

3-Axis Head

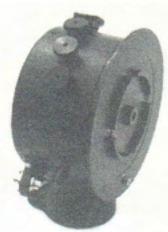


Weaver/Steadman 3-Axis Head

The W/S 3-Axis Head combines the 2-Axis Head with the Third-Axis Module. In this configuration, the Third-Axis Module controls **tilt** and the original Tilt Module facilitates Camera **roll**, enabling cinematographers to pan, tilt and roll the Camera close to the lens axis. The Camera Package can be rolled while suspended from a Jib Arm, making any move imaginable — from skimming along the ground on a ubangi/dolly to flying and rolling more than 360° (using a video assist monitor to view the shot).

W/S 3-Axis Head parts list

Pan Module



Tilt Module



Third-Axis Module



90° Bracket (2)



Dutch Angle Bracket



Drop Bracket with Lead Screw Assembly and Locking Lever



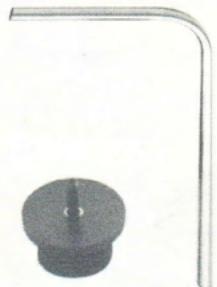
Allen Wrench



Pan Handle



Third-Axis Handle



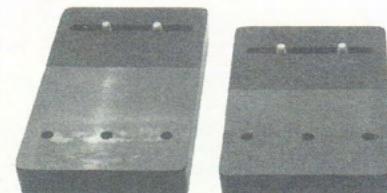
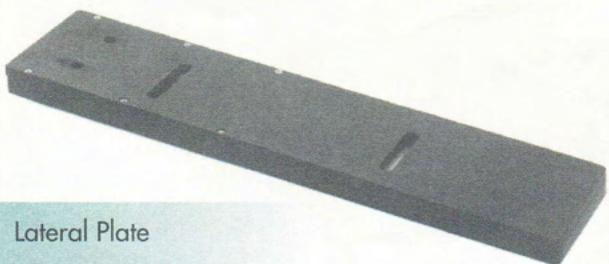
Tie-Down Assembly



Safety Collar with Fast Pin (2)

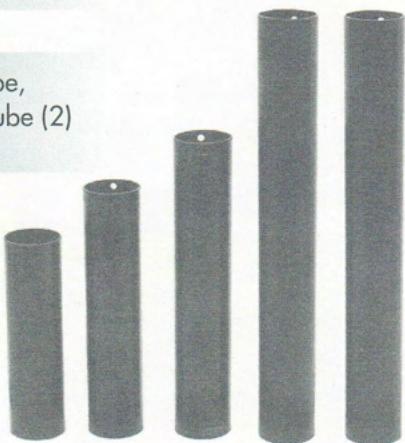


Lateral Plate



Panavision / Arri / Video Shoes

9" Tube, 11" Tube, 13" Tube, 18" Tube (2)



W/S 3-Axis Head assembly

The following directions are for a suspended position — a unique feature of the W/S 3-Axis Head; it can also be assembled in an upright position.

1 **Install the Pan Module on the support equipment;** make sure it is securely attached to the Mitchell mount.

2 **Install a 13" Tube in the Pan Module's socket.** Make sure the Tube is fully inserted; securely tighten the socket's Allen Screw.

