

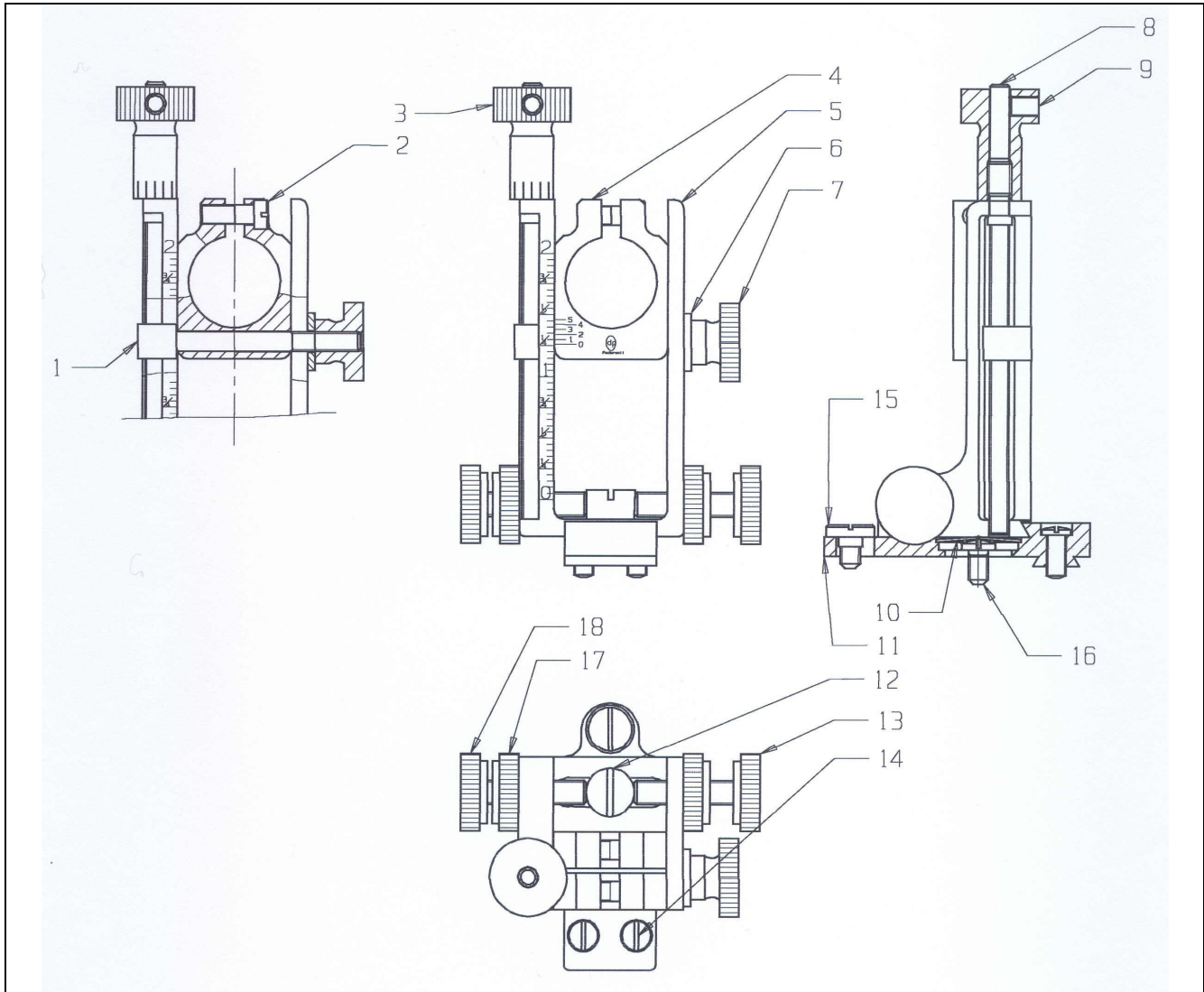


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## MALCOLM-STYLE SCOPE REAR MOUNT (USA 233)



1	Elevation adjustment staff bar	10	Rear spring
2	Scope blocking screw	11	Race
3	Elevation adjustment knob	12	Windage adjust pin screw
4	Collar/mount	13	Windage adjust screw
5	Mount/staff	14	Race mounting screw
6	Elevation adjust Nut washer	15	Front base screw
7	Elevation adjustment blocking nut	16	Rear base screw
8	Elevation adjustment screw	17	Windage blocking nut
9	Knob blocking dowel	18	Windage adjusting long screw

### INSTRUCTIONS FOR MOUNTING AND USE

The Pedersoli Davide Company Malcolm style scope rear mount is designed for use with vintage-style rifle scopes having a tube diameter of  $\frac{3}{4}$  inches (0.750"/19.05mm) that can be installed in a rear sight dovetail measuring  $\frac{3}{8}$  inches (0.375"/9.525mm).

