PENTAX

SPORT OPTICS

Reliable gear for your adventures.

Rifle Scope Instructions

Lightseeker-XL Xtreme Light

PENTAX PIONEER

WHITETAILS UNLIMITED

Lightseeker-30

Instructions for PENTAX Rifle Scopes

• Lightseeker-XL • Lightseeker-30
• Whitetails Unlimited • Pioneer

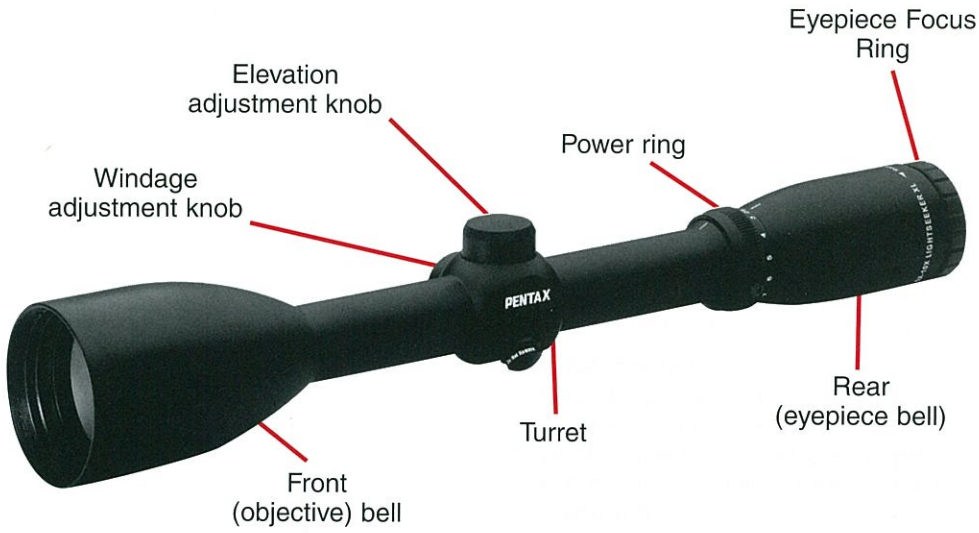
Congratulations! You have purchased the finest quality and most advanced optical sighting device available today – at any price. PENTAX scopes are designed by shooters for shooters. We build them with a true understanding of what shooters and hunters need, because we are shooters and hunters ourselves. We also understand that your satisfaction must always be our ultimate goal. Whether this is your first PENTAX product, or you are a long-time PENTAX customer, we appreciate the trust you have placed in us by purchasing this rifle scope. You may be assured that we have done our best to earn that trust, and we will continue to do our best to ensure your satisfaction.

Contents

With proper mounting and reasonable care your PENTAX scope will provide a lifetime of accuracy and reliable performance. While a rifle scope is a relatively simple instrument to mount and use, the following information will provide tips to help every shooter obtain optimum performance and maximum enjoyment from this product. Please take a few moments to read this manual before using your scope.

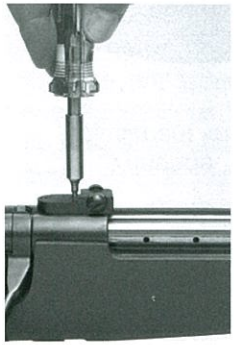
Mounting

Proper scope mounting is a critical component of achieving maximum overall rifle accuracy. If you are mounting your scope yourself, the following pointers will help you achieve the best results:



1. Use quality steel mounts, making sure the base or bases (one or two piece) are the correct ones for your rifle, and the rings are for the proper diameter scopes. (Virtually all modern rifles come from the factory drilled and tapped for scope mount bases, or with integral bases built into the receiver. If you are mounting your scope on a receiver which is not made to accommodate scope mounts, consult a gunsmith.) Read the ring and base manufacturer's instructions.

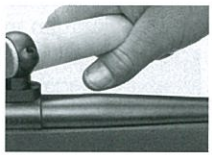
2. Using a degreasing solvent, clean the base screws and the screw holes in the receiver. Place a small amount of removable Loctite™ (Loctite Threadlocker #242 is recommended) or a similar product on each screw and secure the bases(s) without fully tightening the screws. In a rotating pattern, tighten each screw a little at a time until each one is very tight, but do not use so much torque as to damage the screw heads.



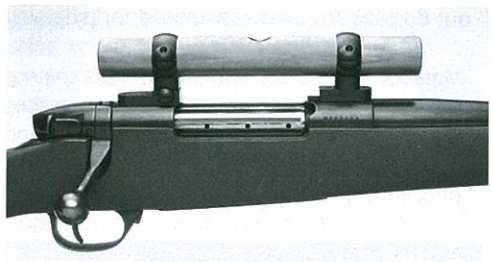
Warning:

- In securing the base screws to the rifle receiver, use only removable Loctite™ or similar products. Avoid any product which will permanently bond the screws to the receiver.
- Do not use the scope as a leer or tool to turn dovetail rings into their bases.

