

## 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 Over the 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 32" minimum/36" maximum 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
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.	80		
2	<b>STARTING STEP</b> For use with volutes and turnouts. Select a single or double bullnose starting step matching your floor plan to those shown on page 79. Be sure to select a starting step that coordinates with the chosen volute(s) and turnout(s). Measure finished skirtboards from outside to outside. For false starting steps see page 81.	79,81		
3	<b>TREADS</b> Select one tread for each step (except the starting 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 81.	80-81		
4	<b>RISERS</b> Select one riser for each step (except the starting step). Select one more riser than treads per each flight because of landing tread (see #5). Landing tread replaces the nosing over the last riser. For false risers see page 81.	80-81		
5	<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.	80		
6	<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.	80		
7	<b>STARTING FITTING</b> Select either a standard volute, vertical volute, turnout, or starting easing with cap. Choose a climbing volute to eliminate the need for an unusually long starting newel.	73-74		
8	<b>PIN NEWEL</b> Use under a vertical volute. This newel is also used in the middle of a long rake run of handrail for strength (does not require a handrail fitting). Pin newels are available in two turning styles only.	52, 54-55		
9	<b>UTILITY NEWEL (43")</b> Use everywhere except at the intermediate landing corner of an L-shaped stair and in situations listed in #8 above.	44-55		
10	<b>UTILITY NEWEL (50")</b> Use for balcony newel(s) that will extend below the floor surface. Also use under a starting easing with cap when a starting step is <u>not</u> used, and the rake handrail height is 34" or higher.	44-55		
11	<b>INTERMEDIATE LANDING NEWEL</b> Use the 58" intermediate landing newel at the intermediate landing corner of an L-shaped stair. Use the 73" intermediate landing newel in 2-winder or 3-winder situations. A 65" intermediate landing newel is also available in the Cornerstone Collection on pages 53-54.	44-55		
12	<b>LEVEL RUN NEWEL</b> If the balcony is 10 feet or longer, use the 43" utility newel every 5 or 6 feet under a tandem cap. Place a newel at every corner under a quarterturn with cap. Use the 50" utility newel if the newel is to extend below the 2nd floor surface.	44-55		
13	<b>HALF NEWEL</b> Select the half-newel of the same style as the other full newels selected on the balcony.	44-55		
14	<b>OR ROSETTES</b> 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).	81		
15	<b>NEWEL MOUNTING HDWE</b> Select one of the newel mounting kits for each newel post.	84		
16	<b>BALUSTERS FOR VOLUTES AND TURNOUTS</b> "LJ-" Series Balusters: Standard volutes require four or six 1 1/4" balusters, or four 1 1/2" balusters. Turnouts require two 1 1/4" balusters, or one 1 1/2" balusters. For 30"-34" rake rail height, use 38" balusters under all standard volutes, and use 42" baluster(s) under all turnouts. For 34"-38" rake rail height, use 42" balusters under all standard volutes and turnouts. Climbing volute requirements: For 30" rake rail height, use three 34" and one or two 38" baluster(s). For 34" rake rail height, use three 38" and one or two 42" baluster(s). For 36" rake rail height, use four or five 42" balusters. "S-" Series Balusters: For 30"-34" rake rail height, standard volutes require four or six 1 1/4" x 36" balusters, or four 1 1/2" x 36" balusters. Turnouts require two 1 1/4" x 39" balusters, or one 1 1/2" x 39" baluster. For 34"-38" rake rail height, use 42" balusters under standard volutes and turnouts.	43-55		
