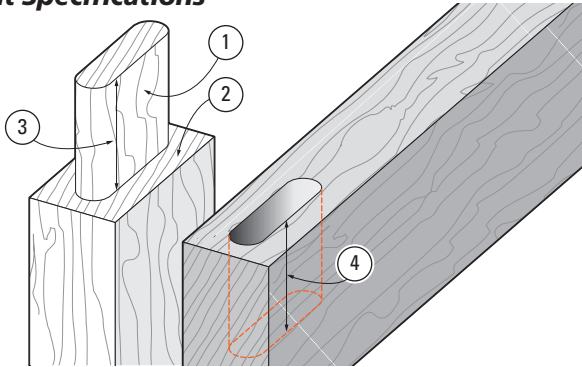


Joint Specifications, Guide and Bit Selection

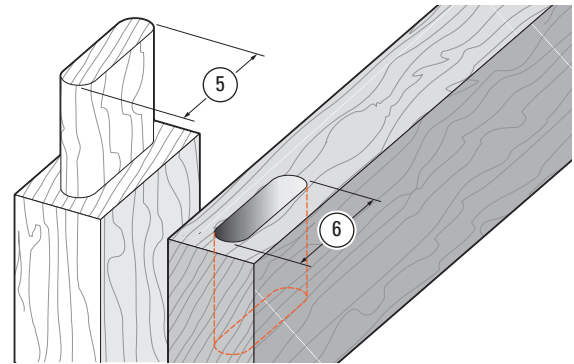
Foreword

The illustrations and specifications in this Appendix show the largest tenon rail and tenon sizes possible on the Super FMT, either in one table position or multiple table positions as noted. For all smaller sizes, refer to the guide and bit selection chart.

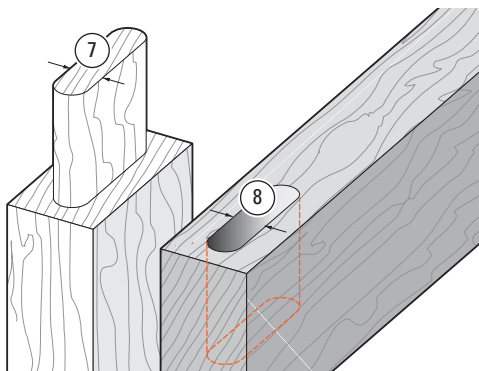
Joint Specifications



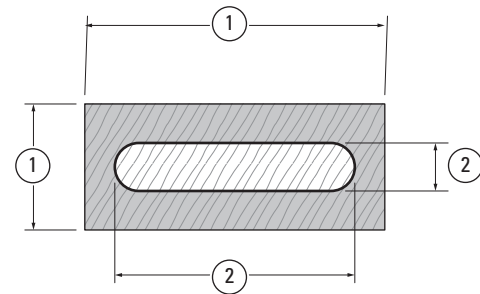
A1-1 Joint Terminology The tenon sides are the “Cheeks” ①. The tenon shoulders are called (luckily) the “Shoulders” ②. Unfortunately, references to dimensions of mortises and tenons do not share matching terminology, so... Long or short tenons ③ fit into deep or shallow mortises ④. **Tenon Length = Mortise Depth.**



A1-2 Wide or narrow tenons ⑤ fit into long or short mortises ⑥. **Tenon Width = Mortise Length.**



A1-3 Thick or thin tenons ⑦ fit into wide or narrow mortises ⑧. **Tenon Thickness = Mortise Width.**



