

TECHNICAL DATA

Toyo

• CONCEPT :

The Toyo GR range of submersible pumps with agitator has been specially designed to handle heavy and abrasive slurries.

These centrifugal pumps with semi-open impeller feature a unique agitator design. This agitator lifts sediments into suspension and mix them to create a homogeneous slurry. This enables 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 long service life and economical operation. The impeller, the wear plates 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, ensure tightness in the hardest of conditions.

The axial flow of the pumped liquid secures the cooling of the electric class F motor and makes partial immersing possible. This design reduces the outer dimensions of the pump and hoses assembly.

Servicing the pumps and maintaining good working order is easy. Models GR15 to GR30 dispose of one adjustable wear plate which allows optimizing hydraulic efficiency of the pump.

The GR pumps are equipped with a thermal protection in standard version.

• OPERATING CONDITIONS :

GR pumps can handle:

- slurries with solid contents of up to 40% by weight
- particle sizes up to 40 mm
- liquid temperatures up to 60°C
- pH levels between 4 and 14

The maximum operating depth is 30 m. Pumps GR15 to GR30 are available in special versions able to work up to 60 m, without any external additional device.

Special versions are available for liquid temperatures up to 80° C.

• ELECTRIC POWER REQUIREMENTS* :

Pump Type	Power kVA	Amp. 400 V
GR 3	6	5.5
GR 5	12	8.5
GR 7.5	15	11
GR 10-100	20	15
GR 10	20	15
GR 15/H	30	23
GR 20/B	40	31
GR 30/B	50	44

*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
GR 3	4 x 6 mm ²	19	500
GR 5	4 x 6 mm ²	19	340
GR 7.5	4 x 6 mm ²	19	260
GR 10-100	4 x 6 mm ²	19	190
GR 10	4 x 6 mm ²	19	190
GR 15/H	4 x 10 mm ²	23	180
GR 20/B	4 x 10 mm ²	23	120
GR 30/B	4 x 16 mm ²	27	160

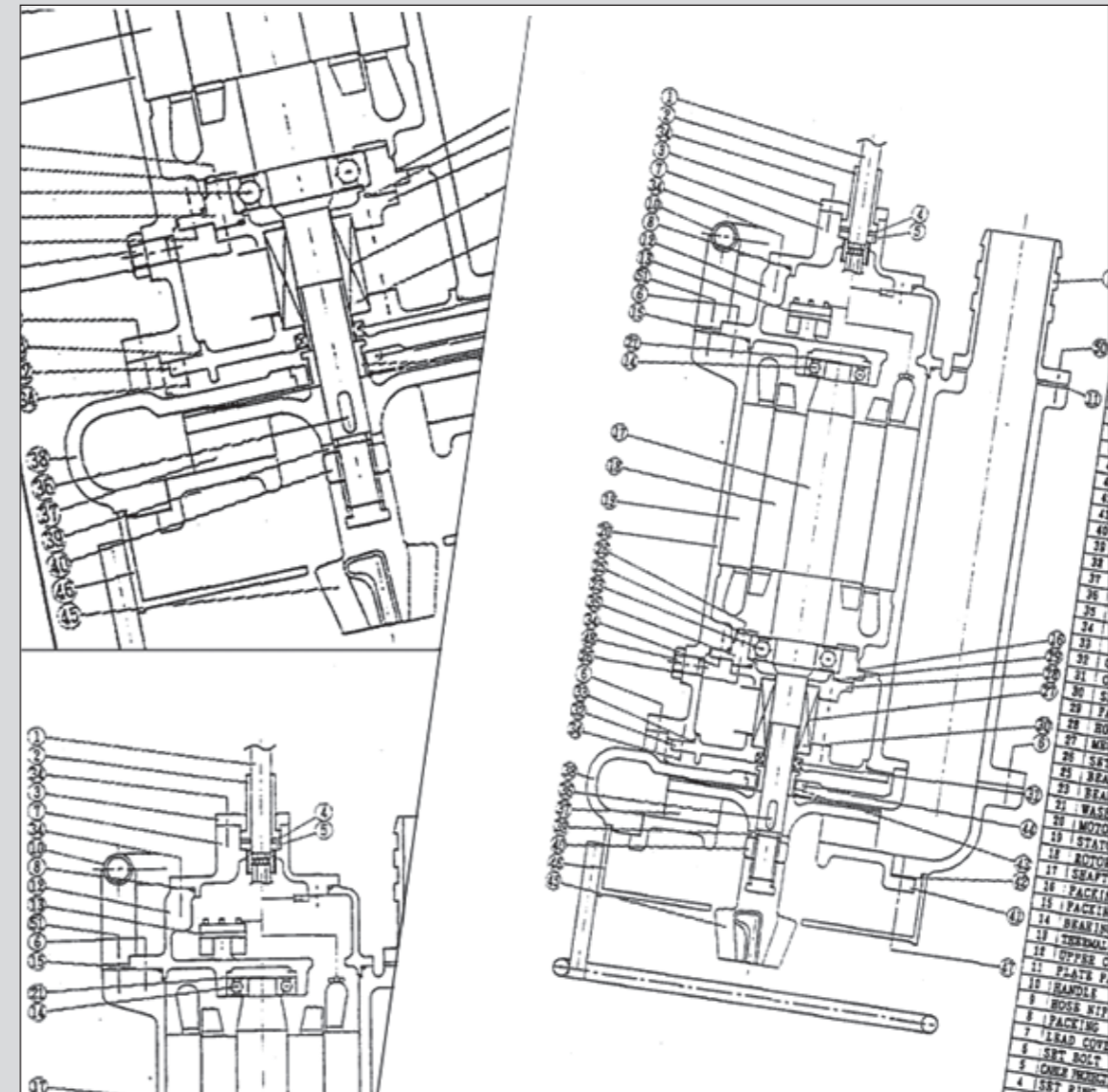
• CONTROL PANEL:

