compass$^{x}$

16 CB PLUS™

# Fluid Head

## OPERATOR'S MANUAL

1090 Compass$^{x}$ 2 Fluid Head
1092 Compass$^{x}$ 6 Fluid Head
1093 Compass$^{x}$ 8 Fluid Head
1096 Compass$^{x}$ 10 Fluid Head
1097 Compass$^{x}$ 14 Fluid Head

# Features and Controls

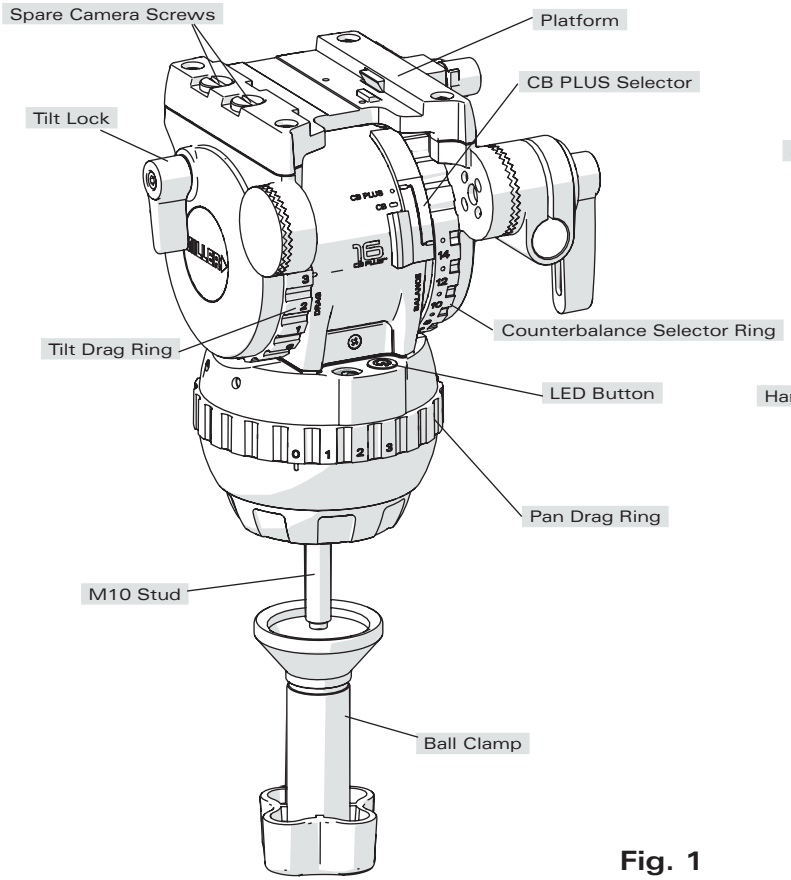



**Fig. 1**

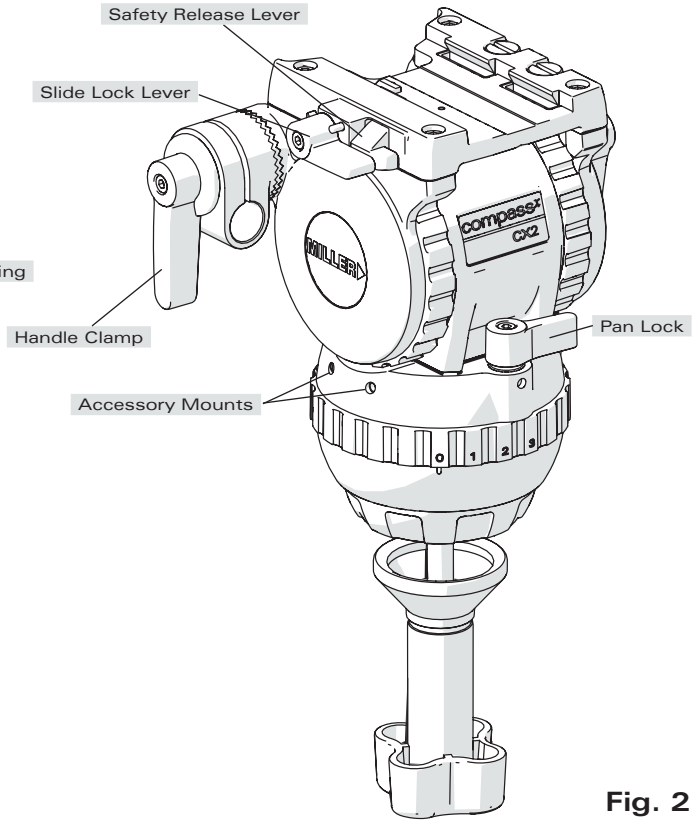



**Fig. 2**

# Introduction

Thank you for purchasing the Compass$^{x}$ Fluid Head. The Compass$^{x}$ Fluid Head has been designed to suit a wide range of cameras, lenses and accessories as demanded by professional users.

