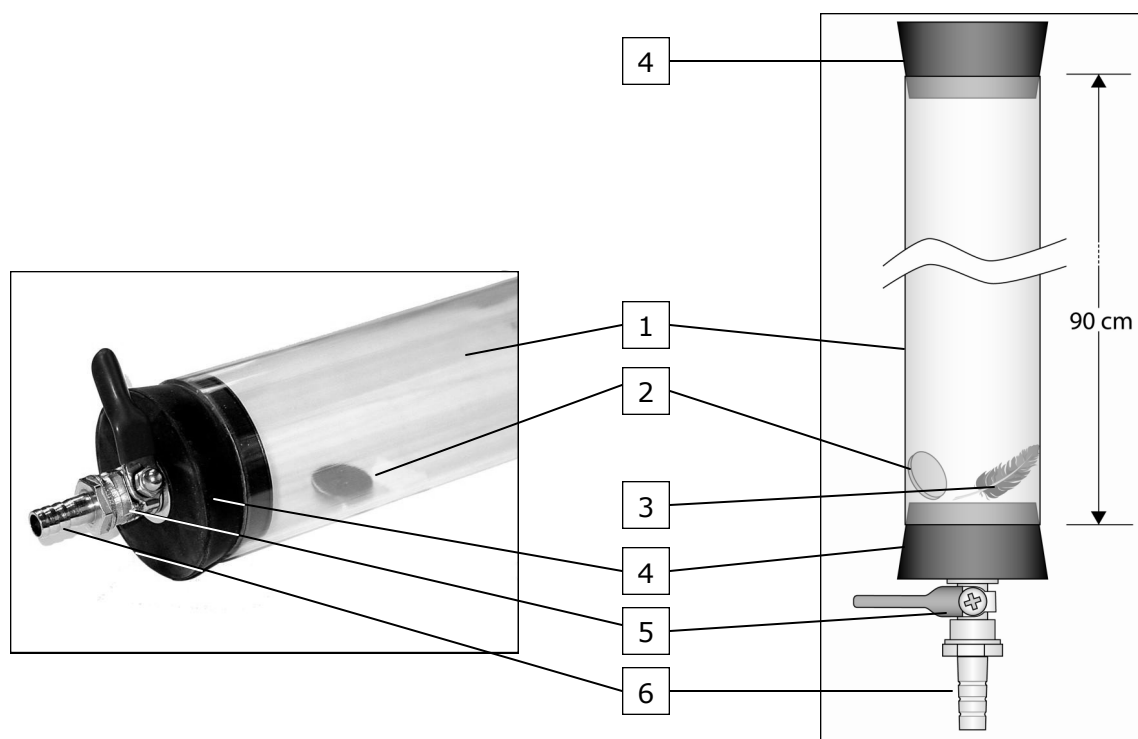


# OPERATING INSTRUCTIONS

## FREE FALL TUBE

FFT001



### DESCRIPTION

The Free Fall Tube demonstrates that in the absence of air resistance all objects, whether light or heavy, fall at the same rate.

The apparatus consists of a heavy wall plastic tube (1) that contains a metal disk (2) and a feather (3) and is closed at both ends by rubber stoppers (4). One of the rubber stoppers has a central hole that carries a stopcock (5) with a hose barb (6) for attaching a vacuum line. The plastic tube is 4.5 cm in diameter and 90 cm long.

The demonstration is carried out in two parts. First, the stopcock is turned to the open position with the hose barb open to the air, so that the tube is full of air. The tube is held vertically so that the metal disk and the feather lie on the lower stopper. The tube is then quickly inverted to bring the two internal objects to the top. The metal disk rapidly falls to the bottom, but the feather floats slowly down due to the resistance of the air. This is the familiar behavior of these two objects when dropped.