SECTION 11 73 50

PATIENT HANDLING EQUIPMENT

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\*\* NOTE TO SPECIFIER \*\* Hillrom Safe Patient Handling & Mobility Solutions; a division of Hillrom; operating room equipment and management systems.  
This section is based on the products of Hillrom Safe Patient Handling & Mobility Solutions; a division of Hillrom; health care industry products and solutions:  
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Hillrom is a leading worldwide manufacturer and provider of medical technologies and related services for the health care industry, including patient support systems, safe mobility and handling solutions, non-invasive therapeutic products for a variety of acute and chronic medical conditions, medical equipment rentals, surgical products and information technology solutions.  
Hillrom's comprehensive product and service offerings are used by health care providers across the health care continuum and around the world in hospitals, extended care facilities and home care settings to enhance the safety and quality of patient care.  
Hillrom: Enhancing outcomes for patients and their caregivers.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for the project.

* + 1. Lift units.
    2. Overhead rail systems.
    3. Free standing rail systems.
    4. Mobile patient lifts.
    5. Accessories:
       1. Horizontal lifts.
       2. Slingbars.
       3. Slings and lift sheet.
  1. RELATED SECTIONS
     1. Section - .
     2. Section - .
     3. Section - .
     4. Section 11 73 00 - Patient Care Equipment.
     5. Section - .
     6. Section - .
     7. Section - .
  2. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI):

\*\* NOTE TO SPECIFIER \*\* UL 60601-1 is the 2nd edition of the electrical safety standard; ANSI/AAMI ES60601-1 is the current 3rd edition

* + - 1. ANSI/AAMI ES60601-1 - Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance.
    1. American Society of Civil Engineers (ASCE):
       1. Standards for Seismic Forces as a suspended nonstructural system
    2. Association for the Advancement of Medical Instrumentation (AAMI).
    3. CSA Group (CSA):
       1. CAN/CSA C22.2 No.60601-1 - Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance.
    4. European Standards (EN):
       1. EN 60601-1-2 - Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests.
    5. European Medical Devices Directive (MDD):
       1. MDD 93/42/EEC, for Class I products.
    6. International Building Code (IBC):
       1. Seismic Requirements.
    7. International Electrotechnical Commission (IEC):
       1. IEC 60601-1 - Medical Electrical Equipment - Part 1: General Requirements for Basic Safety and Essential Performance.

\*\* NOTE TO SPECIFIER \*\* EN and IEC have the same content.

* + - 1. IEC 60601-1-2 - Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests.
    1. International Organization for Standardization, (ISO):
       1. ISO 10535 - Hoists for the transfer of disabled persons - Requirements and test methods.
    2. National Fire Protection Association (NFPA):
       1. NFPA 70 - National Electrical Code.
    3. Underwriters Laboratories (UL):
       1. UL 60601-1 - Medical Electrical Equipment, Part 1: General Requirements for Safety.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Source quality certificates.
        2. Certificate of Compliance: ISO 10535.
        3. Pre-Installation Manual: Preparation instructions and recommendations.
        4. Installation Manual: Storage and handling requirements and recommendations.
        5. Installation Manual: Installation methods.
        6. Service Manual: Maintenance and operations data.
     3. Shop Drawings: Include system components, utility requirements and connections, relationship with adjacent construction. Include required clearances and access for servicing.
        1. Indicate general arrangement of lift equipment.
        2. Electrical requirements.
        3. Space requirements.
        4. Finishes of components.
        5. Provide installation template for work performed by others.
  2. QUALITY ASSURANCE
     1. Regulatory Requirements: Comply with requirements of authorities having jurisdiction and applicable codes at the location of the project.
     2. Manufacturer Qualifications: Minimum 5 years' experience manufacturing similar products.
     3. Installer Qualifications: Minimum 2 years' experience installing similar products, and certified by the equipment manufacturer.
  3. DELIVERY, STORAGE, AND HANDLING
     1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
     2. Comply with manufacturer's recommendations for storage. Handle materials to avoid damage.
  4. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not store or install products under environmental conditions outside manufacturer's recommended limits.
  5. WARRANTY
     1. Provide manufacturer's standard limited warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Hillrom Safe Patient Handling and Mobility Solutions; a division of Hillrom; 1069 State Route 46 E. Batesville, IN 47006; ASD Tel: 812-934-7777; Fax: 812-934-8189; Email: Aman.Agrawal@hillrom.com; Web: https://www.hillrom.com; Web: https://construction.hill-rom.com.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete Article if not required. Delete features not required.

* 1. PERFORMANCE REQUIREMENTS
     1. Must be designed for operation by only one caregiver.
     2. Must comply with all relevant areas of NFPA 70 - National Electric Code.
     3. Seismic Requirements: Comply with International Building Code, California Building Code (CBC), and American Society of Civil Engineers Standards for Seismic Forces as a suspended nonstructural system. Account for patient presence in system during earthquake event. Lift system, including rails, vertical support elements, bracing and substructure elements, must be capable of resisting imposed forces without failure or yielding of aluminum rail members.
        1. Patient Weight: Equal to maximum motor capacity as tabulated in Section 2.02, A1.1a and/or A2.1b.
        2. Lateral forces imposed by patient swing: Based on 15-degree offset, 30-degree arc, with patient suspended.
  2. LIFT UNITS
     1. Basis of Design: Likorall as manufactured by Liko, a Division of Hillrom.

\*\* NOTE TO SPECIFIER \*\* Delete lift units not required.

