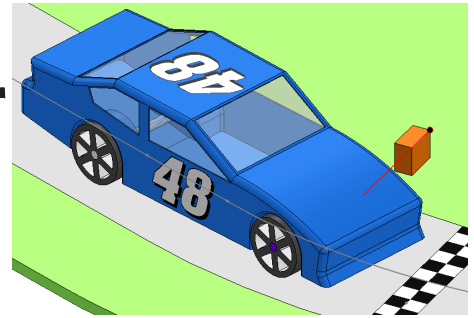


Speedway Sensor Timer



A. Open Speedway Assembly.

Step 1. If necessary, open your Speedway Assembly file.

B. Extrude Sensor Holder.

Step 1. **Rewind Motion Study to 0 seconds.**

To rewind, either **drag the Play Head** back to the beginning in the Motion Manager toolbar or **drag the Time Bar**, the gray vertical line back to 0 in the Timeline, **Fig. 1**.

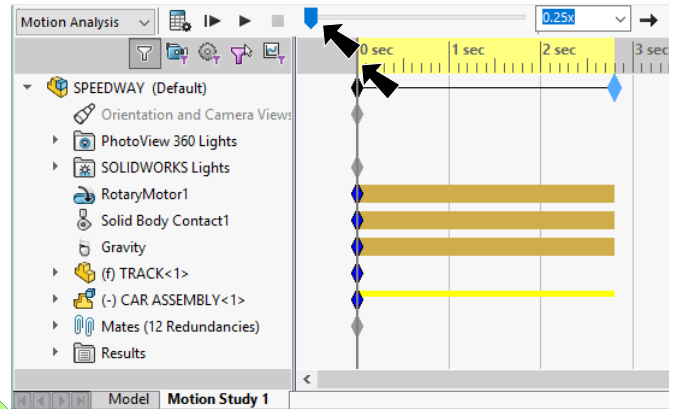


Fig. 1

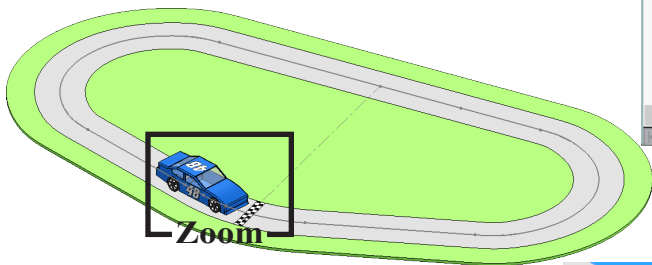



Fig. 2

Step 2. Zoom in around **Car Assembly and Start/Finish line, Fig. 2**. To zoom, place the cursor over the Car Assembly and spin the wheel on mouse back.

Step 3. Click the **Track** and click **Edit Part**  on the context toolbar, **Fig. 3**.

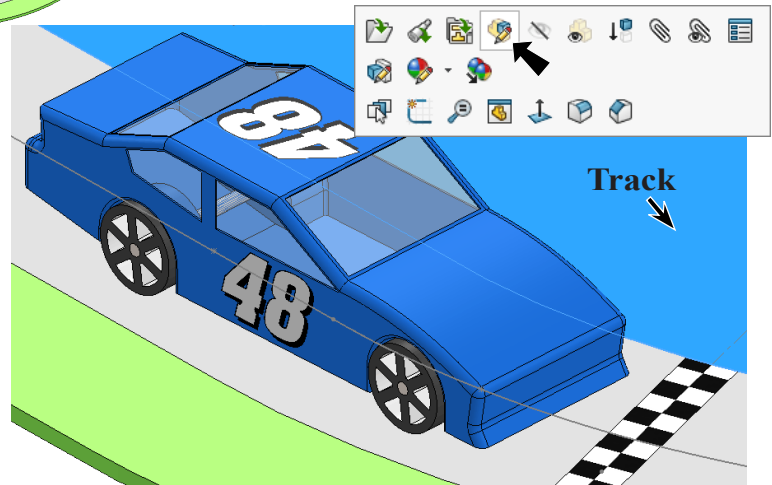



Fig. 3

Step 4. Click the **top face of Track** and click **Sketch**  on the context toolbar, **Fig. 4**.

