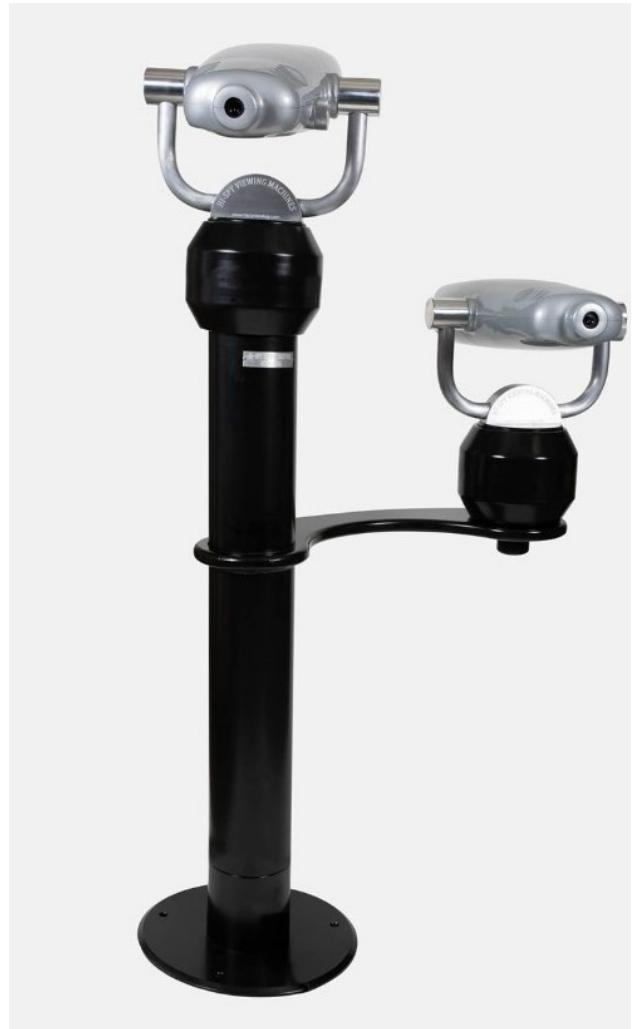


PINNACLE SCOPES Hi-Spy Models

Standard model – non-coin operated



Dual model with standard and accessible viewers





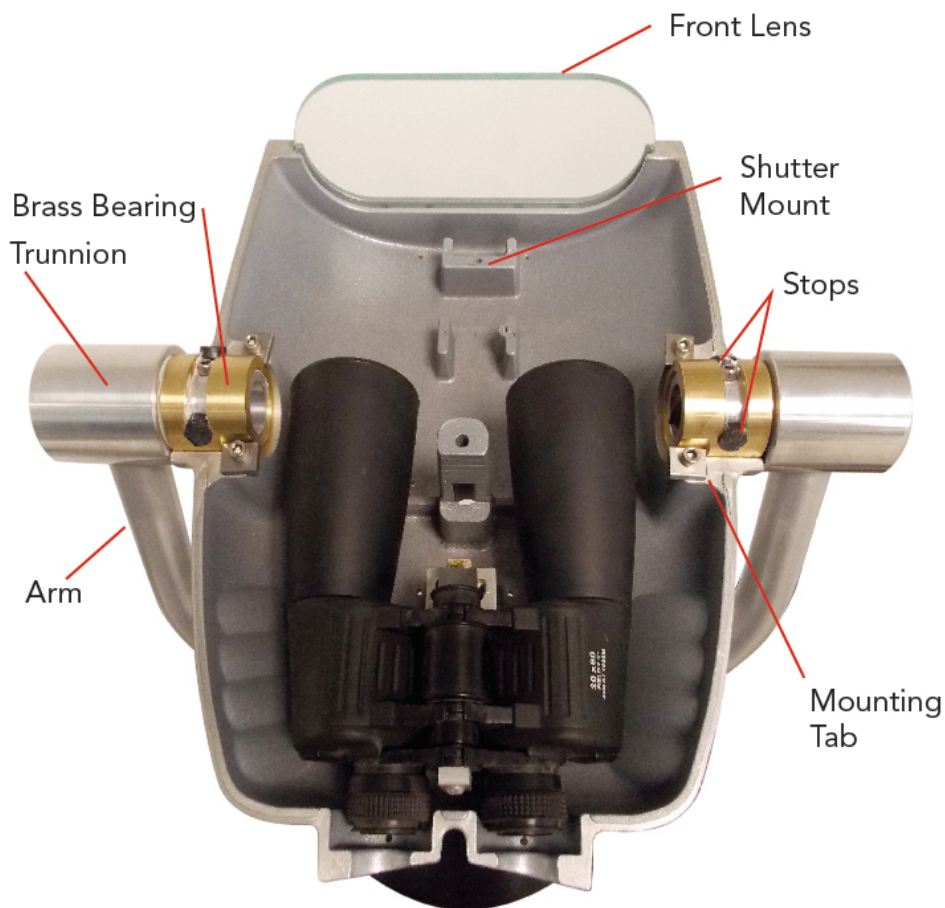
Base Options

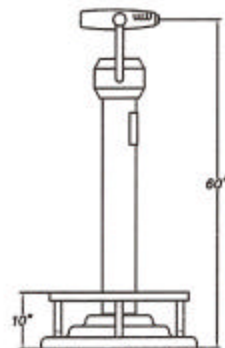
There are two base options for all models including the wheelchair accessible machines. The options are:

1. Our Standard Base is a contoured 28" Steel Base with standing ring
2. Flat Aluminium Baseplate (12" diameter, but can be smaller diameter on request)

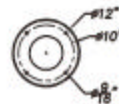
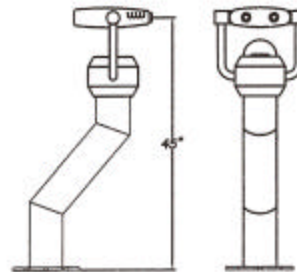
