Stay Active and

Enjoy the Ride

21st Century SCIENTIFIC, Inc.

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(800) 448-3680
**BOUNDER Plus H-Frame**

*Fast!* Configured for 9.1, 10.0, 10.8 or 11.6 mph top speed for most users. Slower speeds easily programmed.

*Extended Range!* Large, sliding dual group 27 battery box provides additional range (over 40 miles per charge under ideal conditions; over 25 miles per charge in typical use). Group 27 batteries which are the largest in use on power wheelchairs and are readily available. Some configurations require either group 24 or 22NF batteries.

**STANDARD FEATURES**

- **500 lb Weight Capacity**
- Durable H-style frame uses 2.5” x 1.5” x 0.125” wall steel - TIG welded for superior strength
- Standard Non-Suspension Base
- 0.120” wall steel seat rails and back posts - for extra strong seat and back
- Super Torque 3 motors and brakes
- Quiet non-slip Panther synchronous drive belt system - won’t slip in rain or snow; similar to those used on many motorcycles
- Sliding dual group 27 battery box - for extended range and ease of maintenance
- Xtra Duty 12 position adjustable suspension forks with oversized 5/8” ID (inside diameter) wheel bearings and 1” diameter fork stems and ID caster barrel bearings
- Sheet metal pan seat
- Super Duty sling back upholstery - double liner, cap, and web strap under every screw; attached with machine screws
- Detachable desk length arms
- Anti-tipping wheelie wheels
- UE1 Series electronics - 6 drive programs, battery condition meter, diagnostics, and more

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**BOUNDER Plus H-Frame**

- **9" x 3.50" steel caster wheels** - excellent on most surfaces including grass and dirt roads
- **12.75" x 4.00" steel drive wheels** - available with smooth or knobby treads
- **Safety taillights built in** - turn on and off with chair power (turn on and off with light control or AUX switch if headlight ordered)
- **Very stable rear wheel drive** - does not fishtail at high speeds, unlike front and mid-wheel drives
- **Durable black powder coated frame**
- **Fully automatic 8A dual mode battery charger** - charges both gel-cell and lead acid batteries; Optional 12A charger available
- **Detailed Owner's Manual**
- **Easy to service and maintain**

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*BOUNDER Plus with 13" Power Seat Elevator, custom brown frame, camo upholstery & custom center mount footboard*
Three Construction Variations

**BOUNDER Plus H-Frame with Extra Narrow Base Width**

- 24” overall base width (wider bases available)
- Group 24 batteries standard

**Narrow & Extra Narrow Base Options**

**Narrow Base options** provide improved maneuverability in confined spaces such as some small homes, narrow hallways and vehicles.

**Narrow Base**
- 24” overall base width
- Group 24 batteries standard

**Extra narrow Base**
- 21.5” overall base width
- Group 22NF batteries standard
- Top speed limited to 9.1mph
- Excellent for small adults and children

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**BOUNDER Plus H-Frame with Independent Drive Wheel Suspension (IDWS)**

- 25.5” overall base width (wider bases available)
- Group 24 Batteries standard

The Independent Drive Wheel Suspension offers an improved ride but has slightly reduced range due to the group 24 batteries. For increased range, a 28.5” wide base can be ordered to allow for installation of group 27 batteries.

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**BOUNDER Plus H-Frame with High Volume Low Pressure Off-Road Package (HVLP OR)**

- Improved ride plus great off-road capability
- Group 27 batteries standard
- ST4M Super Torque Motors
- 13.50”x5.40” black high volume low pressure off-road tires
- 9”x3.50” black pneumatic front tires
- 7.6 mph available top speed
- 28.5” overall base width
- Very rugged No. 35 chain drive
- 4.5” ground clearance available on some configurations

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- 7.6 mph available top speed
- 28.5” overall base width
- Very rugged No. 35 chain drive
- 4.5” ground clearance available on some configurations
Bariatric: **BIG BOUNDER H-Frame**

500 lb weight capacity standard, 700 lb & 1000 lb weight capacities available

**BIG BOUNDER H-Frame power chairs** are configured specifically for bariatric users. Similar to **BOUNDER Plus H-Frame** chairs, they also include reinforced frames. They are custom built to each user's unique dimensions. The electronics and drive train are optimized at the factory for the user. Available in seat widths from 21” to 48”. Very narrow overall widths (as little as 3” wider than the seat width) result in improved maneuverability through doors and tight spaces.

**Power 700 Option**
for users up to 700 lb

All **BIG BOUNDER H-Frame** features and ...

