



#1003 DS60 Fluid Head (150mm Bow)  
#1004 DS60 Fluid Head (Flat Base)

## OPERATOR'S MANUAL

# DS-60 FLUID HEAD

## ACCESSORIES & COMPONENTS

Description	Cat#
Camera Plate Assembly (EURO)	#1060
3/8" w Camera Screw	P0037
Handle Clamp Assembly	P3810
Telescopic Pan Handle	#690
Eyepiece Leveller Adaptor	#383
Ø150 M12 Clamp Nut Assembly	P5114
9V Battery	P5901

## WARRANTY

3 year parts and labour warranty. Please refer to warranty card for complete details.



## SERVICE, SALES & SUPPORT

Miller Authorised Service Agents must carry out all service and repair work. Failure to observe this requirement may void warranty. It is advisable to notify Miller or a Miller Authorised Service Agent if a change of performance is observed as a result of dropping or rough usage. For information regarding sales and service of Miller products, or for your nearest Miller representative please contact us via [www.millertipods.com](http://www.millertipods.com) or at the following:

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## FEATURES AND CONTROLS

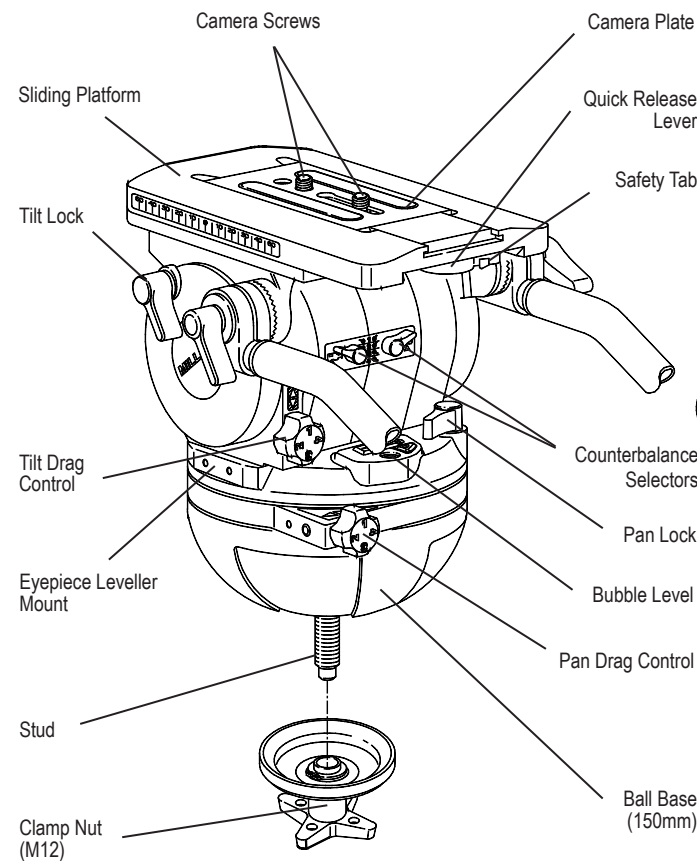


Fig 1.

