

THINK City

USER

**EMERGENCY RESPONSE
INFORMATION**

TH!NKcity

Outline

1. Two reasons for rescuing the car

- The car is not able to drive/charge or has stopped involuntarily
- Car Accidents

2. What is special about electric cars

3. Safety!

4. Towing and lifting

- Car practice

5. Technical support

6. Useful tips

- Dead 12V battery & Towing

7. Components in the car/technology

- Theory and practice

8. Useful sources of information

Two Reasons For Rescuing The Car

The car is not able to drive/charge or has stopped involuntarily

- In most cases this is relatively an un-dramatic procedure, and the car rescue worker can safely pick up the car and deliver it to the mechanic.
- There is one exception, and that is cases where an **EXTERNAL ISOLATION FAULT** has occurred.

Accidents; collisions, run-off-road collisions etc.

- In the cases where you're picking up a car that has been deformed by an accident the following should be considered:
 1. The possibility of leaking battery fluid
 2. Perforation of the battery box could create the possibility of electrocution
 3. The possibility of a fire

Traction battery and an electric motor

- Instead of a fuel tank and a combustion engine

Lithium batteries

- **High Voltage** $\approx 395V$ Fully Charged/ $\approx 260V$ Fully Discharged

Charging the batteries

- Charge time is 16 hours with the 110V charger.
- It is not possible to start the car with the charge cable plugged in
- Charging requires a special J1772 cable (comes with the car). REMEMBER to bring it to the mechanic.
- 110V charger stored in rear compartment



Starting the Vehicle

- The ignition mechanism has three steps just like a regular car, but it could have just had an on/off switch
- **IMPORTANT!** The lamp test in pos II will light the "green car" icon, but it turns itself off again after a moment.
- The car is "drive enabled" once the key is turned to position III and released again. The "green car" icon should be constantly lit. If not it is not possible to drive the car.
- You do not hear "the engine running"

Regenerative braking

- Active in modes "Drive" (D) and "Economy" (E)
- When the driver releases the accelerator pedal the regeneration starts automatically. This will feel like a strong engine break, and is not possible to turn off.

Vacuum pump for service brakes

- A growling noise will be heard from the vacuum pump under the hood when the brakes are applied

What Is Special About Electric Cars?

Electronic heating system of 4 kW

- Gets its energy from the propulsion battery that stores a total of 23 kWh when fully charged.

Low Charge/Power Limit

- When the battery reaches 15%-10% State of Charge (SOC) the “Low Fuel/Charge” light will illuminate.
- When the battery reaches 5%-3% SOC the “Power Limit” lamp will illuminate and HV output will be limited.
- When the battery reaches 0% SOC the “Low Fuel/Charge” light will flash and power is further limited.
- When the power limit light starts to flash the battery is fully discharged and vehicle will not power up.

Isolation errors

EPO (Emergency Power Off) switch

Limited range (100 miles on a full battery-Estimate)

Electric safety tells you things to consider and what you should consider when you are handling an electric vehicle.

- Wear gloves (1000 V).
- Work like an electrician; with one hand.



Accidents

The safety of the car rescue workers rests on knowledge of both general electrical safety and the challenges associated with handling a deformed car.

- Avoid getting into contact with leaking battery fluid.
- In case of fire: Follow the instructions for fire extinguishing. It is important to use the correct extinguishing equipment. (see page 9)
- In case of any doubt: use protection wear to avoid damages from high voltage power.

Safety - Batteries

Safety and Important Measures

The Ener1 lithium-ion battery is fitted in a closed case underneath the vehicle. With normal use, the battery does not generate gases. There are no high temperature surfaces and the battery case is electrically insulated.

The lithium-ion battery has a separate control system to ensure safe use. The safety features are based on the following:

1. If a severe error on the battery is detected, the control system will close down all charging and discharging (use) of the battery. Electric connections between the vehicle and the battery will be disconnected. Electric isolation fault is an example of a severe error. The driver is notified by warning lights in the instrument panel (see User Manual, Chapter 2 - "Main Instrument Cluster with Warning Lamps").
2. If the air bag is deployed, the control system will stop charging and discharging.
3. If the inertia sensor in the motor compartment is activated, for instance, in a collision, the control system will stop charging and discharging.
4. Mechanical protection; the battery is fitted in a case to prevent access to the battery components.