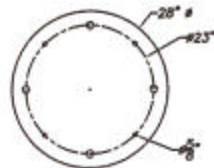
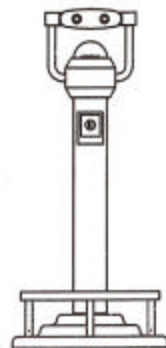
Note: Regardless of base options, all machines (except wheelchair ADA models) are made to be 5' 0" at the eyepieces

Parts of Head





HI-SPY
STANDARD MODEL



HI-SPY ADA
WHEELCHAIR
MODEL

- NOTES:
A) MACHINE CAN BE LAG BOLTED
DIRECTLY INTO WOOD
B) IF INSTALLED IN CONCRETE, FIRST
MARK THE FOUR HOLES, THEN DRILL
USING A 3/4" DRILL BIT, FOUR HOLES
FOR LAG SHIELDS. INSERT LAG
SHIELDS, FASTEN LAG BOLTS THROUGH
MACHINE INTO LAG SHIELDS

INSTALLATION DETAIL
JUNE 2010

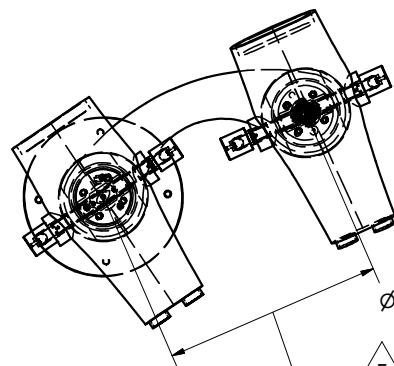
PINNACLE SCOPES
COBOURG ONT.
rod@pinnaclescopes.com

