

TECHNICAL DATA

Toyo

• CONCEPT :

The Toyo VHA amphibious three outlets pumps have been specially designed to pump and mix very heavy and abrasive slurries. They can operate partially or totally submerged as well as on the surface. These pumps are available in both horizontal and vertical versions with three outlets for both mixing and pumping applications.

These centrifugal pumps with semi-open impeller, feature a unique agitator design. This agitator lifts sediments into suspension and creates a homogeneous mixture. This allows continuous pumping of media with a high concentration of solids.

Robust construction, careful selection of materials and unique contour components have produced a pump with excellent abrasion resistance. These characteristics ensure a long service life and economical operation.

The impeller, the wear plate(s) and the agitator are manufactured in cast chrome iron (24 to 28% Cr).

A strong short shaft, supported by a series of carefully selected bearings and double mechanical seal operating in an oil bath guarantee perfect tightness in the hardest of conditions. The design of the pump associated with a powerful SP electric motor (F class) allows the pump to be both air and water cooled.

Models VHA3 to VHA10 dispose of one adjustable wear plate, models VHA15B to VHA30B have two wear plates of which the bottom one is adjustable. This allows simple adjustment to maintain long lasting high performance, even in the case of wear of impeller and wear plates.

VHA pumps can be used in horizontal or vertical position. The horizontal models are supplied fixed on a frame with strainer or fixing cone, with or without agitator.

They are available in different metallurgies and notably in stainless steel for acid slurries pumping.

• OPERATING CONDITIONS :

- slurries with solid content of up to 60% by weight
- particle sizes up to 60 mm
- liquid temperatures up to 60°C
- pH levels between 4 and 14

Special versions are available for liquid temperatures up to 80°C. The maximum operating depth is 30 m.

• ELECTRIC POWER REQUIREMENTS* :

Pump type	Power kVA	Amp. 400 V
VHA 3	6	4.4
VHA 5	12	7.3
VHA 7.5	15	11
VHA 10	20	14.5
VHA 15B	30	22
VHA 20B	40	28
VHA 30B	50	40.5

*These figures are given as an indication.

• ELECTRIC CABLE :

The standard cable type to be used for connecting the pump is HO7RN-F and its specifications should correspond to the following:

Pump type	Section	Outer diam. mm	Max. length m / 400V
VHA 3	4 x 6 mm ²	19	500
VHA 5	4 x 6 mm ²	19	380
VHA 7.5	4 x 10 mm ²	23	350
VHA 10	4 x 10 mm ²	23	280
VHA 15B	4 x 10 mm ²	23	190
VHA 20B	4 x 10 mm ²	23	130
VHA 30B	4 x 16 mm ²	27	180

