KAIDAN

QuickPan™ Magnum User's Guide

Photographic VR Panoramic Tripod Head *(QPX-2)*

The professional's choice in Photographic VR tripod heads.

Copyright Information

Kaidan Warranty and Return Policy

A • Limited Warranty

In the event of a defect in materials or workmanship, Kaidan will repair the product with new or rebuilt parts for a period of three-hundred and sixty five (365) days from the date of original purchase. Such work will be performed free of charge. Follow the Product Return Procedure (Section D following).

Likewise, any software purchased from Kaidan also comes with a one year warranty if your disc or media is defective or damaged. This warranty is extended only to the original purchaser and is not transferable. A purchase receipt or other proof of original purchase will be required before warranty performance is rendered.

This warranty only covers failures due to defects in materials or workmanship which occur during normal use. It does not cover damages or failures which are caused from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification, service by anyone other than an authorized representative of Kaidan, Acts of God, or by products not supplied by Kaidan.

This warranty covers any damage incurred during original shipment of product to customer. Any item resold, or distributed by, and not explicitly manufactured by Kaidan will be covered by their respective company's product warranty.

B • Warranty Exclusions

There are no express warranties except as listed above.

Kaidan shall not be liable for special, incidental, consequential or punitive damages, including, without limitation, loss of goodwill, profits or revenue, loss of the use of this product or any associated equipment, cost of substitute equipment, downtime costs, or claims of any party dealing with buyer for such damages,resulting from use of this product or arising from breach of warranty or contract, negligance, or any other legal theory .

All express and implied warranties, including the warranties of merchantability and fitness for a particular purpose, are limited to the applicable warranty period set forth above. Some states do not allow the exclusion or limitation of consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

This warranty and any claims which arise with the Kaidan product(s) are governed by the laws of the state of Pennsylvania. By purchasing this product, customer acknowledges and agrees to these Limits and Exclusions. If a problem with your Kaidan product develops during the warranty period, immediately contact Kaidan for assistance.

C • Product Return Policy

All Kaidan products come with a 30-day return policy (a minimum 10 percent re-stocking fees will apply) from date of purchase, with the exception of software or videotapes.

Both of the aforementioned items are copyrighted and subject to the laws concerning intellectual property. Kaidan will replace defective software/videotapes free of charge upon return receipt of defective item(s). Products returned under this policy, excluding replacement of defective items, must be shipped at purchaser's expense. Purchaser must ship product with an approved traceable service, such as FedEx, and with appropriate levels of shipping insurance for the item being returned. Kaidan will not be held responsible for returned items lost or damaged in transit.

Kaidan will issue a refund to customer's account if the following conditions are satisfied:

1) Receipt of item(s) in a restockable condition.

Criteria for Restockable Condition is as follows:

- All parts are included in box; hardware, manuals, discs, nuts/bolts, tools.
- No signs of damage; scratches, bent parts, missing pieces, markings, alterations, or additions to the product.
- All packaging materials are intact; foam, peanuts, cardboard, bubble bags.
- No signs of excess usage or wear to the product.

Items of Non-restockable condition are subject to the following:

- Restocking Fee/s - a minimum of 10 percent and possible additional fees based on the condition of the product (how the product best meets the criteria above), at Kaidan's discretion.

Non-Restockable Condition - constitutes the following:

- Missing parts; hardware, manuals, discs, nuts/bolts, tools, and packaging materials; foam, peanuts, cardboard, bubble bags.
- Signs of damage; scratches, bent parts, missing pieces, markings, alterations, additions to the product.
- Signs of excess usage or wear to the product.
- Damage or loss incurred during uninsured shipping to Kaidan. In this case, Kaidan cannot issue any type of refund. Customer will be responsible to submit claim with their shipping company.
- If damages occur in shipping, customer must submit claim with shipping company prior to any action by Kaidan.

Items Part of Special Bundle

If item(s) are part of a special bundle offer, return of part of the bundle will void any special pricing and the item(s) remaining in the possession of the customer will revert to their regular Suggested Retail Price (SRP). The credit, to customer, will reflect the difference of the actual product SRP from the amount of credit due customer.

