

Establish Bed Height, Bed Frame and Scoping Recommendations for the Florida Specific Accessibility/Transient Housing Section of Code

Statement of the Problem:

The ADA regulations currently contain no technical specifications for accessible hotel guest room beds.

Thicker box springs and mattresses are now the norm in the hotel industry. Primarily because of this trend, bed heights have increased over the past decade and now typically range from 25"-30", and pose a significant obstacle to people with mobility disabilities, including people with paralysis, lower extremity weakness, cerebral palsy, short stature, older people and other disabilities. As beds have gotten higher, rooms that were once considered accessible have become inaccessible. Many people do not have the strength in their arms to lift themselves up into bed. Shorter stature people have great difficulty. Joint and flexibility restrictions cause problems in lifting ones legs onto a high bed. Older people have problems getting their legs up and in some cases getting safely out again. The problem with bed heights is rampant in the hotel industry regardless of whether it is at the upper end or lower end of the price spectrum. It is almost impossible to find a low bed these days. Management is usually willing to take beds off their frame but then the sheets and comforter are partially lying on the floor and the height needs are still not met for many. If you end up with a bed at 17" height it is very difficult to get out of if you have a soft mattress and transfer with or without a transfer board (transfer board has too steep an incline to use, e.g. more disabled) and a higher height bed needed by caretakers may not be possible to achieve if bed heights are set too low. Many hotels continue to use platform beds or other frames that are fixed in place and do not allow for needed space or use of a lift. Bed frames typically have little or no adjustability. In some cases, people must travel with someone who can assist them into bed, or must even cancel their trip altogether. Independence in travel has been compromised and travel has become needlessly stressful in many cases.

The Accessibility Code has a number of Florida specific standards but has not yet addressed bed heights or specifics on bed frames. Data is available that can be used to determine Florida specific code requirements for bed height ranges, frames and scoping requirements.

The outcome of the research project is to recommend a Florida specific code standard that applies to bed frames, bed heights and make a recommendation for scoping requirements.

Selected Current Code Requirements related to transient housing/beds:

Florida Accessibility Code for Building Construction:

224.2 Guest Rooms with Mobility Features. In transient lodging facilities, guest rooms with mobility features complying with 806.2 shall be provided in accordance with Table 224.2.

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TABLE 224.2 GUEST ROOMS WITH MOBILITY FEATURES

	Minimum Number of Required Rooms Without Roll-in Showers	Minimum Number of Required Rooms With Roll-in Showers	Total Number of Required Rooms	Florida 5%
1 to 25	1	0	1	See Section 224.6.3
26 to 50	2	0	2	
51 to 75	3	1	4	
76 to 100	4	1	5	
101 to 150	5	2	7	
151 to 200	6	2	8	
201 to 300	7	3	10	
301 to 400	8	4	12	
401 to 500	9	4	13	
501 to 1000	2 percent of total	1 percent of total	3 percent of total	
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100, or fraction thereof, over 1000	

224.6.3 Buildings, Structures, or Facilities Licensed as a Hotel, Motel, or Condominium Pursuant to Chapter 509, F.S. All buildings, structures, or facilities licensed as a hotel, motel, or condominium pursuant to chapter 509, F.S., a number of rooms equaling at

least 5 percent of the guest rooms minus the Total Number of Required (accessible) Rooms required by Table 224.2 shall provide special accessibility features of 806.4.

806.2.3 Sleeping Areas. At least one sleeping area shall provide a clear floor space complying with 305 on both sides of a bed. The clear floor space shall be positioned for parallel approach to the side of the bed. EXCEPTION: Where a single clear floor space complying with 305 positioned for parallel approach is provided between two beds, a clear floor or ground space shall not be required on both sides of a bed.

806.4 Hotel, Motel and Condominium Special Accessibility Features. This section does not relieve the owner of the responsibility of providing accessible rooms in conformance with Section 224 and 806 of this code. In all buildings, structures and facilities licensed as a hotel, motel or resort condominium pursuant to Chapter 509, F.S., a number of rooms equaling at least 5 percent of the guest rooms minus the Total Number of Required (accessible) Rooms required by Table 224.2 shall provide the following additional special accessibility features:

- (i) Grab rails in bathrooms and toilet rooms which comply with Section 604.5.
- (ii) All beds in designed accessible guest rooms shall be open-frame type that allows the passage of lift devices.
- (iii) Water closets that comply with section 604.4.