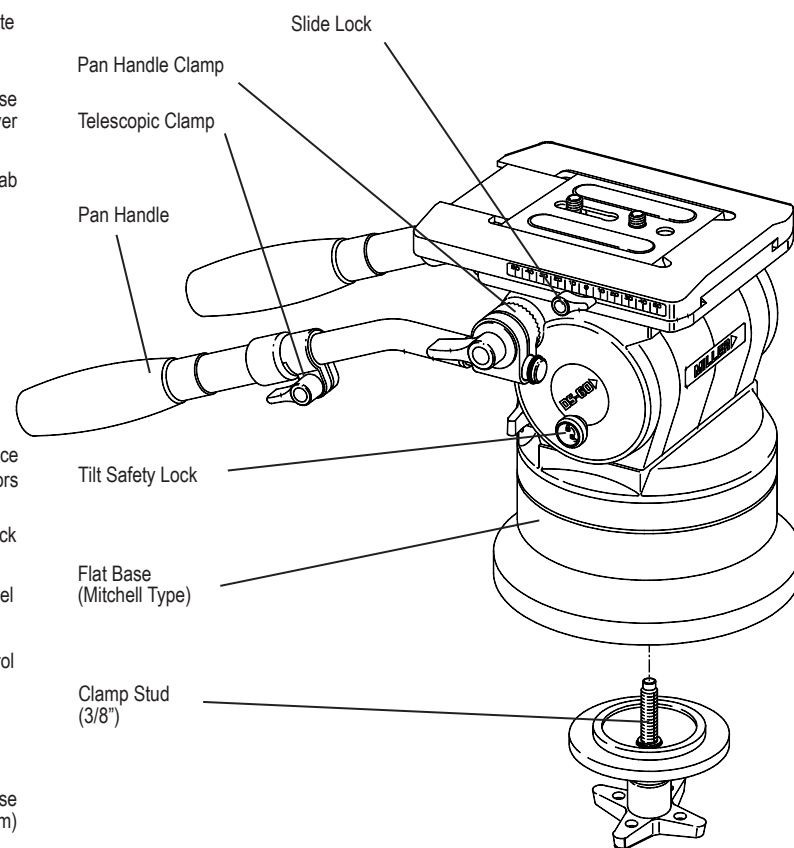


Fig 2.

## INTRODUCTION

The Miller DS60 fluid head offers robust and versatile 150mm ball levelling or Flat Base support in a portable system. The DS60 features 4-position counterbalance plus 4-position selectable pan/tilt drag to support payloads from 15-30kg (30-66lb). With rear mounted main controls, a quick-release Euro camera plate and tilt safety lock, the DS60 is designed for operator ease. The 'true' fluid drag action complements these features to deliver seamless transitions under all studio and location conditions.

## SAFETY INSTRUCTIONS

- Before operation please read the operating instructions.
- This Fluid Head has been designed to be operated by qualified camera operators.
- Ensure Tripod is set-up for maximum stability and is stable.
- Hold camera securely during all levelling, balancing or removing operations.
- Ensure sliding platform is locked before tilting fluid head from horizontal • Lock fluid head in horizontal position using the tilt safety lock before fitting or removing payload, or whenever operator leaves the system.
- Do not adjust the counterbalance or drag settings without securing (holding) the pan handle.
- Do not release the TILT LOCK without holding the PAN HANDLE to prevent accidental or sudden movement.
- Do not release the clamp nut without holding either the head or the attached camera.
- Do not exceed the maximum total payload of 30kg. (66lb)
- The operator is responsible for the safe operation of this piece of equipment.

## TECHNICAL DATA

<b>Weight</b>	6.1kg (13lb)
<b>Height</b>	210mm (8.2")
<b>Width</b>	260mm (10.2")
<b>Depth</b>	200mm (7.8")
<b>Max Payload Capacity</b>	30kg (66lb) (see CB Graph)
<b>Mounting</b>	150mm ball levelling (1003), or Flat Base (1004)
<b>Pan Drag</b>	4-position selectable fluid drag
<b>Pan Range</b>	360°
<b>Pan Lock</b>	Positive lock calliper brake
<b>Tilt Drag</b>	4-position selectable fluid drag
<b>Tilt Range</b>	+75°/-75°
<b>Tilt Lock</b>	Positive lock calliper brake
<b>Safety Lock</b>	Steel pin tilt brake calliper lock
<b>Counterbalance System</b>	4-position
<b>Counterbalance Range</b>	15-30kg (30-66lb) (see CB graph)
<b>Camera Plate</b>	QR Euro Plate - 80mmW x 120mmL
<b>Camera Platform</b>	100mm (+50/-50mm) Sliding range

## OPERATING INSTRUCTIONS

The operating instructions for the DS60 Fluid Head are described below. Please read and understand these instructions before using this equipment.

