

XB Agitation Vat Technical Parameters and Model Selection Guide

Page 1 — Product Overview and Operating Range



Equipment type:	Vertical Agitation Vat
Model range:	XB-750 to XB-3500
Tank internal diameter:	750–3,500 mm
Tank depth:	750–3,500 mm
Effective volume:	0.26–30 m ³
Agitator diameter:	240–850 mm
Agitator speed:	200–530 r/min
Motor power:	1.1–22 kW
Equipment weight:	228–7,110 kg
Main duty:	ore-pulp mixing and flotation conditioning



NOTE: Published parameters are intended for preliminary model comparison. Final selection must consider slurry flow, solids concentration, particle size, slurry density and required conditioning time.

XB Agitation Vat Technical Parameters and Model Selection Guide

Page 2 — Complete XB Technical Parameters

Confirmed model data for preliminary comparison of standard XB agitation vats.

Model	Tank Diameter (mm)	Tank Depth (mm)	Effective Volume (m ³)	Agitator Diameter (mm)	Agitator Speed (r/min)	Motor Model	Motor Power (kW)	Weight (kg)
XB-750	750	750	0.26	240	530	Y90S-4	1.1	228
XB-1000	1000	1000	0.58	240	530	Y90L-4	1.5	436
XB-1200	1200	1200	1.14	400	320	Y100L2-4	3	765
XB-1500	1500	1500	2.20	400	320	Y100L2-4	3	1083
XB-2000	2000	2000	5.46	550	230	Y132M2-6	5.5	1671
XB-2500	2500	2500	11.20	650	200	Y160L-6	11	3438
XB-3000	3000	3000	19.10	700	210	Y225S-8	18.5	4613
XB-3500	3500	3500	30.00	850	230	Y225M-8	22	7110

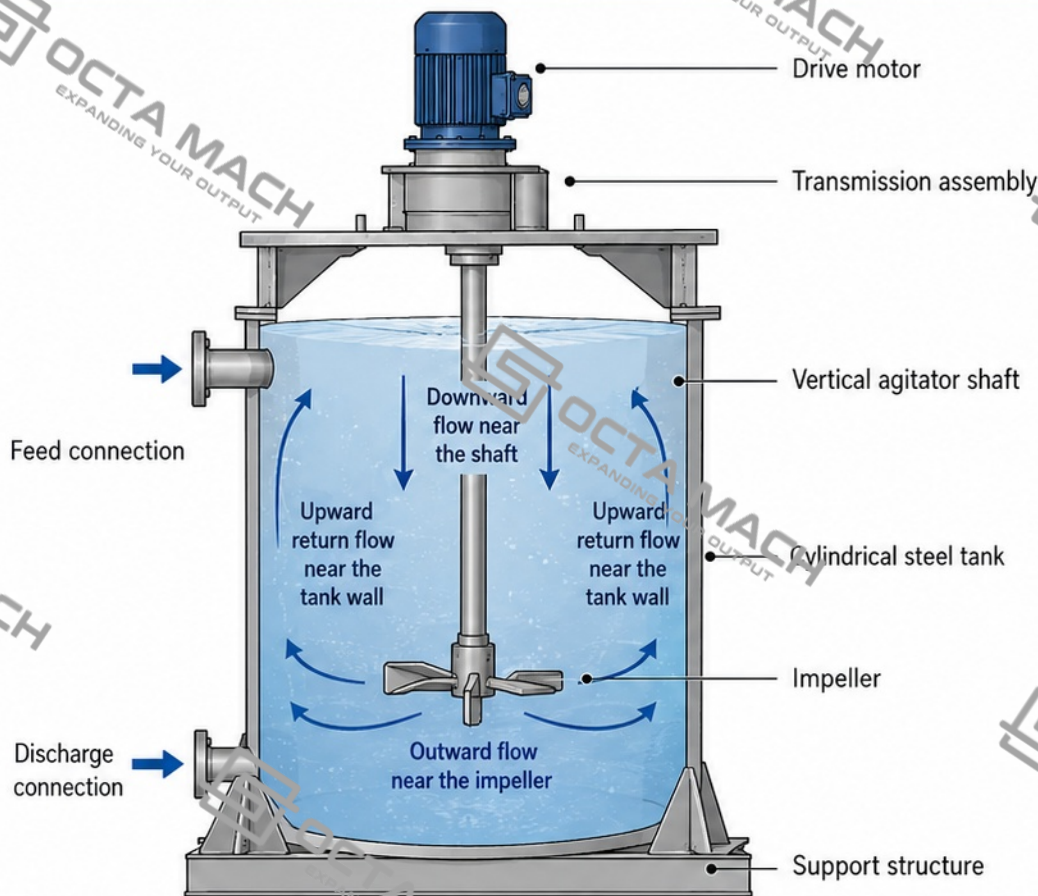
NOTES:



- Effective volume refers to the working volume under normal operating conditions.
- Agitator diameter and speed are matched to standard slurry-mixing duty.
- Final selection should be checked against slurry density, solids concentration, particle size and conditioning time.