The robust design and construction of the Compass$^{x}$ Fluid Head offers maximum stability and durability and includes a precision drag plate system in the pan and tilt assembly to deliver true fluid drag performance over the entire temperature and payload range.

The fluid drag and the counterbalance system were designed to provide excellent control and repeatability and offer progressive equal increments of drag and torque through the unique radial ring design.

The Compass$^{x}$ Fluid Head will give best performance when used on a wide range of Miller tripods, including SOLO, Toggle, Sprinter II and HD Tripods (depending on bowl size). This will ensure maximum system stability to suit any professional set-up. The Compass$^{x}$ Fluid Head will suit most industry standard 75mm and 100mm tripods as well, please refer to manufactures' manual for mounting details.

# Safety Instructions

Please use this manual to familiarise yourself with the operation of the Compass$^{x}$ Fluid Head and observe these instructions to prevent any damage to your equipment. Ensure that all equipment is operating correctly and free from defects and damage, also please ensure that the tripod is steady, secure and that the bowl is approximately horizontal when attaching the camera. The operator is responsible for the safe operation of this piece of equipment.

- Do not exceed the maximum payload capacity of the Fluid Head.
- Do not leave the camera unattended on the Fluid Head.
- Do not release the SLIDE LOCK LEVER whilst the camera is at an angle.
- Do not adjust the tripod whilst the camera is attached to the Fluid Head.
- Ensure PAN HANDLE CLAMP and CLAMP NUT is securely tightened.
- Apply TILT LOCK when adding/removing equipment from the camera or when attaching/removing the camera from the Fluid Head.
- Hold camera securely whilst changing Counterbalance, Pan Drag or Tilt Drag settings.
- Hold the camera securely whilst releasing the SAFETY RELEASE LEVER.
- Hold camera securely whilst adjusting the CLAMP NUT to level the Fluid Head.

## 2. Mounting Your Camera

2.1 Remove the CAMERA PLATE by lifting the SAFETY RELEASE LEVER on the PLATFORM (SLIDE LOCK LEVER must be unwound (clockwise)) (Fig. 3a).

2.2 Attach the CAMERA PLATE to the camera[1] such that the Centre of Gravity (C of G)[2] mark on the camera is approximately in the middle of the camera plate.

2.3 Tighten PAN/TILT LOCKS, mount the CAMERA PLATE to the PLATFORM non-locking side first. The side load lock mechanism will capture camera plate (distinct click sound will be made when CAMERA PLATE is retained). CAMERA PLATE will be able to slide freely (60mm) until SLIDE LOCK LEVER is tightened.

2.4 Untighten TILT LOCK, slide the CAMERA PLATE such that the camera's C of G is directly above the centre axis of the Fluid Head (fig. 3b), camera should be balanced (if not slide camera backward or forward). Once balanced tighten the SLIDE LOCK LEVER (anti-clockwise)[3] and tighten TILT LOCK.

If this cannot be achieved then reposition the CAMERA PLATE on the Camera – step 2.2.

**NOTES:**

[1] Refer to the camera's owners manual for correct method of attachment to the CAMERA PLATE. Remove the 1/4" screw or 3/8" screw as required.

[2] The camera's C of G can be estimated by placing the camera on to a round rod and then shifting it backwards or forwards until a balance point – C of G - is achieved. It is recommended to identify this point on the camera as it will be useful in step 2.2.

[3] Ensure SLIDE LOCK LEVER is tightened at all times when you are not finding C of G or mounting/dismounting camera.

