

# USER GUIDE



SCAN TO ACCESS YOUR  
INSTRUCTOR MATERIALS



# TABLE OF CONTENTS

Introduction .....	3
SIDNE Setup.....	5
Course Setup .....	13
Sample Courses.....	18
Running A Program.....	21
Alcohol-Impaired Driving Activity.....	27
Drowsy and Distracted Driving Activity .....	33
Owner's Manual .....	39
Maintenance .....	52
Maintenance Videos .....	62



# INTRODUCTION

# INTRODUCTION

## Modeled Impairments

When driving SIDNE (Simulated Impaired Driving Experience), electronics in the vehicle cause the driver to experience a loss of steering, erratic acceleration, and delayed braking response, simulating Impaired driving.

## Purpose

SIDNE delivers an actual driving experience that shows the dangers of Impaired and distracted driving. Promote responsible driving by providing an experience that your participants will remember.



[4]

# SIDNE SETUP

# SIDNE SETUP

It is strongly recommended that you follow these step-by-step numbered instructions to set up and drive SIDNE.

1

## First Shipment Contents (or Included with SIDNE + Trailer Delivery)

You will receive the materials below, before SIDNE is delivered. The transmitters are delivered by your SIDNE trainer to ensure an unauthorized person cannot start SIDNE. If any of these items are missing in your shipment, please call 1-800-272-5023.

### SIDNE

- Operations Kit
- Safety Helmet
- Safety Glasses
- Box Scrub Hats
- Box Disposable Wipes
- Instructor Vests
- Banner
- License Plate

### Charger

Use to keep your batteries charged and conditioned.

### Training Materials

- User Guide
- Course Cards

### Second Shipment

SIDNE  
SIDNE Batteries



# SIDNE SETUP

2

## SIDNE's Features

Take a few minutes to become acquainted with SIDNE's features.

### Review Features

- 1 Steering Wheel
- 2 Forward/Reverse Switch
- 3 Seatbelts
- 4 Hand Brake
- 5 Brake Pedal
- 6 Accelerator Pedal
- 7 LCD Panel and Red Power Button
- 8 Receiver



[7]

# SIDNE SETUP

3

## Preparing SIDNE for Use

Assemble the materials from the first and second shipment. Before you begin to drive SIDNE, follow these steps to ensure that it is set up correctly and that all of the batteries are charged.



### 1 Roll Bar, Banner, License Plate

- Pull the roll bar up and back into the slots in the frame.
- Push the screws back into place.
- Tightly screw in the wing nuts.
- Attach the banner to the roll bar using the elastic cords and clips.
- Attach SIDNE license plate by attaching adhesive-backed Velcro to both license and front roll pad cover.



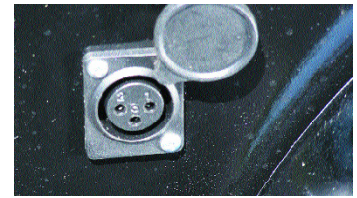
### 2 Connecting the Batteries

- Make sure the Red Power Button is pushed down and the emergency hand brake is pulled back to STOP.
- Place each of the batteries in the tray on the right side of the back of SIDNE.
- Insert the battery connectors into the connectors attached to the cart.
- Replace the bungee strap to secure the batteries.



### 3 Connecting the Lights

- Connect the rear lights to the plug on the back of the cover.
- Place the cover on the back of the vehicle.
- Push the cover into place until the magnets connect.



### 4 Charge the SIDNE's Batteries

- The charger receptacle is located at SIDNE's left rear wheel. The receptacle cover swivels.
- Move SIDNE next to an electrical outlet.
- Press the Red Power Button down and pull the emergency brake back to STOP.
- Attach the charger to the receptacle.
- Plug in the charger.
- Allow eight hours for the first charge. The LED light on the side of the charger will be green and constant when the batteries are fully charged.

[ 8 ]



# SIDNE SETUP

4

## SIDNE's Safety Features

It is Important to be familiar with all of the safety features offered.



### Roll Bar and Head Rest

The roll bar and headrest provide stability.



### Hand Brake

The hand brake keeps SIDNE from rolling forward when not in motion. Can be pulled back in case of emergency stops.



### Transmitter

SIDNE will NOT operate unless the GO button is held down.



### Seatbelts

The two three-point ELR seatbelts provide separate seatbelts for the driver and a passenger up to a total of 350 pounds.



### Red Power Button

The button is located on top of the receiver. If the driver cannot control the vehicle, it can be pressed DOWN to cut power.



### Bumper

The bumper is a first line of defense in the event SIDNE is driven into an object.

# SIDNE SETUP

5

## Using the Transmitter

Become familiar with the buttons of the transmitter before operating SIDNE. The transmitter is set up to accommodate left- or right-hand operation.

**A High Speed Position**

Sets SIDNE's top speed at 8 mph when "High" is pressed.

**B Low Speed Position**

Sets SIDNE's top speed at 4 mph when "Low" is pressed.

**C Brake**

Activates the brake. It is used in the event of an emergency.

**D Impaired Position**

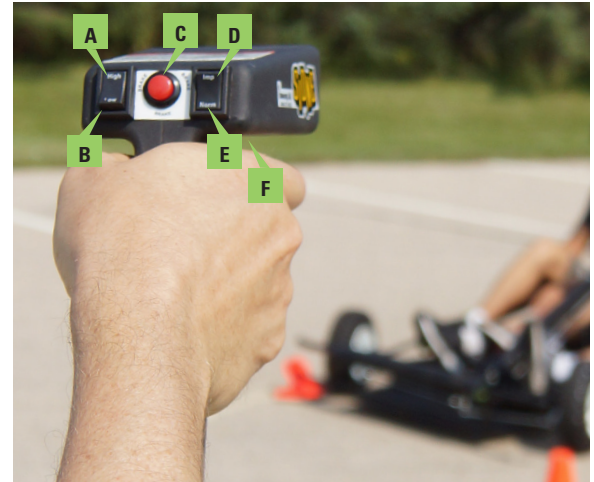
Turns the Impairment effects on when "Imp" is pressed.

**E Normal Position**

Turns the Impairment effects off when "Norm" is pressed.

**F Go Button**

This is the black trigger button located on the front of the handle of the transmitter. Press this trigger button with the index finger to communicate with SIDNE.



[ 10 ]

# SIDNE SETUP

6

## Driving SIDNE

ImpORTANT: These instructions should initially be performed with your certified SIDNE trainer.

**Warning: The area for the test drive MUST BE paved, flat, and free of all obstructions/barriers. SIDNE cannot be used on the following surfaces: grass, gravel, astroturf, rubber, carpet, or wet surfaces.**

- 1 Remove and read the WARNING placard.
- 2 Have driver put on helmet and protective glasses and fasten seatbelt. Secure the passenger seatbelt if there isn't a passenger.
- 3 Pull up the Red Power Button on the receiver.
- 4 Push the hand brake forward to the GO position.
- 5 Keep foot off the accelerator pedal. You will hear a series of chirps and the LCD panel will display messages as SIDNE goes through its start-up process. When "SIDNE is ready to go!!!" is displayed, SIDNE is ready to drive.
- 6 Press the GO button on the transmitter.
- 7 Drive SIDNE in Norm mode until you feel comfortable with its operation.
- 8 Drive SIDNE in Imp mode. Keep in mind you will need more space to operate and stop safely.
- 9 When you have finished driving SIDNE, replace the WARNING placard on the steering wheel. Pull the hand brake back to STOP and press down the Red Power Button.

# SIDNE SETUP

7

## Transporting SIDNE

This section will take you through loading SIDNE into a vehicle and removing it from the vehicle.

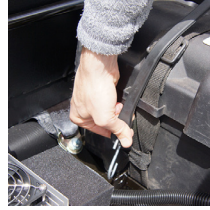


### 1 Move SIDNE to the vehicle.

- Have the front of SIDNE facing the back of the vehicle.
- Align front wheels so they are straight.
- Pull hand brake back to STOP.
- Press down the Red Power Button.
- Lift off the back cover.



