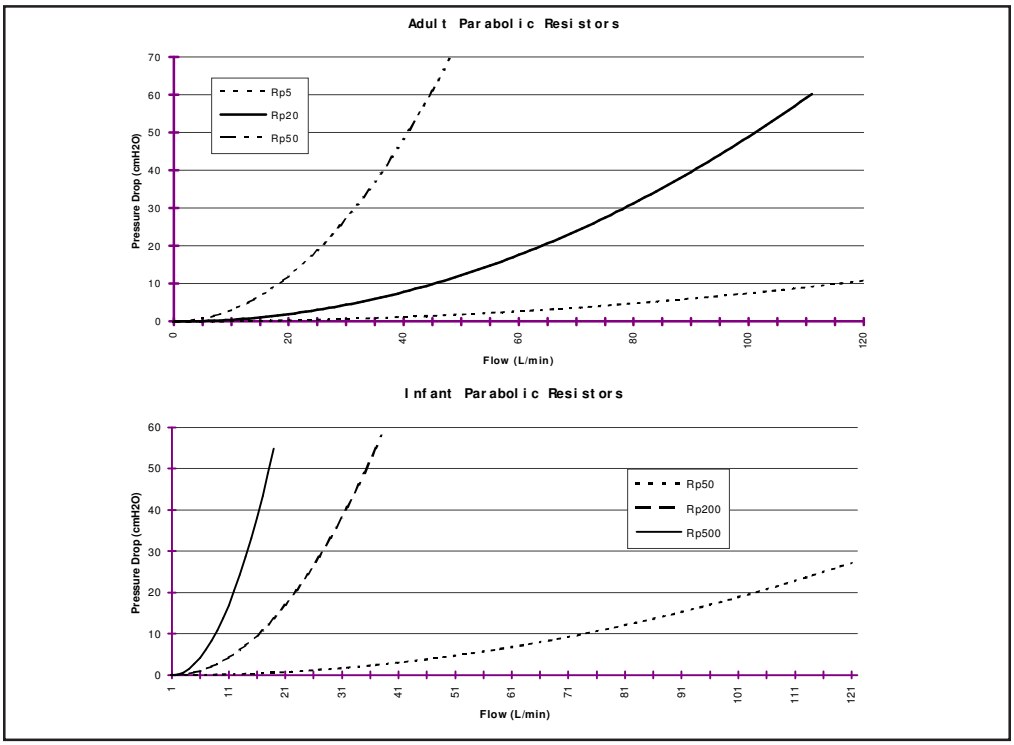
Pneuflo® Airway Resistors

The resistors supplied with the TTL are used in constructing the airway to create varying levels of airway resistance. Each resistor consists of a thin metal disk held in a metal housing. An accurately machined orifice in each disk determines its' resistance value. These resistors are each carefully calibrated to ensure that they perform within specified limits. Typically, one upper and two lower airway resistors are used when ventilating both lungs, and a single resistor is used when working with a single lung.

The Pneuflo resistors exhibit parabolic characteristics, in regards to pressure change as a function of flow. This nonlinear, parabolic characteristic is similar to that seen in standard endotracheal tubes. The specific pressure-flow relationships of the Rp5, Rp20, Rp50, Rp200, and Rp500 resistors are shown below.

Parabolic Resistor	Pressure drop (cmH_2O±5%) At Calibration Flow Rates							Corresponding Linear Resistor
Rp500	26.7	50.2	___	___	___	___	___	R500
Rp200	6.1	___	24.4	___	___	___	___	R200
Rp50	___	___	___	6.8	27.2	___	___	R50
Rp20	___	___	___	___	4.4	17.6	___	R20
Rp5	___	___	___	___	___	2.7	10.8	R5
	3.0	4.5	6.0	15.0	30.0	60.0	120.0	
	Flow Rate ($L_{(NTPD)}$/Min±1%)							



Most experts believe that the bronchi and bronchioles exhibit pressure-flow characteristics which are nearly linear. Linear resistors are not provided with the TTL because of their fragile nature and prohibitive manufacturing cost.