

## GUIDELINES FOR ORDERING AN ALL WOOD STAIR SYSTEM

The following guidelines are designed to provide an accurate and complete list of components necessary to complete your Wood Post to Post Stair System. This checklist and our Products Catalog will provide the flexibility to comply with most building codes as they relate to handrail height and baluster spacing requirements. The following guidelines will achieve 34" - 38" rake rail heights. Always check local building codes before installation. All products in the L.J. Smith catalog are for interior installations only.

Item	Guidelines	Catalog Page	Part #	Qty.
<b>SUPPORT SYSTEM</b>				
1	<b>SKIRTBOARD</b> Select skirtboard at 13" per tread, plus any additional length desired for extension beyond the first and last risers. Be sure to order enough skirtboard for both sides of the stairway.	78		
2	<b>TREADS</b> Select one tread for each step. For a stair open on one side order miter-returned (MR1) and add 1/4" to the skirtboard to skirtboard measurement, then refer to the next longer standard length available. For a stair open both sides order miter-returned both (MR2) and use the finished skirtboard to skirtboard measurement (measured outside to outside). For false treads see page 79.	78-79		
3	<b>RISERS</b> Select one riser for each step. Select one more riser than treads per each flight because of landing tread (see #4). Note: Landing tread replaces the nosing over the last riser. For false risers see page 79.	78-79		
4	<b>LANDING TREAD</b> Select sufficient lineal footage for the entire balcony and width of stairs at each landing. Note: LJ-8090-5 is suitable for all newels up to and including those that are 4' square. Larger newel posts might require the addition of a wood strip.	78		
5	<b>COVE MOULD</b> Select sufficient lineal footage to go under all tread nosing (including miter-returns) and under all landing tread. Note: cove moulding is not needed under false treads.	78		
<b>BALUSTRADE</b>				
6	<b>UTILITY NEWEL</b> For stairs with a 34"-38" rake rail height, select the 58" Utility newel for the starting newel. If handrail and balusters will be installed on both sides of the bottom of the stairway, two of these newels will be needed. See the Post to Post Newel Applications chart at the bottom of this page for further information on Utility Newel applications. If using Box Newels, select one for the starting newel at the bottom of the stairway. If handrail and balusters will be installed on both sides of the bottom of the stairway, two of these newels will be needed.	20-35 36-41		
7	<b>PIN NEWEL</b> Use in the middle of a long rake run of handrail for strength. This newel does not require a handrail fitting. Pin newels are available in two turning styles only.	28-29,32		
8	<b>INTERMEDIATE LANDING NEWEL</b> Select the intermediate landing newel with the 14 1/2" face when not using a landing fitting assembly (gooseneck). If a landing fitting assembly is used, select the 5" face intermediate landing newel. See the Post to Post Newel Applications chart at the bottom of this page for selecting the appropriate Intermediate Landing Newel(s) for your application. Refer to the photos on page 12. If using Box Newels, select an Intermediate Box Newel. Matching the Box Newel chosen in #6 may require adding additional length to the bottom of the post when used at the intermediate landing.	20-35 36-41		
9	<b>SECOND FLOOR LANDING NEWEL</b> Select the 2nd Floor Landing Newel when not using a landing fitting assembly (36" balcony height). 42" balcony height requires the use of a landing fitting assembly. Use the 48" Utility Newel for surface mount when using a landing fitting assembly. If the newel extends below the floor surface, use the 58" Utility Newel with a landing fitting assembly. See the applications chart below... If using Box Newels, select a Box Newel or Intermediate Box Newel for the Second Floor Landing Newel.	20-35 36-41		
10	<b>LEVEL RUN NEWEL</b> A level run, whether on the 2nd floor or at an intermediate landing, must include newel posts. It should match the post selected for the transition from rake to level or rake to rake (whichever is applicable). For a run of 10 feet or more, use a newel at the midpoint or every 5 to 6 feet. Place a newel at every corner.	20-41		
11	<b>HALF NEWEL</b> OR <b>ROSETTES</b> Select the half-newel of the same style as the other full newels selected on the balcony (i.e.: 11" face or 5" face or Box Newel) Select the round rosette for all level run rail connections into a wall. Select the oval or rectangular rosette for all angled rail connections into a wall (when the rail meets the wall on a rake).	20-41 79		
12	<b>NEWEL MOUNTING HDWE</b> Select one of the newel mounting kits for each newel post.	82		