SIZE	FROM NO.	DWG NO.	REV
SCALE		SHEET	

Hi-Spy Viewing Machines

500 Ball Street
Cobourg, Ontario
Canada

Tel. (905) 448-5908
Fax (416) 907-2918
email: info@hispyviewing.com



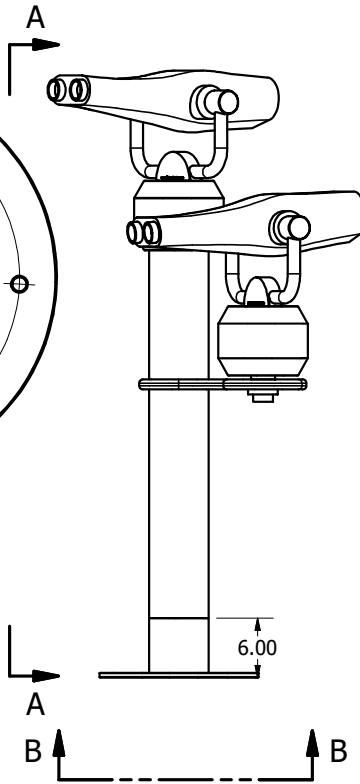
Ø.56 THRU

Ø16.00

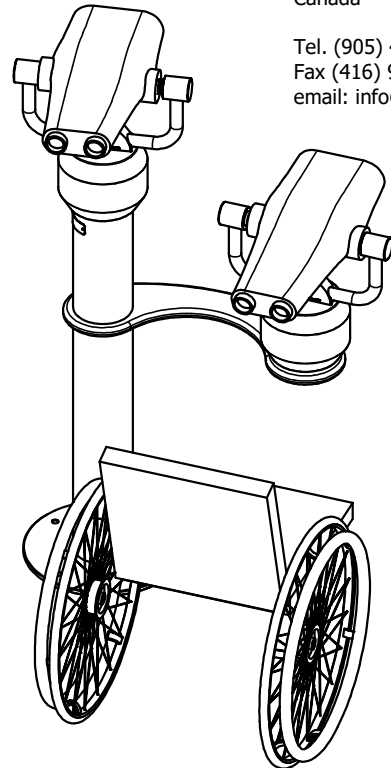
22 Distance between centers of viewing heads

Ø13.00

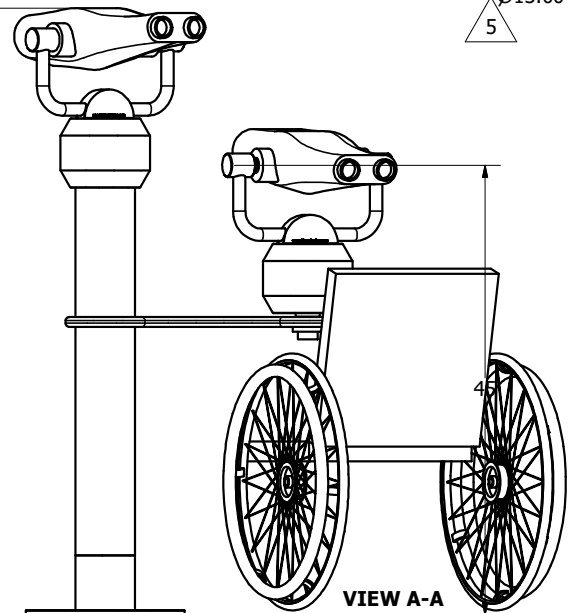
Base View
B-B



6.00



± 62 Overall Height,
(depends on viewer angle)



VIEW A-A

Note: Pinnacle Scopes, Hi-Spy viewing machines reserves the right to change the style and dimensions of devices for economical or product refinement purposes without notice. Every effort is made to reflect the actual dimensions and details actually supplied, but due to the nature of progress, regrettably this is not always possible.

REVISION HISTORY

ZONE	REV	DESCRIPTION	DATE	APPROVED
	5	Bs Plat Dims	13/9/21	

DRAWN	Doug Norton	11/2/11
CHECKED		
QA		
MFG		
APPROVED		

Hi-Spy Viewing Machines

TITLE			
Dual Model Viewer			
SIZE	B	DWG NO	HS-2000-A
SCALE		REV	4

SHEET 1 OF 1

Maintenance and Troubleshooting User Manual

(2022 Update)



Pinnacle Scopes

Tel. (289) 252-2019

Hi-Spy Viewing Machines

www.hispyviewing.com



CONTENTS

- A. Assembly
- B. Care and Maintenance
- C. Usage and Care of Keset coin door locks
- D. Troubleshooting Coin Viewers
- E. Keys and hex wrenches
- F. Freeplay on Coin Models
- G. Parts of Machines

**(Helpful videos are available on our website
<http://hispyviewing.com/product-information/product-videos>)**

A. Assembly of your Hi-Spy Viewing Machine

Standard

STEP 1

When you receive your machine it will come in two boxes: one large box and one smaller box.

