B-Free Flash

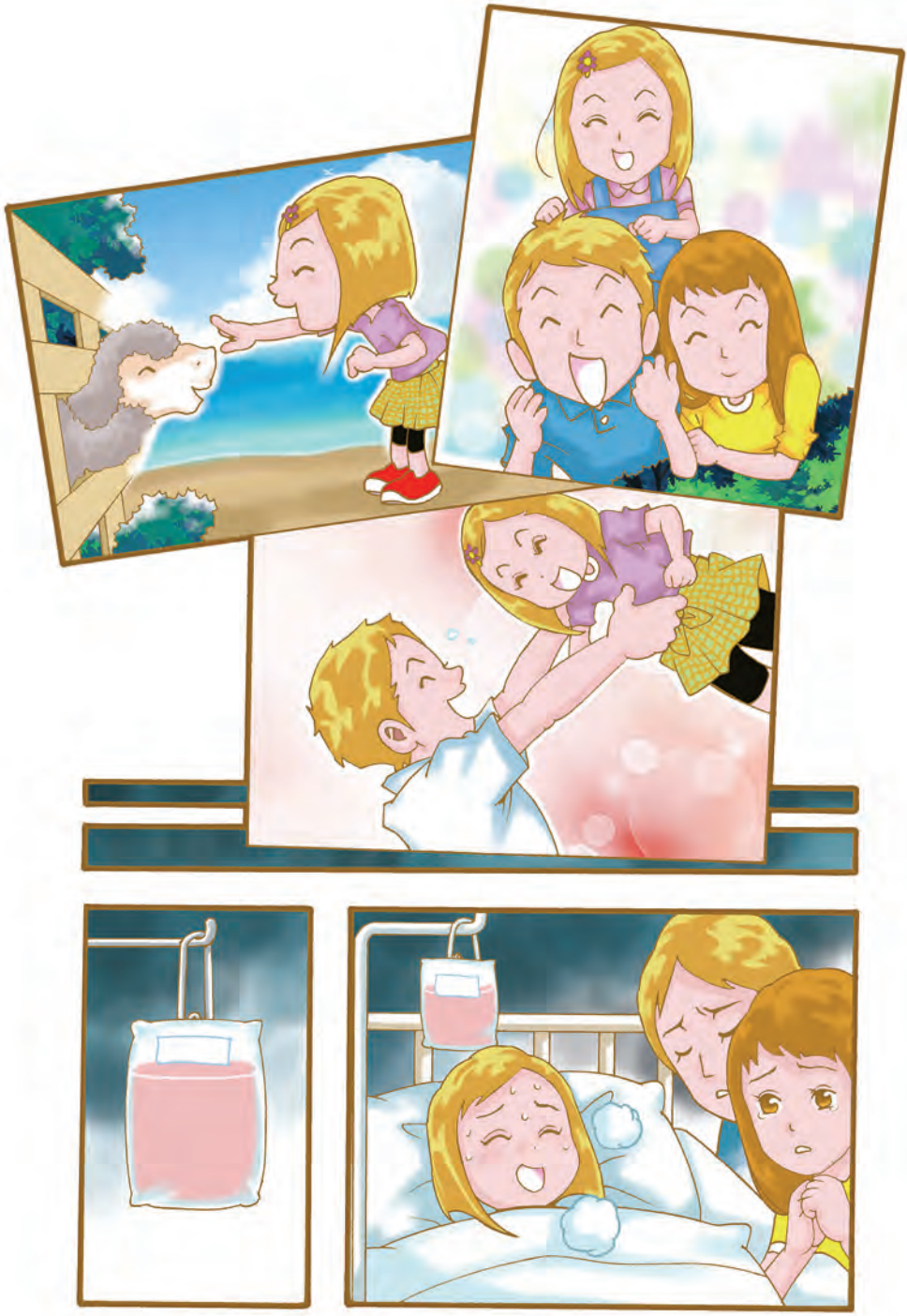
B-Free

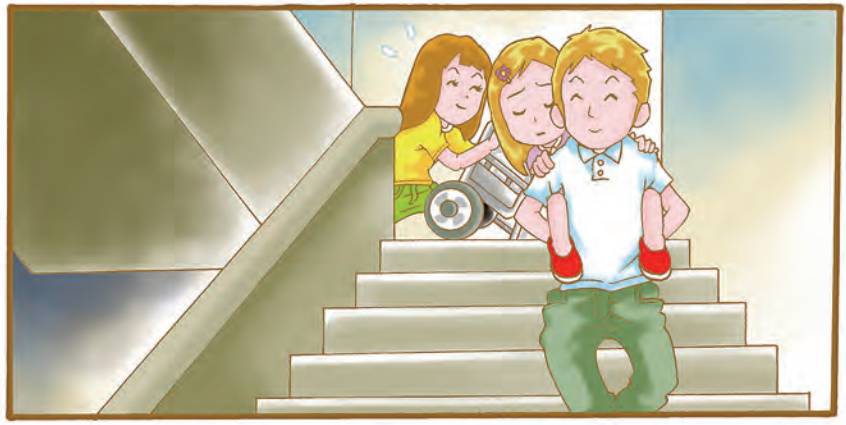
Barrier-Free

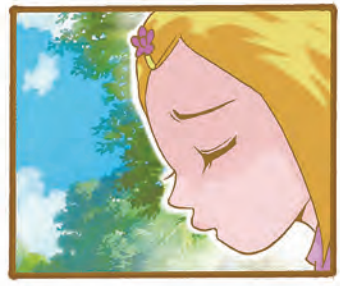
Let's be free

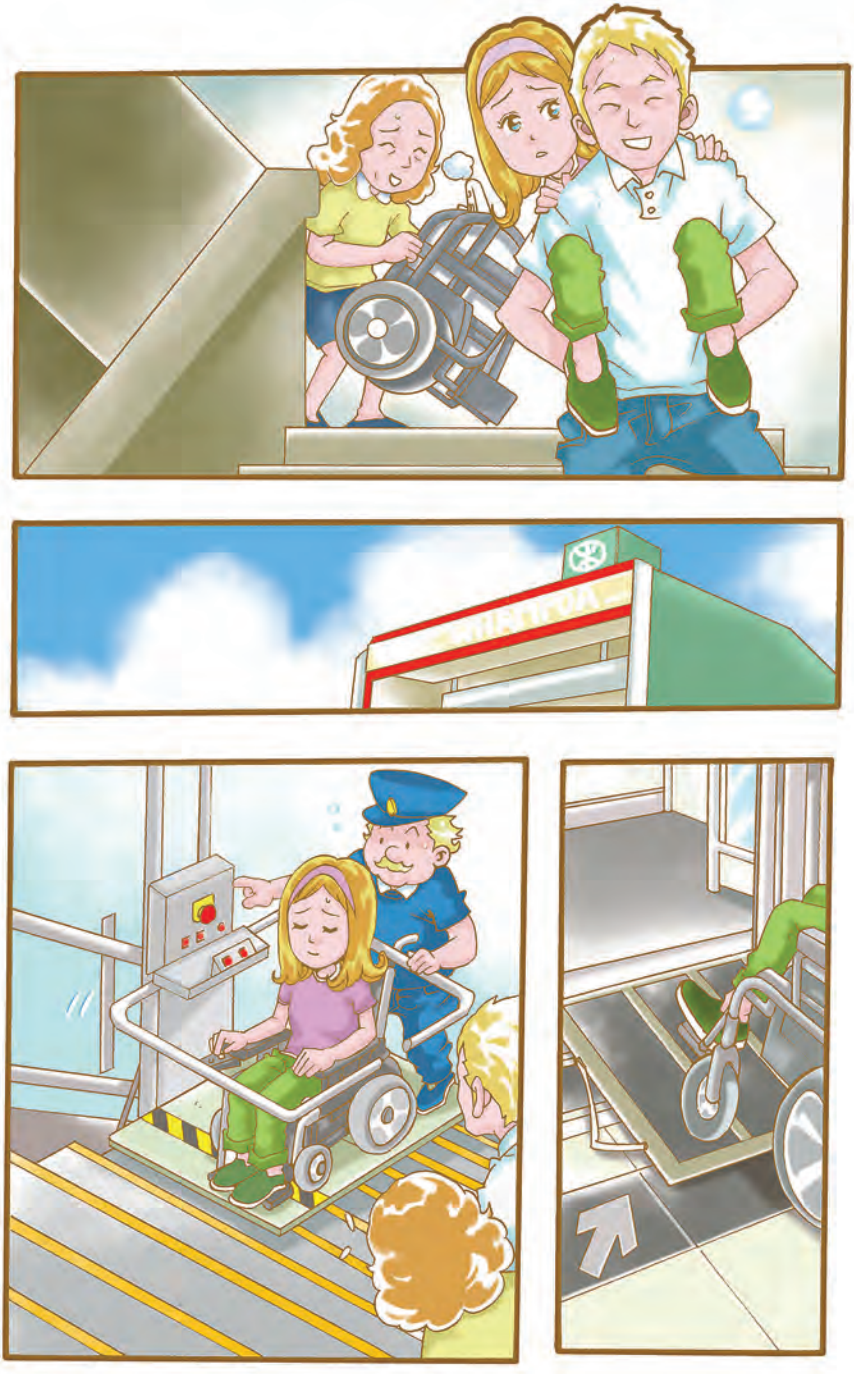
Content

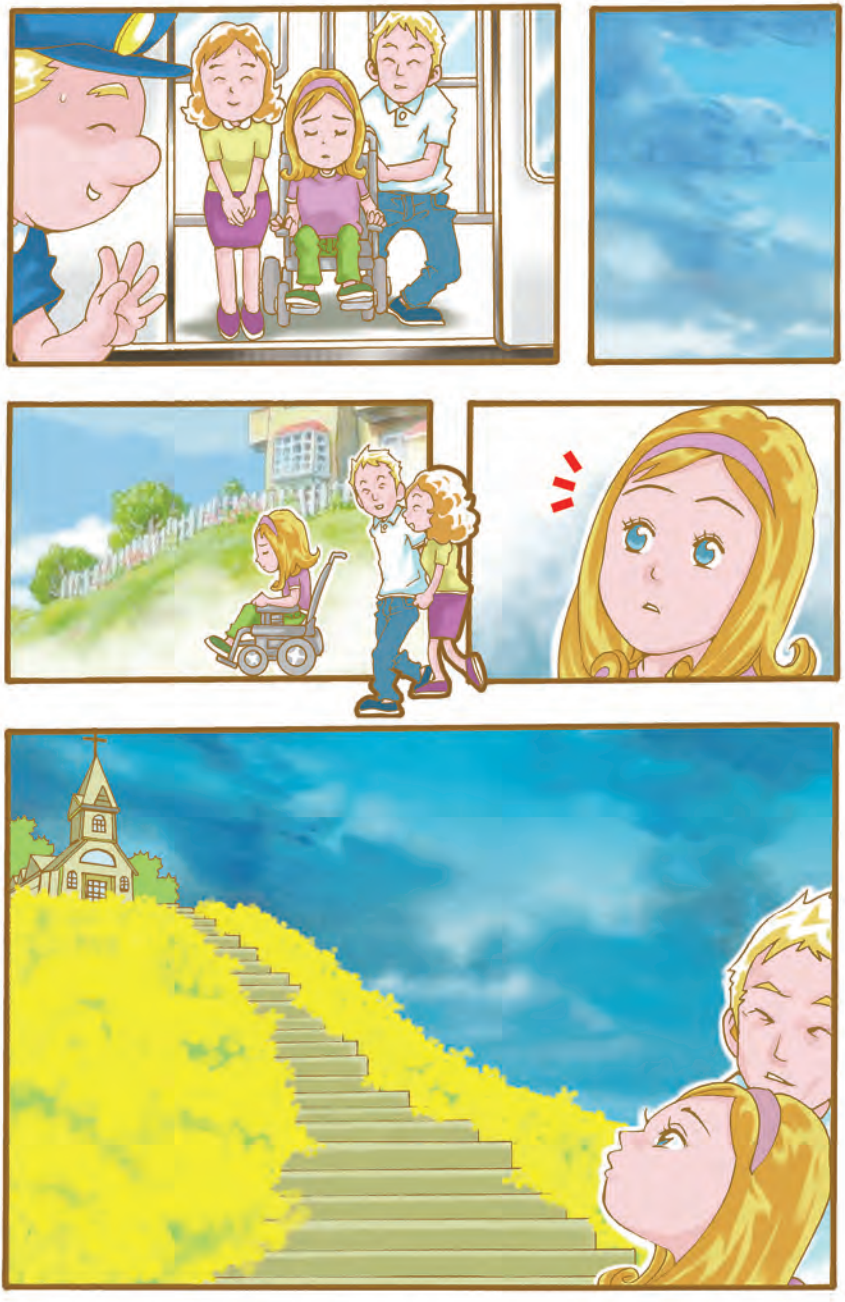
STORY

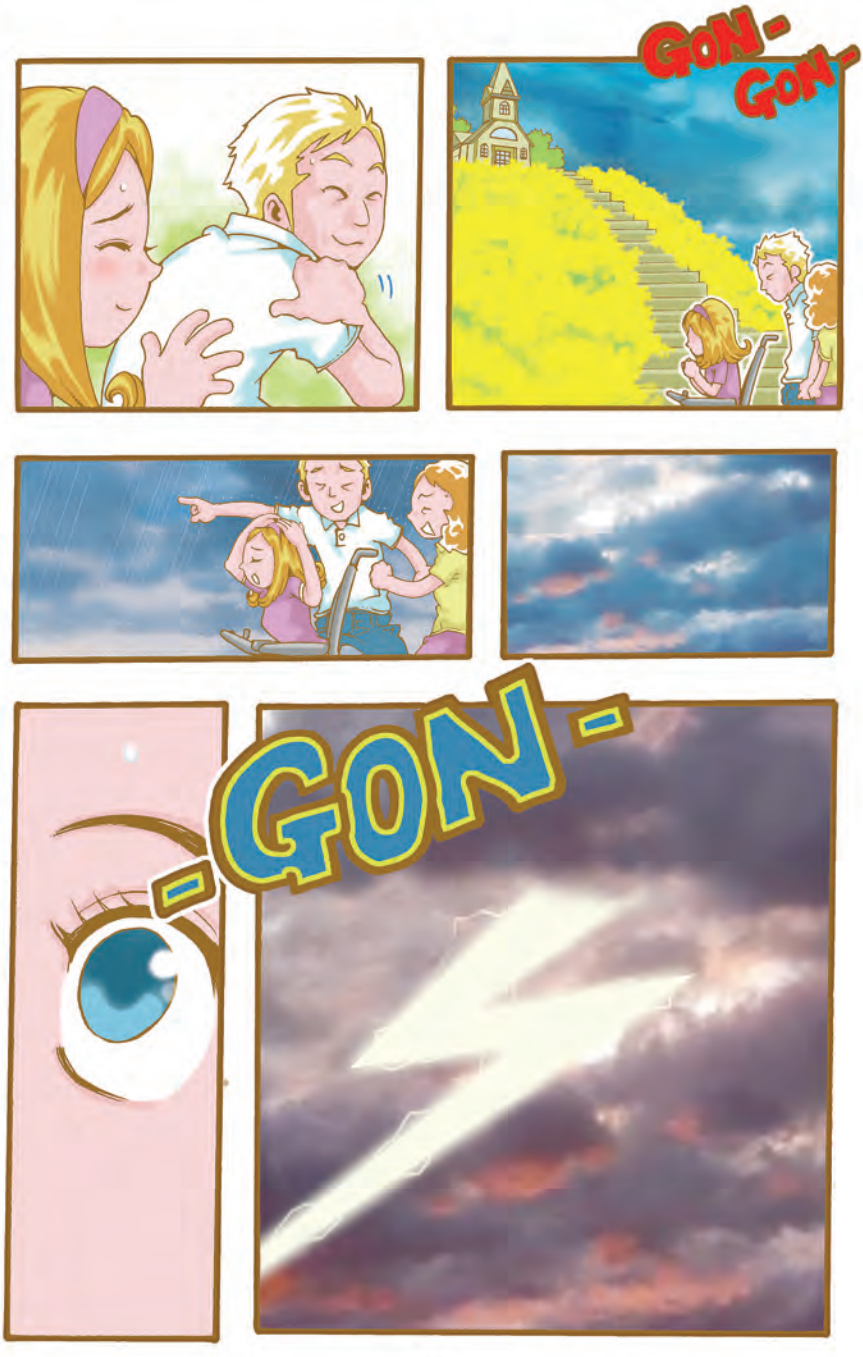