### 2 Disconnect the rear light cable.



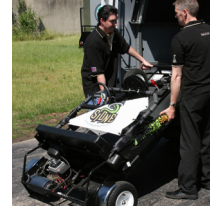
### 3 Remove battery bungee cord.

- Disconnect batteries.
- Remove each battery by grasping the handle and lifting out of SIDNE.



### 4 Remove the banner guides on the three grommets on the left corner of the SIDNE banner.

- Loosen the wing nuts on both sides of the roll bar.
- Fold the roll bar down.
- Replace the screws and wing nuts into the bar for safe keeping.



### 5 Push the hand brake forward.

- Move to the front of SIDNE.
- Have one person at each side of the vehicle.
- Grasp SIDNE at the bumper.
- Lift the front of SIDNE up and place into the vehicle.



### 6 Move to the rear of SIDNE.

- Have one person at each side of SIDNE.
- Grasp the vehicle at the bar by each of the rear tires.
- Lift SIDNE up and roll it into the vehicle.
- Secure SIDNE in the vehicle.
- Pull the hand brake back to STOP.
- Secure the batteries in an upright position in the transport vehicle.

[ 12 ]

# COURSE SETUP

# COURSE SETUP

## Training is Included in the Initial Purchase of your SIDNE

The training includes:

- Setting up your SIDNE for the first time
- Identifying an area for your demonstrations
- Laying out a course
- Learning about the roles of the demonstration team
- Practicing operating SIDNE and conducting a demonstration

If you add new members to your delivery team, we recommend that they:

- View the SIDNE training video
- Review the User Guide
- Observe a SIDNE demonstration
- Practice operating the SIDNE transmitter



View the SIDNE Training Video

<https://vimeo.com/263925628/b5477f2966>



# COURSE SETUP

## Materials

- SIDNE
- Battery Charger for SIDNE
- Transmitter (and 4 extra AA batteries)
- Helmets(at least 2; 6 will help make the program go faster)
- Safety glasses (at least 2; 6 will help make the program go faster)
- Traffic Cones (minimum of 30) – we recommend 6” high cones for laying out your course.
- Tape or chalk to mark the location of the cones and the direction of the course

# COURSE SETUP

Course Requirements	Not Acceptable	Possible Course Sites
<ul style="list-style-type: none"><li>• Area <i>recommended</i> is 100 ft x 130 ft.</li><li>• Area must be a hard surface such as concrete, asphalt or gym floors</li><li>• Area must be free from landscaping, parking barriers, light poles, telephone poles, and parked cars. Area must be a flat level surface</li><li>• Area must be free from deep puddles or snow</li><li>• SIDNE may be used indoors provided the facility meets the requirements listed</li></ul>	<p>SIDNE CANNOT Operate on the following surfaces:</p> <ul style="list-style-type: none"><li>• Grass</li><li>• Gravel</li><li>• Astroturf</li><li>• Rubber</li><li>• Carpet</li></ul>	<p>Successful SIDNE course sites include but are not limited to the following:</p> <ul style="list-style-type: none"><li>• School parking lots</li><li>• Local mall or shopping center parking lots</li><li>• Airplane hangars</li><li>• Gymnasiums</li><li>• Basketball and tennis courts</li><li>• Warehouse</li></ul>

# COURSE SETUP

## Course Area

### **Safety Buffer**

The Safety Buffer's purpose is to allow enough space for SIDNE to stop safely. Our example in this guide and in the training video uses a 15-foot buffer. This size may not be adequate for your location or circumstances. You may require more than a 15-foot Safety Buffer given your location and circumstances. Establish your Safety Buffer to provide ample time to react and stop SIDNE in the event of an emergency.

### **Participant Viewing**

In addition to the course, the demonstration area will need to accommodate participants who are waiting and program supplies. Clearly mark a safe area away from the driving course where participants, observers, and others should be while the course is in use.

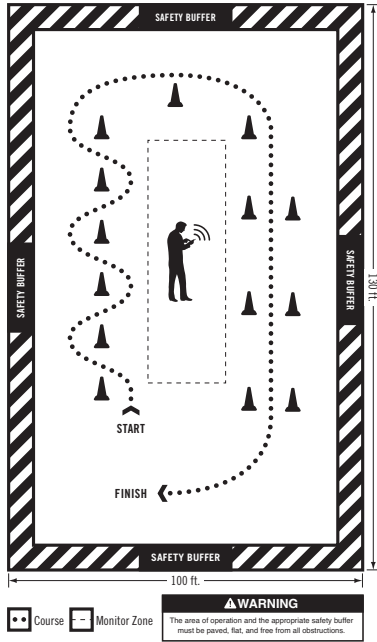
### **Debriefing/Survey Area**

The Instructors use the debriefing area to discuss the outcome of the demonstration with the participants or have them complete a post-simulation survey. This area is usually the same as the viewing area. This area must be outside the boundaries of the Safety Buffer.

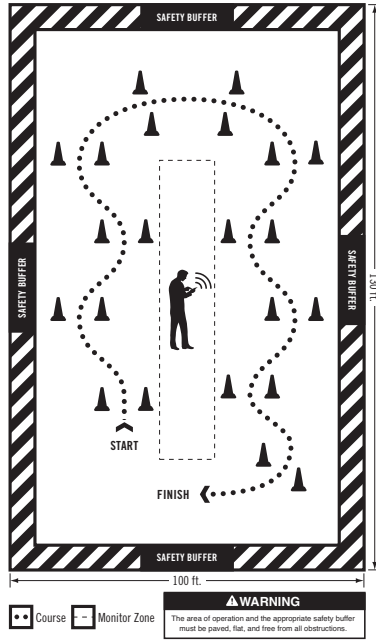
# SAMPLE COURSES

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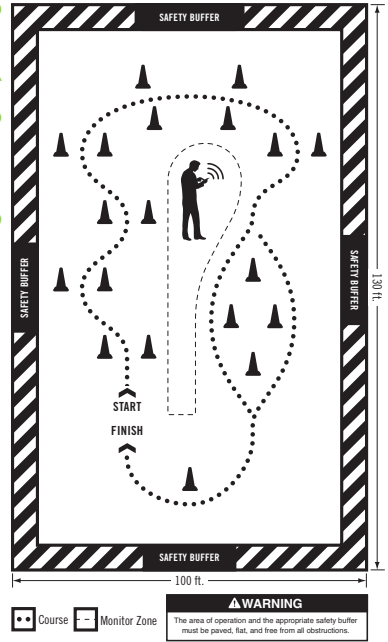
Sample Course 1



Sample Course 2

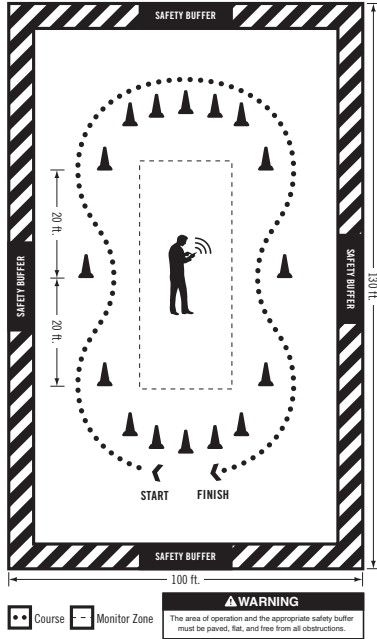


Sample Course 3

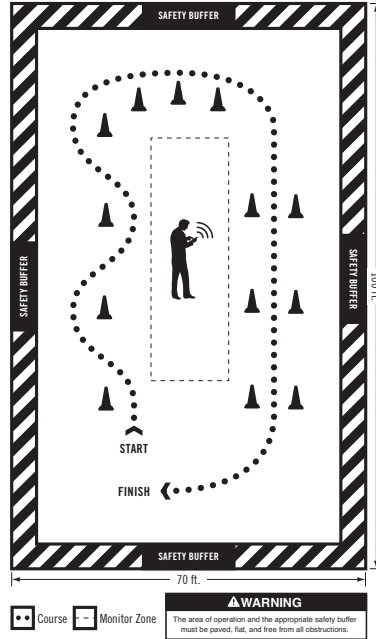


# SAMPLE COURSES

Sample Course 4



ALTERNATE COURSE FOR SMALL VENUES





# **RUNNING A PROGRAM**

# RUNNING A PROGRAM

## PROGRAM MONITORS

The number of program monitors you need depends upon the course's size, complexity, audience size and behavior. We suggest a minimum of 4 people to serve as program monitors. The program monitor(s) responsible for operating the transmitter must practice with the transmitter until they are confident they can control SIDNE during a program.

