This collection consists of preassembled panels resulting in a very simplified installation process for open tread stairs, kneewall stairs and level run applications. This system is for interior use only.

Our Linear Panels can be pre-built to fit and only need a few screw holes drilled for installation. No glue needed, no sanding, no drilling of baluster holes, no marking and cutting to fit. Installation Instructions are available on our website www.LJSmith.com

Installation hardware included with panels and posts:

- **P-SCREEN114**: 1-1/4" Rail Wood Screw
- **P-SCREEN212**: 2-1/2" Panel Bottom Wood Screw
- **P-POSTBOLT1.0**: Panel Post and Barrel Fastener
- **P-POSTFTSCR2.75**: 2-3/4" Post Foot Lag Screw

1/2" x 1 1/2" rectangular tube construction with .065 wall thickness

Designed for 7 1/2" Rise and 10" Run (36.9°)

36" Rake rail height and 36", 39" or 43" level run rail heights. Rail heights may vary due to field conditions or preferences.

Five rake panel widths

Seven level panel widths

Kneewall Stair Panels

Every rake and level panel is predrilled on the top rung and comes with screws for attachment to the handrail. Screws are also included for the bottom of each panel.

<table>
<thead>
<tr>
<th>Model</th>
<th>Actual Rake Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR-K1236</td>
<td>15&quot;</td>
</tr>
<tr>
<td>PR-K1836</td>
<td>22½&quot;</td>
</tr>
<tr>
<td>PR-K2436</td>
<td>30&quot;</td>
</tr>
<tr>
<td>PR-K3036</td>
<td>37½&quot;</td>
</tr>
<tr>
<td>PR-K3636</td>
<td>45&quot;</td>
</tr>
</tbody>
</table>

Standard finish is Low Sheen Black. Other powder coat and Pantone paint colors can be quoted.

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**Kneewall Stair Panels**

- **PR-K1236**: 15" Actual Rake Length
- **PR-K1836**: 22½" Actual Rake Length
- **PR-K2436**: 30" Actual Rake Length
- **PR-K3036**: 37½" Actual Rake Length
- **PR-K3636**: 45" Actual Rake Length

---
Every rake and level panel is predrilled on the top rung and comes with screws for attachment to the handrail. Screws are also included for the bottom of each panel.

**Open Tread Stair Panels**

![Diagram of Open Tread Stair Panels]

**Level Run Panels**

![Diagram of Level Run Panels]
Panel System

Spacer Newels

Use to maintain spacing code between panels. Rake and Level Panel Runs cannot exceed 15° without a spacer Newel.

<table>
<thead>
<tr>
<th>Newel Type</th>
<th>Size</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 4-Hole Foot Newel</td>
<td>1&quot; x 1-1/2&quot; x 34-3/8&quot;</td>
<td>36&quot; Rail Height</td>
</tr>
<tr>
<td>Flush Mount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curb Wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kneewall 2-Hole Foot Newel</td>
<td>1&quot; x 1-1/2&quot; x 30-5/8&quot;</td>
<td>36&quot; Rail Height</td>
</tr>
<tr>
<td>PL-F36NWL4H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-K30NWL2H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-C30NWL4H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-E30NWL4H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel Posts

Each Spacer Newel and Panel Post comes with foot lag screws for attachment to the mounting surface. Spacer Newels also include wood screws for attachment to the handrail. Each Panel Post includes 3 Panel Post and Barrel Fasteners for attachment to the panel.

<table>
<thead>
<tr>
<th>Post Type</th>
<th>Size</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Hole Foot Plate</td>
<td>1/2&quot; x 1-1/2&quot; x 47&quot;</td>
<td>36&quot; Rail Height</td>
</tr>
<tr>
<td>PL-F32NWL2H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-E32NWL2H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL-C32NWL4H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Curb Wall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel Post Kit

The following kit is available to simplify the ordering of panel systems utilizing Panel Posts.

**P-POSTKIT2H**

- Each kit includes:
  - 2 Panel Posts with 2-Hole Foot Plate (P-POST2H)
  - 4 2-3/4" Post Foot Lag Screws (P-POSTFTSCR2.75)
  - 6 Post and Barrel Bolts (P-POSTBOLT1.0)

Flush, Elevated and Curb Wall Details

- **Flush Mount**
- **Elevated**
- **Curb Wall**
Metal Newels for Cable System

Stairway Open Tread Newels

Rake Up
- CR-310U-36
  - 2\" x 35\%/32\"
- CR-310U-39
  - 2\" x 38\%/32\"

Use on the first tread at the bottom of an open tread stairway flight.

Use on open tread stairs at 42" intervals between the newels at the bottom and top of each flight.

Rake Down
- CR-310D-36
  - 2\" x 35\%/32\"
- CR-310D-39
  - 2\" x 38\%/32\"

Use at the top of the first flight of any shaped open tread stairway.

Also used at the top of any flight that ends at a wall.