* + - 1. Likorall Lift Motor Model 200: 440 lbs (200 kg) lift capacity.
      2. Likorall Lift Motor Model 242: 440 lbs (200 kg) lift capacity.
      3. Likorall Lift Motor Model 250: 550 lbs (250 kg) lift capacity.
      4. Standards Compliance:
         1. ANSI/AAMI ES60601-1.
         2. CAN/CSA C22.2 No. 606.1.
         3. CAN/CSA C22.2 No.60601-1.
         4. EN60601-1-2.
         5. IEC 60601-1-2.
         6. ISO 10535.
         7. UL60601-1.
      5. Lifting Speed: 2 in per sec (51 mm per sec).
      6. Lifting Interval: Minimum 70.9 to 82.7 in (180 to 2100 mm) height adjustable.
      7. Electric Motor: 24 V, 10 to 13 A, self-braking, motor driven worm gear.
         1. Sealed aluminum motor casing.
         2. Emergency Stop Button: On side of motor per ISO 4.3.12.
         3. Hydraulic Single Fault Safety Drum-(SFS): Automatically brakes free fall in case of motor axle malfunction.
         4. Safety Squeeze Protection (SSP): Directly beneath motor automatically stopping lifting operation once slingbar reaches maximum height.
         5. Built-In Self-Diagnostics: Includes overload and anti-twist strap protection.
         6. Motor Lift Strap: 2 in (51 mm) minimum width, with ten-fold safety load margin.
         7. Noise Level: Less than 52 dB per lift unit.
         8. Quick Release System: Q-Link option to connect the strap to the slingbar allowing different slingbar options.
      8. Emergency Lowering: Electrical or Mechanical as applicable to model.
         1. Electrical Emergency Raising and Lowering: Push buttons on side of lift motor casing.
         2. Electrical Emergency Stop and Lowering: Pull cord on side of the motor casing.
         3. Mechanical Emergency Lowering Device: Integrated with the lift strap. Must be in line with sling-bar with additional 48 in (1219 mm) of reel-mounted strap.
      9. Batteries: Two rechargeable 12 V, 2.4 to 2.6 A, valve regulated, sealed, lead accumulator (gel-type batteries).
         1. Charge Level Indicators: Audible beep and lighted low battery indicator (ISO 4.3.14).
      10. Battery Charging:

\*\* NOTE TO SPECIFIER \*\* Delete two of the three battery charging options below. In-Rail is only available for the Likorall Lift Motor Model 250.

* + - * 1. On-wall: Patient room wall mounted, 110 VAC, 40 to 60 Hz, max 0.6 A, splash-proof double insulated.
        2. Side-Rail (Multistation): 110 VAC, 40 to 60 Hz, max 0.6 A, splash-proof double insulated.
        3. In-Rail (Likorall Lift Motor Model 250 only): 100-240 VAC, 50 to 60 Hz, max 0.5 A, splash-proof double insulated.
      1. Hand Control:
         1. Connect on the side of motor via a round thread-locking DIN connector.
         2. Hand control with an LED light to indicate charging to a power source and/or an indication when batteries are charging or finished charging.
         3. Hand control with a back-side spring clamp to attach the hand control to the strap when the lift is not in use.
         4. Hand control with a back-side hook option to attach the hand control to the strap via a hang-up accessory when the lift is not in use.
    1. Basis of Design: LikoGuard as manufactured by Liko, a Division of Hillrom.

\*\* NOTE TO SPECIFIER \*\* Delete Lift units not required.

* + - 1. LikoGuard Lift Motor Model L: 600 lbs (272 kg) lift capacity.
      2. LikoGuard Lift Motor Model XL: 800 lbs (363 kg) lift capacity.
      3. Standards Compliance:
         1. ANSI/AAMI ES60601-1
         2. CAN/CSA C22.2 No. 606.1.
         3. CAN/CSA C22.2 No.60601-1
         4. EN60601-1-2.
         5. IEC 60601-1-2.
         6. ISO 10535.
         7. UL60601-1.
      4. Lifting Speed: 2 in per sec (51 mm per sec).
      5. Lifting Interval: Minimum 68 to 92 in (1727 to 2337 mm), depending on installation height 6-11/16 to 9-1/16 in (170 to 230 mm).
      6. Motor: 2 x 24 V, 2 x 10 A to 2 x 12.5 A self-braking, motor driven worm gear.
         1. Plastic motor casing.
         2. Protection Class: IPX4 (humidity resistance).
         3. Emergency Stop Button: On side of motor per ISO 4.3.12.
         4. Centrifugal Hook System: Automatically brakes free fall in case of motor/gearbox failure.
         5. Safety Squeeze Protection (SSP): Directly beneath motor automatically stopping lifting operation once slingbar reaches maximum height.
         6. Built-In Self-Diagnostics: Includes overload and anti-twist strap protection.
         7. Motor Lift Strap: 2 in (51 mm) minimum width, with a six-fold safety margin.
         8. Noise Level: Less than 70 dB per lift unit.
         9. Quick Release System: Q-Link option to connect the strap to the slingbar allowing different slingbar options.
         10. Emergency Stop Function: With strap connected to the bottom side of the motor casing, reachable from floor via Emergency strap.
      7. Emergency Lowering:
         1. Manual: Located on lift motor casing and reachable from floor via emergency strap.
         2. Electrical Emergency Raising and Lowering: Through push buttons located on the bottom of lift motor casing.
      8. Batteries: Rechargeable Lithium-Ion battery, 25.2 V at 4.2 A, with built in charger.

\*\* NOTE TO SPECIFIER \*\* Delete charging option that is not required.

* + - * 1. Pendant Charging: Charger current 1.0 A.
        2. IRC Charging: 0.3 A.
        3. Charge Level Indicators: Audible beep and lighted low battery indicator (ISO 4.3.14).
      1. Battery Charging:

\*\* NOTE TO SPECIFIER \*\* Delete one of the two battery charging options below.