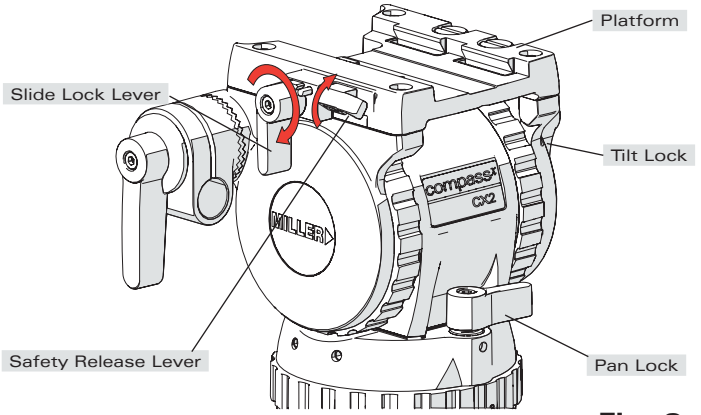



**Fig. 3a**

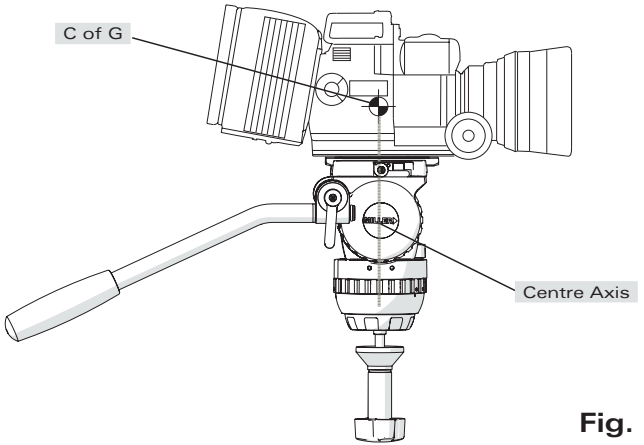



**Fig. 3b**

## 3. Counterbalance Control

The counterbalance system was designed to neutralise the effect of the camera weight when it is tilted. The Compass$^x$ Fluid Head offers a 16 position counterbalance system which is operated with the CB SELECTOR RING and the CB PLUS SELECTOR (Fig. 4). With the Compass$^x$ systems it is also possible to disengage counterbalance (position zero),

**NOTE:**

Be careful when disengaging counterbalance as you could damage your equipment with an unwanted tilt drop.

The CB SELECTOR RING and the CB PLUS SELECTOR must be operated when the BASE PLATE is in a horizontal position.

After changing the counterbalance setting it may be necessary to tilt the camera back and forth to ensure that the CB spring has engaged.

3.1 For safety it is generally better to start at a higher counterbalance position (e.g. position 14) and work your way to the correct setting, this is to reduce any chance of unwanted tilt drops (Fig. 4).

3.2 Hold the camera and release the TILT LOCK, then gently tilt the camera from the horizontal position forward then backward and observe its response. If the camera 'springs back' to the horizontal position then a lower counterbalance setting is required, use the CB SELECTOR RING to cycle through all even number positions (eight positions including zero).

3.3 Finer adjustments can be made by engaging the CB PLUS SELECTOR (upward direction).

3.4 Correct counterbalance setting has been achieved when the camera does not spring back or drop when pan handle is released.