### 1. INSTALL AND LEVEL THE HEAD

1. Unscrew the CLAMP NUT from its threaded stud/hole. (see Fig. 3)
2. Place the head in your tripod and re-fit the CLAMP NUT. Do not tighten fully.
3. Level the fluid head by centering the BUBBLE LEVEL. Then screw the CLAMP NUT tight.
4. Note: If adjusting the level with your camera mounted, hold the camera before loosening the CLAMP NUT.

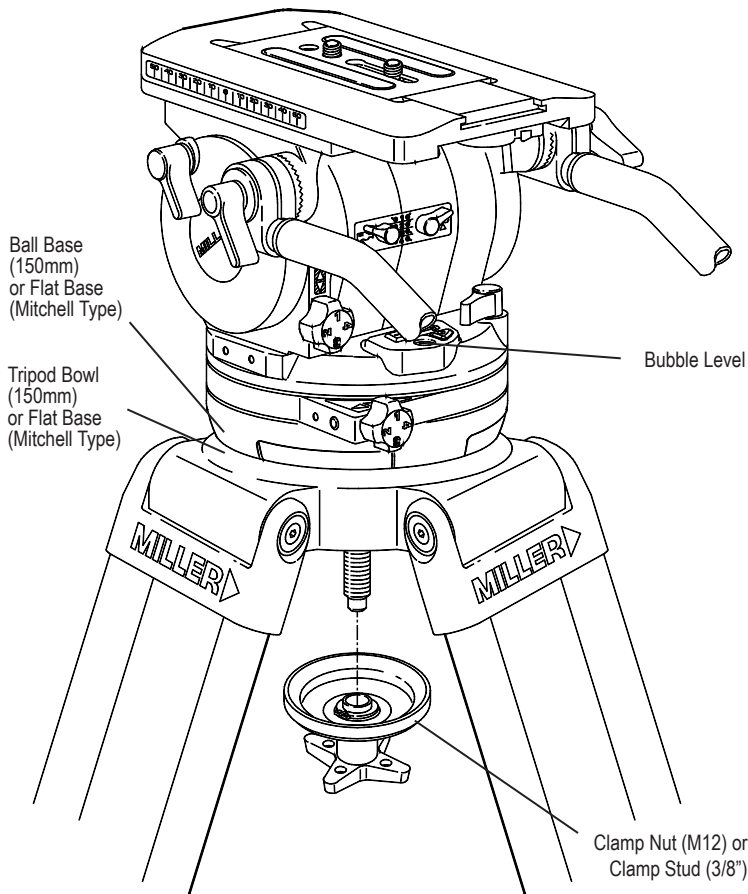


Fig 3.

### 2. MOUNT YOUR CAMERA

Note that best camera control can be achieved by balancing the camera centre of gravity (C of G) over the centre axis of the head. To achieve this the DS60 is equipped with a SLIDING CAMERA PLATFORM

1. Ensure tilt is horizontal. Lock the TILT SAFETY LOCK.
2. Lock the PAN and TILT LOCKS (rotate both levers clockwise until firm).
3. Remove the CAMERA PLATE by pulling downwards on the SAFETY TAB while rotating the QUICK RELEASE to the left until it reaches the automatic stop position (the CAMERA PLATE will pop up).
4. With accessories and battery fitted, determine your camera's Cof G by the best method available (Eg: balance camera on a rod to find balance point).
5. Attach the CAMERA PLATE at the C of G point by fastening the CAMERA SCREWS into your camera's base or "tripod base plate". These screws should be tightened evenly and as far apart as possible to prevent movement between camera and fluid head.
6. Attach your camera to the fluid head by holding the camera slightly "lens down" and placing the attached CAMERA PLATE under the front lip on the top of the SLIDING PLATFORM. Lower the back of the camera until the QUICK RELEASE knob locks. Ensure the QUICK RELEASE knob is firmly seated.
7. Grip the PAN HANDLE firmly and then disengage the PAN and TILT LOCKS and TILT SAFETY LOCK. Your camera should be firmly attached with no free movement.