Shipping Costs

All shipping costs, VAT, duties and return costs are sole responsibility of customer. If customer purchases thru Kaidan distributor or reseller, customer is responsible for all shipping and VAT costs incurred by that distributor or reseller. These charges are non-refundable.

For instructions on the return of your product, follow the Product Return Procedure below

D • Product Return Procedure

When returning a product, customer must first contact Kaidan (or the distributor/reseller) and obtain a Return Material Authorization Number (RMA#). After receiving the RMA#, customer will be instructed to return product directly to Kaidan. Returned goods must be shipped with an approved traceable service, such as FedEx, and with appropriate levels of shipping insurance for the item being returned. Kaidan will not be held responsible for returned items lost or damaged in transit. RMA numbers are valid for 15 days, and the product(s) must be received by Kaidan before the RMA expires. We are unable to accept for return any product(s) received after the expiration of the RMA.

Return Packaging

The product packaging must reflect customer name, address, RMA# as well as Kaidan information:

Kaidan Incorporated
703 E. Pennsylvania Blvd • Feasterville, PA 19053 • U.S.A.
Attention: Return Department per RMA# _____

Contact Information: Voice: 215-364-1778 • Fax: 215-322-4186
http://www.kaidan.com • E-mail: info@kaidan.com

Chapter 1

Unpacking your QuickPan™

Unpacking the Box

This manual covers the QuickPan Magnum QPX-2. See the figure below. Depending on how you purchased your QuickPan, it might have shipped with a camera bracket, such as our QPU-2, or it might have shipped without a bracket and then only the indexing base would be in the box. If your unit came with a camera bracket, such as the QPU-2, then you'll want to refer to the separate manual for that unit to make sure that all the components are included.

The QuickPan Magnum base is detailed below. Please make sure that all parts are included. Examine the parts for any signs of shipping damage. In the event of shipping damage, immediately contact Kaidan to process claims.

If any items are missing or you notice any damage, call Kaidan at 215-364-1778, between the hours of 10:00 am and 6:00 PM, Mon-Fri, EST.

Level Adjustment Screw (1 of 3)

QPX-2 (Micro-Tilt Base)

Chapter 2

Assembling the QuickPan™

ATTACHING THE BASE TO YOUR TRIPOD

The QuickPan Magnum base has a 1/4-20 threaded hole in the bottom of the base. This will accomodate the 1/4-20 threaded posts found on most tripods. If your tripod has a larger threaded post, then it is most likely a 3/8-16 thread, which is more common in Europe. Contact Kaidan for more information on obtaining a base plate that has the 3/8-16 thread.

Chapter 3

Using the QuickPan™

CHANGING THE INCREMENT ROTATION ANGLE

The QPX-2 uses a spring-loaded plunger indexing mechanism. A spring-loaded brass plunger is located on the underneath side of the QuickPan. To remove the plunger, simply unscrew the unit from the base. When removing or replacing the plunger, be sure to hold on to the brass housing and not the dark colored adjusting screw which protrudes from the end of the plunger.

Chapter 4

Using the QuickPan™

ADJUSTING THE SPRING FORCE OF THE PLUNGER

The dark colored adjusting screw which protrudes from the end of the plunger is used to vary the force of the spring plunger. This adjustment is typically used to provide more force when the plunger is moved towards the center of the detent. In general, the closer the plunger is to the center of the wheel, the more force is required in order to achieve a satisfactory detent action. You can also adjust the force simply to correspond to your personal preference.

You can tighten or loosen the adjusting screw when the plunger is installed or removed from the unit, as shown below.

Chapter 5

Using the QuickPan™

WHICH HOLE SHOULD I USE?

The number of click-stop positions is determined by which hole the plunger is threaded into. It is also a function of which detent wheel is mounted on the base. The standard wheel, QPD-1, is gold colored and has 8, 12, 16, 20 and 36 positions. These positions correspond to the five threaded holes on the underneath of the base, with the 8 position location being closest to the center and the 36 position location being furthest from the center.

You may also have (or wish to obtain) our QPDD-2 detent wheel. It is a light purple color and has 10, 14, 18, 24 and 30 positions. In this case, the 10 position location is closest to the center and the 30 position location is furthest.

