

An integrated resonance muffler that includes the input and output branch pipes, gas duct placed between those, with chambers with different volumes with controlled value connected to it, in number equal to the sum of main and important for the specific source of noise higher harmonics, and the controllers of the volumes of the chambers are connected to the master of frequency of main and higher harmonics, for instance with crankshaft of the internal combustion engine, at that the resonance chambers have parameters that make it possible to control the self-resonant frequency of those within the limits of change of frequencies of respective harmonics, and are arranged as cylinders with pistons installed at given angles to the gas duct, for instance normally, and the drive of the pistons is kinematically, with control of gear ratio, connected to the frequency master, for instance with the crankshaft of the combustion engine. To increase effectiveness of the muffler of worked-out gases through provision of coincidence of the peak of effectiveness of noise suppression of the muffler with the peak of noise, the piston drive is arranged as an electromagnetic controller and a system for determination of the position of the rod of the piston.