10 Holes
11 Holes

Rake Pass Through
- CR-320-36
  - 2\" x 35\%/32\"
- CR-320-39
  - 2\" x 38\%/32\"

Use on the first tread at the bottom of a kneewall stairway flight.

Use on kneewall stairs at 42" intervals between the newels at the bottom and top of each flight.

Rake Down
- CR-KW310D-36
  - 2\" x 31\%/32\"
- CR-KW310D-39
  - 2\" x 33\%/32\"

Use at the top of any kneewall stairway flight.

8 Holes
9 Holes

Stairway Kneewall Newels

Rake Up
- CR-KW310U-36
  - 2\" x 28\%/16\"
- CR-KW310U-39
  - 2\" x 31\%/16\"

Use on the first tread at the bottom of a kneewall stairway flight.

Use on open tread stairs at 42" intervals between the newels at the bottom and top of each flight.

Rake Pass Through
- CR-KW320-36
  - 2\" x 28\%/16\"
- CR-KW320-39
  - 2\" x 31\%/16\"

Use on the first tread at the bottom of a kneewall stairway flight.

Use on kneewall stairs at 42" intervals between the newels at the bottom and top of each flight.

10 Holes
11 Holes

IMPORTANT: Our Metal Newels and Cable System is designed for stairways with 7-1/2" rise and 10" run (approx. 36.9°)

See page 14 for cable, cable fittings and cable accessories. This system is for interior or exterior use.
Level Run Newels

Level Start/Stop

- CL-310-36 2” x 34 3/8"
- CL-310-39 2” x 37 3/8"
- CL-310-42 2” x 40 3/8"

Level Corner

- CL-310C-36 2” x 34 3/8"
- CL-310C-39 2” x 37 3/8"
- CL-310C-42 2” x 40 3/8"

Level Pass Through

- CL-320-36 2” x 34 3/8"
- CL-320-39 2” x 37 3/8"
- CL-320-42 2” x 40 3/8"

Level Down/Straight

- CL-310DS-36 36 rake to 36 level 2” x 34 3/8"
- CL-310DS-39* 36 rake to 39 level 2” x 37 3/8"
- CL-310DS-42* 36 rake to 42 level 2” x 40 3/8"

Level Down/Left

- CL-310DL-36 36 rake to 36 level 2” x 34 3/8"
- CL-310DL-39* 36 rake to 39 level 2” x 37 3/8"
- CL-310DL-42* 36 rake to 42 level 2” x 40 3/8"

Level Down/Right

- CL-310DR-36 36 rake to 36 level 2” x 34 3/8"
- CL-310DR-39* 36 rake to 39 level 2” x 37 3/8"
- CL-310DR-42* 36 rake to 42 level 2” x 40 3/8"

*Requires a gooseneck handrail fitting

Installation Instructions are available on our website
www.LJSmith.com

See page 14 for cable, cable fittings and cable accessories. This system is for interior or exterior use.

IMPORTANT: Our Metal Newels and Cable System is designed for stairways with 7-1/2” rise and 10” run (approx. 36.9°)
Open Tread Stairway Anatomy
Linear Cable System Features & Benefits

- Marine Grade 316 Stainless Steel Cable and Fittings for lasting beauty and very low maintenance
- Swageless Cable Fittings eliminate the need for expensive equipment
- Unique Linear designed newels sized and drilled for simplified installation
- Modern and code compliant handrail profile for a clean, refined look
- Box or Square Nose Treads create a modern designed stairway
Wood Newels for Cable System

Level Run Newels

- **Level Start/Stop**
  - Use at the end of a level run
  - CL-410-36: 3⅛" x 34½"
  - CL-410C-36: 3⅛" x 34⅛"

- **Level Corner**
  - Use at the corner of two level runs
  - CL-410C-36: 3⅛" x 34⅛"

- **Level Down**
  - Use on the second floor landing at the top of the stairway
  - CL-410D-36: 3⅛" x 34½"
  - CL-410C-39: 3⅛" x 37⅛"

- **Level Pass Through**
  - Use on level runs at 42" intervals between Level Start/Stop, Corner, and Down Newels
  - CL-410D-36: 3⅛" x 34½"
  - CL-410C-39: 3⅛" x 37⅛"

- **Level Blank**
  - B-400-48: 3½" x 47½"

  

Rake Newels

- **Rake Up**
  - Use on the first header at the bottom of the stairway
  - CR-410U-36: 3⅛" x 35¾"
  - CR-410U-39: 3⅛" x 38¾"

- **Rake Pass Through**
  - Use on the stairs at 42" intervals between the newels at the bottom and top of each flight
  - CR-410U-36: 3⅛" x 35¾"
  - CR-410U-39: 3⅛" x 38¾"

- **Rake Blank**
  - BR-400-48: 3½" x 47½"

  

Newel Suggestions for Post to Post Systems

- 10 Holes: CL-410-36: 3⅛" x 34½"
- 11 Holes: CL-410-39: 3⅛" x 37⅛"
- 12 Holes: CL-410-42: 3⅛" x 40¾"

  

Metal Newel Caps

Metal newel caps are used with LJ-4101 Newel Blanks shown to the left. Each cap style and size is available in Satin Black, Low Sheen Black, Matte Nickel, Oil Rubbed Copper and Stainless Steel.