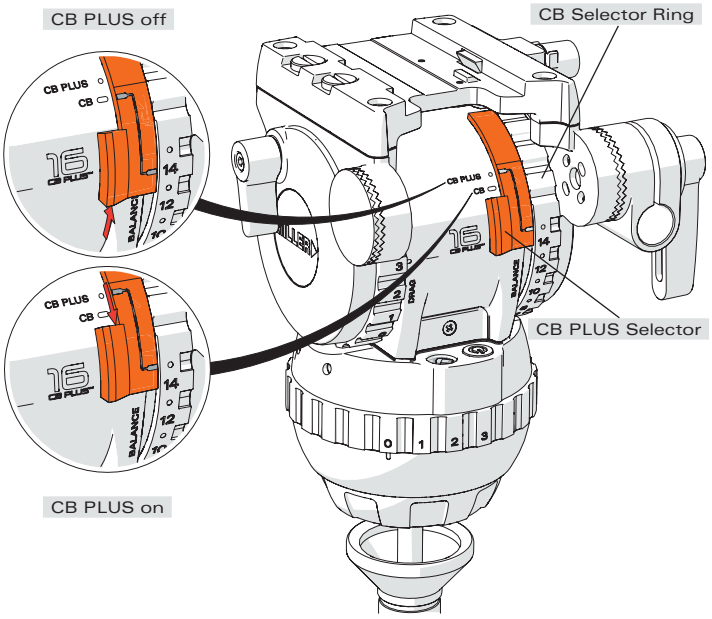



**Fig. 4**

## 4. Pan/Tilt Drag Control

The Compass*x* Fluid Head offers selectable positions of fluid drag in the Pan and Tilt (including zero positions). The settings are equally stepped from lighter drag in position 1 up to heavier drag in position 3 on CX2 and CX6 models and position 5 on CX8, CX10 and CX14 models, the drag plates are completely disengaged in position zero.

- Do not pan or tilt the Fluid Head whilst adjusting PAN or TILT DRAG CONTROL or whilst the PAN and TILT DRAG CONTROL is between settings.
- The drag setting can be changed at any tilt or pan angle.

## 5. Pan/Tilt Lock Control

The Compass*x* Fluid Head offers high capacity caliper disc brake system to hold the Fluid Head in a fixed pan and/or tilt position. Camera position will not change when applying or releasing the Pan-tilt locks.

- Do not pan or tilt the Fluid Head whilst the PAN or the TILT LOCK is partially applied.

## 6. Illumination

The Compass*x* Fluid Head offers illumination of the BUBBLE LEVEL when the low ambient light conditions exist. Illumination can be achieved by pressing the LED BUTTON once. The light will switch off after 10 seconds.

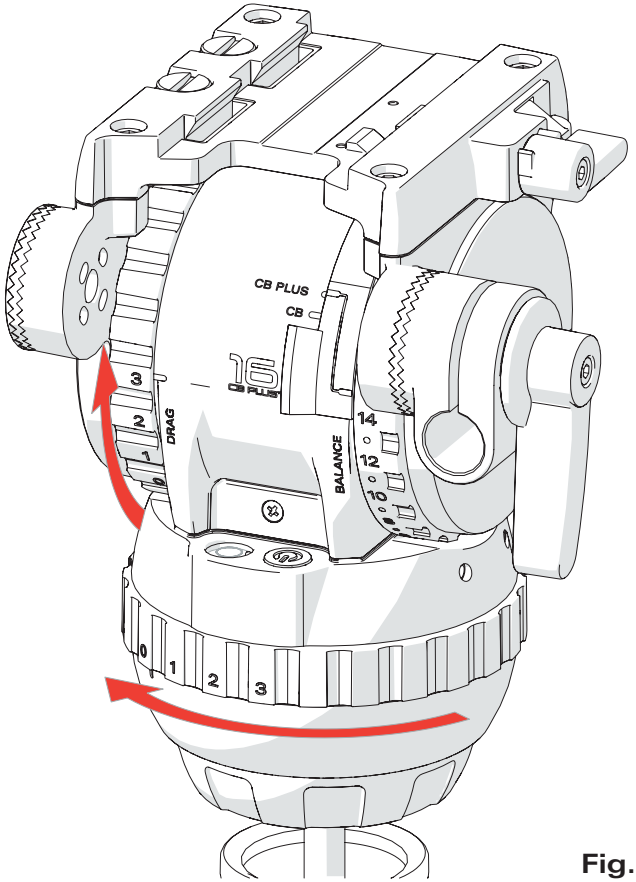



Fig. 5

# Maintenance

The Compass*x* Fluid Head offers high quality surface coatings, dust and moisture seals. Miller recommends keeping the Fluid Head clean at all times by using soft brushes and lint free cloth to wipe over the surfaces.

- Do not immerse the Fluid Head in any liquid.
- Do not use stiff brushes, abrasives, harsh detergents and solvents.

# Battery Replacement

The Compass*x* Fluid Head uses a single 11A type - 6 Volt battery for Illumination. Miller recommends the following batteries to provide long life performance – GP11A, Duracell MN11 or Vinnic L1016.

1. Using a Phillips Head #1 screw driver, remove the RETAINING SCREW and the BATTERY COVER.
2. Using a small flat screw driver remove the battery.
3. Align the new battery as shown on the back of the BATTERY DOOR and place into the BATTERY HOUSING, then push down the battery into place. A small flat screw driver may be used to push down the battery into the BATTERY HOUSING.
4. Align the BATTERY DOOR into the body then tighten the screw lightly.

