

NECC POLICIES & PROCEDURES GUIDE

HOW TO MOUNT AND USE TIMING TRANSPONDERS

Transponder Deposit and Installation Guide.

At some NECC track events, the cars are timed using an electronic system that automatically detects each car's passage over the start-finish line. The detection is made by having an electronic transponder mounted at or near the front bumper of the car. This "Transponder Deposit and Installation Guide" is intended to provide some basic information how transponders work, how they should be mounted, and how drivers pay for their usage at NECC events.

How Transponder Timing Systems Work.

When the car passes over the start-finish line, the transponder sends a signal that is detected by an antenna loop buried in the pavement of the track. The antenna loop is connected to a timing computer, which picks up the signal, records the exact time when the car crosses the start-finish line, and calculates the lap time. The computer can distinguish each car because each transponder sends a unique signal to the antenna.

Transponder Mounting Basics.

The transponder must be mounted to the car in a manner that allows a clean radio signal to be transmitted between the transponder unit and an antenna loop mounted in the pavement of the track. Thus, the transponder must be mounted on the car so that (1) there are no obstructions between the transponder and the ground and (2) at a height of no more than 24 inches from the track surface.

Serious racers have their own transponders and mount them permanently to their cars. But weekend racers often just rent them from their motorsport club, like NECC. Rental transponders come with a quick-disconnect bracket or holder that allows the transponder to be clipped in place at the beginning of the day and removed after the end of the event so that the transponder can be returned to the club.

Rental transponders are fully self-contained units that have an internal rechargeable battery that is fully charged and ready for use when you receive it from the club. Rental transponders do not need to be wired to your car's electrical system. They merely need to be fastened to the car. This is the arrangement NECC uses.

Shown below is a photo of a rechargeable transponder, clipped into its quick disconnect holder.



Choosing a Good Mounting Location.

As noted above, rental transponders are clipped into a bracket, which in turn, must be mounted to the car with bolts, screws or zip ties.

The question then becomes, where shall I mount the transponder holder to the car?

Most drivers will be able to mount the transponder holder to the front license plate bracket or comparable location on their car. So that you can attach the transponder holder to your car quickly when you arrive at the track, NECC suggests that you pre-drill mounting holes in either (a) your front body panel directly below the bumper where your front license plate would normally be mounted, or (b) in a “dummy” license plate that you can screw onto the stock front license plate bracket.

Do not mount the transponder in the trunk or interior of your car unless you have no floor! And do not mount the transponder in the engine compartment; the heat may damage it.

Transponder Holder Dimensions.

The key dimensions are as follow:

The overall height of the transponder holder is about 3 ¾ inches. The overall width of the holder is about 2 inches. There are 2 inches between bolthole centers (for bolts / screws / tie-wraps). The upper hole is a vertical slot, the lower is a horizontal slot. Both holes accept a 1/8" diameter bolt / screw and are about 5/16" overall length.

The size of the holder is the same as the transponder itself, so if you provide sufficient room for the holder, the transponder will fit inside the holder just fine. The transponder and holder, together, weight about 120 grams.

NO metal or carbon fiber surfaces should be between the transponder and the track.

Shown below is a photo of the transponder holder, by itself.



Deposits for Transponder Usage.

At those events where NECC will conduct timing with transponders, all participants who borrow transponders from the club will be required to provide a \$75 deposit (in check or cash), which will be fully refunded upon return of the transponder at the end of the day. You will be responsible for the care and return of the transponder issued to you, so do not ignore the need for a proper and secure mount on your car.