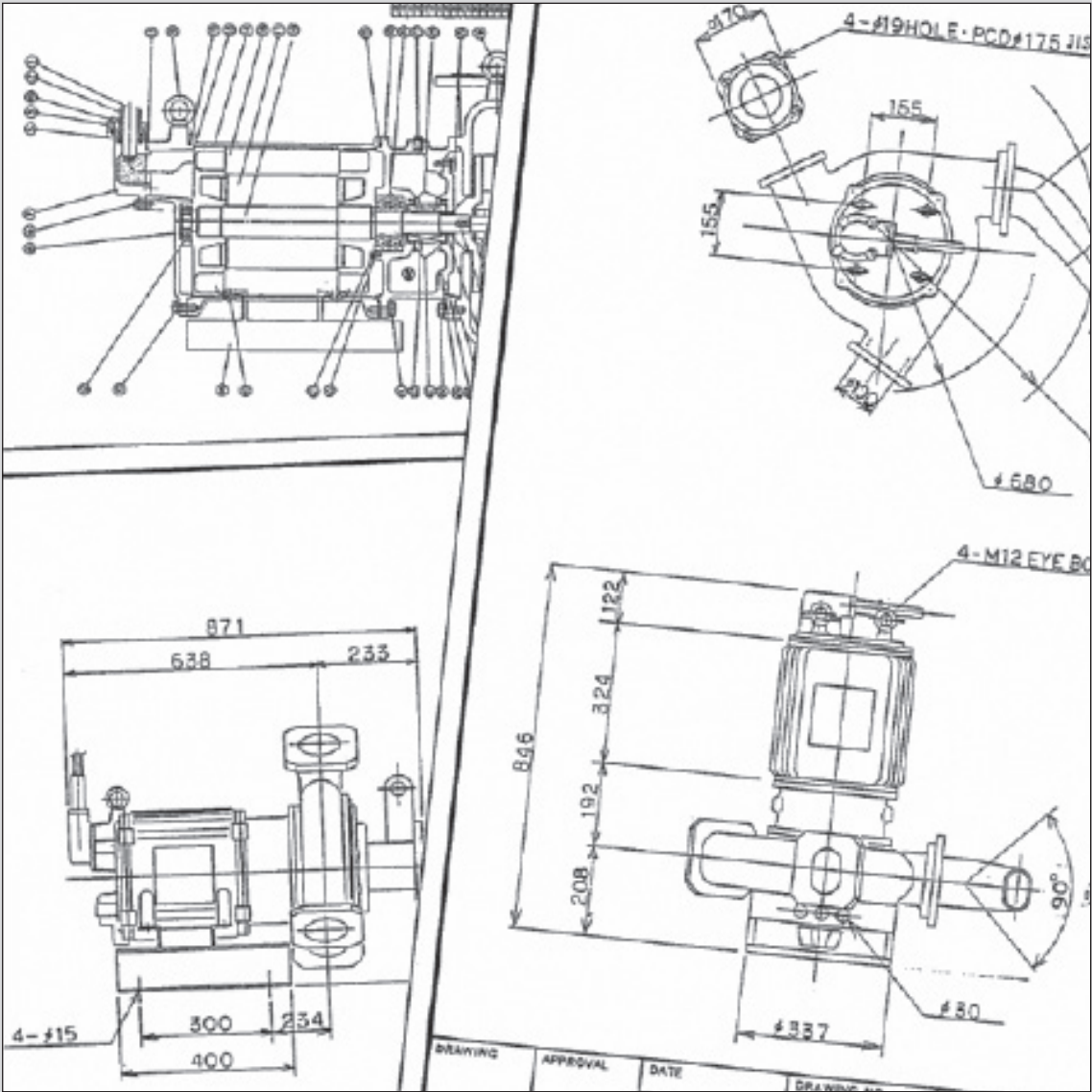
• CONTROL PANEL :

For 3 to 10 HP VHA pumps, we recommend to use a Toyo control panel equipped with a direct starter.

From 15 HP VHA pumps on, we