* + - * 1. On-wall: Patient room wall mounted, 85 to 264 VAC, 47 to 63 Hz, max 0.9 A, splash-proof double insulated.
        2. In-Rail: 90 to 264 VAC, 47 to 63 Hz, max 1.2 A, splash-proof double insulated.
      1. Hand Control:
         1. Cable is adjustable in length up to 28 in (711 mm) and fixed to lift motor.
         2. LED light indication charging from a power source.
         3. LED light indication when batteries are charged.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - * 1. Back-side hook option to attach the hand control to the strap via a hang-up accessory when the lift is not in use.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - * 1. Hand control with display and graphical user interface (GUI), offers access to information tracked by the lift unit - such as the count of lift cycles per a defined period of time.
    1. Basis of Design: Multirall 200 lift as manufactured by Liko, a Division of Hillrom.
       1. Standards compliance:
          1. ANSI/AAMI.
          2. ISO 10535.
          3. EN 60601-1-2.
          4. IEC 60601-1.
          5. ES60601-1.
          6. CAN/CSA C22.2 no 60601-1.
          7. MDD 93/42/EEC, for Class I products.
       2. Lifting Capacity: 440 lbs (200 kg).
       3. Lifting Speed: 2.3 in per sec (60 mm per sec).
       4. Lifting Interval: Minimum 63 in (1600 mm).
       5. Protection Class Lift Unit: IP 30.
       6. Protection Class Hand Control: IP 43.
       7. Lifting Unit Weight: 19 lbs (8.7 kg).
       8. Electric Motor: 24 V, 8.5 A, self-braking, motor driven worm gear.
          1. Sealed aluminum motor casing.
          2. Emergency Stop Button.
          3. Hydraulic Single Fault Safety Drum-(SFS): Automatically brake free fall in case of motor axle malfunction.
          4. Safety Squeeze Protection (SSP): Located directly beneath motor automatically stopping motor lifting operation once slingbar reaches maximum height.
          5. Built-In Self-Diagnostics: Includes overload and anti-twist strap protection.
          6. Motor Lift Strap: 2 in (51 mm) minimum width, with six-fold safety load margin.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - * 1. Emergency Stop: Provide a hanging pull cord as the emergency stop function connected to the side of the motor casing.
        2. Sound Level: 62.2 dB.
        3. Quick Release System: Q-Link option to connect the strap to the slingbar allowing different slingbar options.
      1. Emergency Lowering Electrical: push button on end cover of lift unit.
      2. Emergency Lowering, Mechanical: red button marked "Emergency" on the end cover of the lift unit. Load must be applied to lift for the mechanical emergency lowering to engage.
      3. Batteries: 2 x 12 V 2.4 to 2.6 A valve regulated, sealed, lead acid gel-type batteries.
         1. Charge Level Indicators: Audible beep and lighted low battery indicator.
      4. Battery Charging Options:
         1. On-wall: Patient room wall mounted, 110 VAC, 40 to 60 Hz, max 0.6 A, splash-proof double insulated.
      5. Hand Control:
         1. Connect on the side of motor via a round thread-locking DIN connector.
         2. Hand control with an LED light to indicate charging to a power source and/or an indication when batteries are charging or finished charging.
         3. Hand control with a back-side spring clamp to attach the hand control to the strap when the lift is not in use.
         4. Hand control with a back-side hook option to attach the hand control to the strap via a hang-up accessory when the lift is not in use.
    1. Basis of Design: UltraTwin as manufactured by Liko, a Division of Hillrom. Lifting system utilizing two Likorall lift motors each independently lifting the upper and lower body.
       1. Likorall Lift Motor Model: 242 x 2 - 880 lbs (400 kg) lift capacity.
       2. Likorall Lift Motor Model: 250 x 2 - 1100 lbs (500 kg) lift capacity.
       3. Lifting Speed: 2 in per sec (51 mm per sec).
       4. Lifting Interval: Minimum 78.7 in (2000 mm).
       5. Electric Motor: 24 V, 10 to 13 A, self-braking, motor driven worm gear.
          1. Sealed aluminum motor casing.
          2. Emergency Stop Button: On side of motor per ISO 4.3.12.
          3. Hydraulic Single Fault Safety Drum-(SFS): Automatically brakes free fall in case of motor axle malfunction.
          4. Safety Squeeze Protection (SSP): Directly beneath motor automatically stopping lifting operation once slingbar reaches maximum height.
          5. Built-In Self-Diagnostics: Includes overload and anti-twist strap protection.
          6. Motor Lift Strap: 2 in (51 mm) minimum width, with ten-fold safety load margin.
          7. Noise Level: Less than 52 dB per lift unit.
          8. Quick Release System: Q-Link option to connect the strap to the slingbar allowing different slingbar options.
       6. Emergency Lowering: Electrical or Mechanical as applicable to model.
          1. Electrical Emergency Raising and Lowering: Push buttons on side of lift motor casing.
          2. Electrical Emergency Stop and Lowering: Pull cord on side of the motor casing.
          3. Mechanical Emergency Lowering Device: Integrated with the lift strap. Must be in line with sling-bar with additional 48 in (1219 mm) of reel-mounted strap.
       7. Batteries: 2 x 12 V, 2.4-2.6 A valve regulated, sealed, lead accumulator (gel-type batteries).
          1. Charge Level Indicators: Audible beep and lighted low battery indicator (ISO 4.3.14).
       8. Battery Charging:

\*\* NOTE TO SPECIFIER \*\* Delete two of the three battery charging options below. In-Rail is only available for the Likorall Lift Motor Model 250.

* + - * 1. On-wall: Patient room wall mounted, 110 VAC, 40 to 60 Hz, max 0.6 A, splash-proof double insulated.
        2. Side-Rail (Multistation): 110 VAC, 40 to 60 Hz, max 0.6 A, splash-proof double insulated.
        3. In-Rail (Likorall Lift Motor Model 250 only): 100-240 VAC, 50 to 60 Hz, max 0.5 A, splash-proof double insulated.
      1. Hand Control:
         1. Connect on the side of motor via a round thread-locking DIN connector.
         2. Hand control with an LED light to indicate charging to a power source and/or an indication when batteries are charging or finished charging.
         3. Hand control with a back-side spring clamp to attach the hand control to the strap when the lift is not in use.
         4. Hand control with a back-side hook option to attach the hand control to the strap via a hang-up accessory when the lift is not in use.
  1. OVERHEAD RAIL SYSTEMS
     1. Rails: Wall or ceiling mounted:

\*\* NOTE TO SPECIFIER \*\* Delete rail system type not required.

* + - 1. Straight Rail System:
         1. Options may include combinations of straight or curved rails. This system is usually intended for lifting between two fixed points, for example a bed and a chair.
         2. Straight Rail systems with "curves" can only be ceiling mounted.
      2. Traverse Rail System:
         1. "X-Y" or "H" type design.
         2. Consists of a moveable traversing rail mounted on two fixed rails. This design allows for an increased coverage area to include chairs, couches, sink, etc.
         3. Provides additional functions such as patient repositioning and in-room ambulation (walking) training.
      3. Extruded aluminum with anodized neutral or powder-coated protective coating.
      4. Standards compliance: ISO 10535 allowing a maximum deflection during maximum load of less than .04 in (1 mm) over 7-7/8 in (200 mm) span (ISO 6.8).
      5. Thickness options and profiles:

\*\* NOTE TO SPECIFIER \*\* Delete thickness options not required.

* + - * 1. 2.8 in (70 mm).
        2. 4.0 in (100 mm).
        3. 5.6 in (140 mm),
        4. 6.4 in (160 mm).
        5. 7.2 in (180 mm).
      1. Accommodations: Charging location.

\*\* NOTE TO SPECIFIER \*\* Delete accommodation not required.