- All frame members either .120” wall or solid bar stock
- Reinforced footrests
- Solid back posts
- Cross strut welded between push handle tips or back posts
- Reinforced seat mounts
- Rated for a 700 lb user

**Power 1000 Option**
for users up to 1000 lb

All **BIG BOUNDER H-Frame** features, 
*Power 700 option features and …

- Super Torque 4M Motors (ST4M)
- Solid bar stock arm tips
- Solid bar stock in many frame members
- Rated for a 1000 lb user
BOUNDER PLUS CONVENTIONAL Frame

Classic Styling! The conventional style frame utilizes 20” x 2.125” drive wheels and sling seat and back upholstery. Ideal for long-time power chair users who like the look and feel of a “traditional” power wheelchair.

BOUNDER Plus Conventional Frame

STANDARD FEATURES:

» 16”, 17”, 18”, 19” or 20” seat widths (14” & 15” widths available at additional charge)
» .065” wall tandem cross struts
» .120” wall seat rails
» Non-folding box frame
» All steel TIG welded frame (no brazing, no aluminum)
» Sliding dual group 27 battery box with safety reflectors
» UE1 Series electronics - 6 drive programs, battery condition meter, diagnostics, and more
» Smart electric brake release - for easy pushing by an attendant
» Xtra Duty caster barrels
» Xtra Duty 12 position adjustable suspension forks
» 8” x 2” front wheels

Reinforced rear wheel mounts
» Super Torque 3 motors and brakes
» Mag style 20” x 2.125” aluminum drive wheels
» Black powder coated frame
» Super Duty sling back upholstery - double liner, cap, and web strap under every screw; attached with machine screws
» Detachable desk length arms
» Anti-tipping wheelie wheels
» Fully automatic 8A dual mode battery charger - charges both gel-cell and lead acid batteries; Optional 12A charger available
» Detailed Owner's Manual
» Easy to service and maintain
Power Recline System (PRS)
✦ Our Power Recline System is extremely durable
✦ Up to 80 degrees of recline (some restrictions apply)
✦ Greater strength and less complexity than competitive systems
✦ Optional Pushrod Linked Elevating Legrest available
✦ Options available for users up to 700 lb

Dual Independent Power Elevating Legrests (DIPLR)
✦ Elevate either legrest separately from the other and independent of any other power seating

Power Seat Elevator 2 (PSE2)
Elevating seat increases user independence. The Power Seat Elevator 2 raises the seat as much as 13”, typically bringing the user's face to normal standing height. Even more impressive, most users under 250 lbs can drive the chair in the raised position.*
✦ Up to 13” of elevation (some restrictions apply)
✦ Can be combined with tilt, recline, and/or power elevating legrests
✦ Especially useful in the workplace
* Limited speed, operation on level ground, and good judgment are required!

Power Tilt System (PTS)
✦ Power Tilt System is extremely durable
✦ Up to 50 degrees of tilt (some restrictions apply)
✦ Greater strength and less complexity than competitive systems
✦ Options available for users up to 700 lbs

Sliding Back Power Recline (SBPRS)
Back slides downward as it reclines, greatly reducing shear. Excellent for those with skin deterioration or breakdown. Not pictured.
✦ Up to 70 degrees of recline (some restrictions apply)
✦ Adjustable linkage allows nearly 5” of sliding motion
A Reverse Power Tilt System provides user control of the angle between the seat and the ground. The back of the seat tilts up from the normal driving position, and the seat and back move together. This facilitates transfers into the chair from a standing position and vice versa. Toggle switch control is standard. Usually the tilt can be adjusted over about a 30 degree range. The seat-to-back angle is fixed, usually at 94.5 degrees, though other seat-to-back angles can be custom ordered. The arms move with the seat. Front rigging is attached to the base of the chair and does not move with the seat.
Power Seating Options

Combining: Power tilt, recline, seat elevator, power elevating legrests and power headrest (some restrictions apply)

Standard Power Seating Systems (PSS) are rated for up to 250 lb users

PSS HD available for users between 250 and 400 lb

PSS XHD available for users over 400 lb

PS LOCKOUT Power Seating Lockout Switch - complete (stop), slow (low), medium and fast speed drive lockouts. Up to 10 can be installed on a chair

COMBI PS LOCKOUT - Each can prevent or limit the movement of two seating systems, or one seating system and the chair speed.

PS OVERRIDE switch controls a seating actuator that is also controlled through a PSM Module. Can prevent a user from being stranded in a fully reclined or tilted position

Custom sizes available at additional cost

Power Recline System arm options: Sliding arms and articulating arms in addition to any of our standard arms

Many components can be customized: Headrests, legrests, arms, seating, upholstery, etc.