### Training Program Monitors

1. Provide the program monitors with this section and the SIDNE course card for a complete description of the functions of SIDNE for their review prior to your program.
2. It is imperative that anyone participating as a program monitor experience a ride in SIDNE prior to helping with a program. They gain an understanding of what the participants will experience and the Importance of their role in the program.

3. Hold a practice session for the program monitors prior to your program.
4. On the day of the program:
  - a. Answer any questions the program monitors have about their functions.
  - b. Remove the WARNING placard from SIDNE's steering wheel and have them read it. Replace the WARNING placard after the program.  
<https://www.fatalvision.com/wp-content/uploads/2023/03/SIDNEWarningPlacard.pdf>

# RUNNING A PROGRAM

**Program Monitors** will perform the following functions:

## INSTRUCTOR

Responsible for getting participants into the vehicle and processing their experiences after the activity.

- Help participants into vehicle
- Have participant fasten seat belt
- Orient participants to the vehicle and the course

### Vehicle

- Brake
- Accelerator
- Forward/reverse
- Parking brake

### Course

- “Follow the arrows”
- Stopping points
- Expectations for each time around the course

- **Important: Capture the participant’s teachable moment afterwards by briefly asking questions regarding their experience as you deliver your prevention message.**
- At each driver change:
  - Make sure parking brake is engaged
  - Confirm steering is responding after parking brake is released and SIDNE has fully re-booted

# RUNNING A PROGRAM

## TRANSMITTER MONITOR

This is a critical safety function. The transmitter operator **must not** perform any other functions at the same time.

### During Program

- Confirm everyone is off the course before pressing GO
- Stand in the middle of the course
- Maintain a distance of less than 75 feet between the transmitter monitor and SIDNE
- Wait for instructor signal to press GO
- Stay vigilant during SIDNE operation
- Be alert to any dangerous situations and be ready to apply the BRAKE button. Potential dangerous situations include:
  - SIDNE is heading toward a crowd or building, and does not appear to be stopping
  - Someone walks on to the course

- The vehicle is heading off the established course
- Any other situation the monitor considers a hazard
- Release GO button when participate completes ride
- *Take care of the transmitter! The inner components can be damaged if it is dropped*

### Prior to Program

- Drive the course prior to starting the program; identify best locations for putting SIDNE in Impaired mode.
- Turn off cell phone.

# RUNNING A PROGRAM

## SAFETY MONITOR

Responsible for briefing the participants about the driving activity and ensuring they are properly informed of the safety procedures.

- Prepare participants to enter SIDNE, helmets, and goggles.
- Review safety briefing rules:
  - Enter course only when instructed
  - Wear helmet with straps buckled
  - Wear safety goggles or glasses
  - No loose clothing or jewelry
  - Pull back and fasten long hair
  - Wear seat belt
  - Arms and legs in vehicle at all times
- Driver stays on the designated course
- Rider stays in the vehicle until instructed to get out
- Participants stay in the designated waiting area
- Follow all instructions

## COURSE MONITOR

Responsible for maintaining the course setup.

- Reposition cones or signs moved AFTER SIDNE has completely passed by
- Monitor participants who are waiting
- Be aware of SIDNE's location on the course at all times
- Coordinate carefully with the transmitter monitor if cones are stuck and need to be removed from under SIDNE's wheel or bumper
- Act as a spotter, direct onlookers to stay out of the safety buffer
- Answer questions

# RUNNING A PROGRAM

## Equipment Safety Check

Prior to beginning your demonstration with SIDNE, be sure you have completed any necessary maintenance tasks as described in the maintenance section of this guide.

### **Prior to the start of the program:**

- Tires are inflated to the appropriate pressure
- SIDNE batteries are fully charged
- Transmitter has fresh batteries
- Seat belts are in working order
- Cart padding is in tact and in place
- Test drive completed

### **During your SIDNE event at each driver change:**

- SIDNE is parked, that is the GO button is released and the parking brake is pulled back to the stopped position
- Seat belts are fastened
- Steering is responding properly, i.e. left/right operation
- Transmitter is working properly. When the GO button is pressed, you will here a “click.” This is an indication that the power is being sent to the cart.
- If no one is in the passenger seat, fasten the seat belt and make sure it is in the vehicle and will not drag outside the vehicle during operation



# **ALCOHOL-IMPAIRED DRIVING ACTIVITY**

# ALCOHOL-IMPAIRED DRIVING ACTIVITY

## Simulated Alcohol Impairments

When driving SIDNE (Simulated Impaired Driving Experience), electronics in the vehicle cause the driver to experience a loss of steering control, erratic acceleration, and delayed braking response, simulating Impaired driving. These effects result in missed turns; lane shifts into “oncoming traffic,” and crashing, simulating the consequences caused by alcohol-Impaired drivers.

## Materials

- SIDNE®
- SIDNE Transmitter
- Cones
- Helmets
- Chalk
- Course cards
- Safety Glasses
- Course Cards
- Battery Charger for SIDNE

## Research-Based Approach

Some people believe they can handle their alcohol and are not likely to face negative consequences if they overindulge and drive. This belief tendency is called Optimistic Bias. By providing a personal insight into Impairment, people will experience the debilitating effect excessive alcohol consumption (*severity*) can have on their ability to function Normally while operating a vehicle. This personal experience is intended to influence the individual's attitude and beliefs about the effect of alcohol and dispel the optimistic bias that “I can handle my alcohol!”

## Activity Objective

At the end of the session, participants will be able to:

- Describe the Impairments that Impact the ability to operate a motor vehicle safely
- Identify at least one strategy to avoid driving Impaired or riding with an Impaired driver

[ 28 ]

# ALCOHOL-IMPAIRED DRIVING ACTIVITY

## Introduce the Activity

Drivers will experience the difference between operating a vehicle unimpaired and impaired. Introduce the participants to the vehicle, the course, and the activity.

### The vehicle:

- a. Battery operated
- b. Does not exceed 8 mph
- c. Has both a brake and an accelerator pedal
- d. Has both forward and reverse capability
- e. Steering is sensitive like a car and requires only small movements to control the vehicle
- f. The driver controls the steering, braking, and acceleration

### Review the course layout with the group

- Point out the direction to drive
- Point out the arrows drawn on the course

## Review the Activity

Explain to the participants that they will travel around the course without stopping. The participant will be in Normal mode (no simulated impairment) the first time driving the course.

At some point, after the driver seems to be driving confidently, the transmitter operator will put SIDNE into Impaired mode allowing the driver to experience the sensation of impaired driving and losing control. Typically, the impaired mode is experienced during the second time around the course.