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

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

TOYO PUMPS EUROPE

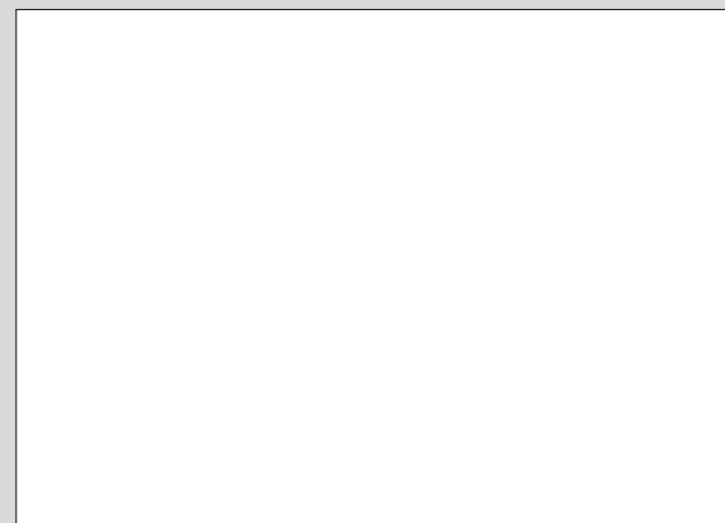
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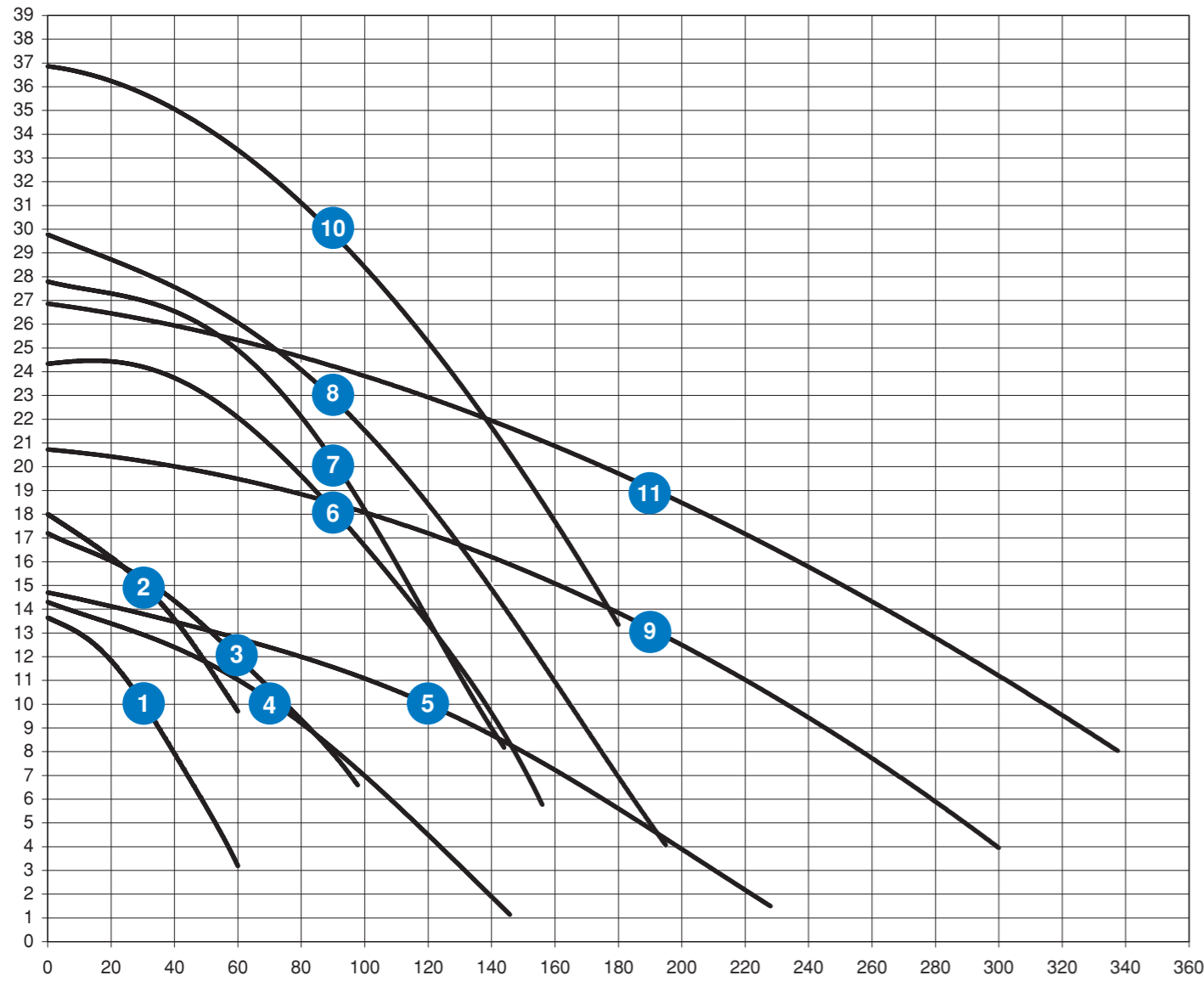
Toyo