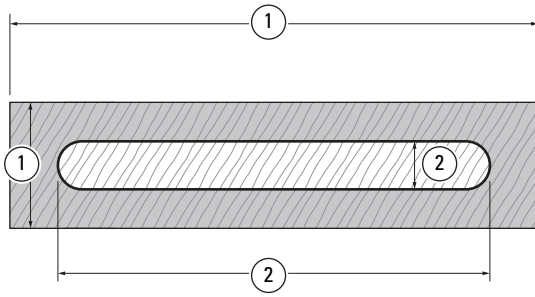
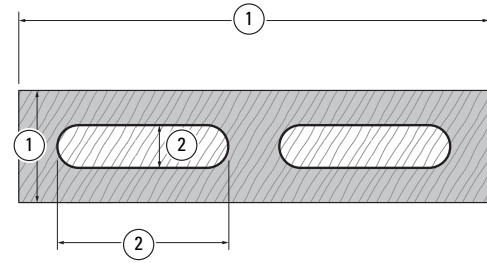
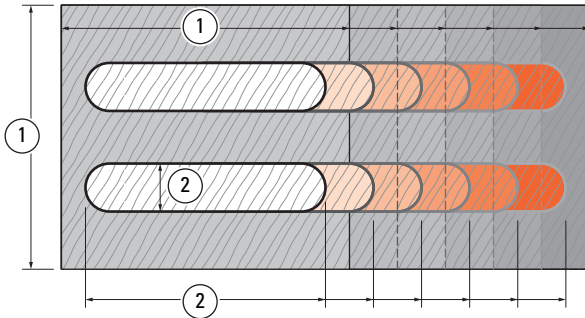
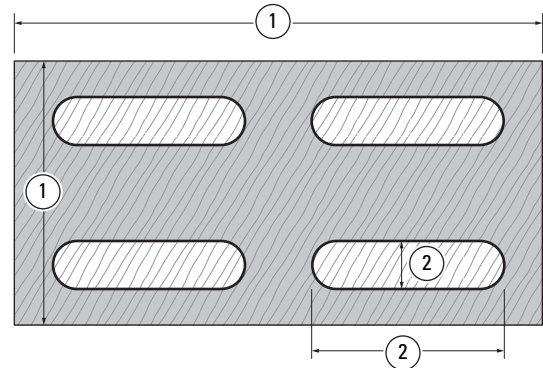
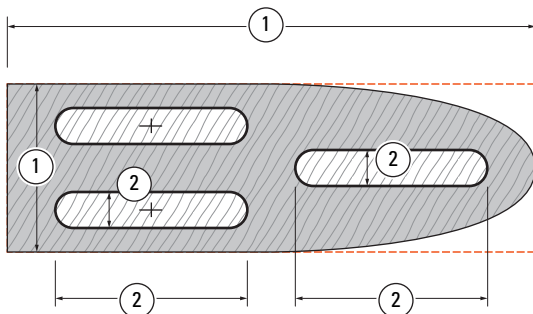
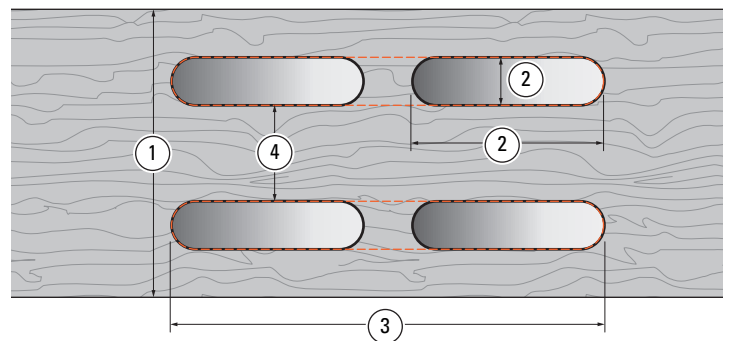
A1-4 Largest Single Rail and Tenon (using one table position with 1/4" bit)

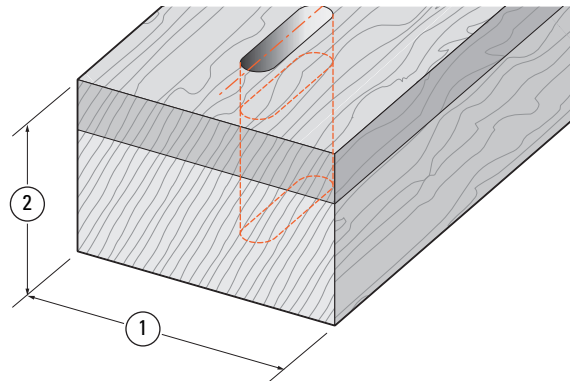
Workpiece 1 5/16" x 3 1/8" [34 x 80mm] ①.