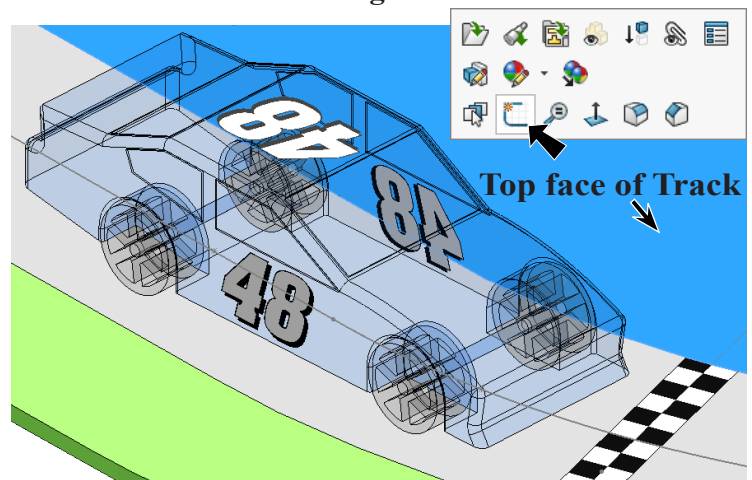





Fig. 4

Step 5. Click **Corner Rectangle**  in the **Rectangle flyout**  on the Sketch toolbar.

Step 6. Sketch a rectangle on infield of Track, **Fig. 5**.

Step 7. Click **Smart Dimension**  (S) on the Sketch toolbar.

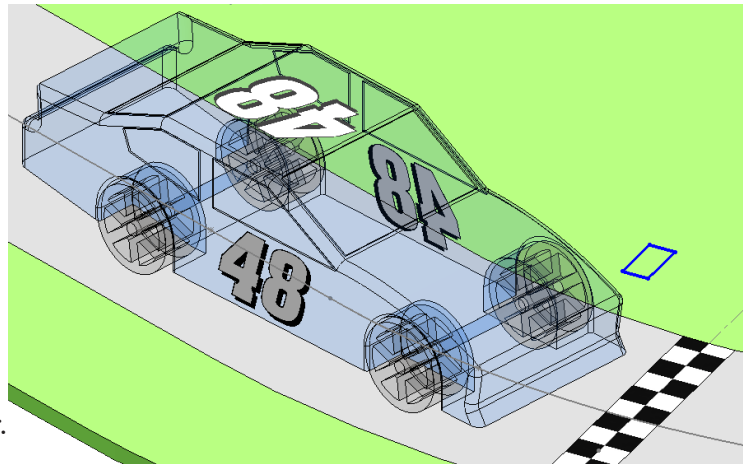


Fig. 5

Step 8. Add dimensions, **Fig. 6**.