3. Mount the rings on the base(s) and adjust them visually so that they are centered on the receiver. Do not tighten completely. If one or both of the rings are of the dovetail type, which must be rotated to seat in the base, mount a one inch wooden dowel or steel rod in the ring to accomplish this task.



4. Your scope came from the factory with the windage and elevation adjustments recentered. As with any scope, the highest quality image is obtained by viewing through the center of the optics. The goal in mounting a scope, then, is to attach and align the rings as perfectly centered and squared as possible, so that a minimum of windage and elevation adjustment will be required to zero the scope. Because of irregularities in the fire arm or scope mounts, this is not always possible, but it should be attempted. Another consideration is that generally speaking, the higher the power of the scope, the more narrow the range of adjustment. Well-centered and aligned rings become even more critical when mounting a higher powered scope. Good ring alignment will also prevent the scope from being bent or stressed as the rings are tightened around it, a condition which could cause loss of accuracy or optical performance.



It is sometimes helpful to mount a one inch or 30mm wood dowel or steel rod in the rings before actually mounting the scope. The dowel or rod should visually appear parallel with the receiver and barrel, and it should be in contact with as much of the inner surface area of the rings as possible. Another helpful technique is to temporarily place the scope

in the rings and check alignment with a bore-sighter. Make adjustments to the rings, as necessary, until the scope is centered.

Once you are confident that the rings are properly aligned with the rifle receiver and one another, complete the procedure of tightening them to the bases, making sure the alignment is not lost in the process. These screws should be as tight as you can make them with one hand with out damaging the screws. Loctite is not recommended here.

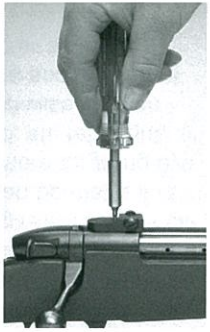
5. Next, place the scope in the rings, making certain the scope is oriented properly on the rifle. The eyepiece end should be toward the rear of the rifle and the objective end toward the muzzle. (Depending on the scope model,

the eyepiece may be smaller or larger than the objective.) The elevation turret should point upward, the windage turret to the right side of the rifle and the logo on the scope on the left side. Install the ring screws loosely.

6. Adjust for proper eye relief by holding the

rifle in your normal shooting position and moving the scope forward and back until you find the point at which you can most comfortably see the scope's entire field of view. Check to be sure the reticle is properly aligned (the horizontal line of the reticle should be horizontal as you view through the

scope). Tighten the ring screws, little by little, in a rotating pattern. Loctite is not recommended for the ring screws, and they should not be as tight as the base screws.



Shotguns: Mounting

Several different scope mounting systems are available, depending on your shotgun type. Some specialty pump and autoloader shotgun models are offered with built-in cantilever scope mounts. Similar systems are also available on replacement barrels from specialty barrel manufacturers. Most bolt action shotguns are drilled and tapped to accept rifle-type scope bases. These integral systems offer optimum accuracy and scope mounting simplicity – of particular value to slug shooters. (For drilled and tapped shotguns, follow the instructions for mounting scopes on rifles and muzzleloaders as previously stated).

Receiver-type mounts are available from several manufacturers to fit many common pump and autoloader shotguns which do not have integral scope mounting systems. These are installed by replacing the trigger assembly pins which, if the manufacturer's instructions are carefully followed, you can easily do yourself. These mounts provide a base on top of the receiver, generally for Weaver ™ type rings. Additionally, some shotgun manufacturers offer a simple, easy to install, rib adapter system, also accepting Weaver-type rings. Both systems can be quickly removed if you want to use your gun without a scope for wing or clay shooting; upon reinstallation, the scope should need little, if any, rezeroing. Follow the mount manufacturer's instructions for attaching rings and scope, and refer to instructions for mounting scopes on rifles and muzzleloaders.

Eyepiece Focusing

The eyepiece is the optical assembly located at the rear of the scope. Eyepiece focus is preset for 20/20 vision, and thus may require

no adjustment, but may be readjusted to accommodate the vision of the individual user. It is important to note that the purpose of focusing the eyepiece is to produce a clear image of the reticle – not the target. Focus is changed by turning the focus ring of the scope or the entire rear bell of the scope for shotgun scopes. Whitetails Unlimited, Lightseeker-30, Lightseeker-XL and Pioneer have a European-style quick focusing eyepiece. This style of focusing requires no locking ring and adjustments can be made in a split second. It also offers more forgiving eye positioning (moving forward, aft, left, right, up and down). (Counterclockwise rotation increases the diopter setting and clockwise rotation decreases the diopter setting.)

