



**Spotting Scope with Universal Digital Camera Adapter
12 to 36 Power x 50mm Objective Lens
Model S-536DS
(S-536 Spotting Scope with DS-40ST Universal Camera Adapter)**



(Camera not included)

Thank you for the purchase of your new Cstar S-536DS Spotting Scope with the DS-40ST Universal Camera Adapter. As with all Cstar Optics products, this product is carefully engineered to give you a high quality optical image while bringing you up closer to nature both on the land and in the sky. To get the most performance out of your S-536DS spotting scope and DS-40ST Universal Camera Adapter, please see the below instructions.

WARNING! Do not, under any circumstance attempt to view the sun through your spotting scope. Doing so will result in instant and permanent eye damage.

WARNING: CHOCKING HAZARD-Small parts! Not intended for children under age 6 unless supervised by an adult.

S-536DS SPOTTING SCOPE SPECIFICATIONS

TYPE.....SPOTTING SCOPE

OBJECTIVE LENS SIZE..... 50MM

MAGNIFICATION.....VARIABLE 12X TO 36X (ENJOY SEVERAL MORE VIEWING POWERS WHEN USING YOUR DIGITAL CAMERA WITH THE INCLUDED UNIVERSAL CAMERA ADAPTER). **SEE BELOW EYEPIECE CHART.**

OPTICS.....COATED OPTICAL GLASS

NEAR FOCUS.....10 METERS

EYE RELIEF.....12X = 16MM / 36X = 13MM

FIELD OF VIEW.....12X = 40M @ 1000M / 36X = 32M @ 1000M

EXIT PUPIL.....12X = 3MM / 36X = 1MM

MOUNT.....UNIVERSAL CAMERA STYLE

TRIPOD.....PRE-ASSEMBLED TABLE-TOP (10 INCHES HIGH) WITH DIRECTIONAL CONTROL HANDLE

EYEPIECE CHART AND MAGNIFICATION WHEN USING YOUR DIGITAL CAMERA (CAMERA NOT INCLUDED)

Spotting Scope Magnification Setting and Camera Zoom Setting	POWER
SELECT 12X ON SPOTTING SCOPE WITH DIGITAL CAMERA (NO ZOOM).....	12X
SELECT 12X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 2X.....	24X
SELECT 12X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 3X.....	36X
SELECT 24X ON SPOTTING SCOPE WITH DIGITAL CAMERA (NO ZOOM).....	24X
SELECT 24X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 2X.....	48X
SELECT 24X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 3X.....	72X
SELECT 36X ON SPOTTING SCOPE WITH DIGITAL CAMERA (NO ZOOM).....	36X
SELECT 36X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 2X.....	72X
SELECT 36X ON SPOTTING SCOPE WITH DIGITAL CAMERA ZOOM AT 3X.....	108X

** DIGITAL CAMERAS MAY FEATURE OPTICAL OR DIGITAL ZOOMS HIGHER THAN 3X. THE ABOVE CHART ASSUMES USER IS USING A DIGITAL CAMERA WITH A STANDARD 3X OPTICAL ZOOM LENS. TO LEARN MORE ABOUT THE DIFFERENCE BETWEEN OPTICAL AND DIGITAL CAMERA ZOOM, PLEASE REFER TO THE "HELPFUL SPOTTING SCOPE AND DIGITAL IMAGING TERMINOLOGY" SECTION.*

DS-40ST UNIVERSAL CAMERA ADAPTER SPECIFICATIONS

ASSEMBLED SIZE.....4" X 4" X 5" (INCHES)

UN-ASSEMBLED.....4" X 2" X 5" (INCHES) *TWO PARTS EASILY ASSEMBLE FOR USE, OR DISSEMBLE FOR EASY STORAGE.

WEIGHT.....8 OZ.

EYEPIECE COMPATIBILITY...40MM (FITS SPOTTING SCOPES WITH EYEPIECE DIAMETERS OF 40MM OR LESS).

* ALSO COMPATIBLE WITH TELESCOPES WITH STANDARD 1.25" EYEPIECE DIAMETERS WITH INCLUDED ADDITIONAL RUBBER STICKY PAD. WE SHOW YOU HOW TO USE.

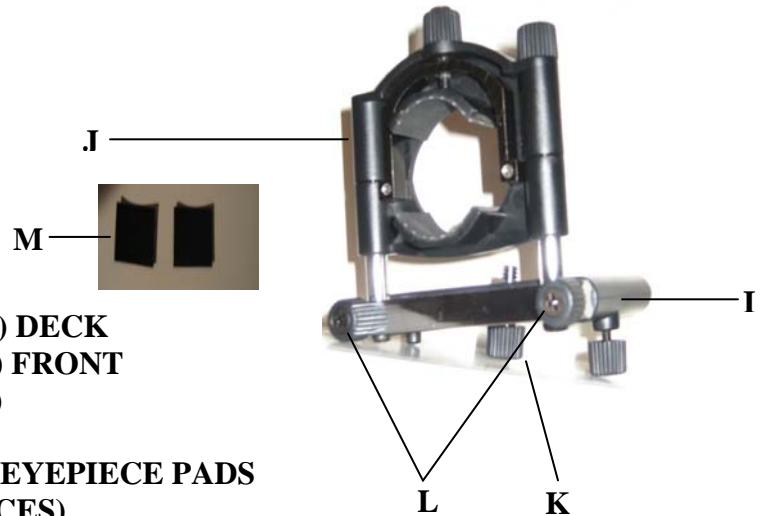
ALIGNMENT TECHNOLOGY.....SIMPLE AND INNOVATIVE DESIGN ALLOWS FOR EASY "XYZ" ALIGNMENT OF BOTH THE CAMERA AND SPOTTING SCOPE OPTICAL PATHS.

MATERIALS & CONSTRUCTION.....EXTREMELY RIGID ALUMINUM AND ABS PLASTIC CONSTRUCTION FOR STABLE PICTURE TAKING.

WHAT'S IN THE BOX?

WHAT'S IN THE BOX?