Chapter 6

Using the QuickPan™

STORING THE PLUNGER AND FREE ROTATION

You may find that you don't want or need to use the click-stops. In this case, you can remove the spring plunger. When the plunger is removed it does not engage the holes on the detent wheel.

In this configuration, the detent wheel will spin freely, and it can be locked into any desired position by use of the Clamp knob, which protrudes from the side of the base as shown below (lower).

Chapter 7

Using the QuickPan™

ATTACHING THE CAMERA BRACKET

The camera bracket (i.e. QPU-2) simply screws onto the top of the detent wheel of the QuickPan. You don't need to tighten the bracket excessively. Most panoramas are produced by rotating the bracket in a clockwise direction (as viewed from above), and this action normally tightens the bracket.

Chapter 8

Using the QuickPan™

FINAL

The completed QuickPan Magnum, with the camera bracket is shown below. Under normal usage, your QuickPan should last for years. You can clean it with a damp rag. Avoid soaking the rubberized cork faces of the camera bracket. In time, you may need a replacement spring plunger tip - simply contact Kaidan and we'll send you a replacement at a nominal cost.

Every so often you should remove the detent wheel and plunger assembly and clean these "hidden" areas.

Chapter 9

Using the QuickPan™

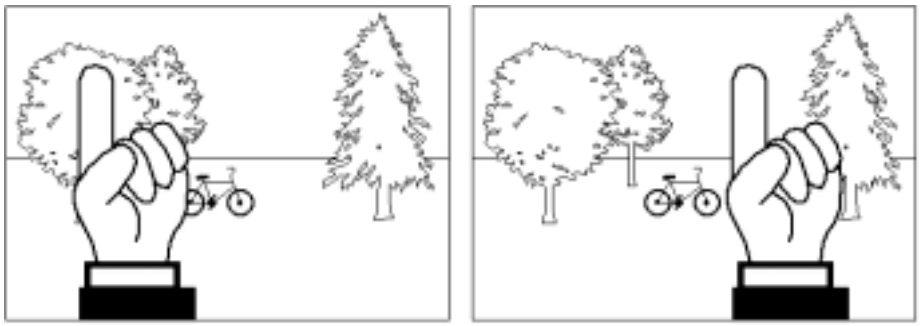
How do I Locate my Camera's Nodal Point?

This is one of the most frequently asked questions when it comes to QTVR panorama creation. Once you understand the basics, you'll be able to easily locate the nodal point for any camera and lens combination.

Simply put, the nodal point is the point inside your camera where the light rays converge and flip over. When shooting a QTVR panorama It's necessary to rotate about this point to eliminate the image mismatch caused by parallax error.

It's also worth noting that the nodal point is not the same as the film plane, which is often marked on the underneath side of many 35mm cameras. Generally, for most 35mm cameras and lenses, the nodal point is located somewhere towards the center of the lens barrel.

Parallax error can be easily demonstrated by this simple experiment. Close one eye and hold your index finger upright about six inches away from your open eye. Rock your head from side to side. Notice how your finger moves with respect to the background. This relative movement is due to the fact that you're not rotating your head around your eye's nodal point, which is somewhere in the center of your eyeball. Instead, you're rotating about your spine which is several inches to the rear and off to one side. It is this relative side-to-side motion that we will strive to eliminate when setting up a camera for VR panoramas.



Step 1: The Easy Part - The Side-to-Side Adjustment

Once your camera is fastened to your pan head, move to the front of the unit so you're looking into the lens. The center of the lens should be directly over the pivot axis of the pan head. Adjust the side-to-side adjustment so the lens is centered over the pivot. With the QuickPan™ you can also measure (in millimeters) the distance from the camera's mounting surface to the center of the lens. Then, slide the bracket until the outside edge of the bottom of the vertical bracket ,(the side with the bubble level), aligns with the appropriate number on the scale. (See Fig. to right)

Step 2: The Slightly Harder Part - Fore-Aft Adjustment

This step is most easily accomplished out of doors. Find a vertical edge or line, such as a doorway or edge of a building. Position your camera and tripod about two feet away, or as close as possible with the edge still in focus when you look through the viewfinder.