In Case of an Accident

Please follow the recommendations in this chapter

General

First, get an overview of the situation and the accident. If possible, move the vehicle to ensure that it is not a danger to people and traffic. Call for required help (police, ambulance, fire department). Place a warning triangle on the road and put on a reflective safety vest. Provide assistance if people are injured.

In Case of Fire

If a fire should occur in the vehicle, keep passengers and public away from the vicinity of the fire. Make sure to move away from wind that may carry smoke. Contact fire department and police as soon as possible.

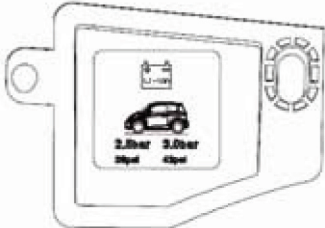
Fire Extinction

To extinguish fire, an ABC powder extinguisher or other type of extinguisher intended for burning metal is recommended. A CO2 extinguisher can also be used.

Identification of Traction Battery

THINK City can be delivered with different types of traction batteries. Each battery type has different qualities, therefore, each type has its own user guide.

You will be able to identify the traction battery in your car on the label inside the charge lid. Here you will find the following information:

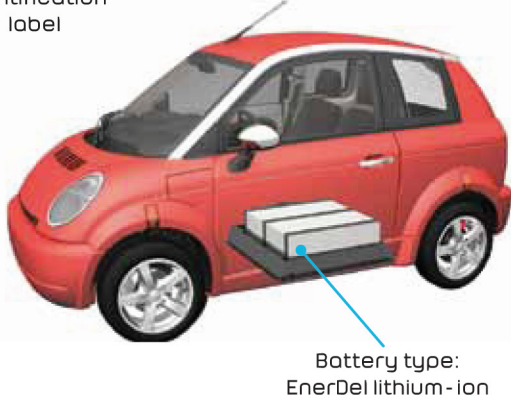
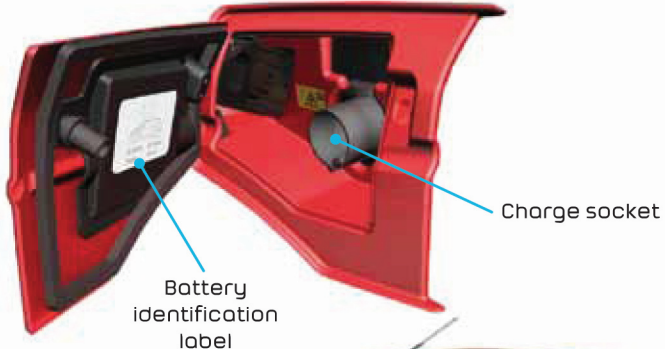


On your vehicle, the label will be marked: Li-Ion. This means the vehicle has a lithium-ion traction battery.

Traction Battery – Introduction

Your THINK City is driven by an electric motor. The motor takes power from the traction battery, which is located under the vehicle. In addition to the electric motor, the traction battery also provides power to the cabin heater, air conditioning (optional equipment) and charges the 12V battery. This 12V battery provides power to lights, dashboard, interior fan, radio/CD player (if equipped), etc. The traction battery, or battery pack, consists of a number of single battery cells joined together to give the desired amount of energy.

Safety and Battery Location



Towing and Lifting



Tow hook at front of car



Tie down loop



**In the front
Watch for the brake lines!**



**In the back
Keep away from battery!**

Both with pads laying flat on frame

Towing and Lifting

Driving and Safety

Contact a towing company if you need to have your car towed. Perhaps you have an insurance or emergency road service to contact.

When towing a THINK City:

- Gear selector in N - turn the ignition key "OFF". Do not take the key out!
- Maximum speed - 50 km/h
- Maximum towing distance - 50 km
- Remember that the brakes need more force to work when the power is off.



Towing hook in the front
Towing hook in the back: in the center under the bumper

Recommended towing options:
Transporting the car on a flatbed.



Car should be facing forward if possible

Towing on a ramp.
If the rear wheels are raised, the front wheels must be put on a ramp to avoid damage to the transmission.



