

The invention relates to rocket-and-space engineering. A method of docking and separation of modules of carrier rockets and spacecraft consists in that the modules having flanges with conical surfaces are tightened by a splittable band and after launching of the module in a desired point of flight path, at the command from the control system repulsion forces of splittable band are created through a pulse of pyromechemisms and elasticity of the splittable band, while reducing the pulse of pyromechemisms, creating and directing additional forces of repulsion, retraction and withdrawal of the elements of splittable band in the direction of movement of the latter. A device for docking and separation of the modules of carrier rockets and spacecraft consists of two modules made in the form of shells of revolution, which include flanges with conical outer surfaces connected together by a splittable band formed by two semicircles equipped with a locking element with conical inner surface and a cylindrical groove, which diameters in free state are greater than the outside diameter of the outer surface of flanges, in the case at the ends of semirings, as one whole with them, fittings are made which are strapped together by two pyromechemisms set tangentially to the outer surface of shells of revolution, and compression nuts with spherical washers, and housings of pyromechemisms and compression nuts with spherical washers are fastened in the fittings. On one of the modules traps and mechanisms of retraction are fixed, containing a support bracket and a housing having a groove, in which a carriage is movably installed which is equipped with a threaded bushing, at one end of which a collapsible crasher is fixed, at the opposite end an annular collar of fastening the support coil of compression spring is made, the opposite coil of which by similar annular collar is fixed on the support, to which a flexible rope is fastened, another end of which is connected to the bracket attached on the shoulder of splittable band having on the inner side a biconical groove, the bicone angle of which is smaller than corresponding bicone angle of the flanges of docked modules, and in the area of ends of fittings the biconical groove has lead-in angles of inclination, while to one of the modules in places in installation of pyromechemisms set the mechanisms of withdrawal are fastened containing a bracket, a body and a threaded bushing, on one end of which a collapsible crasher is fixed, and at the opposite end an annular collar of fastening a support coil of compression springs is made, the opposite coil of which by similar annular flange is fixed on the support, to which a flexible rope is attached, the other end is connected to a rod equipped with a lock sandwiched between the fittings of semirings, with corresponding grooves.