#### **REMOVE THE EXISTING REAR BARREL SIGHT**

To prepare for installing the Pedersoli Malcolm Scope Rear Mount, carefully remove the existing rear sight from the dovetail slot. Using a brass (non-marring) or nylon drift punch and a small hammer, gently tap on the left side of the sight base to move it out of the slot left-to-right.

Some sights are very snug in the slot and may require the use of a light penetrating oil to assist in drifting out the sight. Once the sight has been removed, carefully examine the slot to insure that it is clean and smooth; having no burrs or damage.

#### **INSTALL THE MALCOM SCOPE MOUNT**

The Malcolm mount is designed to be securely held in the dovetail slot by two set screws. To install the Malcolm mount, loosen the screws to the point where they do not project below the bottom surface of the dovetail base.

Slide the scope mount into the dovetail from the right side. Depending upon your individual rifle, the mount may fit in the dovetail slot with plenty of clearance or be rather tight.

#### **PROPER FIT**

If the base fits the slot and makes contact or is a close fit on the bottom and top surfaces of the slot, make sure that the mount is centered on the barrel then tighten the set screws. After tightening the screws check to insure that the mount is tight and there is no front-to-rear wobble.

#### **TOO LOOSE**

If the base fits loosely in the slot, you may want to use a thin, brass (or other material) shim between the bottom of the slot and the bottom surface of the base. It is very important that the top-angled surfaces of the dovetail base are in contact with upper surfaces of the dovetail slot. Otherwise the mount will not be rigid and subject to front-to-rear movement or wobble.

#### **TOO TIGHT**

If the mount is so tight that it will not slide into the slot using hand pressure, use the non-marring drift punch and hammer to tap it into the slot until it is centered on the barrel. If the dovetail slot on your rifle is undersize to the point that you cannot drift the base into the slot using reasonable force, then consider having a gunsmith install the scope for you. It is best to modify the base rather than modify the rifle if possible.

#### **INSTALL THE RIFLE SCOPE**

To install the scope, begin by loosening the ELEVATION locking knob on the right side and turn the ELEVATION ADJUSTMENT knob clockwise until the scope mount is raised high enough to gain access to the two locking screws that secure the scope in place. Next, loosen the locking screws.

Since the scope-mount clamp will only accommodate a  $\frac{3}{4}$ -inch tube, the rear eye piece or the front lens (depending upon your scope configuration) may need to be removed to pass the scope through the mount. If such is the case, refer to the scope manufacturer's instructions as to how to proceed.

Pass the scope tube through the mounting clamp and into the front scope mount (depending upon your specific scope and front mount, you may need to reverse the process by installing the scope in the front mount first). Next, secure the front mount in place on the barrel but leave the scope loose so that it moves freely in all directions (front-to-rear and rotates in the mounts). Do not lower the scope yet.

## **SET THE EYE RELIEF**

To determine the proper eye relief for your scope, sit at a shooting bench or table in a shooting position.

With scope still raised, rotate the scope so that the crosshairs are close to horizontal & vertical (we'll make final adjustments later) then move the scope toward or away from your eye until the best eye relief is determined. Next tighten one of the two locking screws in just enough to prevent the scope from moving freely but loose enough so that the scope can still be moved.

Turn the Elevation knob to lower the scope to approximately the  $\frac{1}{2}$  or  $\frac{1}{4}$  mark on the elevation scale mark. Next, while still sitting in your shooting position, check to confirm that you still have the correct eye relief. If not, adjust the scope as necessary. Then, from your shooting position, check the rotation of the crosshairs. If they are not aligned properly, rotate the scope until they appear horizontal and vertical.

When you are satisfied with the eye relief and the crosshairs, raise the scope back up and carefully tighten the locking screws to hold the scope securely. (Note: Unlike other scope mounts where the scope is allowed to move under the recoil of the rifle. The Pedersoli Malcolm mount is designed to hold the scope rigid and to not move when the gun is fired.)

Finally lower the scope down to the desired elevation setting. At this point your scope is properly mounted and ready for bore sighting or test firing.

## **BORE SIGHTING THE SCOPE**

Now that your scope is properly mounted on the rifle the next step is to sight in the rifle for the distance at which you will be shooting. By far, the best way to get the rifle "on-target" is to "bore sight" the scope as a starting point. Additionally you will likely want to establish settings for multiple distances. For example, in the sport of Black Powder Cartridge Rifle Silhouette matches you will need elevation settings for 200 meters, 300 meters, 385 meters, and 500 meters. For Mid-Range Target shooting the targets are set at 200, 300, and 600 yards.

Begin by placing a target approximately 25 yards or more down range. With the action open, place the rifle on a bench rest or sand bags and get into position so that you can see through the bore of the rifle. While looking through the bore, adjust the position of the rifle so that the "black" of the target is centered in the rifle bore. Then, without moving the rifle, raise your eye to look through the scope. The crosshairs may or may not be on target but you should be able to see the target in the scope. To center the crosshairs on the target, adjust the ELEVATION KNOB to raise or lower until the horizontal crosshair appears centered. To center the vertical crosshair, alternately loosen and tighten the opposing WINDAGE SCREWS until the crosshair is centered.