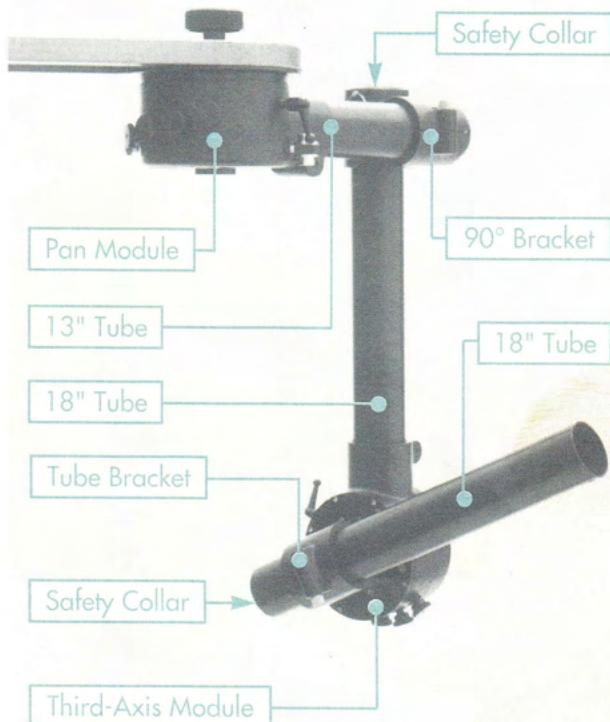
3 **Install the 90° Bracket on the 13" Tube.** Vertically align the Bracket's socket, so it is parallel to the pan axis; securely tighten the appropriate Allen Screw.

4 **Install a Safety Collar on both 18" Tubes.** Mount Collars on the ends of the Tubes with 1/4" holes; align the holes and insert the Fast Pin all the way through the Assembly.

5 **Install one of the 18" Tubes through the 90° Bracket,** so its Safety Collar holes rest next to the Bracket.

6 **Install the Third-Axis Module (now controlling tilt) on the 18" Tube.** This Module has a Tube Bracket attached to its rotating face. When installed, the face should point back toward the Assembly, under the Pan Module. Make sure the Tube is fully inserted into the Third-Axis Module's socket; securely tighten the Allen Screw.

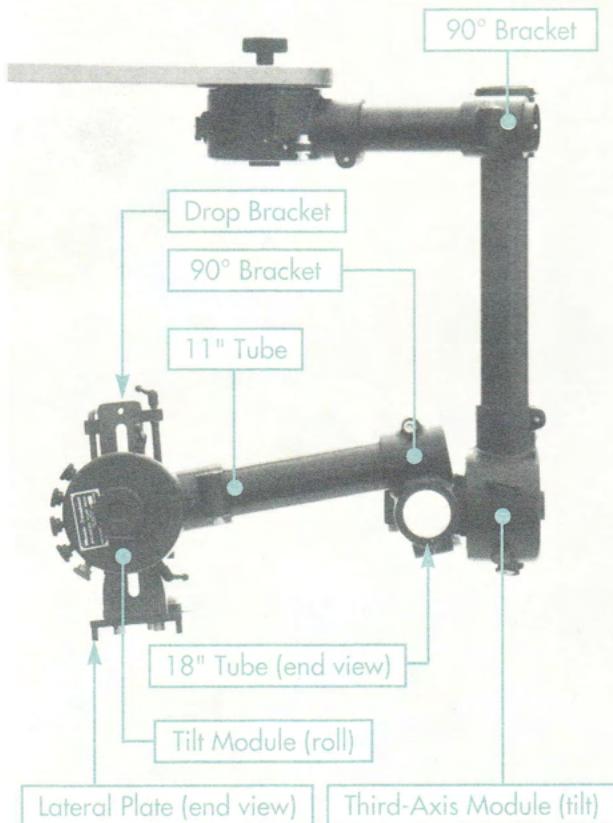
7 **Install the second 18" Tube through the Third-Axis Module's Tube Bracket,** so its Safety Collar rests near the Bracket. The Tube should be horizontally aligned, with most of it extending out toward the back of the Assembly (away from the area under the Pan Module); securely tighten the Allen Screw.



8 Install a second 90° Bracket on this 18" Tube, so the Bracket's empty socket is above the Tube, horizontally aligned; securely tighten the Allen Screw.

9 Install an 11" Tube in the 90° Bracket. This cross-Tube should be horizontal and extend to the right when viewed from under the Pan Module; securely tighten the Allen Screw.

10 Install the Tilt Module on the 11" Tube. Make sure the Module is fully inserted on the Tube; securely tighten the Allen Screw.



11 Install the Drop Bracket on the Tilt Module with its T-nut, washer and Locking Lever. This Module will now be behind the Camera providing the roll axis.