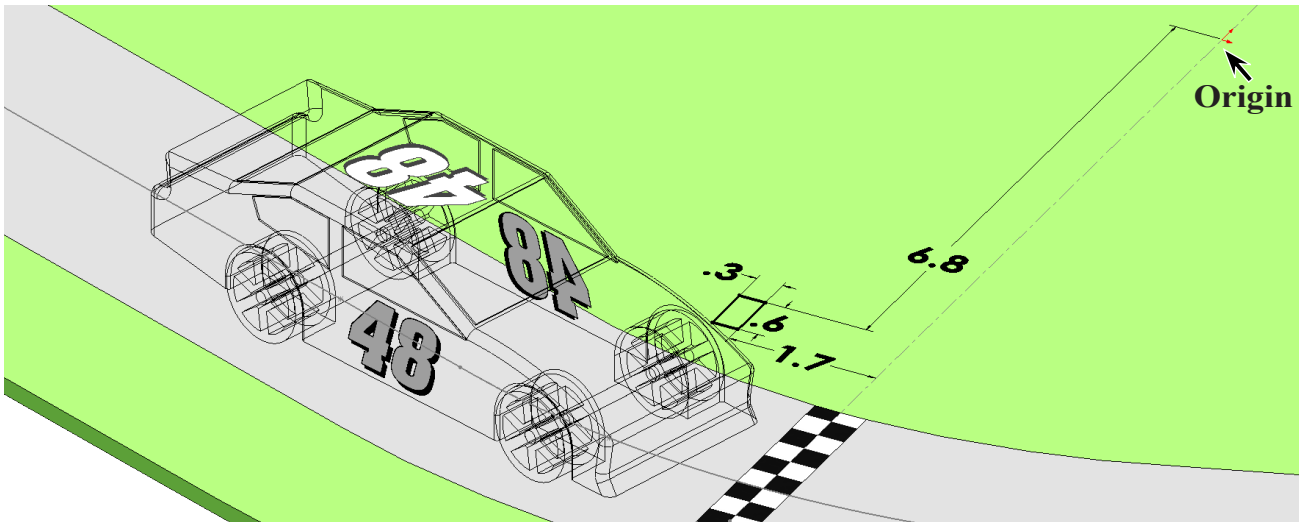


Fig. 6

Step 9. Click **Features**  on the Command Manager toolbar.

Step 10. Click **Extruded Boss/Base**  on the Features toolbar.

Step 11. In the Boss-Extrude Property Manager set:
under Direction 1, **Fig. 7**

Depth  **D1** **.5**
click OK .

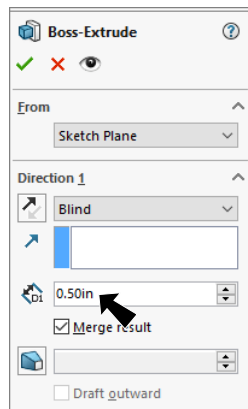


Fig. 7

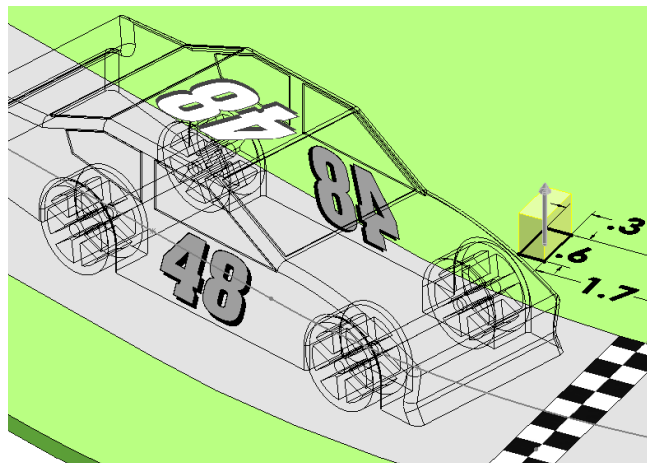




Fig. 8

C. Appearance.

Step 1. Click the Extruded feature to select the feature, click **Appearances Callout**  on the Content toolbar and click **Boss-Extruded2** , Fig. 9.