* + - * 1. Wall-mounted charging station located on room wall near end of rail.
        2. Electrically conductive charging tape option affixed to underside of rail profile ceiling.
        3. End-rail charging station affixed to the exterior side the rail.
    1. Substructure: Structural elements between Rails and main building structural elements.
       1. Vertical support elements: Variable length, adjustable 2 piece, cylindrical cross section, schedule 40 steel pipe section or better. Threaded rod not acceptable as substitute.
       2. Attachment Plates: Each end of vertical support element to be steel, .27 in (7 mm) minimum thickness, welded to vertical support element and capable of accepting 2 bolt or 4 bolt conditions.
       3. Diagonal bracing: For vertical support elements with length over 11 in (279 mm) between connection plates.
          1. Unistrut or equivalent rigid, one-piece steel strut or hollow structural elements bolted to vertical support elements and connected too concrete and steel building elements with expansion anchors and bolts.
          2. Installed in-line with fixed rails (longitudinal bracing) and 90 degrees orthogonal to fixed rails (transverse bracing).
          3. Pendant Bracing Against Lateral Movement: Diagonal braces, having a length shorter than 11 in (279 mm) and 4 attachment bolts between vertical support element and main building elements, and a combination of horizontal "lash" bracing and diagonal braces.
          4. Diagonal Bracing Alignment Variance: No greater than 15 degrees from longitudinal-transverse axes of system.
          5. Vertical alignment of brace can vary no more than 15 degrees above or below a 45 degree inclination to floor, ceiling, lift system.
       4. Interconnection for Attachment Plates and Main Building Structural Elements: Unistrut elements with Unistrut hardware, bolts, plates and other elements as depicted in manufacturer's instructions. Unistrut (or equal) must have design documentation and engineering support data verifying element capacities adequate for applied loads.
       5. Connection to Concrete and Steel Building Elements: post installed concrete expansion anchor/bolts/combination of Unistrut and bolts or welding.
       6. Post-Installed Concrete Expansion Anchors: Hilti KBTZ, 3/8 in (9.5 mm) diameter minimum (per manufacturer's instructions), installed per manufacturer's instructions.
       7. Concrete or steel main building structural elements must bear at least three times the operating load (capacity) of system, including one-quarter of the self-weight associated with rails, motors, slings, accessories.
       8. Main building structural elements, vertical support elements and diagonal bracing must maintain system rigidity (at final rail locations) to within 1/8 in (3 mm) over 100 in (2540 mm) during full range of operation with full motor capacity loads suspended.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. FREE STANDING RAIL SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete free standing rail systems not required.

* + 1. Basis of Design: FreeSpan Straight Rail (SR) Lift System as manufactured by Liko, a Division of Hillrom.
       1. Mobile, aluminum, light weight, extremely stable construction. The rail, and two telescoping side supports assemble without tools.
          1. Standards Compliance:

ISO 10535.

MDD 93/42/EEC.

\*\* NOTE TO SPECIFIER \*\* Delete models not required.

* + - * 1. Model: FreeSpan SR 1.5m. 550 lbs (250 kg) maximum load.

Rail Length: 59.1 in (1500 mm).

Overall Width: 78.3 to 96.1 in (1990 to 2440 mm).

* + - * 1. Model: FreeSpan SR 2.0m. 550 lbs (250 kg) maximum load.

Rail Length: 78.7 in (2000 mm).

Overall Width: 98.0 to 115.7 in (2490 to 2940 mm).

* + - * 1. Model: FreeSpan SR 2.5m. 550 lbs (250 kg) maximum load.

Rail Length: 98.4 in (2500 mm).

Overall Width: 117.7 to 135.4 in (2990 to 3440 mm).

* + - * 1. Model: FreeSpan SR 3.0m. 550 lbs (250 kg) maximum load.

Rail Length: 118.1 in (3000 mm).

Overall Width: 137.4 to 155.1 in (3490 to 3940 mm).

* + - * 1. Model: FreeSpan SR 3.5m. 550 lbs (250 kg) maximum load.

Rail Length: 137.8 in (3500 mm).

Overall Width: 157.1 to 174.8 in (3990 to 4440 mm).

* + - * 1. Model: FreeSpan SR 4.0m. 440 lbs (200 kg) maximum load.

Rail Length:157.5 in (4000 mm).

Overall Width: 176.8 to 194.5 in (4490 to 4940 mm).

* + - * 1. Model: FreeSpan SR 4.5m. 440 lbs (200 kg) maximum load.

Rail Length: 177.2 in (4500 mm).

Overall Width: 196.5 to 214.2 in (4990 to 5440 mm).

* + - * 1. Model: FreeSpan SR 5.0m. 440 lbs (200 kg) maximum load.

Rail Length: 196.9 in (5000 mm).

Overall Width: 216.1 to 233.9 in (5490 to 5940 mm).

* + - * 1. Height: Adjustable at intervals of 3.9 in (100 mm).

Working Height Range: 88.6 to 100.4 in (2250 to 2550 mm).

Transport Height: 66.9 in (1700 mm).

* + - * 1. Lift Unit:

\*\* NOTE TO SPECIFIER \*\* Delete lift units not required.

Multirall lift unit.

Likorall lift unit.

* + - * 1. Rail Corners:

End-stops.

Locking handle for adjusting corners.

\*\* NOTE TO SPECIFIER \*\* Delete carriage type not required.

Carriage: Single piece.

Carriage: Two-piece.

* + - * 1. Side Supports: Telescopic.

Upper locking handle.

Lower locking handle.

Handle.

Parking bracket.

Charger plate.

* + - * 1. Wheels: Pivot casters, lockable with brakes.
    1. FreeSpan Traverse Lift System as manufactured by Liko, a Division of Hillrom.
       1. Stationary. aluminum, light weight, extremely stable construction. Dual rail, and two telescoping side supports assemble without tools.
          1. Standards Compliance:

EN ISO 10535.

MDD 93/42/EEC.

* + - * 1. Maximum Load Capacity: 440 to 550 lbs (200 to 250 kg).
        2. Dimensions:

Length: 96 to 234 in (2450 to 5950 mm).

Width: 90 to 169 in (2300 to 4300 mm).

Height: 88 to 100 in (2250 to 2550 mm).

* + 1. FreeSpan UltraTwin Traverse Lift System as manufactured by Liko, a Division of Hillrom.
       1. Mobile, aluminum, light weight, extremely stable construction. The rail, and two telescoping side supports assemble without tools.
          1. Standards Compliance:

EN ISO 10535.

MDD 93/42/EEC.

\*\* NOTE TO SPECIFIER \*\* Delete rail lengths not required.

* + - * 1. Rail Length: 59.1 in (1500 mm). 1100 lbs. (500 kg) maximum load.

Overall Width: 78.3 in (1990 mm).

