

THEORY OF MACHINES



TEC EQUIPMENT

The study of the relative motion between parts of a machine and the study of the forces which act on those parts.

KINEMATICS – The relative motion between the parts.

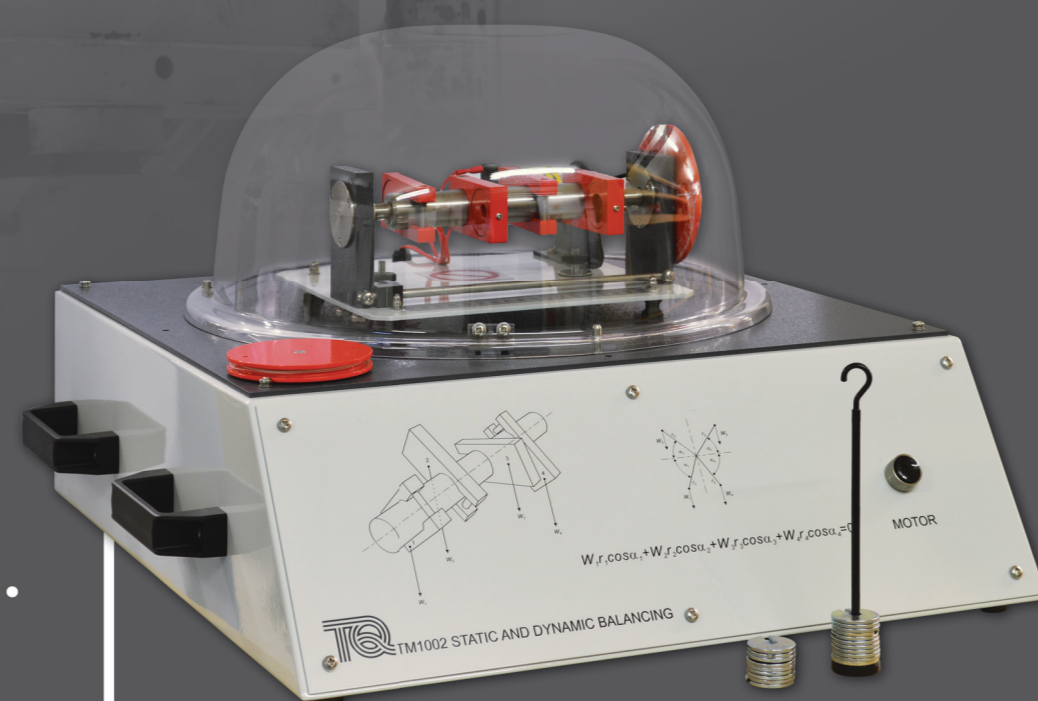
DYNAMICS – The forces which act on the parts.

STATICS – The forces which act on the various parts that are assumed to be without mass.

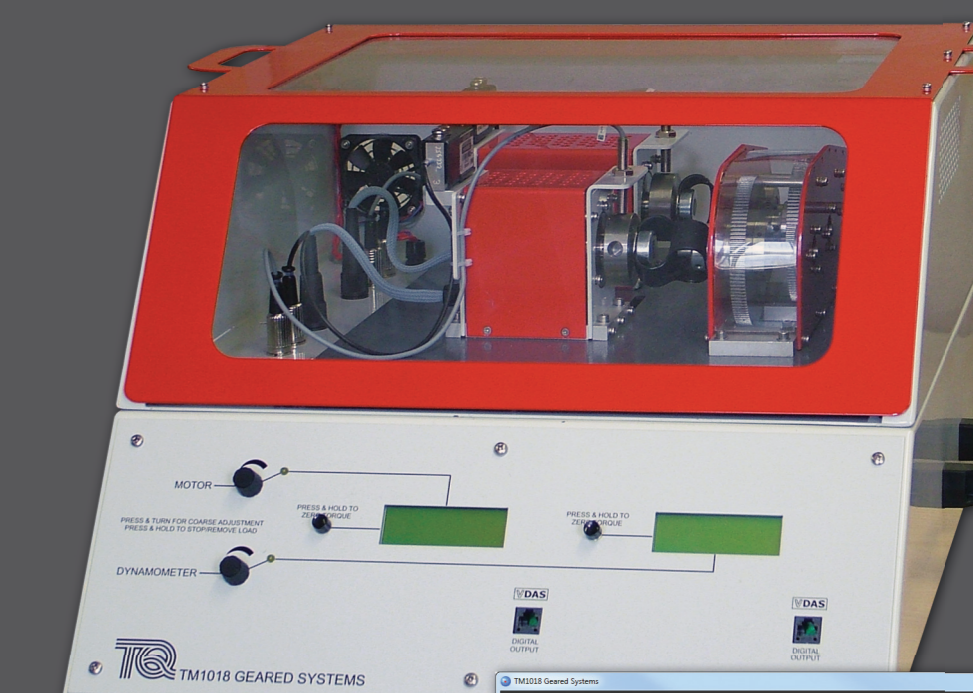
KINETICS – The inertia forces arising from the combined effect of the mass and motion of the parts.

