



User Manual

Excel *X-power 5*

'Smart mobility solutions'

Read instructions before use

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INTRODUCTION TO X-POWER 5/10 POWER WHEELCHAIR

Welcome aboard your brand new Excel X-power 5/10 power wheelchair and thank you for choosing our product. This newest model is designed with all specific practical user wishes and desires in mind. It combine a solid construction and modern high-tech electronics with safety and performance.

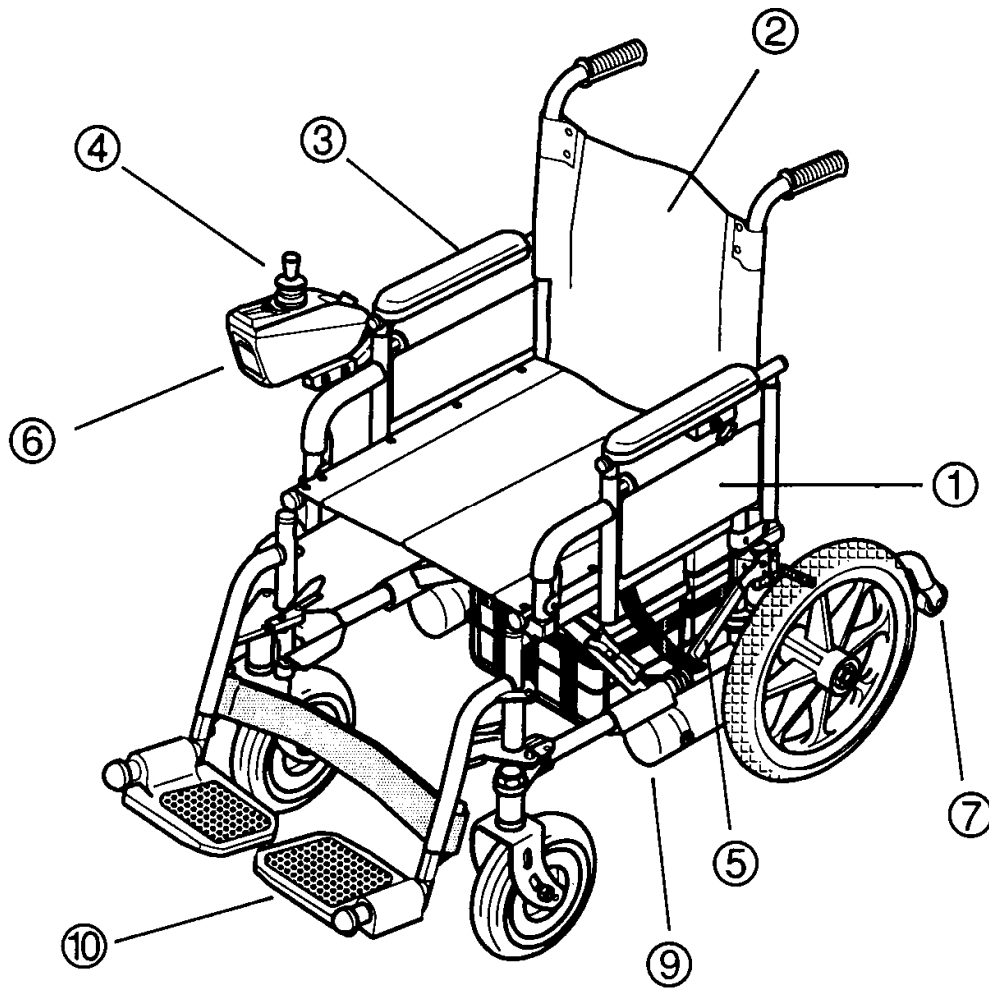
The X-power 10 has a programmable electronic control system reflecting the latest state of the art design. It means, among other things, that your powerchair can be programmed and adjusted within a given range of its performance characteristics, to suit your individual needs and wishes. The controller is set at the factory to give the powerchair nominal operating performance characteristics.

If after an initial trial period, when you have familiarized yourself with your powerchair, you would prefer certain features to be more adapted to your personal requirements (e.g. acceleration, deceleration, maximum speed, cornering speed, response to joystick, movement etc.), please contact your local dealer. He will be able to advise you, and he has the necessary equipment to carry out any adjustments required.

We recommend that your powerchair is serviced by your local or nearby dealer every six months. It is in your best interests, not only to ensure your personal safety, but also to ensure long life and reliability.

This manual contains a number of useful tips and information concerning safety, use and maintenance. Read this manual carefully to ensure that you get maximum enjoyment and benefit from your new independence and mobility.

Whenever you require special advice and attention, do not hesitate to contact your local dealer. He has all the equipment and know-how to provide expert service.