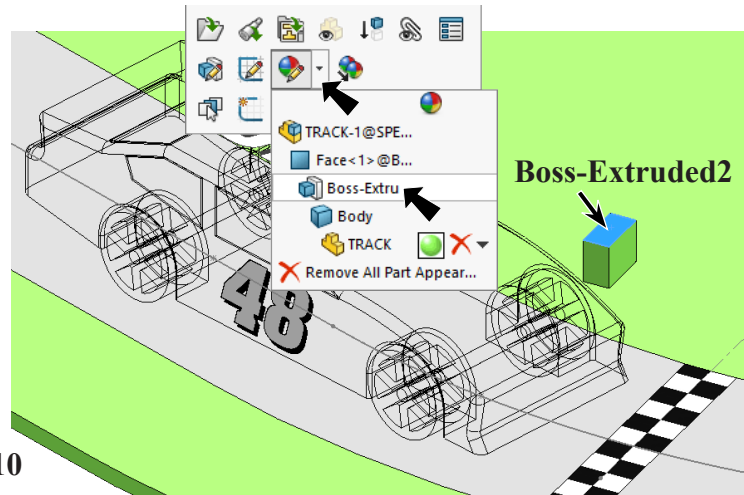

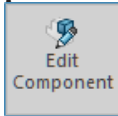


Fig. 9

Step 2. In the Appearances Property Manager;
under Color
click **Orange** swatch, Fig. 10
click OK .

Step 3. Click **Edit Component**



on the Sketch toolbar to turn off edit component and return to the assembly file.

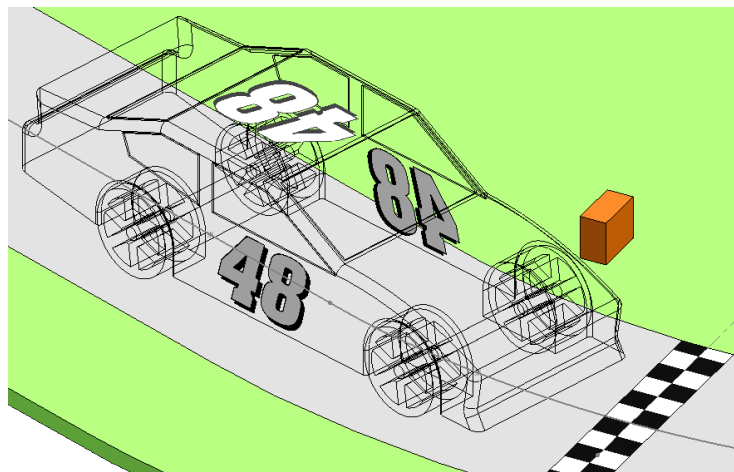


Fig. 11

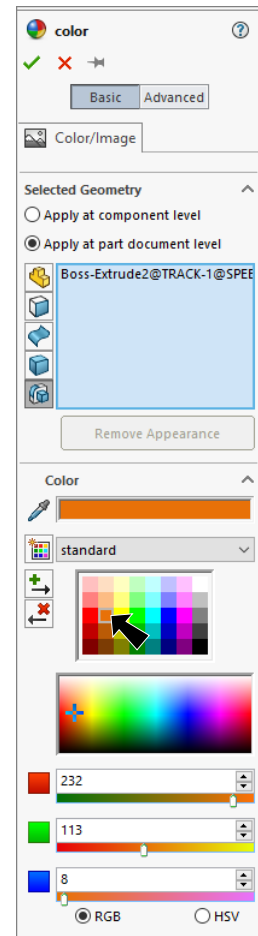



Fig. 10

D. Add Sensor.

Step 1. **Right click Sensors**  in the Feature Manager and click **Add Sensor** from the Content toolbar, Fig. 12.

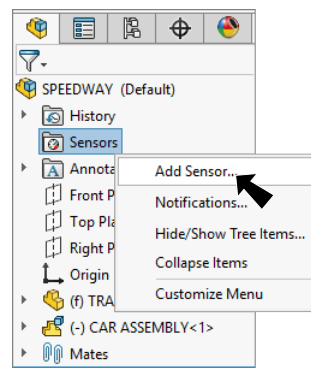


Fig. 12

Step 2. Click **Rebuild** in the Rebuild this document dialog box, Fig. 13.

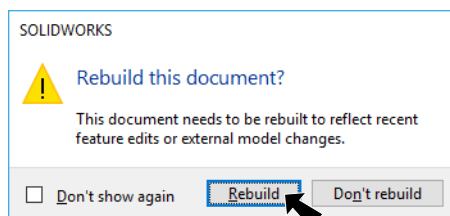



Fig. 13

Step 3. In the Sensor Property Manager set:
 under Sensor Type, **Fig. 14**
Sensor type Proximity

under Properties

Proximity sensor location 
 click top right vertex of Boss-Extruded2, **Fig. 15**

Proximity sensor direction 
 click top edge of Boss-Extruded2

check **Reverse direction**

Components to track 
 click front Axle (not Wheel Assembly)

Proximity sensor range  2.2

click OK .