# ALCOHOL-IMPAIRED DRIVING ACTIVITY

## Activity Steps

1. Seat the driver and rider ensuring they are wearing helmets, seatbelts, and safety glasses for the rider. Review the following features with the driver:
  - Accelerator
  - Brake
  - Forward/reverse switch
  - Emergency brake
2. Instruct the driver to navigate the course using the marked directional arrows and to stay between the cones.
3. Have the transmitter operator switch SIDNE to Imp when they see that the driver is driving confidently. This is usually during the second time around the course. Return to Norm after it's apparent the driver has lost control.
4. The instructor determines when the drive is complete.
5. The driver stops SIDNE and engages the parking brake.
6. Discussion questions:
  - Have the driver describe their experience.
  - What did you experience when you lost control of the vehicle?
  - List a few consequences that might result if an Impaired driver lost control of their vehicle in the same way you just experienced.
  - How can you help yourself and others avoid riding with an Impaired driver? Or avoid driving if you are Impaired yourself?

# ALCOHOL-IMPAIRED DRIVING TALKING POINTS

This section contains statements that are often heard regarding a alcohol-related crash and/or arrest. Add your own, and solicit more from participants.

*"I have been in cars with drivers who have been drinking, and they keep the car between the lines just fine."*

So far, as far as you know. Is staying on the road the only responsibility of a driver? Besides steering, what else does a safe driver need to be doing? In what other areas does they need to be paying attention?

*"I didn't know they were that drunk."*

Unless you had lab test results in your hand, probably not. Does how drunk matter? Does minimizing the condition lessen the consequences? Does this change the legality of the action or behavior?

*"They were was my only ride home."*

Whom did you call to ask for another ride? Whom might you have called? If you did not call for help, why not?

*"It wasn't that bad."*

How bad was it supposed to be? Bad compared to what?

*"I didn't think anything could happen. It wasn't that far."*

Judging from the results, was it far enough? What if you had only gone ten feet? Would that short distance have made a crash impossible? If there is a distance between start and destination in which it is impossible to be involved in a crash, what is it?

# ALCOHOL-IMPAIRED DRIVING PRESENTATION TIPS

## **Here are areas where alcohol Impairment has an effect:**

- Judgment
- Vision
- Reaction time
- Memory
- Speech
- Attention/focus
- Coordination
- Tracking and steering
- Eye movement control
- Standing steadiness
- Emergency response
- Information processing
- Speed control



# **DROWSY AND DISTRACTED DRIVING ACTIVITY**



# DROWSY AND DISTRACTED DRIVING ACTIVITY

## Simulated Impairments

The activity demonstrates the impact of driving while drowsy or distracted. The driver will experience the potentially devastating consequences that can occur if they nod off behind the wheel or take their eyes off the road “for just a second” to dial their mobile phone or send a text.

The Fatal Vision® Drowsy & Distracted Goggles and SIDNE simulate driving distracted or drowsy. The driver’s slowed reactions to driving situations demonstrate the impairments.

## Materials

- Fatal Vision Drowsy & Distracted Goggles
- Device with the Fatal Vision® Drowsy & Distracted Goggles app
- SIDNE
- SIDNE transmitter

- Cones
- Helmets
- Chalk
- Course cards
- Safety goggles for the passenger
- Course cards
- Battery charger for SIDNE

## Research-Based Approach

This activity addresses *optimistic bias*. Driving requires a driver’s full attention to drive safely and react to unexpected hazards. Some people believe they are capable of multi-tasking, for example, texting and driving (*optimistic bias*). This activity addresses the potential severe consequences (*severity*) associated with not being able to multitask.

# DROWSY AND DISTRACTED DRIVING ACTIVITY

## Activity Objective

At the end of the driving session, the participants will be able to:

- Describe the Impact of driving while texting, dialing, or drowsy.
- List at least one way to avoid driving distracted or drowsy.

You will manage the Drowsy and Distracted Goggles through the free app, “Fatal Vision Goggle App,” that runs on a mobile phone. Before beginning the SIDNE demonstration, ensure your device is connected to the goggles through the app. The goggles should be in the default mode.

**Important safety note:** DO NOT use Imp mode on the SIDNE transmitter while the participant is wearing Fatal Vision Drowsy and Distracted Goggles. The SIDNE transmitter is set to Norm while using the DD goggles. The Drowsy and Distracted Goggles phone app engages the simulated experience using the app’s Impaired button.

For this activity, have two separate people run the driving simulation. One will operate the SIDNE transmitter, and one will run the Drowsy and Distracted Goggles from the phone app.

## Introduce the Activity

Drivers will experience the difference between operating a vehicle unimpaired and impaired by distraction or drowsiness. Introduce the participants to the vehicle, the course, and the activity.

### The vehicle:

- a. Battery operated
- b. Does not exceed 8 mph
- c. Has both a brake and an accelerator pedal
- d. Has both forward and reverse capability
- e. SIDNE Steering is responsive and requires only small movements
- f. The driver controls the steering, braking, and acceleration

[ 35 ]

# DROWSY AND DISTRACTED DRIVING ACTIVITY

## Review the course layout with the group

- Point out the direction to drive
- Point out the arrows drawn on the course

## Review the Activity

1. Explain to the participants that they will travel around the course without stopping. The participant will be in Norm mode with no simulated Impairment until the instructor can see the participant is driving confidently.
2. At some point after the driver appears confident driving, the driver will experience one of three simulated Impairment modes:
  - Distracted – Dial – Taking eyes off the road to dial a phone or reach for something off the car floor or in the glove compartment
  - Distracted – Text – Taking eyes off the road to send or read a text or scroll through social media

- Drowsy – Slowly falling asleep, during which time the eyes and brain gradually shut down in microsleep sequences

## Activity steps

1. Seat the driver and rider ensuring they are wearing helmets, seatbelts, and safety glasses for the rider. Have the driver put on the goggles before the helmet for the most comfortable fit.
2. Review the following with the driver:
  - Accelerator
  - Brake
  - Forward/reverse switch
  - Emergency brake
3. Instruct the driver to navigate the course following the yellow arrows (if placed) and to stay between the cones.

# DROWSY AND DISTRACTED DRIVING ACTIVITY

4. When the Instructor sees the driver driving with confidence, the instructor will switch the goggles to one of the app's three Impaired modes. The instructor will return the goggles to Normal mode after it's apparent the driver is driving out of control.
  - Remember, the SIDNE Transmitter Operator should NOT use the SIDNE transmitter to put the driver into Impaired mode. Instead, the Transmitter Operator should carefully observe the driver and be ready to stop the vehicle if the participant starts to drive off course or toward observers on the sidelines.
5. The instructor determines when the drive is complete.
6. The driver stops SIDNE and engages the parking brake.
7. Switch the goggles to Normal mode on the app and discuss the experience with the driver.
8. Discussion questions:
  - Describe your experience.
  - During your drive, you were in (Distracted Text, Distracted Dial or Drowsy) mode, which is like taking your eyes off the road while:
    - Dialing a phone
    - Falling asleep behind the wheel while driving
    - Reaching for something in the glove compartment
    - Sending or reading a text
    - Scrolling through social media, or
  - How did driving while drowsy, during which the eyes and brain gradually shut down, affect your ability to drive?
  - List a few consequences that might result if they were distracted or drowsy while on the road with other drivers.
  - How can you help yourself and others avoid distractions like this?

[ 37 ]

# DROWSY AND DISTRACTED DRIVING PRESENTATION TIPS

## **Other causes of distraction/Impairment while driving:**

- Talking to passengers in the vehicle
- Talking on the cell phone
- Eating while driving
- Lack of driving experience
- Changing radio stations, selecting CD's and tracks to play

# OWNER'S MANUAL

# OWNER'S MANUAL

## Safety Features

**Roll bar**—will help to protect the driver and passenger in the unlikely event of a rollover.

**Headrests**—provided for driver and passenger to help reduce neck injury in the event of a collision.

**Extra-Wide and Low Center of Gravity**—SIDNE is 48" wide and sits only 8" off the ground (making rollovers on level ground highly unlikely).