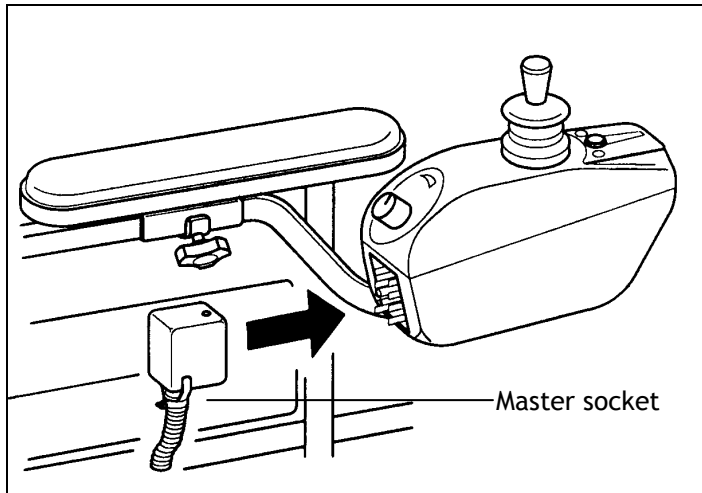


Picture 1

1. Armrests, detachable
2. Removable armrest
3. Height adjustable armrests
4. Joystick
5. Parking brake
6. Controller
7. Removable anti-tippers
8. Master socket
9. Drive motor
10. Adjustable foot rests

SAFETY AND COMFORT

Of course you want to get into your new powerchair and try it out. You don't want to be bored with long winded lectures, but there are a few basic details and rules you must know and understand, so that you are safe and comfortable, indoors and outdoors.

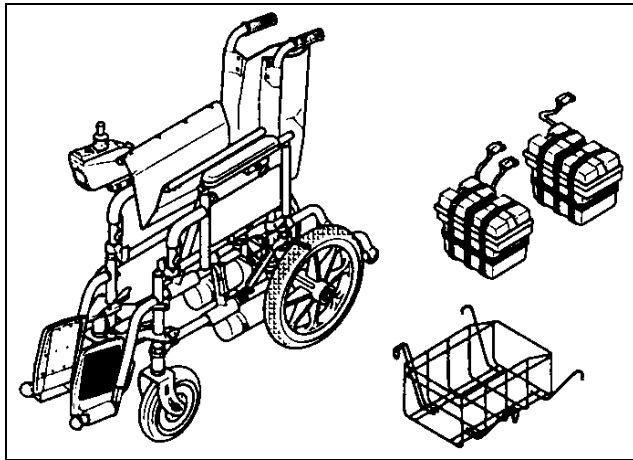


Picture 2

MASTER SOCKET

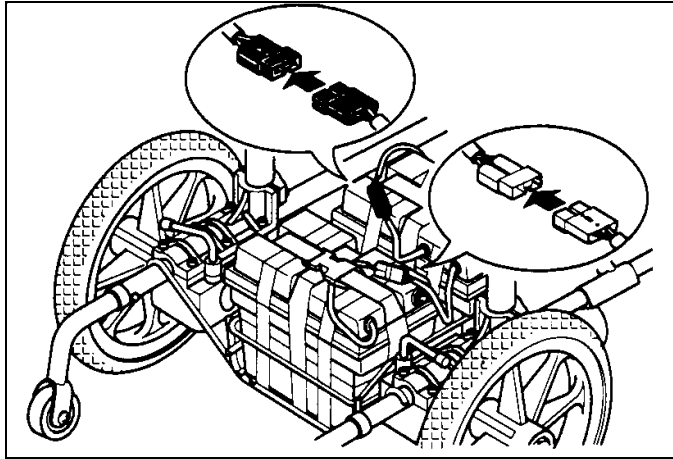
This master socket is the 'ignition key' of your powerchair. It connects to a plug on the rear face of the electronic controller on the side of the vehicle. The powerchair will not operate without it. As we go along we will explain when and how to use it.

ASSEMBLY

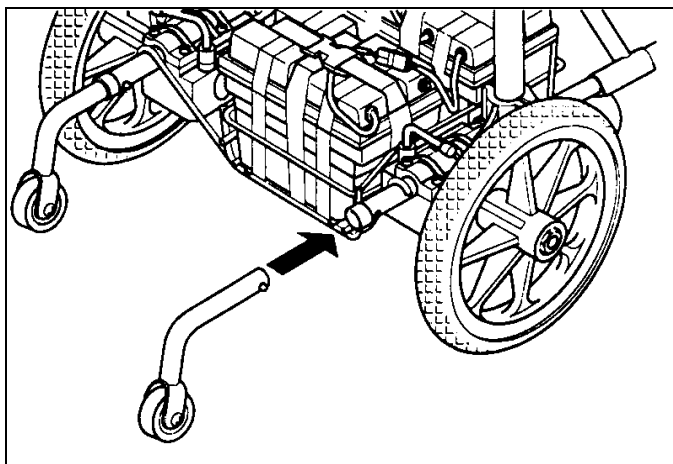


Picture 3

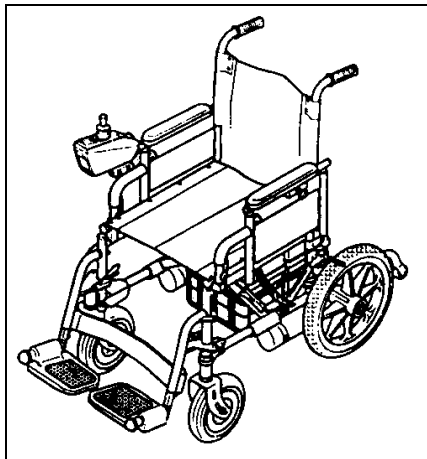
1. Ensure that you received the battery boxes, basket, footrest and anti-tipper.
2. Open the power chair by folding
3. Place the battery basket into position (picture 4)
4. Place the battery boxes into the basket
5. Plug in the power connectors. Black to black, grey to grey (picture 4)
6. Insert the anti-tipper (picture 5)
7. Plug in the master socket (picture 2)



