ROCKLER®
WOODWORKING AND HARDWARE

e-zplan

The Rockler **Train Track Bit Set** lets you create unlimited amounts of track for classic, collectable wooden train sets. Below, learn how easy it is to make curved and straight track at a fraction of the cost of "store bought" sets!

Before You Get Started

SAFETY NOTICE!

• Read the instructions carefully and be sure that you thoroughly understand the instructions and the safe operation of all of the necessary tools BEFORE YOU BEGIN.

• DO NOT use the Rockler Train Track Router Bits "freehand." They are intended for use with a router table ONLY.

EQUIPMENT NEEDED

• **TOOLS:** Router, Router Table with Fence, Rockler Train Track Bit Set (**Rockler #23613**), Band Saw, Sandpaper, Drill and 1/4" drill bit.

• **ADDITIONAL EQUIPMENT:** Right Angle Fixture and Arc Cutting Jig. Rockler recommends the Right Angle Fixture available with the Incra Universal Precision Positioning Jig, Fence, Stop Block and Right Angle Fixture Package (**Rockler #22221**). A shop-built Right Angle Fixture may also be used. The Arc Cutting Jig can be easily constructed out of scrap material (see **SECTION III** for details).

• **RECOMMENDED STOCK**: For best results, use a hardwood species of moderate hardness that machines easily, such as European Beech or Birch.

Section I - Preparing the Stock

1. The recommended dimensions for straight track sections when making a complete set of track are 1-5/8" wide x ½" thick. When making track to match an existing set, prepare stock to match the width and thickness of the existing track.

2. Straight track can be made in a variety of lengths; 4-1/4" and 5-3/4" are popular "track lengths" in store-bought sets. REMEMBER TO ADD 11/16" (the length of the male connector) to the desired "track length" when calculating stock for the straight track (see **Figure 1**).

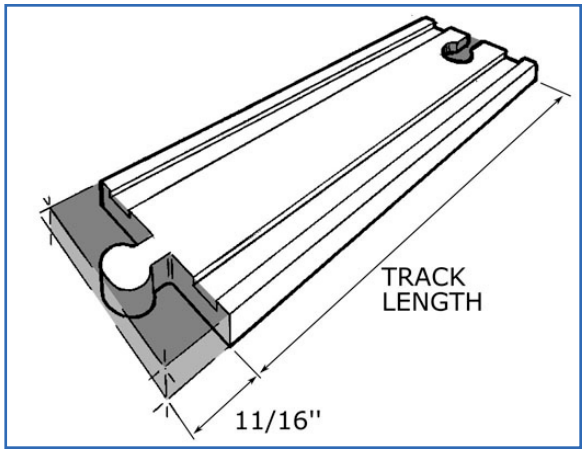

Figure 1

3. Cut the straight track stock into pieces long enough to be cut into three or four sections of track later on. Also, prepare a few extra pieces of stock to allow for test cuts and a mistake or two.

4. Cut blanks for the curved sections. All curved track sections will be cut from 2-3/4'' x 8-1/4'' blanks. To make machining the curved track easier, cut the curved track blanks as accurately as possible.

Section II - Cutting Grooves in Straight Track

Grooving Straight Track with the Double Groove Bit

IMPORTANT! The Double Groove Bit can be used to cut STRAIGHT TRACK ONLY.

1. Mount the Double Groove Bit (**Rockler #26400**) in the router table and position to a cut height that will center the track grooves across the width of the track. Position the fence to produce a cut depth of 1/8''.

2. Position the stock vertically (with the edge of the stock on the router table) and use a push stick to push it through the cut. Be sure to keep the stock firmly in contact with the surface of the table and fence at all times during the cut.
Grooving Straight Track with the Single Groove Bit

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1. Mount the Single Groove Bit (**Rockler# 20953**) in the router table and position the bit at a cut height of 1/8''. For 1-5/8'' wide track, position the fence as shown in **Figure 2**. For all other track widths, position the fence to cut grooves at a distance of 1'' apart (on center) and centered across the width of the track.

2. Position the stock horizontally (laying flat on the table) and push it through the cut using a push stick.

3. For the second cut, flip the stock end for end and repeat Step 2.

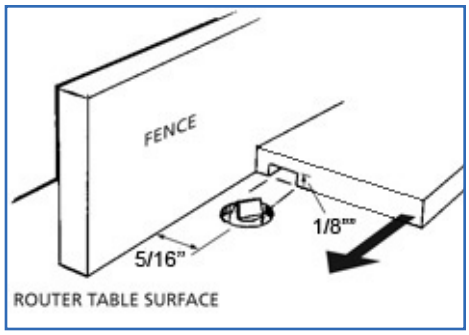

Figure 2

Section III - Grooving and Shaping Curved Track

Making an Arc Cutting Jig and Grooving the Curved Track Blanks

To cut the grooves in the curved track blanks, you'll need to construct a simple Arc Cutting Jig. The jig provides the pivot points for the two curved train track grooves and can be easily constructed out of scrap material.