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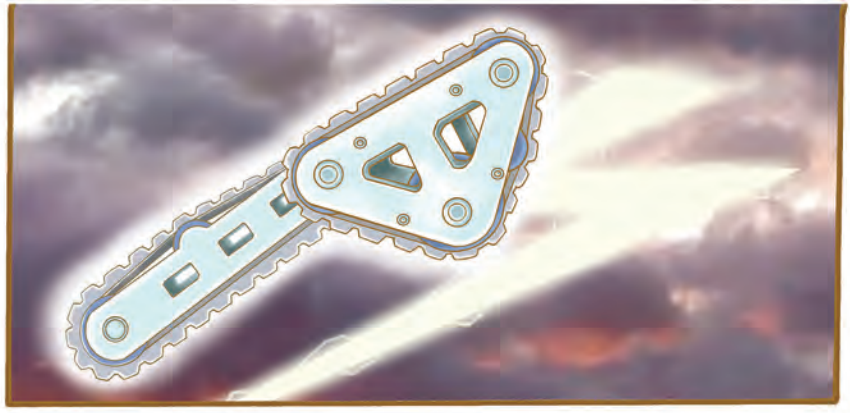
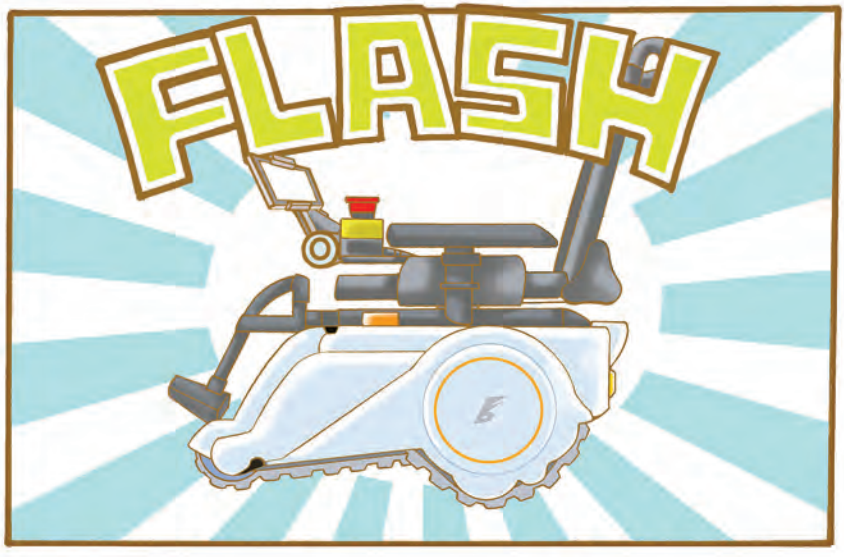
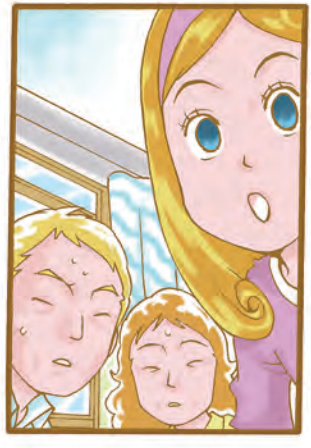



FLASH




STOP
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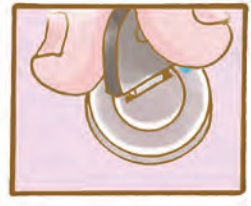