* + - * 1. Rail Length: 78.7 in (2000 mm). 1100 lbs. (500 kg) maximum load.

Overall Width: 98 in (2490 mm).

* + - * 1. Rail Length: 98.4 in (2500 mm). 1100 lbs. (500 kg) maximum load.

Overall Width: 117.7 in (2990 mm).

* + - * 1. Rail Length: 118.1 in (3000 mm). 1100 lbs. (500 kg) maximum load.

Overall Width: 137.4 in (3490 mm).

* + - * 1. Rail Length: 137.8 in (3500 mm). 1100 lbs. (500 kg) maximum load.

Overall Width: 157.1 in (3990 mm).

* + - * 1. Rail Length: 157.5 in (4000 mm). 880 lbs. (400 kg) maximum load.

Overall Width: 176.8 in (4490 mm).

* + - * 1. Rail Length: 177.2 in (4500 mm). 880 lbs. (400 kg) maximum load.

Overall Width: 196.5 in (4990 mm)

* + - * 1. Rail Length: 196.9 in (5000 mm). 880 lbs. (400 kg) maximum load.

Overall Width: 216.1 in (5490 mm).

* + - * 1. Height: Adjustable at intervals of (100 mm).

Working Height Range: 89.4 to 101.2 in (2270 to 2570 mm)

Transport Height: 66.9 in (1700 mm).

* + - * 1. Lift Unit: Likorall lift units. Two units working in tandem.
        2. Dual Rails with corners.

End-stops.

Locking handle for adjusting corners.

Carriage: Two-piece.

* + - * 1. Side Supports: Telescopic, double set.

Upper locking handle.

Lower locking handle.

Handle.

Parking bracket.

Charger plate.

* + - * 1. Wheels: Twin pivot casters; lockable with brakes.
    1. FreeStand Lift System as manufactured by Liko, a Division of Hillrom.
       1. Stationary, aluminum, light weight, extremely stable construction.
          1. Standards Compliance:

EN ISO 10535.

MDD 93/42/EEC.

* + - * 1. Capacity: 440 lbs (200 kg).

\*\* NOTE TO SPECIFIER \*\* Delete rail lengths not required.

* + - * 1. Rail Length: 78.8 in (2000 mm).

Support Arm Range: 81.3 to 146.1 in (2040 to 3710 mm).

* + - * 1. Rail Length: 86.6 in (2200 mm).

Support Arm Range: 88.2 to 153.9 in (2240 3910 mm).

* + - * 1. Rail Length: 94.5 in (2400 mm).

Support Arm Range: 96.1 to 161.8 in (2440 to 4110 mm).

* + - * 1. Rail Length: 102.4 in (2600 mm).

Support Arm Range: 103.9 to 169.7 in (2640 to 4310 mm).

* + - * 1. Rail Length: 110.2 in (2800 mm).

Support Arm Range: 111.8 to 177.6 in (2840 to 4510 mm).

* + - * 1. Rail Length: 118.1 in (3000 mm).

Support Arm Range: 119.7 to 185.4 in (3040 to 4710 mm).

* + - * 1. Rail Length: 126.0 in (3200 mm).

Support Arm Range: 127.6 to 193.3 in (3240 to 4910 mm).

\*\* NOTE TO SPECIFIER \*\* Delete lift units not required.

* + - * 1. Lift Unit: Multirall lift unit with sling bar.

Highest Lifting Height: 68.5 in (1740 mm).

* + - * 1. Lift Unit: Likorall lift unit with mechanical emergency lowering and slingbar.

Highest Lifting Height: 67.5 in (1715 mm).

* + - * 1. Lift Unit: Likorall lift unit with slingbar.

Highest Lifting Height: 71.7 in (1820 mm).

* + - * 1. Rail Height: 85.8 in (2180 mm)
        2. Rail Corners:

End-stops.

Adjustable support arms.

* + - * 1. Side Supports:

Handle.

Parking set; and parking hook and bracket.

Charger.

* + - * 1. Base.

\*\* NOTE TO SPECIFIER \*\* Mobile patient lifts are usually aftermarket items and have been listed here for the benefit of the design professional by showing just what is available. Contact a qualifying manufacturer representative or go to the website for more information on patient handling. Delete Article if not required.

* 1. MOBILE PATIENT LIFTS

\*\* NOTE TO SPECIFIER \*\* Delete mobile patient lifts not required.

* + 1. Basis of Design: Golvo Mobile Patient Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. CAN/CSA C22.2 No.606.1.
          2. IEC 60601-1.
          3. IEC 60601-1-2.
          4. EN ISO 10535.
          5. MDD 93/42/EEC, for Class 1 products.
          6. UL-60601-1.
       2. Lifting capacity: 400 lbs (200 kg).
       3. Lifting Speed: 1.3 in per sec (33 mm per sec).
       4. Lifting Height: 68.31 in (1735 mm).
       5. Width, Overall: 25.75 to 36.93 in (654 to 938 mm) electrical base width adjustment.
       6. Length: 43.9 in (1115 mm).
       7. Base Height: 5.9 in (150 mm).
       8. Wheels, Front: 3 in (76 mm) twin wheels.
       9. Wheels, Rear: 3 in (76 mm) twin wheels with brakes.
       10. Material: Anodized aluminum.
       11. Emergency Lowering: Mechanical and electrical.

\*\* NOTE TO SPECIFIER \*\* Delete battery option not required.

* + - 1. Battery: One (1) Lead-acid gel, valve-regulated battery 24 V 2.9 Ah.
      2. Battery: One (1) Lithium-Ion 25.6 V, 3.3 Ah.
      3. Battery Charger: Internal charger, 100-240 V AC, 50-60 Hz, max 400 mA.
    1. Basis of Design: Golvo Low Base Mobile Patient Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. CAN/CSA C22.2 No.606.1.
          2. IEC 60601-1.
          3. IEC 60601-1-2.
          4. EN ISO 10535.
          5. MDD 93/42/EEC, for Class 1 products.
          6. UL-60601-1.
       2. Lifting capacity: 400 lbs (200 kg).
       3. Lifting Speed: 1.3 in per sec (33 mm per sec).
       4. Lifting Height: 73.23 in (1860 mm).
       5. Width, Overall: 28.94 to 40.16 in (735 to 1020 mm) electrical base width adjustment.
       6. Length: 46.65 in (1185 mm).
       7. Base Height: 5.9 in (150 mm).
       8. Wheels, Front: 3 in (75 mm) twin wheels.
       9. Wheels, Rear: 3 in (75 mm) twin wheels with brakes.
       10. Material: Anodized aluminum.
       11. Emergency Lowering: Mechanical and electrical.
       12. Batteries: New batteries provided by the supplier.