recommend to use a Toyo control panel equipped with a statoric starter.

TOYO PUMPS EUROPE

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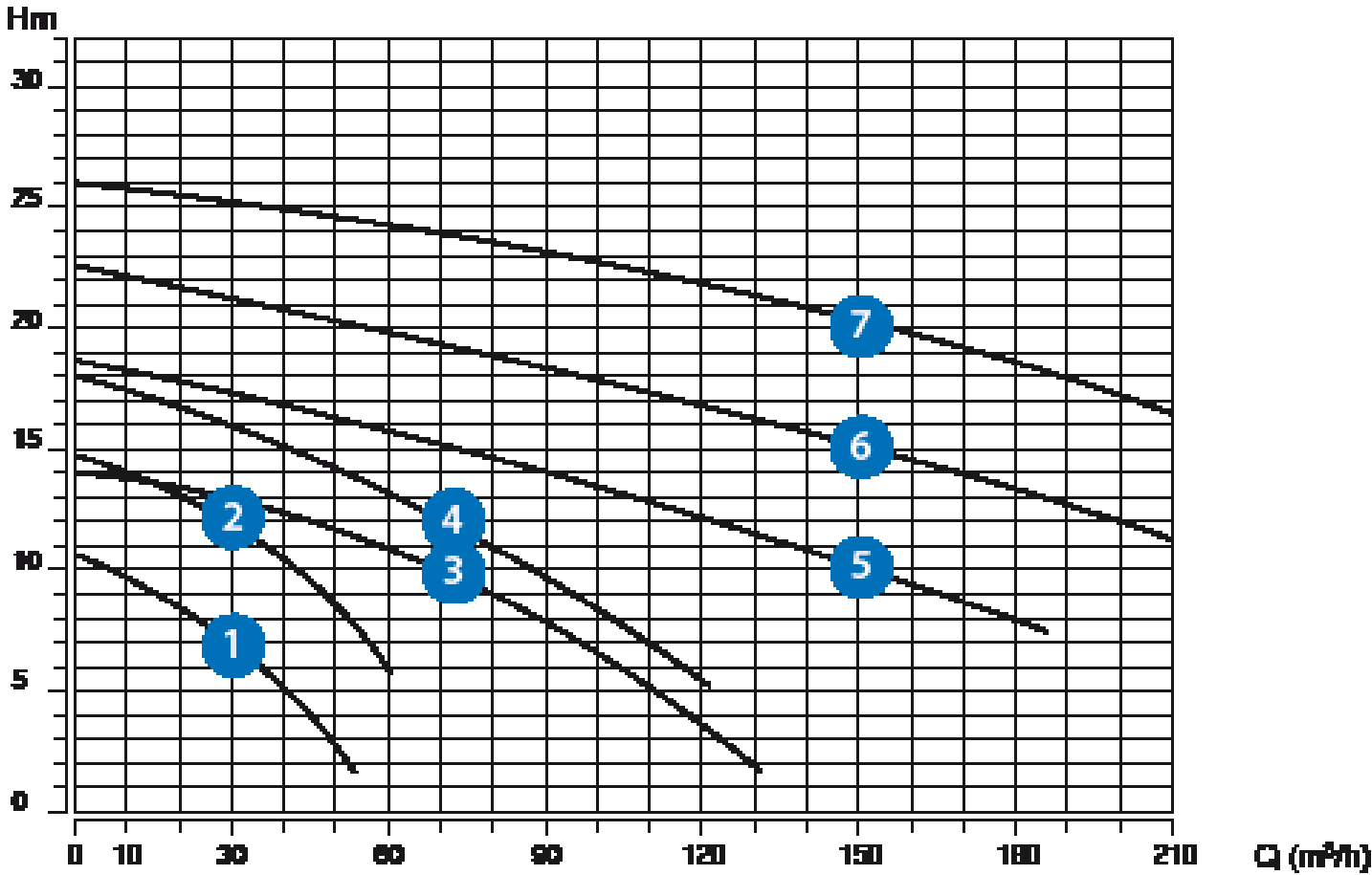
Toyo