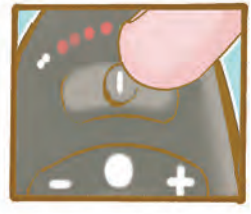

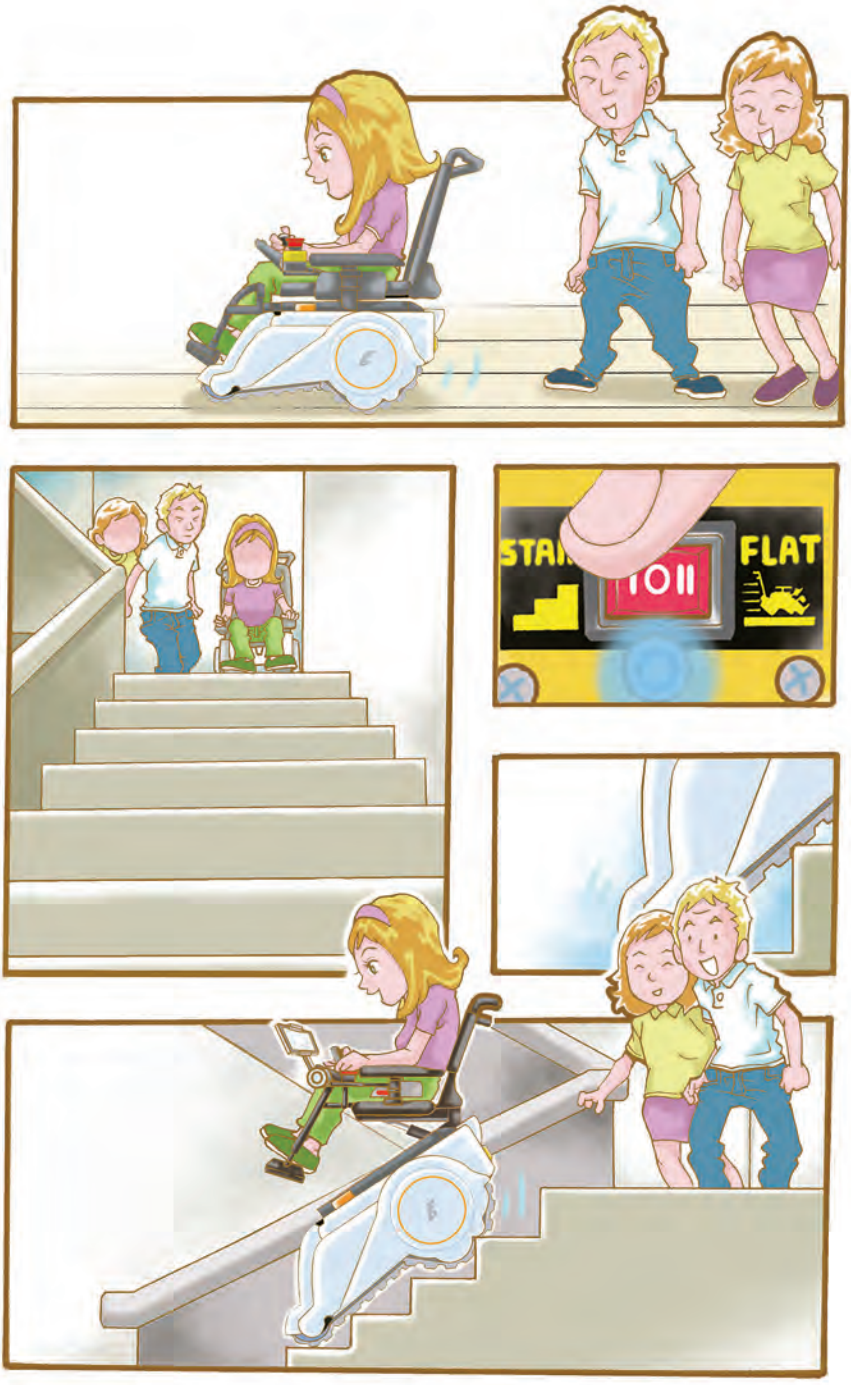
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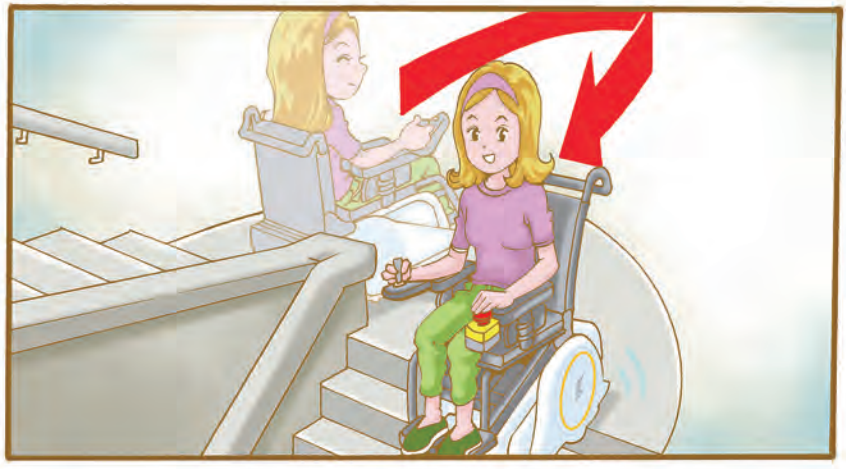
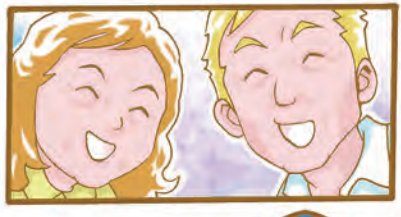
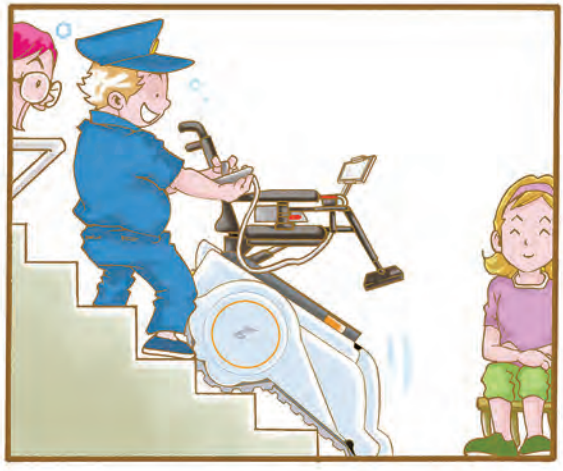
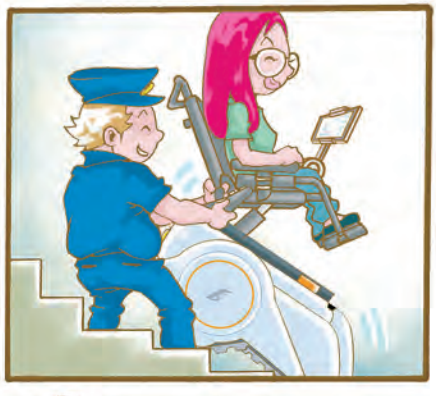
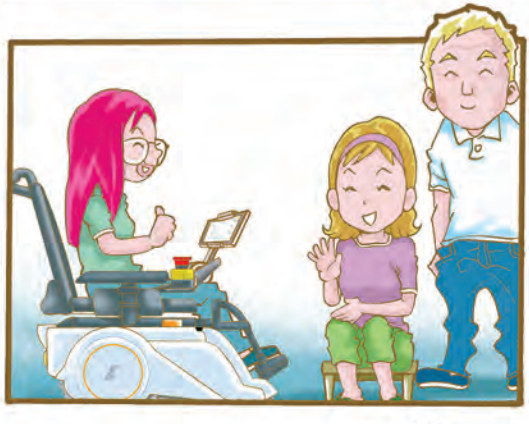
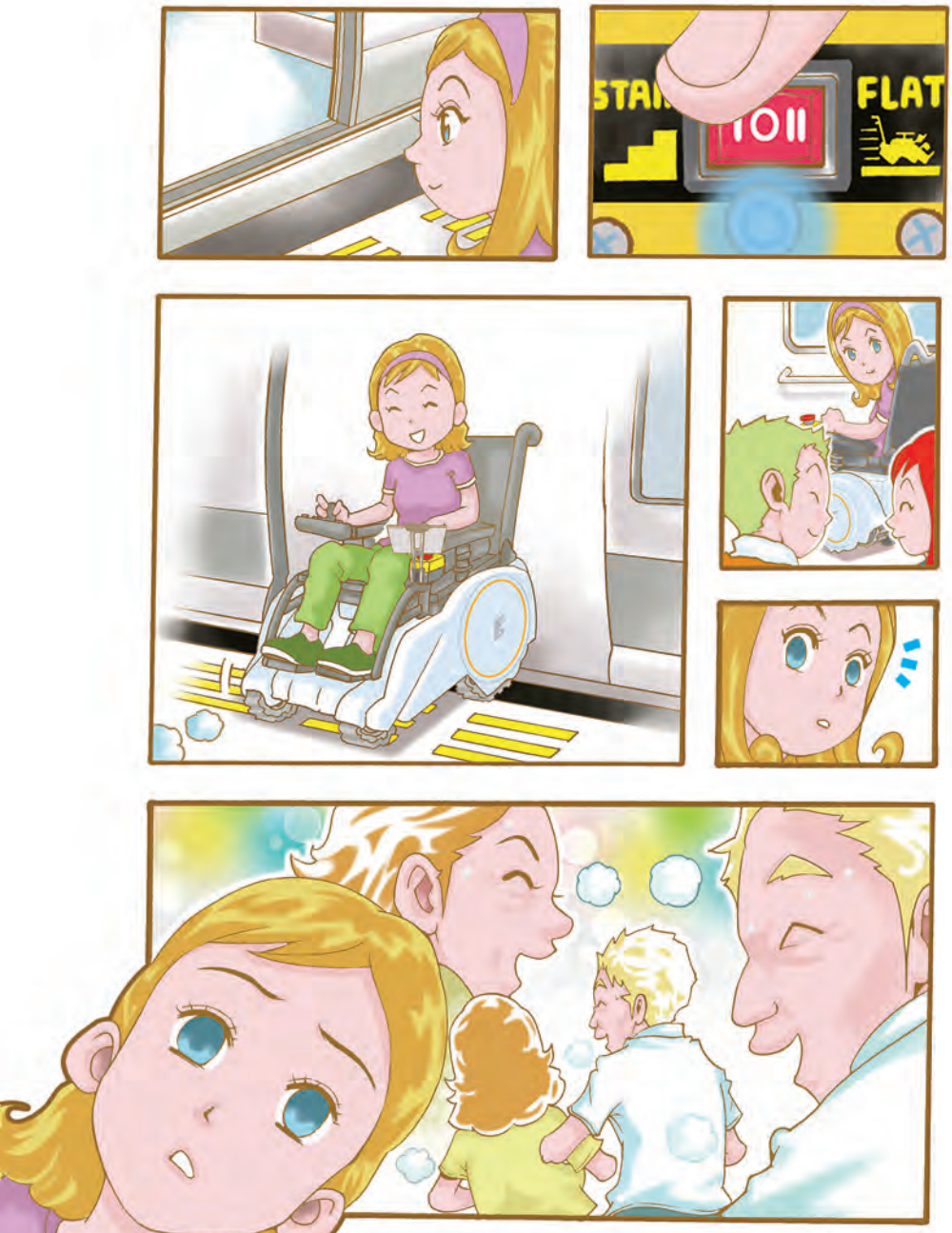








STAI
FLAT


Bank

Start • Shutting Down

Start Flash

Step 1.

