

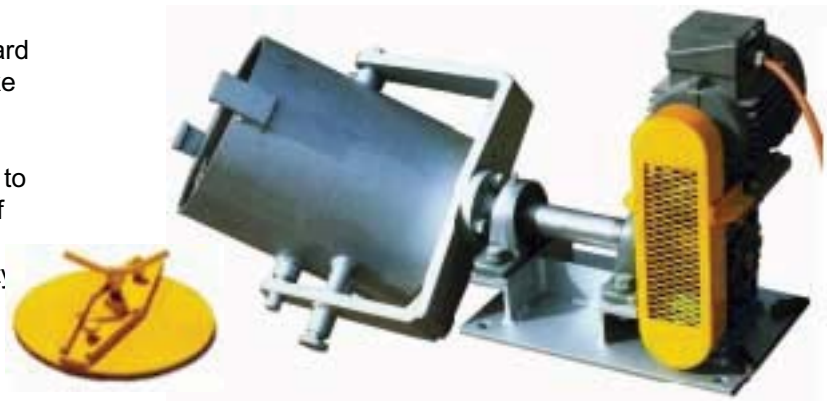
BALL MILLS, ROD MILLS & BOND INDEX MILLS

Labtech Essa manufacture a range of metallurgical laboratory sized ball and rod mills to suit most applications. Included in the range is a Bond index mill which has specific application in establishing the grindability of ores (see sheet 2 of this data sheet)

The ball and the rod mill are of essentially the same basic concept comprising a barrel mounted in a rotating yoke assembly which is driven through a gearbox from a three phase electric motor . The barrel is pivot mounted on the rotating yoke and can be tilted for loading and discharge. A spring loaded locking pin is used to hold the barrel in its horizontal operating position. A manually operated locking mechanism ensures the removable lid of the barrel is sealed tight during operation.

The mills are supplied standard with a barrel and rotating yoke assembly and the electric motor drive; can be mounted on a flat plate for attachment to the customer 's work bench if required.

(Lid shown removed for clarity)



AVAILABLE OPTIONS INCLUDE:

- Various barrel, ball & rod materials.
- Ball funnels
- Ball screens
- Safety enclosure for the rotating barrel.
- Acoustic enclosures
- Modified barrels supplied as loose items for use on bottle rollers

OVERALL DIMENSIONS:

A STANDARD UNIT with ball funnel and screen is approximately 600 wide x 1100 long x 1200 high x approximately 207 kg.



*STAND-ALONE configuration
complete with ball funnel and screen.*

STANDARD SIZES:

Ball mill barrel sizes	Nominal Volume
200mm dia. x 200 long	6.3 litre**
250mm dia. x 250 long	12.3 litre**
300mm dia. x 300 long	21.0 litre**
Rod mill barrel sizes	
200mm dia. x 250 long	7.8 litre**
250mm dia. x 300 long	14.7 litre**
300mm dia. x 360 long	25.4 litre**

** without balls or rods. The useable volume will be approximately 40% of this figure. of 2

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BOND INDEX BALL AND ROD MILLS

Internationally accepted mineral metallurgical standard test procedures to determine the physical properties of ores include the Bond ball mill work index and the Bond rod mill work index.

These are empirical indices determined by closed circuit grindability tests developed by F.C.Bond in the mid 1930's. They require a specific 305mm diameter x 305mm long (inside dimensions) horizontal axis ball mill without lifters operating at 70 rpm to perform grindabilities from 28 to 500 mesh and a 305mm diameter x 610mm long rod mill with a wave type liner operating at 46 rpm to perform grindabilities from 4 to 65 mesh.

Ball and rod mills can be supplied as complying machines with the appropriate barrels and ball or rod charges. As with our standard range of ball and rod mills described on page 1 of this data sheet, the Labtech Essa BOND INDEX BALL MILL and BOND INDEX ROD MILL are supplied standard with a barrel and rotating yoke assembly and the electric motor drive; all mounted on a flat plate for attachment to the customer 's work bench.....with options of a stand-alone bench, funnel and screen. These machines will be of essentially the same physical arrangement and size as our standard range but with the customised features required to meet the Bond specifications.

METALLURGICAL PILOT PLANT MILLS

Labtech Essa also provide 3 sizes of a larger batch or continuous mill style for use in pilot plant applications and similar. These are 600mm dia. x 900 long, 750mm dia x 900 long and 900mm dia. x 1200 long. They are typically supplied with mild steel shells with polyurethane or Linatex rubber linings. They can be supplied with a broad range of options including scoop feeder, trommel discharge, replaceable liners, agitation tank, ball sump, pumps, etc.



Typical batch and continuous mills (with various custom options) during manufacture in our factory.