Heavy slurry pumps

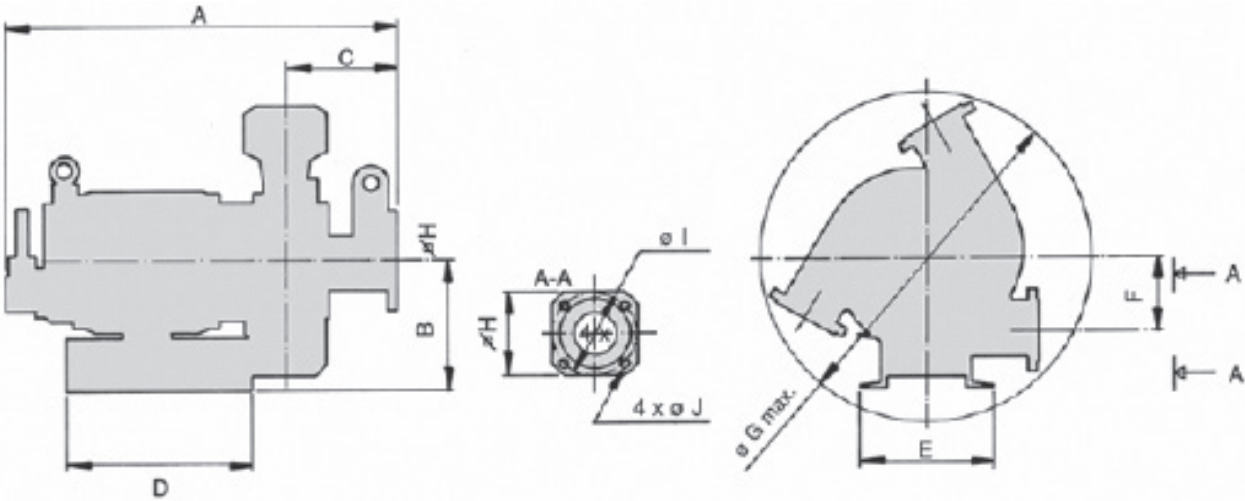
TECHNICAL SPECIFICATIONS
VHA PUMPS



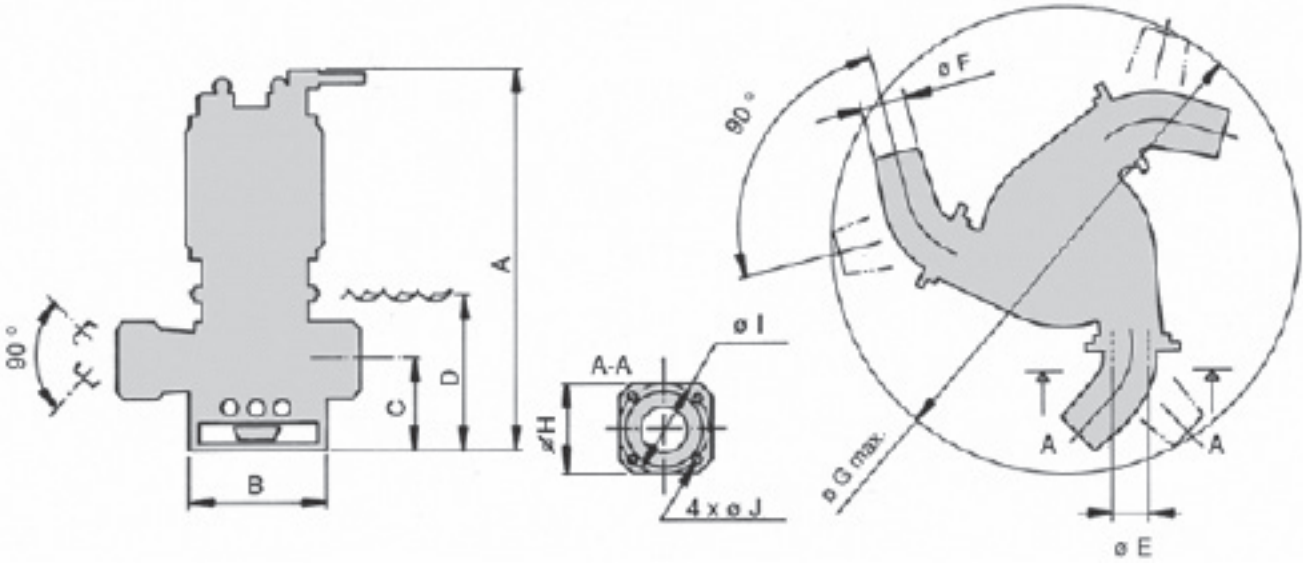
Performance curves with one outlet open



Nr	Type	Outlet (mm)		Mixing volume (m³)	Particle size (mm)		Power (kW)	Poles (P)	Revolution (1/min) 50Hz	Current (A) 400V	Electr. cable	Weight (kg)
		Nozzle	Casing		Horiz.	Vert.						
1	VHA 3	40	80	8~12	30	25	2.2	4	1465	4.4	4x6mm²	130
2	VHA 5	40	80	10~15	30	25	3.7	4	1460	7.3	4x6mm²	140
3	VHA 7.5	80	100	14~21	60	30	5.5	4	1480	11	4x10mm²	185
4	VHA 10	80	100	16~24	60	30	7.5	4	1450	14.5	4x10mm²	200
5	VHA 15B	100	125	24~48	60	45	11	4	1480	22	4x10mm²	330
6	VHA 20B	100	125	40~60	60	45	15	4	1480	28	4x10mm²	350
7	VHA 30B	125	150	52~78	60	45	22	4	1470	40.5	4x16mm²	450



DIMENSIONS (mm)		A	B	C	D	E	F	G	H	I	J
1	VHA 3	700	240	205.5	340	250	135	584	150	150	19
2	VHA 5	720	240	205.5	340	250	135	584	150	150	19
3	VHA 7.5	817	270	233	400	270	145	676	170	175	19
4	VHA 10	871	270	233	400	270	145	676	170	175	19
5	VHA 15B	1040	314	280	540	310	175	761	200	210	23
6	VHA 20B	1109	314	280	540	310	175	761	200	210	23
7	VHA 30B	1218	354	281.5	550	330	180	839	230	240	23



DIMENSIONS (mm)		A	B	C	D	E	F	G	H	I	J
1	VHA 3	676	321	172.5	250	80	40	862	150	150	19
2	VHA 5	696	321	172.5	250	80	10	862	150	150	19
3	VHA 7.5	792	338	208	350	100	80	1054	170	175	19
4	VHA 10	846	338	208	350	100	80	1054	170	175	19
5	VHA 15B	995	363	235	400	125	100	1213	200	210	23
6	VHA 20B	1064	363	235	400	125	100	1213	200	210	23
7	VHA 30B	1252	470	315.5	500	150	125	1370	230	240	23