Picture 4



Picture 5



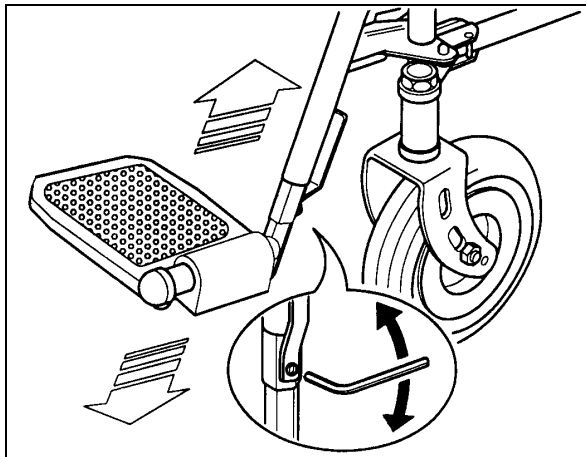
Picture 6

ADJUSTMENT OF FOOTREST HEIGHT

CAUTION: never stand onto the footrests when transferring in or out of the wheelchair.

Ensure that both parking brakes are applied. Fold the footrests upward and enter the powerchair from the front. When you are seated, fold the footrest plates back

down to the normal position. The height of the footrests can adjusted individually as follows:



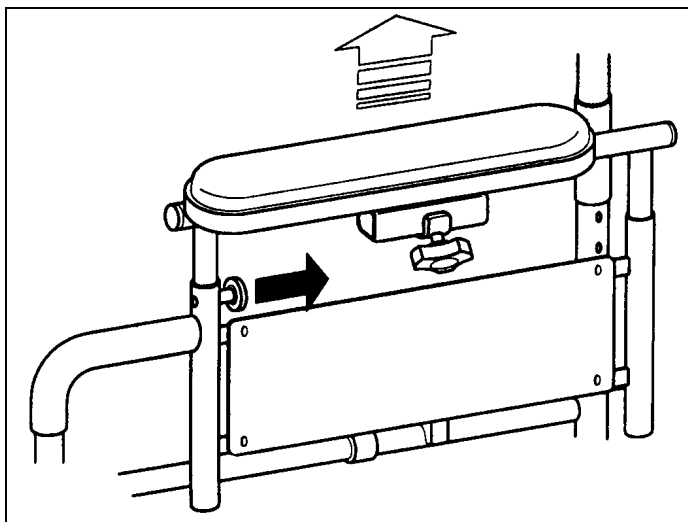
Picture 7

1. Using the allenkey provided, loosen the bolt (picture 7) on the footrest outer tube and slide the footrest inner tube up or down as required.
2. After adjustment, tighten the bolt.

Note:

To enter or leave the powerchair sideways, remove the side panel/armrest. Refer to: *Side panel / armrest sub assembly*.

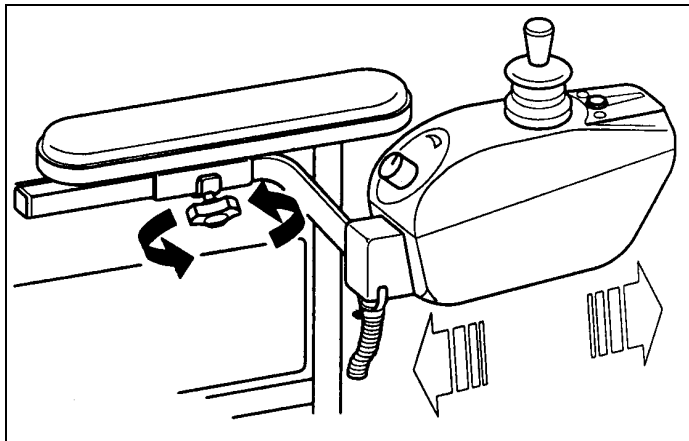
ADJUSTMENT OF ARMREST HEIGHT



Picture 8

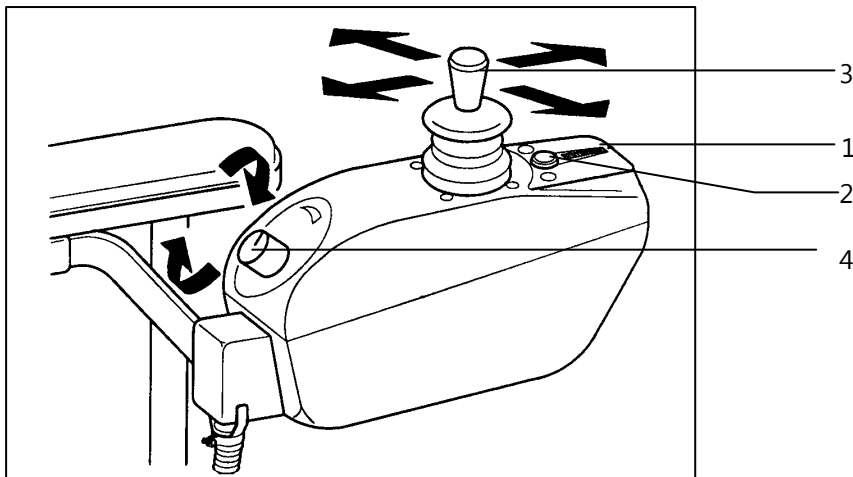
To adjust the armrest height, pull out the spring-loaded plunger (1) in the side panel and pull or push the armrest upward or downward until the plunger engages in the respective hole of the vertical guide rail to give the required armrest position.