- Flat Top: Shown in Matte Nickel
- Pyramid Top: Shown in Oil Rubbed Copper

See page 14 for cable, cable fittings and cable accessories. All wood newels are for interior use only.

**IMPORTANT:** Our Wood Newels above and Cable System is designed for stairways with 7-1/2" rise and 10" run (approx. 36.9°)

Each newel post includes a ¾" x 2" wood dowel (Dowel) for attaching the 684 Handrail.
Wood Newels for Tube System

Level Run Newels

- **Level Start/Stop**: TL-410-36 3½" x 34½" 7 Holes TL-410C-36 3½" x 34½" 8 Holes TL-410C-39 3½" x 37½" 9 Holes
- **Level Corner**: TL-410D-36 3½" x 34½" **TL-410D-39** 3½" x 37½" **TL-410D-42** 3½" x 40½" **Drilled for 7 Tubes**
- **Level Blank**: B-400-48 3½" x 47½"

Rake Newels

- **Rake Up**: TR-410U-36 3½" x 35¾" **TR-410U-39** 3½" x 39¾" **TR-410U-42** 3½" x 40¾"
- **Rake Center**: TR-420-36 3½" x 35¾" **TR-420-39** 3½" x 39¾" **TR-420-42** 3½" x 40¾"

Installation Instructions are available on our website at www.LJSmith.com. This system is for interior use only.

**IMPORTANT**: Our Wood Newels above and Tube System is designed for stairways with 7-1/2” rise and 10” run (approx. 36.9°)

**Newel Mounting Kit for all Wood Newels**

3/4” Hollow 304 Grade Stainless Steel Tube

- **TUBE-005-SS**: 5' Length
- **TUBE-020-SS**: 20' Length

**Stainless Steel Tube Adhesive for Tube System**

- **LI-3703**: Contractor Epoxy Adhesive
- **LI-3701**: Contractor Epoxy Adhesive (Open work time is 18 minutes. Fills approximately 122 holes depending on hole size. Includes mixing nozzle, 28 Oz Gray, Dries Gray)
- **6100E-10AD**: Non-Sag Adhesive (Use with a standard caulk gun cartridge. Fills approximately 110 holes depending on hole size. 10.2 Oz Clear Adhesive, Dries clear)
- **EGEXTREME-10AD**: Extreme Environmentally Friendly Adhesive (Use with a standard caulk gun cartridge. Fills approximately 110 holes depending on hole size. 10.1 Oz White Adhesive, Dries white)

Each newel post includes a 5/8" x 2’ wood dowel (Dowel) for attaching the 884 Handrail.

LJ-3004-3.5 Hanger Bolt & Threaded Insert

LI-3702 Contractor Injector Tool
Stairway Anatomy

Wood Newels & Cable System
Cable, Handrail, Treads

Cable Fittings for Metal Newels

**CL-MFTGS-SS**  Level Run Fixed/Tensioner Pair

**CR-MFTGS-SS**  Rake Fixed/Tensioner Pair

**CL-M2TSN-SS**  Level Run Tensioner/Tensioner Pair

**CR-M2TSN-SS**  Rake Tensioner/Tensioner Pair

1/8” Marine Grade 316 Stainless Steel Cable (1x19 construction)

**CABLE-050-SS** - 50’ Roll

**CABLE-150-SS** - 150’ Roll

**CABLE-500-SS** - 500’ Roll

Cable Release Tool

**C-RELEASE**

Cable Cutter

**C-CUTTER**

Stainless Steel Cleaner & Protectant

**C-CLEANER**

Post Protector Tube (For wood newels only)

**C-PROTECTOR**

Cable Fittings for Wood Newels

**CL-WDFTGS-SS**  Level Run Fixed/Tensioner Pair

**CR-WDFTGS-SS**  Rake Fixed/Tensioner Pair

**CL-WD2TSN-SS**  Level Run Tensioner/Tensioner Pair

**CR-WD2TSN-SS**  Rake Tensioner/Tensioner Pair

Handrail and Handrail Fittings

684 Handrail

2 5/8” x 1 5/8”

784QTR Quarterturn

784UE Upeasing

784OE Overeasing

784LHGN Left Hand Gooseneck

784RHGN Right Hand Gooseneck

784SGN Straight Gooseneck

LJ-8879 False Tread Kit
7-5/8” x 12-1/16” For open tread left hand, open tread right hand or closed tread applications.