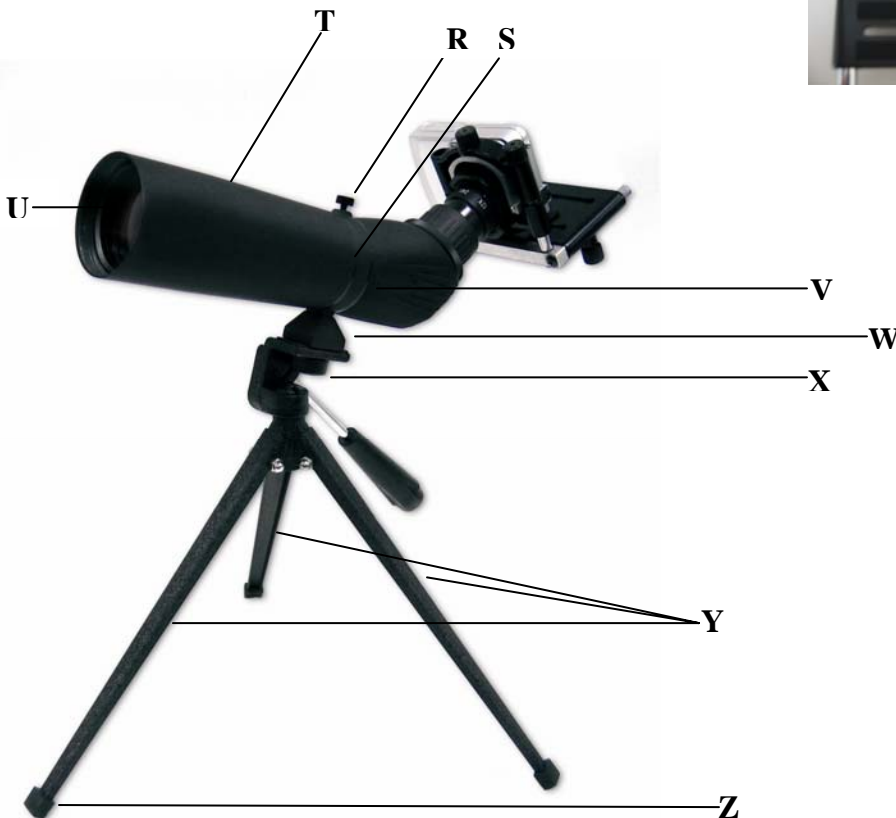
- A. 12-36 X 50MM SPOTTING SCOPE
- B. EYEPIECE COVER
- C. OBJECTIVE LENS DUST COVER
- D. LENS CLEANING CLOTH
- E. PRE-ASSEMBLED TRIPOD
- F. DIRECTIONAL CONTROL HANDLE
- G. MAIN CARRYING CASE
- H. ACCESSORY CARRYING CASE
- I. UNIVERSAL CAMERA ADAPTER (UCA) DECK
- J. UNIVERSAL CAMERA ADAPTER (UCA) FRONT
- K. CAMERA ATTACHMENT SCREW (1EA)
- L. UCA ASSEMBLY HAND SCREWS (2EA)
- M. BONUS SET OF RUBBER PROTECTIVE EYEPIECE PADS FOR TELESCOPES WITH 1.25" EYEPIECES)
- N. USER INSTRUCTION MANUAL



PARTS LIST AND PARTS DIAGRAM

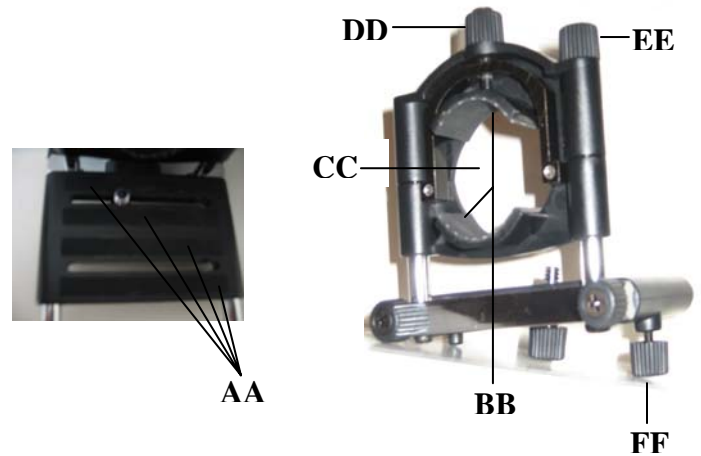
SPOTTING SCOPE

- O. 12-36X ZOOM EYEPIECE LENS**
- P. MAGNIFICATION ADJUSTMENT RING**
- Q. IMAGE FOCUSING ADJUSTMENT RING**
- R. 360 DEGREE TUBE SECURING SCREW**
- S. 360 DEGREE TUBE ROTARY RING**
- T. MAIN SPOTTING SCOPE TUBE**
- U. 50MM OBJECTIVE LENS**
- V. SPOTTING SCOPE MOUNTING BASE**
- W. UNIVERSAL CAMERA MOUNT**
- X. TRIPOD MOUNT SECURING SCREW**
- Y. TRIPOD LEGS (3 EA.)**
- Z. TRIPOD LEG RUBBER FEET**



UNIVERSAL CAMERA ADAPTER (UCA)

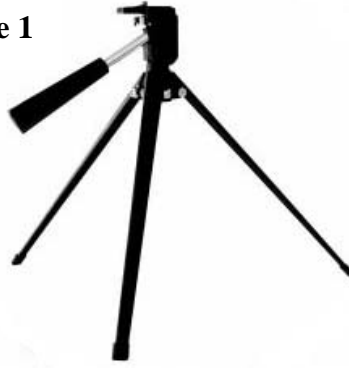
- AA. RUBBER PROTECTIVE PLATFORM PADDING**
- BB. RUBBER PROTECTIVE EYEPIECE PADDING**
- CC. FRONT SIDE OF EYEPIECE CAVITY**
- DD. EYEPIECE CLAMPING SCREW**
- EE. VERTICAL ADJUSTMENT SCREW (Z-AXIS)**
- FF. DEPTH ADJUSTMENT SCREW (Y-AXIS)**



QUICK SET-UP GUIDE FOR THE S-536 SPOTTING SCOPE

STEP 1 – Locate your **Pre-Assembled Tripod (E)**. Open all 3 **Tripod Legs (Y)** until they will not open any further. The tripod should be able to stand on its own as shown in *Figure 1*.