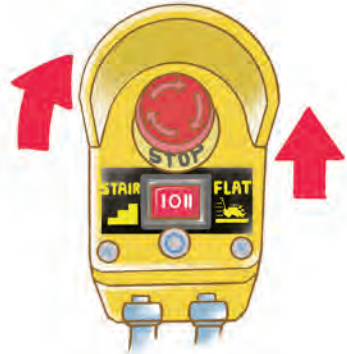
Insert key, turn key to align with blue dot to start.

Step 2.

Once the key is switched to the blue dot; power will remain connect even when the key is removed.

Step 3.

Turn clockwise the 「red」 button on the 「Emergency Stop Control Unit」, the button will eject and power will be connected.



Step 4.

When both the key and the 「red」 button is activated, press the on/off switch underneath the 「red」 button and when a blue light comes on, power is now connected.

Step 5.

Press the on/off button on the right hand controller, both the 「power indicator lamp」 and the 「speed indicator lamp」 will lit up.

Step 6.

You may now use the lever control on your 「right hand controller」 to move in the forward, backward, left and right directions.

Step 7.

When the blue light on the 「emergency stop control unit」 is on, you may press the rocket switch to change between 「I」 「Stair Mode」 or 「II」 「Flat Mode」.

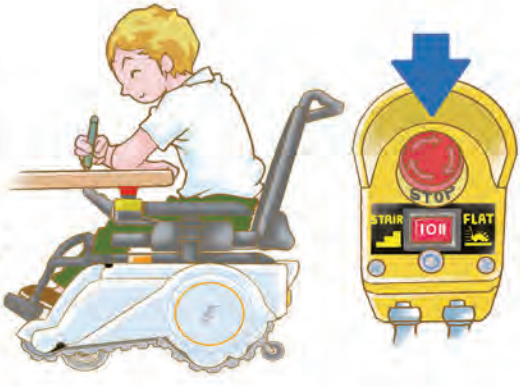
Shutting down Flash

Step 1.

To turn off the 「right hand console」, press the on/off button once, and the 「power indicator lamp」 and the 「speed indicator lamp」 will be off, this means that power is now cut off.

Step 2.

If you intend to have the chair to remain stationary for a prolonged period of time (e.g. working still in front of a desk) we suggest you to press the 「red button」 on the 「emergency stop control unit」 to conserve battery. Main power to the chair will be cut as a result of this action.



Step 3.

If an even longer time is required for power cut, we suggest to turn the key from the blue to the red position to ensure complete power cut.

Step 4.

Remove the key and depart.

RULES

Rule 1. Mode switching rule

1a.

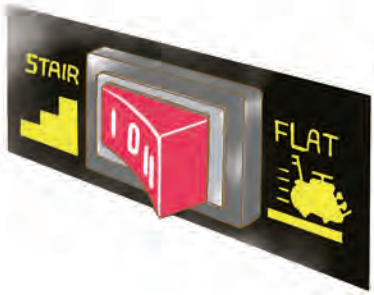
To prevent accidental Mode switching by unintentional contacts, the switch button is covered by protective plastic.

1b.

The user must press through the plastic cover firm enough onto the boat-shape switch button until the button light remains on to activate Mode switching.

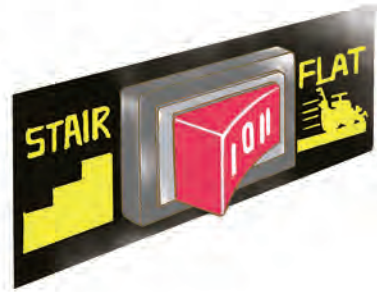
1c.

(Ⅰ) to activate "Stair Mode"



1d.

(Ⅱ) to activate "Flat Mode"



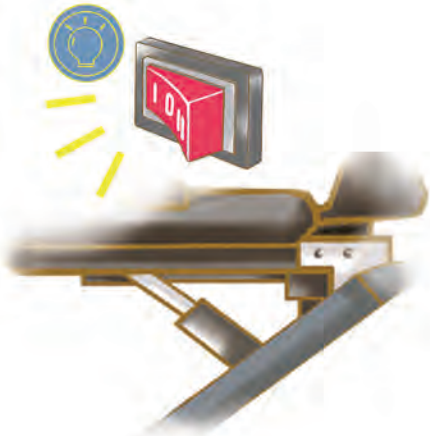
1e.

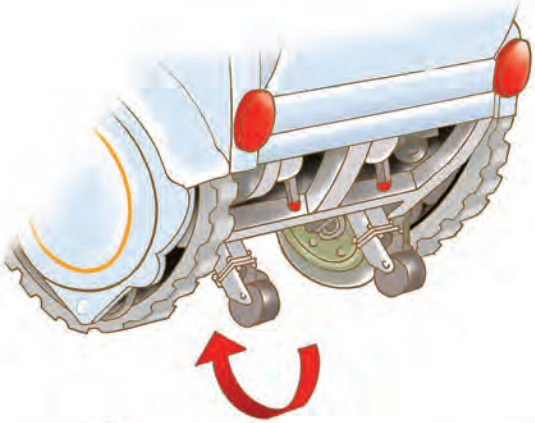
(0), in between (Ⅰ) and (Ⅱ), is to deactivate the Seat Balance System and the switch button light remains off.

Rule 2. Stair Mode switching rule

2a.

Press (I) till the switch button light remains on to activate "Stair Mode" and the Seat Balance System will automatically be activated as well.



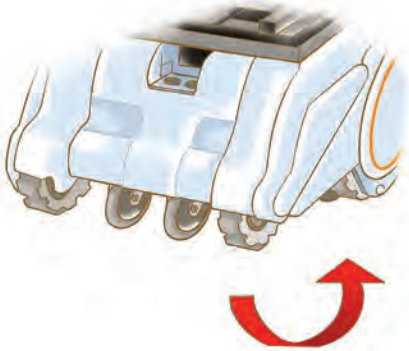


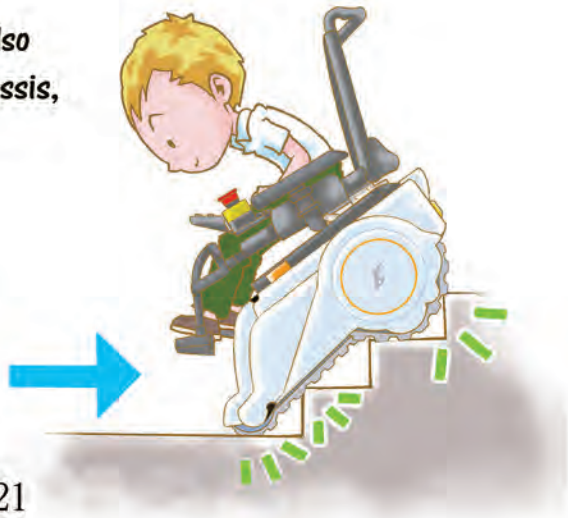
2b.

Simultaneously, the anti-tips will be folded away to prevent hindering stair-climbing.

2c.

The front caster wheels will also be lifted and stored in the chassis, converting to pedrail mode.





2d.

If now the switch button is turned to (0), in between (Ⅰ) and (Ⅱ), the Seat Balance System will be deactivated with the switch button light turned off while the stair-climbing function stays on. Without the Seat Balance System, the user is now at risk of falling off the seat during stair-climbing.

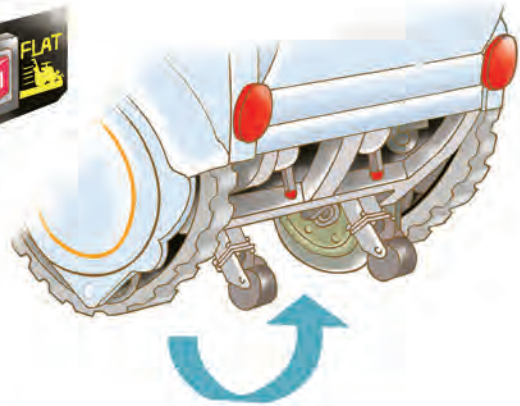
2e.

The user MUST remain vigilant to make sure the switch button light stays on during stair-climbing.

Rule 3. Flat Mode switching rule

3a.

"Flat Mode" is activated by pressing (Ⅱ). The switch button light will remain on to activate the Seat Balance System. Simultaneously, the anti-tips will be extended from the chassis to prevent backward tipping.



3b.

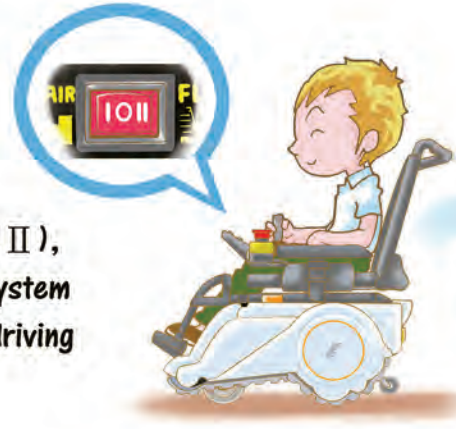
The front caster wheels will also be lowered from the chassis to lift the pedrails off the ground to ensure smooth and agile driving.

3c.

If now the switch button is turned to (O), in between (Ⅰ) and (Ⅱ), "Flat Mode" will remain. As the switch button light is now turned off, the Seat Balance System will be deactivated.

3d.

To save power, the user is suggested to turn the switch button to (0), in between (Ⅰ) and (Ⅱ), as the Seat Balance System is not required while driving on flat surface.



3e.

The user must however wait to ensure mode switching is complete so that the caster wheels are fully lowered to the ground to prop Flash a little higher before turning the switch button light off.

Rule 4. Stair-climbing rule (1)

4a.

Before climbing the stairs, the user must make sure mode switching is complete as both the anti-tips and the caster wheels will hinder stair-climbing.

4b.

The user MUST adopt the backward-facing position when climbing up stairs. Forward-facing to climb up stairs is strictly prohibited.

4c.

The user MUST adopt the forward-facing position when climbing down stairs. Backward-facing to climb down stairs is strictly prohibited.

4d.

The main reason is that the body's centre of gravity is naturally backward leaning when one is sitting in a chair. Forward-facing to climb up stairs will risk backward toppling easily.

4e.

Another drawback of forward-facing to climb up stairs is that if the user needs to come back down from midway of the stairs, reversing to climb down the stairs will surely topple the whole unit backward down the stairs due to backward shift of the centre of gravity!

4f.

It might seem possible to pivot the seat around but this will be extremely scary to the user and mechanically unsafe! Users will certainly be sick and tired if they have to complete going up the whole staircase before they can return back down every single time.