14	<b>RAKE BALUSTERS FOR OPEN TREAD STAIR</b> "L.J." Series Balusters: For 34"-38" handrail height, use the 38" baluster for the 1st baluster on the tread and use the 42" baluster for the 2nd baluster on the tread. If using three balusters per tread, use the 38" baluster for the 1st and 2nd balusters on the tread, and use the 42" baluster for the 3rd baluster on the tread. Note: when using three balusters per tread for 34"-38" rail height, the 42" baluster may not be long enough for use under a landing fitting assembly (gooseneck). "S-" Series Balusters: For 34"-38" rake handrail height, the first baluster on each tread is 36", the 2nd is 42", and if 3 balusters are used, the middle baluster is 39".	19-35 27,31		
15	<b>RAKE BALUSTERS FOR KNEEWALL STAIR</b> "L.J." Series Balusters: Select the shortest available baluster at a rate of two or three per tread equally spaced according to code requirements. Subtract one baluster from the calculated total as the starting newel replaces the first baluster. "S-" Series Balusters: Select the shortest available baluster at a rate of two or three per tread equally spaced according to code requirements. Subtract one baluster from the calculated total as the starting newel replaces the first baluster.	19-35 27,31		
16	<b>LEVEL RUN BALUSTERS</b> "L.J." Series Balusters: Use the 38" baluster for all 36" level runs/balconies. Use the 42" baluster for all 42" level runs/balconies. To determine quantity of balusters needed, measure the total distance between the end newels on each level run. Place balusters on 4" or 6" centers. Subtract one baluster from the calculated total to account for the end of the run. Subtract one baluster for each newel post on the level run. Do not, however, subtract one for the newel post beneath the landing fitting assembly (gooseneck) at the 2nd floor landing. "S-" Series Balusters: Use the 36" baluster for all 36" level runs/balconies. Use the 42" baluster for all 42" level runs/balconies. To determine quantity of balusters needed, measure the total distance between the end newels on each level run. Place balusters on 4" or 6" centers. Subtract one baluster from the calculated total to account for the end of the run. Subtract one baluster for each newel post on the level run. Do not, however, subtract one for the newel post beneath the landing fitting assembly (gooseneck) at the 2nd floor landing.	19-35 27,31		
17	<b>HANDRAIL</b> Select handrail at a rate of 13" per each tread and include enough for all level runs. Our handrails are available in 8', 10', 12', 14', & 16' lengths. Some are also available in 18' & 20' lengths. See #18 for calculating wall rail.	19-35,80		
18	<b>WALL RAIL</b> If local building codes require wall rail, select wall rail at a rate of 13" per each tread that is closed by a wall. Also, see #20 below. Note: any of our non-plowed handrail profiles may be used as wall rail, however, be sure to check with local building codes for space requirements between the rail and the wall. Wall rail requires wall rail brackets (see #25). Select one bracket for each end of the rail and at 2'-3" intervals between.	81 19-35 80		
19	<b>HANDRAIL FITTINGS (Landing Fitting Components)</b> If using a Landing Fitting Assembly (gooseneck) with the Intermediate and/or Second Floor Landing Newels, match each corner of the floor plan to a corresponding plan on pages 75-76. Specify each Conect-A-Kit fitting component needed to construct the Landing Fitting Assembly(ies) or select traditional gooseneck fittings.	75-76		
20	<b>HANDRAIL FITTINGS (Miscellaneous Components)</b> If continuous handrail is needed to transition from the rake balusters, around a wall, and continue up the stair as wall rail, select the appropriate "S" Fitting or select two level quarterturns.	73-74		
21	<b>SHOERAIL FOR KNEEWALL STAIR/LEVEL RUN</b> Select shoerail at a rate of 13" per each tread on kneewall. Select shoerail to cover all balcony landing tread, (if desired).	19-35		
22	<b>FILLET</b> Select enough fillet to fill all plowed handrail and all shoerail.	19-35		
23	<b>DOUBLE-END SCREW</b> Select one Dowel-Fast™ double-end wood screw for each baluster installed on open treads or level landings. This is optional, but highly recommended. Double-end wood screws are not needed for balusters installed within shoerail.	83		
24	<b>BRACKETS (Open Stairs)</b> Select one bracket for each tread, (if desired).	79		
25	<b>HARDWARE</b> See pages 81-84 for any other installation hardware needed, such as, but not limited to, the following: Flush Mount Kit or Rail & Post Fastener to fasten the handrail to the newel posts; Wall Rail Brackets for any handrail attached to the wall; Wood Plugs, Wood Putty or Wood Glue.	81-84		