ADJUSTMENT OF JOYSTICK



Picture 9

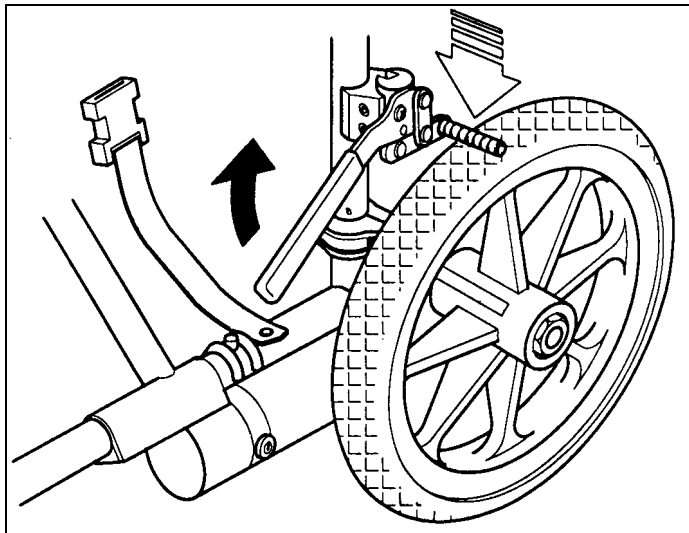
Once seated and satisfied that the footrests are correctly adjusted, check to see that the controller is in a convenient position so that you can reach it easily and safely. To adjust the controller forward or rearward, loosen star knob (picture 9) and retighten after adjustment.



Picture 10

CONTROLS AND INDICATORS

1. Battery capacity meter
2. Power ON/OFF push button
3. Joystick
4. Speed limit control



Picture 11

Parking brakes (one on each side)

DRIVING

Ensure that parking brakes are engaged on both sides. Take a comfortable seat.

1. Connect the master socket to the plug, located on the rear of the controller and push it firmly on.
2. Turn the speed limit control (picture 10) to the desired maximum speed. The further you turn the control to the left, the lower the maximum speed will be. When the knob is turned to the clockwise end position, the powerchair will reach maximum speed and power. For your first drive, and in general when you move indoors, we recommend using a reduced speed setting.
3. Press the green ON/OFF push-button (picture 10). The battery gauge lamp will light up. The battery gauge will indicate the scale of fullness of battery power. The Powertraveller is ready to move after the parking brakes are released.

DRIVING, STEERING AND BRAKING

Release the parking brakes (picture 11). Move the joystick gently forward. The more you push the joystick forward, the faster you will move, to the maximum speed you adjusted on the speed limit control.

To reverse, move the joystick to the rear, beyond the neutral position. The joystick is also your steering lever. Move the joystick to the left or right and you will turn accordingly.

The X-power 10 is very responsive and manoeuvrable. It can turn within its own length (360 degrees). You should avoid making abrupt turns and jerky steering while you are moving at a brisk speed.

If you want to slow down, move the joystick toward its center (neutral) position. When you want to stop or have to make an emergency brake application, simply release the joystick. It will automatically return to the center position. At this

moment the armature brakes of the electric motors will cut in and bring the powerchair smoothly to a standstill.

Once the powerchair is at a standstill, it is automatically locked in its parking position by the electromagnetic safety brake system. If you intend to remain parked for any length of time, or you are leaving the powerchair, apply both parking brakes. Remember to release both parking brakes before moving off again.

When climbing curbs, even with no curb riders fitted, you will find that your powerchair will smoothly overcome low to medium high curbs without the need for drastic speed variations, because the micro-computer of the electronic controller automatically compensates for any extra power required.

The X-power 10 has a climbing power that enables you to overcome gradients up to 25%.

Caution! On loose ground (sand, gravel, grass etc.) the maximum gradient should not exceed 20%. Always approach an incline directly, not at an angle, and follow it up or down directly, not in a zig-zag movement.

Caution! Never attempt to climb or descend an incline which has a slippery or icy surface.

While going uphill or downhill there is no need for drastic corrective joystick movements. The electronic controller ensures that the extra power required for climbing is automatically applied to the motors, so that the selected speed is maintained.