To focus, view through the scope against a blank background, such as the sky or a blank wall, so that the reticle appears in sharp contrast to the background. Unscrew the eyepiece five full turns. The vast majority of users will find the correct focus point by screwing inward from this position. Turn the eyepiece in full turn increments. (Eyepiece

focus is not particularly critical; since the eyepiece threads are quite fine, each full turn causes only a minor focus change.) Check for the point at which the reticle appears blackest and sharpest. Do not look through the scope continuously, as your eye will tend to compensate rapidly for an unfocused reticle, making any setting look sharp. Instead, view each setting for only a few seconds, and look away for several seconds after each change. For best results, focus the eyepiece after the scope is mounted, but before sighting-in. Focus can be changed at any time, as required, but readjustment after site-in may change point of aim.

Warning:
Taking a scope in the brow from a heavy-recoil rifle can be a painful and potentially dangerous experience. With heavy-recoil rifles, adjust the eye relief so that the eyepiece is positioned as far from your eye as possible, while still allowing you to see the full field of view. When firing such rifles, hold the stock tightly to your shoulder to minimize backward movement of the rifle during recoil.

Warning:
Do not turn the eyepiece more than fifteen counter-clockwise rotations from the factory setting. There is no functional focusing effect to be achieved beyond this point, and unscrewing the eyepiece too far may have the undesirable effect of breaking the water proof seal.

Power Adjustment

With variable power scopes, power adjustment is accomplished by turning the power ring, located forward of the eyepiece bell. An index dot, located on the tube forward of the power ring, matches up with the power indication on the ring. Only the target magnification will change – magnification of the reticle remains constant at all powers. The power adjustment system is intentionally designed so that the power ring does not turn easily. Before the scope is mounted, the power ring may seem particularly stiff. After mounting, it may seem to turn more easily, due to the extra leverage and gripping surface provided by the rifle itself.

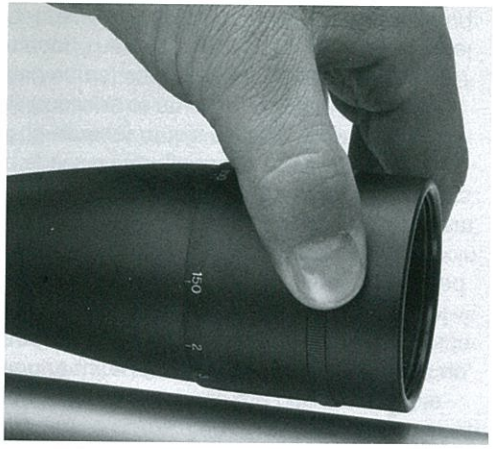
Warning:
Do not loosen or remove the small screw located on the power rings. Doing so will allow the escape of nitrogen gas sealed inside your scope, compromising its water proof qualities, and voiding your warranty.

Parallax and Adjustable Objective

Parallax is the effect created when the image of the target is not focused on the

same plane as the reticle. When light rays enter a scope they are bent inward, so that they cross at some point inside the tube. This crossing point is the plane of focus. The plane of focus will move forward or backward inside the scope as the distance to the target changes. If both the reticle and the target image are focused on the same plane, there will be no change in the position of the reticle with respect to the target, no matter the position of the eye as it looks through the scope. If the target image is focused behind or in front of the reticle, the position of the reticle with respect to the target will shift slightly as the eye is moved up and down or from side to side as it looks through the scope. Since it is virtually impossible to position the eye in exactly the same place for every shot, the condition of parallax can technically result in a loss of accuracy.

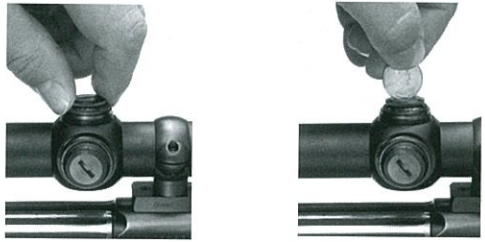
For precision work, such as competitive target or long range varmint shooting, parallax can be a significant accuracy factor. For this reason an adjustable objective or side parallax adjustment are found on higher-powered PENTAX scopes which may be used for these applications. The adjustable objective or side adjustment simply allows the shooter to manually focus the scope for the shooting range, so that the target image is always focused on the reticle plane – thereby eliminating parallax at all ranges. The adjustable objective, if present on your scope model, is located at the forward, or objective end of the scope, side parallax adjustment is located on the left side of the turrets. Calibrations are in yards, with numerals 2, 3, 4, and 5 indicating 200, 300, 400, and 500 yards respectively. The upper end of the scale is designated with an "infinity" symbol. Adjustments are made by rotating the objective bell or side parallax adjustment and registering the range in yards with the index dot. You will note that adjusting the adjustable objective or side adjustment directly affects the focused image, as seen through the scope. When the image is properly focused there will be no parallax. Therefore, parallax can also be eliminated by visually focusing the target image through the scope.