Toggle switch or through-the-joystick control

CAPTAIN’S SEATING

Upgrade your seating with either our own Captain’s Seat (pictures below) or a Recaro® ES power seat (pictures next page).

BOUNDER Plus H-Frame with 13” Power Seat Elevator, Power Tilt System and Independent Drive Wheel Suspension

BOUNDER Plus H-Frame with many custom features: Captain’s Back in black fabric upholstery, sheet metal seat pan with 2” thick seat cushion, adjustable center mount headrest, custom powder coat color: “Prismatic Bright Metallic Orange”, 4 point tiedown, drive wheel fenders, 13” Power Seat Elevator, custom gas struts, 80 degree Power Recline and Dual Independent Power Elevating Legrests

BOUNDER Plus H-Frame with HVLP OR (Off-Road Package), Custom Captain’s Seat, 13” Power Seat Elevator, Power Tilt System and Custom Center Mount Footboard
BOUNDER Plus H-Frame with IDWS (Independent Drive Wheel Suspension), Leather Recaro® ES Seat, High Profile Elevating Legrests and custom black tires

BOUNDER Plus H-Frame with IDWS (Independent Drive Wheel Suspension), Recaro® ES Seat, Custom Center Mount Footboard and Custom Self Supporting Arms
**BOUNDER Plus POWER & MANUAL GURNEYS**

Prone Carts: Nearly any size you need and any user weight up to 1000 lbs

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**MANUAL GURNEYS FEATURE:**
- Front wheel drive for easy self-propelling by user
- 24”x1.75” front drive wheels with handrims, pneumatic tires and tubes
- Super Duty wheel locks

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**Manual and Power Gurneys Options**

- **Power or manual chest and head tilt system** - tilts the front portion of a specially constructed full-length mattress pan up at the front. This tilts the user's chest and head up. Mattress pan is fabricated about 8” narrower under the user's face and chest to allow user to rest arms on a smaller fixed cushion below. Order cushions separately
- **Gurney power elevate system** - elevates the entire mattress pan approximately 20”
- **Gurney power tilt system** - tilts front of entire mattress pan up and down; changes weight distribution and brings user’s face and arms up as high as 5 to 6 feet above ground. Helps to reach high objects or adjust to different work surface heights. Not pictured
- **8”x2” and 9”x3.50” metal caster wheels**
- **Several frame and upholstery color options**
- **Solid and foam filled tires and inserts**
- **For manual gurneys only: 24”x2.125” or 26”x2.125” drive wheels with handrims** (or “Mag style” 16”x2.125” or 20”x2.125” aluminum push wheels without handrims, for users who don't self propel)
- **Side and/or end rails** - custom sizes available; provides user stability on the gurney without requiring straps. Fold down side rails also available
- **Gurney push handles** - for manually pushing by attendant
- **Naugahyde foam cushions** - for standard gurneys as well as those with chest and head tilt systems
- **Roller bumper wheels** - about 3” diameter skate wheels located under each corner of mattress pan
- **Drawer at front of gurney** - slides forward to open
- **Storage tray** - approximately under chest of user
- **Positioning straps** - available
- **Drink holder**
- **Plus many more options too numerous to list!**

*Refer to current Order/Quote Form for more information*
SUPER TORQUE MOTORS

SUPER TORQUE 3 MOTORS
- Fast! - up to 11.6 MPH top speed, depending upon drive train selected
- Reliable field-proven, 6 pole, permanent magnet (PM) motors
- Super Torque Motors have been used in production since 1979
- GEARLESS! No plastic gears to break; no gear noise; no gear lubricant leaks; THERE ARE NO GEAR BOXES!
- TENV (totally enclosed non-ventilated) design keeps dust, dirt and splashes outside the motor
- Typical brush life exceeds ten years!
- Rebuildable motors are mounted horizontally under the seat
- Very quiet operation • Unbeatable 5 year warranty

SUPER TORQUE 4M MOTORS
- Recommended for all users over 500 lbs.
- Best hill climbing performance - ideal for off-road and Bariatric chairs
- 7.6 MPH top speed, depending upon drive train selected
- More powerful - produces significantly more torque than ST3 with 40% speed reduction
- Improved motor and drive train efficiencies increase the driving range per battery charge while running cooler
UE1 SERIES ELECTRONICS