12 Install the Lateral Plate on the Drop Bracket; securely tighten the (2) Allen Screws, using the washers provided.

13 Mount the Camera on the Lateral Plate, so the lens points away from the Module with the Drop Bracket. Make sure all of the (6) Brakes are on securely until balance adjustments are made.



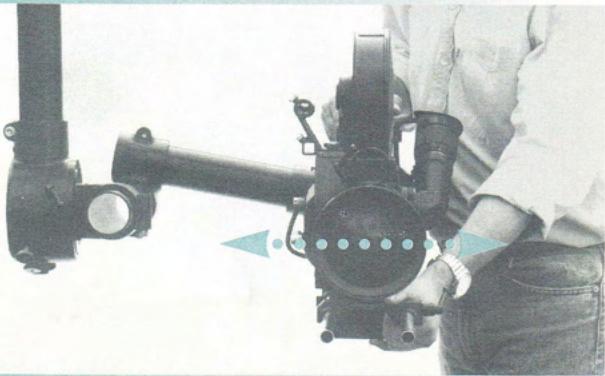
Note

To mount an Arri with an Arri dovetail on the Lateral Plate, remove the small Allen Screw in the front of the dovetail and slide the Camera on from the front (wrong) end; replace the Allen Screw.

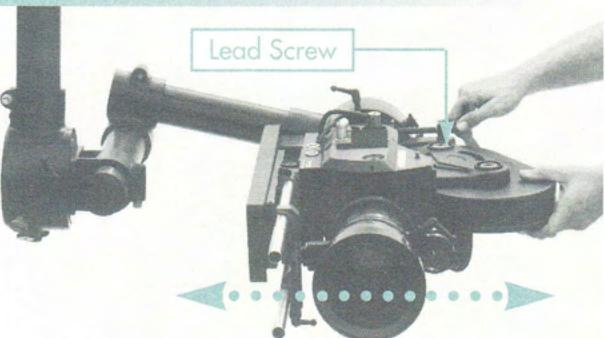
Balancing the W/S 3-Axis Head

There are (4) steps for balancing the 3-Axis Head.

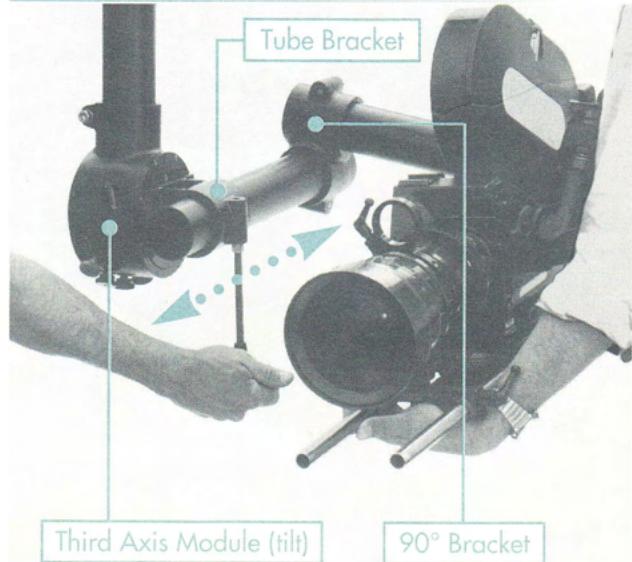
- 1** **Adjust the Third-Axis Module's lateral balance.** Release the (2) Brakes on the Module located directly behind the Camera, and slide the Camera from side to side until its balance point on the Lateral Plate is found. When in balance, the Camera will stay where positioned with the Brakes off; securely tighten the (2) Mounting Screws that attach the Camera.



- 2** **Adjust the Third-Axis Module's vertical balance.** Roll the Camera over on its side; if it rolls to the right or left with the Brakes released, additional balancing is required. While the Camera is on its side, support its weight with one hand and loosen the Drop Bracket's Locking Lever 1/2-turn. Adjust the Lead Screw until the Camera remains in balance when released. Securely tighten the Locking Lever; roll the Camera back to the upright position.