In practicality, parallax is not a significant issue in most hunting situations. If the shooter does experience parallax, the loss of accuracy is so insignificant as to have virtually no effect in terms of effective shot placement. Under most actual hunting conditions, there are many other variables which will have a much greater impact on accuracy than parallax. PENTAX rifle scope models which are most often used for general hunting applications are therefore pre-focused at the factory for a range of 100 yards. Parallax will technically exist at ranges shorter or longer than 100 yards, but will be of no practical significance to the shooter.

Sighting-in

Your scope came from the factory with the windage and elevation adjustments pre-centered. To maintain this "zero" starting point, do not change the adjustment settings until you are ready to sight-in the scope. (Only turn the adjustment knobs to make windage and elevation adjustments – excessive random rotation of the knobs can cause undue wear on the internal mechanism.)



Unscrew and remove the adjustment knob caps to access the adjustment knobs.

The elevation knob, located on the top of the scope, moves the reticle vertically. The windage knob, located on the right side, moves the reticle horizontally. On the elevation knob is an arrow indicating the direction of rotation required to move the point of impact up, and on the windage knob an arrow points in the direction required to move the point of impact to the right. The knobs are designed to be turned using your fingers and/or a coin. As the knob is turned, a clicking mechanism can be heard and felt. Each click represents a specific change in the point of impact. The amount of this change, expressed in fractions of an inch (1/2, 1/4, or 1/8) at 100 yards, varies depending on the scope model. The click value for your scope model is indicated inside one of the adjustment knob caps, and on the specifications chart included in this manual. Each knob has a calibrated dial with calibration marks indicating the distance the point of impact changes with each click.

Bore-sighting prior to sighting-in will speed the process considerably, usually placing the first shot within several inches of the desired point of impact. Bore-sighting is most easily accomplished by using a bore-sighter. With bolt actions, or other actions which permit viewing through the bore from the breech, it is also possible to bore-sight by viewing directly through the bore. Using fingers or a coin to turn the windage and elevation adjustments, center the scope reticle on the same object seen through the rifle bore.

There are many popular methods for sighting-in. Sighting-in is best accomplished shooting from a bench at a paper target from a range of fifty to one hundred yards. (If bore-sighting is not possible, begin the sighting-in process at close range – usually about twenty-five yards will do.) If your scope is equipped with an adjustable objective or side parallal adjustment be sure it is adjusted for the range at which you are sighting-in.

Traditional method:

From a solid rest, position the center of the reticle on the desired point of impact. Fire one or more shots. Make note of the distance between the bullet hole(s) and the desired point of impact. Adjust windage and

desired point of impact. Adjust windage and elevation the required number of clicks to move the point of impact to the point of aim. Fire additional shots and make additional adjustments as required to achieve the desired point of impact.

Note: While bore-sighting, confusion often arises regarding the direction the windage and elevation adjustment knobs must be turned to obtain the desired setting. To move the scope reticle in the desired direction, the knobs must be turned in the direction opposite from that indicated on the knob. The reason for this is that under normal circumstances when you turn the elevation knob in the "up" direction, for example, you are actually moving the bore line (point of impact) in an upward direction to match the line of sight (point of aim). In bore-sighting, you are doing the opposite; moving the line of sight to match the bore line.

Two-shot method:

From a solid rest, position the center of the reticle on the desired point of impact. Fire one shot. With the rifle firmly in the rest, again position the reticle at exactly the same point. Making sure the rifle does not move, turn the windage and elevation adjustments so that the reticle is centered on the first bullet hole. Next, reposition the rifle so that the scope reticle is again positioned on the desired point of impact, and fire a second shot. The rifle should now be correctly sighted-in, although additional minor adjustments may still be required.

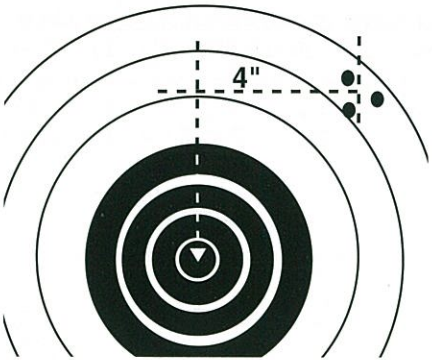
Once the desired point of impact is obtained, fire a group of three to five shots to check for consistency.

Shotguns: (Sighting-in)

If you are shooting slugs, the sight-in process will be the same as for rifles, as described above. (Depending on shotgun type, portions of this section referring to bore sighting may not apply.)

If you are shooting shot shells, as for turkey hunting, the process is also essentially the same, except that it will be necessary to change targets after each shot. This can be a tedious exercise, however it is very important

to be certain that your shotgun is accurately sighted-in to get the full benefit of using a scope for turkey hunting. If space and facilities allow, setting up multiple targets will



reduce the number of trips downrange to change targets. Sight in your scope at thirty-five or forty yards. Use targets with a thirty inch diameter circle and center bull's-eye, or specially printed targets showing the outline of a turkey or turkey head. You can move the shot pattern up and down or left and right, just as you would bullets or slugs, by using the scope's windage and elevation adjustments. Adjust the scope so that point of aim coincides with the center of the densest part of the pattern.