Open the boxes.



STEP 2

The small box contains the base and standing ring already built and the large box contains the built viewer.



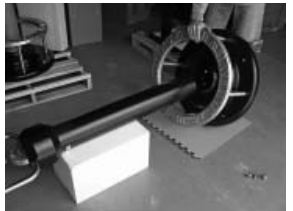
STEP 3

You will also find three short bolts with two washers each along with tools and keys in the package at the bottom of the box. These bolts connect the base to the viewer.



STEP 4

Using a piece of the packing around the viewing head to support the tube, turn the base on its side at bottom of viewer as in Photo Assembly 4 and bolt viewer to base as in Photo Assembly 5. Two people, one to steady the tube, is preferable.



You are done.



Dual

You will receive three (3) boxes. The large one contains the main tube with the ADA arm attached and also the 16" base with its bolts. The other two boxes contain each of the completely built viewing heads.

Assembly is easy and straightforward. Follow these steps:

STEP 1

Open large box.

Take out the small 16" base and its accompanying bolts (3 plus washers). See Photo 1 showing small base.

Bolt small base onto bottom of main tube through bottom side of small base. The lock washer goes onto bolt first, then the flat washer before you do up each bolt.

STEP 2

Now that you have attached the base you will appreciate that with the viewing heads in place the unit is heavy to the one side and will fall over unless you either:

- a) place weights on base (40-50 lbs) on opposite side from ADA arm or
- b) install the tube with base as is and then install heads at final location – we recommend this one since it is very easy to install heads and it is easier to handle tube without heads attached.

STEP 3 - Head On Main Tube

Once tube is upright and either weighted or installed you can install the heads.

Open the two remaining boxes. Each has a complete head. If the heads you ordered were different from each other (example a 10X bino and a 20x bino) please select the one for the main tube accordingly and make sure the head you want on the main tube is selected first.

Take the head out of the box. On bottom of head unit is a spindle that will be inserted into spindle socket on top of main tube and locked in place with a spindle bolt. See Photos 2 and 3 below of spindle on bottom of viewing head and the cut-out.



PHOTO 1



PHOTO 2

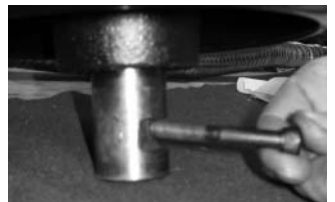


PHOTO 3

Look into the spindle socket – see where spindle bolt enters the socket.

The spindle on the bottom of the head must be placed in such a way in socket that the cut-out on spindle lines up with the spindle bolt – since once that bolt is secure into the cut-out the head cannot come off. See Photo 4.

Place head and its spindle correctly into socket. Secure spindle bolt tightly. See Photos 5 and 6 below.

Lastly cover spindle bolt hole with larger of two cover plates. Holes are bored. Use rivets and rivet gun provided to rivet on the plate to cover hole. See Photo 7 and 8 below.

STEP 4 - Head on ADA Arm

(Refer back to photos in Step 3 — only difference is smaller screw instead of bolt and it is already in place – but may need to be backed off — and smaller plate for cover)

Take the remaining head out of the box. On bottom of head unit is a spindle that will be inserted into spindle socket on top of ADA arm and locked in place with a spindle screw (already in place in arm).

Look into the spindle socket – see where spindle screw enters the socket.

The spindle on the bottom of the head must be placed in such a way in socket that the cut-out on spindle lines up with the spindle screw -since once that screw it is secure into the cut-out the head cannot come off.

Place head and its spindle correctly into socket. Secure spindle screw tightly.

Lastly cover spindle screw hole with smaller of two cover plates. Holes are bored. Use rivets provided to rivet on the plate to cover hole.



