

# Model 1 **XP** Chronograph

This is the official user manual of the PACT Model 1 XP Chronograph. Please use this manual to reference the features and functionality. If you run into any issues please feel free to contact our customer service.

## Getting Started

When you begin to familiarize yourself with the Model 1 XP you'll notice the lack of an on/off switch. When **both** SkyScreen Sensors are plugged into the **START** and **STOP** inputs on the back of the unit, the Model 1 XP will **turn on**. The red control buttons allow you to **Edit** and **Review** shots, and when pressed together they clear the memory and begin a new string.

**NOTE:** *The Model 1 XP uses a standard 9-volt alkaline battery. As the battery runs down the sensitivity of the SkyScreens will eventually begin to drop. On very cold days you might consider keeping an extra battery warm in your pocket and trading them out as the battery in your machine freezes.*

## Setting up the SkyScreen System

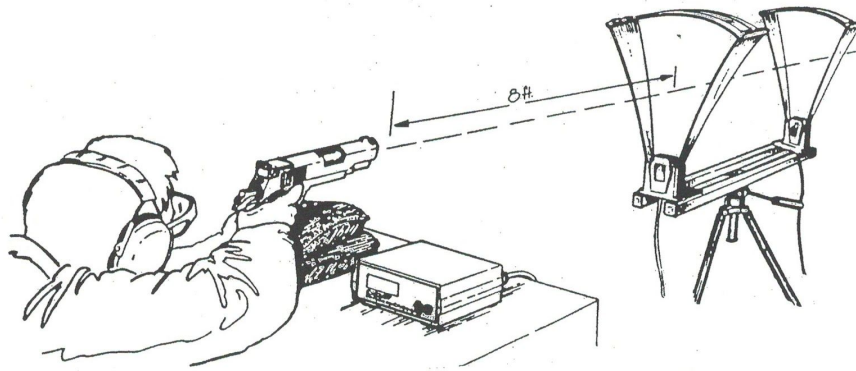
The Model 1 XP comes with our top of the line SkyScreen System. The system will include two SkyScreen Sensors, an 18" metal bracket, four black support arms, and two white diffusers. If you have the **IR** model you'll have an extra set of white diffusers, two strips of IR tape and a transformer also. You'll receive special instructions separately to set that up.

Install the SkyScreen sensors onto the metal bracket by pulling down on the plunger at the bottom of the sensor and sliding it onto the bracket until it locks in place. Once you have done that, insert the black plastic arms into either side of both sensors. The white diffusers will connect between the black plastic arms. After you complete this the setup should look like this:



The system should mount on any standard tripod, or you can set it on a table. Make sure the red side of the sensors are facing away from the shooter. The closest sensor should be plugged into the **START** port, and the further sensor should be plugged into **STOP**.

### Shooting over the SkyScreen System



**SAFETY WARNING:** Make sure you have your shooting glasses on - if you hit a skyscreen or the bracket holding it, bits of plastic, metal and bullet will fly in all directions. Always make sure you are shooting in a safe direction.

Place your Model 1 XP where you can read it at a glance, but not close enough to be affected by the muzzle blast of the gun. After plugging in the sensors your unit should read **"Fire"**.

When you fire you should aim in such a way that the bullet passes through the triangle over the center of both detector screens at 5-8 inches above them. Under most light conditions you can actually shoot higher but your accuracy may diminish. After the first shot your unit should read the shot number alternating with the velocity in FPS.

If it does NOT, make sure that the first sensor is plugged into the START and the second sensor is plugged into STOP. If that looks good you may have missed the "window" or are shooting a very high blast gun that is affecting the chronograph itself. Be sure to shoot 5 to 8 inches over the sensor and in the center.

**NOTE:** *You must wait about 1 second between shots. We make you do this to allow the smoke to clear. If you fire too soon you will either get no reading, or an error (ERR) warning or a very odd reading like 10 FPS.*

Go ahead and fire a few more shots. Each time you fire, the current shot number and velocity will alternate on the display.