Deepwoods Plex Reticle

Some fixed power Lightseeker SG Plus models are equipped with the Deepwoods Plex reticle, which features a circle with overlapping crosshairs. This reticle has specific applications for turkey hunting, but also provides excellent target acquisition for dangerous game, muzzleloader, and slug gun hunting.

The circular portion of the Deepwoods Plex reticle subtends (covers) a diameter of thirty inches at forty yards. This is the area covered by the average shotgun pattern, and the generally accepted maximum range for turkey hunting with a 12 gauge. When properly sighted in the reticle not only tells the shooter where the center of the pattern will fall (center crosshairs), but also the general area of impact of the overall pattern (pattern diameter will vary according to choke and other variables). The circular portion of the reticle

is also useful for range estimation. The average mature gobbler stands approximately thirty inches tall so if it fills the circle from head to toe, the shooter can be confident the turkey is within range (forty yards). For other range estimation applications, the subtension of the reticle increases 7.5 inches for every ten yards of range.

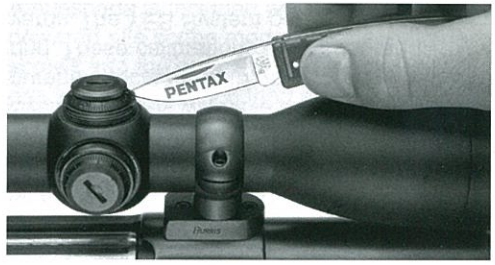
Zero reset feature:

Scopes with finger adjustable knobs are also equipped with a zero-reset. This feature allows the shooter to reset the calibrated dial to the zero mark, once the rifle is sighted-in. This provides a clear reference point so that if field adjustments are made, the scope can be quickly and accurately returned to the zero setting. There is a small slot located on the dial itself (not the coin slot located on the top of the knob). To reset the dial, simply insert a knife blade or other thin-bladed tool in this slot and rotate the dial so that the zero indication is again opposite the index mark.

When sighting-in is completed, replace the windage and elevation adjustment caps.

Target Knobs

Some target shooters prefer the ability to make temporary windage and elevation adjustments to compensate for wind direction or other conditions which may change point of impact. This feature may also be desirable for some types of varmint shooting applications. Several higher-power Lightseeker models are therefore furnished with target knobs.



Unscrew and remove the target knob caps to access the adjustment knobs. The knob located on the top of the scope is for mak-

ing elevation adjustments, and the right side knob is for making windage adjustments. On the upper portion of each knob is a dial, calibrated in inches at 100 yards, with 1/8 inch intermediate increments. The knobs turn easily using the fingers – each click indicating 1/8 inch at 100 yards. On the column of each knob is a vertical index line, with a set of micrometer-style calibrations which indicate each full turn of the dial.

On the elevation knob is an arrow indicating the direction of rotation required to move the point of impact up, and on the windage knob an arrow points in the direction required to move the point of impact to the right.
Zero re-set feature: Once the scope is sighted-in for the desired zero point of impact, the zero indication can be reset on the target knobs. This provides a clear reference point so that, as field adjustments are made, the scope can be quickly and accurately returned to the zero setting.

Using the small hex wrench provided with the scope, loosen both small hex screws located on the rim of the adjustment dial until the click adjustment mechanism is disengaged. Reset the dial to the zero mark and re-tighten the screws. Replace the target knob caps.

YES (Yardage Estimation System)

Some Lightseeker models feature the YES System. Check the power ring to determine whether this feature is present on your scope. On all scopes the power scale is located on the forward part of the ring. YES System scopes will have a second series of numbers located on the rear portion of the ring. These calibrations represent range in yards. The YES System permits the shooter

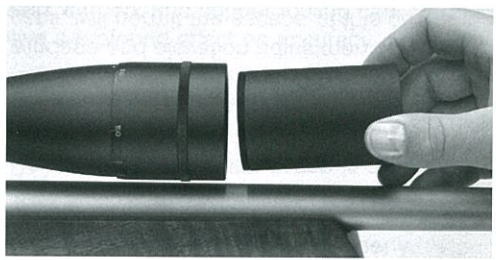
to quickly and easily estimate range by using the thin inner portion of the reticle in conjunction with the power ring and this yardage scale.

The system is based on eighteen-inch increments, or the average body depth of a deer, and is effective for ranges of approximately 150 to 750 yards, depending upon the scope model. To estimate the range of a deer, for example, turn the power ring until the deer's body (from the top of the back to the bottom of the chest) fits exactly within the area between one of the vertical reticle posts and the horizontal crosshair.