STANDARD UE1 Series Features
- Ultra smooth speed and direction control
- Rugged construction
- Very reliable
- Easy to service
- Smart Battery Condition Meter (BCM)
- Low battery indicator
- Error Code Diagnostic Display System
- Audio alarms
- Built-in Charger Current Ammeter (CCA)
- Battery charger interlock
- 6 drive programs (A-F) with on-the-fly program select; 1 attendant program
- 16 Library Programs with TJP (Through-the-Joystick Program selection)
- Factory default programs - preset programs preferred by most users
- Soft Horns when a gentle beep is best
- Hazard Flasher
- Panic Alarm
- Circuit Breaker Battery Cable with heavy duty color coded and keyed connectors
- Industry standard 3-pin female XLR charging socket
- Smart Brake Release Switch (BRS) - for easy pushing by an attendant

Driver and Attendant Controls Features / Options
- Long life 2-axis HFX hall effect joystick for precision proportional control
- 16 LED’s: Brakes Released, Error, ECU, 6 programs A to F and 7 Seating Actuators plus alpha-numeric display
- DHC Driver Hand Control, left and right hand versions; includes AS1
- ACDC Attendant Control/Dual Control; includes ACDC AS. Not pictured
- Option SP Speed Pot (not pictured). SP mounted in place of of AUX Switch on DHC or ACDC
- DCC Driver Chin Control (not pictured)
- Key lock available
- Many custom controls available

Other UE1 Series Options
- PRG1 Plug-In Programmer - Used to customize drive module programs as needed. Program top speed (forward, reverse, turn), acceleration, braking, hill and obstacle compensation (torque), and other drive parameters over a wide range. Also program Accessories, ECU, Seat Actuators, AS, ESSS, PSLS, Veer and more.
- PSA Power Seating and Accessory Control Switches - For simple and economical on/off control of power seating and accessories. Many variations
- PSM Power Seating Module - Required for proportional through-the-joystick control of power seating systems
- AS Auxiliary Switches (aka AUX Switches) are programmable and each can control up to two accessories (lights, horn, fan, leg bag emptier), soft horn, hazard flasher, panic alarm, etc. Optional AS2 and AS3 can be placed where needed
- PSLS Power Seating Lockout Switch - Limits chair speed (or stops it) if seat is out of normal driving position. Up to 10 can be installed
- RPS Remote Power Switch
- ESSS Emergency Stop & Select Switch

DM (Drive Module) Features
- Advanced microcontroller (uC) design
- MOSFET bridge output circuits deliver over 120A per motor
- Smart Brake Logic - reduces brake current, keeps brakes cool and increases range
- 6 Switch Inputs
- 2 Bus connectors
- 2 Accessory Outputs

Connects directly to the wheelchair batteries. Perfect for powering 12V accessories such as cell phones, iPods and laptops. Draws power equally from both wheelchair batteries, not just one, thereby lengthening wheelchair battery life. 5A at 12VDC maximum output. Includes fused battery cable, on-off power switch and 12V automotive style output connector.

24V to 12V Power Converter

24V to 12V Power Converter
Powered accessories are normally controlled by AS Auxiliary Switches (aka AUX Switches). AS1 is built into the driver hand control; separate AS2 and AS3 are mounted wherever convenient. Separate PSA switches can also be provided.

**Electric Leg Bag Emptier 2 (LB2)**
- **Increased Independence** - Allows user to drain leg bag without assistance at the flip of a switch!
- **Fast!** - Drains a medium size bag in about 15 seconds
- **Manual Release** - Lever allows attendant to manually drain the bag
- **No Valve Cleaning Required** - All fluids contact only the inside of the latex drain tube. The valve simply clamps the drain tube. This eliminates the flushing, cleaning and frequent disassembly associated with competitive products
- **No Separate Batteries or Charger Needed** - LB2 is powered by the wheelchair batteries. Separate batteries, charger and worry about inadequate battery power for operation are eliminated
- **Valve mounts on an ankle strap or footplate** - No tension placed on the leg bag drain tube from a dangling valve. No worry about unpleasant accidents
- **Easy Daily Hookup and Removal** - Wrap strap around ankle, connect cable, and push drain tube through valve pinchers. Reverse to remove
- **Conveniently Located Control Switch** - Attach around any 7/8" diameter tube. Choose from standard toggle switch or optional push button
- **Rugged** - LB2 can operate for years with little maintenance or repair
- **ECU Port Option** - Available for 21st electronics as well as other manufacturer’s electronics

**Mirror**
The detachable rear view mirror has a wide angle convex head that allows users to see to the rear without turning their head. It increases safety in traffic and is also handy when backing into or out of elevators. The mirror comes with mounting bracket, telescoping support mast and a quick detach bracket.

**Personal Fan**
The Personal Fan can be used with most power wheelchairs. This quiet fan provides a gentle cooling 45 CFM flow. Mounts on lower front arm of wheelchair or wherever convenient for the user. The kit includes a fused power cable and a toggle switch that clamps on round tubing. Current draw: 0.11A @ 24V. 38.1 dBA.

