

Perfect Balance

Perfectly Balanced Pan and Tilt Heads

Why is balance important?

Imagine the scenario: a person holds a weight at shoulder height with their arm bent and close to their body; the further they extend their arm from their elbow, the harder it becomes to support the weight.

Why? The weight does not become heavier but the amount of effort (torque) required to support the weight increases as the weight is moved further from the elbow (pivot point).

This explanation is also true for a camera that is tilted. The further it is tilted from the horizontal, the more torque is required to prevent the camera falling.

This torque is produced by the pan and tilt head's counterbalance system. If it does not match the camera weight and angle exactly the camera will either fall away or return to centre.

Why is Perfect Balance the best solution?

Most manufacturers offer counterbalance systems that cannot produce the exact amount of torque required. Figure 1 shows that the amount of torque required as a result of tilting the camera has a precise but non-linear pattern. This means that the out of balance effect is most prominent on heads manufactured with linear counterbalance systems.

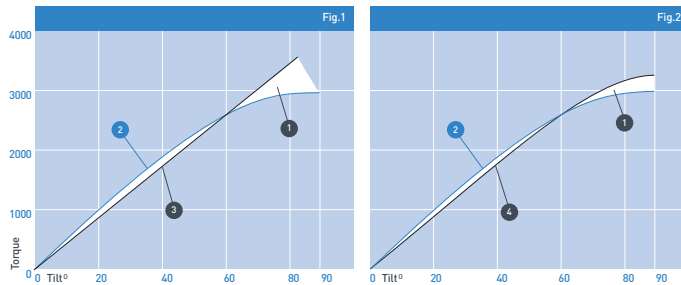
Even where a manufacturer has included continuously variable counterbalance, if it is only approximate the camera will not be completely controlled throughout the tilt range of the head (see Fig.2).

The Vinten Perfect Balance system is easy to set and offers infinite adjustment, providing precisely the right amount of torque necessary to counterbalance the camera throughout the head's tilt range.

Minimal effort is required to move the camera; the camera operator can even go hands-free. Vinten's infinite adjustment allows exactly the right amount of torque to be generated at whatever angle the camera is positioned. Compensating for the effect of gravity, Vinten's Perfect Balance makes the camera appear weightless in the hands of the camera operator. And, as it balances perfectly the drag control can be used for what it is intended to do: shot framing and control, rather than helping to balance the camera.

This means:

- Consistent movement and easy positioning of the camera at any angle
- Perfect shots captured with minimal effort
- Physical strain eliminated; easy to work longer



Key:
 1. out of balance zone
 2. camera requirement & Vinten Perfect Balance
 3. competitor 1 linear counterbalance
 4. competitor 2 continuously variable approximate balance

How to achieve 180° Perfect Balance in 4 simple steps:

- 1 Slide the camera onto the head using the Vinten slide plate and position it so that the camera's centre of gravity sits over the centre of the head.
- 2 Reduce the tilt friction to its minimum.
- 3 Tilt the camera both forward and back; if the camera is correctly positioned it will either fall away from, or return to the horizontal at an even rate either side of the head's top dead centre.
- 4 If the camera falls away from the centre position, turn the Perfect Balance knob clockwise. If the camera springs back towards the centre, turn the Perfect Balance knob anticlockwise.

Perfect Balance is achieved when the camera remains stationary in any tilted position.



Perfectly Balanced Pedestals

Perfect Balance is an equally important part of Vinten pedestals.

Why is balance important?

In this context balance literally means the support offered by the pedestal to the camera/lens configuration. Without balance the camera would fall to the pedestal's lowest point or rise to the pedestal's highest point making it impossible to film.

Why is Perfect Balance the best solution?

Non-perfect balance systems require variable effort throughout the stroke of the column and are therefore harder to use; the camera will have a tendency to fall or rise at certain points, which, depending on its severity, can make smooth movement and steady framing virtually impossible.

Perfect Balance ensures that the pedestal column system consistently offers the exact support required for the camera operator to raise and lower the camera with minimal effort.

The Vision Ped Plus, Pro-Ped, Osprey, Quartz and Quattro ranges utilise precisely engineered and patented balance systems, providing smooth and controllable camera balance. Vinten's Perfect Balance technology ensures that the pedestals can be moved effortlessly and once positioned will stay put - whatever the weight of the camera configuration.

This means:

- Smooth, low effort elevation movement
- No distraction from filming caused by unwanted vertical movement
- Physical strain eliminated; easy to work longer



Vinten's **unique** infinitely adjustable **Perfect Balance** makes the camera appear weightless in the hands of the camera operator.

Vinten pedestals are used all over the world because **Perfect Balance** enables the operator to concentrate on the shot and not on the pedestal.