Read the estimated range on the yardage scale. By using the distance form post to post, either horizontally or vertically, this system can also be used to estimate the range of objects which are approximately thirty-six inches in height or width. The YES System functions only as a range estimate guide. Accuracy will be largely dependent on the shooter's knowledge of the actual size of the object upon which the estimation is being based.

Sunshade

A sunshade is included with some higher powered rifle scope models. The sunshade screws into the objective end of the scope, providing a three inch long extension which helps to prevent the entry of direct sunlight and to eliminate undesirable internal reflections.



Care and Maintenance

PENTAX scopes are built tough to withstand the normal rigors of shooting and hunting. A rifle scope is, nonetheless, a precision optical instrument, and a reasonable amount of care is necessary to ensure continuous optimum performance.

Check periodically to be sure the windage and elevation adjustment caps are tight. To prevent damage to your scope, keep the rifle in a padded case while in transit. There are many scope covers and caps on the market which will also help prevent scope damage. While in the field, take care to protect the scope from excessive impact. To prevent bore cleaning solutions from accidentally coming in contact with the rear lens surface, cover the scope eyepiece while cleaning your rifle.

Your scope was properly lubricated during assembly, and requires no further lubrication. All that is required to keep it functioning correctly is to clean it periodically. Cleaning the scope housing is best accomplished by simply wiping with a clean soft cloth, removing dirt, dust, oils, and moisture. Special care should be taken in cleaning both front and rear lens surfaces to prevent damage to the lens coatings. Brush off dust and surface particles with a lens (camel hair) brush. If further cleaning is required to remove smudges, oils, water spots, etc., use a conservative amount of alcohol or a lens cleaning solution, such as that used for camera lenses. The PENTAX Lens Cleaning Cloth is an excellent product for cleaning your lenses without damaging them.

A Word of Caution

Do not disassemble the scope in any way. Your scope is filled with nitrogen gas and sealed to prevent moisture penetration. Any disassembly, other than removal of the windage and elevation adjustment knob caps, will permit the escape of this gas, and waterproof properties will be lost. When adjusting eyepiece focus, do not unscrew the eyepiece more than fifteen complete rotations beyond the factory setting, or expose more than 3/4 inch of threads. Do not loosen or remove the screw located on the power ring. Disassembly, beyond removing adjustment knob caps, will void your scope's warranty. Practice gun safety at all times! Check to make certain your rifle is unloaded while mounting your scope or performing any other functions described in this instruction manual. While sighting your scope in, do not load a cartridge in the chamber until the rifle is pointed downrange at the target and you are ready to fire. Always use protective eyewear and hearing protection while shooting.

A rifle scope is designed for use exclusively as a sighting device, and should not be used as a substitute for viewing devises such as binoculars or spotting scopes. Remember – you are aiming your rifle at everything you see through your scope!

Troubleshooting

Accuracy problems:

Many different variables may affect accuracy, and inherent accuracy may vary substantially from one rifle to another. If you are experiencing inconsistent or excessively large groups, double groups, "stringing", or flyers, consult with your dealer or gunsmith, or check the following:

1. Recheck all mounting system components, making sure all screws are tight. Loose base screws or other mounting system components are among the most common causes of accuracy/grouping problems.
2. Check to be sure that the scope eye piece is properly tightened against the locking ring (shotgun scopes only).

3. If your scope model features an adjustable objective, check that it is adjusted for the range at which you are shooting.

4. Are barrel and chamber truly clean? Lead, carbon, and copper fouling can have a profound effect on accuracy.

5. Was the barrel allowed to cool between shots? A hot barrel (from repeated rounds fired through it) will often produce inaccurate groups.

6. Are guide (receiver) screws properly tightened?

7. Is the ammunition consistent? Different loads and bullet weights will produce different points of impact. Use identical ammunition for all sight-in procedures and for shooting each test group. Also, it is often helpful to try different loads or brands of ammunition – individual rifles frequently shoot one type of ammunition more accurately than another.

8. Are you shooting from an adequate rest? It is not possible to evaluate the accuracy of a rifle/scope combination unless you are shooting from a solid rest on a solid bench or other support.

9. The following conditions are frequent sources of accuracy problems, and should be checked by a competent gunsmith:

- Warped stock and/or bedding problems
- Barrel or chamber throat erosion (commonly with older rifles which have had many rounds fired through them)
- Excessive trigger pull (the exertion of pulling a very heavy trigger may cause rifle movement with each shot, making tight groups impossible)

Sighting-in problems:

1. If you cannot "get on paper", bore-sight the rifle, or shoot from a closer range. Make the necessary windage and elevation adjustments once the point of impact is found.

2. If you have insufficient windage or elevation adjustment to "zero" the scope, check for the following common sources of this problem (may require the assistance of a competent gunsmith).