Tenon 1/2" x 2 1/2" [12 x 65mm] ②.

Guide 1/2" x 2 1/2" [12 x 65mm].

Note: Routing single tenons in stock thicker than 1 5/16" [34mm] would require the bit to be plunged into the edge of the workpiece, dangerously “trapping” the bit. See 5-39 through 5-44 and follow the “Third Tenon” procedure.

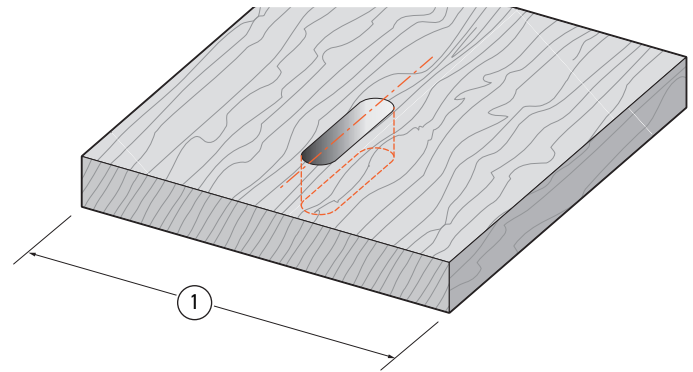
**A1-5 Largest Single Rail and Tenon***(using two table positions)*Workpiece $1\frac{5}{16}" \times 5\frac{1}{2}"$ [34 x 140mm] ①.Tenon $\frac{1}{2}" \times 4\frac{1}{2}"$ [12 x 115mm] ②.Guide $\frac{1}{2}" \times 2\frac{1}{2}"$ [12 x 65mm].*Note: Using 3 table positions tenon length ② may be up to 5" [125mm]***A1-6 Largest Tandem Double Tenon***(using two table positions)*Workpiece $1\frac{5}{16}" \times 5\frac{1}{2}"$ [34 x 140mm] ①.Tenons $\frac{1}{2}" \times 2"$ [12 x 50mm] ②.Guide $\frac{1}{2}" \times 2"$ [12 x 50mm].**A1-7 Largest Side-by-Side Twin Tenon** *(two* table positions)*Workpiece $3" \times 5\frac{1}{2}"$ [76 x 140mm] ①.Tenons $\frac{1}{2}" \times 2\frac{1}{2}"$ [12 x 65+mm] ②.Guide $\frac{1}{2}" \times 2\frac{1}{2}"$ [12 x 65mm].**Note: Add left-right table positions to the two front-back settings, for maximum workpiece and tenons extension. See A1-5.***A1-8 Largest Quadruple Tenon** *(four table positions)*Workpiece $3" \times 5\frac{1}{2}"$ [76 x 140mm] ①.Tenons $\frac{1}{2}" \times 2"$ [12 x 50mm] ②.Guide $\frac{1}{2}" \times 2"$ [12 x 50mm].**A1-9 Largest Triple Tenon** *(five* table positions)*Workpiece $1\frac{3}{4}" \times 5\frac{1}{2}"$ [44 x 140mm] ①.Tenons $\frac{3}{8}" \times 2"$ [10 x 50mm] ②.Guide $\frac{3}{8}" \times 2"$ [10 x 50mm].**Note: To avoid "trapping" the bit on larger workpieces, rout the third tenon in three different □ ▢ ▣ table positions. See Chapter 5, "Triple Joints".***A1-10 Thickest Mortise Board and Mortise Centers** *(four table positions)*Thickness $3"$ [75mm] ①.4 Mortises $\frac{1}{2}" \times 2"$ [12 x 50mm] ②.2 Mortises $\frac{1}{2}" \times 4\frac{1}{2}"$ [12 x 115mm] ③.Spacing $\frac{9}{16}"$ to $1"$ [13 x 26mm] ④.Board Width Clamping Capacity: $5"$ [128mm].

**A1-11 Widest, Deepest Workpieces for Mortising to Center**

Width up to $4\frac{5}{8}$ " [115mm] ①.