THINK's technical support customer Q & A

- Please have the following information ready for the operator.
- VIN, Customer Name, phone number and best time you would like to be contacted.

THINK NA Customer Assistance Center 1-855-MYTHINK (698-4465)

THINK's email assistant - Preferred contact process

- servicena@thinkev.com
- VIN, Customer Name, phone numbers
- Questions and observations, we will provide responses within 24 hours excluding weekends.

THINK's Roadside Assistance

- Driver calls - 888-622-1649
- Provide the last 8 of your VIN
- Provide color and current odometer reading
- Provide location of vehicle to be towed and contact information

Useful Tips

If 12V battery is dead you're not able to move gear selector from park.

Remove gear selector cover and push yellow button forward before moving gear selector.

Or - For Towing

After disconnecting gear cable from the final drive unit move gear selector on the final drive unit.

Remember to block the tires to secure the car from rolling when the cable is disconnected!



Fully Assembled



Cover Removed



Pushing Yellow Button Forward



Disconnect Cable from Drive Unit

12 Volt Battery Charger

If 12V battery is dead you are not able to move gear selector from park.

Sears DieHard Battery Charger and Maintainer

Part Number 28.71219

You can maintain the 12 V Battery on a THINK City by plugging the Charger directly into the 12 Volt receptacle on the Instrument panel.

If the vehicle is parked for extended periods of time or if you find the vehicle will not start.



Components on the Car / Technology

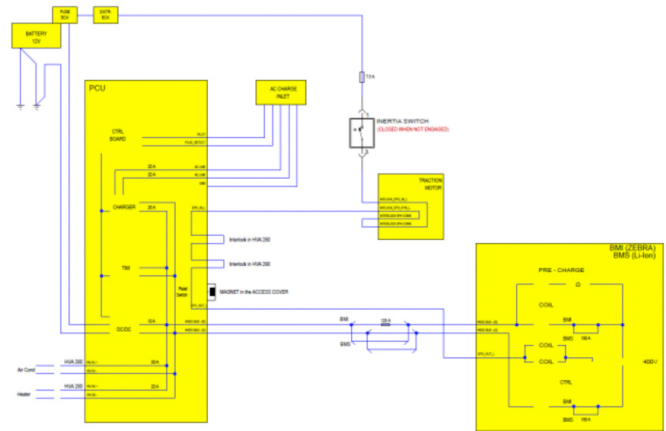
EPO switch and 12 V battery:

The car is protected with a EPO(Emergency Power Off) circuit.

This is a +12V signal through fuse 46 - safety switch - traction motor - connectors in PCU to BMI.

Open circuit will immediately cut high voltage power from battery.

The safety switch will be released if the car is in a collision. The switch will turn off all the cars electricity. You can reset it by pushing the top.





Fuses and 12 V output

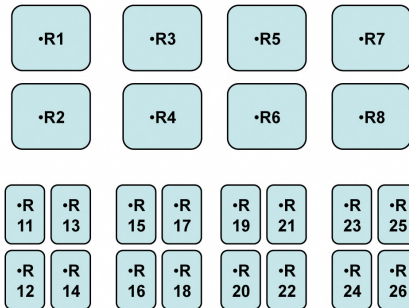
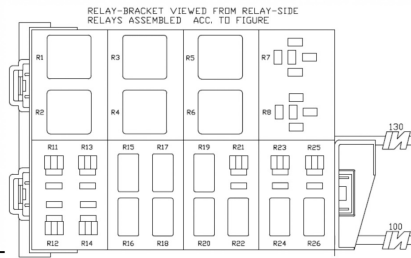
- Fuses
- 12 V plug
- Diagnostic port
- Passenger airbag on/off switch

The main fuses for the 12 V system can be found on the positive battery cable terminal.