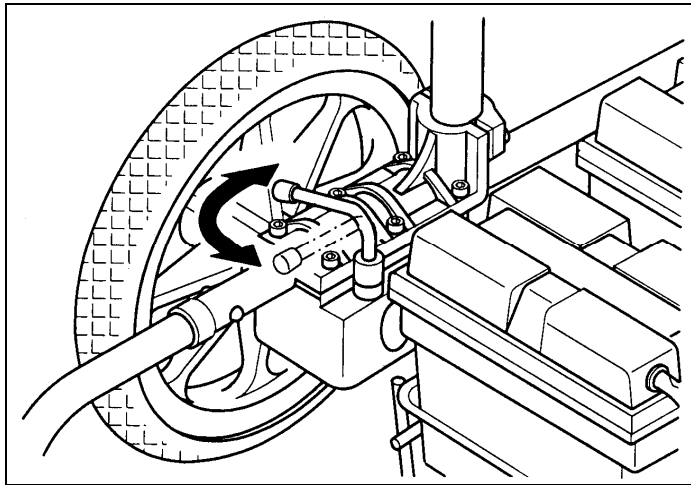
The same applies when you travel downhill. The armature brake and the electromagnetic safety brake give you full control over your powerchair at all times. This unique braking system enables you to descend at a constant slow speed.

You can stop at any time while you are climbing or descending. Simply release the joystick as on the flat. The electromagnetic safety brake will ensure that the powerchair is positively locked and secured in parking position until you are ready to continue your journey.

SHUTDOWN

Before you leave your power chair, press the ON/OFF push button. The warning lamp and voltmeter indicator will extinguish. Fold the footrest plates upward. Make this shutdown sequence a standard procedure and a habit. It is essential for your personal safety.

MANUAL PROPEL



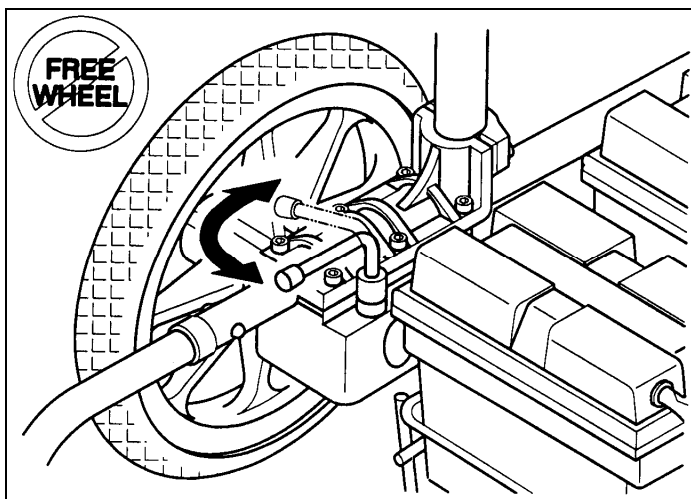
Picture 12

If the powerchair is to be pushed by hand, proceed as follows:
from behind the vehicle, turn the two uncoupling levers (picture 12) of the electric motors outward to the side, so they are pointing toward the rear wheels.

Warning:

1. Never move the uncoupling levers while the vehicle is operating with powered device.
2. When the electric motors are disengaged, the armature brakes and the electromagnetic safety brakes are out of action, ensure that the powerchair is secured with the hand-brakes when it is parked.

When normal powered operation is to be restored, return both uncoupling levers to normal position (picture 13).



Picture 13

Important:

The vehicle will not operate with powered drive unless both uncoupling levers are in normal position.

GETTING READY FOR PERMANENT USE

Now that you have had a good look at your brand new powerchair and taken it for a test drive in your home and around the house, it is absolutely necessary to carry out a battery charging procedure before you start normal operation and take your powerchair on its first long range outing. Read the next section carefully.

BATTERIES

The X-power 10 has two 12 Volt, 31Ah motive power batteries which are accommodated in two battery boxes under the seat at the rear of the powerchair. The batteries are sealed and maintenance free.

Warning:

Do not attempt to open the batteries.

Regular monitoring of the battery charge condition and timely recharging are essential to ensure reliability and performance of your powerchair as well as long battery service life.

The intervals at which the batteries have to be recharged (hours travelled or mileage covered) depend on various factors. It is not possible to specify a generally valid fixed date. Observe the following and you will soon establish a cycle in accordance with your individual requirements and driving routine.

At full battery charge all 10 segments of the battery gauges are lit continuously. With the progressive discharge of the batteries, successive segments will extinguish.

When the battery charge has dropped to 4 scales, yellow light, depending on age and condition of the batteries, you are then left with a limited driving range before you must recharge the batteries. To avoid this critical condition, we recommend charging the batteries overnight whenever you have used your powerchair. It will not only spare you unpleasant situations en route, but it will also prolong the battery service life.

Should you ignore this warning, while the battery gauges is on red and allow the batteries to become almost fully discharged, the electronic controller will automatically shut down the entire electrical system of the powerchair and bring it to a halt.

Note:

While climbing a steep gradient, you may find that the battery warning lamp begins to flash. This does not necessarily mean that the batteries are discharged to the critical level. Recheck the warning lamp after you reach level ground.