Figure 1



STEP 2 - Locate your **12-36 X 50mm Spotting Scope (A)**. Place the **Spotting Scope Mounting Base (V)** on top of the **Tripod Universal Camera Style Mount (W)** so that the **Tripod Mount Securing Screw (X)** is in line with the threaded hole located on the bottom of the **Spotting Scope Mounting Base (V)**. Turn the **Tripod Mount Securing Screw (X)** in the clockwise direction until the tube is secured firmly on the **Universal Camera Mount (W)**. See *Figure 2*.



Figure 2

Turn the **Tripod Securing Screw (X)** clockwise to secure the spotting scope to the tripod.

**Your Spotting Scope is now ready to use. To get started viewing with your Spotting Scope, please skip to the “How to use your S-536 Spotting Scope” section. To see how to set up your Universal Camera Adapter in just seconds, please see the next section, “Quick Set-Up Guide for the DS-40ST Universal Camera Adapter.”*

QUICK SET-UP GUIDE FOR THE DS-40ST UNIVERSAL CAMERA ADAPTER

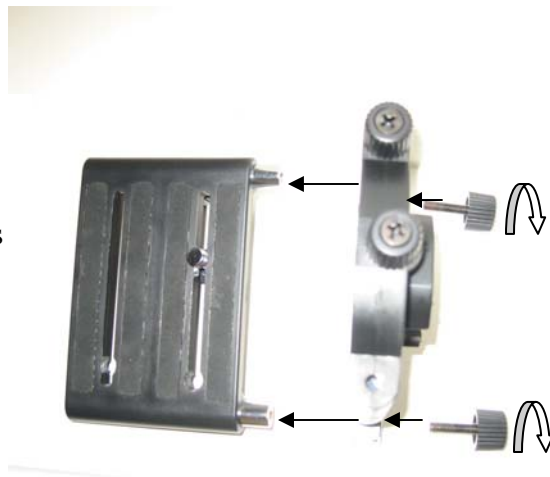


STEP 1 – Locate the **Universal Camera Adapter (UCA) Deck (I)** and **Universal Camera Adapter (UCA) Front (J)**. Next locate the **UCA Assembly Hand Screws – 2ea. (L)**.

STEP 2 – Using the two **UCA Assembly Hand Screws (L)**, place one of the screws through either one of the small holes (as shown in *Figure 3* below) which are located on the chrome colored aluminum section of the **Universal Camera Adapter (UCA) Front (J)**. Next, Hold the **Universal Camera Adapter (UCA) Deck (I)** in your left or right hand (whichever is more convenient for you), and with your other hand, line up the front of the screw with the front of the aluminum bar coming out of the **Universal Camera Adapter (UCA) Deck (I)**. Turn the **UCA Assembly Hand Screw (L)** clockwise until both the **Universal Camera Adapter (UCA) Deck (I)** and **Front (J)** are firmly mated against each other.

Repeat **STEP 2** above for the second **UCA Assembly Hand Screw (L)**.

Figure 3
Turn the screws clockwise as shown.



**Now you are ready to start using your universal camera adapter with your spotting scope!*

HOW TO USE YOUR CSTAR S-536 SPOTTING SCOPE

STEP 1 – Before you start viewing, first remove the **Eyepiece Cover (B)** from the **12-36x Zoom Eyepiece Lens (O)**.

STEP 2 – Next, remove the **Objective Lens Dust Cover (C)**. To remove, simply press the two release buttons on each side of the cover with your fingers and remove from the front of the spotting scope.

**It is always good practice to replace the Eyepiece Cover (B) and Objective Lens Dust Cover (C) back onto the scope when not using your spotting scope. These accessories help protect your 12-36x Zoom Eyepiece Lens (O) and your 50mm Objective Lens (U) from dust and debris. To learn more about caring for your spotting scope, please see the “Care and Maintenance” section.*

STEP 3 – **Aiming your spotting scope.** Simply turn the **Directional Control Handle (F)** counter-clockwise to loosen the mount. Next move the **Main Spotting Scope Tube (T)** towards the object you want to view. You can adjust the “tightness” of the spotting scope and tripod by simply turning the **Directional Control Handle (F)** clockwise (to tighten) and counter-clockwise (to loosen).

***360 DEGREE FEATURE:** To suit your individual style for viewing through the spotting scope, rotate the eyepiece and spotting scope body up to 360 degrees! See *Figure 4*.

Figure 4

To rotate, turn the **360 Degree Tube Securing Screw** counter-clockwise to loosen. Rotate the tube to the position desired and re-tighten (in the clockwise direction) the securing screw.



STEP 4 – **Changing your viewing power.** Your spotting scope features a **12-36x Zoom Eyepiece Lens (O)**. This lens allows you to easily switch between several viewing powers simply by turning the **Magnification Adjustment Ring (P)** clockwise to increase your power or magnification and counter-clockwise to decrease your power or magnification. The minimum power you can view with is 12x (everything appears 12 times closer to you). The maximum power you can view with is 36x (everything appears 36 times closer to you). See *Figure 5*.



Figure 5

Grip and turn this **Magnification Adjustment Ring (P)** until the little white dot is on the magnification desired. The viewing powers are printed on the metal ring just in front of the **Magnification Adjustment Ring (P)**.

**Learn how to use the included Universal Camera Adapter and your own digital camera to view at even higher powers! To learn more, see the “How to use your DS-40ST Universal Camera Adapter” section.*

STEP 5 – How to Focus the image? After you find what you want to see, while looking through the **12-36 Zoom Eyepiece Lens (O)**, simply turn the **Image Focusing Adjustment Ring (Q)** either clockwise or counter-clockwise until your image is sharp and clear. See *Figure 6*.



Figure 6
Grip and turn this **Image Focusing Adjustment Ring (Q)** and turn either clockwise or counter-clockwise until the image is sharp and clear.