- Mounting system is off-center or improperly aligned. Re-check alignment of mounting system, making adjustments if possible, or switch mounting components entirely.

- Scope base screw holes in receiver are not in alignment with center of bore.

- Receiver out of specification, or barrel threaded into receiver at an angle (consult a competent gunsmith).

- Scope tube is bent as a result of severe impact or use as a tool to turn dovetail type mounting rings. Return to your dealer or PENTAX Service Center for non-warranty repair.

To solve extreme elevation (vertical) alignment problems, it is sometimes necessary to place a metal shim under one of the bases (.001 inch shim thickness will move point of aim approximately 1/2 inch at 100 yards). Windage (horizontal) alignment problems may be solved by using windage adjustable rings.

Eye relief problems:
PENTAX scopes are designed to provide maximum eye relief that does not change as magnification power is changed. Our optical designs employ long focal length erector lenses, which maximize field of view without sacrificing eye relief – and because these long focal length lenses do not "bend" light at an extreme angle, the field of view produced is "flatter" and more distortion-free.

PENTAX rifle scopes are designed to mount without difficulty on all common bolt action and most other rifles. However, eye relief requirements will vary considerably with individual shooters, and with the length of pull and other dimensions of individual rifles. Particularly with extremely short action or long action rifles, or those with unusual mounting system placement, it may sometimes be necessary to use special extension bases or rings to move the scope further forward or back to achieve required eye relief.

Fogging:
All PENTAX scopes are sealed with O-rings and special compounds, and filled with nitrogen, to maintain a moisture-free internal environment and prevent the penetration of moisture for the life of the scope. "Fogging" occurs when these seals are broken and moisture or moist air is allowed to enter the scope and condense on internal lens surfaces.

PENTAX scopes are guaranteed fogproof (the terms, "fogproof" and "waterproof"

are essentially interchangeable.) If fogging should occur as a result of a failure of the waterproof seals, PENTAX will repair the problem under the scope's warranty. Fogging most often occurs as a result of broken seals caused by extreme impact or scope disassembly. Under these circumstances, service is not covered by warranty. Should any internal fogging occur, please return the scope to your dealer or the PENTAX Service Center for repair.

It is a common misconception that the term "fogproof" refers to condensation on external front & rear) lens surfaces. Under the right temperature and humidity conditions, fogging on the outside lens surface is a common occurrence with all scopes (made by all manufacturers), and cannot be prevented. Anti-fog solution, such as those sold for eyeglasses, can be used on your scope's external lens surfaces, and may temporarily reduce external fogging. Periodic removal of moisture with a PENTAX Lens Cleaning Cloth may be the most effective way to address this problem. In cold weather, try to avoid breathing on the eyepiece lens.

Service

PENTAX scopes are built according to careful quality control specifications and tested to conform to stringent performance standards. We stand behind our products and are committed to ensuring that ownership of any PENTAX product is a positive and enjoyable experience. Should you have any difficulty with your scope, PENTAX will gladly provide service to the product or assistance in solving the problem. Many scopes returned to the PENTAX Service Center are perfectly functional. To avoid unnecessary delays and expenses, please review the "Troubleshooting" section of this manual and check for any possible problems with the rifle or mounting system before returning your scope to PENTAX.

If you determine that your scope needs service, you may send it directly to the PENTAX Service Center. To send your scope to PENTAX, please carefully follow these instructions:

1. Ship the scope in its original box if available. Otherwise, package in a box with ample packing material to prevent damage during shipment.

2. Include a note describing, in enough detail so that our service technicians can readily understand, the nature of the problem.

3. Include a copy of proof of original purchase (copy of bill of sale or charge slip), or a signed statement that you are the original owner.

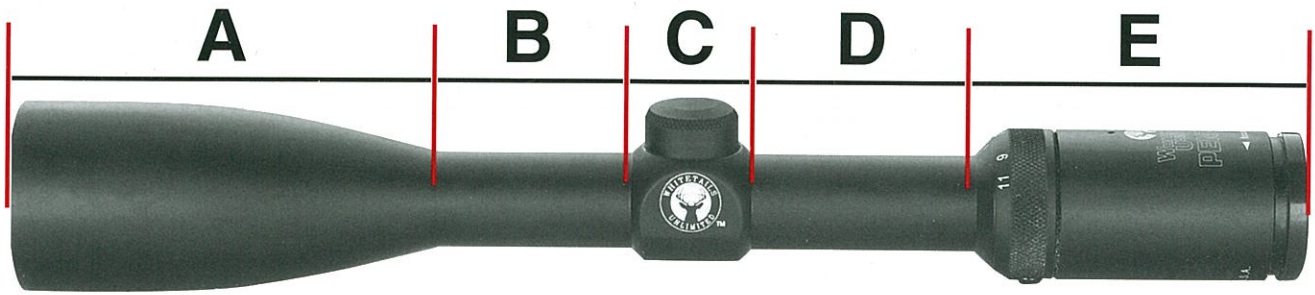
4. Be sure to include your full name, address, and telephone number.