(Note: There is nothing that pertains to bed heights currently in the FL Accessibility Code)

Overview

The final report by The University of Florida titled FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION REVIEW AND RECOMMENDATIONS (Revised June 9, 2015)

The report looked at the seven Florida specific items and included the following scope of work:

- *Perform literature review of recent scholarly work on the subject of concern and its impacts in Florida*
- *Evaluate and summarize data on the results the law has had on building construction and welfare of the general public.*
- *Interpret results, determine whether the problem requires action, and produce a report that explains the results and implications for the Code*
- *Develop a technical basis for Florida-specific items.*
- *Present report/findings to the Commission's Technical Advisory Committee and interest groups for review and feedback*

In reference to bed heights, the report had only the following to say:

- Hotels are also receiving complaints regarding the height of the beds. Florida may need to look into setting a maximum bed height in the next revision of the FACBC.

TAC Recommendation (June 5, 2015): (No Recommendation for bed heights)

Remove the requirements for grab rails and raised water closet and apply the requirements for an open frame bed to all mobility rooms.

Notice of DOJ Proposed Rulemaking (2010)

Nondiscrimination on the Basis of Disability by State and Local Governments and Places of Public Accommodation; Equipment and Furniture

Select sections of the Notice follow:

Beds in accessible guest rooms and sleeping rooms

The Department is considering regulating the accessibility of beds in accessible guest rooms and sleeping rooms, such as dormitories in educational institutions and social service establishments. Many individuals with disabilities have urged the Department to regulate the height of beds, particularly in accessible hotel guest rooms, and to require that such beds have clearance under the bed to accommodate a mechanical lift. In recent years, hotels have provided higher beds, using thicker mattresses that make it difficult or impossible for many individuals who use wheelchairs to transfer onto the beds. Some of these mattresses have pillow tops that raise the

height of the bed by several inches and then, once the individual has transferred to it, compress and reduce the height of the bed. Thus, a bed with a pillow top that is low enough to transfer to from a wheelchair may be too low, once it is compressed, to transfer safely back to the wheelchair. In addition, many hotel beds use a solid-sided platform base for beds with no clearance underneath, which prevents the use of a portable lift to transfer an individual onto the bed.

Question *Should the Department develop a general standard that specifies requirements for beds wherever accessible sleeping accommodations are required? What are appropriate bed heights to ensure accessibility by individuals with mobility disabilities and should there be requirements for mattresses to ensure that the height of the mattress, even when compressed by the weight of a person sitting or laying down on it, remains within a certain range? Are there existing standards that the Department should look to for developing standards for beds in accessible rooms? What is the optimal clearance needed under a bed to accommodate a mechanical lift? Should any such requirements apply to all accessible guestrooms or sleeping rooms or only to a percentage of them? What time line should the Department establish for requiring accessible beds in accessible guest rooms and sleeping rooms and should such a time line be phased in?*

Note: DOJ was contacted to see if anything further on this Proposed Rulemaking is planned and they said nothing at this time; everything is in a holding pattern.

DREDF:

Note: The Disability Rights Education and Defense Fund (DREDF) is a leading national civil rights law and policy center directed by individuals with disabilities and parents who have children with disabilities. They conduct a great deal of research on issues of concern to people with disabilities.

In response to DOJ issuing a notice of proposed rulemaking DREDF responded as follows: (I am including the entire DREDF report in the pages following this proposal because it is so thorough.) It can also be seen at <https://dredf.org/anprm/beds-in-accessible-sleeping-rooms.shtml>

DREDF's recommendation: Having the ability to safely and easily adjust the bed to individual requirements is the ideal; however, an alternative would be to offer a majority of rooms with low beds (21 to 24 inches, per above), and the remaining ones with unregulated beds which would be allowed to be the same as in non-accessible guest and sleeping rooms (i.e. higher). The majority of the accessible guestrooms or sleeping rooms should meet the lower standard, since bed heights were not a widespread problem prior to the newer, taller beds. If there is only one accessible room, it should be required to have a lower bed at 20 inches to 23 inches high.