\*\* NOTE TO SPECIFIER \*\* Delete battery option not required.

* + - * 1. Battery: One (1) Lead-acid gel, valve-regulated battery 24 V 2.9 Ah.
        2. Battery: One (1) Lithium-Ion 25.6 V, 3.3 Ah.
      1. Battery Charger: Built-in, 100-240 V AC, 50-60 Hz, max 400 mA.
    1. Basis of Design: Liko M220 Mobile Lift: Manual base as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. EN ISO 10535.
          4. IEC 60601-1.
          5. IEC 60601-1-2.
          6. IEC 60601-1-11.
          7. MDD 93/42/EE.C, for Class 1 products.
          8. UL-60601-1.
       2. Lifting capacity: 400 lbs (182 kg).
       3. Lifting interval: 22.4 to 67.7 in (570 to 720 mm).
       4. Wheels, Front: 3 in (75 mm) twin wheels.
       5. Wheels, Rear: 3 in (75 mm) twin wheels with brakes.
       6. Material: Steel.
       7. Emergency lowering: Mechanical and electrical.
    2. Basis of Design: Liko M230 Mobile Lift: Electric base as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. EN ISO 10535.
          4. IEC 60601-1.
          5. IEC 60601-1-2.
          6. IEC 60601-1-11.
          7. MDD 93/42/EEC, for Class 1 products.
          8. UL-60601-1.
       2. Lifting capacity: 400 lbs (182 kg).
       3. Lifting interval: 22.4 to 67.7 in (570 to 720 mm).
       4. Wheels, Front: 3 in (75 mm) twin wheels.
       5. Wheels, Rear: 3 in (75 mm) twin wheels with brakes.
       6. Material: Steel.
       7. Emergency lowering: Mechanical and electrical.
    3. Basis of Design: Sabina II Mobile Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. IEC 60601-1.
          4. IEC 60601-1-2.
          5. EN ISO 10535.
          6. MDD 93/42/EEC, for Class 1 products.
          7. UL-60601-1.
       2. Active Lifting Capacity: 440 lbs (200 kg).
       3. Passive Lifting Capacity: 330 lbs (150 kg).
       4. Material: Powder-painted steel.
       5. Weight: 100 lbs (45.2 kg).
       6. Heaviest Removable Part: 50 lbs (22.7 kg).
       7. Wheels, Front: 3 in (75 mm) twin wheels.
       8. Wheels, Rear: 3 in (75 mm) twin wheels with brakes.
       9. Foot Rest: Removable.
       10. Lower-Leg Support: Adjustable in terms of height and depth. Removable.
       11. Turning Diameter: 46.5 in (1180 mm).
       12. Emergency Lowering Device: Mechanical and electrical.
       13. Width: 27.2 to 44.9 in (690 to 1115 mm).
       14. Length: 41.7 in (1060 mm).

\*\* NOTE TO SPECIFIER \*\* Delete lift interval not required.

* + - 1. Lifting Interval with SlingBar 350: 32.5 in (825 mm).
      2. Lifting Interval with Comfort SlingBar: 30.9 in (785 mm).

\*\* NOTE TO SPECIFIER \*\* Delete lifting speed not required.

* + - 1. Lifting Speed (without load) with SlingBar 350: 2.13 in per sec (54 mm per sec).
      2. Lifting Speed (without load) with Comfort SlingBar: 1.85 in per sec (47 mm per sec).
      3. Maximum Noise Output: 46 dB(A).
      4. Protection Class: IP X4.
      5. Operating Forces of Controls: .54 lbf (2.4 N).
      6. Intermittent Operation: Only 10 percent of a given length of time may be active, yet no more than 2 min.
      7. Batteries: 2 x 12 V, 2.9 A. Valve-regulated lead-acid gel-type batteries. New batteries are provided by the supplier.
      8. Battery Charger: Built-in charger for 100 to 240 VAC, 50 to 60 Hz, max 400 mA.
      9. Lift Motor: 24 V, 9.2 A, permanent magnetic motor with mechanical safety mechanism.
      10. Base Motor: 24 V, 5 A, permanent magnetic motor.
    1. Basis of Design: Viking M Patient Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. IEC 60601-1.
          4. IEC 60601-1-2.
          5. EN ISO 10535.
          6. MDD 93/42/EEC, for Class 1 products.
       2. Active lifting Capacity: Viking M: 450 lbs (205 kg).
       3. Material: Aluminum.
       4. Weight: 66.6 lbs (30.2 kg).
       5. Heaviest removable part: 34.8 lbs (15.8 kg).
       6. Wheels, Front: 3 in (75 mm) twin wheels.
       7. Wheels, Back: 3 in (75 mm) twin wheels with brakes.
       8. Turning Diameter: 52.2 in (1400 mm).
       9. Emergency Lowering Device: Mechanical and electrical.
       10. Width: 27.2 to 43.3 in (690 to 1110 mm).
       11. Length: 48.4 in (1230 mm).
       12. Lifting Interval: 50.0 in (1270 mm).
       13. Lifting Speed (without load): 1.7 and 1.5 in per sec (38 and 42 mm per sec).
       14. Maximum Noise Output: 46 dBA.
       15. Protection Class: IP X4.
       16. Operating Forces of Controls:
           1. Hand Controls: .54 lbf (2.4 N).
           2. Operation Panel: 0.9 lbf (4 N).
       17. Electrical Data: 24 V.
       18. Intermittent operation: Only 10 percent of a given length of time may be active, yet no more than 2 min.
       19. Batteries: New batteries provided by the supplier.

\*\* NOTE TO SPECIFIER \*\* Delete battery option not required.