PHOTO 4



PHOTO 5



PHOTO 6



PHOTO 7



PHOTO 8

VistaViewers



VistaViewers come fully assembled.

B - Care and Maintenance Instructions

Congratulations on the acquisition of your new Hi-Spy Viewing Machine!

Your viewer is built to last many years with a minimum of maintenance required. However, there are a few care and maintenance items listed below that should be performed periodically in order to maximize the uptime and service life of your machine.

Please review the following information when you receive your machine.

1. Coin machines come with three t-handle hex wrenches and two keys. The smaller key is for the head lock (a pop-lock) on the underside of the head. This lock covers a bolt which comes out with the smaller ($\frac{3}{16}$ ths) hex wrench. The larger key is for the Keset lock which covers the bolt in the coin door. Take the lock out and use the larger ($\frac{3}{16}$ ths) hex wrench to open the coin door. The longest hex wrench is for the four bolts holding in the coin acceptor (in machine), in case you need to replace the coin acceptor. **Please read carefully the care and use of the Keset lock which is attached. These locks are excellent but they need to be used properly and tenderly.**
2. Non-coin machines, including VistaViewers and Duals come with one t-handle hex wrench and one key (in duplicate). The smaller key is for the head lock (a pop-lock) on the underside of the head. This lock covers a bolt which comes out with the smaller ($\frac{3}{16}$ ths) hex wrench.

All machines (Coin and non-coin):

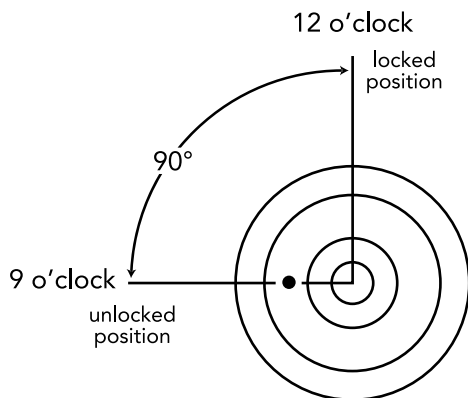
- Remove head lock and door lock and spray with WD-40 lubricant or equivalent every 6 months. (3 months in harsh or salt water environments).
NOTE: do not use a grease based lubricant on door lock.
- Check all bolts, tighten and adjust as necessary.
- Lenses:
 - > Clean binocular and telescope eyepiece lenses with soft dry cloth only. The surfaces of the lenses are coated and can be easily damaged.

- > Clean large outer lenses of head with soft cloth and water. Do not use harsh detergents as this can make them permanently foggy.
- > NOTE: If moving machine from a cool location to a warmer location the lenses may get temporarily foggy on the outside of the lenses (even with waterproof optics). This is just condensation on the outsides of the lenses and will clear itself as temperatures equalize.
- Apply anti-seize lubricant on door bolt on the inside of door annually.
- If removing the viewer or step ring from the base of the machine for any reason, apply anti-seize lubricant to threads before re-assembly.
- Apply white grease annually to the viewer head brass bearings.
- DO NOT use WD-40 on viewing head bearings for up and down movement.
WD-40 will wash away the lubricant that already exists.
- If the bearings are dry use a white grease
- If required use touch-up paint to cover any nicks and scratches on powder-coated surfaces.
- (Coin only) Changing batteries - Four AA batteries are in a battery pack on wire descending down into the tube. Battery pack is usually taped to circuit board which is encased in black plastic. To ensure a good battery contact and to stop corrosion at contact in battery pack, apply a little dilectic grease (especially made for this purpose) to each contact - both ends of each battery.
- Plastic stops in viewing head. Whenever you open viewing head be careful not to lose the two stops in each trunnion in viewing head. They stay in place better with a dab of white grease. If you need more stops we have them available.

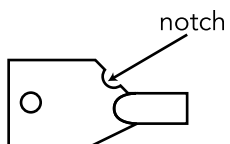
C - Usage and Care of KeSet High Security Locks

All Hi-Spy coin-operated viewing machines come equipped with Keset high security locks on the coin access door. Keset locks require precise treatment when being operated. It is important to maintain inward pressure on keys at all times. Never force any key into a lock or forcefully pull on any key with hands, key ring, or any other instrument. Read these instructions carefully. Failure to follow these instructions could cause lock to become inoperative.