**Skid Plate**—an extra layer of protection on SIDNE's underside to protect the steering mechanisms.

**ELR (emergency locking retractor) Seat belts**—two three-point seat belts provide a seat belt for the driver and a passenger up to 350 pounds total.

**Handbrake**—provided in the event of an emergency. Pull back it brings the vehicle to a stop.

**Transmitter**—SIDNE can only be driven when it is in communication with the transmitter. The GO button delivers power to the vehicle and must be held down for SIDNE to operate .

**Red Power Button**—SIDNE can be stopped by pressing the button down.

## Recommended Items

**Safety Goggles**—eye protection is required to prevent debris from hitting passenger and driver in the eye.

**Helmet**—required to protect passenger and driver from head injuries.

[ 40 ]



# OWNER'S MANUAL

## Weather Conditions

SIDNE is an electronic device that should be treated more carefully than a typical go-cart.

SIDNE is designed for operation in Normal weather, i.e. dry days, or light drizzle. It should not be driven through snow or deep puddles. SIDNE can be driven through puddles, no deeper than 1/4 inch, or light rain. It should not be exposed to heavy or torrential rains or snow. Keep in mind SIDNE does not have a fender. If there is water on the course, your participants maybe sprayed with water.

SIDNE should be driven on level, paved parking lots. It cannot be driven over curbs and should not be driven on grass. SIDNE is NOT designed for driving off road, on grass, artificial turf, or carpet.

SIDNE should be stored indoors. Do not store SIDNE outside where it will be exposed to rain and snow or sunlight. We have found that steady exposure to humid ocean air that is saturated with salt can corrode SIDNEs electronics over time. Store SIDNE away from such conditions.

## Operating Temperatures

SIDNE can be operated and stored between 32°F and 110°F.

# OWNER'S MANUAL

## Transmitter Operation

- SIDNE is designed so that it cannot operate without its transmitter. It is essential that the transmitter is kept in a secure place where it can be easily found.
- Keep an extra set of 4 AA spare batteries with you.
- The transmitter's range is approximately 75 feet. If the participant drives the vehicle out of transmitter range, power will be cut to SIDNE. The driver must apply the brake pedal or the emergency brake to come to a stop.
- Aim the transmitter at the receiver on SIDNE's roll bar.
- The transmitter is designed so that it may be held in either the right or left hand.
- The red power button on SIDNE's receiver must be lifted before the transmitter is active. You will hear a "chirping" sound after the button is pulled up. When the "chirping" ends, the GO button can be activated.



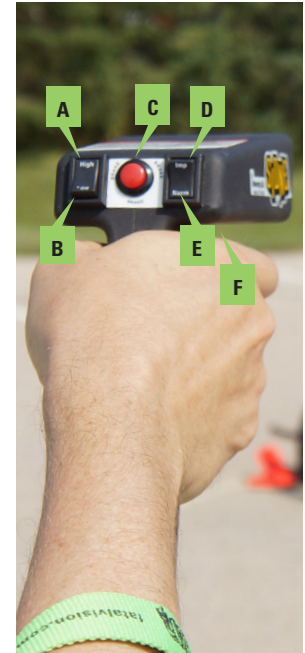
# OWNER'S MANUAL

## Transmitter - Speed Switch

- A High Speed Position-** Sets SIDNE to its top speed of approximately 8 mph. The GO button must be depressed when the speed is changed. The Speed switch is toggled up.
- B Low Speed Position-** Low speed position is when the Speed Switch is down. Low speed is approximately 4 mph. To switch SIDNE from high to low speed, the GO button must be depressed and the Speed switch is toggled down.
- C Brake (Red button in the middle of the Transmitter)-** Activates the brake. It is used in the event that the driver has lost control of the vehicle. The Transmitter Monitor should depress and hold the Brake Button. This button works whether or not the GO button is depressed.

**IMPORTANT:** Once the Brake button has been pressed let go of BOTH the Brake and GO buttons for 2 seconds. Then SIDNE is ready to GO again.

- D Effects Switch/Imp Position-** Impaired position is when the Effects Switch is up. To switch SIDNE from Norm to Imp, the GO button must be depressed and the Effects switch is toggled to Imp. The Imp mode affects steering, braking, and acceleration.
- E Effects Switch/Norm Position-** Norm position is when the Effects Switch is down. To switch SIDNE from the Imp to Norm, the GO button must be depressed and the Effects switch is toggled down.
- F GO-** Black button in the trigger position at the front of the Transmitter.



[ 43 ]

# OWNER'S MANUAL

## Starting and Operating SIDNE

### Steering Wheel

The steering wheel works just like the steering wheel of a car. The height is adjustable, and the steering mechanism is very sensitive. Steering requires regular movements, just like steering a car. When turned to the left, the vehicle will steer to the left. When turned to the right, the vehicle will steer to the right.

If the Effects Switch is in the Imp position, the switch is toggled up, and the vehicle will respond to the left or right as turned. However, the response will not be immediate. The driver may notice the vehicle's apparent lack of response and try to overcompensate.

### Brake Pedal

The red brake pedal is on the left side of the pair of pedals; the same place as in a car. When the driver depresses the

brake, the vehicle will slow down and come to a stop. Like any vehicle, SIDNE requires time and distance to come to a complete stop. The pedals can be adjusted to fit the driver's height.

If the transmitter is in the Imp position, the vehicle will respond to the brake. However, the response will take time. The driver may notice the vehicle's apparent lack of response and try to overcompensate.

### Accelerator Pedal

The accelerator pedal is in the exact location of a car the right side. When the driver depresses the accelerator pedal, the vehicle speeds up. The pedals can be adjusted to fit the driver's height.

# OWNER'S MANUAL

If the transmitter is in the Low position, toggled down, the vehicle will reach a top speed of approximately four mph. If the Speed switch is in the High position, toggled up, the vehicle will reach a top speed of approximately eight mph. If the Imp position, the switch is toggled up, and the vehicle will still respond to the accelerator. However, the response will take time. The driver may notice the vehicle's apparent lack of response and try to overcompensate.

## **Reverse switch**

The switch is located on the top of the steering column. The vehicle must be at a complete stop. The driver flips the switch up to go into reverse. If the transmitter is the Imp position, the vehicle's steering, braking, and acceleration will react as if the driver is Impaired. SIDNE sounds a constant alarm and message on its LCD panel to alert you that it is in reverse.

## **Hand Brake**

The hand brake must be pulled back when the vehicle is stopped. The back position locks the vehicle so participants can enter and exit the vehicle safely. Once the driver has entered the vehicle with their safety equipment and fastened their seat belt, the driver may release the brake by pushing it forward. In an emergency, the participant can stop the vehicle by pulling the brake back.

Note: The hand brake rods may squeak. This is Normal. DO NOT apply grease. The handbrake does not stop SIDNE from rolling backward.

# OWNER'S MANUAL

## Starting and Operating SIDNE

### LCD Panel

The LCD panel on the receiver of SIDNE's rollbar delivers helpful information at SIDNE's startup and during operation. As SIDNE goes through its start up process; the LCD panel displays its progress.

In addition to regular operational messages; the LCD panel displays a variety of messages that alert you to any errors SIDNE is experiencing. See the next page for a list of error messages and suggestions for resolving the error.