XB Agitation Vat Technical Parameters and Model Selection Guide

Page 3 — Working Principle and Main Components



The motor drives the vertical shaft and impeller through the transmission assembly. Controlled circulation disperses reagents, keeps solids suspended and reduces concentration differences before flotation or other downstream treatment.



Slurry homogenization

Promotes uniform concentration through controlled circulation within the tank.



Solids suspension

Maintains particles in suspension to prevent settling and ensure stable process operation.



Reagent dispersion

Ensures rapid and uniform distribution of reagents for effective conditioning.



NOTE: Higher rotational speed does not automatically improve mixing performance. Excessive agitation may increase power demand, wear and unwanted air entrainment.

XB Agitation Vat Technical Parameters and Model Selection Guide

Page 4 — Preliminary Model Selection

Selection Input	Engineering Relevance
Slurry flow rate	Determines required effective tank volume
Required conditioning time	Defines minimum residence volume
Solids concentration	Influences viscosity and suspension difficulty
Slurry density	Affects motor load and shaft duty
Particle-size distribution	Indicates settling tendency and circulation demand
Particle settling tendency	Influences impeller duty and solids suspension requirement
Reagent type and dosage	Determines dispersion requirement and contact condition
Upstream flow variation	Defines the required operating allowance
Downstream process duty	Confirms whether the tank is used for mixing, conditioning or buffering
Feed and discharge elevation	Affects installation arrangement and transfer conditions
Installation space	Limits tank diameter, height and layout
Plant interfaces	Confirms piping, structural and equipment connections

Volume Sizing Relationship



Required effective volume =
slurry flow ×
required conditioning time



Use consistent units and include an operating allowance for process fluctuations.

Preliminary Model Direction

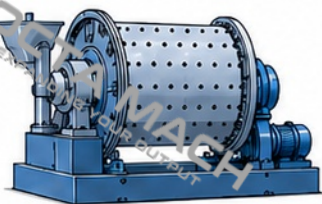
Laboratory or small pilot duty	XB-750 to XB-1000
Small continuous conditioning duty	XB-1200 to XB-1500
Medium slurry-conditioning duty	XB-2000
Larger flotation-feed preparation	XB-2500
High-volume mineral-processing circuit	XB-3000 to XB-3500



CAUTION: These model directions are preliminary and must not replace process calculations.

XB Agitation Vat Technical Parameters and Model Selection Guide

Page 5 — Process Position and Final Project Checklist



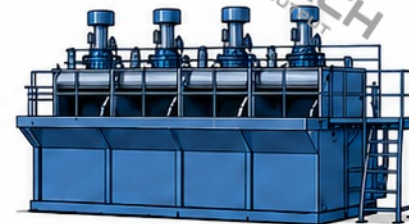
Grinding



Classification



Agitation Vat



Flotation Machine

Project Data Item	Checklist Focus
Ore or mineral type	Identify the target mineral and circuit purpose
Slurry flow rate	Confirm operating flow range
Solids throughput	Confirm dry-solids processing rate
Solids concentration	Check expected pulp consistency
Slurry density	Review density under operating condition
Particle-size distribution	Confirm settling and mixing characteristics
Required conditioning time	Define required residence time
Reagent type and addition points	Confirm chemical addition and dispersion requirement
Process duty	Specify mixing, conditioning or buffering service
Power supply	Confirm available electrical specification
Installation elevation	Review elevation and platform arrangement
Tank feed connection	Confirm feed orientation and connection size
Tank discharge connection	Confirm discharge orientation and connection size
Available installation space	Check diameter, height and access clearance
Downstream equipment interface	Confirm connection to flotation or other follow-up equipment



Final model selection should be confirmed using actual slurry data, required conditioning time, solids-settling characteristics and verified plant operating conditions.