Components on the Car / Technology - Fuses

No.	Fuse type	Amp	Component	No.	Fuse type	Amp	Component
1	Maxi	30	Main fuse to motor switch	33	Mini	5	Electric mirror control current/BMS start
2	Maxi	30	ABS pump motor	34			Not in use (reserve)
3	Maxi	20	ABS valve control	35	Mini	5	Ignition in Drive: PCU, VCU, drive relay Rly6
4	Maxi	20	Rear defroster	36			Not in use (reserve)
5			Not in use (reserve)	37	Mini	5	ABS start, interior fan relay and climate control unit (CDCM) start
6			Not in use (reserve)	38	Mini	15	12V outlet passenger compartment
7	Maxi	20	Interior fan 25A with A/C (extra)	39	Mini	5	Ignition in Drive: indicator lamps, instrument cluster
8	Maxi	20	Windshield wiper motor setting 1 and washer pump	40	Mini	5	Ignition start signal to PCU
9	Maxi	20	Electric windows	41	Mini	5	Interior lights (via relay Rly 17)
10	Maxi	20	A/C condensation fan (extra)	42	Mini	15	Horn (via relay Rly 18)
11	Mini	10	Brake light switch (pedal switch)	43	Mini	15	Windshield wiper motor setting 2, intermittent wiping relay R15
12	Mini	10	Vacuum pump for power brake	44	Mini	10	Rear backing lights (via relay Rly 22)
13	Mini	5	Water pump in cooling system	45	Mini	20	Front windshield defroster setting 1 (extra)
14	Mini	10	License plate light, parking light, rear daytime driving lamps, lights on alarm	46	Mini	7.5	Safety circuit for traction power, G-torque limit switch
15	Mini	20	Power door locks (GEM)	47	Mini	5	Parking lights, right side (front and back)
16	Mini	15	Turn signal (GEM)	48	Mini	5	Parking lights left side (front and back)
17			Not in use (reserve)	49	Mini	10	High beams, left side
18	Mini	10	BMS unit	50	Mini	10	High beams, right side
19	Mini	5	Diagnostics contact, climate control (CDCM)	51	Mini	10	Low beams, left side
20	Mini	15	Radio pin A-4	52	Mini	10	Low beams, right side
21	Mini	5	VCU	53	Mini	10	+12V connection point for mounted extra on dashboard
22	Mini	10	Safety restraint system (air bag control module)	54	Mini	5	Power steering (steering wheel sensor and power steering pump)
23	Mini	20	Radiator fan 2	55	Mini	15	Sunroof (extra)
24	Mini	5	Electric heated mirrors	Di56	Mini diode		Code diode for radio control (not "power off" at ignition key start) Direction is important!
25			Not in use (reserve)	Di57	Mini diode		Code diode for front daytime driving lamps. Direction is important!
26	Mini	7.5	Not in use (reserve)	Di58	Mini diode		Code diode for Bi-halogen. Direction is important!
27	Mini	5	Water pump, heating passenger comp.				
28	Mini	20	Radiator fan 1				
29			Not in use (reserve)				
30	Mini	5	Brake pedal signal, gear selector-release				
31	Mini	5	Radio pin A-7				
18 32	Mini	10	Rear fog lamp switch (if equipped)				

Located under right hand side of dashboard.



Nr: Name

R1: Heater blower speed 2

R2: Heater blower

R3: Radiator fan, high speed

R4: Radiator fan, low speed

R5: Heater rear window

R6: Run/start (init by key run, circuit from junction box to brake pedal switch to gear selector switch, PCU signal, brake lights, ABS)

R7: Air-conditioning (option)

R8: Heated windscreen (option)

R9: N.A.

R10: N.A.