A **dynamically** balanced system is **automatically** statically balanced.

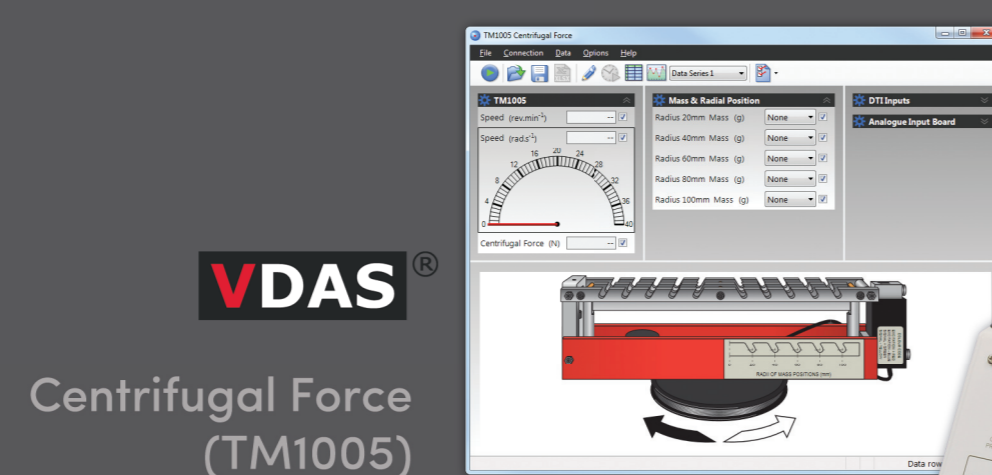
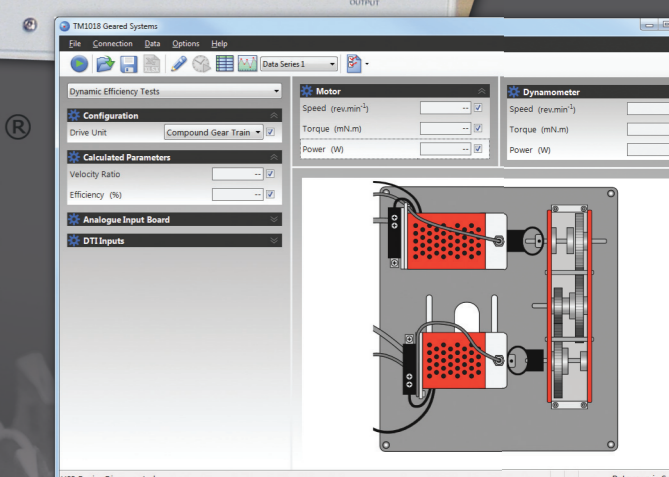
A **statically** balanced shaft is **not always** dynamically balanced.