# OWNER'S MANUAL

## Error Messages from the LCD Panel

Message	Suggested Actions
<b>Battery LOW</b> Charge Battery	<ul style="list-style-type: none"><li>• SIDNEs batteries are low. Pull SIDNE up to an outlet and connect the charger. Batteries should be charged for 6 hours min.</li><li>• If available, change low batteries with two fully charged spare batteries.</li></ul>
<b>Infrared/Motor</b> Comm. Err	<ul style="list-style-type: none"><li>• Restart SIDNE. It is possible that the course you are using is not flat and that your transmitter is not communicating with SIDNE's collar. Verify that you are seeing the solid red light on SIDNEs collar or adjust the position of the transmitter.</li><li>• It is also possible that SIDNE's batteries are low, which can also cause this Comm. error. Check batteries voltage (should be 12.5 or preferably more each) and if low, change or charge batteries.</li></ul>
<b>Memory Failure</b> Can't continue!!	<ul style="list-style-type: none"><li>• Try restarting SIDNE once. If you get the message again, call our support number. This may be a fatal error and require new parts.</li></ul>
<b>Overspeed Error</b> Recycle Power	<ul style="list-style-type: none"><li>• This error is easily resolved. Go through the start up process for SIDNE.</li></ul>
<b>OVER Temperature</b> Turn off COOL DN	<ul style="list-style-type: none"><li>• SIDNEs cube has overheated. It must be cooled down before proceeding. Move SIDNE into a shady area for about 15 minutes.</li></ul>
<b>SPEED Sensor Error</b>	<ul style="list-style-type: none"><li>• This error is easily resolved. Go through the start up process for SIDNE.</li></ul>



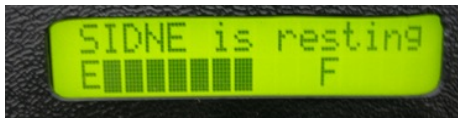
# OWNER'S MANUAL

## Start Up Sequence

LCD Display	Description
SIDNE IR Rxcvr User 6.0 xx-xx-xx	User 6.0 Indicates SIDNE's revision number Software Date xx-xx-xx indicates the date of SIDNE's software
SIDNE IR Rxcvr User 6.0 xx.x	XX.X is the number of hours to the tenth that SIDNE has been operated
Welcome to SIDNE SIDNE Start up --Please Wait-- Checking memory --Please Wait--	SIDNE is checking to make sure the memory is functioning
Checking Pedals --Please Wait-- SIDNE Start up --Please Wait-- SIDNE is Ready To Go!!	Make sure the driver is not pressing either of the pedals  SIDNE is ready to begin your program. Aim the transmitter at the receiver to start
<b>SIDNE is receiving</b>	SIDNE is communicating with the transmitter to allow the vehicle to move

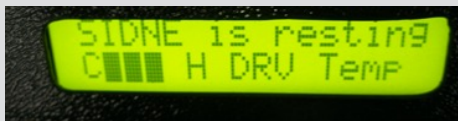
# OWNER'S MANUAL

## LCD readings when SIDNE is at rest



### **Battery Level**

This indicates that SIDNE's batteries are at approximately 70% capacity. The message displays 10 squares to indicate battery level; SIDNE should have at least 5 squares to operate.



### **Motor Temperature**

This indicates the temperature of SIDNE's drive motor. A display of 3 squares or less is Normal.



### **Steering Motor Temperature**

This indicates the temperature of SIDNE's steering motor. A display of 3 squares or less is Normal.

# OWNER'S MANUAL

## Receiver Lights

Color	Indicates
<b>Red</b>	<b>Solid</b> – SIDNE is receiving broadcasts from the transmitter. <b>Flashing</b> – The signal from the transmitter is not solid; it might have been broken by someone walking in between the transmitter and SIDNE. Check to make sure no one is between the transmitter and SIDNE.
<b>Blue</b>	<b>Flashing</b> – SIDNE is in ImpAIRED MODE. <b>Solid</b> – Indicates an error in SIDNE's operation. Check the LCD panel for an error message.
<b>Amber</b>	<b>Slow flash</b> – indicates SIDNE is in low speed. <b>Fast flash</b> – SIDNE is in high speed.

## Power Consumption

Our current estimates show that SIDNE's batteries should last approximately 4-6 hours before requiring charging. As noted in the hour meter section, to conserve power consumption, make sure that the red power button is down and the hand brake is in **STOP** when SIDNE is not being driven.

# OWNER'S MANUAL

## Starting SIDNE

**WARNING: The area for the test drive MUST BE paved, flat, and free of all obstructions/barriers.**

The best way to get to know SIDNE is to drive it initially with the effects turned off, this is the default at start up.

1. Remove and read the warning placard.
2. Power Up Sequence:
  - Pull the red power button on the receiver up
  - Push the hand brake forward to the GO position
  - Keep foot off of the accelerator and brake pedals

You will hear a series of chirps and the LCD panel will display messages as SIDNE goes through its start up process. When "SIDNE is ready to go!" is displayed, it is ready. Note: If either of the foot pedals is depressed during the power up sequence, you will have to start the process again.

3. Press the GO button on the transmitter.
4. Drive SIDNE in Low speed and Norm mode first. Become accustomed to the steering and braking.
5. When you are comfortable with SIDNE, put SIDNE in Imp mode
6. When you have finished driving SIDNE replace the warning placard on the steering wheel. Pull the handbrake back to stop and press down the red power button.
7. CAUTION: If SIDNE is in reverse at start up, the reverse beep will sound continuously and the LCD panel will display the reverse warning.

**WARNING - SIDNE is NOT a street licensed vehicle and should NOT be driven on the street.**



**MAINTENANCE**

# MAINTENANCE

Proper maintenance, will keep SIDNE in top operating service. There are a number of steps you can take to ensure that SIDNE continues to operate efficiently and safely. To insure safe and trouble-free operation of SIDNE it's best to assign ongoing maintenance duties to a specific person or department with some basic mechanical skills. This person would be the best one to perform any troubleshooting or repairs on SIDNE.

## Charging SIDNE's Batteries

Before proceeding to charge batteries, make sure you read all provided safety instructions enclosed with the charger. If SIDNE's batteries are totally depleted; it will take 4-6 hours to recharge them.

1. Drive SIDNE to an electrical outlet.
2. Pull the handbrake back to STOP position.
3. Press down the red power button.
4. Plug the battery charger's cable into SIDNE's receptacle on the left rear panel.
5. Plug the battery charger into an electrical outlet.

6. Turn the charger on; leave SIDNE plugged in until the green light is on continuously. Leaving SIDNE plugged in to the charger will not hurt the batteries or the charger.
7. Reading the battery charger:
  - a. When the yellow light is on, the batteries are charging.
  - b. When the green light is on, the batteries are fully charged.
  - c. When the green light is flashing, the output is not connected. Lift the back cover and make sure the batteries are plugged in.
8. It is recommended the batteries be fully charged immediately after use to prolong battery life. It is not necessary to drain the batteries before recharging.
9. Using batteries as a set ensures the same rate of discharge and even charge. This routine will prolong the life of the batteries.

Note: If you have a full-day demonstration planned, more than 6 hours, it's a good idea to have a set of spare batteries for both SIDNE and the transmitter, charged, and ready to use.

[ 53 ]

# MAINTENANCE

## Replacing the Transmitter Batteries

SIDNE comes with an extra battery clip for your transmitter. It requires 4 AA batteries.

1. Remove the plate on the bottom handle by removing the 2 thumbscrews.
2. Disconnect the battery snap from the battery clip.
3. Slide the battery clip out of the handle.
4. Remove the old batteries and replace with fresh batteries.
5. Slide the clip back into the handle, keeping the wire along the flat side of the opening.
6. Connect the battery snap to the battery clip.
7. Replace the plate and screws.



Remove thumbscrews



Disconnect battery snap, remove battery clip



# MAINTENANCE

## Preparing for a SIDNE Simulation

### **Before Every Session**

- Check the inflation pressure on the tires. Tires should be set to 24 PSI, the Normal operating rate. SIDNE's tires are inflated to 22 PSI at shipment. The maximum pressure is 24 PSI and is stated on the wall of the tire.
- Make sure SIDNE's batteries are fully charged. Have fresh batteries ready for the transmitter.