R11: Free

R12: Free

R13: Free

R14: Free

R15: Wiper motor park

R16: Wiper motor

R17: Power saving, dimmer interior light

R18: Alarm and horn

R19: High beam

R20: Dimmed beam

R21: Day running lights

R22: Reverse light

R23: Free

R24: Pump – heater circuit

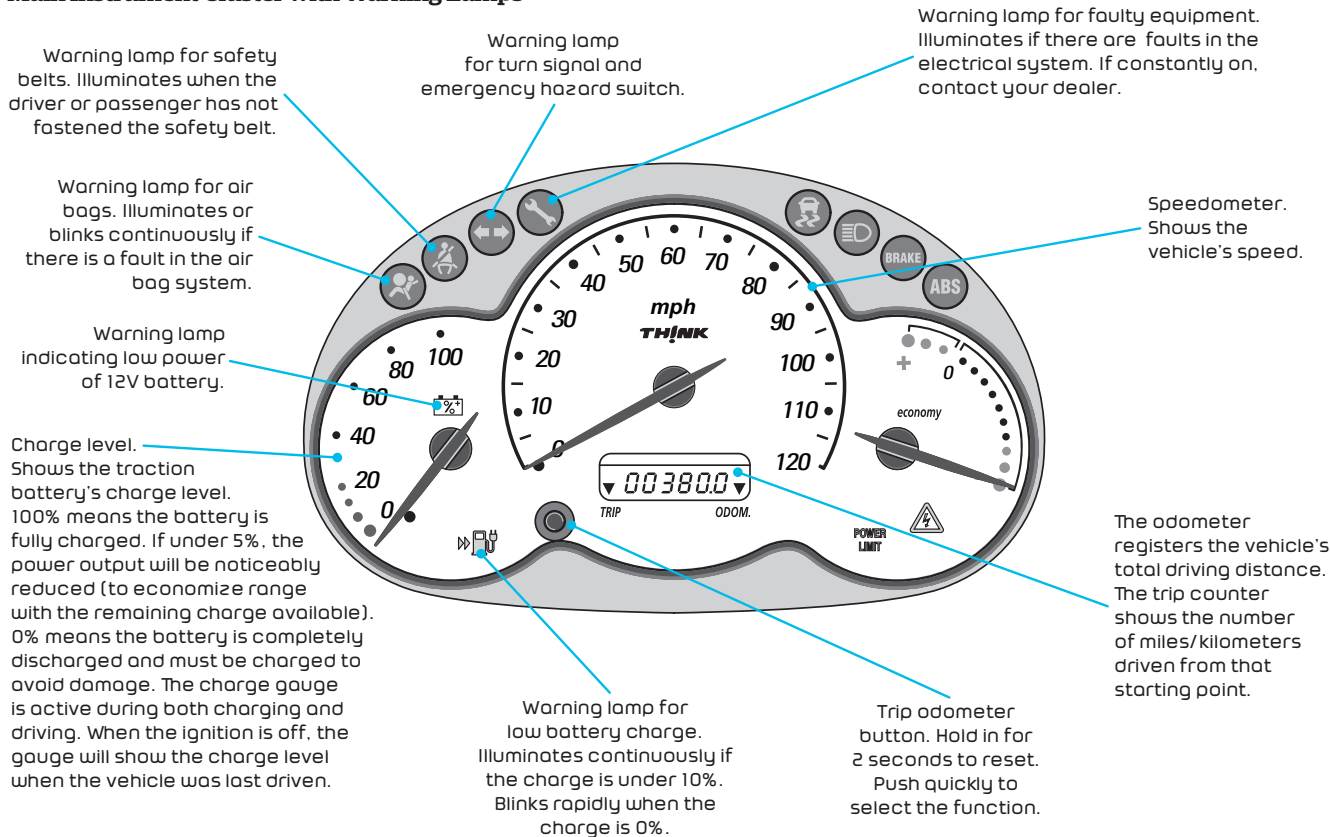
R25: Free

R26: Pumps – Cooling circuit engine and PCU

Components on the Car / Technology

Warning Lamps - Overview I

Main Instrument Cluster with Warning Lamps



Warning Lamps - Overview II

Main Instrument Cluster with Warning Lamps

Warning lamp for electronic stability program (ESP) (if equipped). Illuminates briefly when you switch on the vehicle and then goes out. Warning lamp flashes whenever an ESP event occurs. If it illuminates continuously while driving, the ESP system is not fully operational and the vehicle should be checked by the dealer as soon as possible.

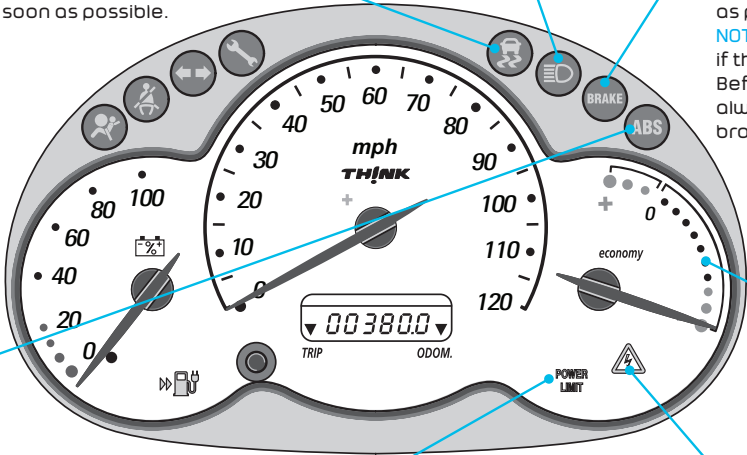
Warning lamp for high beams. Illuminated when high beams are on.