If during the course of the day, you have used your powerchair for more than one hour of actual travelling time, it is recommended that you charge the batteries overnight. The special-design charger will switch off automatically when the

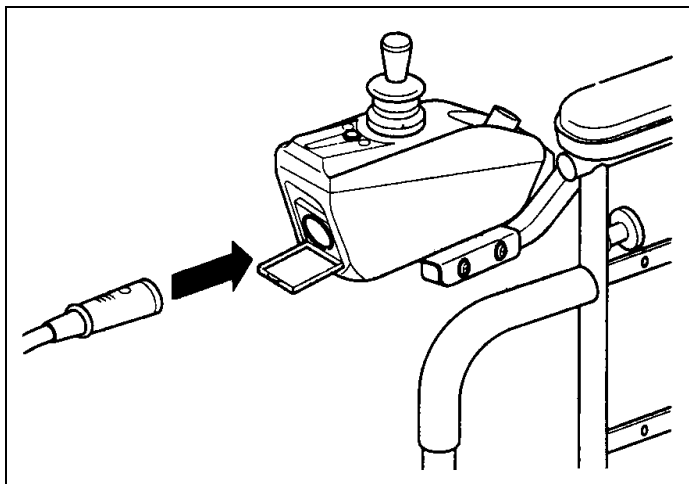
batteries are charged , so it is completely safe and does not use excess electricity regardless of the time the batteries are connected to the charger.

If your powerchair remains unused for any length of time (approximately four weeks or more), the batteries must be charged. Charge them at least once a month to maintain their charge.

BATTERY CHARGING

The batteries of your X-power 5/10 are different from ordinary car batteries. Only use the charger specifically designed for the motive power type batteries installed.

1. Always insert the charger output plug into the charging socket on the front face of the controller. Only then connect the charger input cable to an electrical outlet.
2. Follow the instructions on the front panel of the charger for its operation and the meaning of its indicators
3. The minimum time required for charging varies and depends on battery condition and discharge level. We recommend, however, that the batteries be charged overnight.



Picture 14

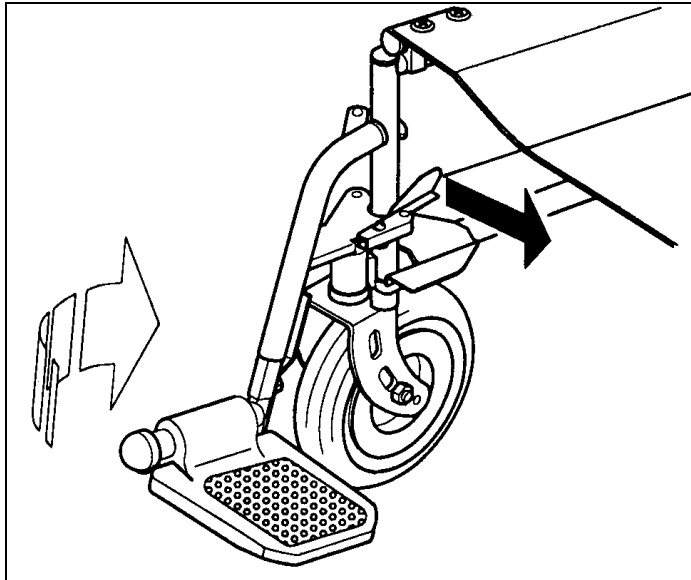
Note:

The specially designed charger ensures that excess power is not consumed regardless of how long it is switched on and connected to the batteries.

4. On completion of the charging cycle, first disconnect the charger input from the electrical outlet and only then disconnect the charger from the controller socket. Do not leave the charger connected to the controller when its input power is disconnected. This will cause the batteries to discharge.

For replacement of the batteries, contact your dealer.

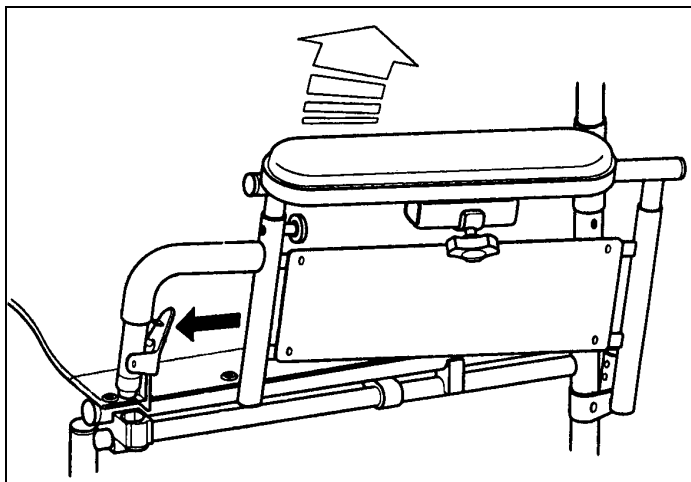
FOOTREST REMOVAL INSTRUCTIONS



Picture 15

1. Push the spring loaded steel lever (picture 15) inward
2. Swing the footrest assembly slightly outward and lift the complete footrest assembly clear of the main frame
3. Installation is in reversed order of removal procedure