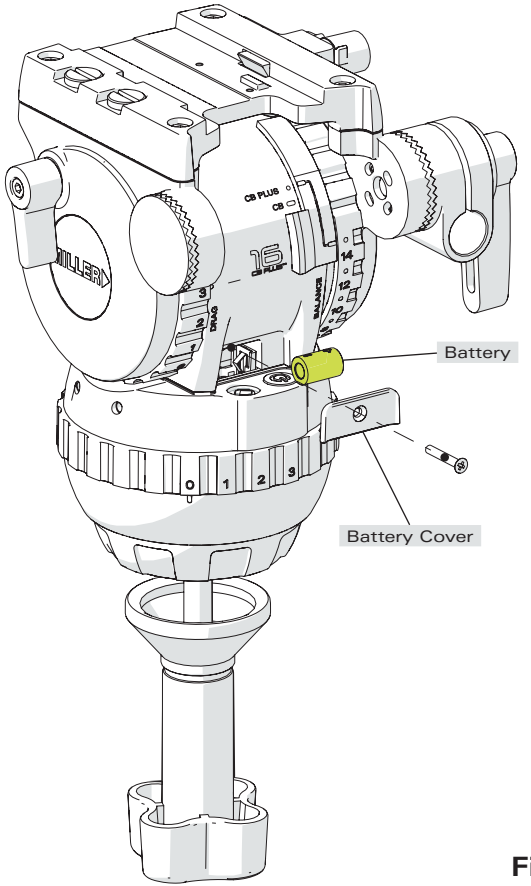


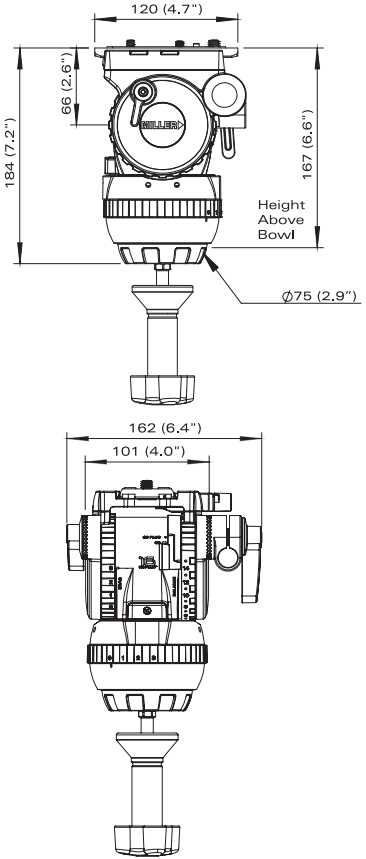

**Fig. 6**

# Specifications

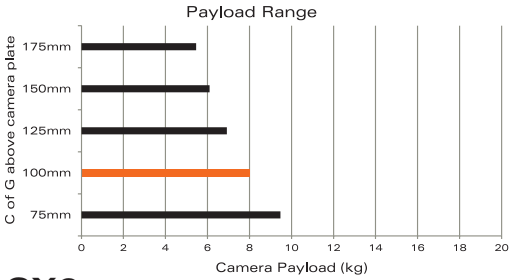
| | 1090 Compass.x 2 | 1092 Compass.x 6 | 1093 Compass.x 8 | 1096 Compass.x 10 | 1097 Compass.x 14 |
|---|---|---|---|---|---|
| Weight | 2.3kg (5.1lbs) | 2.3kg (5.1bs) | 2.5kg (5.5lbs) | 2.5kg (5.5lbs) | 2.5kg (5.5lbs) |
| Payload range | 0-8kg (0-17.5lbs) | 0-12kg (0-26.4lbs) | 0-12kg (0-26.4lbs) | 0-12kg (0-26.4lbs) | 0-14kg (0-30.9lbs) |
| Pan-tilt drag | 3 selectable fluid drag positions + 0 | 3 selectable fluid drag positions + 0 | 5 selectable fluid drag positions + 0 | 5 selectable fluid drag positions + 0 | 5 selectable fluid drag positions + 0 |
| Pan range | 360° | 360° | 360° | 360° | 360° |
| Pan-tilt locks | Positive lock calliper brake system | Positive lock calliper brake system | Positive lock calliper brake system | Positive lock calliper brake system | Positive lock calliper brake system |
| Tilt angle | +90°/-75° | +90°/-75° | +90°/-75° | +90°/-75° | +90°/-75° |
| Counterbalance | 16 selectable positions (0 +15 position) | 16 selectable positions (0 +15 position) | 16 selectable positions (0 +15 position) | 16 selectable positions (0 +15 position) | 16 selectable positions (0 +15 position) |
| Camera platform | Side loading, 60mm balance travel camera plate with 1/4" and 3/8" screws | Side loading, 60mm balance travel camera plate with 1/4" and 3/8" screws | Side loading, 60mm balance travel camera plate with 1/4" and 3/8" screws | Side loading, 60mm balance travel camera plate with 1/4" and 3/8" screws | Side loading, 60mm balance travel camera plate with 1/4" and 3/8" screws |
| Sliding range | 60mm (2.4") | 60mm (2.4") | 60mm (2.4") | 60mm (2.4") | 60mm (2.4") |
| Height above bowl | 167mm (6.6") | 167mm (6.6") | 167mm (6.6") | 150mm (6.0") | 150mm (6.0") |
| Mounting base | 75mm (2.9") ball levelling | 75mm (2.9") ball levelling | 75mm (2.9") ball levelling | 100mm (3.9") ball levelling | 100mm (3.9") ball levelling |
| Illuminated controls | Bubble Level | Bubble Level | Bubble Level | Bubble Level | Bubble Level |
| Temperature range | -40° to +65°C (-40° to +149°F) | -40° to +65°C (-40° to +149°F) | -40° to +65°C (-40° to +149°F) | -40° to +65°C (-40° to +149°F) | -40° to +65°C (-40° to +149°F) |
| Pan handle | Fixed 390mm (15.4") | Fixed 390mm (15.4") | Fixed 390mm (15.4") | Fixed 390mm (15.4") | Fixed 390mm (15.4") |