Treads, Risers, Landing Tread, False Treads

LJ-8870 Plain Tread
1” x 11-1/2”
Lengths: 42”, 48”, 54”

LJ-88701RV Tread with Miter Return on 1 End (Reversible)
1” x 11-1/2”
Lengths: 42”, 48”, 54”

LJ-8870MR2 Tread with Miter Return on Both Ends
1” x 11-1/2”

LJ-8875 Riser
3/4” x 7/8” or 8”
Lengths: 42”, 48”, 54”

LJ-8890-5 Landing Tread
5-1/4” x random length

LJ-8895 Cove/Shoe/Trim Moulding
3/4” x 3/4” x random length

LJ-8890-5 Landing Tread
5-1/4” x random length

LJ-8870 Plain Tread
1” x 11-1/2”
Lengths: 42”, 48”, 54”

LJ-88701RV Tread with Miter Return on 1 End (Reversible)
1” x 11-1/2”
Lengths: 42”, 48”, 54”

LJ-8870MR2 Tread with Miter Return on Both Ends
1” x 11-1/2”

LJ-8875 Riser
3/4” x 7/8” or 8”
Lengths: 42”, 48”, 54”

LJ-8890-5 Landing Tread
5-1/4” x random length

LJ-8895 Cove/Shoe/Trim Moulding
3/4” x 3/4” x random length
The following guidelines are designed to provide an accurate and complete list of components necessary to complete your panel railing system. This checklist and our Linear Collection Metal Panel Systems brochure will provide the flexibility to comply with most building codes as they relate to handrail height and infill spacing requirements. The following guidelines are designed for stairways with a 7 1/2" rise and 10" run (approx. 36°), a 12" rise handrail height of 36" and level handrail heights (depending on handrail used, curb wall height, amount panels are elevated, etc.). All metal panel lengths are plan view measurements. This system is for interior use only. Consult your local building code official before purchasing and installing this system.