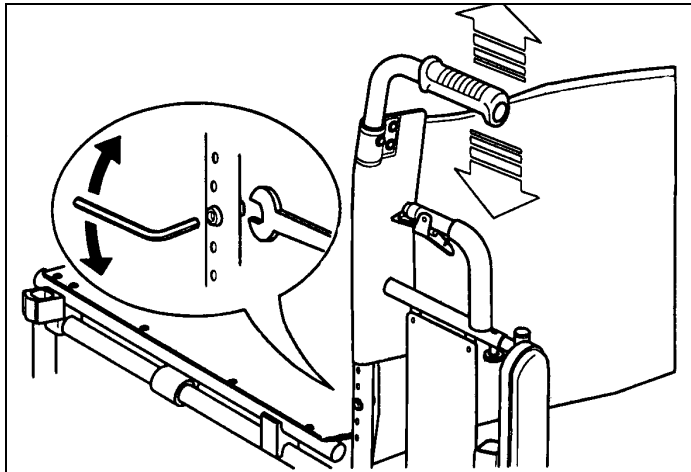
SIDEPLATE / ARMREST REMOVAL INSTRUCTIONS



Picture 16

1. Simply pull the side panel / armrest upward and push the spring loaded pin at the front of the side panel (picture 16) downward until it releases the assembly
2. Installation is in reversed order of removal procedure

BACKREST REMOVAL INSTRUCTIONS



Picture 17

1. Remove the two screws and nut from the bottom of the backrest (picture 17) and pull the backrest upward out of the frame
2. Installation is in reversed order of removal procedure

WHEELS REMOVAL AND ASSEMBLING INSTRUCTIONS

Rear wheel:

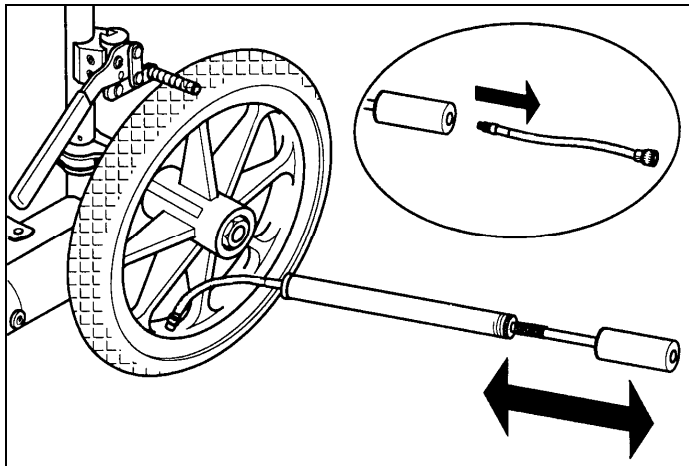
1. Ensure that the clutch lever of the motor drive is engaged (picture 13)
2. Support or jack up the power chair under the side frame
3. Unscrew the hexagon bolt and remove, together with the washer
4. Withdraw the rear wheel from the drive axle

Installation is in reversed order of removal procedure. Check that the threads of the hexagon bolt are undamaged and clean. If necessary, wipe with a clean dry cloth. Do not use any sharp tools to clean the threads. Do not forget to slide the washer over the bolt before it is screwed in. Tighten the bolt firmly.

Front wheel:

1. Support or jack up the powerchair under the side frame
2. Use the wrench provided, remove the axle bolt
3. Slide the front wheel out of the fork
4. Assembling is in reversed order

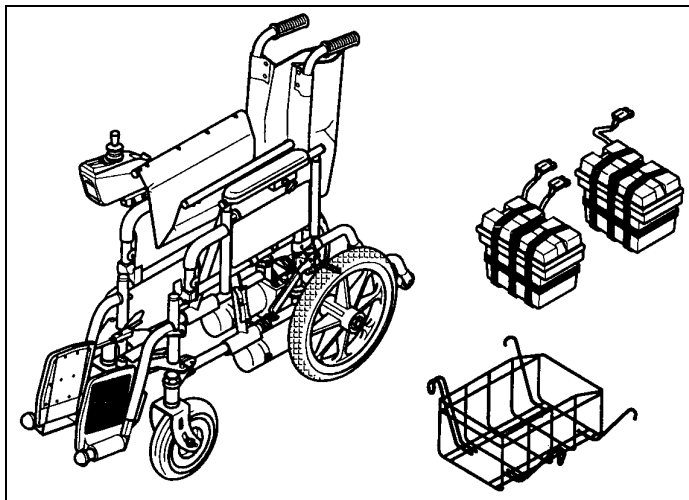
TIRE INFLATION



Picture 18

1. Take out the connection adaptor from the air pump (picture 18)
2. Insert the adaptor to the pump
3. Start to inflate the tire to your desired (30~60 psi) pressure

FOLDING THE POWERCHAIR



Picture 19

The powerchair can be folded to a neat and compact size within minutes.

1. Ensure that the master socket is disconnected
2. Fold the two footrest plates upward
3. Loosen the star knob for adjustment of the controller position and slide the controller bak as far as it will go. Tighten the star knob
4. Disconnect the battery cable connector from the controller
5. Remove battery boxes, then remove basket
6. Take a firm hold of the seat support tubes on each side of the seat and pull upward. The two sides will accore together to a compact stowing size
7. If the folded power powerchair is stowed of transported in a horizontal position, place it so that the side with controller is uppermost to prevent damage to the controller

GENERAL SPECIFICATION DATA

Batteries 2 x 12 Volt	31 Ah, maintenance free, sealed gel
Speed	0 - 6,5 km/h
Range	Approximately 25 km on level ground with 91 kg occupant
Climbing performance	Up to 25% (1 in 4) on firm dry ground. Up to 20% (1 in 5) on loose ground (gravel, loose chips, grass, sand etc.)
Brakes (on both rear wheels)	Regenerative motor brakes, elektromagnetic safety brakes and parking brakes.
Seat height	52 cm
Seat width	41 - 46 cm standard, 38 - 43 cm optional
Total width (normal)	55 - 57 - 60 - 63 cm
Total width (folded)	36 cm
Total length	106 cm
Total height	101 cm
Total weight	53 kg
Tire pressure	2-2.5 BAR (30-37 psi)

PU TIRES

No inflation necessary, 12½" x 2½" rear wheels.

