



Shaft Rating Curves

Before using the charts, you need to calculate the total down thrust. This includes hydraulic thrust, line shaft weight and the weight of the bowls, shaft and impellers. Weight of bowls, shaft and impeller values can be negligible.

Having calculated the total thrust, the maximum shaft loading can be taken from the chart, using the applicable RPM chart.

An example:

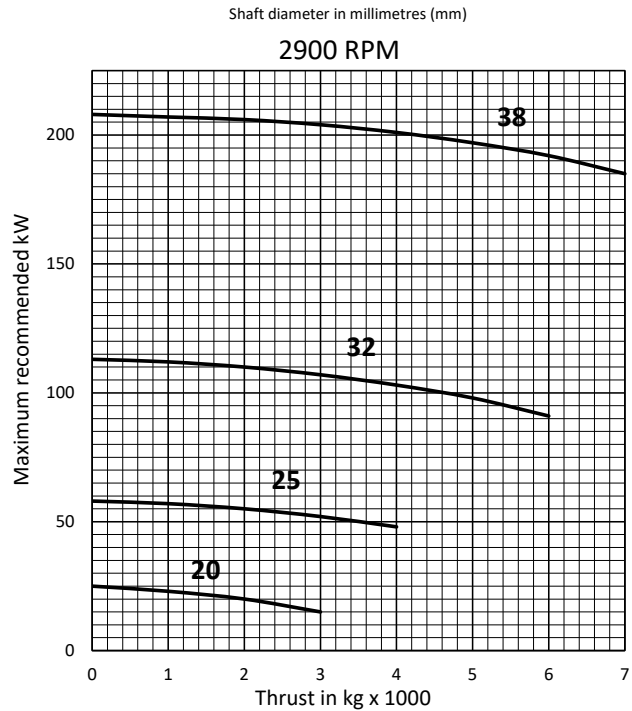
- Speed = 2900 RPM
- Thrust = 3000 kg
- Shaft = 38mm diameter

Using the chart, the maximum load would be 205 kW

An example:

- Speed = 2900 RPM
- Thrust = 2000 kg
- kW required = 55 kW at bowls

Using the chart, the correct shaft size will be 25mm as the loading exceeds the allowable for the 20mm shaft but is less than the allowable for the 25mm shaft.



For different shaft materials, apply the following multipliers:

MATERIAL	MULTIPLIER
AISI C1045 HTS	1.0
431 Stainless Steel	1.0
416 Stainless Steel	0.9
316 Stainless Steel	0.8

SHAFT FRICTION LOSS in kW											
RPM	Shaft Size (millimetres)										
	20	25	32	38	45	50	57	64	70	76	82
1460	0.19	0.32	0.48	0.75	0.93	1.3	1.6	1.9	2.2	2.7	3.1
1770	0.24	0.4	0.56	0.93	1.1	1.5	1.8	2.2	2.6	3.2	
2200	0.30	0.5	0.75	1.1	1.4	1.8	2.2	2.6			
2900	0.39	0.66	0.95	1.4	1.8						
3500	0.46	0.82	1.1								

Shafting and Tubing Weights - kg per linear metre (m)											
SHAFT Dia (mm)	20	25	32	38	45	50	57	64	70	76	82
kg/m	2.23	3.97	6.21	8.94	12.2	15.9	20.1	23.6	30.1	34.3	42
TUBE Dia (mm)	32	38	50	64	76	76	89	102	125	125	125
kg/m	4.45	5.4	7.47	11.4	15.3	15.3	18.6	22.3	30.9	30.9	30.9



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Shaft diameters in millimetres (mm)