* + - * 1. Battery: One (1) Lead-acid gel, valve-regulated battery 24 V 2.9 Ah.
        2. Battery: One (1) Lithium-Ion 25.6 V, 2.25 Ah.
      1. Battery Charger: CBL20002, built-in, 100 to 240 V AC, 50 to 60 Hz, max 600 mA.
      2. Lift motor: 24 V, 8.5 A permanent magnetic motor with mechanical safety mechanism.
      3. Motor for base width adjustment: 24 V, 6 A.
    1. Basis of Design: Viking L Patient Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. IEC 60601-1.
          4. IEC 60601-1-2.
          5. EN ISO 10535.
          6. MDD 93/42/EEC, for Class 1 products.
       2. Active Lifting Capacity: 550 lbs (250 kg).
       3. Material: Aluminum.
       4. Weight: Total: 82.5 lbs (37.4 kg).
       5. Heaviest Removable Part: 47.6 lbs (21.6 kg).
       6. Wheels, Front: 3 in (75 mm) twin wheels.
       7. Wheels, Back: 5 in (125 mm) twin wheels.
       8. Turning Diameter: 57.4 in (1460 mm).
       9. Emergency Lowering Device: Mechanical and electrical.
       10. Width: 27.4 to 42.1 in (695 to 1070 mm).
       11. Length: 55.9 in (1420 mm).
       12. Lifting Interval: 52.4 in (1330 mm).
       13. Lifting Speed (without load): 0.5 and 0.8 in per sec (13 to 21 mm per sec).
       14. Maximum Noise Output: 51 dBA.
       15. Protection Class: IP X4.
       16. Operating Forces of Controls:
           1. Hand Controls: .54 lbf (2.4 N).
           2. Operation Panel: 0.9 lbf (4 N).
       17. Electrical Data: 24 V.
       18. Intermittent operation: Only 10 percent of a given length of time may be active, yet no more than 2 min.
       19. Batteries: New batteries provided by the supplier.

\*\* NOTE TO SPECIFIER \*\* Delete battery option not required.

* + - * 1. Battery: One (1) Lead-acid gel, valve-regulated battery 24 V 2.9 Ah.
        2. Battery: One (1) Lithium-Ion 25.6 V, 2.25 Ah.
      1. Battery Charger: CBL20002, built-in, 100 to 240 V AC, 50 to 60 Hz, max 600 mA.
      2. Lift motor: 24 V, 8.5 A permanent magnetic motor with mechanical safety mechanism.
      3. Motor for base width adjustment: 24 V, 6 A.
    1. Basis of Design: Viking XL Patient Lift as manufactured by Liko, a Division of Hillrom.
       1. Standards Compliance:
          1. ANSI/AAMI ES60601-1.
          2. CAN/CSA C22.2 No.606.1.
          3. IEC 60601-1.
          4. IEC 60601-1-2.
          5. EN ISO 10535.
          6. MDD 93/42/EEC, for Class 1 products.
       2. Active Lifting Capacity: 660 lbs (300 kg).
       3. Material: Aluminum.
       4. Weight: Total: 89.5 lbs (40.6 kg).
       5. Heaviest Removable Part: 52.0 lbs (23.6 kg).
       6. Wheels, Front: 3 in (75 mm) twin wheels.
       7. Wheels, Back: 5 in (125 mm) twin wheels.
       8. Turning Diameter: 61.8 in (1570 mm).
       9. Emergency Lowering Device: Mechanical and electrical.
       10. Width: 32.1 to 44.5 in (815 to 1130 mm).
       11. Length: 55.9 in (1420 mm).
       12. Lifting interval: 54.0 in (1370 mm).
       13. Lifting Speed (without load): 0.5 and 0.5 in per sec (13 to 21 mm per sec).
       14. Maximum noise output: 51 dBA.
       15. Protection class: IP X4.
       16. Operating forces of controls:
           1. Hand Controls: 2.4 N.
           2. Operation Panel: 4 N.
       17. Electrical Data: 24 V.
       18. Intermittent operation: Only 10 percent of a given length of time may be active, yet no more than 2 min.
       19. Batteries: New batteries provided by the supplier.

\*\* NOTE TO SPECIFIER \*\* Delete battery option not required.

* + - * 1. Battery: One (1) Lead-acid gel, valve-regulated battery 24 V 2.9 Ah.
        2. Battery: One (1) Lithium-Ion 25.6 V, 2.25 Ah.
      1. Battery Charger: CBL20002, built-in, 100 to 240 V AC, 50 to 60 Hz, max 600 mA.
      2. Lift motor: 24 V, 8.5 A permanent magnetic motor with mechanical safety mechanism.
      3. Motor for base width adjustment: 24 V, 6 A.

\*\* NOTE TO SPECIFIER \*\* Delete Article if not required.

* 1. ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* Horizontal lifts are usually aftermarket items and have been listed here for the benefit of the design professional showing just what is available. Contact a qualifying manufacturer representative of go to the website for more information on patient handling. Delete Article if not required.

* + 1. Horizontal Lifts:

\*\* NOTE TO SPECIFIER \*\* FlexoStretch can be used with Likorall, or Multirall lift units , or mobile lifts, Viking XL, Viking L or Golvo.

* + - 1. Basis of Design: FlexoStretch Lift Stretcher as manufactured by Liko, a Division of Hillrom.
         1. Standards Compliance: MDD 93/43/EEC for Class 1 products.
         2. Load: Up to 660 lbs (300 kg).
         3. Construction: Aluminum.
         4. Adjustable Width: 28 to 38 in (711 to 965 mm).
         5. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

LiftSheet XL.

Fixed assembly kit.

Quick-release hook.

Scale.

\*\* NOTE TO SPECIFIER \*\* The LikoStretch Mod 600 IC accessory can be used together with a number of Liko's lifts such as the overhead lifts LikoGuard, Likorall, Multirall, and mobile lifts Viking L, Viking XL, and Golvo.

* + - 1. Basis of Design: LikoStretch 600 IC Lift Stretcher as manufactured by Liko, a Division of Hillrom.
         1. Standards Compliance:

MDD 93/43/EEC for Class 1 products.

EN ISO 10535.

* + - * 1. Load: Up to 550 lbs (250 kg).
        2. Construction: Aluminum.

\*\* NOTE TO SPECIFIER \*\* Delete width not required.

Width: 27.5 in (700 mm).

Width: 31.5 in (800 mm)

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - * 1. Accessories:

SideRails 600 (pair).

SideRails 600 IC (pair).

Spatula 600 IC.

Straps Model 600 IC, 8 pieces per set.

Stretch Leveler.

Mast attachment.

Quick-Release Hook.

Scale.

\*\* NOTE TO SPECIFIER \*\* The OctoStretch accessory can be used together with a number of Liko's lifts such as the overhead lifts LikoGuard, Likorall, Multirall, and mobile lifts Viking, and Golvo.

* + - 1. Basis of Design: OctoStretch Lift stretcher as manufactured by Liko, a Division of Hillrom.
         1. Standards Compliance:

MDD 93/43/EEC for Class 1 products.

* + - * 1. Load: Up to 440 lbs (200 kg).
        2. Construction: Aluminum.
        3. Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

LiftSheet Octo: Max 200 kg (440 lbs).