Depth up to 4" [100mm] ②.

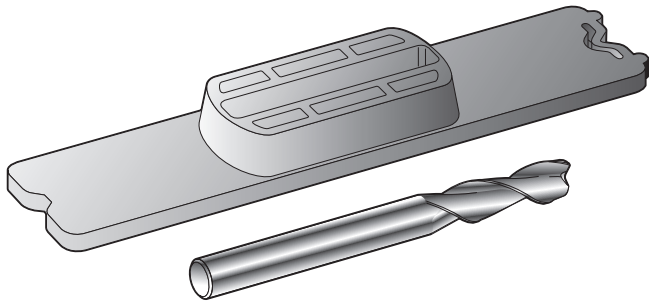
Note: See 6-21 for mounting instructions for these pieces.

**A1-12 Maximum-width Board for Mortising to Center**

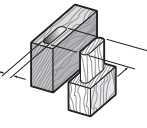
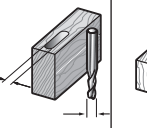
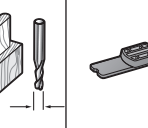
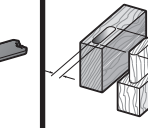
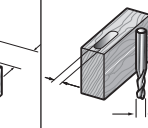
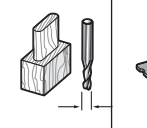
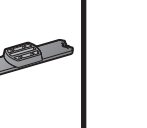
Width from $4\frac{5}{8}$ " [115mm]

up to $6\frac{1}{2}$ " [165mm] ①

Note: See 6-22 for special instructions. ■

Guide and Bit Selection

Use the charts on the next few pages to select appropriate guide and bit combinations. →

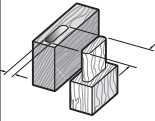
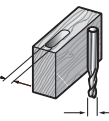
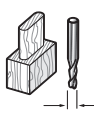
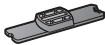
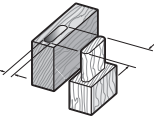
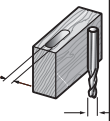
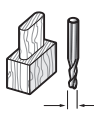
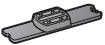
INCH GUIDE AND BIT SELECTION CHART							
							