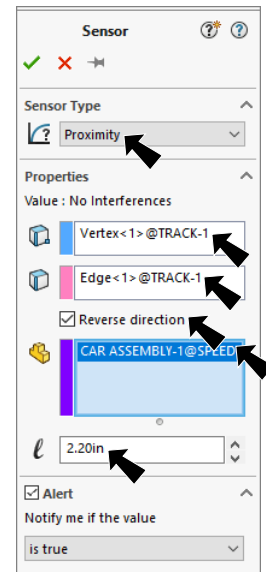


Fig. 14

Step 4. In **Fig. 16** I switched to the Top View and changed transparency of the Car Body and Wheel to illustrate that Sensor has to be positioned behind the Axle.

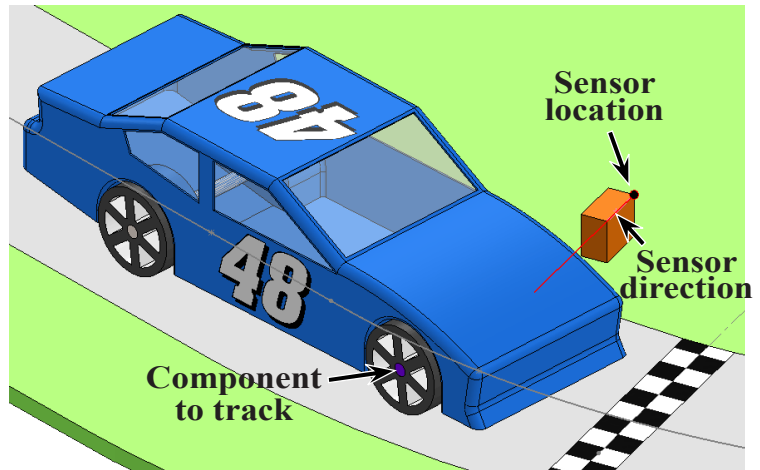


Fig. 15

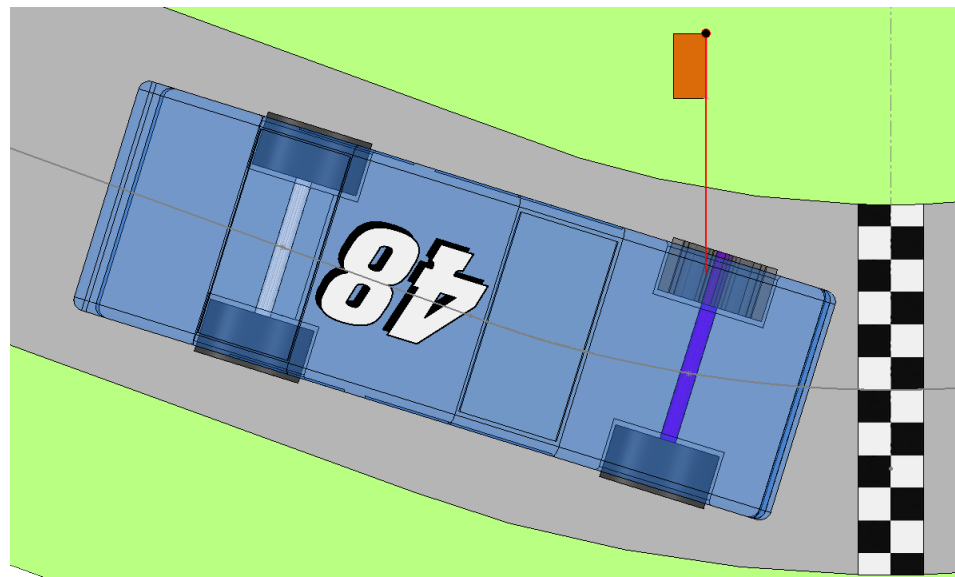


Fig. 16

E. Task Sensor.

Step 1. Click **Event-based Motion View**  on the far right end of Motion Manager toolbar, **Fig. 17.**