17	<b>BALUSTERS FOR STARTING EASING WITH CAP</b> "LJ-" Series Balusters: Use one 38" baluster for 30"-34" handrail height. Use one 42" baluster for 34"-38" handrail height. "S-" Series Balusters: Use one 34" baluster for 30"-34" handrail height. Use one 42" baluster for 34"-38" handrail height.	43-55 51-53		
18	<b>RAKE BALUSTERS FOR OPEN TREAD STAIR</b> "LJ-" Series Balusters: For 30"-34" handrail height, use the 34" baluster for the 1st baluster on the tread and use the 38" baluster for the 2nd and 3rd balusters on the tread. If using three balusters per tread, substitute a 42" baluster for the 3rd baluster under each landing fitting assembly. 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 <u>not</u> be long enough for use under a landing fitting assembly. "S-" Series Balusters: For 30"-34" handrail height, the 1st baluster on the tread is 31", the 2nd is 34", and if applicable, 3rd is 36". (If using 3 per tread, substitute a 39" for the 3rd baluster under each landing fitting assembly (gooseneck). 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"	43-55 51,53		
19	<b>RAKE BALUSTERS FOR KNEEWALL STAIR</b> "LJ-" Series Balusters: Select the shortest available baluster at a rate of two or three per tread placed on 4" or 6" centers. 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 placed on 4" or 6" centers. Subtract one baluster from the calculated total as the starting newel replaces the first baluster.	43-55 51,53		
20	<b>LEVEL RUN BALUSTERS</b> "LJ-" Series Balusters: Use the 38" baluster for all 36" level runs/balconies. Use the 42" baluster for all 42" level runs/balconies (exception: an over the post rake rail height of 34"-38" requires 42" balusters for 36" and 42" level 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.	43-55 51,53		
21	<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 #22 for calculating wall rail.	43-55 82		
22	<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 #24 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 #29). Select one bracket for each end of the rail and at 2'-3' intervals between.	83 43-55 82		
23	<b>HANDRAIL FITTINGS (Landing Fitting Components)</b> Match each corner of the floor plan to a corresponding plan on pages 77-78. Specify each Connect-A-Kit fitting component needed to construct the Landing Fitting Assembly(ies) or select traditional gooseneck fittings.	77-78		
24	<b>HANDRAIL FITTINGS (Miscellaneous Components)</b> Each newel must be covered with a fitting. Select an opening cap for each half-newel (this fitting will be cut on the job). 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 selected two level quarterturns.	75-76		
25	<b>SHOERAIL FOR KNEEWALL STAIR/LEVEL RUN</b> Select shoerail at a rate of 13" per each tread on the kneewall. Select shoerail to cover all balcony landing tread, (if desired).	43-55		
26	<b>FILLET</b> Select enough fillet to fill all plowed handrail and all shoerail.	43-55		
27	<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.	85		
28	<b>BRACKETS (Open Stairs)</b> Select one bracket for each tread, (if desired).	81		
29	<b>HARDWARE</b> See pages 83-85 for any other installation hardware needed, such as, but not limited to, the following: Wall Rail Brackets for any handrail attached to the wall; Wood Plugs, Wood Putty or Wood Glue.	83-85		