Warning lamp for faults in the brakes. If lamp illuminates continuously, it indicates a severe brake system fault. If this happens, stop the vehicle in a safe manner and get it checked by the dealer as soon as possible. **NOTE:** This lamp will also illuminate if the hand brake is engaged. Before driving the vehicle, always ensure that the hand brake is disengaged.

Warning lamp for antilock brake system (ABS). Illuminates for a few seconds when the vehicle is started. If the lamp does not illuminate when the vehicle is started or if the lamp is illuminated continuously, the ABS will not work and the vehicle should be taken to the dealer as soon as possible.

Warning lamp for limited output. Illuminated when the motor's power is limited.

Economy gauge. Shows the vehicle's power consumption. While driving the vehicle, if the indicator is in the green field, the vehicle is charging the battery (regenerative braking). See page 4-12 for more information.



WARNING

If illuminated, the telltale lamp indicates a fault in the high voltage system. Charging is not possible if the light is continuously illuminated. Contact your dealer if the lamp does not illuminate a few seconds at start-up or remains illuminated while driving.

Components on the Car / Technology

Warning Lamps - Overview I



Temperature



Airbag



High voltage.
warning

The warning lamp with the lightning
indicates an electrical error in the car

Charging in
progress

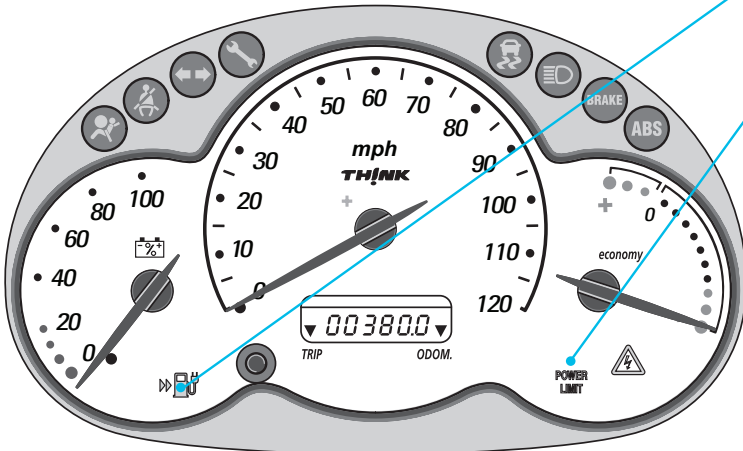
Power supply
connected



Charging Indicator

Warning Lamps - Overview II

IF the SOC (State Of Charge) is low, the Warning Lights will illuminate.



The Low Fuel/Charge light will illuminate when the SOC is between 15% and 10%

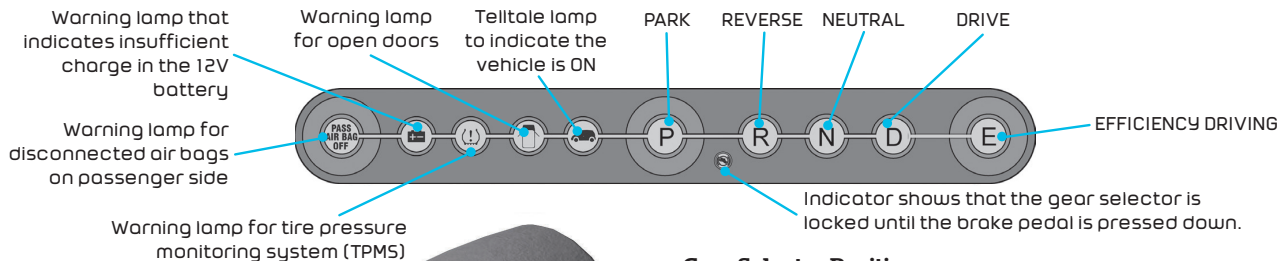
The Power Limit light will illuminate when the SOC is between 5% and 3%