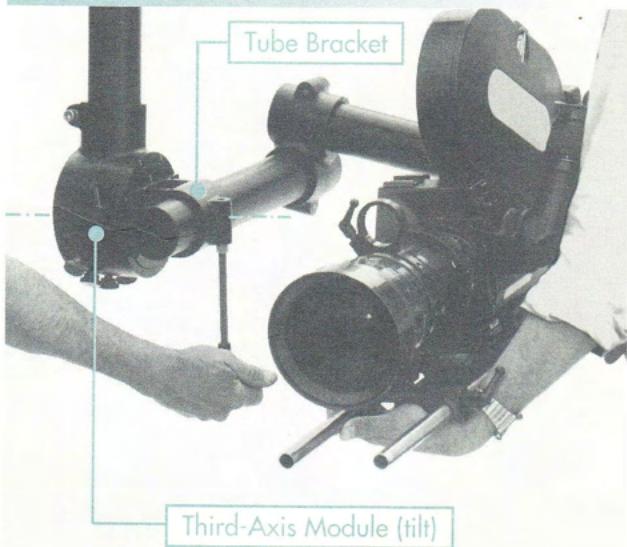


- 3** **Adjust the Tilt Module's lateral balance.** An assistant must support the Camera while the Tube Bracket on the face of the Third-Axis Module controlling tilt is loosened. Slide the 18" Tube horizontally through the Bracket until the Camera is in balance; securely tighten the Tube Bracket's Allen Screw. An additional adjustment may be made by sliding the 90° Bracket located behind the Camera on the horizontal 18" Tube, then tightening the Allen Screw. Again, an assistant must support the Camera. With some Camera Packages, fine-tuning this balance may be possible by adjusting the Camera's own dovetail base.



4 Adjust the Tilt Module's vertical balance.

While an assistant supports the Camera, loosen the Tube Bracket on the Third-Axis Module. Raise or lower the Camera Package, rotating the 18" Tube within the Bracket to align the Camera Package's center of gravity with the axis of the Third-Axis Module's axle. Make sure the Tube does not move laterally as it rotates, so Step 3's adjustment is maintained. When in balance, securely tighten the Tube Bracket's Allen Screw.



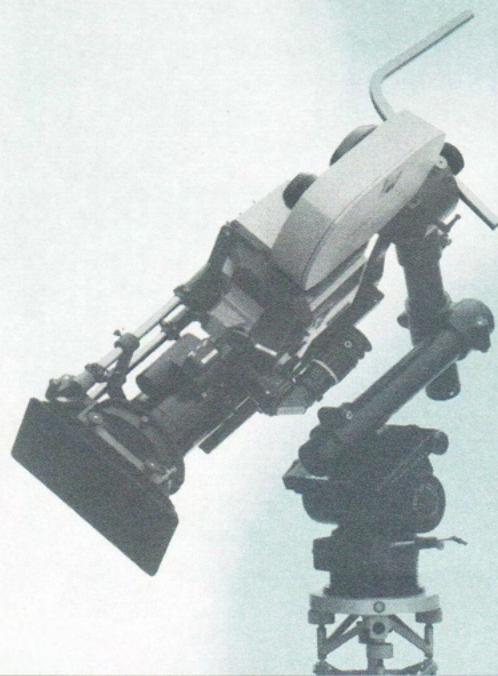
Note

1. The center of the Camera Package's weight should be aligned with the axis of the Third-Axis Module's axle; some trial and error may be necessary. Once adjusted, the Tube's length relative to the Tube Bracket may be noted for future setups.

2. The Assembly pictured in this manual is comprised of an ARRI 35-III with a 400' magazine and a zoom lens. Other Camera Package's may require different Tube lengths.

3. Remember, the Assembly will be more rigid and responsive when the Camera Package's weight is kept as light as possible.