Heavy slurry pumps

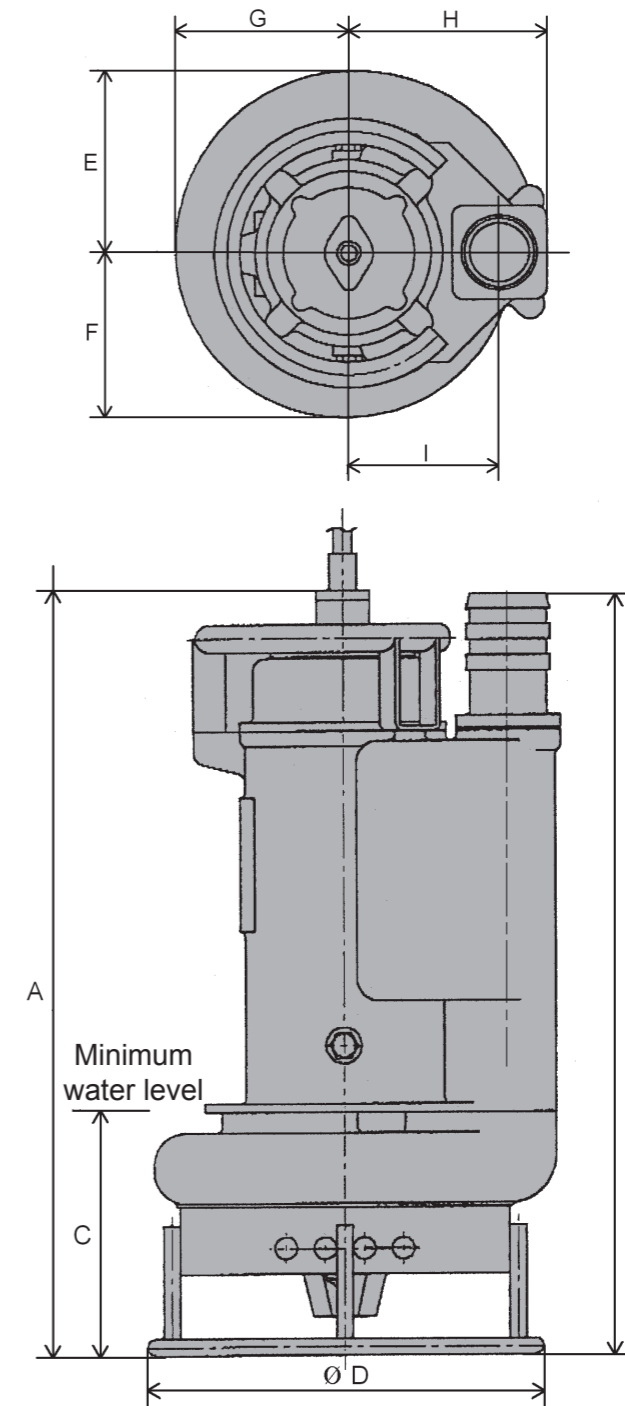
TECHNICAL SPECIFICATIONS GR PUMPS



Performance curves



Nr	Type	Outlet (inch) (mm)	Capacity (m³/h)	Manom. head (m)	Particle size (mm)	Power (kW)	Poles (P)	Revolution (1/min) 50Hz	Current (A) 400V	Electr. cable	Weight (kg)
1	GR 3	3 80	30	10	22	2.2	4	1425	5.5	4x6mm²	115
2	GR 5	3 80	30	15	22	3.7	4	1445	8.5	4x6mm²	135
3	GR 7.5	4 100	60	12	25	5.5	4	1425	11	4x6mm²	145
4	GR 10-100	4 100	72	10	35	7.5	4	1435	15	4x6mm²	180
5	GR 10	6 150	120	10	35	7.5	4	1435	15	4x6mm²	180
6	GR 15	4 100	90	18	30	11	4	1445	23	4x10mm²	270
7	GR 15H	4 100	90	20	25	11	4	1445	23	4x10mm²	270
8	GR 20	4 100	90	23	30	15	4	1445	31	4x10mm²	370
9	GR 20B	6 150	192	13	40	15	4	1445	31	4x10mm²	370
10	GR 30	4 100	90	30	30	22	4	1420	44	4x16mm²	440
11	GR 30B	6 150	192	19	40	22	4	1420	44	4x16mm²	440



DIMENSIONS (mm)		A	B	C	D	E	F	G	H	I
1	GR 3	677	673	235	384	195	175	185	210	160
2	GR 5	742	738	235	384	195	175	185	210	160
3	GR 7.5	757	760	250	396	213	188	200	225	170
4	GR 10-100	800	843	250	396	250	200	225	275	195
5	GR 10	800	843	250	396	250	200	225	275	195
6	GR 15	890	823	280	488	254	240	242	272	215
7	GR 15H	890	823	280	488	254	240	242	272	215
8	GR 20	1095	1013	400	533	298	251	273	325	240
9	GR 20B	1095	1013	400	533	298	251	273	325	240
10	GR 30	1100	1048	400	475	305	280	280	350	250
11	GR 30B	1100	1048	400	475	305	280	280	350	250