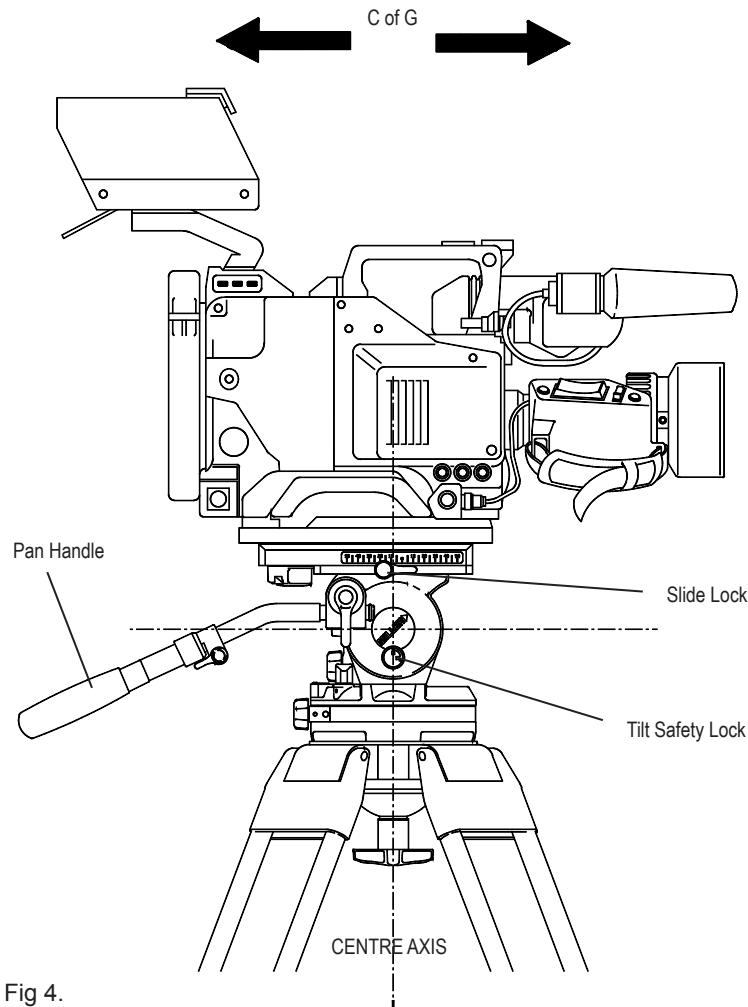


Fig 4.

### 3. CENTRE YOUR CAMERA ON HEAD

1. With your camera attached to the fluid head, hold the PAN HANDLE and release the TILT LOCK and TILT SAFETY LOCK.
2. Turn the TILT DRAG CONTROL knob to position "1". Turn the COUNTERBALANCE SELECTOR knob to position "1".
3. Release the SLIDE LOCK lever and slide your camera forward or backward until balanced over the centre axis of the fluid head (see Fig.4). If necessary, be prepared to stop your camera sliding suddenly. Your camera will remain static when balanced.
4. Lock the SLIDING PLATFORM by turning the SLIDE LOCK clockwise until firmly locked tight.

### COUNTERBALANCE PERFORMANCE

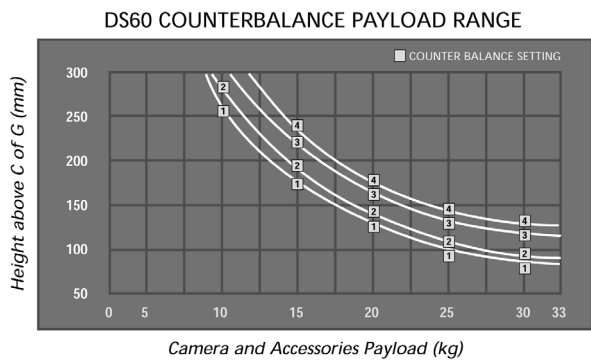


Fig 5.