ADDITIONAL TIPS FOR YOUR CSTAR S-536 SPOTTING SCOPE

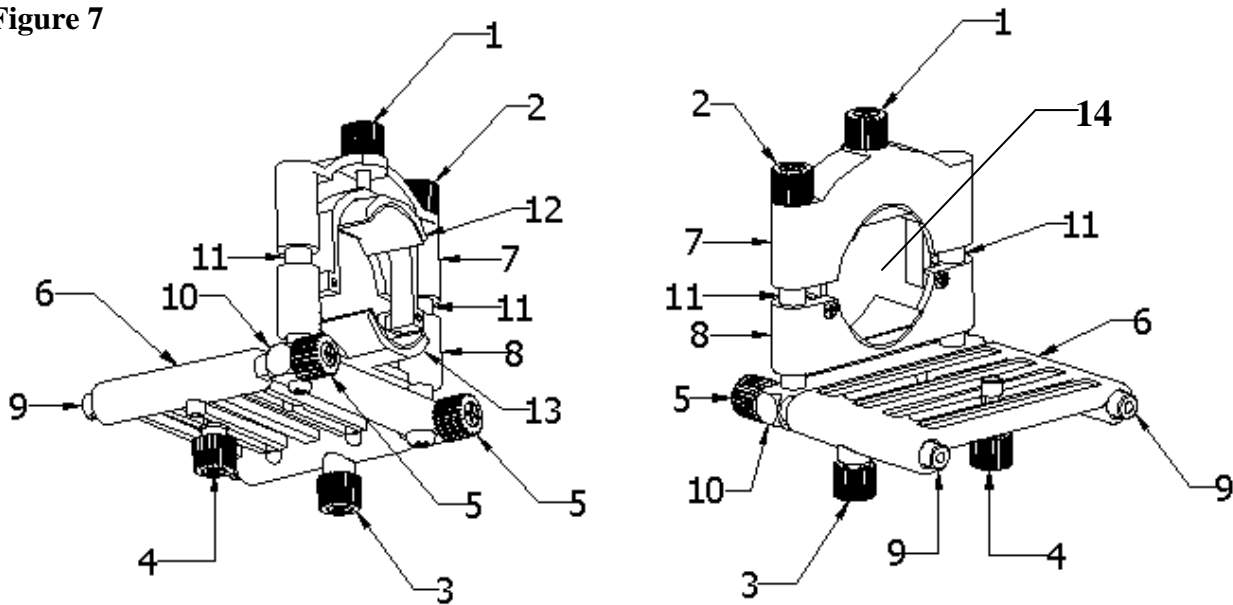
- 1. Mounting your spotting scope onto the tripod:** Your spotting scope comes with a tripod to help keep the magnified image steady when viewing. Simply screw the tripod onto the bottom of your spotting scope securely and then open the tripod legs to their fullest position for use. You can adjust the angle of the telescope by moving the handle on the tripod.
- 2. Power and Focus Adjustment:** The magnification can be adjusted by turning the zoom eyepiece ring and the focus can be set by turning the focus eyepiece ring. First turn the zoom eyepiece ring to set the scope to the lowest power and then turn the focus eyepiece ring until you have a sharp image. Then turn the zoom eyepiece ring until you reach the highest power. Again re-adjust the focus eyepiece ring until the image is clear. You may notice that particularly at high power the image may not seem as clear as at the low power setting. This is due primarily to less light reaching your eye at the higher power and also to light waves being obscured by atmospheric contamination or heat waves. Also, sometimes at high power, vibrations may make it more difficult to see a steady view over extended periods of time. Placing your tripod on a firm surface will help reduce vibrations.
- 3. 360 Degree Rotary Scope Body:** Turn the eyepiece to the position that is most comfortable with this 360 degree spotting scope rotary feature! See *Figure 4* on page 7.

HOW TO USE YOUR DS-40ST UNIVERSAL CAMERA ADAPTER

*PLEASE REFER TO **FIGURE 7** DURING THIS SECTION IN ORDER TO ACHIEVE BEST RESULTS.

- | | | |
|---------------------------------------|--------------------------|--|
| #1 – Eyepiece Clamping Screw | #6 – UCA Deck | #11 – UCA Front |
| #2 – Vertical Adjustment Screw Z-Axis | #7 – Upper Clamp Housing | #12 – Upper Clamp |
| #3 – Depth Adjustment Screw Y-Axis | #8 – Lower Clamp Housing | #13 – Lower Clamp |
| #4 – Camera Attachment Screw | #9 – UCA Deck Guides | #14 – Camera Adapter Opening or Throat |

Figure 7



Congratulations! Your purchase of this Universal Camera Adapter (among enthusiasts it is also known as a “Digi-Scoping adapter) ensures your success in taking good pictures of astronomical or terrestrial objects if you carefully follow the step by step instructions below. This Universal Camera Adapter (UCA) is manufactured with the world’s most reliable components to allow even beginning and novice users to easily and precisely take digital images with your spotting scope. This adapter allows for precise positioning of the camera on the UCA platform (also known as its “deck”) and connects to your spotting scope in a rigid and stable fashion. This all adds up to great digital images with your spotting scope and digital camera (digital camera not included).

**Reminder: Individual viewing experience varies depending on the type and quality of camera used, atmospheric conditions such as excessive heat in the air and the interference of light pollution.*

STEP 1 - Setting up your camera and Universal Camera Adapter

- 1.1 Switch your camera power button to the “On” position. (The Universal Camera Adapter fits many sizes of digital cameras (Both small and large as shown in **Figure 8** and **Figure 9** below).