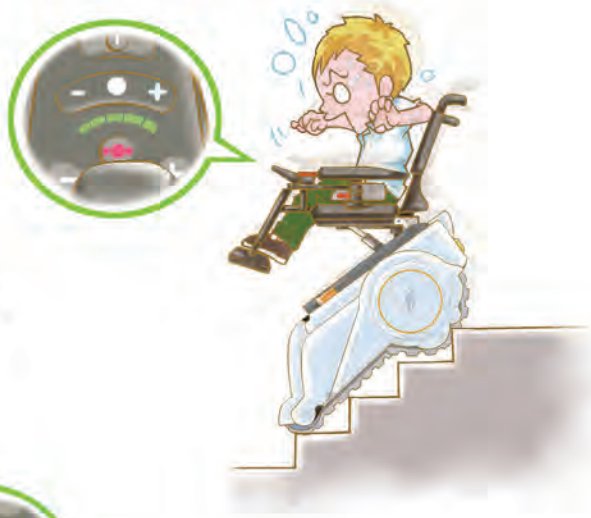
4g.

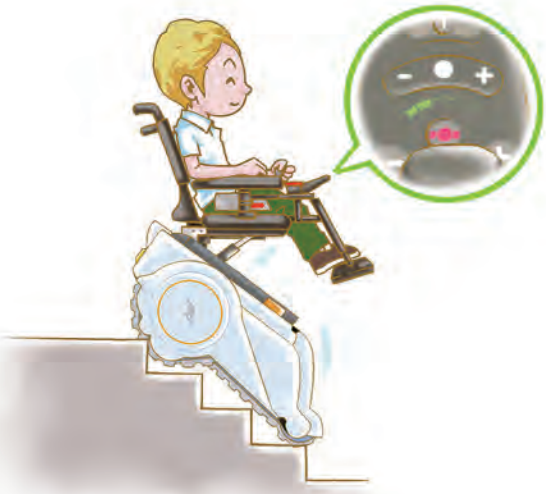
It is therefore why the Flash adopted the back facing uphill and front facing downhill approach.

Rule 5. Stair-climbing rule (2)

5a.

The user must adjust the Speed to "1" or "2" while climbing stair as they are specifically programmed for stair-climbing. Flash may become rather unstable if other higher Speeds are used for stair-climbing.





5b.

Speed "2" is more powerful than Speed "1" and is also faster. The user may select the appropriate Speed according to own needs and ability.

5c.

During stair-climbing, the user must steer properly to prevent sideway tilting to avoid accident.

Rule 6. Stair-climbing rule (3)

6a.

The maximum design tilt of the Flash is at 35°, please ensure climbing angle do not exceed this.

6b.

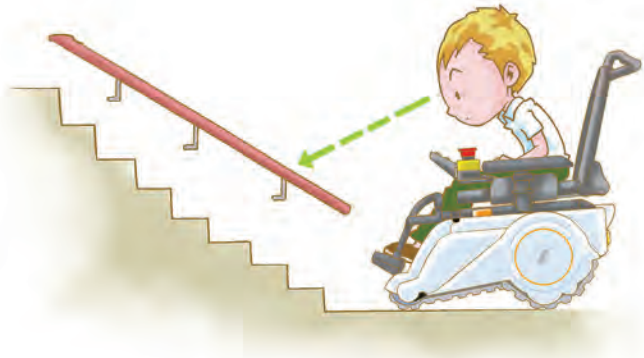
Whist climbing and facing against the stair, when the tilting of the chair had reached maximum to the angle that you are tilting forward.
This means the maximum design tilt had been exceeded and you should stop the climbing immediately and proceed safely back to flat ground..

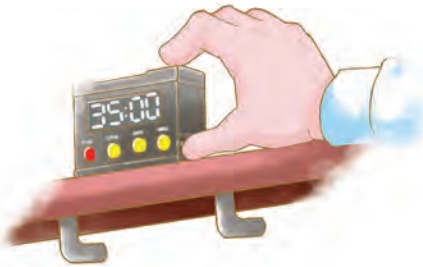
6c.

Similarly, if the front pedrails are found unable to reach the stair tread surface, the user MUST stop climbing down the stair and must reverse the wheelchair back to safe ground.

6d.

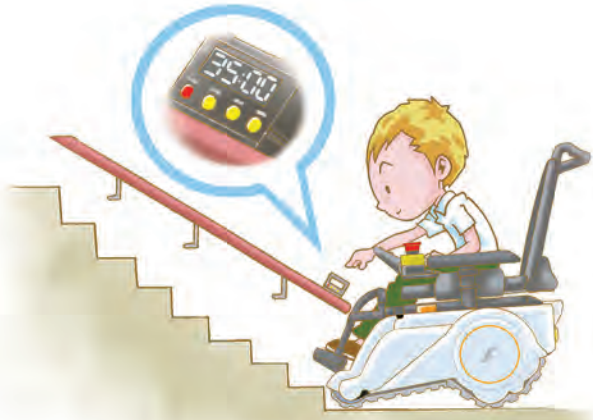
If the user is not confident enough in eyeballing the stair-inclination,





6e.

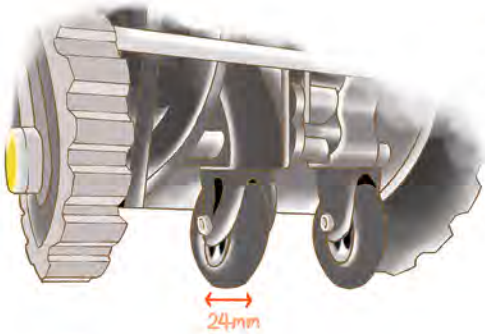
a digital inclination measuring device may be purchased from the distributor or from any hardware shops to measure the stair angle accurately.



Rule 7. Flat Mode rule

7a.

Upon switching to "Flat Mode", Flash is more agile and drives more comfortably with the 4 wheels as the pedrails are not in contact with the floor anymore.

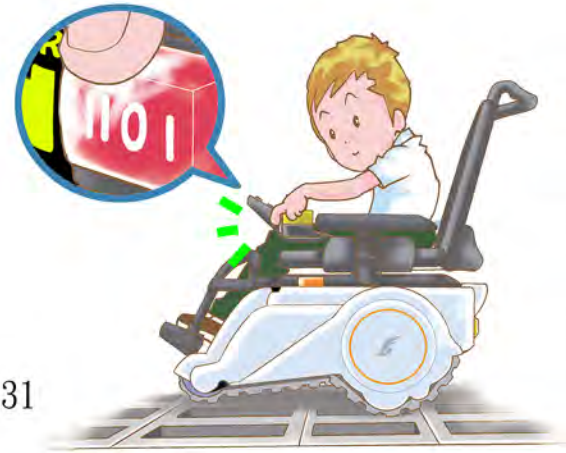


7b.

As Flash's chassis is already fully occupied with mechanical parts, it can only house a pair of smaller caster wheels.

7c.

The smaller caster wheels may become relatively unstable on rough terrain and may even fall into drainage gaps or any other gaps on the road.



7d.

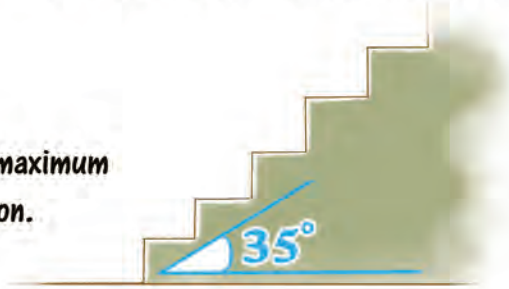
"Flat Mode" is therefore only suitable for smooth terrain. The user must switch to use "Stair Mode" upon encountering rough terrain.

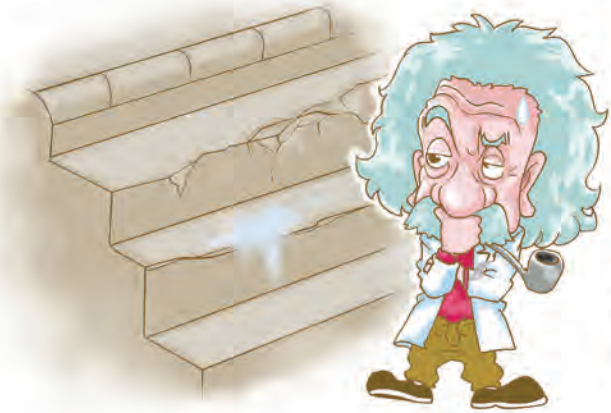
Rule 8.

Climbing a staircase that has never been attempted before

8a.

Flash is able to climb a maximum of 35 degrees inclination.





8b.

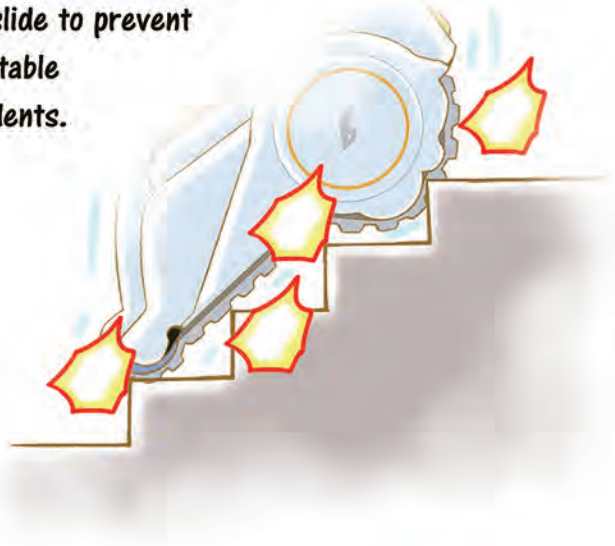
But other undetectable factors and uncertainties such as friction and damage of the stair nosing, material used, stain and grease etc. may also affect its stair-climbing ability.

8c.

Therefore, when encountering a staircase that has never been attempted before, the user should attempt climbing up first.