Looking through the camera's viewfinder, find another vertical edge or line that is far away, such as another building or telephone pole. Align the two objects and rotate the pan head so they are in the left hand side of the viewfinder.

Rotate the pan head so the two objects move over to the right hand side of the viewfinder. Unless you've managed to unwittingly locate the right position, you should notice the two objects will move with respect to each other as you rotate the pan from left to right. Slide the camera to the front or rear as required to eliminate this relative movement.

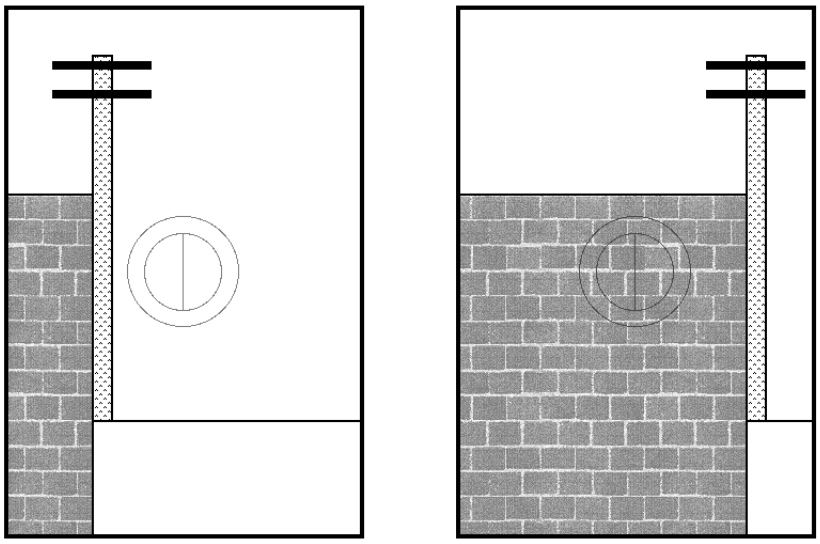
It may help to first locate the camera all the way to the front or rear and then move it a little bit at a time. This way you'll more readily see the parallax effect and notice how it improves as you slide the bracket.

Step 3: Level the Camera

Once you have located the fore-aft position, you now must level the camera. If your camera has a flash hot shoe, you can use a bubble level designed to slide into the shoe. You should be able get these at a good photographic supply store. Kaidan also has these levels for sale at competitive prices.

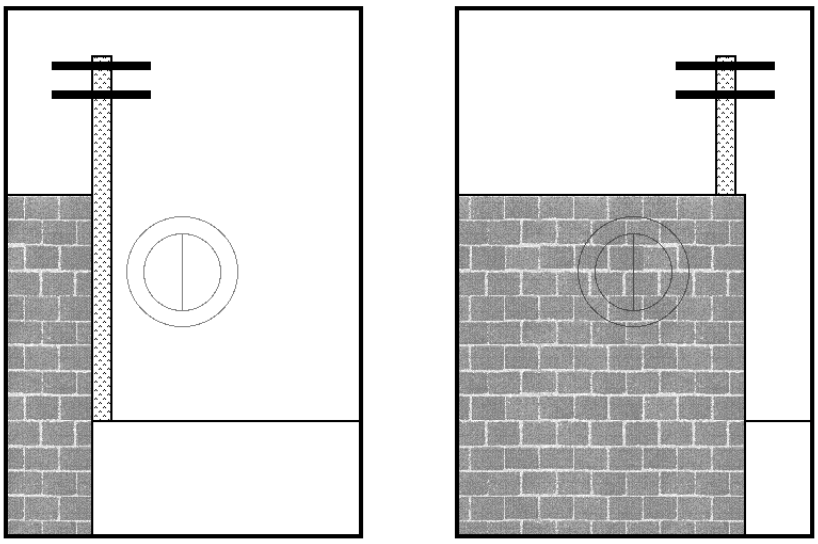
If your camera does not have a hot shoe, then you'll need to level the camera another way. If the camera has a flat, level surface, then you can use a bubble level. You should be able to locate a small level at a hardware store. If your

Looking through the viewfinder align a close object (brick wall) with a faraway object (telephone pole). As you rotate the camera from side-to-side there should be no relative movement between the two objects as shown to the right.



there are no level surfaces, then you may have to resort to "eyeballing".