JOINT SIZE	MORTISE BIT	TENON BIT	GUIDE SIZE	JOINT SIZE	MORTISE BIT	TENON BIT	GUIDE SIZE
1/16" x 1/8"	1/16	7/16	1/4" x 5/16"	1/4" x 5/16"	1/4	1/4	1/4" x 5/16"
1/16" x 3/16"	1/16	7/16	1/4" x 3/8"	1/4" x 3/8"	1/4	1/4	1/4" x 3/8"
1/16" x 5/16"	1/16	7/16	1/4" x 1/2"	1/4" x 7/16"	1/4	3/8	5/16" x 1/2"
1/16" x 7/16"	1/16	7/16	1/4" x 5/8"	1/4" x 1/2"	1/4	1/4	1/4" x 1/2"
1/16" x 9/16"	1/16	7/16	1/4" x 3/4"	1/4" x 5/8"	1/4	1/4	1/4" x 5/8"
1/16" x 13/16"	1/16	7/16	1/4" x 1"	1/4" x 11/16"	1/4	3/8	5/16" x 3/4"
1/16" x 1-1/16"	1/16	7/16	1/4" x 1-1/4"	1/4" x 3/4"	1/4	1/4	1/4" x 3/4"
1/16" x 1-5/16"	1/16	7/16	1/4" x 1-1/2"	1/4" x 15/16"	1/4	3/8	5/16" x 1"
1/8" x 3/16"	1/8	3/8	1/4" x 5/16"	1/4" x 1"	1/4	1/4	1/4" x 1"
1/8" x 1/4"	1/8	3/8	1/4" x 3/8"	1/4" x 1-3/16"	1/4	3/8	5/16" x 1-1/4"
1/8" x 5/16"	1/8	1/2	5/16" x 1/2"	1/4" x 1-1/4"	1/4	1/4	1/4" x 1-1/4"
1/8" x 3/8"	1/8	3/8	1/4" x 1/2"	1/4" x 1-3/8"	1/4	1/2	3/8" x 1-1/2"
1/8" x 1/2"	1/8	3/8	1/4" x 5/8"	1/4" x 1-7/16"	1/4	3/8	5/16" x 1-1/2"
1/8" x 9/16"	1/8	1/2	5/16" x 3/4"	1/4" x 1-1/2"	1/4	1/4	1/4" x 1-1/2"
1/8" x 5/8"	1/8	3/8	1/4" x 3/4"	1/4" x 1-7/8"	1/4	1/2	3/8" x 2"
1/8" x 13/16"	1/8	1/2	5/16" x 1"	1/4" x 2-3/8"	1/4	1/2	3/8" x 2-1/2"
1/8" x 7/8"	1/8	3/8	1/4" x 1"	5/16" x 1/2"	5/16	5/16	5/16" x 1/2"
1/8" x 1-1/16"	1/8	1/2	5/16" x 1-1/4"	5/16" x 3/4"	5/16	5/16	5/16" x 3/4"
1/8" x 1-1/8"	1/8	3/8	1/4" x 1-1/4"	5/16" x 15/16"	5/16	7/16	3/8" x 1"
1/8" x 1-5/16"	1/8	1/2	5/16" x 1-1/2"	5/16" x 1"	5/16	5/16	5/16" x 1"
1/8" x 1-3/8"	1/8	3/8	1/4" x 1-1/2"	5/16" x 1-1/4"	5/16	5/16	5/16" x 1-1/4"
3/16" x 1/4"	3/16	5/16	1/4" x 5/16"	5/16" x 1-7/16"	5/16	7/16	3/8" x 1-1/2"
3/16" x 5/16"	3/16	5/16	1/4" x 3/8"	5/16" x 1-1/2"	5/16	5/16	5/16" x 1-1/2"
3/16" x 3/8"	3/16	7/16	5/16" x 1/2"	5/16" x 1-15/16"	5/16	7/16	3/8" x 2"
3/16" x 7/16"	3/16	5/16	1/4" x 1/2"	5/16" x 2-7/16"	5/16	7/16	3/8" x 2-1/2"
3/16" x 9/16"	3/16	5/16	1/4" x 5/8"	3/8" x 1"	3/8	3/8	3/8" x 1"
3/16" x 5/8"	3/16	7/16	5/16" x 3/4"	3/8" x 1-1/2"	3/8	3/8	3/8" x 1/2"
3/16" x 11/16"	3/16	5/16	1/4" x 3/4"	3/8" x 2"	3/8	3/8	3/8" x 2"
3/16" x 7/8"	3/16	7/16	5/16" x 1"	3/8" x 2-1/2"	3/8	3/8	3/8" x 2-1/2"
3/16" x 15/16"	3/16	5/16	1/4" x 1"	1/2" x 1"	1/2	1/2	1/2" x 1"
3/16" x 1-1/8"	3/16	7/16	5/16" x 1-1/4"	1/2" x 1-1/2"	1/2	1/2	1/2" x 1-1/2"
3/16" x 1-3/16"	3/16	5/16	1/4" x 1-1/4"	1/2" x 2"	1/2	1/2	1/2" x 2"
3/16" x 1-3/8"	3/16	7/16	5/16" x 1-1/2"	1/2" x 2-1/2"	1/2	1/2	1/2" x 2-1/2"
3/16" x 1-7/16"	3/16	5/16	1/4" x 1-1/2"				

Note: Joints routed with a single bit are shown shaded.

In addition to the joint sizes listed in the charts, any tenon width (mortise length) can easily be achieved by using the jig's quick-acting table movement and limit stops (see Chapter 6, Longer and Shorter Joints). By using combinations of machine tool bits, even more sizes of small and miniature joints may be routed (see Chapter 4, Small Joints).

