

ECLA EUROPEAN CLASSIFICATION

B04B **CENTRIFUGES** (high-speed drum mills [B02C19/11](#); domestic spin driers [D06F](#); analysing, measuring or monitoring physical or chemical properties of samples during centrifuging, see the relevant subclasses for these procedures, e.g. [G01N](#))

Note

This subclass covers machines or apparatus for separating, mixing, drying, extracting, purifying, or like treating in which centrifugal effects are generated by rotary bowls or other rotors. Where such machines or apparatus involve pumping effects, such effects must be incidental or subsidiary to the treating.

Guide heading: **Types of centrifuges; Centrifuges characterised by discharging means**

B04B1/00 **Centrifuges with rotary bowls provided with solid jackets for separating predominantly liquid mixtures with or without solid particles**

- B04B1/02 . without inserted separating walls
- B04B1/04 . with inserted separating walls
- B04B1/06 . . of cylindrical shape
- B04B1/08 . . of conical shape
- B04B1/10 . with discharging outlets in the plane of the maximum diameter of the bowl [N: (cleaning [B04B15/06](#))]
- B04B1/12 . . with continuous discharge
- B04B1/14 . . with periodical discharge
- B04B1/16 . . . with discharging outlets controlled by the rotational speed of the bowl
- B04B1/18 controlled by the centrifugal force of an auxiliary liquid
- B04B1/20 . discharging solid particles from the bowl by a conveying screw coaxial with the bowl axis and rotating relatively to the bowl
- B04B1/20A . . [N: with an abrasion-resistant conveyer or drum]
- B04B1/20D . . [N: Driving control or mechanisms; Arrangement of transmission gearing]

B04B3/00 **Centrifuges with rotary bowls in which solid particles or bodies become separated by centrifugal force and simultaneous sifting or filtering**

- B04B3/02 . discharging solid particles from the bowl by means coaxial with the bowl axis and moving to and fro, i.e. push-type centrifuges
- B04B3/02D . . [N: with a reversible filtering device]
- B04B3/04 . discharging solid particles from the bowl by a conveying screw coaxial with the bowl axis and rotating relatively to the bowl
- B04B3/06 . discharging solid particles by vibrating the bowl
- B04B3/08 . discharging solid particles by bowl walls in the form of endless bands

- B04B5/00** **Other centrifuges**
- B04B5/00B . [N: Centrifugal separators or filters for fluid circulation systems, e.g. for lubricant oil circulation systems]
- B04B5/02 . Centrifuges consisting of a plurality of separate bowls rotating round an axis situated between the bowls
- B04B5/04 . Radial chamber apparatus for separating predominantly liquid mixtures, e.g. butyrometers
- B04B5/04B . . [N: for liquids contained in receptacles ([B04B5/04C](#) takes precedence)]
- B04B5/04B2 . . . [N: comprising test tubes]
- B04B5/04B2B [N: pivotably mounted]
- B04B5/04B4 . . . [N: with flexible receptacles]
- B04B5/04C . . [N: with means for adding or withdrawing liquid substances during the centrifugation, e.g. continuous centrifugation]
- B04B5/06 . Centrifugal counter-current apparatus
- B04B5/08 . Centrifuges for separating predominantly gaseous mixtures
- B04B5/10 . Centrifuges combined with other apparatus, e.g. electrostatic separators; Sets or systems of several centrifuges ([B04B5/12](#) takes precedence; magnetic or electrostatic separators [B03C](#); [N: amassing particles by electric fields, e.g. by agglomeration [B03C3/017B](#)])
- B04B5/12 . Centrifuges in which rotors other than bowls generate centrifugal effects in stationary containers
- Guide heading:** **Elements; Accessories**
- B04B7/00** **Elements of centrifuges** (drives [B04B9/00](#); feeding, charging, or discharging appurtenances or devices [B04B11/00](#))
- B04B7/02 . Casings; Lids (shock absorbers, vibration dampers [F16F](#))
- B04B7/04 . . Casings facilitating discharge
- B04B7/06 . . Safety devices; [N: Regulating]
- B04B7/08 . Rotary bowls ([centrifugal casting machines B22D](#))
- B04B7/08B . . [N: fibre- or metal-reinforced]
- B04B7/10 . . Bowls for shaping solids
- B04B7/12 . . Inserts, e.g. armouring plates
- B04B7/14 . . . for separating walls of conical shape
- B04B7/16 . . . Sieves or filters (filters in general [B01D](#); sieves in general [B07B](#))
- B04B7/18 . . formed or coated with sieving or filtering elements (filters in general [B01D](#); sieves in general [B07B](#))
- B04B9/00** **Drives specially designed for centrifuges; Arrangement or disposition of**

transmission gearing; Suspending or balancing rotary bowls

- B04B9/02 . Electric motor drives [N: (dynamo-electric machines associated with centrifuges [H02K7/16](#))]
- B04B9/04 . . Direct drive
- B04B9/06 . Fluid drive
- B04B9/08 . Arrangement or disposition of transmission gearing [N: (for solid bowl screw centrifuges [B04B1/20D](#)); Couplings; Brakes]
- B04B9/10 . Control of the drive; Speed regulating [N: (for solid bowl screw centrifuges [B04B1/20D](#))]
- B04B9/12 . Suspending rotary bowls; [N: Bearings; Packings for bearings]
- B04B9/14 . Balancing rotary bowls ([balancing per se G01M](#)); [N: Schrapplers]
- B04B9/14F . . [N: Unbalance detection devices]

- B04B11/00** **Feeding, charging, or discharging bowls** ([B04B1/00](#), [B04B3/00](#), [B04B7/04](#) take precedence)

- B04B11/02 . Continuous feeding or discharging; Control arrangements therefor
- B04B11/04 . Periodical feeding or discharging; Control arrangements therefor
- B04B11/04B . . [N: Load indication with or without control arrangements]
- B04B11/05 . . Base discharge
- B04B11/06 . Arrangement of distributors or collectors in centrifuges
- B04B11/08 . Skimmers or scrapers for discharging; [N: Regulating thereof]
- B04B11/08B . . [N: Skimmers for discharging liquid] [N0607]

- B04B13/00** **Control arrangements specially designed for centrifuges; Programme control of centrifuges** (control arrangements for feed, charge, or discharge [B04B11/00](#))

- B04B13/00B . [N: Rotor identification systems]

- B04B15/00** **Other accessories for centrifuges**

- B04B15/02 . for cooling, heating, or heat insulating
- B04B15/04 . for suppressing the formation of foam
- B04B15/06 . for cleaning bowls, filters, sieves, inserts, or the like
- B04B15/08 . for ventilating or producing a vacuum in the centrifuge

- B04B15/10 . for forming a filtering layer in the rotary bowl
- B04B15/12 . for drying or washing the separated solid particles