<table>
<thead>
<tr>
<th>Item</th>
<th>Guidelines</th>
<th>Part #</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TREADS</td>
<td>Select one tread for each step. If false treads are utilized, select one or two kits per tread depending on application.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 RISERS</td>
<td>Select one riser for each step and select one more riser per each flight.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 LANDING TREAD</td>
<td>Select sufficient lineal footage of LJ-8890-5 for the entire balcony and width of stairs at each landing. Custom landing tread can also be quoted and ordered.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 COVE MOULD</td>
<td>Applicable for level runs and stairs with risers. Select sufficient lineal footage of LJ-8895 cove moulding to go under all tread nosing (including miter returns) and under all landing tread. Cove moulding is not required under false treads.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 RAKE PANELS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Open Tread Stairways: Select the appropriate sizes and quantity of open tread stair panels to fill the plan view layout of the open tread stairway rake. Spaces between panels can be no more than 4&quot;. Be sure to take into consideration the 1/2&quot; thickness of each Panel Post and 1&quot; thickness of each Spacer Newel (see 7 &amp; 8 below) when calculating the spacing. Select from the following rake panels: (sizes indicated are plan view widths) PR-01236 (12&quot;), PR-01836 (18&quot;), PR-02436 (24&quot;), PR-03036 (30&quot;), PR-03636 (36&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kneewall Stairways: Select the appropriate sizes and quantity of kneewall stair panels to fill the plan view layout of the kneewall stairway rake. Spaces between panels can be no more than 4&quot;. Be sure to take into consideration the 1&quot; thickness of each Spacer Newel if used (see 8 below) when calculating the spacing. Select from the following rake panels: (sizes indicated are plan view widths) PR-K1236 (12&quot;), PR-K1836 (18&quot;), PR-K2436 (24&quot;), PR-K3036 (30&quot;), PR-K3636 (36&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 LEVEL RUN PANELS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elevated Panels: Select the appropriate sizes and quantity of panels to fill the plan view layout of each level run. Spaces between panels can be no more than 4&quot;. Be sure to take into consideration the 1/2&quot; thickness of each Panel Post and 1&quot; thickness of each Spacer Newel (see 7 &amp; 8 below) when calculating the spacing. Select from the following level panels for a 39&quot; level rail height: PL-CE1239 (12&quot;), PL-CE1839 (18&quot;), PL-CE2439 (24&quot;), PL-CE3039 (30&quot;), PL-CE3639 (36&quot;), PL-CE4239 (42&quot;), PL-CE4839 (48&quot;)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>For a 36&quot; level rail height: PL-CE1236 (12&quot;), PL-CE1836 (18&quot;), PL-CE2436 (24&quot;), PL-CE3036 (30&quot;), PL-CE3636 (36&quot;), PL-CE4236 (42&quot;), PL-CE4836 (48&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Curb Wall Panels: Select the appropriate sizes and quantity of panels to fill the plan view layout of each level run. Spaces between panels can be no more than 4&quot;. Be sure to take into consideration the 1&quot; thickness of each Spacer Newel if used (see 8 below) when calculating the spacing. Select from the following level panels: For a 36&quot; level rail height: PL-CE1236 (12&quot;), PL-CE1836 (18&quot;), PL-CE2436 (24&quot;), PL-CE3036 (30&quot;), PL-CE3636 (36&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For a 39&quot; level rail height: PL-CE1839 (18&quot;), PL-CE2439 (24&quot;), PL-CE3039 (30&quot;), PL-CE3639 (36&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level Run Flush Mount Panels: Select the appropriate sizes and quantity of panels to fill the plan view layout of each level run. Spaces between panels can be no more than 4&quot;. Be sure to take into consideration the 1/2&quot; thickness of each Panel Post and 1&quot; thickness of each Spacer Newel (see 7 &amp; 8 below) when calculating the spacing. Select from the following level panels: For a 36&quot; level rail height: PL-CE1236 (12&quot;), PL-CE1836 (18&quot;), PL-CE2436 (24&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For a 39&quot; level rail height: PL-CE1839 (18&quot;), PL-CE2439 (24&quot;)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 PANEL POSTS</td>
<td>Panel Posts are used on open tread stairways and elevated panel level runs. Select 2 Panel Posts with 2-Hole Foot Plate (P-POST2H) per panel. The Panel Post With 4-Hole Foot Plate (P-POST4H) is used at the end of a level run that ends near a wall.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>NOTE: A Panel Post kit (P-POSTKIT2H) is available that includes: 2 Panel Posts with 2-Hole Foot Plate (P-POST2H), 4 Post Foot Lag Screws (P-POSTFTSC2.75) and 6 Post and Barrel Bolts (P-POSTBOLTL0).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 SPACER NEWELS</td>
<td>Spacer newels must be used in any panels that are over 4&quot; to comply with building codes. Also, rake and level runs cannot exceed 15' without a spacer newel.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kneewall Stairways: Select the necessary quantity of Kneewall Spacer Newels (PR-K36NWL2H).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level Run Elevated Panels: Select the necessary quantity of Level Spacer Newels. For a 39&quot; level rail height: PL-CE39NWL4H. For a 43&quot; level rail height: PL-CE43NWL4H</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level Run Curb Wall Panels: Select the necessary quantity of Level Spacer Newels. For a 39&quot; level rail height: PL-CE39NWL4H. For a 43&quot; level rail height: PL-CE43NWL4H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 HARDWARE</td>
<td>Every rake and level panel comes with screws for attachment to the handrail. Screws are also included for the bottom of each panel (use for level flush mount, level curb wall mount and kneewall stair applications only). Spacer newels and panel posts include post foot lag screws. Spacer newels also include screws for attachment to the handrail. Each panel post includes 3 panel post and barrel fasteners. The panel post kit includes 6 panel post and barrel fasteners and 4 post foot lag screws. Each of these hardware items are also available separately, if needed. See pages 2 &amp; 4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 HANDRAIL</td>
<td>Select 684 handrail at a rate of 13&quot; per each tread and include enough for all level runs and walls (if wall rail is required). Handrail is available in 6', 10', 12', 14&quot;, &amp; 16' lengths.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 HANDRAIL GOOSENECK FITTINGS</td>
<td>A gooseneck handrail fitting must be used for the following rake to level run transitions: 36&quot; rake to 39&quot; level; 39&quot; rake to 42&quot; level. Select the appropriate gooseneck fitting: 784LHGN (Left Hand Gooseneck), 784RGN (Right Hand Gooseneck), 784SGN (Straight Gooseneck)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 HANDRAIL FITTINGS (Miscellaneous Components)</td>
<td>Select the necessary Overeasing, Upeasing and Level Quarterturns as needed for changes in elevation and direction of the handrail. If continuous handrail is needed to transition from the rake, around a wall, and continue up the stair as wall rail, select two Level Quarterturns. Select from these fittings: 784OE (Overeasing), 784UE (Upeasing), 784QTR (Level Quarterturn)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Guidelines

1. **TREADS**
   - Select one tread for each step. If false treads are utilized, select one or two kits per tread depending on application. (Interior stairs only)

2. **RISERS**
   - Select one riser for each step and select one more riser per each flight. (Interior stairs only)

3. **LANDING TREAD**
   - Select sufficient linear footage of LJ-889S landing tread for the entire balcony and width of stairs at each landing. Custom landing tread can also be quoted and ordered. (Interior stairs only)

4. **COVE MOLDING**
   - Applicable for level runs and stairs with risers. Select sufficient linear footage of LJ-889S Cove moulding to go under all tread nosing (including rafter returns) and under all stair landing tread. Cove moulding is not needed under false treads. (Interior stairs only)

5. **RAKE UP NEWEL**
   - Open Tread Stairways: For stairs with a 34°-36° rake rail height, select the CR-310U-36 at the bottom of the stair flight. For 36°-38° rake rail height, select the CR-310U-36. The stairway can only be open on both sides, two of these newels will be needed. See the Linear Metal Newel Applications chart at the bottom of this page for further information.

   - Kneewall Stairways: For stairs with a 34°-36° rake rail height, select the CRKW310U-36 at the bottom of the stair flight. For 36°-38° rake rail height, select the CRKW310U-36. These newels are used between both sides of stairs, depending on both sides of these newels will be needed. See the Linear Metal Newel Applications chart at the bottom of this page for further information.