### **During a SIDNE Event at Each Driver Change**

- The GO button is released and the hand brake is pulled back to the STOP position.
- Tug on the seat belts to ensure they are securely fastened.
- Steering is responding properly, i.e. left/right operation.
- Transmitter is working properly. When the GO button is pressed, you will here a click. This is an indication that the power is being sent to the vehicle.
- If no one is in the passenger seat, fasten the seatbelt and make sure it is in the vehicle.

# MAINTENANCE

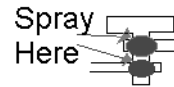
Item	Frequency for Inspection/Maintenance	Page
Tie Rod Ends	Every 25 Hours of Use	57
Tire Pressure	Before Every Event	58
Steering Motor	Every 25 Hours of Use	58
Wheel Bearings	Every 25 Hours of Use	59
Axle Nuts	Every 100 Hours of Use	59

If you have any questions, please contact Innocorp. Current replacement parts for your model can be found at our website [fatalvision.com](https://fatalvision.com) or call toll-free (800) 272-5023.

# MAINTENANCE

## Tie Rod Ends (Every 25 Hours of Use)

1. Spray the two end Tie Rod with a 1-second shot of Spray White Lithium Grease.
2. Spray the top and middle tie rods each with a 1-second shot of Spray White Lithium Grease.



## Check the Tie Rods for Excessive Play

1. Measure the distance between the 2 front wheels. Measure from the outside of each tire.
2. Holding both tires, push one of the tires out.
3. While the tires are being pushed apart, measure the distance between the 2 tires again. There should be no more than  $\frac{3}{4}$ " of movement.

# MAINTENANCE

## Tire Pressure (Before Every Event)

1. Check the tire pressure, when the tires are cold.
2. They should be inflated to the maximum pressure listed on the front tire wall. (\*22-24 psi)

## Steering Motor (Every 25 Hours of Use)

1. Aim the spray nozzle at the junction of the black holed rod and the steering mechanism.
2. Spray a 1 second shot of White Lithium grease.
3. Do NOT get any grease on the 'pot' or white coupler.

\*WARNING: DO NOT REMOVE THE COVER ('Skid Plate') FROM THE STEERING MOTOR

# MAINTENANCE



## Lubricate Wheel Bearings (Every 25 Hours of Use)

1. Spray front and back of the bearing openings of all 4 wheels with a 1 second shot of White Lithium Grease.

\*Keep belt drive free and clean from all grease however.\*



## Check the Axle Nuts (Every 100 Hours of Use)

1. Elevate the vehicle so the tires spin freely.
2. Tighten the nut clockwise until you feel a slight drag.
3. Back it off 1 flat, (1/6 of a turn.)

\*WARNING: OVERTIGHTENING CAN CAUSE DAMAGE TO THE BALL BEARINGS

# MAINTENANCE

## Cleaning SIDNE

- You can clean SIDNE's frame using a bucket of water and a soft cloth. Dip your cloth in the bucket and wipe SIDNE down. DO NOT hose or power wash SIDNE.
- You can clean SIDNE's mats with a damp cloth, vacuum cleaner, or canned air.
- Seats can be cleaned with a damp cloth or a protectant like Armor All®.
- The receiver may be wiped with a DAMP cloth. DO NOT wipe with a dry cloth as it could build up static and harm SIDNE.

# MAINTENANCE

## Storing SIDNE

SIDNE should be stored indoors out of the weather.

- It is recommended to remove SIDNE's batteries first. The batteries are wet cell and electrical components of SIDNE could be damaged if the batteries are tipped over in SIDNE.
- Fully charge SIDNE batteries after every use. When SIDNE's batteries are left at a half-charge for an extended period of time, a state of sulfation can occur which can dramatically shorten the battery life of your SIDNE. When battery power is weak, SIDNE often will stay in low speeds, sometimes shut down unexpectedly when accelerator is pressed, and cause various error messages.
- It is also recommended that SIDNE is kept as free from dust settling on it as possible. Dust can interfere with the IR receiver and 'cube's internal computer circuits if it gets inside.



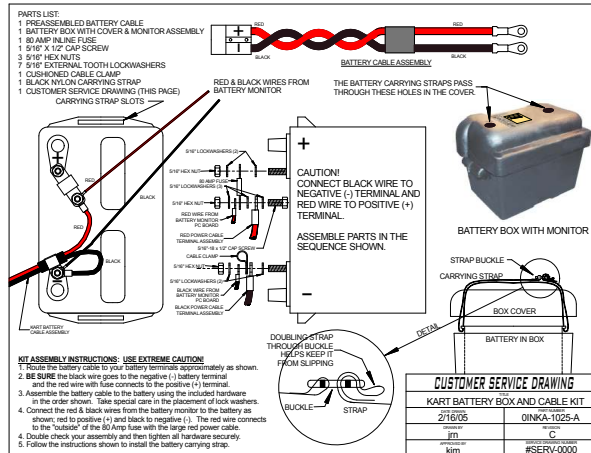
# MAINTENANCE VIDEOS

# MAINTENANCE VIDEOS

Battery Assembly <https://vimeo.com/innocorp/batteryreplacement>



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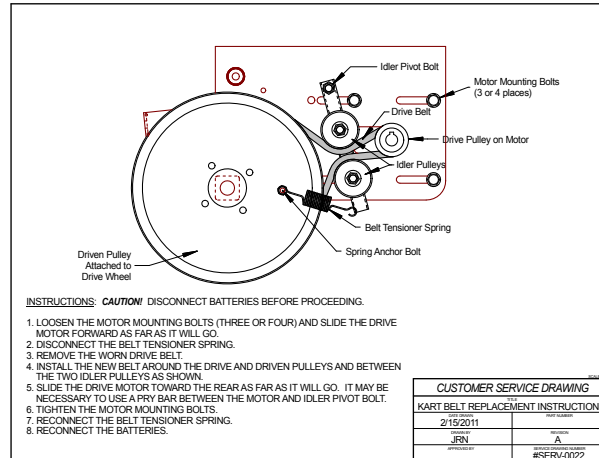


# MAINTENANCE VIDEOS

Belt Replacement <https://vimeo.com/innocorp/sidnebelt>



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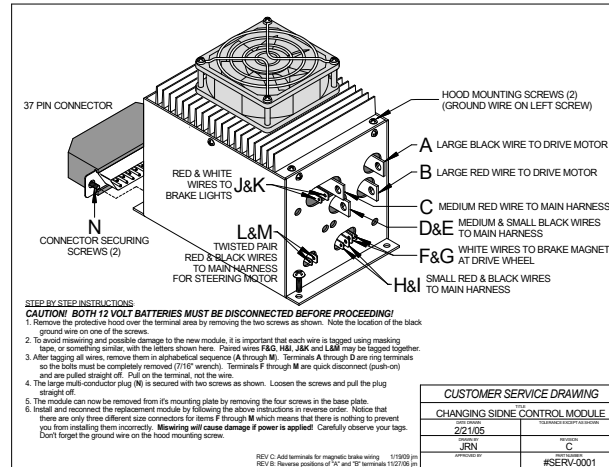


# MAINTENANCE VIDEOS

Cube Replacement <https://vimeo.com/innocorp/cubereplacement>



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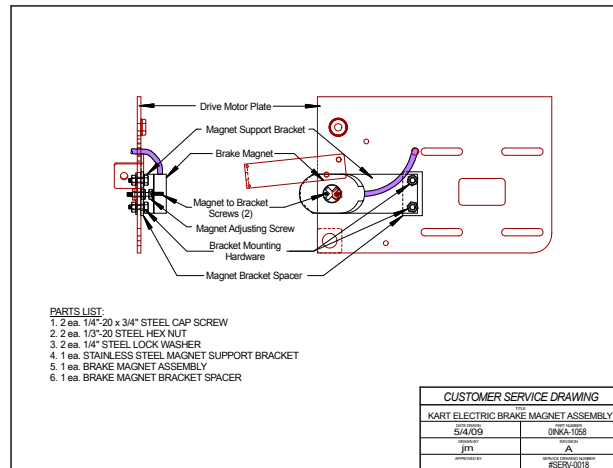


