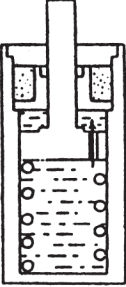
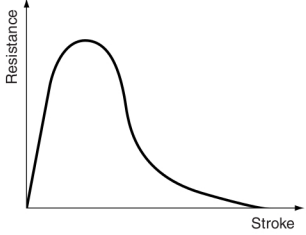
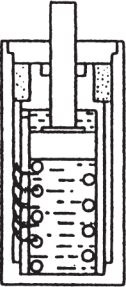
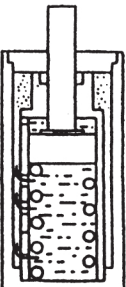
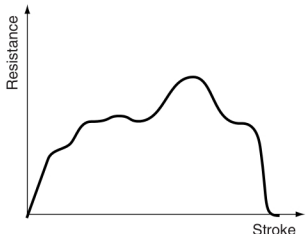
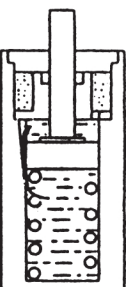




Structural Absorption Characteristics of Soft Absorbers

Soft absorbers are divided into two major categories based on how the orifice area changes, and they are further divided into four groups according to their absorption characteristics. Each of the absorption characteristics is described below.

Constant orifice	Single-orifice type		<p>There are three structures in a single-orifice type: a dashpot structure that utilizes the space between the piston and cylinder tube; a single tube structure in which orifices are provided in the piston; and a double tube type single orifice structure (adjustable). Their resistance characteristics are shown in the graph to the right. When the piston moves within the cylinder tube, the product of the pressure generated in the inner tube and the piston area becomes the resistance. Throughout the entire stroke, the orifice area is constant. The resistance spikes immediately after the impact, and as the stroke advances, the speed decreases and the resistance decreases with it.</p>	
	Stroke-dependent orifice	Multiple-orifice type		<p>It has a double structure comprising an outer tube and an inner tube. Similar to the single-orifice type, the resistance is the product of the pressure generated inside the inner tube when the piston is stroking and the piston area. The orifice area at the moment of impact is larger compared to the single type, and because it gradually decreases as the stroke advances, it can suppress the overall resistance. Theoretically, the resistance during a stroke can be maintained constant. Depending on the orifice design, the resistance characteristics can be modified according to the impact conditions.</p>
Multiple varying orifice type			<p>Although it has the same structure as the multiple-orifice type, resistance characteristics that are suitable for the intended use can be obtained rather than a constant damping force. FWM series is designed to absorb the kinetic energy in the first half of the stroke and to perform speed control during the last half of the stroke. Because of this, ideal energy absorption with respect to the air-cylinder thrust can be obtained.</p>	
Groove-orifice type			<p>Through a single tube system, the orifice groove provided on the inside wall of the tube changes as the stroke advances. Similar to the multiple type, it has a large orifice area at the beginning of the stroke. As the stroke advances, the orifice area becomes smaller, suppressing the resistance. In addition, because the orifice area can be changed on a continuous basis, the resistance fluctuates less compared to the multiple type. Because of this, optimal energy absorption can be realized.</p>	