BIT SPECIFICATIONS					
LEIGH BIT ITEM NO.		A	B	B	C
HSS Spiral Upcut	Solid Carbide Spiral Upcut	Mortise Size Cutting Diameter	HSS Cutting Depth	Solid Carbide Cutting Depth	Shank Diameter
162	N/A	1/16"	3/16"	-	1/4"
164	164C	1/8"	3/8"	1/2"	1/4"
166	166C	3/16"	5/8"	3/4"	1/4"
168	168C	1/4"	1"	1-1/8"	1/4"
170-500	170-500C	5/16"	1"	1-1/8"	1/2"
173-500	173-500C	3/8"	1-1/4"	1-1/4"	1/2"
177	177C	7/16"	1-3/4"	1-3/4"	1/2"
180	180CL	1/2"	1-1/2"	2-1/8"	1/2"

Note: For metric bit specifications, please see your national Leigh distributor.

METRIC GUIDE AND BIT SELECTION CHART							
							
JOINT SIZE	MORTISE BIT	TENON BIT	GUIDE SIZE	JOINT SIZE	MORTISE BIT	TENON BIT	GUIDE SIZE
2 x 4	2	10	6 x 8	6 x 8	6	6	6 x 8
2 x 6	2	10	6 x 10	6 x 10	6	6	6 x 10
2 x 11	2	10	6 x 15	6 x 13	6	10	8 x 15
2 x 16	2	10	6 x 20	6 x 15	6	6	6 x 15
2 x 21	2	10	6 x 25	6 x 18	6	10	8 x 20
2 x 26	2	10	6 x 30	6 x 20	6	6	6 x 20
2 x 31	2	10	6 x 35	6 x 23	6	10	8 x 25
2 x 36	2	10	6 x 40	6 x 25	6	6	6 x 25
3 x 5	3	9	6 x 8	6 x 28	6	10	8 x 30
3 x 7	3	9	6 x 10	6 x 30	6	6	6 x 30
3 x 12	3	9	6 x 15	6 x 33	6	10	8 x 35
3 x 17	3	9	6 x 20	6 x 35	6	6	6 x 35
3 x 22	3	9	6 x 25	6 x 38	6	10	8 x 40
3 x 27	3	9	6 x 30	6 x 40	6	6	6 x 40
3 x 32	3	9	6 x 35	7 x 14	7	9	8 x 15
3 x 37	3	9	6 x 40	7 x 19	7	9	8 x 20
4 x 6	4	8	6 x 8	7 x 24	7	9	8 x 25
4 x 8	4	8	6 x 10	7 x 29	7	9	8 x 30
4 x 11	4	12	8 x 15	7 x 34	7	9	8 x 35
4 x 13	4	8	6 x 15	7 x 39	7	9	8 x 40
4 x 16	4	12	8 x 20	8 x 15	8	8	8 x 15
4 x 18	4	8	6 x 20	8 x 20	8	8	8 x 20
4 x 21	4	12	8 x 25	8 x 23	8	12	10 x 25
4 x 23	4	8	6 x 25	8 x 25	8	8	8 x 25
4 x 26	4	12	8 x 30	8 x 30	8	8	8 x 30
4 x 28	4	8	6 x 30	8 x 33	8	12	10 x 35
4 x 31	4	12	8 x 35	8 x 35	8	8	8 x 35
4 x 33	4	8	6 x 35	8 x 40	8	8	8 x 40
4 x 36	4	12	8 x 40	8 x 43	8	12	10 x 45
4 x 38	4	8	6 x 40	8 x 53	8	12	10 x 55
5 x 7	5	7	6 x 8	8 x 63	8	12	10 x 65
5 x 9	5	7	6 x 10	10 x 25	10	10	10 x 25
5 x 14	5	7	6 x 15	10 x 35	10	10	10 x 35
5 x 19	5	7	6 x 20	10 x 45	10	10	10 x 45
5 x 24	5	7	6 x 25	10 x 55	10	10	10 x 55
5 x 29	5	7	6 x 30	10 x 65	10	10	10 x 65
5 x 34	5	7	6 x 35	12 x 25	12	12	12 x 25
5 x 39	5	7	6 x 40	12 x 35	12	12	12 x 35
				12 x 45	12	12	12 x 45
				12 x 55	12	12	12 x 55
				12 x 65	12	12	12 x 65