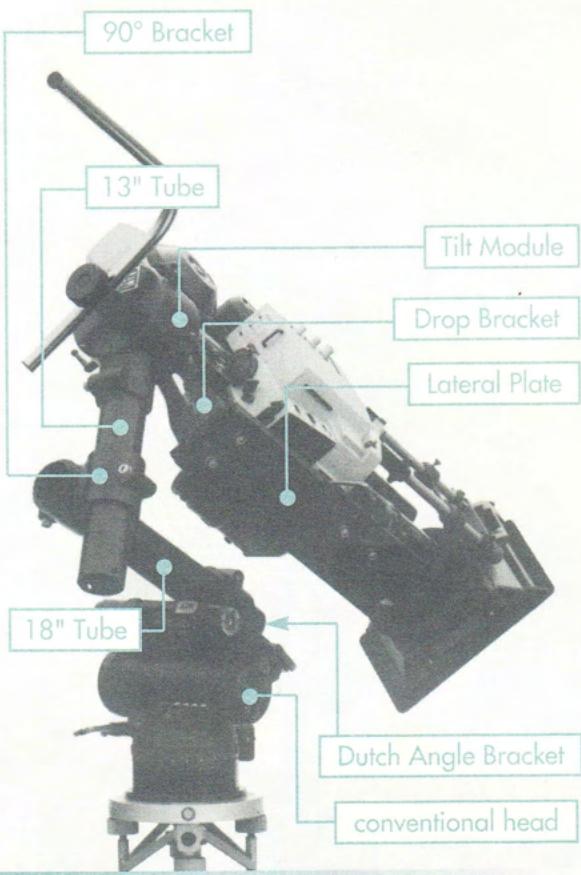
Dutch Angle Head



Weaver/Steadman Dutch Angle Head

This is a simple, fast Assembly for dutch angle shots in an upright position only. In this configuration, a conventional head (Sachtler 80, O'Connor or gear head) is mounted on a dolly or heavy-duty tripod to provide pan and tilt; the W/S Tilt Module is added to provide roll. The roll axis is easily lined up close to the Camera lens, eliminating framing problems generated when the Camera moves in an arc from side to side. Now, all dutch angles are possible.

Weaver/Steadman Dutch Angle with conventional head assembly



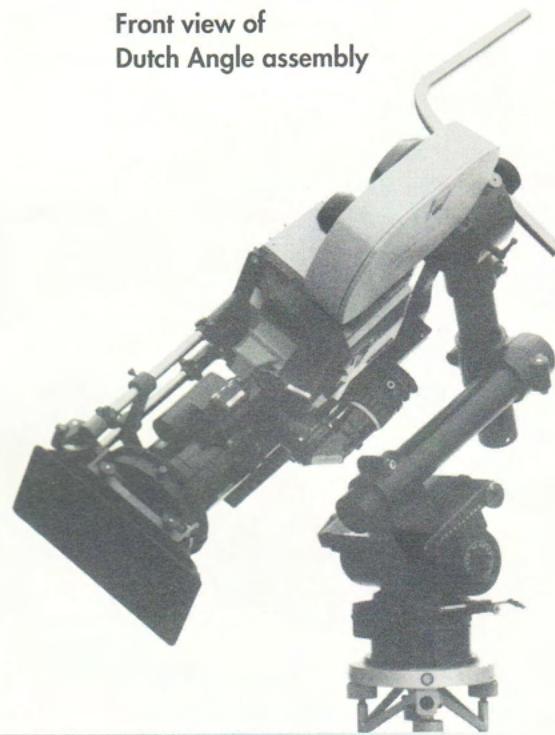
- 1** Mount a conventional head on a dolly or tripod.
- 2** Mount the Dutch Angle Bracket on the conventional head and align the Tube socket with the direction of the lens.
- 3** Install an 18" Tube in the Dutch Angle Bracket so the Tube extends out the back, away from the lens; securely tighten the Allen Screw.
- 4** Install the 90° Bracket on the end of the 18" Tube. Vertically align the empty socket; securely tighten the Allen Screw.