ANSI:

Standard for Accessible and Usable Buildings and Facilities (ICC A117.1-2017) May, 2017
1102.15 Beds. In at least one sleeping area, a minimum of five percent, but not less than one bed shall comply with Section 1102.15.

1102.15.1 Clear floor space. A clear floor space shall be provided on both sides of the bed. The clear floor space shall be positioned for parallel approach to the side of the bed. Exception: Where a single clear floor space positioned for parallel approach is provided between two beds, a clear floor space shall not be required on both sides of the bed.

1102.15.2 Bed frames. At least one bed shall be provided with an open bed frame.

1102.15.3 Bed height. At least one bed shall measure 17 to 23 inches (430 to 585 mm) high from the floor to the top of the uncompressed mattress.

1102.15.4 Wheelchair charging area. The clear floor space required by Section 1102.15.1 shall also serve as a wheelchair charging area complying with Section 906.

This will not become effective until the adoption of the 2021 IBC for that will be the first code to reference the 2017 A117.1 (according to Larry Schneider)

Note: There is no means in ANSI to achieve adjustable bed heights and the range specified is very large.

ADA National Network, Information, Guidance and Training on the Americans with Disabilities Act

The ADA National Network is funded by NIDRR (National Institute of Disability Rehab and Research)

Recommendation: To Improve accessibility of places of lodging, best practices include: To ensure beds are of an accessible height between 20 and 23 inches from the floor to top of the mattress.

Note: It is not clear where the recommended heights come from and there are no recommendations for bed frames.

Scope of Work

Task 1 Determine a technical basis for Florida specific bed height and bed frame recommendations. Review, update and summarize the data and other information used to establish bed height requirements, particularly the DREDF Report from 2010 (recommending 20-23 inch high range) and ANSI which establishes a 17-23 inch high range. Analyze differences and interpret results.

Task 2 Survey major stakeholders including hotel chains and organizations representing people with disabilities as to their perspective on bed height issues and solutions. Gather and summarize data.

Task 3 Make recommendation for several ways in which bed height ranges can most easily be met. Investigate feasibility of requiring adjustable bed frames. Make code recommendations for Florida specific bed frame requirements. At a minimum, use the following considerations:

- Frame adjustability or other means such as bed risers to accommodate a range of needs,
- The need to accommodate a lift beneath bed; establish minimum heights needed
- The need for bed to be moveable vs not moveable (e.g., platform beds are not moveable)

Task 4 Determine scoping requirement recommendations. Should scoping requirements apply to all mobility accessible guestrooms or sleeping rooms or only to a percentage of them?

Task 5 Evaluate and determine the financial impact to hotels/motels and impact on the disability community.

Expected Outcome and Impact on the Code:

Recommendations for bed height(s), bed frames, and scoping requirements will be made for consideration of the Access TAC and Commission in setting Florida specific requirements. The financial impact to hotels will be determined. It is expected that the impact to people with disabilities and, in some cases, to caregivers will be very beneficial. Whereas it is currently a real lottery as to whether a person with a mobility impairment will be able to comfortably use a bed in a hotel room, adoption of new bed height requirements and bed frame requirements should provide needed flexibility to better accommodate people with mobility related disabilities and those who have mobility issues related to aging. It is sometimes difficult to see a direct impact from a code requirement on a group of people but in this case there should be a tremendous impact on people with mobility related disabilities and, hopefully minimum impact to the hotel motel industry..

Budget: \$5,000

DREDF Report Follows

DREDF Report re. Bed Heights (Recommendations Highlighted)
Beds in Accessible Sleeping Rooms
Introduction

The ADA already requires beds that are usable by people with disabilities in accessible sleeping rooms through, at a minimum, its general non-discrimination requirements. Public and private entities that offer sleeping rooms are required to engage in a considered process to provide usable beds. The comments below are the provisions, reasons, and analysis we propose about how to regulate this existing requirement.

16 (a). Should the Department develop a general standard that specifies requirements for beds wherever accessible sleeping accommodations are required?

We strongly support specific DOJ requirements for accessible beds. Beds that are too high have been a significant barrier for travelers with disabilities.