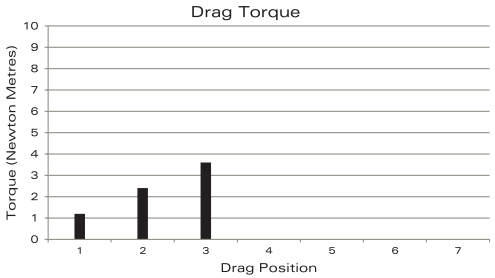
# Specifications

## 75mm

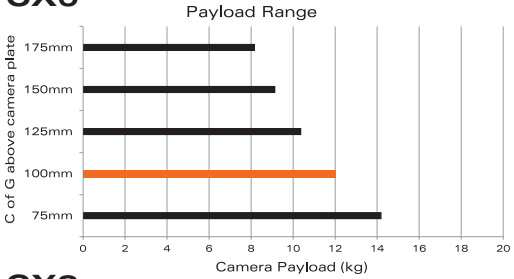


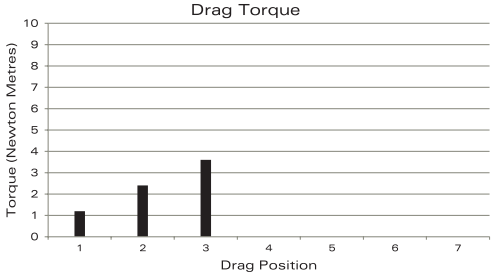

## CX2



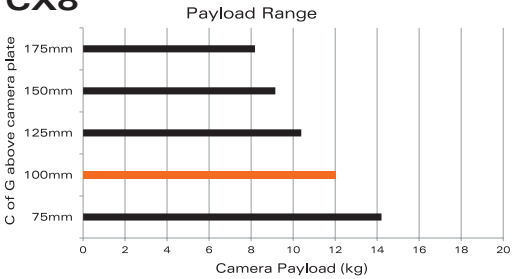



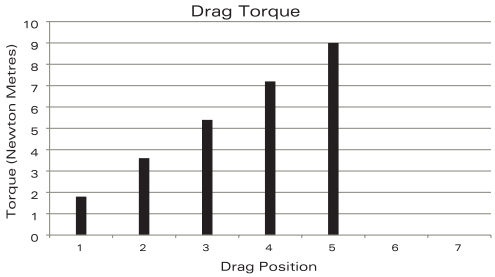

## CX6



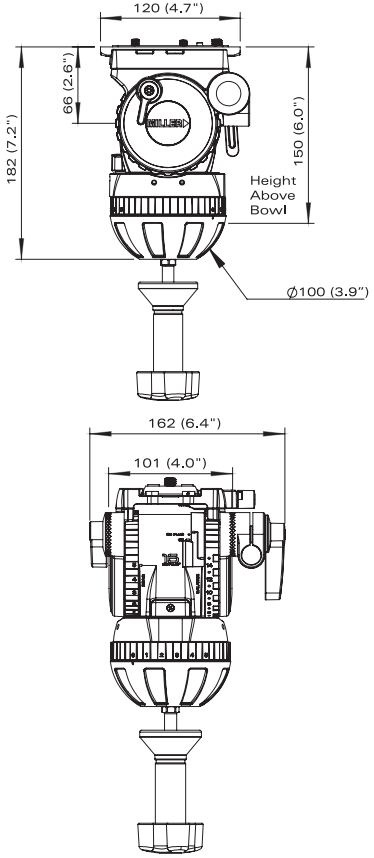

## CX8



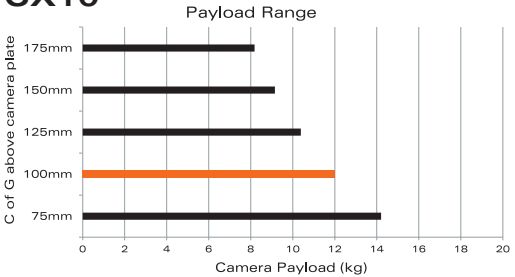



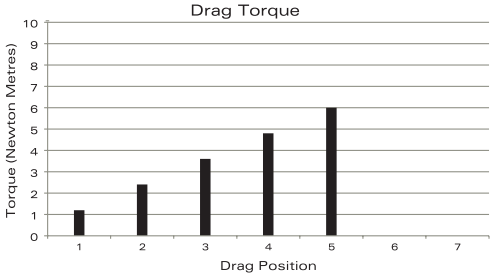
# Specifications

## 100mm

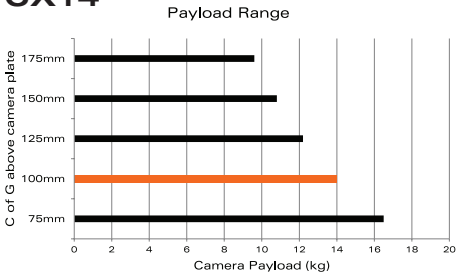


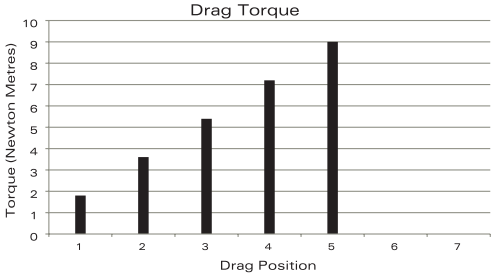

## CX10




## CX14



# Storage

The Compass$^x$ Fluid Head can be stored for extended periods; Miller recommends storage in a Miller case and the following:

- Clean the external surfaces.
- Keep in a dry place away from direct sunlight.
- Loosen off PAN & TILT LOCK.

# Spare Parts and Accessories

| ITEM | ITEM NO. |
|---|---|
| Battery | P3798 |
| Camera screw 3/8" | P0037 |
| Camera screw 1/4" | P0036 |
| Serrated washer | PN12501 |
| Pan handle - fixed with clamp | 679 |
| Pan handle - telescopic with clamp | 696 |
| Accessory mounting block | 1255 |
| Sliding plate assembly (Euro)* | 1210X |
| Sliding plate assembly (Mini Euro)* | 1206X |
| 1/4" screw and pin carriage | 493 |
| Camera plate | 1205 |
| Camera plate (short) | 1209 |
| Camera plate (long) | 1207 |

# Warranty

MILLER offers 3 years parts and labour warranty.

Please refer to MILLER Warranty card D3993 for complete details.

# Service, Sales and 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 our website or at the following:

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