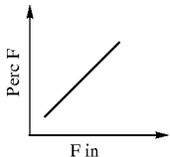
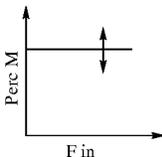
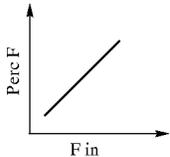
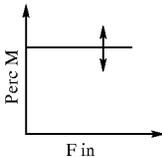
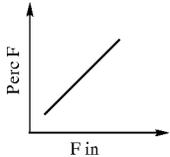
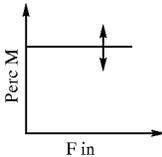


[0067]

TABLE 9

Desired perceived frequency and perceived magnitude for various frequency ranges for smooth, strong and sharp controllers				
Controller Range	Frequency Range	Desired Perceived Frequency	Desired Perceived Magnitude	Comments
Low	<6.6 Hz Smooth <10 Hz Strong, Sharp			Controller input frequency matches, actual and perceived output frequency. Perceived magnitude is variable with PWM
Transition	6.6–10 Hz Smooth 10–16 Hz Strong, Sharp			Controller input frequency creates actual frequency with envelope. (If continuous spinning, then input frequency does not match output frequency.) Average energy delivered is the same.
High	10–100 Hz Smooth 16–100 Hz, Strong Sharp			Controller input frequency creates continuous spinning where that does not match output frequency. Average energy delivered is increasing.

[0068]

TABLE 10

Actual acceleration frequency, perceived frequency and perceived magnitude for various frequency ranges for smooth, strong and sharp controllers				
Controller Range	Controller Input Frequency Range	Actual Acceleration frequency	Perceived frequency	Perceived Magnitude
Low	<6.6 Hz Smooth <10 Hz Strong, Sharp	Controller input frequency matches, actual.	Controller input frequency matches perceived.	Perceived magnitude is variable with PWM
Transition	6.6–10 Hz Smooth 10–16 Hz Strong, Sharp	Controller input frequency matches envelope frequency.	User perceives envelope frequency	Perceived magnitude is variable with PWM.
High	10–100 Hz Smooth 16–100 Hz, Strong Sharp	Controller input frequency does NOT match actual frequency.	Controller input frequency does NOT match perceived frequency.	As controller input frequency is increased, magnitude is perceived to increase.