The Low Fuel Light will start flashing when the SOC is 0%

The Power Limit light will start flashing when the battery is fully discharged and vehicle can not be restarted

Components on the Car / Technology

Gear Selector / Warning Lights



Brake-shift Interlock Feature

There is a gear lock which stops the gear selector from moving into or out of P (PARK), unless the brake pedal is engaged. The vehicle will not move when it is put in P (PARK). This parking lock function will disengage automatically when the gear selector is moved out of P (PARK).

Gear Selector Positions

- Hold the brake pedal down and press on the gearlock release button before moving the gear selector from P (PARK) to another gear.
- P (PARK) - The vehicle must be stationary before it is put into P. The vehicle must be in P to remove the ignition key. If the doors are open and the gear selector is not in P, there is a repeated warning beep. Gear selector cannot be shifted to/from P unless the ignition key is in position.
- R (REVERSE) - When the gear selector is in R, the vehicle will move backward when the brakes are released.
- N (NEUTRAL) - When the gear selector is in N, the vehicle can be started and will move freely. Apply the brakes to stop the vehicle.
- D (DRIVE) - With the gear selector in D, the vehicle will move forward.
- E (EFFICIENCY DRIVING) - Limits power output and increases regenerating level to allow for more energy-efficient driving.

Starting / Accessories
Ignition Lock and Emergency Hazard Switch

Ignition Lock

- I. Turns off the motor and other functions. The radio can be used.
- II. All electrical functions are on. The key is in the drive position.
- III. Starts the motor and all systems for driving. Release the key as soon as the motor starts (indicated by the green car telltale lamp in the warning lamp panel). Once released, the key automatically returns to position II.

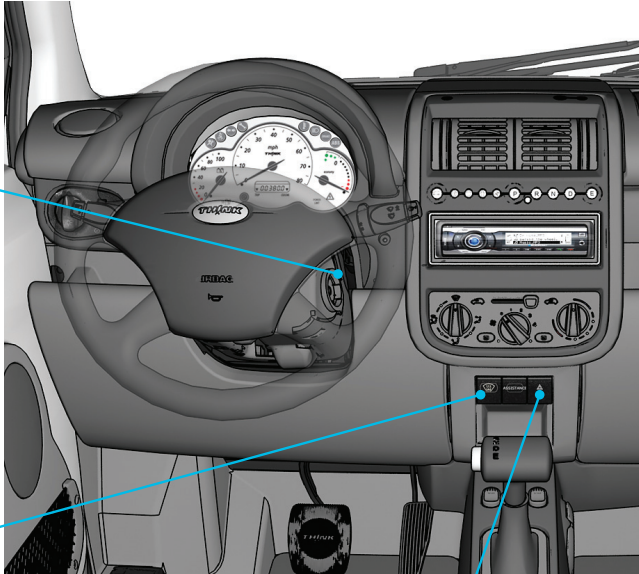
0. Activates the steering wheel lock. The key can be taken out.

Electric Windshield Defroster (if equipped)

This button has two positions. Pushing once will remove dew (yellow light illuminates). This turns off after 14 minutes or when the ignition is turned off. Press twice to manually turn off.



Pushing twice melts ice and snow (red light illuminates). This turns off after 4 minutes or when the ignition is turned off. Push once to manually turn off.



Emergency Hazard Switch

This switch activates all the turn signals when the ignition is on or off. Push once to activate and once more to turn off.



Components on the Car / Technology

Troubleshooting

Forgot to remove charging cable

- The car won't start

Left the key on

- 12 V battery will gradually lose charge

Turn the key in the ignition too fast

- The car won't start

The cars transmission is not in "Park"

- You have to put the car in "Park" or "Neutral" for it to start

Forgot to push the brake pedal

- Not possible to get the transmission out of "Park"



User manual

Owner manual

Battery warranty

Vehicle warranty

Distributor:

THINK

THINK NORTH AMERICA, INC.

3221 Magnum Drive

Elkhart, Indiana 46516

www.thinkev.com