# MAINTENANCE VIDEOS

E-Brake Replacement <https://vimeo.com/innocorp/e-brake>



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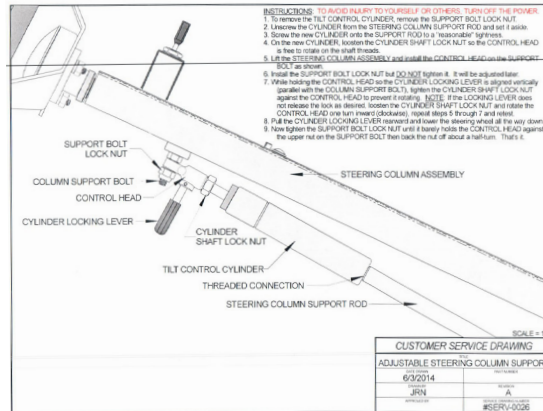


# MAINTENANCE VIDEOS

Hydraulic Steering Column Part Replacement <https://vimeo.com/innocorp/sidnehydraulic>



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# MAINTENANCE VIDEOS

IR Receiver Diagnostic Testing <https://vimeo.com/innocorp/diagnostictest>



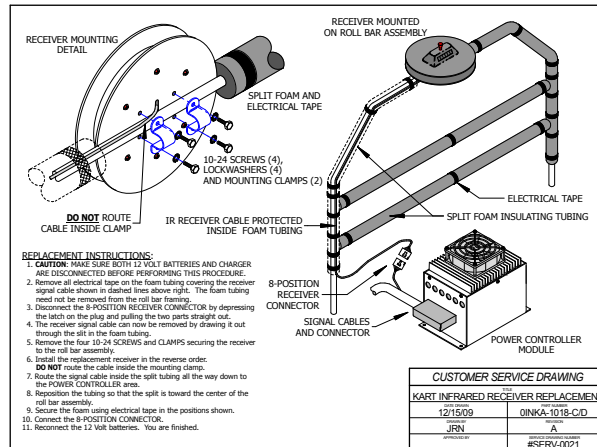


# MAINTENANCE VIDEOS

IR Receiver Replacement <https://vimeo.com/innocorp/irreceiver>



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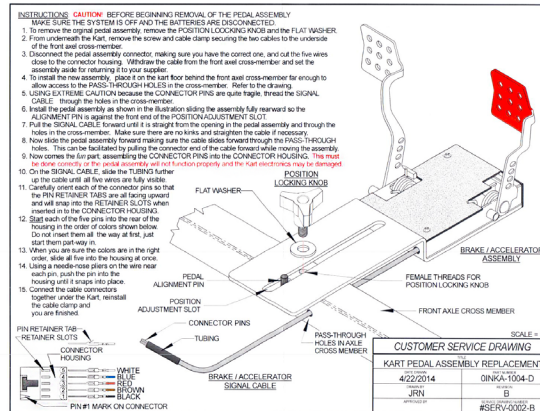


# MAINTENANCE VIDEOS

Pedal Replacement <https://vimeo.com/innocorp/pedalreplace>



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# MAINTENANCE VIDEOS

Power Receptacle Replacement <https://vimeo.com/innocorp/powerreceptacle>



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## REPLACING THE POWER RECEPTACLE CORD FOR SIDNE

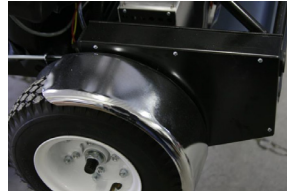
*Make sure the SIDNE batteries are disconnected before you begin!*

**Tools Needed:**

- 3/4" socket ratchet wrench
- 3/4" wrench
- 5/16" Nut driver
- Wire cutter
- Phillips Screwdrivers (#1 and #2)

It is easiest to place SIDNE on sawhorses, or something that puts SIDNE in a secure location, at waist level (for your comfort)

Face the SIDNE Drive Wheel



Use the 3/4" Ratchet Socket Wrench to remove 4 nuts



# MAINTENANCE VIDEOS

Potentiometer Assembly Replacement <https://vimeo.com/innocorp/potreplacement>



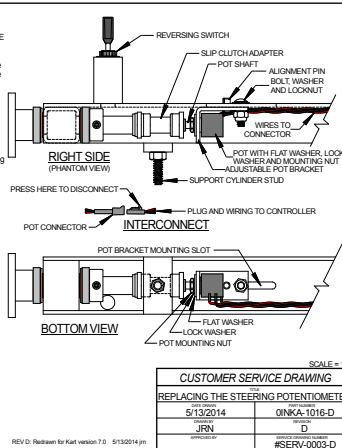
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**INSTRUCTIONS: CAUTION** BE SURE TO DISCONNECT BOTH BATTERIES BEFORE ATTEMPTING THIS PROCEDURE! BE CAREFUL TO FOLLOW THE FOLLOWING STEPS IN THE ORDER THEY ARE GIVEN.

1. First disconnect the POT CONNECTOR as shown below in the INTERCONNECT section. It may be necessary to cut the wire to that holds the wiring to the steering column.
2. Then remove the BOLT, WASHER AND LOCKNUT securing the ADJUSTABLE POT BRACKET to the steering column.
3. Now slide the pot and bracket assembly away from and out of the ADAPTER and remove the assembly from the kart.
4. On the assembly, remove the POT MOUNTING NUT, the LOCK WASHER and the FLAT WASHER.
5. Attach the new POT to the ADJUSTABLE POT BRACKET using the FLAT WASHER, LOCK WASHER and POT MOUNTING NUT in the order shown but **DO NOT** tighten the nut at this time. The POT must be free to move as required for exact alignment with the ADAPTER when installed.

**Proper alignment of all components is critical. Failure to follow this procedure carefully will damage the new pot.**

6. With the POT only loosely secured to the POT BRACKET, carefully slide the POT SHAFT into the SLIP CLUTCH ADAPTER making sure the ALIGNMENT PIN on the bracket is in the POT BRACKET MOUNTING SLOT.
7. Slide the assembly toward the SLIP CLUTCH ADAPTER until the POT MOUNTING NUT is close to the ADAPTER but not in contact with it.
8. Install the BOLT, WASHER AND LOCKNUT as shown and carefully tighten the LOCKNUT making sure the assembly is not moved.
9. Now tighten the POT MOUNTING NUT using a half-inch open end wrench or similar. Be careful not to force the POT out of alignment while doing this.
10. Route the wires from the pot as shown, connect the PLUG to the POT CONNECTOR and secure the wiring with a new wire tie.
11. Turn the steering wheel several turns in each direction and check for any indications of stress on the pot assembly.
12. Done! Good Job!



# MAINTENANCE VIDEOS

Power Path Test <https://vimeo.com/innocorp/powertest>

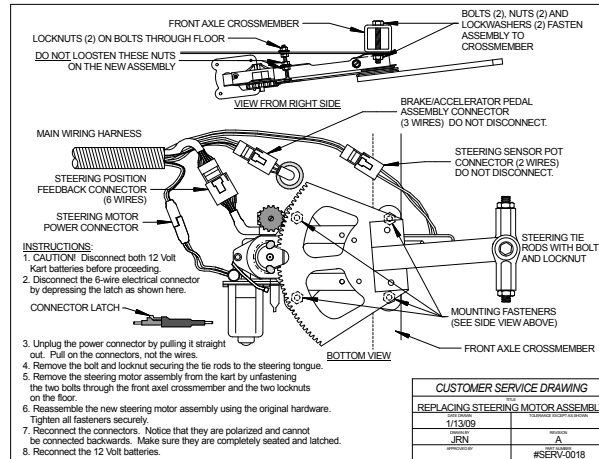


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Steering Motor Replacement <https://vimeo.com/innocorp/steeringmotor>



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