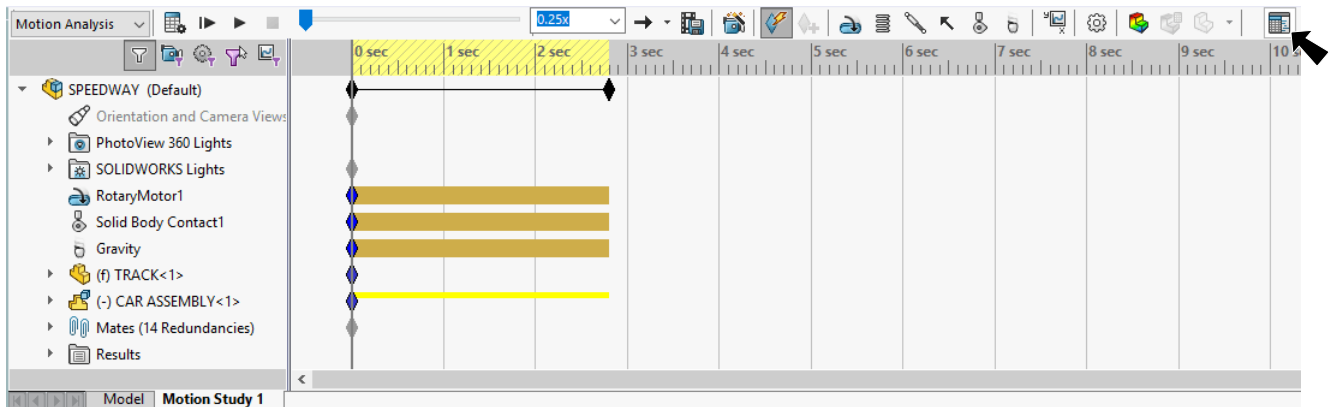


Fig. 17

Step 2. In the Event-based Motion Study, click **+ Click here to add**, **Fig. 18.**