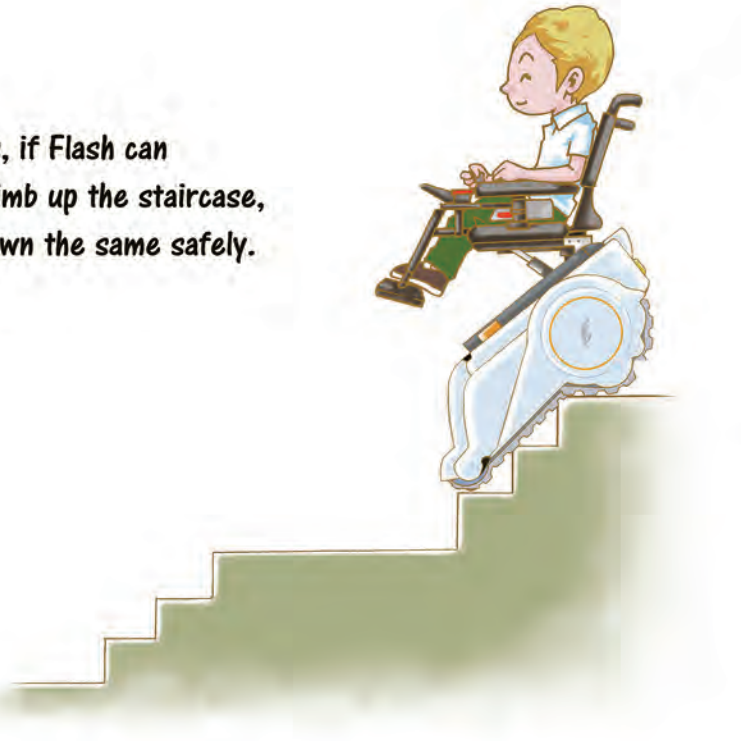
8d.

As Flash's pedrails are uniquely designed, the pedrails will slip and slide to prevent them to climb those unsuitable stairs so as to avoid accidents.



8e.

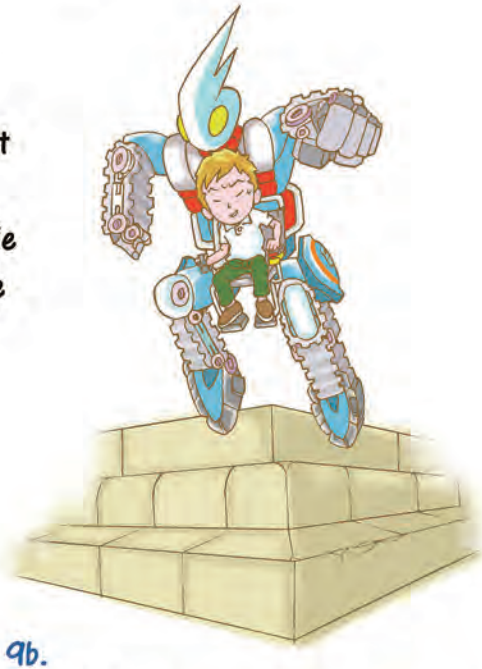
In other words, if Flash can comfortably climb up the staircase, it can climb down the same safely.

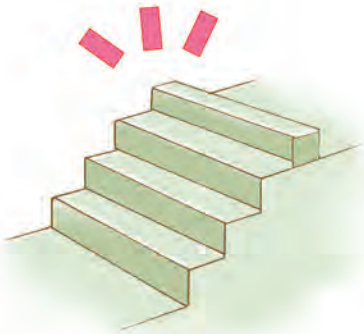


Rule 9. Atypical staircases

9a.

There are many stairs of different size and shapes. We may truly need a transformer from the movie to be able to negotiate all of these different types of stairs.





9b.

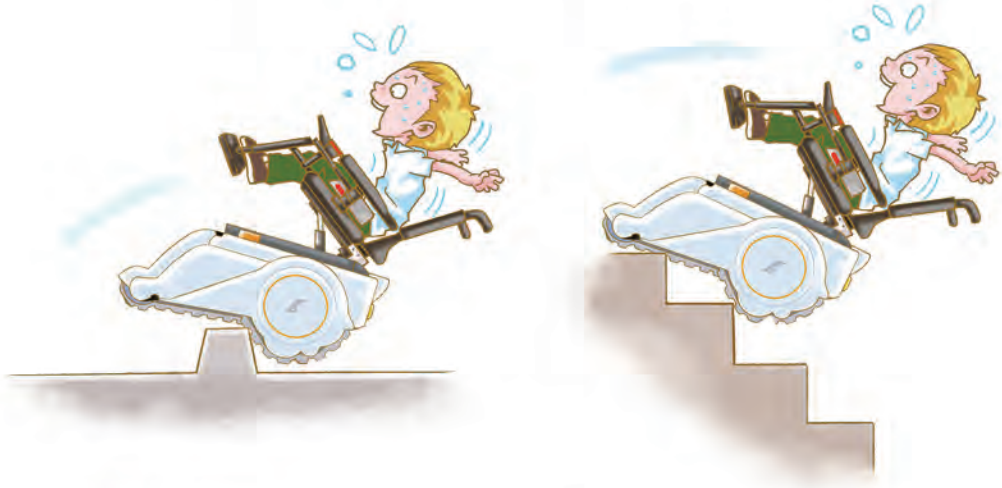
One of these strange staircases is one that has a hump at the very top of the staircase. It looks like a step but is actually a road hump acting as an obstacle.

9c.

The user must not be misled by such hump as a normal step and continue to drive over it backward.

9d.

As this will be the same as climbing down stairs or over obstacles backward and is strictly prohibited.



9e.

Upon encountering such staircase, the only way is to abort the climbing attempt and return to safe ground.

Rule 10. Slope climbing

10a.

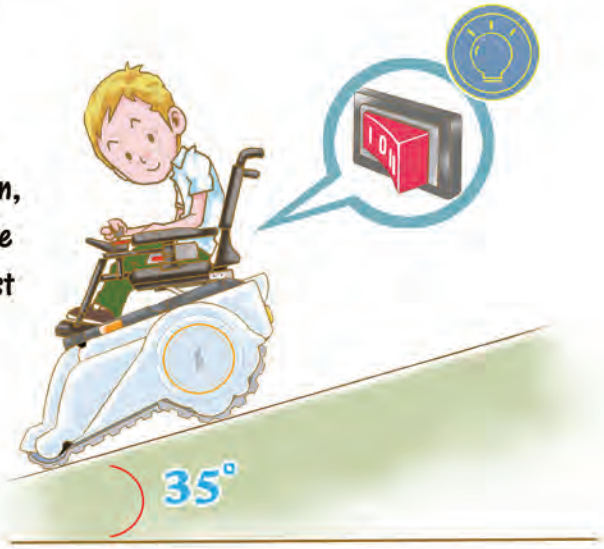
Flash comes with a set of specially design Mecanum wheels anti-tips at the back. Its anti-topple ability surpasses most electric wheelchairs and has a frontal climbing angle of 10°.

10b.

Once this angle is exceeded, there is a chance that Flash will topple.

10c.

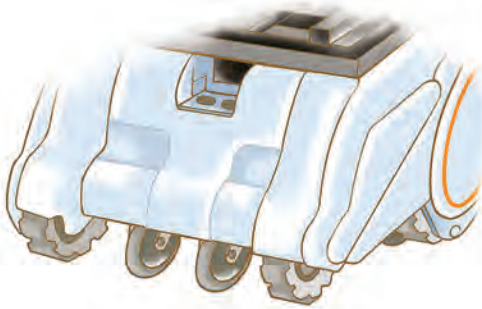
Once Stair Mode is turned on, one can treat the tilting slope as stairs and if facing against the slop to climb upwards, the climbing angle can reach 35°.



Rule 11. Driving on rough terrain

11a.

Flash drives on a pair of front caster wheels in "Flat Mode".



11b.

As Flash is small, it's chassis is already fully occupied and can only house a pair of smaller caster wheels.

11c.

Smaller caster wheels have great difficulties in negotiating rough terrain as they can be blocked by higher obstacles and be stuck by gaps on the road.

11d.

It is possible that the caster wheels can be lifted off the ground by switching to use the "Stair Mode".

11e.

But the anti-tips will also be folded away, risking backward toppling. Driving Flash on rough terrain is therefore not recommended.

Rule 12. Flash's ability to negotiate obstacles

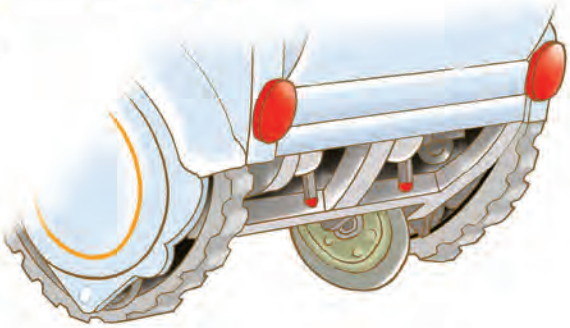
12a.
The user is reminded that Flash is, same as any other power wheelchairs, not equipped with obstacle negotiation function.

12b.
But any ramps and steps may still be easily negotiated by "Stair Mode".

12c.
For instance, "Stair Mode" may comfortably cross a platform gap less than 15cm.

12d.

Again, the user must be reminded that the anti-tips are folded away in "Stair Mode".

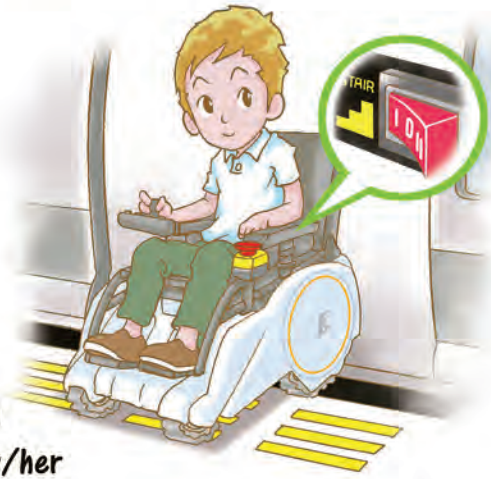


12e.

Hence when boarding a train which is higher than the platform, please treat it as a stair and face against the higher ground you intend to move to.

12f.

The user must regard entering the train as driving up the stair in a backward facing position. Once again, it is emphasized that Flash is not equipped with obstacle negotiation function. The user must be very familiar with Flash and be responsible to bear his/her own risk to cross over obstacles.



Rule 13. Waterproofing of Flash

13a.

Flash is an international acclaimed product and has pass relevant waterproofing certifications.

13b. Being a waterproof product does not mean we recommend using Flash in the rain roads surfaces will be slippery and it also poses a lot of unknown danger to the user. Like all other electric wheelchair, Flash should not be used in the rain.

13c.

If it rains suddenly whist you are using Flash, you should find a place for cover and should not continue movement until rain stops.

Rule 14. Emergency Stop button

14a.

The emergency stop button is to be used when Flash is out of control, electronics is malfunctioning and whenever you sense danger.

14b.