According to a JD Powers customer satisfaction survey that was conducted several years ago, one of the "must haves" in a lodging experience was a comfortable bed. In its eagerness to meet their customer's desires, the lodging industry responded to this survey by installing new beds, and in some cases worked with bed manufacturers to develop their own branded premium beds. These new beds, ranging in heights from 25"-30", are notably higher than the beds previously found in hotels, and in countless instances pose a significant barrier to people with mobility disabilities, including people with paralysis, polio, cerebral palsy, short stature and other disabilities. Due to the increased heights of these beds, rooms that were once considered accessible have become inaccessible. People who rely solely on their arms to transfer into bed may not have the strength to lift their entire body to the top of these mattresses. People with short stature have a limited height they can jump to access a bed. People with restricted movement in their joints may not have the flexibility to lift their legs onto a high bed. This bed height problem has become pervasive across the spectrum of lodging categories, from high-end luxury properties to budget properties. It is not uncommon that people with disabilities need to call multiple properties before they find one that will work for them. In some cases, they must travel with someone who can assist them into bed, or must even cancel their trip altogether.

As our population ages and as more people lose their mobility, it is imperative that the DOJ respond to this issue of increased bed heights.

16 (b). What are appropriate bed heights to ensure accessibility by individuals with mobility disabilities and should there be requirements for mattresses to ensure that the height of the mattress, even when compressed by the weight of a person sitting or laying down on it, remains within a certain range? Are there existing standards that the Department should look to for developing standards for beds in accessible rooms?

The typical seat height of a wheelchair is 19" above the floor, a dimension that was published in the ADA Accessibility Guidelines in 1991,^[1] and which can still be seen today in the common 19" to 20" seat height of popular models of wheelchairs.^[2] Consequently, a bed that is substantially higher than 20 inches presents a problem for most wheelchair users.

We recommend as follows:

- Require beds in the accessible guestrooms to measure 20 to 23 inches high from the floor to the top of the mattress, whether or not it is compressed. This is based on a sampling of 50 different wheelchair heights by Access Compliance Services, as well as on the range of bed heights that were found in the first years after the ADA became effective, before bed heights increased so dramatically. In those early years, these lower bed heights did not appear to pose a problem.
- Require bed frames that can readily be removed, thus lowering the bed when requested by guests. This would likely mean that stationary box frames are not acceptable.
- Have adjustable legs, either as part of the existing frame, or various height bed risers that can be added to the frame (the latter currently exist on the market).
- Require at least one accessible room to be equipped with a ceiling transfer lift.
- While the least beneficial, at the very minimum, information about bed heights should be readily available on a property's website, with the reservation department, and at the front desk.

Franchise Systems Inc., a leader in the lodging industry for marketing to travelers with disabilities, recognized early on that their implementation of a new bed initiative might cause problems for

people with limited mobility. "We recognize the importance of comfort for all of our guests so we had to find a bed that would not compromise comfort for access," says Roy. E. Flora, EVP & COO, U.S. Franchise Systems, Inc.

Working with bed manufacturers Sealy, Serta, and Simmons, Franchise Systems was able to design a low-profile box spring (5 1/2") that offers both a high level of comfort while maintaining accessibility for people with mobility limitations. The California building code also requires at least a 7" vertical clearance under the bed for lift access. Franchise Systems was able to achieve that standard as well and still have their beds measure no higher than 23-inches.

Some Hyatt Hotels report intentionally limiting the height of beds in their accessible guest rooms to 19 inches high.^[3]

A safe and usable bed height of approximately 21" can be achieved with standard brand stock products, without the need for customized sizes, and still use today's popular thicker mattresses. For example:

- 7-1/2 inch high bed frame^[4]
- 2-inch high low-profile box spring^[5]
- 12-inch high mattress^[6]

16 (c). What is the optimal clearance needed under a bed to accommodate a mechanical lift?
Clearance Under The Bed

We recommend that DOJ adopt a provision that is consistent with California's Title 24 accessibility requirements. Title 24 has a requirement for a seven-inch clearance under the bed. It is based on data gathered by Access Compliance Services in 2000 and updated in December 2010.^[7]

Many beds are placed on stationary platforms (AKA stationary box frames). These stationary platforms not only limit access for lifts, they make it impossible to move the bed in any direction if someone should need to move it to create an accessible pathway to either side of the bed (often there isn't the required 36-inch clear width maneuvering space along both sides of a bed).

Therefore, we suggest that along with a required clearance underneath, that the bed be required to be moveable.