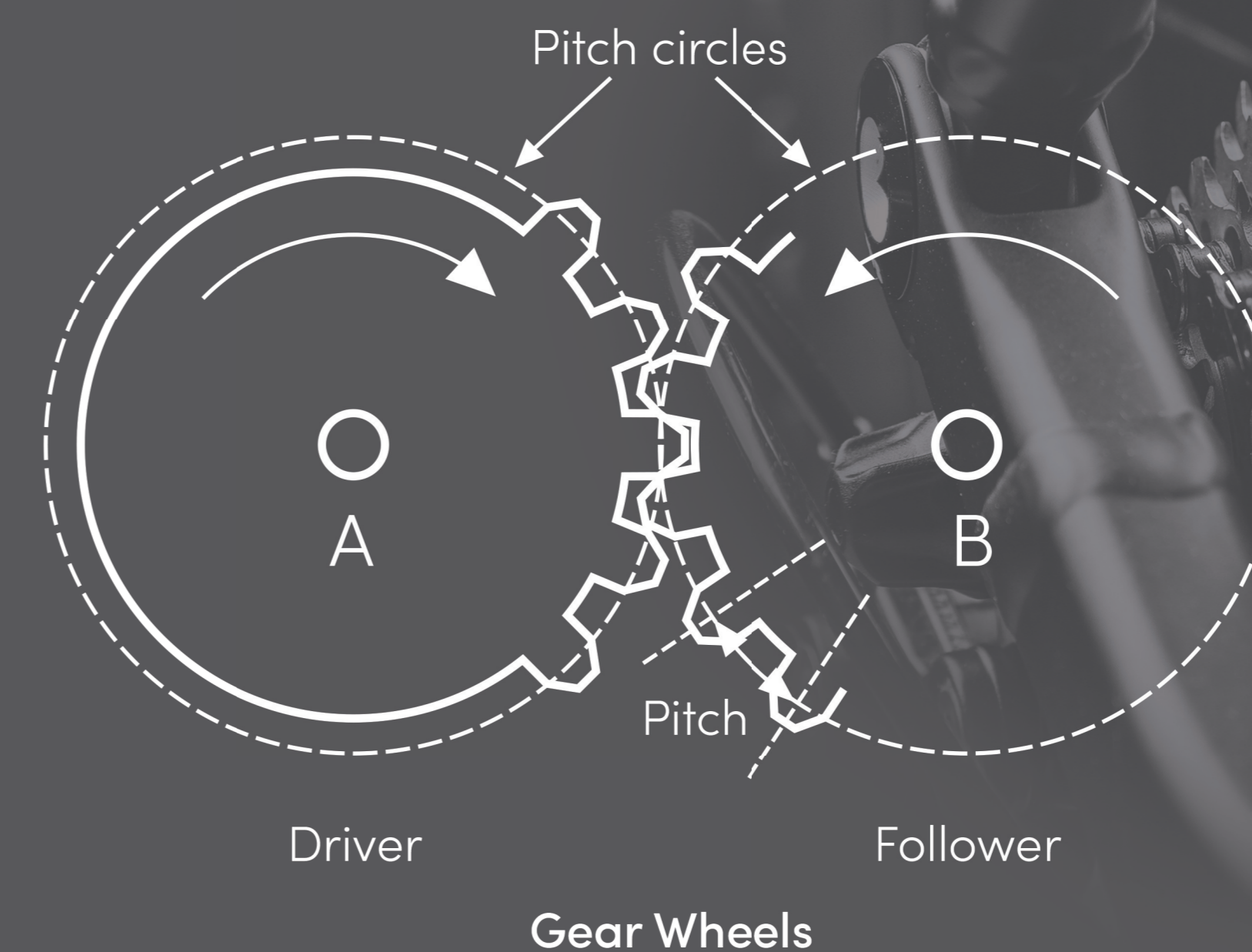
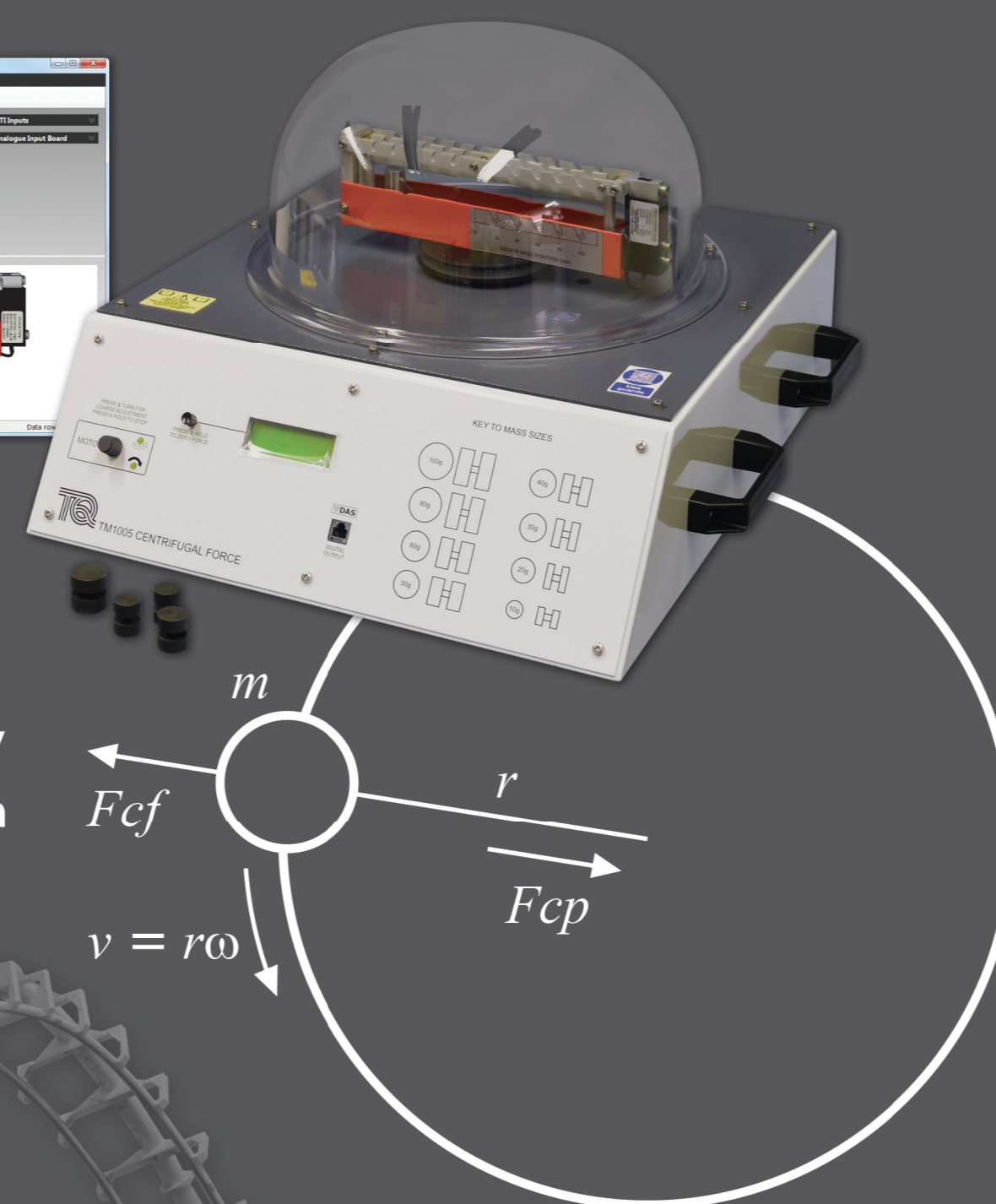
Static and Dynamic Balancing (TM1002)



VDAS
Geared Systems (TM1018)



VDAS
Centrifugal Force (TM1005)



$$\left[\frac{\text{Speed of Driver A}}{\text{Speed of Follower B}} = \frac{\text{Circumference of Follower}}{\text{Circumference of Driver}} = \frac{\text{Number of Teeth on Follower}}{\text{Number of Teeth on Driver}} \right]$$