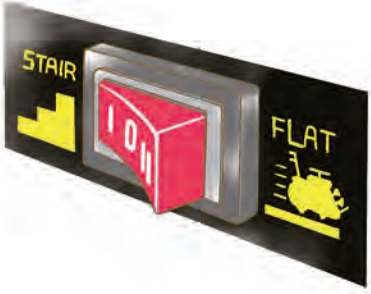
Once pressed, the power to Flash will be cut to stop the anomalies mentioned above.

14c.

To restart Flash, turn the red button on the 「emergency stop control unit」 in a clockwise direction until the button pop ups and then press the small button beneath the rocket switch. Power will be connected once the blue light is on.

14d.

Once the power is on, the right hand controller needs to be reactivated.



14e.

The rocket switch on the left hand side would remain at the previous position before the chair was deactivated. If the chair is deactivated whilst the 「Stair Mode」 is on, upon switching back on Flash, the stabilising system will be automatically activated.

14f.

The user MUST therefore remember to switch the Seat Balance System off before reactivating Flash if the emergency situation was due to malfunctioning of the Seat Balance System.

14g.

Furthermore, the Emergency Stop button must not be pressed while Flash is moving at high speed.

14h.

The user's body will be vigorously thrown forward due to such sudden stop, possibly causing severe injuries.

14i.

To prevent such hazardous situation, the user must always fasten the seat belt and not to press the "Emergency Stop" button while driving at high speed unless it is an emergency.

TIPS

Tips 1. Mode switching tips

1a.

As Flash is small, its chassis is fully packed with mechanical parts. The caster wheels may occasionally be stuck to other mechanical parts underneath the chassis while switching from "Flat Mode" to "Stair Mode".

1b.

To prevent this happening, Flash may be reversed a little to allow the pair of caster wheels to spin to the appropriate positions to avoid contacting other mechanical parts underneath the chassis every time before switching from "Flat Mode" to "Stair Mode".

Tips 2. Speed indicator

2a.

The 5 lights sequentially indicate 5 speed levels and is adjusted by pressing + or – (1 light represents the slowest speed level 1 and 5 lights represents the highest speed level 5). One more press of + at speed level 5 will change the speed straight to level 1. In the opposite, one more press of – at speed level 1 will change the speed straight to level 5.

2b.

Speed "1" and "2" are specifically programmed for stair-climbing. Speed "2" is faster and more powerful than Speed "1". The user may select the appropriate Speed at will.

2c.

Speed "3" to "5" are specifically programmed for driving on smooth terrain. Speed "5" is faster than Speed "3". The user may select the appropriate Speed at will.

2d.

While driving, the user may select the appropriate Speed by pressing + or - .

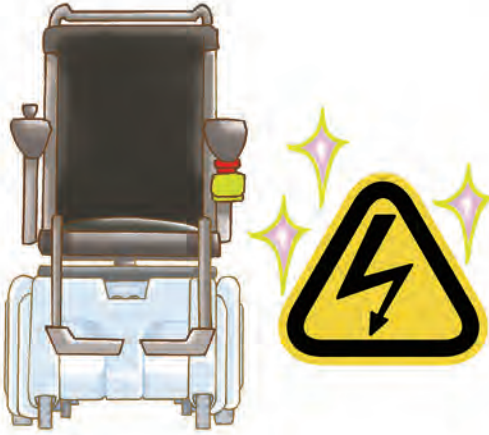
2e.

If necessary, the user may request the distributor to alter the software programing for individual.

Tips 3. Battery power indicator

3a.

Battery power is indicated by 8 lights (4 red lights and 4 green lights). Battery power is full when all 8 lights are on.



3b.

One must be reminded that Flash uses the more powerful "Lithium iron Battery" that it has higher voltage than other wheelchairs after a full charge.

3c.

Thus far, all controllers are designed for normal wheelchair batteries. There is yet no specifically designed controller that may detect Lithium iron battery power level.

3d.

Because of its higher voltage, the Lithium iron battery power level may have to drop to almost half before being detected by the controller. In other words, when the battery power indicator drops to 7 lights, the Lithium iron battery power level may have already dropped below half.

3e.

If the Battery power indicator drops to 4 lights, the actually battery power level may only be able to continue Ranger's function for a few more minutes.

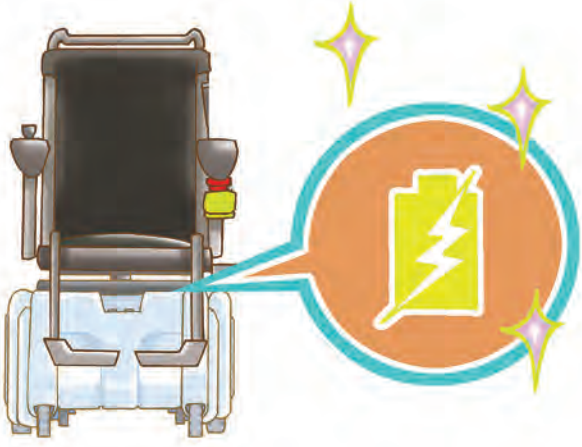
3f.

If necessary, the user may request the distributor to install an additional Lithium iron battery power level detector.

Tips 4. Battery maintenance

4a.

Flash uses high quality/power "Lithium iron Battery" which has higher durability and safety to other batteries. Unfortunately, most people have poor battery maintenance knowledge, resulting in much shortened battery life.



4b.

Batteries should not be overcharged or left uncharged till exhaustion. These will cause chronic damage to the batteries. If it has to be left idle for a long time, it must be fully charged every 45 days.

4c.

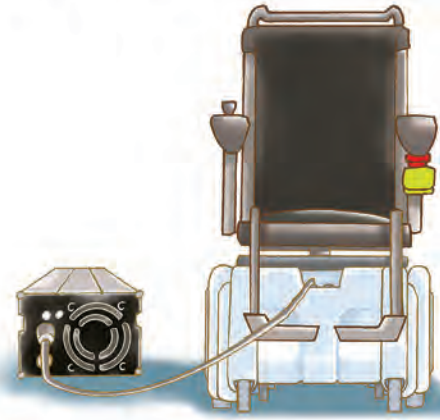
The best is to fully charge the battery when the battery power indicator drops to 6 or 7 lights, i.e. when actual battery power level drops to 30% to 40%.

4d.

When the charger's indicating light turns off or when the radiator fan stops, battery charge is complete and it is best to unplug the power as soon as possible.

4e.

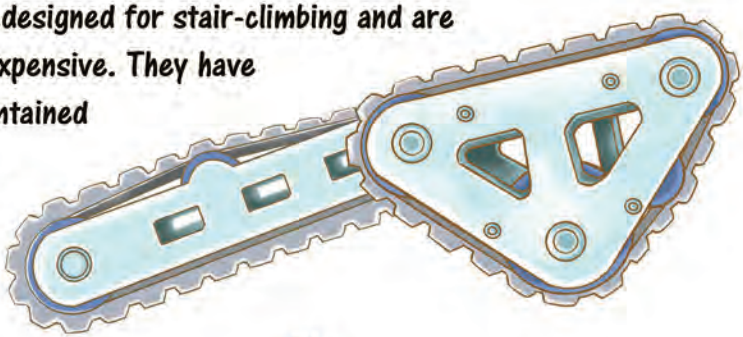
According to international certification requirements, wheelchairs are prohibited from driving while charging. Therefore, Flash is programmed not to be activated when the joystick is tampered while charging. If it happens, the "Setting" light will flash to indicate that safe mode is activated.



Tips 5. Pedrail maintenance

5a.

Flash has 2 pedrails on each side, a total of 4 pedrails. They are specially designed for stair-climbing and are therefore rather expensive. They have to be properly maintained to ensure optimal durability.



5b.

The transmission force of the pedrail is driven by the intertwine of its inner teeth and the special wheel shell. Inner side of the pedrail will therefore sustain immense friction force and is the main cause of pedrail's wear and tear.

5c.

The advantage of such unique pedrail design is that it can drive out foreign debris but the user must regularly apply special lubricant to the inner side of the pedrail to reduce friction by the wheel shell to minimize wear and tear.

5d.

Loss of lubricant will be more significant after driving over sand and gravel and should be topped up as soon as possible.

5e.

Each tooth on the outer side of the pedrail is thick enough to minimize wear and tear to reduce the need of replacement.

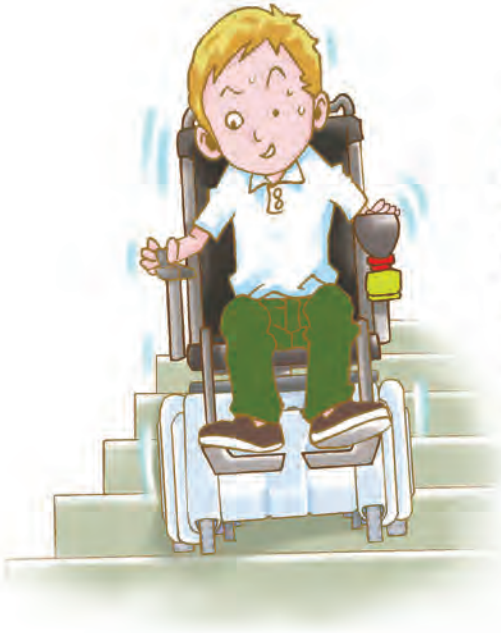
5f.

But if it is often used on rough terrain and spun on gravel, its durability will be greatly reduced. Users must be aware that if friction is excessive, such as driving on wet and muddy gravel, the pedrail may even be forced off the wheel shell.

Tips 6.
Ways to prevent sideway tilting during stair-climbing

6a.

Although Flash's rear pedrail is meticulously designed with Z shape teeth to automatically adjust any sideway tilting during stair-climbing,



6b.

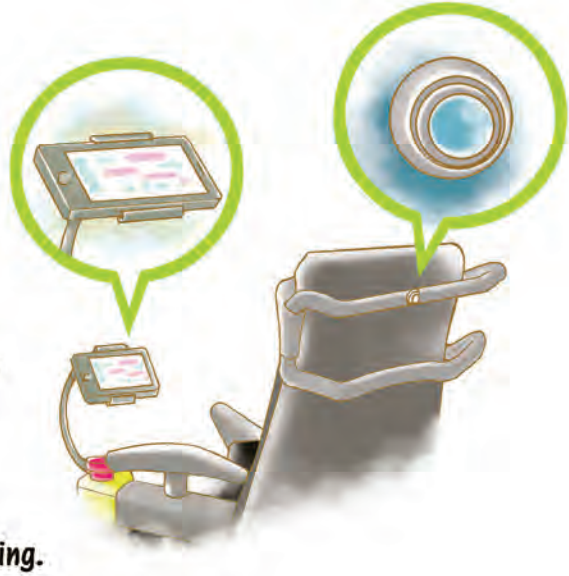
If friction is strong enough while the user is not controlling well, Flash may still have a chance to tilt sideway.