Figure 8 Digital “SLR” Camera



Figure 9 Digital “Point and Shoot” Camera

- 1.2 The **Camera Attachment Screw (#4 in Figure 7 / or K under the “What’s in the Box?” section)** may be installed in either the front or rear slot of the **Universal Camera Adapter (UCA) Deck (#6 / or I under the “What’s in the Box?” section)**. Which slot you use (front or rear) will depend on the location of the screw attachment area/cavity on your digital camera. Digital cameras will have an open threaded area (1/4 inch in width) on the bottom of the camera which is used for mounting the camera on tripods or onto the Cstar Universal Digital Camera Adapter. This adapter is universal and should allow for a firm attachment between the **Universal Camera Adapter (UCA) Deck (#6 / I)** and the bottom of your digital camera. Due to the size of the camera in **Figure 8**, the camera is mounted on the rear slot of the **Universal Camera Adapter (UCA) Deck (#6 or I)**. In **Figure 9**, the camera is mounted on the front slot of the **UCA Deck (#6 or I)**. To remove the knob from one of the slots, simply slide it over to the right hand side of the **UCA Deck (#6 or I)** and turn it out (counter-clockwise) from the threaded hole which is located on both the right hand corners of both front and back slots. To replace the knob, just turn clockwise through the threaded hole on either the front or rear side. See **Figure 10**.

Figure 10



**So that you do not lose your Camera Attachment Screw, it cannot just be “pulled” out from the threaded hole. You will need to unscrew (counter-clockwise) to remove the Camera Attachment Screw. Replace in either the front or rear slot by turning the screw in the clockwise direction.*

- 1.3 **Line up the X axis (left or right):** With the camera still in the “On” position, center the camera lens in the middle of the camera adapter “throat” or “opening.” See **Figure 11**. Use the **Camera Attachment Screw (#4 or K)** to secure the base of the camera to the **UCA Deck (#6 or I)** by turning in the clockwise direction. The left and right sides of your camera lens should be centered so that each side has approximately the same distance between the left and right side of the camera adapter “throat” or hole. Turn the **Camera Attachment Screw (#4 or K)** so that its front threaded screw turn/screw into the small threaded hole/cavity in the bottom of the digital camera.

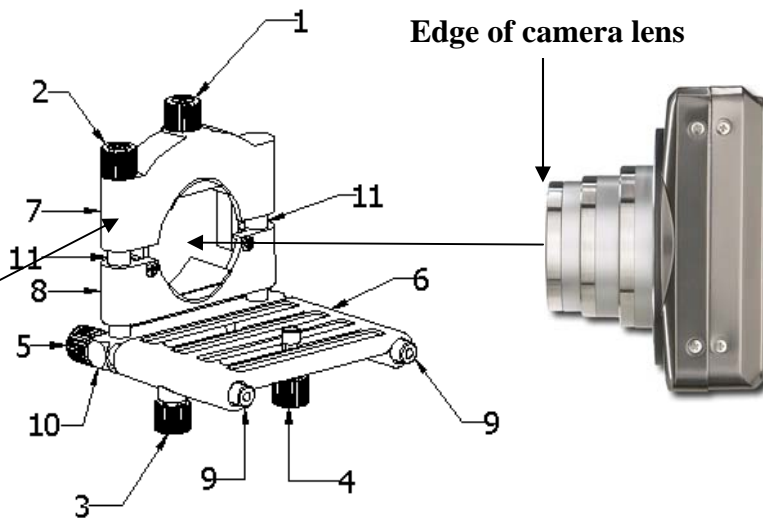
***Your camera should fit snugly against the UCA Deck (#6 or I). If it does not, and you have already turned the Camera Attachment Screw (#4 or K) until it stops, please call Cstar Optics, Inc. toll-free customer service line at: 1-877-88-CSTAR for help. DO NOT FORCE THE SCREW INTO THE BOTTOM OF THE CAMERA.**

Figure 11

For best results, line up the edge of the camera lens with the center of the opening as shown.

TIP

For best results, keep the front edge of the camera lens about 1/4" inch away from face of **Upper Clamp Housing (7)**. This will allow some room for final focus adjustments. See 1.4 below for instruction on how to adjust the distance of the lens from the opening.



1.4 Line up the Y axis (front and back): The front edge of your camera lens should not protrude past the front face of the **Upper Clamp Housing (7)**. For best results, keep the front edge of the camera lens about 1/4" inch away from face of **Upper Clamp Housing (7)**. This will allow some room for final focus adjustments. Loosen the **Depth Adjustment Screw (Y-Axis) (FF)** by turning in the counter-clockwise direction. Slide the **UCA Deck (#6 or I)** out until the edge of the camera lens is approximately 1/4 inch away from the **Universal Camera Adapter (UCA) Front (J)**. Once the UCA Front (J) is at its desired position, re-tighten the Depth Adjustment Screw (Y-Axis) (FF) by turning ion the clockwise direction. See *Figure 12*.

Figure 12

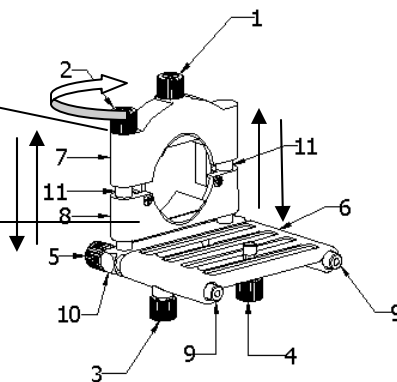


Slide the **UCA Deck (#6 or I)** out along the chrome colored aluminum guides until the camera lens is approximately 1/4 inch from the **UCA Front (J)**. Re-tighten the **Depth Adjustment Screw (Y-Axis) (FF)** to secure.

1.5 Line up the Z axis (up and down): Simply turn the top **Vertical Adjustment Screw (#2 or EE)** in the clockwise direction to move the **UCA Front (J)** down or in the counter-clockwise direction to move the **UCA Front (J)** up so that the top and bottom of your camera lens are centered between the **Top and Bottom Clamp Housings (#7 and #8)**. See *Figure 13*.

Figure 13

As you turn the **Vertical Adjustment Screw (#2 or EE)**, after every few turns, press down slightly on the **Bottom Clamp Housing (#8)**, and then continue to turn until the top and bottom of your camera lens is centered in the opening.



**In summary, all sides of the camera lens should be approximately the same distance from the edges of the opening. In other words the center of the camera lens should be in-line with the center of the camera adapter opening. The edge of the lens should also not protrude through the opening but be located approximately ¼ inch from the opening of the UCA Front (J).*

1.6 **Parallel Alignment of the Camera LCD monitor or rear face of the camera (if no LCD screen):** Be sure the rear face or LCD monitor of your camera is parallel to the face of the **Upper Clamp Housing (7)**. Now that you have the camera lens lined up with the opening of the camera adapter, check to see if the camera is parallel with the **Universal Camera Adapter Front (J)**. Just adjust by moving the camera by hand. You may need to loosen the **Camera Attachment Screw (#4 or K)** to adjust.