### Post to Post Newel Applications

Each Post to Post newel series includes several newels of different lengths. The application for the newels in each series is identified below.

<b>Shortest Utility Newel (48"—5" top face)</b>	Use this newel as the starting newel on all stairs with a 30"-34" rake rail height. Can be used as a balcony newel that is surface mounted.
<b>Longest Utility Newel (58"—5" top face)</b>	Use this newel as a starting newel for stairs with a 34"-38" rake rail height and for balcony newels that will extend below the floor surface.
<b>2nd Floor Landing Newel (11" top face)</b>	Use this newel for the 2nd floor landing newel when not using a landing fitting assembly. Will achieve a 36" balcony railing height.
<b>Intermediate Landing Newel (73" overall—14 1/2" top face)</b>	Use this newel for a level intermediate landing with no landing fitting assembly (gooseneck).
<b>Intermediate Landing Newel (78" overall—5" top face)</b>	Use this newel at the intermediate landing corner of an L-shaped stair with a landing fitting assembly (gooseneck), including landings with 2-winder or 3-winder treads. This newel is also available in 62" and 73" lengths for the Cornerstone Collection on pages 31-32.

## GUIDELINES FOR ORDERING AN IRON & WOOD STAIR SYSTEM

The following guidelines are designed to provide an accurate and complete list of components necessary to complete your Iron & Wood Post to Post Stair System. This checklist and our Products Catalog will provide the flexibility to comply with most building codes as they relate to handrail height and baluster spacing requirements. The following guidelines will achieve 34" - 38" rake rail heights. Always check local building codes before installation. All products in the L.J. Smith catalog are for interior installations only.