6c.

A useful tip on the most reliable way to prevent sideway tilting is to avoid confusion and misled by the surrounding and to look straight ahead to use the body to sense if the wheelchair is tilting or not.

6d.

Another useful suggestion is to install a rear camera at the designated location for those who are not able to control well enough. The rear camera can be connected to a smart phone for easy rear viewing of the gap between the rear pedrail and the stair to determine the degree of tilting.



Tips 7.
Emergency plan for stoppage on stair due to exhausted power and mechanical failure

7a. All users of any kind of rechargeable products must be responsible for estimating the power usage and must not continue to use the device with insufficient operating power.

7b.

Since Flash uses a special "power failure safe mode" design, all functions will stop and be locked immediately no matter if it is due to power exhaustion or failure. As long as the user stays calm and remains seated, he/she is always safe.

7c.

As with any other wheelchairs or stair climbing devices, the safest approach for any mishaps is to contact the distributor immediately and calmly wait for assistance.

7d.

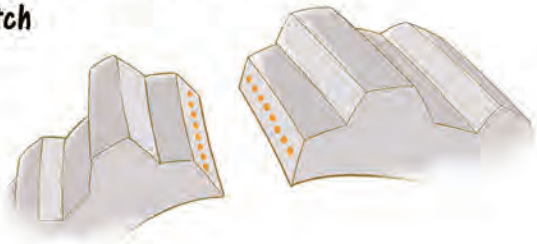
If needed, light and portable spare batteries are always available from the distributor.

QUERIES

Queries 1. Would the pedrails break easily ?

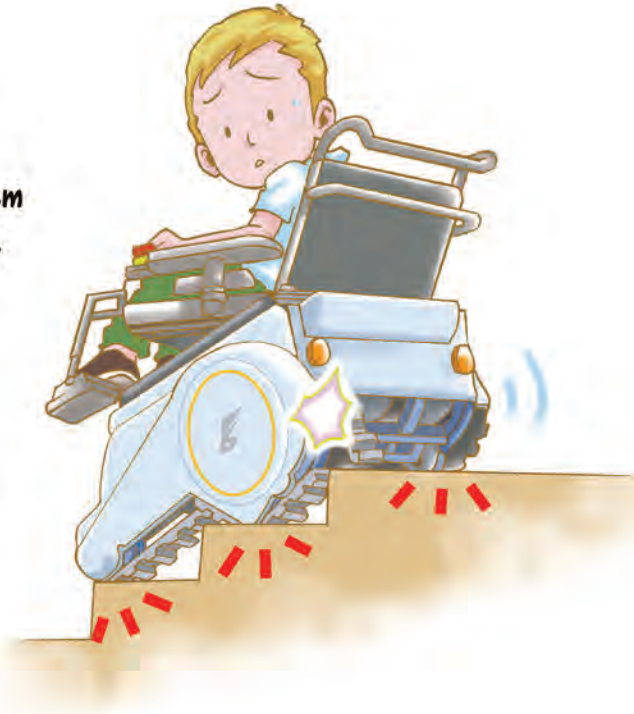
1a.

Flash's pedrail is specially structured to mix the extremely high tensile metal wires with high abrasion resistive composite rubber to form a unique stretch and split resistant pedrail. It is therefore extremely difficult to over-stretch and break the pedrail.



1b.

Furthermore, Flash uses a patented multi-pedrail system with 2 pedrails on each side to consist of a total of 4 pedrails to minimize risk in case of sudden rupture of a pedrail that the remaining 3 pedrails can still safely support the full weight.



Queries 2.

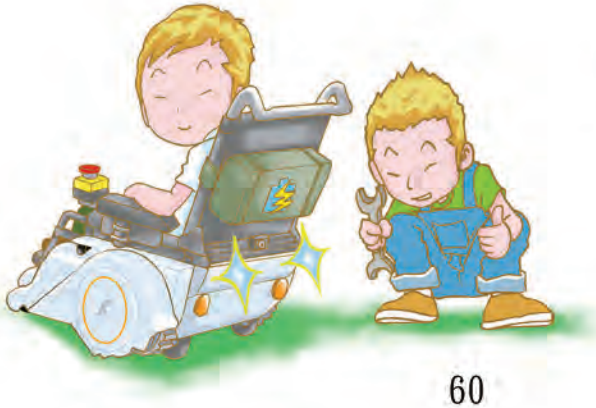
Why would Flash's speed be slower when compared with other power wheelchairs ?

2a.

Repeated road tests by different user groups have revealed initial inexplicable excitement of driving Flash over obstacles and up and down stairs at unsafe high speeds while ignoring risks of accidents.

2b.

To counter this, the Flash is designed based on the using of a speed lower than the internationally standard of 6 km / hrs.



2c.

User is reminded to bear their own risk if they modified Flash without manufacturer permission.

Queries 3.
Why would Flash have only 2 operation modes ?

3a.

The more functions it has, the more complicated the control is. It may become too complicated and confusing for the user to control, hence risking accidents.

3b.

The more functions it has, the more parts and complex mechanical structures are required and therefore the more production cost it is. Such cost will have to be passed on to the users, increasing Flash's retail price.

3c.

Flash is to meet the market demand for an inexpensive and less complex stair-climbing wheelchair to help more users.

Queries 4.

Is the stair-climbing principle adopted by Flash reliable ?

4a.

Most stair climbers operate on the principle that the pedrails hook onto the nosing of the stairs to grip and climb.

4b.

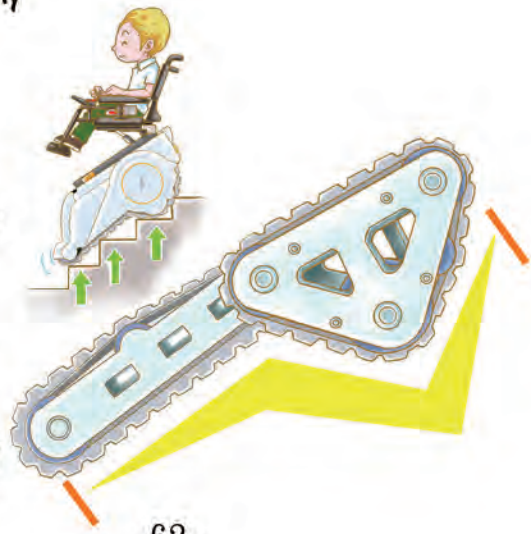
Such hooking mechanism is insufficient to sustain an accidental push from behind and the user risks sliding down the stairs.

4c.

Flash uses the uniquely designed and patented "Flash/lightning-shaped pedrail system" to not just be able to "hook" to the nosing but to firmly and stably "step" and "prop" on the tread of the stairs.

4d.

Its safety with the ability to sustain enormous force from behind and not to be toppled is undoubtedly proven by our patented design and numerous practical tests. Our stringent tests also include sideway forces to ensure maximum safety.



4e.

This is also why the maximum sustainable sideway pulling or pushing force is 60kg when Flash is carrying a user of 100kg weight climbing on stairs of 35° inclination.

4f.

Flash can still easily and safely climb a staircase of irregular inclination.

Queries 5.
Why is Flash not equipped with rear vision camera and reverse warning ?

5a.

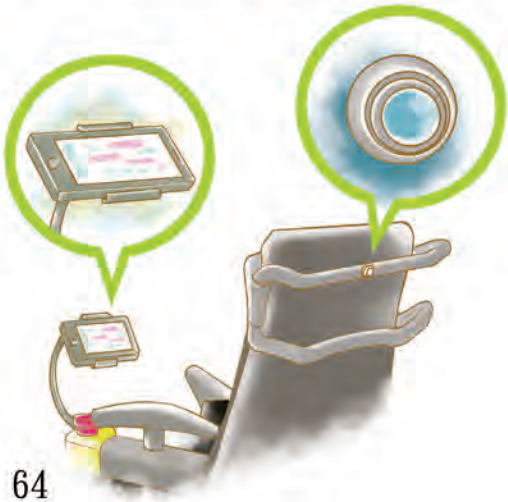
As reverse driving is required in daily activities, most experienced power wheelchair users will not find reversing difficult.

5b.

If need be, "Reverse Warning" can be requested to be installed by the distributor on the right controller. Reverse steering of the joystick will activate an alert beeping sound to warn passerby. As most users find such function annoying, it is not installed as a factory specification.

5c.

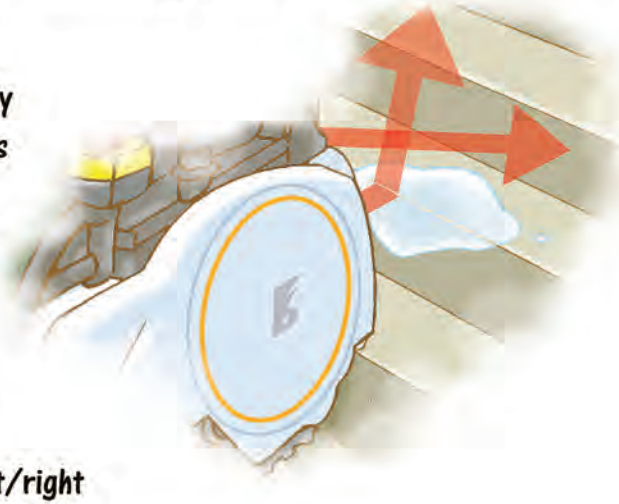
For users who have difficulties reversing, rear vision cameras can be purchased from the distributor for clear on screen real-time visions behind the wheelchair. They can also be easily installed by experience users as well.



Queries 6.
Reasons for manual left/right adjustment while climbing stairs

6a.

All sensors can be adversely affected by external factors such as highly reflective smooth materials used on the staircase or water marks, uneven bumps and chipped nosing etc. It is therefore dangerous to use sensors for auto left/right steering, especially on stairs.



6b.

Faulty sensors may issue detrimental false directional instructions to the control system that the user may lose control of the wheelchair and be tilted and even be toppled down the stairs.

6c.

Even if the sensing system can be developed to become perfectly synchronized with the control system, the R&D cost will be unpractically high. Coupled with insurance liability issues, such fully automatic driving system will definitely put immense burden on the product cost and therefore user's affordability.

6d.

We are diligently developing an "Intelligent Sensing/Scanning System" that can automatically scan the environment around the wheelchair so as to provide the user the most appropriate warnings and suggestions.
But the final decision of how to operate the wheelchair is still on the user. In case of system failure, the user can still have full control to minimize accidents.