3683105 - Polyester, medium, 160 x 50 cm (63 x 20 in).

3683106 - Polyester, large, 170 x 90 cm (67x35 in).

Stretch Leveler.

Quick-Release Hook.

Scale.

\*\* NOTE TO SPECIFIER \*\* UltraStretch is used in combination with Liko's lift system Ultra Twin FreeSpan, with rails 80 cm apart, or with UltraTwin in a fixed-rail installation.

* + - 1. Basis of Design: UltraStretch Lift Stretcher as manufactured by Liko, a Division of Hillrom.
         1. Standards Compliance:

MDD 93/43/EEC for Class 1 products.

* + - * 1. Load: Up to 880 lbs (kg).
        2. Construction: Aluminum.

\*\* NOTE TO SPECIFIER \*\* Delete accessories options not required.

* + - * 1. Accessories:

LiftSheet XL 65 in (1651 mm).

LiftSheet XL Long 73 in (1854 mm).

Stretch Leveler.

Quick-Release Hook.

Scale.

* + 1. Sling Bars and Sling Guards: As manufactured by Liko, a Division of Hillrom.

\*\* NOTE TO SPECIFIER \*\* Delete types not required. Note that the Likorall 243 lift motor cannot be used with the SlingGuard types listed below.

* + - 1. Basis of Design: Universal SlingBar 350.
      2. Basis of Design: Universal SlingBar 450.
      3. Basis of Design: Universal SlingBar 600.
      4. Basis of Design: Universal TwinBar 670 Twin.
      5. Basis of Design: Universal SlingBar 350 QRH.
      6. Basis of Design: Universal SlingBar 450 QRH.
      7. Basis of Design: Universal SlingBar 600 QRH.
      8. Basis of Design: Universal TwinBar 670 Twin QRH.
      9. Basis of Design: Universal SlingBar 350 R2R.
      10. Basis of Design: Universal SlingBar 450 R2R.
      11. Basis of Design: SlingGuard 450 for LikoGuard.
      12. Basis of Design: SlingGuard 450 with Quick Hook Multi for LikoGuard.
      13. Basis of Design: SlingGuard 670 Twin for LikoGuard.
      14. Basis of Design: SlingGuard 670 Twin with Quick Hook Multi for LikoGuard.
      15. Standards Compliance: EN ISO 10535.
      16. Load, Maximum:
          1. SlingBar: 660 lbs (300 kg).
          2. SlingGuard: 800 lbs (363 kg).

\*\* NOTE TO SPECIFIER \*\* Delete assembly type not required.

* + - 1. Assembly Type: Fixed.
      2. Assembly Type: Quick-release hook.

\*\* NOTE TO SPECIFIER \*\* Slings and Lift sheets are usually after market items and have been listed here for the benefit of the design professional by showing just what is available. Contact a qualifying manufacturer representative or go to the website for more information on patient handling. Delete Article if not required.

* 1. SLINGS AND LIFT SHEETS
     1. Basis of Design: Slings and lift sheets as manufactured by Liko, a Division of Hillrom.

\*\* NOTE TO SPECIFIER \*\* Delete slings and lift sheets not required.

* + - 1. Amputee Sling: Standards Compliance: EN ISO 10535.
         1. Back support.
         2. Back and head support.
      2. ComfortSling Plus: Standards Compliance: EN ISO 10535.
         1. Hygiene opening.
         2. Back support.
      3. ComfortSling Plus High: Standards Compliance: EN ISO 10535.
         1. Hygiene opening.
         2. Back and head support.
      4. ComfortVest Lift Aid: Standards Compliance: EN ISO 10535.
      5. HygieneSling: Standards Compliance: EN ISO 10535.
      6. HygieneVest: Standards Compliance: EN ISO 10535.
      7. LiftPants: Standards Compliance: EN ISO 10535.
      8. MasterVest Lift Aid: Standards Compliance: EN ISO 10535.
      9. MultiStrap Lift Aid: Standards Compliance: EN ISO 10535.
      10. HighBack Sling: Standards Compliance: EN ISO 10535.
      11. HighBack Soft Sling: Standards Compliance: EN ISO 10535.
      12. OriginalSling: Standards Compliance: EN ISO 10535.
      13. RepoSheet Lift Aid: Standards Compliance: EN ISO 10535.
      14. SafetyVest Lift Aid: Standards Compliance: EN ISO 10535.
      15. SilhouetteSling Lift Aid: Standards Compliance: EN ISO 10535.
      16. Solo HighBack Sling: Standards Compliance: EN ISO 10535.
      17. Solo RepoSheet Lift Aid: Standards Compliance: EN ISO 10535.
      18. Solo SupportSheet Lift Aid: Standards Compliance: EN ISO 10535.
      19. SupportVest Lift Aid: Standards Compliance: EN ISO 10535.
      20. UltraSling Lift Aid: Standards Compliance: EN ISO 10535.
      21. UniversalSling: Standards Compliance: EN ISO 10535.
      22. Vest Shell for Standing: Standards Compliance: EN ISO 10535.

1. EXECUTION
   1. EXAMINATION
      1. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions that may be detrimental to proper or timely completion.
      2. Do not proceed until unsatisfactory conditions have been corrected.
   2. INSTALLATION
      1. General: Install per manufacturer's written instructions and in proper relationship with adjacent construction.
         1. Installers shall be certified by the equipment manufacturer and follow all manufacturer's instructions.
         2. Provide temporary hoisting facilities as required for the placement and installation of equipment.
         3. Anchor equipment securely, at locations indicated using approved expansion anchors, steel bolts, steel strut members, steel screws or other structural elements per manufacturer's instructions, construction drawings or design documents. Friction connections, threaded inserts, plastic elements or wood elements are not acceptable as part of the substructure.
         4. Installation construction per manufacturer's instructions, construction documents, design drawings and regulations per local, state and federal laws and jurisdiction.
      2. Testing: Test per manufacturer's written instructions. All overhead patient lift systems must be load tested with weights at or above the minimum rated bearing capacity of the systems. Repair or replace equipment which does not perform in accordance with manufacturer's requirements. Test concrete expansion anchors per manufacturer's instructions. Submit log of test records to the Owner.
   3. CLEANING AND PROTECTION
      1. Protect from damage during construction operations. Promptly repair any damaged surfaces. Remove and replace work which cannot be satisfactorily repaired.
      2. Clean products, prior to Substantial Completion, using materials recommended by the manufacturer.

END OF SECTION