**Horn**
This 24V horn is LOUD! The horn control switch can be mounted on the wheelchair tubing at any convenient location. One size fits all width chairs included. Momentary toggle switch will be supplied unless you specifically request a push-button switch.

**Lighting Packages**
Lighting Packages feature one or two 24V, 50W, 5000 CP sealed beam headlamps mounted in rubber housings. Each package has a switch box that can be mounted on round tubing and cables that support one or two headlamps and a taillight. If ordered as a kit for use on other brand chairs, the taillight assembly, pictured above, includes a sturdy metal case with amber side reflectors and two red tail lamps. Compatible with most 24V power wheelchairs. Current draw per headlamp: 1.75A @ 24V. Taillight assembly: 0.30A @ 24V. Note: Lighting Packages for BOUNDER H-Frames, which feature built-in taillights, do not include separate taillight assembly.
Options to fit your needs and life style:

NO ONE OFFERS AS MANY CONFIGURATIONS AS WE DO!

OPTIONS AVAILABLE ON MOST BOUNDERS

- Exciting powder coated frame colors
- Several seat and back options
- Many types of front rigging and arms
- Several styles of armrest, headrest and calf pads
- Add swing-away hand control extension slide
- Flip up arms available
- Angle adjustable footplates
- Footplate roller bumpers
- Headrests: Center post, sling and power
- Power seating: Tilt, recline, elevate, legrests
- Several front caster and drive wheel sizes
- Respirator shelves and O₂ bottle holders
- Many electronic options
- Hand, chin, bib, sip-n-puff, switch and foot controls
- Attendant control/dual control (ACDC)
- Power chin control boom
- Add accessories: Lights, horn, rear view mirror, fan, electric leg bag emptier, 12V accessory power
HVLP OR IDWS: **BOUNDER** Plus H-Frame with High Volume, Low Pressure Off-Road Package, Independent Drive Wheel Suspension, Short Base, custom color Copper Vein, custom Chrome Powder Coated wheels, Adjustable Angle Back, Captains Back covered in Sofleece III, Sheet Metal Pan, Center Mount Footboard, Flip Up Arms with Desk Length Trough Armrest Pads covered in Sofleece III

**BOUNDER** Plus H-Frame with many custom features: Captain’s back in black fabric upholstery, sheet metal seat pan with 2” thick seat cushion, Adjustable Center Mount Headrest, Prismatic Bright Metallic Orange powder coat, 4 point tiedown, drive wheel fenders, 13” Power Seat Elevator, custom gas struts, 80 degree Power Recline and Dual Independent Power Elevating Legrests

**BOUNDER** Plus H-Frame with 50 degree Power Tilt System with Back Mounted Tilt Actuator, Power Seat Elevator, Suspension and Custom Footboard with Roller Bumpers

**BOUNDER** Plus with Commode Seat

**BOUNDER** Plus H-Frame with Power Recline and custom O2 Vent Trailer

**BOUNDER** Plus with Power Recline and Dual Independent Power Elevating Legrests

Custom Manual Gurney with back/head tilt and lateral tilt

Custom Cable-Style Self Supporting Articulating Arms

Custom Foot Control

Custom Power Elevating Articulating Center Mount Footboard

OPTIONS CUSTOM & SPECIAL ORDERS
WARRANTIES

- **ONE YEAR BIG BOUNDER** chair warranty
- **TWO YEAR BOUNDER Plus** chair or gurney warranty
- Up to **FIVE YEAR** motor/brake drive train warranty **
- Up to **TEN YEAR** frame warranty *

*Limited warranties - some restrictions apply. Warranty varies between models and frame styles. See current Order/Quote Forms for specific warranty information.

**Includes motors, brakes, drive wheels, drive wheel pulleys/sprockets (drive belts, tires, motor pulleys/sprockets, inner tubes and bearings not included).

**FRAME COLORS**

- Black
- Dark Green
- Red
- Yellow
- Blue
- White
- Light Gray
- Teal
- Lavender
- Pink

**UPHOLSTERY COLORS**

- Naugahyde
  - Black
  - Burgundy
  - Dove Gray

- Fabric
  - Red
  - Tan
  - Camo
  - Black

Current Order/Quote Forms, Price Lists, additional photos, videos and more information are available on the web.

Visit us at: [www.wheelchairs.com](http://www.wheelchairs.com)

21st Century SCIENTIFIC, Inc. reserves the right to make changes at any time, without notice March 2012 Revised June 2019