See *Figure 14*.

Figure 14

Front of camera and front of the universal camera adapter should be parallel with each other.



1.7 **Secure your camera on the adapter deck:** If you have not yet secured all of the adjusting knobs, tighten both the **Camera Attachment Screw (#4 or K)** and **Depth Adjusting Screw (3 or FF)** to fix your camera safely on the deck.

STEP 2 - Clamping the adapter with already mounted camera on your spotting scope eyepiece.

2.1 **Selecting your viewing magnification:** Select your viewing magnification by turning the Magnification Adjustment Ring (P) on the spotting scope to your desired viewing power. The Cstar S-536 features variable powers from 12x to 36x. See *Figure 5* under the “**How to use your S-536 Spotting Scope**” section.

2.2 **Opening the camera adapter clamping area:** Turn the **Eyepiece Clamping Screw (#1 or DD)** counter-clockwise several turns each time and lightly press down the **Lower Clamping Housing (8)** to open the Clamping “throat” or hole. The **Upper Clamp (12)** and **Lower Clamp (13)** will expand apart until the

eyepiece barrel of your spotting scope can easily fit into the “throat” or hole of the camera adapter. See *Figure 15* and *Figure 16*.

Figure 15

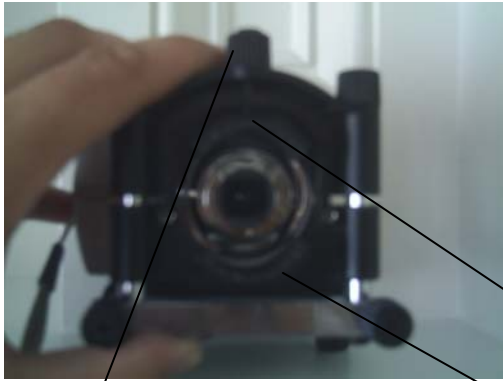


Figure 16



Turn **Clamping Screw (#1 or DD)** until the Lower and Upper clamps open wide enough to slide over the front of the spotting scope eyepiece as shown in *Figure 16*.

2.3 Placement of the camera adapter with camera onto the spotting scope: Place the camera adapter with the mounted camera onto the spotting scope eyepiece. The two upper and lower clamps should be placed over the **Magnification Adjustment Ring (P)** for best viewing. See *Figure 17*, *18*, and *19* below.

Figure 17



Figure 18



Magnification Adjustment Ring (P)

Figure 19



Magnification Adjustment Ring (P)

2.4 Secure the camera adapter with camera onto your spotting scope: Turn the **Eyepiece Clamping Screw (#1 or DD)** to clamp the spotting scope eyepiece inside the Camera Adapter Clamping Throat. A “snug” feel is sufficient for stable picture taking. Do not over tighten by turning as tight as it will go...just a “snug” fit will provide for best results. See *Figure 20*.

Figure 20
Eyepiece
Clamping
Screw (#1
or DD)



**To change to different magnifications, just loosen the Clamping Knob (1), and remove the camera adapter from the eyepiece. Select your power and then place the camera adapter back onto the eyepiece and tighten the Clamping Knob (1).*

***IMPORTANT – MAKE FINE ADJUSTMENTS**

Now that you have mounted your camera on the camera adapter and already placed the camera adapter onto the spotting scope eyepiece, it's now time to start observing and taking photos! As you start to view through your camera's view finder or your camera's LCD screen, it may be necessary to make small adjustments to get your image just right. Please review the final few steps below and included image samples to ensure the camera lens and spotting scope are aligned with each other.

***IMPORTANT – FOCUS YOUR SPOTTING SCOPE**

Although you may have focused the spotting scope before placing the digital camera and adapter onto the spotting scope eyepiece, you may need to re-focus the spotting scope. If you change viewing magnification by zooming in with your digital camera zoom button, it may also be necessary to re-focus the image. To focus the image, simply turn the Image Focusing Adjustment Ring (Q) either clockwise or counter-clockwise until the image is sharp and clear in your camera's view finder or LCD monitor. Refer to the previous section: "How to use your Cstar S-536 Spotting Scope" to learn how to focus your spotting scope.

STEP 3 - Further / fine alignment with camera on the camera adapter deck

- 3.1 **Final "Z-axis" alignment:** Turn **Vertical Adjustment Screw (Z-Axis) (#2 or EE)** clock-wise to lower or counter-clockwise to raise the clamping throat until the center of the camera lens is aligned to the center of the eyepiece. Refer to the previous step: **1.5** above.
- 3.2 **Final "Y-axis" alignment:** Slightly loosen the **Depth Adjustment Screw (Y-Axis) (#3 or FF)** and move the **UCA Deck (6 or I)** either towards the front until the front edge of the camera lens is approximately only 1mm away from the eyepiece lens. Refer to the previous step: **1.4** above.

STEP 4 - Final steps for ensuring your camera lens is aligned with your spotting scope eyepiece

- 4.1 Turn the camera magnification so that it is at "0 power." A circular "light grayish" spot will appear on the LCD monitor or in your view finder if your camera does not have an LCD monitor.
- 4.2 Adjust the focusing ring of the spotting scope until the spot becomes a clear image. See **Figure 21**.

*You are ready to start "digi-scoping" and taking great digital photos if you can see a circular image when viewing at the lowest spotting scope power of 12x magnification without using the zoom button on your camera. See **Figure 21**:*



Figure 21 Photo to the right was taken with this spotting scope set at 12 power and a "point and shoot" digital camera (no zoom).

