ECLA EUROPEAN CLASSIFICATION

B64G COSMONAUTICS; VEHICLES OR EQUIPMENT THEREFOR (apparatus for, or methods of, winning materials from extraterrestrial sources E21C51/00)

Notes

1. This subclass covers only vehicles, equipment or the like, which are specially adapted for cosmonautics.

2. This subclass does not cover vehicles and equipment applicable to both cosmonautics and aeronautics, which are covered by the appropriate aeronautical subclasses of class B64.

3. In this subclass, the following term is used with the meaning indicated:
- "cosmonautics" includes all transport outside the earth`s atmosphere, and thus includes artificial earth satellites, and interplanetary and interstellar travel.

B64G1/00 Cosmonautic vehicles

B64G1/00A . [N: Launch systems] [N0201]
B64G1/00A1 . . [N: Air launch] [N0201]
B64G1/00A2 . . [N: Orbit transfer] [N0201]

B64G1/10 . Artificial satellites; Systems of such satellites; Interplanetary vehicles (space shuttles B64G1/14; radio transmission systems using satellites H04B7/185)
B64G1/10A . . [N: Communications satellites (communications aspects H04B7/185)] [N0201]
B64G1/10B . . [N: Navigation satellites (navigation systems G01S5/14B)] [N0201]
B64G1/10C . . [N: Earth observation satellites] [N0201]
B64G1/10D . . [N: Space science] [N0201]
B64G1/10E . . [N: Maintenance satellites] [N0201]
B64G1/10M . . [N: Swarms and constellations] [N0201]
B64G1/12 . . manned

B64G1/14 . Space shuttles

B64G1/16 . Extraterrestrial cars (land vehicle aspects B60 to B62)

B64G1/22 . Parts of, or equipment specially adapted for fitting in or to, cosmonautic vehicles
B64G1/22D . . [N: Appendage deployment mechanisms] [N0201]
B64G1/22P . . [N: Special coatings for spacecraft] [N0201]
B64G1/24 . . Guiding or controlling apparatus, e.g. for attitude control (jet-propulsion plants F02K; navigation or navigational instruments, see the relevant subclass, e.g. G01C; automatic pilots G05D1/00)
B64G1/24A . . . [N: Orbits and trajectories] [N0201]
B64G1/26 . . . using jets
B64G1/28 . . . using inertia or gyro effect

B64G1/28A . . . . [N: Spin-stabilised spacecraft] [N0201]
B64G1/28B . . . . [N: using reaction wheels] [N0201]
B64G1/28C . . . . [N: using momentum wheels] [N0201]
B64G1/28D . . . . [N: using control momentum gyroscopes (CMGs)] [N0201]
B64G1/28E . . . . [N: using gyroscopes as attitude sensors] [N0201]
B64G1/32 . . . using earth`s magnetic field
B64G1/34 . . . using gravity gradient
B64G1/36 . . . using sensors, e.g. sun-sensors, horizon sensors
B64G1/36A . . . . [N: using star sensors] [N0201]
B64G1/36B . . . . [N: using sun sensors] [N0201]
B64G1/36C . . . . [N: using horizon or Earth sensors] [N0201]
B64G1/36D . . . . [N: using magnetometers] [N0201]
B64G1/36E . . . . [N: using gravimeters] [N0201]
B64G1/38 . . . damping of oscillations, e.g. nutation dampers
B64G1/40 . . Arrangements or adaptations of propulsion systems (B64G1/26 takes precedence; propulsion plants per se, see the relevant subclasses e.g. F02K, F03H)
B64G1/40A . . . [N: Liquid propellant rocket engines (per se F02K9/42)] [N0201]
B64G1/40B . . . [N: Propellant tanks; Feeding propellants (in general F02K9/44)] [N0201]
B64G1/40C . . . [N: Solid propellant rocket engines (per se F02K9/08)] [N0201]
B64G1/40C1 . . . . [N: Hybrid rocket engines (per se F02K9/72)] [N0201]
B64G1/40D . . . [N: Ion or plasma engines (per se F03H1/00)] [N0201]
B64G1/40E . . . [N: Arcjets and other resistojets] [N0201]
B64G1/40F . . . [N: Solar sailing (includes also attitude control using solar sailing)] [N0201]
B64G1/40N . . . [N: Nuclear spacecraft propulsion] [N0201]
B64G1/40Z . . . [N: Unconventional spacecraft propulsion systems] [N0201]
B64G1/42 . . Arrangements or adaptations of power supply systems (power supply systems per se, see the relevant subclasses)
B64G1/42A . . . [N: Non-solar power generation] [N0201]
B64G1/42A1 . . . . [N: Nuclear power generation] [N0201]
B64G1/42A2 . . . . [N: Fuel cells] [N0201]
B64G1/42B . . . [N: Power storage] [N0201]
B64G1/42B1 . . . . [N: Flywheels] [N0201]
B64G1/42B2 . . . . [N: Thermal power storage] [N0201]
B64G1/42C . . . [N: Power distribution and management] [N0201]
B64G1/44 . . . using radiation, e.g. deployable solar arrays (solar cells per se H01L31/00)
B64G1/44A . . . . [N: Photovoltaic cell arrays] [N0201]
B64G1/44B . . . . [N: Thermal solar power generation] [N0201]
B64G1/46 . . Arrangements or adaptations of devices for control of environment or living conditions (space suits B64G6/00)
B64G1/48 . . . for treatment of the atmosphere (B64G1/50 takes precedence; air conditioning in general F24F)
B64G1/50 . . . for temperature control (temperature control in general G05D23/00)
B64G1/50A . . . . [N: Radiator panels] [N0201]

B64G1/50B . . . . [N: Heat pipes] [N0201]
B64G1/52 . . Protection, safety or emergency devices; Survival aids (life-saving in general A62)
B64G1/54 . . . Protection against radiation (against radiation in general G21F)
B64G1/54A . . . . [N: protecting the crew in manned spacecraft] [N0201]
B64G1/54B . . . . [N: shielding electronic equipment] [N0201]
B64G1/56 . . . Protection against meteorites (meteorite detectors B64G1/68)
B64G1/58 . . . Thermal protection, e.g. heat shields (thermal insulation in general F16L59/00; chemical aspects, see the relevant classes)
B64G1/60 . . Crew or passenger accomodations
B64G1/62 . . Systems for re-entry into the earth`s atmosphere; Retarding or landing devices
B64G1/64 . . Systems for coupling or separating cosmonautic vehicles or parts thereof, e.g. docking arrangements
B64G1/64A . . . [N: Interstage or payload connectors] [N0201]
B64G1/64B . . . [N: Separators] [N0201]
B64G1/64C . . . [N: Docking or rendez-vous systems] [N0201]
B64G1/64D . . . [N: Tethers] [N0201]
B64G1/66 . . Arrangements or adaptations of apparatus or instruments, not otherwise provided for (instruments per se, see the relevant classes, e.g. aerials for use in satellites H01Q1/28)
B64G1/68 . . . of meteorite detectors

B64G3/00 **Observing or tracking cosmonautic vehicles** (radio or other waves systems for navigating or tracking G01S)

B64G4/00 **Tools specially adapted for use in space**

B64G5/00 **Ground equipment for vehicles, e.g. starting towers, fuelling arrangements** (B64G3/00 takes precedence)

B64G6/00 **Space suits**

B64G7/00 **Simulating cosmonautic conditions, e.g. for conditioning crews** (simulators for teaching or training purposes G09B9/00)

B64G9/00 **Cosmonautics not otherwise provided for**