- 1) All Keset locks provided by Hi-Spy are of counter-clockwise rotating movement, as shown below, and are shipped already programmed such that for normal service only the silver service key is required.



- 2) To unlock the door, insert silver colored service key with notch on key head (as shown below) aligned with dot on lock. Maintain slight pressure on key while turning counter-clockwise to the unlocked position and gently slide lock outward from its holder. NOTE: key is retained in lock at this position. Do not try to remove key from lock while in this position or damage will occur.
- 3) To lock the door, slide the lock and key back into the lock holder in the door with the dot at the 9 o'clock position. Maintain slight pressure on key and turn to the 12 o'clock position and remove key gently from lock.



- 4) Periodic use of WD-40, or equivalent, is recommended for spraying into lock and onto the cam at the rear of the lock.

D - Troubleshooting Mechanical Coin Viewers

Note there are only four coin components : battery, coin acceptor, circuit board (encased in plastic) and shutter.

When troubleshooting a mechanical coin acceptor (Beaver) viewer *follow these steps every time*:

Note: *When testing, always listen closely for the noise the shutter makes. This will always tell you something and help in troubleshooting a problem.*

Error 1:

If the shutter is not opening when a coin is cranked though the coin acceptor (no shutter noise at all):

ALWAYS PROCEED IN THIS ORDER

- First: check battery voltage (replace batteries that read below 5.7V). If it's reading close to zero, it's probably the batteries not making good contact within the battery holder. Push each battery with your fingers in the direction the spring is trying to push them, and recheck voltage. In some cases you may need to wrap electrical tape tightly around the ends of the battery case to hold the ends of the battery holder against the battery terminals, or try a different battery holder. Reconnect battery pack, and Re-test. Also check all the connections -reseat them if necessary.
- Second: (this should only apply to a new machine when it first arrives- once connections are correct they should stay correct): when you open the coin door you will see two sets of connections. One comes from the coin acceptor to the control board, and the other comes from the shutter to the control board. Swap these two sets of connections. Re-test. (If no change, immediately put the connectors back to the way they were previously. The wire colors are meant to match up with each other when plugged in correctly.
- Third: Try another control board

Error 2:

If you hear a noise from the shutter at cycle start, but shutter not opening or moving:

-Wait for 2 minutes for cycle to time out and watch to see if it opens when the cycle finishes (this would be an error). If it does, reverse the connectors on the shutter wires inside of the head.

Error 3:

If you hear a noise from the shutter at the start AND end of the cycle, and nothing is moving:

- Servo is probably broken. Replace servo motor in shutter.

Error 4:

Check the operation of the micro-switch on the coin acceptor. The micro-switch is a little black plastic switch on the back side of the coin acceptor with a lever on it, and two wires coming from it. Press lever with your fingers and see if shutter opens. If the machine works by doing this, but NOT by cranking a coin through it, then the coin acceptor needs to be replaced because the micro-switch is then not being activated by the coin (and it should be)

E - Keys and Hex Wrenches



Photo shows two sizes of t-handle hex key (hex wrench) and two sizes of keys plus key fob. Larger key opens coin door lock and larger t-handle hex key(3/8") opens coin door after lock removed. Smaller key opens head lock (underside of head) and smaller hex key(3/16") removes bolt revealed by removing that lock and allows access to head.

F. Freeplay on Coin Models

Freeplay: On coin models if you wish to change unit to freeplay (no money required to open shutter) simply do one of the two following methods:

1. A) Open coin door.
B) Activate coin acceptor switch either with a coin or by pressing switch contact inside on back of acceptor
C) When shutter opens disconnect battery so it cannot close
D) Close coin door

Now in freeplay.

OR

2. A) Open head
B) Manually move shutter to open position
C) Open coin door and disconnect battery
D) Close coin door

Now in freeplay.

G. Parts of Machines



Parts of Head