5. Ship your package via parcel post, UPS, or other parcel service to.

PENTAX Service Department
250 North 54th Street
Chandler, AZ 85226
1.877.269.7179

6. Insure your shipment against loss.

Your PENTAX scope is covered by the PENTAX Worry-Free Warranty, allowing for lifetime servicing to the original owner for $19.95 (to cover shipping & handling). This Worry-Free Warranty covers any type of damage, excluding loss or theft.



Mounting Specifications Lightseeker® (Shot Gun) and Lightseeker-XL					
	2.5X	3X-9X	3X-9X-50	2.5X-10X	4X-16X
Optimum Eye Relief (in.)	3.5-3.75	3.5-4.0	3.5-4.0	4.2-4.7	3.5-4.0
Click Adjustment Range (in. @ 100 yd)	1/2	1/4	1/4	1/4	1/4
Max Adjustment Range (in. @ 100 yd)	60.00	75.00	78.00	100.00	32.00
Objective End Outside Diameter (in.)	1.09	1.89	2.24	2.24	2.36
Eyepiece End Outside Diameter (in.)1.55		1.65	1.54	1.54	1.53
Tube Diameter (in.)	1.00	1.00	1.00	1.00	1.00
Overall Length** (in.)	10.70	12.85	13.00	14.10	15.20
Overall Bell Length {A} (in.)	0.87	3.10	3.08	3.92	5.00
Tube Length {B} (in.)	2.46	2.30	1.50	1.44	1.80
Turret Length {C} (in.)	1.24	1.25	1.25	1.25	1.25
Tube Length {D} (in.)	3.00	2.40	3.50	3.50	3.50
Eyepiece Bell Length** {E} (in.)	3.47	3.80	3.77	3.77	3.77

Mounting Specifications Lightseeker-30	3X-10X	4X-16X	6X-24X	8.5X-32X
Optimum Eye Relief (in.)	3.5-4.0	3.3-3.8	3.2-3.7	3.0-3.5
Click Adjustment Range (in. @ 100 yd)	1/4	1/4	1/8	1/8
Max Adjustment Range (in. @ 100 yd)	64	74.00	52.00	39.00
Objective End Outside Diameter (in.)	1.89	2.28	2.28	2.28
Eyepiece End Outside Diameter (in.)	1.65	1.65	1.65	1.65
Tube Diameter (mm)	30mm	30mm	30mm	30mm
Overall Length** (in.)	13.2	15.70	16.20	16.90
Objective Bell Length {A} (in.)	3.30	4.20	4.70	5.10
Tube Length {B} (in.)	2.20	2.90	3.0	3.2
Turret Length {C} (in.)	1.20	1.20	1.20	1.20
Tube Length {D} (in.)	2.70	3.40	3.40	3.50
Eyepiece Bell Length** {E} (in.)	3.60	3.80	3.80	3.80

IMPORTANT NOTE ON ALL Lightseeker-30 and Lightseeker-XL Rifle Scopes

Please note the small "button" opposite the windage and elevation adjustments. ***Under no circumstances should you remove or attempt to remove it.*** This the housing for the main coil spring. If tampered with, the waterproof and fogproof seals will be broken.

Mounting Specifications Whitetails Unlimited® and Pioneer®	3X-9X	3X-9X-50	3.5X-10X	3.7X-11X	4.5X-14	6.5X-20X
Optimum Eye Relief (in.)	3.1-3.8	3.1-3.8	3.1-3.8	3.1-3.8	3.1-3.8	3.1-3.6
Click Adjustment Range (in. @ 100 yd)	1/4	1/4	1/4	1/4	1/4	1/4
Max Adjustment Range (in. @ 100 yd)	50.00	50.00	50.00	50.00	40.00	30.00
Objective End Outside Diameter (in.)	1.89	2.28	2.24	1.96	2.20	2.37
Eyepiece End Outside Diameter (in.)	1.54	1.54	1.54	1.54	1.54	1.54
Tube Diameter (in.)	1.00	1.00	1.00	1.00	1.00	1.00
Overall Length** (in.)	12.20	13.20	13.01	13.10	13.00	14.60
Objective Bell Length {A} (in.)	3.10	4.50	4.10	4.30	3.80	5.80
Tube Length {B} (in.)	2.50	1.70	2.10	2.00	2.20	1.80
Turret Length {C} (in.)	1.20	1.20	1.20	1.20	1.20	1.20
Tube Length {D} (in.)	2.30	2.30	2.50	2.50	2.40	2.30
Eyepiece Bell Length** {E} (in.)	3.40	3.40	3.40	3.20	3.40	3.40

*Subject to change as minor product refinements are occasionally implemented.
**Length will vary with eyepeice diopter setting.