PARKING BRAKES

Wheel locks should be checked regularly to ensure grip.

The purpose of the wheel locks is to hold the powerchair in place when it is stopped, not to slow it down when it is moving.

Always engage both locks before entering or exiting the powerchair.

Never stand on the footrests while entering or exiting the powerchair. Standing on the footrests could cause the powerchair to tip over.

The owner should enter or exit the powerchair only after the power is turned off.

TURNING RADIUS

It is very important, especially when travelling on inclines, to reduce your speed with the control lever before making a sharp turn. Never try to turn the powerchair suddenly while travelling at full speed.

Your powerchair should not be operated on streets except when using the crosswalks. Operate your powerchair with extreme caution.

ANTI-TIPPERS

Anti-tippers are standard with the X-power 5/10. Replacements for these parts are available through your authorized dealer. Anti-tipper prevent the powerchair from tipping backwards.

PARTS

Special high strength fasteners are used on the powerchair. Replacements for these parts should be ordered through an authorized dealer.

Warnings:

Never stand on the footrests as it may cause the powerchair to tip over.

Never lift the powerchair by the footrests. The footrests are removable and lifting the powerchair by the footrests could cause damage to the powerchair or possible injury to the owner.

Never connect the battery charger to the main supply until after you have connected it to the powerchair.

It is important to develop safe techniques before attempting to negotiate obstacles such as curbs, ramps and inlines. Never try to go up a steep incline without assistance. Avoid uneven and hilly terrain as the powerchair may tip over. Avoid grades steeper than 10% (1 foot rise in a ten foot distance) without assistance.

Control your speed carefully when traveling downhill. Slow speeds should be used when travelling on downgrades.

Do not use the ON/OFF switch to turn off the power to the powerchair while it is moving. This will cause the powerchair to come to an abrupt stop and may cause injury to the user or damage to the chair.

Many powerchair controllers have been affected by high power radio transmitters, such as CB radios and cellular telephones. If any of these devices are being used near your powerchair, you should use caution in operation. If loss of control occurs, shut off your powerchair immediately and leave it off until the interfering devices are no longer operating.

The user should be trained by a healthcare professional to assure safe operation of the powerchair during the performance of daily activities.

WEIGHT LIMIT OF THE POWERCHAIR

Maximum weight limit should not exceed 100 kg.

CONTROLLER

The electronic controller is normally installed on the right side of the powerchair, below the armrest / side panel. On the rear face of the controller are two connectors; the lower one is for the master socket from the two motors and the batteries, the upper one is for the cable loom from the joystick box. For trouble free operation, it is important to ensure that all these connectors are firmly seated at all times. Refer to the troubleshooting guide.

On the forward face of the controller are two vacant connectors. The upper connector is for the battery charger. The lower connector is for connecting specialized equipment for programming at your dealers or at the factory. Do not tamper with this connector and protect it from dirt and damage. Apart from assuring that the connectors are properly seated, do not interfere with the controller in any way.

BATTERY BOXES

On the top right side of the rear battery box, you will see the reset button of a circuit breaker. This button must always be pressed in, otherwise the powerchair will not operate. Refer to the troubleshooting guide. Also on the battery boxes are cables with connectors for connecting the batteries together and to connect batteries to the controller box. To remove the battery boxes (when you want to fold the powerchair), you must first disconnect these connectors from the battery boxes.

MAINTENANCE

There are no specific maintenance requirements for the joystick and the controller, but the service life of the equipment will be extended if you observe the following:

the joystick box and the controller are splash proof but should be protected from excessive spillage of liquid. Do not expose to direct heat (from an electric heater for example). Check that the rubber boot on the joystick and switch cover are in good condition and show no holes or cracks.

PROBLEMS AND SOLUTIONS

Nature of fault	Problem	Action
1. Powerchair does not drive, and lamp does not work	a. Main plug not inserted b. ON / OFF push button in OFF position c. Batteries discharged to low level d. Loose plug connection at controller or battery	a. Connect plug properly b. Push the ON / OFF button c. Recharge the batteries d. Press plugs firmly into their sockets
2. Powerchair does not drive, but lamp does work	a. Drive motor is in freewheel b. Fault in controller electronics	a. Reset uncoupling lever (s) b. Consult dealer
3. Lamp flashing quickly (2 times per second)	a. Motor plug is loose b. Battery status is very low c. Fault in controller	a. Press plugs firmly b. Recharge the batteries c. Consult your dealer
Important In all cases of an electrical fault, check that the circuit breaker (located on the rear battery box) is pressed in. If it has been tripped it must be pressed. If the reset button comes out again, even after the suspected cause of the fault has been corrected, consult your dealer.		

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