## Editing Shots

If you notice a bad reading, push the **EDIT** button. This will erase the last shot from the computer's memory and back the display up to the previous shot. You can also use this feature after you have finished your string, rather in the middle of a string.

## Reviewing Shots

When you are done with your string, the Model 1 XP will provide you with a statistical summary. Each time you push the **REVIEW** key the Model 1 XP will move to the next item of the review. The display will alternate between the statistic shown (i.e. "SD" for Standard Deviation) and the value. Here are the abbreviations you will encounter:

- **"HI"** - Highest Velocity
- **"LO"** - Lowest Velocity
- **"AV"** - Average Velocity
- **"ES"** - Extreme Spread

- **“SD”** - Standard Deviation
- **“AD”** - Average Deviation or the Mean Absolute Deviation

At this point each shot of the string (up to 20) can be individually reviewed. If you see a bad reading just push the edit button to remove it. After editing and reviewing past the last shot, push the review button again and you'll see that the statistics have been recalculated.

**NOTE:** *The chronograph will not record shots when it's in review mode.*

## Starting a New String

To start a new string, exit review mode at any time by pressing the REVIEW and EDIT buttons together. The Model 1 XP will respond with “FirE” indicating that it has cleared its memory and is ready to begin a new string.

## Outdoor Light Conditions

All light sensitive chronographs have a reputation for being a bit flakey under certain light conditions. The optimal conditions are a fairly bright but overcast day. Sometimes blue skies with direct sunlight can essentially blind the sensors from seeing the bullet.

**Low Sun Condition** - If the sun is low in the sky and is illuminating the underside of your bullet, the Model 1 XP may have a hard time reading the shot. If this happens you may try shooting lower over the Sky Screens. You may also eliminate the problem by changing the direction of fire and/or tilting your SkyScreens.

**Overcast Days** - When operating on an overcast day the white diffusers will not do anything for you, other than acting as an aiming guide. If it's a very dark overcast day and you find yourself having trouble getting a reading, try removing the white diffusers all together.

## Muzzle Blast

While we have gone to lengths to filter out muzzle blast, unfortunately if we filter it out completely the chronograph would not see bullets either. When you fire a subsonic (below around 1200 FPS) round, the sound of the gun reaches the SkyScreens before

the bullet does. If it shakes the screens hard enough, they will trigger and give you an incorrect reading. In this case the solution is simple, **BACK UP!**

Another muzzle blast problem occurs when the SkyScreens trigger on the shadow of the muzzle blast. This can happen when the sun is quartering to directly behind you and fairly low on the horizon (otherwise known as shooting north in winter months). The sun is reflecting off the edge of the slit drops producing an absurdly high reading (i.e. 2700 FPS for a rimfire .22 pistol). Changing the direction of fire will likely solve the problem.

## Troubleshooting

While we have worked hard to make sure your Model 1 XP is reliable as possible, of course ever so often an issue can arise. If your Model 1 XP does misbehave, here are some things to check:

1. **Are the SkyScreen Sensors plugged in correctly?** It can be easy to mistake the START and STOP cables, make sure they are correct and well seated into the unit.
2. **Is the 9V battery fully charged?** Often you'll see a decrease in sensitivity when the battery starts losing power. Make sure it is a newly purchased fully charged battery.
3. **Have the SkyScreen Sensors been exposed to water?** Water can wreak havoc on your SkyScreens. If you leave them out in the rain it could short out the phototransistor. If this happens, it may be necessary to take them apart and dry them out.

If you do have a problem don't suffer in silence. Please visit the support section of our website, or shoot us an email at [info@pact.com](mailto:info@pact.com). Our success depends on your satisfaction. We have been building electronic products for shooters for decades. We will be sure to get you sorted out.

Finally as we've been saying for years, please **DON'T BE A DUMB ASS, ALWAYS WEAR EYE PROTECTION!**