### Over the Post Newel Applications

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

<b>Shortest Utility Newel (43")</b>	Use this newel under all starting fittings (except Vertical Volutes and Starting Easings with Cap), and as a balcony newel that is surface mounted. (see "Longest Utility Newel" for exception on Starting Easing with Cap)
<b>Longest Utility Newel (50")</b>	Use this newel under a Starting Easing with Cap when a starting step is not used and the rake handrail height is 34" or higher. Can also be used as a balcony newel that will extend below the floor surface.
<b>Intermediate Landing Newel (58")</b>	Use this newel for level intermediate landings.
<b>Intermediate Landing Newel (73")</b>	Use this newel for intermediate landings with 2-winder or 3-winder treads. This newel is also available in 65" length for the Cornerstone Collection on pages 53-54.

## 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 Over the 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 32" minimum/36" maximum 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.	80		
2	<b>STARTING STEP</b> For use with volutes and turnouts. Select a single or double bullnose starting step matching your floor plan to those shown on page 79. Be sure to select a starting step that coordinates with the chosen volute(s) and turnout(s). Measure finished skirtboards from outside to outside. For false starting steps see page 81.	79,81		
3	<b>TREADS</b> Select one tread for each step (except the starting step). For a stair open on one side order miter-returned (MR1) and add 1½" 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 81.	80-81		
4	<b>RISERS</b> Select one riser for each step (except the starting step). Select one more riser than treads per each flight because of landing tread (see #5). Landing tread replaces the nosing over the last riser. For false risers see page 81.	80-81		
5	<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.	80		
6	<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.	80		
<b>BALUSTRADE</b>				
7	<b>STARTING FITTING</b> Select either a standard volute, vertical volute, turnout, or starting easing with cap. Choose a climbing volute to eliminate the need for an unusually long starting newel.	73-74		
8	<b>IRON NEWEL</b> Iron newels can only be used as starting newels at the bottom of the stairway because they require a starting step for installation. If handrail and balusters will be installed on both sides, two of these newels will be needed. See steps #9, #10 & #11 below if using wood newels as the starting newels.	68		
9	<b>WOOD PIN NEWEL</b> Use under a vertical volute. This newel is also used in middle of a long rake run of handrail for strength (does not require a handrail fitting). Pin newels are available in two turning styles only.	52, 54-55		
10	<b>WOOD UTILITY NEWEL (43")</b> Use everywhere except at the intermediate landing corner of an L-shaped stair and in situations listed in #9 above. See the Over the Post Newel Applications chart at the bottom of the previous page for further information on over the post wood newel applications.	44-55		
11	<b>WOOD UTILITY NEWEL (50")</b> Use for balcony newel(s) that will extend below the floor surface. Also use under a starting easing with cap when a starting step is not used, and the rake handrail height is 34" or higher.	44-55		
12	<b>WOOD INTERMEDIATE LANDING NEWEL</b> Use the 58" intermediate landing newel at the intermediate landing corner of an L-shaped stair. Use the 73" intermediate landing newel in 2-winder or 3-winder situations. A 65" intermediate landing newel is also available in the Cornerstone Collection on pages 53-54.	44-55		
13	<b>WOOD LEVEL RUN NEWEL</b> If the balcony is 10 feet or longer, use the 43" utility newel every 5 or 6 feet under a tandem cap. Place a newel at every corner under a quarterturn with cap. Use the 50" utility newel if the newel is to extend below the 2nd floor surface.	44-55		
14	<b>WOOD HALF NEWEL OR ROSETTES</b> Select the half-newel of the same style as the other full newels selected on the balcony. 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).	44-55 81		
16	<b>NEWEL MOUNTING HARDWARE</b> Select an Iron Newel Mounting Kit for each iron newel being used. Select one of the newel mounting kits for each wood newel post being used.	68 84		
17	<b>IRON BALUSTERS FOR VOLUTES AND TURNOUTS</b> Standard volutes require six iron balusters. Climbing volutes require five iron balusters. Turnouts require two iron balusters. Scroll balusters cannot be used under volutes or turnouts.	57-67		
18	<b>IRON BALUSTERS FOR STARTING EASING WITH CAP</b> Use one iron baluster under each Starting Easing with Cap.	57-67		
19	<b>RAKE IRON BALUSTERS FOR OPEN TREAD STAIR</b> Use two or three iron balusters per tread. While not necessary, an alternating pattern is frequently desired. When using two balusters per tread, please check building codes for baluster spacing compliance. Note: Scroll style balusters cannot be used three per tread.	57-67		
20	<b>RAKE IRON BALUSTERS FOR KNEEWALL STAIR</b> Select iron balusters at a rate of three per tread and 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		
21	<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 on 4" or 6" centers 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.	57-67		
22	<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 #23 for calculating wall rail.	43-55 82		
23	<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. See #25 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 #31). Select one bracket for each end of the rail and at 2'-3" intervals between.	83 43-55 82		
24	<b>HANDRAIL FITTINGS (Landing Fitting Components)</b> Match each corner of the floor plan to a corresponding plan on pages 77-78. Specify each Conect-A-Kit fitting component needed to construct the Landing Fitting Assembly(ies) or select traditional gooseneck fittings.	77-78		
25	<b>HANDRAIL FITTINGS (Miscellaneous Components)</b> Each newel must be covered with a fitting. Select an opening cap for each half-newel (this fitting will be cut on the job). 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 2 level quarterturns.	75-76		
26	<b>BOTTOM BALUSTER COLLARS</b> Select one bottom baluster collar for each baluster. See descriptions for applications.	57-67		
27	<b>TOP BALUSTER COLLARS</b> Select one top baluster collar for each baluster (if desired). See descriptions for applications.	57-67		
28	<b>IRON BALUSTER ACCESSORIES</b> If using PLA44 balusters, select the appropriate number of adjustable knuckles (if desired). If medallion balusters are being used, select the corresponding number of medallions (if desired).	58,60		
29	<b>BRACKETS (Open Stairs)</b> Select one bracket for each tread, (if desired).	81		
30	<b>IRON BALUSTER EPOXY</b> Select construction epoxy for installing the iron balusters.	71		
31	<b>HARDWARE</b> See pages 83-85 for any other installation hardware needed, such as, but not limited to, the following: Wall Rail Brackets for any handrail attached to the wall; Wood Plugs, Wood Putty or Wood Glue.	83-85		