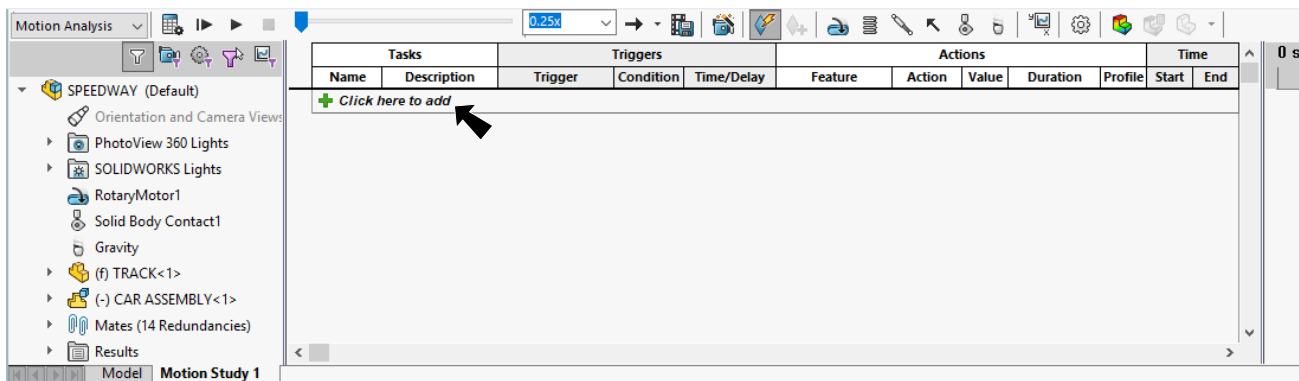


Fig. 18

Step 3. Under Trigger, click the **Select a trigger button** , **Fig. 19.**

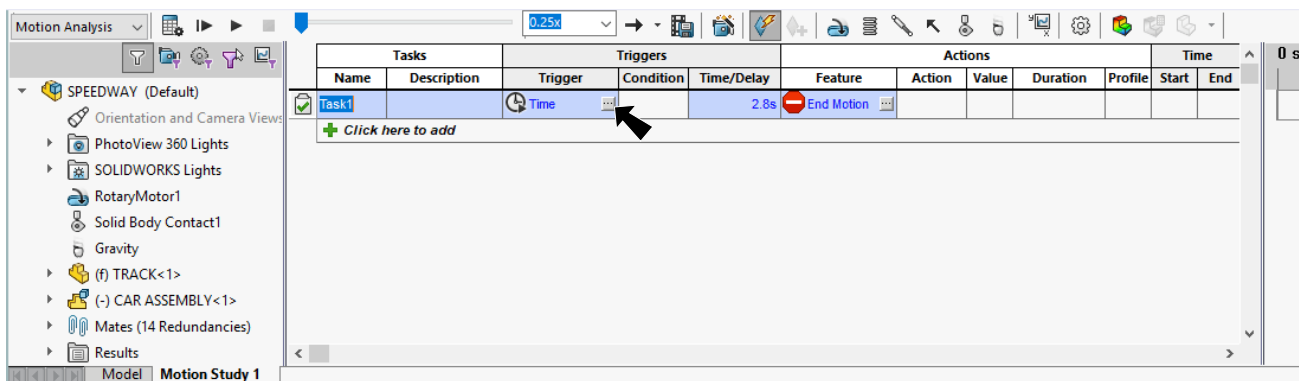


Fig. 19

Step 4. In the Trigger dialog box, expand **Sensor** and select **Proximity1**. Click **OK**, **Fig. 20.**

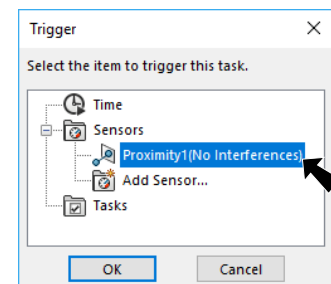



Fig. 20

Step 5. Click Zoom to Fit  (F) on the View toolbar.

Step 6. Click **Calculate**  and **Play from Start**  on the Motion Manager toolbar, **Fig. 21**. The Motion Study will stop when Car “trips” the sensor.

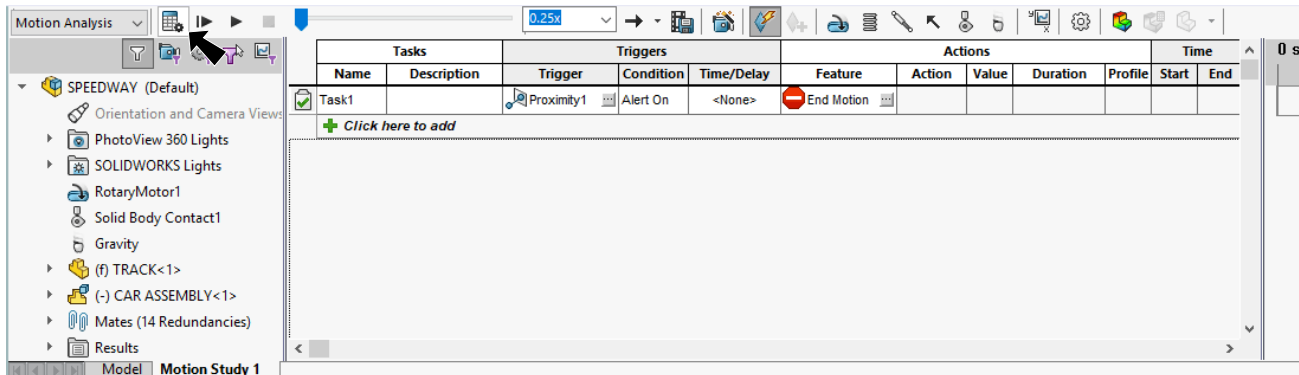


Fig. 21

Step 7. Under Time, what is your time, **Fig. 22**?

