

GTEK Laboratory Rod Mill

LAB ROD MILL OPERATION MANUAL



I Application

XMB series rod ball mill is an efficient laboratory grinding equipment for wet grinding of ore or other materials. Steel balls can be used as grinding medium instead of steel rods. In rod grinding operation, particle sizes of final product are relatively uniform and ore overgrinding can be eliminated. Generally speaking, lab rod mill is commonly used as a grinder for mineral feasibility study and for heavy concentrate reduction.

II Technical Specification

Item		XMB160×200			XMB200×240			XMB240×300			Unit		
Drum(Diameter×Length)		160×200			200×240			240×300			mm		
Volume		4.02			7.5			13.57			L		
Capacity		300~800			500~1000			1000~5000			g		
Feed Size		-2			-2			-3			mm		
Discharge Size		-0.074			-0.74			-0.074			mm		
Drum Speed		120			110			96			r/min		
Motor		Model		A02-7114			y801-4			y801-4			
		Power		0.25			0.55			0.55		kw	
		Speed		1400			1390			1390		r/min	
Grinding Media	Steel Rod	Diameter		18	20	15	18	22	15	18	22	mm	
		Length		185			225			286			mm
		qty		10	9	17	9	9	33	13	6	pcs	
	Weight		3.55		4.0 9	4.9	4. 2	4.9	12.7 9	7.48	5. 02	kg	
	Steel ball	Diameter		20	25	30	20	25	30	20	25	30	mm
		qty		100	26	5	136	52	29	290	115	37	ea
weight		3.3 1	1.7 0	0.5 6	4.4	3. 3	3.7	9.57	7.37	4. 1	kg		
Dimensions(L×W×H)		1052×530× 1150			1052×615× 1160			1052×615× 1160			mm		
Weight		90			155			160			kg		

III Mechanism and Structure

The nodular graphite iron drum is connected with the big belt wheel by screw bolt. The one end of drum is open, and the other end hollow trunnion. Both ends are withstood by a pair of support and base bearing. The base bearing seat and support frame are mounted on support frame which can rotate in 180°. The support plate are mounted on the frame with two bearing seat. The slewing ring can rotate 22.5°, 67.35° and 90° left and right from horizontal through control handle and alignment plate, so that ore loading, discharging, rod taking out, and rustproof fluid filling can be accomplished.

The right end of the drum is with ore feeding stopper, the left end with ore discharging cap; when working, tighten the screw bolt in a clockwise direction with a special wrench until the rubber gasket in the discharge cap tighten the screw bolt three or four turns, the cap withdraw outside 6~10mm, and without taking the cap away, the ore can be discharged. The discharge end is coupled with slurry collecting cover, so that the slurry splash phenomenon can be avoided completely.

IV Installation, Use and Maintenance

1. Installation

- 1.1 This machine require no installation platform or operation form, easy to use and move.
- 1.2 After installation, remove the package paper, and check lubrication conditions, power on and ground wire, test run, and determine rotation direction.
- 1.3 Use useless material and grinding media to perform cleaning operation until the grinding media and inner wall of of the drum are clean enough.
- 1.4 Let the drum rotate 90° towards discharge end, filling with rust-proof lime water and jam-pack, and stored and for backup.

2. Using

- 2.1 To lubricate the machine according to lubrication requirements.
- 2.2 Pour our the rust-proof lime water, if need to add new rods, pour the rods from the ore feeding end also (Pull the slewing ring control handle, and rotate back 90°). If no need to put new rods, pour out the lime water only.
- 2.3 Make the drum rotate towards the discharge end on the first case (22.5°), test run, and clean the grinding media and drum wall until they are clean enough. If necessary, clean the grinding media and drum wall with the material that need to be ground.
- 2.4 Close the discharge open end, put water, ore and reagent subsequently, and put the drum under horizontal level, then can perform test run and start grinding;
- 2.5 After the schedule time of grinding, stop. Put the drum rotate towards the fist case, open the discharge end, and pour the ore into pot. Take ore feeding stopper away, inject clean water with rubber pipe, and wash the ore slurry out from the drum and stopper.
- 2.6 Close up the discharge open, and start another turn of grinding, or fill the drum with rust-proof slime water, closed up ore feeding open, and cover with gauze or wiper, until next time using.

3. Maintenance

3.1 There are four points that need to be lubricated.

3.2 The two copper cover position in the middle axis, very month before work, twist the cap of grease half a circle. When twisting, make the slewing ring rotary in the vertical position to the middle axis, so it is easy to operate.

3.3 The bearing of slewing ring, lubricate with energy oil very three month

3.4 Bearing in the two end of motor, change the energy oil every year, common calcium base grease can be added. Suggests to use calcium base grease to add to the gap between base bearing and middle axis. Sodium base greased is not suggested, so as to avoid to lose effectiveness because of saponification of grease.