### 4. COUNTERBALANCE YOUR CAMERA

The DS60 includes a variable counterbalance system that provides fingertip control through its tilt range and allows the camera to be static at any angle within that range. The counterbalance control can be set in one of four positions depending on your payload.

1. Hold the PAN HANDLE and release the TILT LOCK.
2. Rotate the COUNTERBALANCE SELECTORS to setting position "4".
3. Tilt the camera through its tilt range. Check that your camera remains static in a tilted position. If the Camera rotates from its tilted position, return the camera to the horizontal position and a lower counterbalance setting. Tilt through the range again and check that the camera remains static in both tilted forward and tilted backward positions. Note: You may need to adjust the SLIDING PLATFORM to ensure forward and backward balance.

Note: If accessories are added or removed, re-balance by: adjusting the COUNTERBALANCE SELECTOR, and/or adjusting the SLIDING PLATFORM position, or by re-positioning the CAMERA PLATE on your camera's base or "tripod base plate".

### 5. DRAG CONTROL

1. The DS60 provides four (4) settings for the pan drag control. These settings are indicated on the control knob. There are no half-stops. When changing drag settings, pan and tilt movements must be stopped.
2. To achieve smooth diagonal movement, ensure that TILT and PAN DRAG CONTROLS are on similar settings.

### 6. BATTERY REPLACEMENT

The DS-60 illumination feature uses a standard long life alkaline 9V battery. Under most operating conditions the battery will provide two years of operation.

Miller approves the use of the following battery, GP25A or equivalent 9V batteries.

To change the BATTERY:

1. Lift tab on BATTERY LID
2. Remove BATTERY
3. Insert new BATTERY, negative end (-) first
4. Replace BATTERY LID by pressing into opening. Check for proper location of BATTERY LID.
5. Press the ILLUMINATION BUTTON to test operation. The BUBBLE LEVEL will remain illuminated for 10 seconds, then switch off automatically.

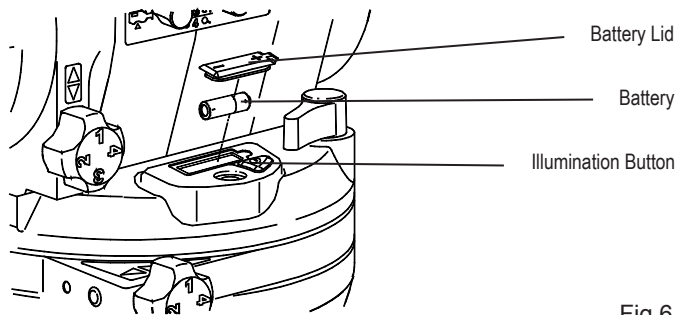


Fig 6.

### 7. CLEANING

**WARNING: Do not immerse in any liquid.**  
**WARNING: Do not use stiff brushes, abrasives or solvents.**

The DS60 features protective coatings, dust and moisture seals and corrosive resistant materials to ensure long and trouble free operation, even in harsh environments. To ensure optimum performance throughout the life of the head Miller recommends regular cleaning. When the fluid head has been used in harsh environments (such as sand, mud, or salt water spray), wipe over with a soft damp cloth as soon as possible. Use a soft clean brush to clean crevices. Clean CAMERA PLATE and SLIDING PLATFORM.

### MAINTENANCE

With the exception of cleaning, the DS60 does not require additional maintenance. Miller recommends periodic servicing by a Miller Authorised Service Agent. Miller Authorised Service Agents must carry out all service and repair work. Failure to observe this requirement may void warranty.

### STORAGE

When storing your DS60 for extended periods clean fluid head and store in a safe, dry place, away from direct sunlight. The fluid head can be stored horizontally or upright. However, do not store the head with the tilt locked.