- 4.3 The out-line of the circular image should be all clear without any blurry areas if alignment is correct. It is recommended to check to see if the camera body and the face of the **Upper Clamp Housing (7)** are parallel to each other. Refer to step:1.6 above. If they are not parallel with each other, you will often see the internal walls within the spotting scope eyepiece and thus you will not see a nice circular image as shown in *Figure 21*.
- 4.4 If you do not see a circular image as shown in *Figure 21*, then make small adjustments in all three directions (x, y, and z) by slowly loosening, adjusting, and tightening the **Camera Attachment Screw (X-Axis) (#4 or K)**, **Vertical Adjustment Screw (Z-Axis) (#2 or EE)** and **Depth Adjustment Screw (Y-Axis) (#3 or FF)** for the camera's X,Y and Z position.

TIPS FOR GOOD “DIGI-SCOPING” PHOTOGRAPHY

- a. To avoid hot air turbulence which causes image deformation and an image that seems to “jump” or “bounce,” for best results take pictures when the air is dry and cool.
- b. When just getting started, first use the camera with its lens at zero power or at its “normal” setting to find and focus your target objects. After you can see a circular image (similar to *Figure 21*), then adjust to a bigger optical magnification by pressing the zoom button on your camera. Now the image will fill the whole LCD screen and you will no longer see the “out-line” of the circular image. See *Figure 22*.



Figure 22 Photo to the left was taken with this spotting scope set at 12 power with a “point and shoot” digital camera using its 3x zoom feature.

- c. Flash: It is best to turn off your Flash when taking photos through your spotting scope. The additional “flash” of light often causes glaring in your photo. By turning off your flash, the image color remains clear and sharp. Please refer to your camera manufacturer’s instructions for turning off your flash.
- d. Image quality is greatly subjected to the brightness level of the camera “Also known as the F-Number selection.” Most digital cameras provide -2 to +2 stop adjustment in its auto- exposure control. It is recommended to try using the adjustment to see and select an optimal brightness for taking photos through your spotting scope. Please refer to your camera manufacturer’s instructions for adjusting the camera’s auto-exposure.
- e. Place your tripod on a level surface that is comfortable for viewing. (i.e. Placing your spotting scope on a picnic table and sitting in a chair to view works very well). This will help to ensure workable stability and adjustability when digi-scoping.

- f. Use your camera's self timer feature: When you focus your spotting scope and then press the picture taking button on your digital camera, the camera will most likely vibrate or have some movement. This vibration or movement often creates a blurry image. For best results, set your time to 3 to 4 seconds. This will allow all vibrations to stop and your photograph will come out very sharp and clear.

**Reminder: Individual viewing experience varies depending on the type and quality of camera used, atmospheric conditions such as excessive heat in the air and the interference of light pollution.*

USING YOUR CAMERA ADAPTER WITH YOUR TELESCOPE – Telescope Not Included

Many people may own a telescope of some kind. The DS-40ST Universal Camera Adapter is also compatible with telescopes which have eyepieces of 1.25 inch diameter.

To use your camera adapter with your telescope, first try placing the camera adapter onto the eyepiece. Follow the same steps as in the previous instructions (for use with the spotting scope) in this manual. The camera adapter will go onto the telescope eyepiece the same way it goes onto the spotting scope eyepiece. The camera adapter's Upper and Lower Clamps should clamp down on the front of the telescope eyepiece as shown in *Figure 23*.

Figure 23



*If the camera adapter feels loose on the eyepiece and feels like it will not clamp down for a “snug” fit, then do the following:

1. Peel the rubber pads off of the Upper and Lower clamps. The pads peel off very easily.
2. Use the bonus pads included (made for 1.25 inch telescope eyepieces) and replace the new pads back onto the Upper and Lower Clamps. Now, try placing the camera adapter back onto the telescope eyepiece while using the same steps (as used for mounting the camera adapter onto the spotting scope eyepiece) as previously explained in this manual.

For questions or help, please visit us on the web at: www.cstaroptics.com or call us Toll Free: 1-877-88-CSTAR. Replacement pads can be purchased from Cstar Optics, Inc.

SUPPLEMENTAL IMAGES AND DESCRIPTIONS

These additional images are meant to help you familiarize yourself with the universal camera adapter product and most importantly to help you take great photos.

Universal Camera Adapter – Supplemental Images and Descriptions



When using the adapter for your spotting scope

This adapter may clamp on a spotting scope's eyepiece barrel of 35-40mm diameter, and will securely fix a camera on to its deck with a standard 1/4 inch screw.

Within 20 seconds you may easily attach this adapter and camera on a spotting scope for immediate "digi-scoping," or remove it from the spotting scope.



When using the camera with a telescope (use the included "thicker" pads)

This adapter will clamp to a telescope's 1.25" eyepiece, and securely fix a camera on its deck with a standard 1/4 inch screw. Within 20 seconds, you may easily attach this adapter and camera on a telescope for immediate "digi-scoping," or remove it from the telescope.

HELPFUL SPOTTING SCOPE AND DIGITAL IMAGING

TERMINOLOGY

Close Focus (also called Near Focus) - The closest you can be to an object and completely focus the image. For example your S-536 spotting scope has a near focus of 10 meters. If you try to view objects from a distance that is less than 10 meters, you may not be able to see a completely focused image.

Digi-Scoping – A term that refers to using your digital camera to take photos through your spotting scope or telescope by using a camera adapter attachment such as your Cstar DS-40ST universal camera adapter.

Exit Pupil - The exit pupil refers to the size of the column of light that exits a spotting scope.

Eye Relief - The distance a spotting scope can be held away from the eye and still present the full field-of-view.

Field of View (F.O.V.) - Field-of-view is the side-to-side measurement of the circular viewing field or subject area. It is defined by the width in feet or meters of the area visible at 1000 yards or meters. The higher the magnification, the more narrow the field-of-view.

Lens Coatings – Coatings on lens surfaces helps to increase the amount of light coming into the scope, thus providing a brighter image. The more lens coatings you have on the lens, the brighter the image will appear.

Magnification (Power) - Spotting scopes are often referred to by numbers separated by an "x". For example: 12-36x50. The first number is the power or magnification of the spotting scope. With a 12-36x50 variable power spotting scope, the object being viewed appears to be 12 to 36 times closer than you would see it with the unaided eye.