6. **RAKE PASS THROUGH NEWEL**
   - Open Tread Stairways: The distance between the rake newels should not exceed 42”. Use in the middle of a rake run of handrail to keep the spacing between the newel posts at 42” or less. For stairs with a 34°-36° rake rail height, select the CR-320-36. For 36°-38° rake rail height, select the CR-320-36.

   - Kneewall Stairways: The distance between the rake newels should not exceed 42”. Use in the middle of a rake run of handrail to keep the spacing between the newel posts at 42” or less. For stairs with a 34°-36° rake rail height, select the CR-320-36. For 36°-38° rake rail height, select the CR-320-36.

7. **RAKE DOWN NEWEL**
   - Open Tread Stairways: Use this newel at the top of any open tread stair flight that ends at a wall. For stairs with a 34°-36° rake rail height, select the CR-310D-36. For stairs with a 38° rake rail height, select the CR-310D-39.

   - Kneewall Stairways: Use this newel at the top of any kneewall stair flight. For stairs with a 34°-36° rake rail height, select the CRKW310D-36. For stairs with a 38° rake rail height, select the CRKW310D-39.

8. **LEVEL DOWN NEWEL**
   - Open Tread Stairways: When transitioning to a handrail height of 36” or 39” to 42” select the CR-MFTGS-SS (Level Fixed/Tensioner Pair). For any cable run that is 25’ to 50’ long.

   - The distance between the level run newels should not exceed 42”. Use the Level Pass Through Newel at the corner of two level runs. Based on the application details below, please select the appropriate second floor landing newel(s).

9. **LEVEL CORNER NEWEL**
   - For 39° rake level rail height, select the CR-310C-36 for the newel at the corner of two level runs. For 39° rake level rail height, select the CR-310C-39.

10. **LEVEL START/STOP NEWEL**
    - Cable fittings may be installed directly into the wall at the end of a level run, or they can be installed into a newel post at the end of the run that is placed next to the wall. If ending a level run with a newel post, select the CR-310-36 for 36° rake level rail height. Select the CR-310-39 for 39° rake level rail height. Select the CR-310-42 for 42° rake level rail height. These newels are also used to start the run level handrail that transitions from the top of a kneewall stair flight.

11. **LEVEL PASS THROUGH NEWEL**
    - Each cable run requires a CR-MFTGS-SS (Rake Fixed/Tensioner Pair). Count the total number of cable fitting pairings needed based on the Rake Up Newel(s) selected in #4 above. Be sure to exclude enough cable fitting pairings for each flight. Do not include Pass Through Newels (CR-320) when calculating cable fitting pairs required since the cable will simply "pass through" this newel.

12. **RAKE FIXED/TENSIONER CABLE FITTINGS PAIR (CR-MFTGS-SS)**
    - For any cable run of 25’ to 50’ long, tensioner cable fittings should be used on both ends of the cable to achieve the desired tensioning on both directions of cable. Item CR-M2TSN-SS contains 2 Rake Tensioners.

13. **LEVEL RUN FIXED/ TENSIONER CABLE FITTINGS PAIR (CL-MFTGS-SS)**
    - Each level cable run requires a CL-MFTGS-SS Level Fixed/Tensioner Pair. Calculate the level cable fitting pairings needed by adding the number of straight level runs times the number of pairs required for the selected newels. CL-310D-36 requires 10 pairs; CL-310D-39 requires 11 pairs; CL-310D-42 requires 12 pairs.

14. **1/8” CABLE**
    - Calculate enough cable to run between every Fixed/Tensioner Cable Fitting Pair as well as between every Tensioner/Tensioner Cable Fitting Pair.

15. **HANDRAIL**
    - Select B48 handrail at a rate of 13” per each tread and include enough for all level runs and walls (if wall is required). Handrail is available in 8’, 10’, 12’, 14’, & 16’ lengths. (Interior stairs only, however exterior 684 can be quoted)

16. **HORNSOECKEN FITTINGS**
    - A gooseneck fitting must be used for the following rake to level transitions: 34°-36° rake to 39° level rail height select the 784SGN (Straight Gooseneck) (Interior stairs only)

17. **HANDRAIL FITTINGS (Miscellaneous Components)**
    - Select the necessary Overeasing, Upeasing and Level Quarterturns as needed for changes in elevation and/or direction of the handrail. Continuous handrail is needed to transition from the rake, around a wall, and continue up the wall as stair rail, select two Level Quarterturns. Select from these fittings: 784D (Overeasing), 784U (Upeasing), 784TR (Level Quarterturn) (Interior stairs only, however exterior handrail fittings can be quoted)

18. **ACCESSORIES**
    - Select a Cable Release Tool (C-RELEASE), Cable Cutters (C-CUTTER), Stainless Steel Cleaner & Protectant (C-CLEANER).