Step 8. Click **Timeline View**  on the far right end of Motion Manager toolbar to switch to Timeline View, **Fig. 22**.

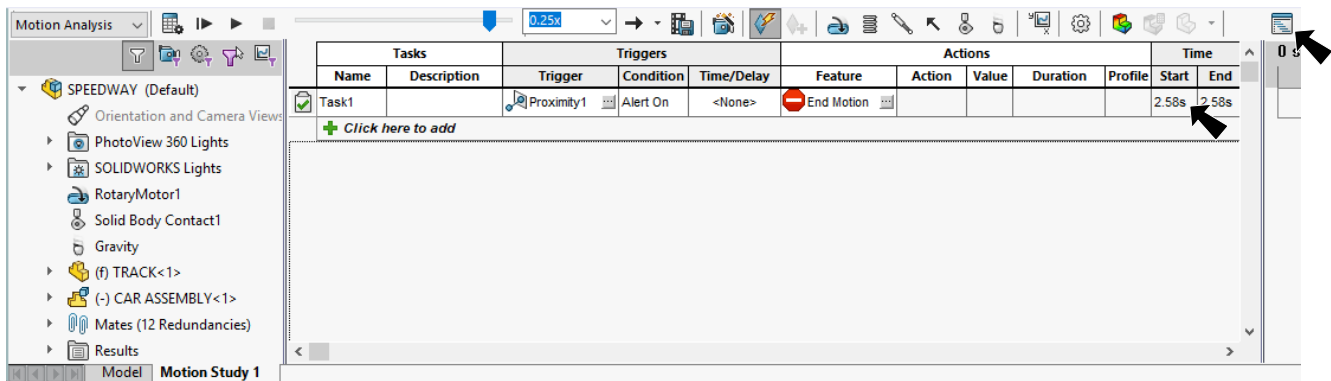


Fig. 22

Step 9. Save. Use **Ctrl-S**.

Step 10. Out best time was **2.15**, **Fig. 23**.

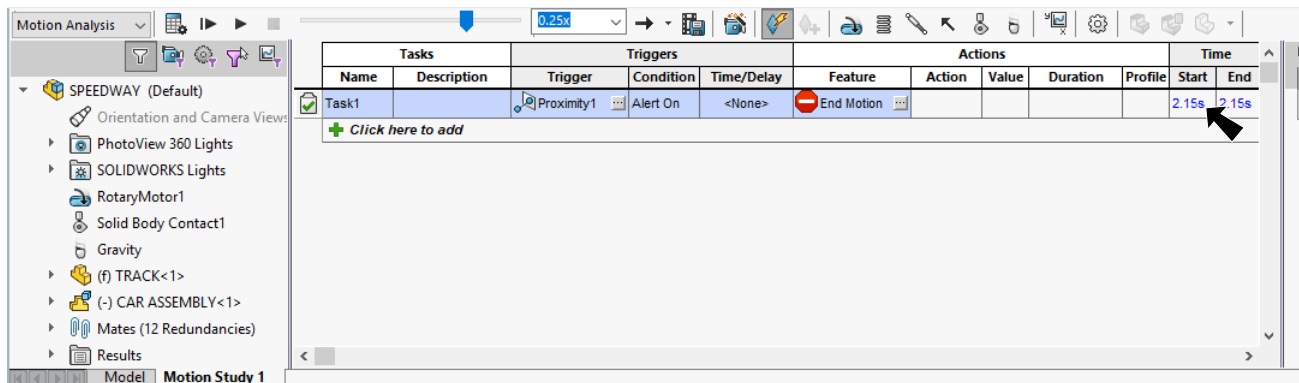


Fig. 23