5 Install an 11" or 13" Tube vertically in the 90° Bracket; securely tighten the Allen Screw. Use the 13" Tube for magazine clearance when rolling the Camera Package 360°.

6 Install the Tilt Module with the Drop Bracket facing the direction of the lens; tighten the Allen Screw. Adjust the 90° Bracket where it attaches to the bottom 18" Tube, so the Camera can be moved to a position directly above the pan axis.

7 Install the Lateral Plate on the Drop Bracket; securely tighten the (2) Allen Screws, using the washers provided.

Front view of
Dutch Angle assembly



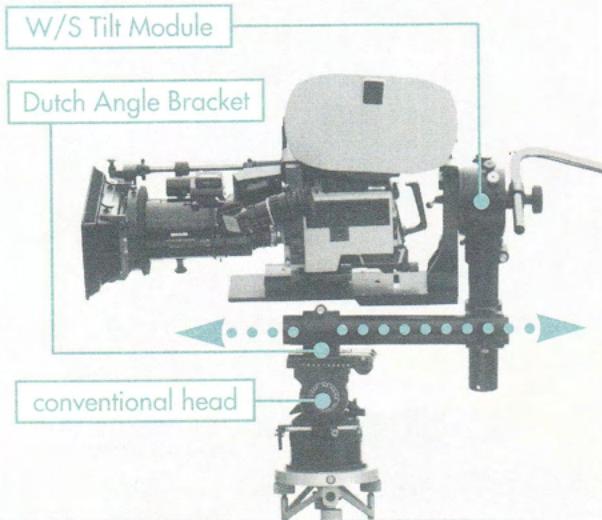
- 8** Mount the Camera on the Lateral Plate. The Camera Package should be positioned as close as possible to the Drop Bracket.

Note

To mount an Arri with an Arri dovetail on the Lateral Plate, remove the small Allen Screw in the front of the dovetail and slide the Camera on from the front (wrong) end; replace the Allen Screw.

Camera balance adjustments

There are (3) steps required to balance the Camera.



1 Adjust the conventional head's tilt balance.

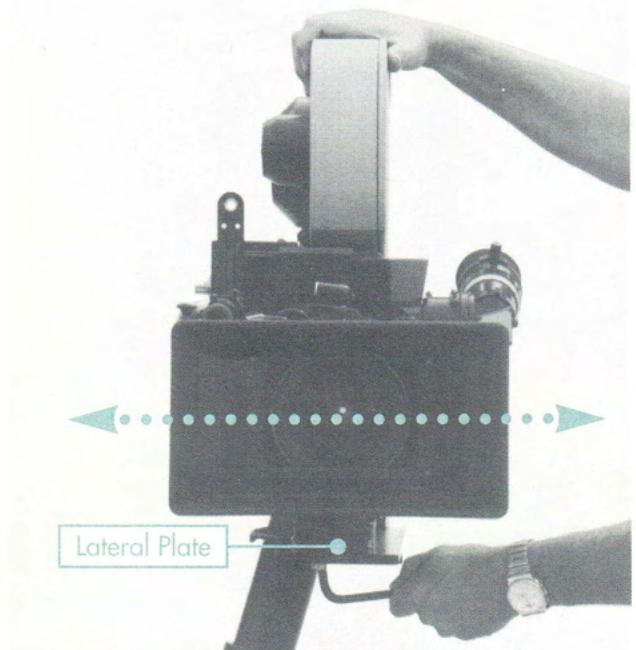
An assistant **must** support the Camera Package as the Dutch Angle Bracket's Tube socket is loosened. Then, slide the 18" Tube to adjust the whole Camera/Roll Assembly so the Camera is positioned slightly forward of the pan axis; securely tighten the Tube socket.

Next, release all drag and spring tension on the conventional head so any balance adjustment required will be more apparent.

Finally, loosen the conventional head's tilt brake and adjust for optimum balance (Sachtler and O'Connor have lead screw adjusters for fine-tuning balance); re-tighten the tilt brake.