Linear Metal Newel Applications

- **Open Tread Rake Up Newel (CR-310U)**
  - Use this newel as the starting newel on the first tread at the bottom of an open tread stairway flight.

- **Open Tread Rake Pass Through Newel (CR-320)**
  - Use this newel on open tread stairs at 42° intervals between the newels at the bottom and top of each flight.

- **Open Tread Rake Down Newel (CR-310D)**
  - Use this newel at the top of the first flight of any L-shaped open tread stairway. Also used at the top of any flight that ends at a wall.

- **Kneewall Rake Up Newel (CR-KW310U)**
  - Use this newel as the starting newel on the first tread at the bottom of a kneewall stairway flight.

- **Kneewall Rake Pass Through Newel (CR-KW320)**
  - Use this newel on kneewall stairs at 42° intervals between the newels at the bottom and top of each flight.

- **Kneewall Rake Down Newel (CR-KW310D)**
  - Use this newel at the top of any kneewall stairway flight.

- **Level Start/Stop Newel (CL-310)**
  - Use this newel at the beginning or end of each level run. Also used on the level run that transitions from a kneewall stair flight.

- **Level Pass Through Newel (CL-310DS)**
  - Use this newel on level runs midway between the Level Start/Stop, Level Corner and Level Down Newels at 42° intervals.

- **Level Down to Level Straight Newel (CL-310DS)**
  - Use this newel on the second floor landing at the top of the stairway flight that transitions to a straight level run.

- **Level Down to Level Left Newel (CL-310DL)**
  - Use this newel on the second floor landing at the top of the stairway flight that transitions left to a level run.
The following guidelines are designed to provide an accurate and complete list of components necessary to complete your wood newel post and cable or tube railing system.

This checklist and our Linear Collection brochure will provide the flexibility to comply with most building codes as they relate to handrail height and infill spacing requirements. The following guidelines are designed for stairways with 7 1/2" rise and 10" run (approx 36.9°), a rake handrail height of 34"-38" and a level handrail height of 36", 39" or 42". These guidelines also follow our recommendation of installing a newel at every corner or change in direction making each straight run separate cable with a fixed cable fitting on one end and a tensioner cable fitting on the other to ensure the newel forms a smooth transition between two Pass Through Newels or at 45° from one another with Post Protector Tubes to turn a corner, but tensioner cable fittings must be used on both ends of the cable to achieve the desired tensioning on both directions of cable. Tensioner cable fittings should also be used on both ends of any cable run that is 25' to 50' long. These systems are for interior use only. Consult your local building code official before purchasing and installing this system.