Maneuvering To The Bed

Operating a lifting device requires adequate space to steer the lift to a position alongside and parallel to the bed, as well as space to then turn the lift 90-degrees so that it is perpendicular to the bed with its support legs underneath the bed. Since the longest lifts are approximately the same 48-inch length as the ADA standards designate for a wheelchair space, applying maneuvering space requirements for wheelchairs would ensure adequate space for using a lift. For example, the original ADAAG at Section 9.2.2(1) already requires a 36-inch wide space alongside of the beds in transient lodging, as does the 2010 ADA standards at Section 806.2.3. And, both versions of the ADA standards require that in order to navigate a 90-degree turn, both legs of the turn must be 36-inches wide (See original standards at Section 4.3.3, and the 2010 standards at Section 403.5.1). Consequently, adequate space for using a lift could be provided by a 36-inch wide accessible route to alongside a bed or between two beds, that connects to a space under the bed that is 36-inch wide and at least 7-inches high. Requiring that the 7-inch high under-bed clearance to extend 30-inches deep would ensure that the mast of the lift could be brought all the way to the bed for safely picking up or placing an individual. Providing such an under-bed space that extends 30-inches deep can be achieved without conflicting with the common hotel practice of installing a mid-span support under wider beds, since the narrowest beds for which such support would be needed are 60-inch wide queen-size models. (Also see last endnote which includes related California code provision.)

16 (d). Should any such requirements apply to all accessible guestrooms or sleeping rooms or only to a percentage of them?

Requiring all guestrooms to have the same bed height ignores the diverse needs of people with disabilities and people who are elderly. People that require someone to assist them into a bed often prefer a higher bed to minimize back strain for the assistant whereas people with limited mobility who aren't using outside assistance generally need a lower bed, per the specifications given above. Having the ability to safely and easily adjust the bed to individual requirements is the ideal; however, an alternative would be to offer a majority of rooms with low beds (21 to 24 inches, per above), and the remaining ones with unregulated beds which would be allowed to be

the same as in non-accessible guest and sleeping rooms (i.e. higher). The majority of the accessible guestrooms or sleeping rooms should meet the lower standard, since bed heights were not a widespread problem prior to the newer, taller beds. If there is only one accessible room, it should be required to have a lower bed at 20 inches to 23 inches high.

16 (e). What time line should the Department establish for requiring accessible beds in accessible guest rooms and sleeping rooms and should such a time line be phased in? The lodging industry should have no more than one year to comply with any new bed height standards.

CONCLUSION REGARDING TIMING OF THE REGULATION

Every subject area in this ANPRM is of vital importance to the disability community across the United States. We urge the Department to move ahead with each area of rulemaking independently as it is able, and not allow time delays in one area to hold up rulemaking on the other issues raised in this ANPRM, and in all of the ANPRMs issued by the Department in July 2010.

[1] 19-inch wheelchair seat height from original ADA standards

[Figure A3](#) (28 CFR, Part 36, Appendix A)

[2] 19-inch wheelchair front-edge seat height of popular wheelchair models

The low (L) and high (H) dimensions reflect choices of wheel sizes.

Manual Chairs

Invacare Top End Crossfire	(L) 16"	(H) 21"
Invacare Tracer EX2	(L) 17-1/2"	(H) 29-1/2"
Quickie Breezy Ultra 4	(L) 18"	(H) 18"
Nova Transport chair (all 11 models)	(L) 19"	(H) 20"
Nova steel wheelchair (all 7 models)	(L) 20"	(H) 20"
Nova lightweight chair (all 3 models)	(L) 20-1/2"	(H) 20-1/2"

Power Chairs

Pride Q600	(L) 16-3/4"	(H) 17-3/8"
Pride Jazzy 600	(L) 17"	(H) 20"
Invacare 3G Torque	(L) 17-1/2"	(H) 21"

[3] Personal communication with Bonnie Lewkowicz, Access Northern California, December 8, 2010

[4] Two leading manufacturers, Leggett & Platt, and Hollywood Bed & Spring, provide standard metal bed frames for all sizes that stand 7" to 7-1/2" high, depending on the choice of floor glides, casters, or rug rollers. See more on bed frames in section on portable lifts.

[5] Mattresses can be supported by a low-profile box spring, which is also called a palette board. The standard of the industry across various brands is 1-3/4" thick. Also see products such as the Bunkie Board at www.havertys.com/Product_22503?curlIndex=1&resultCount=41.