Item	Guidelines	Catalog Page	Part #	Qty
<b>SUPPORT SYSTEM</b>				
1	<b>SKIRTBOARD</b> Select skirtboard at 13" per tread, plus any additional length desired for extension beyond the first and last risers. Be sure to order enough skirtboard for both sides of the stairway.	78		
2	<b>TREADS</b> Select one tread for each step. For a stair open on one side order miter-returned (MR1) and add 1 1/4" to the skirtboard to skirtboard measurement, then refer to the next longer standard length available. For a stair open both sides order miter-returned both (MR2) and use the finished skirtboard to skirtboard measurement (measured outside to outside). For false treads see page 79.	78-79		
3	<b>RISERS</b> Select one riser for each step. Select one more riser than treads per each flight because of landing tread (see #4). Note: Landing tread replaces the nosing over the last riser. For false risers see page 79.	78-79		
4	<b>LANDING TREAD</b> Select sufficient lineal footage for the entire balcony and width of stairs at each landing. Note: LJ-8090-5 is suitable for all newels up to and including those that are 4" square. Larger newel posts might require the addition of a wood strip.	78		
5	<b>COVE MOULD</b> Select sufficient lineal footage to go under all tread nosing (including miter-returns) and under all landing tread. Note: cove moulding is not needed under false treads.	78		
<b>BALUSTRADE</b>				
6	<b>UTILITY NEWEL</b> For stairs with a 34"-38" rake rail height, select the 58" Utility newel for the starting newel. If handrail and balusters will be installed on both sides of the bottom of the stairway, two of these newels will be needed. See the Post to Post Newel Applications chart at the bottom of this page for further information on Utility Newel applications.  If using Box Newels, select one for the starting newel at the bottom of the stairway. If handrail and balusters will be installed on both sides of the bottom of the stairway, two of these newels will be needed.	20-35 36-41		
7	<b>PIN NEWEL</b> Use in the middle of a long rake run of handrail for strength. This newel does not require a handrail fitting. Pin newels are available in two turning styles only.	28-29,32		
8	<b>INTERMEDIATE LANDING NEWEL</b> Select the intermediate landing newel with the 14 1/2" face when not using a landing fitting assembly (gooseneck). If a landing fitting assembly is used, select the 5" face intermediate landing newel. See the Post to Post Newel Applications chart at the bottom of this page for selecting the appropriate Intermediate Landing Newel(s) for your application. Refer to the photos on page 12.  If using Box Newels, select an Intermediate Box Newel. Matching the Box Newel chosen in #6 may require adding additional length to the bottom of the post when used at the intermediate landing.	20-35 36-41		
9	<b>SECOND FLOOR LANDING NEWEL</b> Select the 2nd Floor Landing Newel when not using a landing fitting assembly (36" balcony height). 42" balcony height requires the use of a landing fitting assembly. Use the 48" Utility Newel for surface mount when using a landing fitting assembly. If the newel extends below the floor surface, use the 58" Utility Newel with a landing fitting assembly. See the Newel Applications chart below...  If using Box Newels, select a Box Newel or Intermediate Box Newel for the Second Floor Landing Newel.	20-35 36-41		
10	<b>LEVEL RUN NEWEL</b> A level run, whether on the 2nd floor or at an intermediate landing, must include newel posts. It should match the post selected for the transition from rake to level or rake to rake (whichever is applicable). For a run of 10 feet or more, use a newel at the midpoint or every 5 to 6 feet. Place a newel at every corner.	20-41		
11	<b>HALF NEWEL OR ROSETTES</b> Select the half-newel of the same style as the other full newels selected on the balcony (i.e.: 11" face or 5" face or Box Newel)  Select the round rosette for all level run rail connections into a wall. Select the oval or rectangular rosette for all angled rail connections into a wall (when the rail meets the wall on a rake).	20-41 79		
13	<b>NEWEL MOUNTING HARDWARE</b> Select one of the newel mounting kits for each newel post.	82		
14	<b>RAKE IRON BALUSTERS FOR OPEN TREAD STAIR</b> Use three iron balusters per tread equally spaced according to code requirements. While not necessary, an alternating pattern is frequently desired. Note: Scroll style balusters cannot be used three per tread.	57-65		
15	<b>RAKE IRON BALUSTERS FOR KNEEWALL STAIR</b> Select iron balusters at a rate of three per tread equally spaced according to building code compliance. Subtract one baluster from the calculated total as the starting newel replaces the first baluster. While not necessary, an alternating pattern is frequently desired.	58,61		
16	<b>LEVEL RUN IRON BALUSTERS</b> To determine quantity of balusters needed, measure the total distance between the end newels on each level run. Place iron balusters equally spaced according to building code compliance. Subtract one baluster from the calculated total to account for the end of the run. Subtract one baluster for each newel post on the level run. Do not, however, subtract one for the newel post beneath the landing fitting assembly (gooseneck) at the 2nd floor landing. While not necessary, an alternating pattern is frequently desired.	57-65		
17	<b>HANDRAIL</b> Select non-plowed handrail at a rate of 13" per each tread and include enough for all level runs. Our handrails are available in 8", 10", 12", 14", & 16" lengths. Some are also available in 18" & 20" lengths. See #18 for calculating wall rail.	19-35, 80		
18	<b>WALL RAIL</b> If local building codes require wall rail, select wall rail at a rate of 13" per each tread that is closed by a wall. Also, see #20 below. Note: any of our non-plowed handrail profiles may be used as wall rail, however, be sure to check with local building codes for space requirements between the rail and the wall. Wall rail requires wall rail brackets (see #26). Select one bracket for each end of the rail and at 2'-3" intervals between.	81 19-35, 80		
19	<b>HANDRAIL FITTINGS (Landing Fitting Components)</b> If using a Landing Fitting Assembly (gooseneck) with the Intermediate and/or Second Floor Landing Newels, match each corner of the floor plan to a corresponding plan on pages 75-76. Specify each Connect-A-Kit fitting component needed to construct the Landing Fitting Assembly(ies) or select traditional gooseneck fittings.	75-76		
20	<b>HANDRAIL FITTINGS (Miscellaneous Components)</b> If continuous handrail is needed to transition from the rake balusters, around a wall, and continue up the stair as wall rail, select the appropriate "S" Fitting or select two level quarterturns.	73-74		
21	<b>BOTTOM BALUSTER COLLARS</b> Select one bottom baluster collar for each baluster. See descriptions for applications.	57-65		
22	<b>TOP BALUSTER COLLARS</b> Select one top baluster collar for each baluster (if desired). See descriptions for applications.	57-65		
23	<b>IRON BALUSTER ACCESSORIES</b> If using PLA44 balusters, select the appropriate number of adjustable knuckles (if desired).	58		
24	<b>BRACKETS (Open Stairs)</b> Select one bracket for each tread, (if desired).	79		
25	<b>IRON BALUSTER EPOXY</b> Select construction epoxy for installing the iron balusters.	69		
26	<b>HARDWARE</b> See pages 81-84 for any other installation hardware needed, such as, but not limited to, the following: Flush Mount Kit or Rail & Post Fastener to fasten the handrail to the newel posts; Wall Rail Brackets for any handrail attached to the wall; Wood Plugs, Wood Putty or Wood Glue.	81-84		

### Post to Post Newel Applications

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<b>Shortest Utility Newel (48"—5" top face)</b>	Use this newel as the starting newel on all stairs with a 30"-34" rake rail height. Can be used as a balcony newel that is surface mounted.
<b>Longest Utility Newel (58"—5" top face)</b>	Use this newel as a starting newel for stairs with a 34"-38" rake rail height and for balcony newels that will extend below the floor surface.
<b>2nd Floor Landing Newel (11" top face)</b>	Use this newel for the 2nd floor landing newel when not using a landing fitting assembly. Will achieve a 36" balcony railing height.
<b>Intermediate Landing Newel (73" overall—14 1/2" top face)</b>	Use this newel for a level intermediate landing with no landing fitting assembly (gooseneck).
<b>Intermediate Landing Newel (78" overall—5" top face)</b>	Use this newel at the intermediate landing corner of an L-shaped stair with a landing fitting assembly (gooseneck), including landings with 2-winder or 3-winder treads. This newel is also available in 62" and 73" lengths for the Cornerstone Collection on pages 31-32.

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