If, as shown to the right, the two objects move with respect to one and another in the viewinder, slide the camera fore or aft in order to eliminate this movement. Here, the telephone pole has moved behind the brick wall.



STEP 4: RECORD YOUR RESULTS

After you've discovered the two location dimensions, be sure to record the settings. The QuickPan camera bracket has a convenient indicator scales for this purpose. These numbers represent the nodal point for this given camera and lens combination. If you change cameras or lenses, this procedure may have to be repeated.

Step 5: How About Rangefinder Cameras?

A rangefinder camera is a camera where you look through a separate viewfinder and not through the actual lens. The process is basically the same. Locate the Side-to-Side adjustment as discussed in Step 1. When it comes to the Fore-Aft adjustment, you won't be able to look through the viewfinder to determine the proper setting since the viewfinder is a separate optical path that doesn't really "see" the same image as the film.

Instead, you'll have to start with the bracket all the way to the front and take pairs of test shots. Each pair will have the vertically aligned objects in the left and then the right side of the viewfinder. After each pair of photos, slide the bracket rearward and repeat the process. Slide the bracket the same increment each time (i.e. 10mm). Be sure to record the scale setting for each pair of images. Process the film, or in the case of digital cameras, download the images to your computer.

At the end of this process you will be able locate the pair of images with the least relative movement. If no single image is optimum, you may need to interpolate between two images to find the closest value.

Chapter 10

Taking Photos with the QuickPan™

How much Overlap?

The amount you turn the camera for each shot varies. It is dependent on a number of factors such as the field of view (the angle) of your camera and lens, as well as which program you intend to use. For example, Apple recommends that the images should overlap by anywhere from one-third to one-half. You should check with the recommendations of the software that you intend to use in order to determine overlap requirements.

How many Shots?

Once you've determined the overlap, you'll be able to figure out how many shots. The easiest way to do this is to simply look through the viewfinder and turn the camera to achieve the desired amount of overlap. You then check the angle readout to see how far you turned the camera. Round the angular value to the nearest convenient value. For most stitching programs, it is generally not that important to use a precise overlap value.

However, it should be noted that some programs are more sensitive to an overlap value that constantly repeats from shot to shot. You may need to experiment somewhat to obtain the best results.

Taking the Photos

When you're ready to shoot, make sure that the camera and QuickPan™ are securely attached. You should use a tripod that is sturdy, ideally one that has a center support system of braces to help keep the camera and QuickPan™ from excessive flexing. Some tripods have built-in bubble levels which make it easy to level the unit.

Proper leveling is important. We discussed earlier, the process for leveling the camera in elevation (looking up and down on the Vertical Bracket), now that you're ready to shoot, it is important that the rotation plane of the camera is level as well.

TAKING THE PHOTOS (CONTINUED)

Using the twin-axis bubble level on the bottom of the Vertical Bracket, observe it while you level the tripod. Of course, this task is much easier if your tripod also has a tilt head.

Once the tripod and QuickPan™ are level, now is the time to double check to see if the camera is level in elevation. If it needs to be adjusted, loosen the Captive knob just a slight amount and tilt the camera accordingly. Be sure not to change the Fore-Aft dimension. Tighten the Captive knob.

Rotate the camera so that the lens is facing the direction you want to take your first shot. Depending on whether the stitching software that you're using prefers having the photos taken in a clockwise or counterclockwise sequence, you'll have to either count the number of shots being taken from your start position.

At this point, you're ready to shoot the photos. As you shoot around the circle, try to avoid capturing any moving objects that might come into your field of view. There is no harm in waiting, for example, while a person walks past before shooting the photo.

You may also want to check with the software developer of the stitching software that you're using to get their recommendations for exposure settings and other camera settings.

We hope you enjoy shooting your panoramas and if you have any questions or problems using our equipment, please let us know. We would also like to see the results of your work and would be glad to consider placing your work on our website, or to put a link to your website as well.

Thank you,
The Kaidan team.