



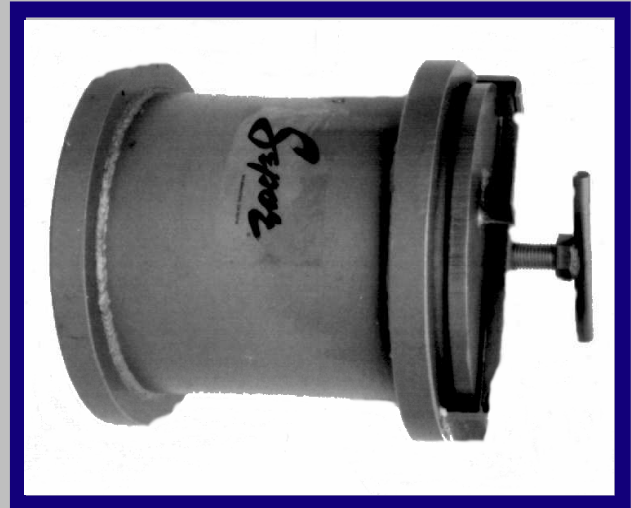
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LABORATORY SIZE BATCH BALL & ROD MILLS

Sepor's batch ball and rod mills are designed to give size reduction of laboratory quantities of minerals and ores. Feed size should generally be $-1/8"$, for ball mill and $-1/2"$ for rod mill. They are of a sturdy, rugged design to handle frequent use with hard materials. The batch ball and rod mills require a drive roll to rotate them at the proper grinding speed, usually 60% - 75% of the critical speed for ball mills and 50% to 90% of critical speed for rod mills. The batch ball mill should be run between 56 RPM's and 70 RPM's. The batch rod mill should be run between 47 RPM's and 79 RPM's. Sepor has two series of drive rolls, one (recommended for these mills) is the 5" diameter roll drive rolls, and the other has 2" diameter drive rolls. Both drive rolls have variable speed drives, for operating the mill at the desired revolutions.

Either wet grinding or dry grinding may be conducted in the batch ball and rod mills. Usually, wet grinding is more efficient than dry grinding, however in laboratory operations, adding liquid is not feasible. The jars should be charged with at least 20 pounds of balls (or rods for the rod mill), and 25% to 40%, by volume, material to be ground (1.4 liters to 2 liters).

The batch ball and rod mill consists of the grinding cylinder with four lifter bars, machined rolling rings, threaded removable yoke, hand lever for tightening and loosening the lid, a machined lid with neoprene gasket. Materials of construction are mild steel, 316 stainless steel or mild steel lined with urethane.



Ball/Rod Mill Charge

A mixed size ball charge is best, many times, since the larger particles require more mass from the larger balls to break rapidly, while the smaller particles require more surface area from the grinding media to grind quickly. Sepor's standard ball charge is 20 pounds total weight, with equal portions of $1-1/4"$, and $1"$ diameter hardened steel alloy balls. Sepor's standard rod charge is composed of numbers of nine $3/4"$, nine $5/8"$, seven $1/2"$ diameter by nine inches long hardened steel rods, with a total weight of 20 pounds.

Catalog Number	Description	Net Weight (Lbs.)	Total Volume (Liters)
010E-007	Mild Steel Ball/Rod Mill, 8" ID x 9.75", OD - 10.5" x 14.75"	45	5.7
010E-013	Stainless Steel Ball/Rod Mill, 8" ID x 9.75", OD - 10.5" x 14.75"	45	5.7
010E-011	Urethane Lined Ball/Rod Mill, 7.5" ID x 9", OD - 10.5" x 14.75"	50	4.2
010E-008	Mild Steel Ball/ Rod Mill, 8" ID x 9.75", OD - 10.5" x 14.75"	50	7.9
010E-014	Stainless Steel Ball/Rod Mill, 8" ID x 9.75", OD - 10.5" x 14.75"	50	7.9
010E-008	Urethane Lined Ball/Rod Mill, 7.5" ID x 9", OD - 10.5" x 14.75"	55	6.4