29,42	31,15	32,88	34,62	
38	3,65	5,48	7,31	9,13	10,96	12,79	14,62	16,44	18,27	20,10	21,92	23,75	25,58	27,40	29,23	31,06	32,88	34,71	36,54	
40	3,85	5,77	7,69	9,62	11,54	13,46	15,38	17,31	19,23	21,15	23,08	25,00	26,92	28,85	30,77	32,69	34,62	36,54	38,46	
41	3,94	5,91	7,88	9,86	11,83	13,80	15,77	17,74	19,71	21,68	23,65	25,63	27,60	29,57	31,54	33,51	35,48	37,45	39,42	
42	4,04	6,06	8,08	10,10	12,12	14,13	16,15	18,17	20,19	22,21	24,23	26,25	28,27	30,29	32,31	34,33	36,35	38,37	40,38	
43	4,13	6,20	8,27	10,34	12,40	14,47	16,54	18,61	20,67	22,74	24,81	26,88	28,94	31,01	33,08	35,14	37,21	39,28	41,35	
50	4,81	7,21	9,62	12,02	14,42	16,83	19,23	21,63	24,04	26,44	28,85	31,25	33,65	36,06	38,46	40,87	43,27	45,67	48,08	
54	5,19	7,79	10,38	12,98	15,58	18,17	20,77	23,37	25,96	28,56	31,15	33,75	36,35	38,94	41,54	44,13	46,73	49,33	51,92	
55	5,29	7,93	10,58	13,22	15,87	18,51	21,15	23,80	26,44	29,09	31,73	34,38	37,02	39,66	42,31	44,95	47,60	50,24	52,88	
60	5,77	8,65	11,54	14,42	17,31	20,19	23,08	25,96	28,85	31,73	34,62	37,50	40,38	43,27	46,15	49,04	51,92	54,81	57,69	
70	6,73	10,10	13,46	16,83	20,19	23,56	26,92	30,29	33,65	37,02	40,38	43,75	47,12	50,48	53,85	57,21	60,58	63,94	67,31	
80	7,69	11,54	15,38	19,23	23,08	26,92	30,77	34,62	38,46	42,31	46,15	50,00	53,85	57,69	61,54	65,38	69,23	73,08	76,92	
105	10,10	15,14	20,19	25,24	30,29	35,34	40,38	45,43	50,48	55,53	60,58	65,63	70,67	75,72	80,77	85,82	90,87	95,91	100,96	
120	11,54	17,31	23,08	28,85	34,62	40,38	46,15	51,92	57,69	63,46	69,23	75,00	80,77	86,54	92,31	98,08	103,85	109,62	115,38	

HAWK pumps are designed and built for pumping clean, fresh water or water with a low percentage of commonly used detergents, up to a temperature of 65°C.

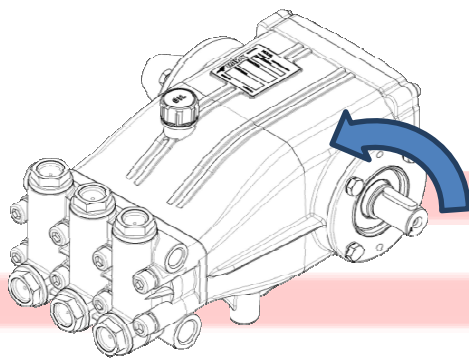
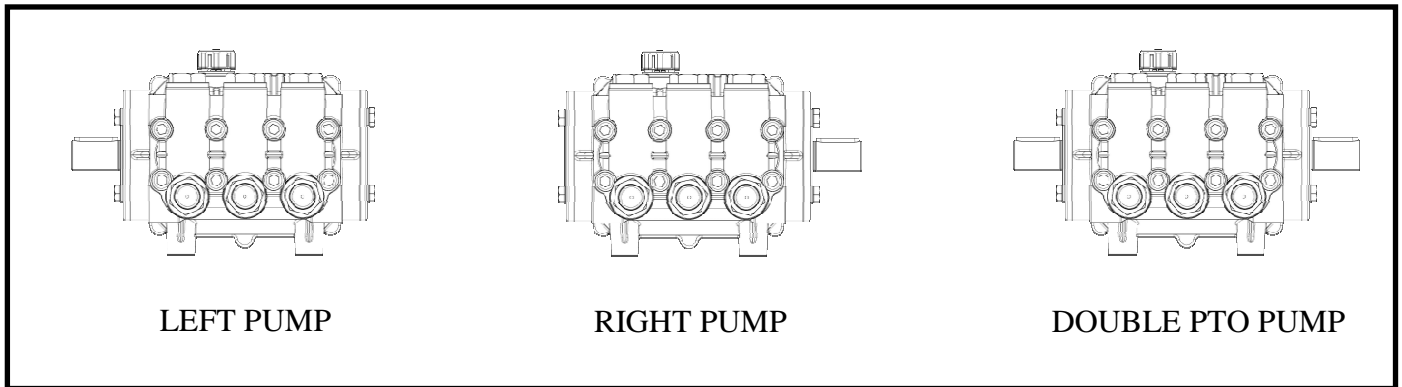
The pH of the liquid must be between 5 and 9. If the water contains abrasive particles, a filter must be fitted with a pore size of 20÷30 µm (80 mesh in standard conditions).

HAWK pumps were not designed for pumping potentially hazardous liquids (explosive, toxic and flammable liquids).

Contact our technical staff if the application involves the use of harsh chemicals or in case of doubt with regard to any of the points below.

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HAWK pumps can be supplied with a single PTO (left or right) or double PTO configuration. The direction of the pump is determined by observing the PTO output side with the manifold housing in front. A double PTO pump is both left and right.



The PTO shaft can **turn** in both directions, but the direction shown in the illustration is **preferable** for the hydrostatic dynamics.

NOTE: Do not install the pump on a slope of more than 2° in order to ensure correct lubrication

The following are also important elements to take into consideration when choosing a pump:

- its footprint
- its weight
- the size of the inlet and outlet couplings

A larger and heavier pump will generally be less subject to strain than a smaller pump offering the same performance.

This information is useful for deciding the best size of pump for a specific application.

When two pumps offer the same performance, choose the larger pump for heavy duty applications.

STANDARD PUMPS

- are suitable for the majority of applications that need to pump clean fresh water or water with a low percentage of commonly used detergents, up to a temperature of 65 °C.

AISI 316L STAINLESS STEEL MANIFOLD HOUSING PUMPS

- are suitable for applications involving reverse osmosis, for use in the food- chemical and pharmaceutical industries and for applications using seawater.

CAR WASH PUMPS

- have a special seals pack designed for the car wash sector in order to ensure longer seal life, low maintenance and reliable car wash operation with no downtime. Anti-corrosion nickel plated manifold housing offering superior protection even in the most challenging conditions.

HT PUMPS

- have a special seals pack designed for the food industry and for all applications up to 85°C to prevent problems often associated with the use of hot water. Anti-corrosion nickel plated manifold housing offering superior protection even in the most challenging conditions.

ATEX PUMPS

Category II 2G c T135°C (T4) Atex certified pumps, which can be integrated in appliances operating in potentially explosive environments.