Objective Lens Size - The number after the "x" in the formula: (12-36x50) is the diameter of the objective or front spotting scope lens. The larger the objective lens, the more light that enters the spotting scope and the brighter the image.

Optical Zoom vs. Digital Zoom – Digital cameras may have an optical zoom, a digital zoom, or both. An optical zoom literally changes your lens's focal length. In other words, the image is magnified by the lens. Light is spread across the entire sensor and all of the pixels can be used. The optical zoom is the "true" zoom that will improve the quality of your images. Thus a 3x optical zoom allows you to actually really increase your viewing magnification up to 3 times! When combined with the powerful magnification of a spotting scope, a new and innovative way of taking photos emerges...termed Digi-Scoping!

A digital zoom uses interpolation techniques to add detail to the portion of the subject that you have zoomed in on. However, no additional image detail is gained. The end result would be the same as if you had shot the picture without the zoom, and then blow up the picture using software.

In general, the digital zoom only changes the presentation of existing data, and the optical zoom actually augments the image collected by the sensor. Optical zooms are far superior to digital zooms and should be one of the first things you look for in purchasing a digital camera.

Point-and-Shoot Digital Cameras – A point-and-shoot camera uses one lens to view the scene, and a separate lens to capture the desired image. This means the image captured will not be the actual image viewed by the photographer, but only a close approximation. For most casual photographers, the image is so close you won't

recognize the difference. Point-and-Shoot cameras require very little manual adjustment (if any), and operate like the name describes. Focus is usually automatic.

Roll-Down Rubber Eyecups – If you are an eyeglass wearer and like to leave your glasses on when viewing through your spotting scope, then just roll-down the rubber eye-cups. This will help to ensure you can see the complete field of view. Your Cstar S-536 spotting scope features roll-down rubber eyecups.

Self Timer on a Digital Camera - When this feature is selected, the photo is taken following a short delay after the shutter button is pressed. This feature is useful for preventing camera vibrations, or to include yourself in the photo.

SLR Digital Cameras – SLR refers to Single Lens Reflex, or a camera that has one single lens to both view a scene and capture an image. What this means, to the casual photographer, is the picture you take will be the same as the image you view through the lens. It also means you can change the lens to take telephoto or wide angle photos. The most appealing aspect of an SLR camera is the ability to adjust the camera's settings manually, so that a seasoned photographer generally knows what the finished picture will look like before it is ever viewed.

SLR Digital Cameras vs. Point-and-Shoot Digital Cameras

1. **Does an SLR take better photos?** Yes. With an SLR camera it is usually easier to capture high quality photos, but there is a price. Entry level SLR camera prices are two to three times higher than high-end point-and-shoot camera prices. SLR cameras also have a learning curve, and require the user to learn a little about how a camera works.
2. **Does a Point-and-Shoot take poor photos?** No. A Point-and Shoot camera may take high quality photos, and the quality of these cameras are constantly increasing. It is more difficult to produce professional quality photo with a Point-and-Shoot camera, but it is possible. Point-and-Shoot digital cameras now take pictures that can be printed as large as 11x17 with excellent results.

Zoom Button on a Digital Camera – Most digital cameras come standard with a 3x optical zoom. Thus, when taking photos with your camera through the Cstar S-536 spotting scope, you can increase the actual power of the spotting scope up to 3 times!

Zoom Eyepiece – A zoom eyepiece allows the user to quickly change between viewing powers without the need to switch to a different “eyepiece.”

CARE AND MAINTENANCE

Cstar builds its optical products to last for years. In order to be sure your Spotting Scope is able to perform as it was designed, gently blow away or remove with a small brush any debris or dust that fall on the lens surface. To clean the lens of fingerprints or dirt, please use a soft non-abrasive cloth and softly rub in a circular motion until the lens is clean. Excessive rubbing, use of a coarse material, or chemical may scratch or remove coating from the lens surface and cause permanent damage.

WARNING! Do not, under any circumstance attempt to view the sun through your spotting scope or digital camera (Digital Camera Not Included). Doing so will result in instant and permanent eye damage.

WARNING: CHOCKING HAZARD-Small parts! Not intended for children under age 6 unless supervised by an adult.

WARRANTY AND REPAIR

Cstar Optics, Inc. is dedicated too and confident in the quality and craftsmanship of our products. Cstar Guarantees this product to be free from defects in materials and workmanship for the life of the product. This spotting scope and universal camera adapter have a **LIMITED LIFE-TIME WARRANTY** and is limited to the original purchaser and is non-transferable. In addition, this warranty does not apply to products purchased outside the United States of America. Repaired products will only be shipped back to United States of America addresses. Customer is responsible for all freight, duty, and all other export and import charges for any items to be shipped back outside of the United States of America.

Should it become necessary to repair or replace your Cstar product, return it prepaid to:

**CSTAR OPTICS, INC.
ATTN: CUSTOMER SERVICE
15352 S. KEELER ST. UNIT-E
OLATHE, KS 66062**

SHIPPING & HANDLING FEES

Send in a check or money order for shipping and handling made out to Cstar Optics, Inc in the amount of: \$10.00.

(California residents are excluded from paying shipping and handling payments for warranted items only)

Include a brief note detailing the nature of the defect and a copy of the original sales invoice. A customer service agent will contact you before any parts have been replaced if the nature of the damage is not covered by our warranty. The sole obligation of Cstar Optics, Inc. under the limited warranty is to replace or repair parts on the covered product under the terms set forth.

In addition, this warranty becomes void if the covered product has been modified in design or function, or has been subjected to abuse, mishandling, or unauthorized repair. Furthermore, product malfunction or deterioration due to normal wear is not covered by this warranty.

This warranty gives you specific rights, and you may have other rights, which vary from state to state.

For Customer Service, Please call:

Toll Free: 1-877-88-CSTAR

Telephone: 913-829-1004

Fax: 913-829-7466

OR EMAIL: SERVICE@CSTAROPTICS.COM

Again, we appreciate your business, and hope you have a wonderful experience with your new Cstar Spotting Scope and Universal Camera Adapter.

Cstar Business Hours: Monday-Friday 8AM-5PM CST

WWW.CSTAROPTICS.COM

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