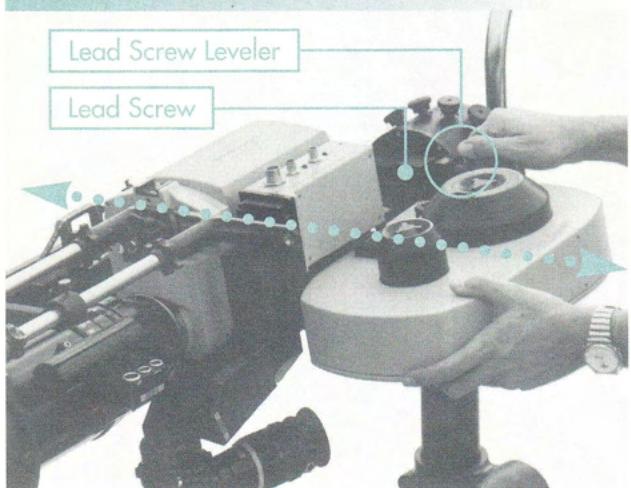
2 Adjust the W/S Module's lateral balance.

Unscrew all the Module's Knurled Spring Plunger Knobs and release the Brakes. Then, loosen the Camera's Mounting Screws under the Lateral Plate and slide the Camera from side to side until it is in balance; securely tighten the Mounting Screws.



3 Adjust the W/S Module's vertical balance.

With Brakes off, roll the Camera over on its side. If the Camera rolls to the right or left, loosen the Drop Bracket's Locking Lever 1/2-turn and adjust the Lead Screw until the Camera remains in balance when released; securely tighten the Locking Lever.



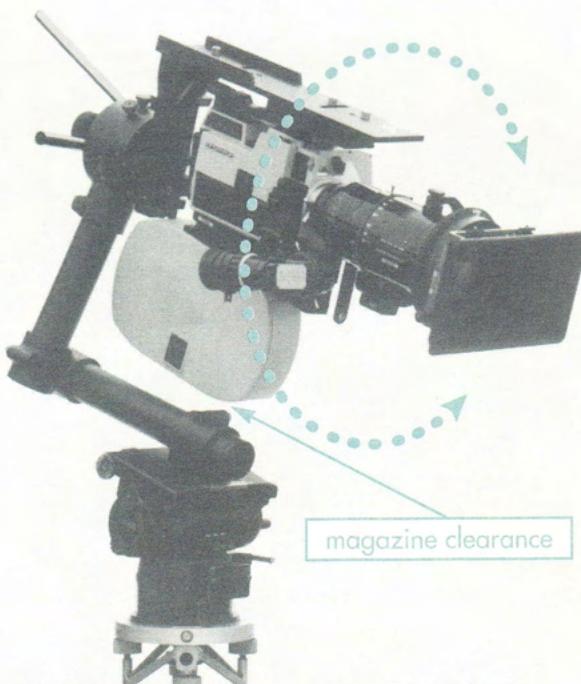
Fine-tuning balance adjustments

1

Fine-tune lateral balance after rolling the Camera back to the upright position. Now, the Camera will come to rest at any angle with drag disengaged.

2

Adjust the vertical Tube for minimum clearance between the Lateral Plate and Dutch Angle Bracket to keep the Camera Package as low as possible. The Camera Package is high, so some spring tension must be used on the conventional head. For 360° rolls, adjust the vertical Tube with the Camera rolled upside down so the magazine clears the Dutch Angle Bracket.



3

Adjust the conventional head's counter-balancing springs, so the Camera will balance in any position between horizontal and an extreme tilt. Be sure to make this adjustment with all drag disengaged.

4

Adjust drag. Adjust drag on the conventional head for the desired response. Then, adjust drag on the W/S Module until it approximates that of the conventional head.

Note

1. Lateral balancing may shift the Camera lens slightly off the exact axis of roll because the Camera body is not in balance with its lens axis. This offset will not affect most shots.

2. The lightest possible Camera Package is recommended for easy setup and smooth operation.