Check your settings by alternately looking through the bore again and then through the scope. When the target appears centered in the bore the crosshairs should be centered on the target. If it is not, repeat the process.

## **ESTABLISHING ELEVATION SETTINGS**

### **Follow all safety and loading procedures for your rifle!**

Place a target at 25 yards (or 50 yards if preferred) from the bench rest and fire a shot at the target.

The shot should appear on the target slightly low of center and may be to the left or right. For making windage adjustments at 25 yards you will need to move approximately 1 mark on the windage scale for every inch of adjustment on the target.

## **WINDAGE ADJUSTMENT**

If the bullet strikes left of center, adjust the windage by loosening the left windage screw turn the right windage screw clockwise (away from you) to move the bullet impact to the right. If the bullet strikes right of center, loosen the right windage screw and turn the left windage screw clockwise (toward you) to move the bullet impact to the left. After making windage adjustments, tighten both windage screws.

## **ELEVATION ADJUSTMENT**

To adjust the elevation, loosen the locking knob and raise or lower the scope as needed. At 25 yards, you will need to move approximately 1 full mark on the main ELEVATION SCALE for every inch of adjustment on the target. Continue firing and adjusting until you are satisfied with your 25-yard zero.

## 100 YARD ZERO

Move the target to 100 yards and fire a 3-shot group from a bench rest or other steady position. Examine the target and determine the approximate center of the 3-shot group. Next, determine how far (in inches) the center of the group is away from the center of the target, both horizontally and vertically. In the event that the bullet strikes are not on the target board, move the target back to 50 yards.

## USING THE VERNIER ELEVATION ADJUSTMENT

At 100 yards distance we can take full advantage of the Elevation adjustments using the VERNIER SCALE on the scope mount bracket. The elevation staff is graduated in inches with graduation marks at 0.050" (5/100 of 1 inch) and numeric markings at  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  and a "1" at the 1-inch mark. On the scope bracket there is a smaller scale known as a Vernier scale that has 6 lines marked "0" through "5". The markings on the Vernier scale are used to make small adjustments by subdividing the space between the 0.50" marks on the staff into 5 equal segments. Using the Vernier graduations you can make elevation adjustments equal to 0.01" (1/100").

**1 Minute of Angle (MOA) at 100 yards = 1 inch distance, which approx. = 0.01 inch.**

Once we have determined the VERTICAL distance in inches from our 3-shot group to the center of the target, we can adjust the elevation setting using the Vernier scale by moving the same number of marks to equal the number of inches required. For example, if our group is 5 inches low and out sight is set (the witness mark) at the  $\frac{1}{4}$  mar (0.25 in decimals) we can raise the sight using the small scale in 0.01" increments until the "0" is at the (0.30) mark on the staff. If we only need to raise the bullet impact 3 inches, we would adjust the elevation until the line marked "3" is lined up with a line on the staff. This will place the "0" line  $\frac{3}{5}$ ths of the way between 0.25 and 0.30 at 0.28-setting.

The windage scale is also graduated with markings 0.05 inches apart and the same applies MOA distances apply to the scale. However, in this case there is no Vernier scale to subdivide the markings. But, if we remember that each mark represents approximately 5 inches at 100 yards, we can accurately estimate how far to adjust the windage.

Minutes of Angle are the preferred method for adjusting sights and scopes because of coincident relation to distances of 100-yard increments.

## MINUTE OF ANGLE TABLE

1 MOA at 100 yards	1 inch
1 MOA at 200 yards	2 inches
1 MOA at 300 yards	3 inches
1 MOA at 400 yards	4 inches
1 MOA at 500 yards	5 inches
1 MOA at 600 yards	6 inches
1 MOA at 800 yards	8 inches
1 MOA at 900 yards	9 inches
1 MOA at 1000 yards	10 inches

## BLACK POWDER CARTRIDGE RIFLE SILHOUETTE RANGES

Chickens – 200 meters, 1 MOA = 2  $\frac{1}{4}$ "

Pigs – 300 meters, 1 MOA = 3  $\frac{1}{2}$ "

Turkeys – 385 meters, 1 MOA = 4  $\frac{1}{4}$ "

Rams – 500 meters, 1 MOA = 5  $\frac{1}{2}$ "

## ESTABLISHING ELEVATION SETTINGS

Once you have a good 100-yard sight setting you will want to establish settings for other distances for target shooting. Most shooters acquire a small notebook in which to keep a record of their settings and often include settings for different locations where range conditions can vary. Keeping a record of your settings is a great time saver when getting ready for a match. By doing so you will know that your first shot will be "on-target" when the FIRE command is given.