<table>
<thead>
<tr>
<th>Item</th>
<th>Guidelines</th>
</tr>
</thead>
</table>

**Part #**

**Qty.**

<table>
<thead>
<tr>
<th>1</th>
<th>TREADS</th>
<th>Select one tread for each step. If false treads are utilized, select one or two kits per tread depending on application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>RISERS</td>
<td>Select one riser for each step and select one more riser per each flight.</td>
</tr>
<tr>
<td>3</td>
<td>LANDING TREAD</td>
<td>Select sufficient lineal footage of LJ-8895-5 for the entire balcony and width of stairs at each landing. Custom landing tread can also be quoted and ordered.</td>
</tr>
<tr>
<td>4</td>
<td>COVE MOLD</td>
<td>Applicable for level runs and stairs with risers. Select sufficient linear footage of LJ-8895 cove molding to go under all tread nosing (including levels runs) and under all landing tread. Cove molding is not needed under false treads.</td>
</tr>
<tr>
<td>5</td>
<td>RAKE UP NEWEL</td>
<td><strong>CABLE SYSTEM:</strong> For stairs with a 34&quot;-38&quot; rake rail height, select the CR-410U-36 at the bottom of the stairway at the first floor. For 36&quot;-38&quot; rake rail height, select the CR-410U-39. If the stairway is open on both sides, two of these newels will be needed. See the Wood Linear Newel Applications chart at the bottom of this page for further information. <strong>TUBE SYSTEM:</strong> For stairs with a 34&quot;-36&quot; rake rail height, select the TR-410U-36 at the bottom of the stairway at the first floor. For 36&quot;-38&quot; rake rail height, select the TR-410U-39. If the stairway is open on both sides, two of these newels will be needed. See the Wood Linear Newel Applications chart at the bottom of this page for further information.</td>
</tr>
<tr>
<td>6</td>
<td>RAKE PASS THROUGH NEWEL (Cable)</td>
<td><strong>CABLE SYSTEM:</strong> The distance between the rake newels should not exceed 42&quot;. Use in the middle of a rake run of handrail to keep the spacing between the newel posts at 42&quot; or less. For stairs with a 34&quot;-38&quot; rake rail height, select the CR-420-36. For 36&quot;-38&quot; rake rail height, select the CR-420-39. <strong>TUBE SYSTEM:</strong> The distance between the rake newels should not exceed 48&quot;. Use in the middle of a rake run of handrail to keep the spacing between the newel posts at 48&quot; or less. For stairs with a 34&quot;-38&quot; rake rail height, select the TR-420-36. For 36&quot;-38&quot; rake rail height, select the TR-420-39.</td>
</tr>
<tr>
<td>7</td>
<td>LEVEL DOWN NEWEL</td>
<td><strong>CABLE SYSTEM:</strong> For 36&quot; level rail height, select the CL-410D-36 for the newel on the second floor landing at the top of the stairway flight. For 39&quot; level rail height, select the CL-410D-39. For 42&quot; level rail height, select the CL-410G-42. <strong>TUBE SYSTEM:</strong> For 36&quot; level rail height, select the TL-410D-36 for the newel on the second floor landing at the top of the stairway flight. For 39&quot; level rail height, select the TL-410D-39. For 42&quot; level rail height, select the TL-410G-42.</td>
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<tr>
<td>8</td>
<td>LEVEL CORNER NEWEL (Tube)</td>
<td>For 36&quot; level rail height, select the CL-410C-36 for the newel at the corner of two level runs. For 39&quot; level rail height, select the CL-410C-39. For 42&quot; level rail height, select the CL-410G-42. <strong>TUBE SYSTEM:</strong> For 36&quot; level rail height, select the TL-411C-36 for the newel at the corner of two level runs. For 39&quot; level rail height, select the TL-411C-39. For 42&quot; level rail height, select the TL-411G-42.</td>
</tr>
<tr>
<td>9</td>
<td>LEVEL START/STOP NEWEL (Tube)</td>
<td><strong>CABLE SYSTEM:</strong> Cable fittings may be installed directly into the wall at the end of a level run, or they can be installed into a newel post at the end of the run that is placed next to the wall. If adding a level run with a newel post, select the CL-410L-36 for 36&quot; level rail height. For 39&quot; level rail height, select the CL-410L-39. For 42&quot; level rail height, select the CL-410G-42. <strong>TUBE SYSTEM:</strong> Tube should be installed into a newel post at the end of the level run that is placed next to the wall. Select the TL-410L-42 for 42&quot; level rail height. Select the TL-410L-39 for 39&quot; level rail height. Select the TL-410L-36 for 36&quot; level rail height. <strong>TUBE SYSTEM:</strong> Tube should be installed into a newel post at the end of the level run that is placed next to the wall. Select the TL-410L-42 for 42&quot; level rail height. Select the TL-410L-39 for 39&quot; level rail height. Select the TL-410L-36 for 36&quot; level rail height.</td>
</tr>
</tbody>
</table>
1 Open Tread Stair Panels, Level Run Panels, P-POSTKIT2H Panel Post Kits and Custom Handrail

2 Linear CABLE-SS Stainless Steel Cable, CL-MFTGS-SS Stainless Steel Level Run Cable Fittings, CL-310-36, CL-310C-36 and CL-320-36 Linear Metal Newel Posts and Custom 684 Exterior Handrail

3 Linear TUBE-SS Stainless Steel Tube, LJ-4101 Newel Posts and Custom Handrail
5 Kneewall Stair Panels, Level Run Panels, LJ-4101G Newel Posts and Custom Handrail

6 Linear CABLE-SS Stainless Steel Cable, CL-WDFTGS-SS Level Run Stainless Steel Cable Fittings, LJ-6002 was used for Handrail and Newel Post

7 Linear CABLE-SS Stainless Steel Cable, CL-WDFTGS-SS Level Run and CR-WDFTGS-SS Rake Stainless Steel Cable Fittings, LJ-4101 Newel Posts with LJ-9017-3.50 and LJ-9018-3.50 Metal Newel Caps, and LJ-6002 Handrail
Consult your local building code official before purchasing and installing any of these systems. Please contact your L.J. Smith dealer or representative if you have any questions about our Linear Collection products.

**Tools Lists**

**Panel System**
- Power Drill
- Miter Saw
- Hack Saw
- Square or Phillips Screw Tip
- 5/32" Hex Driver or Allen Wrench
- 1/8", 3/16", 3/8" Twist Bits

**Cable & Metal Newels System**
- Power Drill
- 1/8" Cable Cutter
- Two 3/8" Open End Wrenches
- 1/2" Box End Wrench
- 3/16", 5/32" Allen Wrenches
- 1/8", 1/4" Twist Bits
- #2 Phillips Drill Tip or Phillips Screwdriver
- Cable Release Tool

**Cable & Wood Newels System**
- Power Drill
- 1/8" Cable Cutter
- Two 3/8" Open End Wrenches
- 3/16" Allen Wrench
- 9/16" Wrench
- 5/16" Twist Bit
- 5/8" x 3" Flare Spade Bit
- Cable Release Tool

**Tube & Wood Newels System**
- Power Drill
- 9/16" Wrench
- 5/16" Twist Bit
- 5/8" x 3" Flare Spade Bit
- Cable Release Tool

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*The tension on the cables will need periodic adjustment by using two 3/8" open end wrenches as described in the installation instructions.*