[6] An 8-inch thick mattress was common ten years ago. Today's trend is toward thicker mattresses that are commonly 10" to 14" thick, but can be as thick as 18-inch. Among the popular brands, 12-inch thick mattresses are available that include popular features such as non-flip, pillow-top, and latex foam.

Sealy Monogram 400 Plush

2-inch Supersoft Sealyfoam

11-1/2 inch mattress height

Sealy Hotel Executive Limited - Plush

1 oz. Sealy Fiber, 2" Sealyfoam

12-1/2 inch mattress height

Sealy Posturepedic

Alford Cushion Firm-Innerspring Core

12-inch mattress height

Serta Perfect Sleeper

Gold Suite Pillow Top

12-1/2 inch mattress height

Serta Perfect Sleeper

Diamond Suite Plush

11-1/2 inch mattress height

Englander Indulgence

All Foam Mattress

12-inch mattress height

[7] Observations of nine models of lifts (see below) show that most personal lifting devices need 5.5 inches or less of vertical clearance under the bed, while a few that use larger wheels for greater ease of maneuvering on carpet, need 6.5 inches of clearance. The most common metal bed frames provide 7 to 7.5 inches of clearance under the bed, depending on whether they are outfitted with floor glides, casters or rug rollers. That is sufficient clearance for the front legs of even the highest lifting devices.

For example, two leading manufacturers, Leggett & Platt and Hollywood Bed & Spring, provide standard metal bed frames for all sizes that stand 7 inches to 7.5 inches high, depending on the choice of floor glides, casters or rug rollers. While a lower frame could be acquired, the standard 7-inch high models, of which there are many choices, will accommodate the 4-1/2 inch high front forks the common Hoyer Advance portable personal lifting device (www.joerns.com/lifting-repositioning/advance) as well as other lift models. This would allow meeting the requirements of future USDOJ standards and would ensure meeting the current California building code requirement for a clear height of 7 inches under the bed (Section 1111B.4.3):

(2010 CBC) 1111B.4.3 Access to beds. Accessible sleeping rooms shall have a 36-inch (914 mm) clear width maneuvering space located along both sides of a bed, except that where two beds are provided, this requirement can be met by providing a 36-inch-wide (914 mm) maneuvering space located between the beds. In addition, there shall be a clear space under the bed for the use of a personal lift device. The clear space shall be on a long side of the bed adjacent to an accessible aisle. The clear space shall extend horizontally to points not more than 12 inches (305 mm) from each end of the bed, vertically not less than 7 inches (178 mm), and not less than 30 inches (762 mm) deep.

Note: This 12 horizontal inches is a restrictive provision that could be larger to allow for a deeper bedside table.

Lift data:

This lift data was compiled as of December 20, 2010 by Access Compliance Services

(<http://www.accesscomplianceservices.net/>):

PERSONAL LIFTS – 2010 DATA

Invacare 9805P

Vertical clearance needed under the bed: 6.5 inches

Invacare Get-U-Up Hydraulic GHS350

Vertical clearance needed under the bed: 4.5 inches

Invacare Reliant RHL-450 w/low base

Vertical clearance needed under the bed: 4.5 inches

Hoyer Hoy-Advance-H

Vertical clearance needed under the bed: 5.5 inches

Hoyer Classic C-HLA

Vertical clearance needed under the bed: 5.5 inches

Hoyer Hydraulic HML400

Vertical clearance needed under the bed: 5.5 inches

Drive Medical Hydraulic Lift 13010 SV

Vertical clearance needed under the bed: 5.5 inches

Apex Genesis 400 DPL 400H

Vertical clearance needed under the bed: 4 inches

ProBasics LIFT

Vertical clearance needed under the bed: 6.5 inches

Resources:

Hoyer Personal Lift

Ted Hoyer & Company

2222 Minnesota St.

Oshkosh, WI

414-236-3460

800-255-5022
800-211-6522 (tech support)
Quickie Designs Inc.
Sunrise Medical
2842 Business Park
Fresno, CA 93727
209-292-7412 (fax)
800-456-8168
888-739-6059 (tech. support)
Invacare Corporation
899 Cleveland St.
Elyria, OH 44036-2125
800 333-6900

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