1. The Arc Cutting Jig requires an approximately 12'' x 14'' piece of scrap plywood. On the plywood, draw a lengthwise centerline and a perpendicular guideline as shown in **Figure 3.**

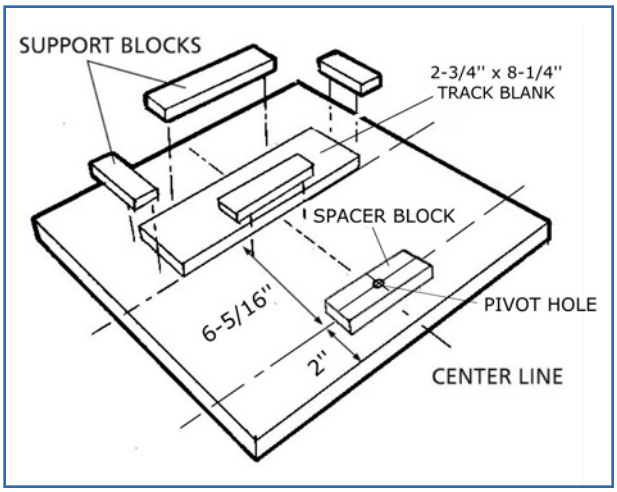

Figure 3

IMPORTANT! For the jig to work correctly, the Pivot Hole must be accurately placed and perpendicular to the surface of the material. – measure carefully and drill as straight through the material as possible.

2. Position one of the 2-3/4'' x 8-1/4'' track blanks along the guideline as shown in **Figure 3**. Glue support blocks around the perimeter of the track blank. NOTE: The support blocks must be no thicker than the thickness of the train track stock.

3. Glue an approximately 1-1/2'' x 3'' spacer block in the location shown. Using a 1/4'' bit, drill the jig's Pivot Hole through the plywood and spacer block in the location shown in **Figure 3**. NOTE: The spacer block must be approximately the same thickness as the train track stock.

4. Mount the Single Groove Router Bit (Rockler #20953) in the router table and set the cut height at 1/8''

5. To provide pivot points on the router table for the inner and outer groove cuts, you'll need to drill two positioning holes. The holes can be drilled directly into the surface of the router table, or into "false top" constructed out of 3/4'' plywood and clamped to the surface of the table. Using a 1/4'' drill bit, drill positioning holes in the router table surface or false top in the locations shown in **Figure 4**.

IMPORTANT! For the jig to work correctly, the positioning holes must accurately placed.

6. Mount a track blank in Jig Part A (a piece of double-sided tape can be used to help hold the blank in place). Align the jig's Pivot Hole with one of the positioning holes (it doesn't matter which one) as shown in **Figure 4**. The chuck-end or the 1/4'' drill bit can be used as a "pivot pin" to connect the jig's Pivot Hole with the positioning hole.

7. Pivot the jig away from the router bit, turn the router on, and pivot the jig through the cut. Apply enough pressure to keep track blank flat on the surface of router table throughout the cut and remember to keep your fingers out of the path of the bit.

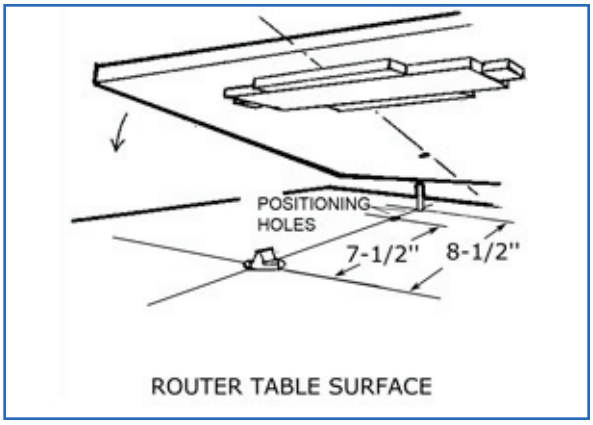

Figure 4

8. Repeat the procedure for the second groove cut, this time connecting the jig's Pivot Hole with the remaining positioning hole.

9. Flip the track blank over and repeat (grooving the track on both sides will allow you to set up turns in the track going in either direction).

Cutting the Curved Track to Shape

1. Angle cut the track blank as shown in **Figure 5**.

2. Draw a guideline for the edge of the track in the desired location. For 1-5/8'' wide track, the correct margin is 3/16'' from outside edges of the track grooves.

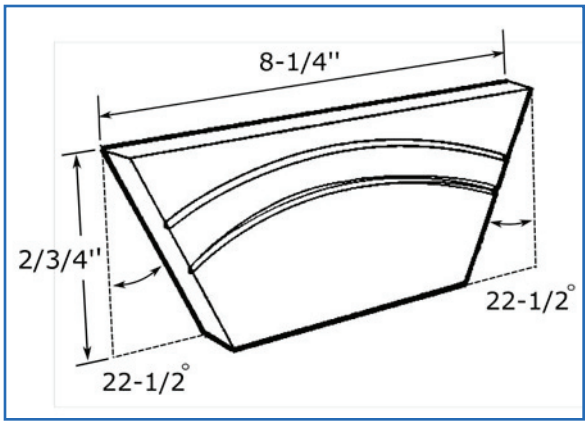

Figure 5

3. Cut the track to shape on a band saw and sand the edges smooth.

Section IV - Cutting the Female Connectors

Cutting the Female Connectors in Straight Track

1. Cut the straight track stock to the desired length. Remember to add 11/16" to the "track length" to account for length the male connector.

2. Mount the Female Connector Bit (**Rockler# 27288**) in the router and set to a cut height of 3/4".

3. Clamp a section of track to the face of the Right Angle Fixture. Be sure that the edge of the track is parallel to the vertical edge of the fixture, and the end of the track positioned to rest flat on the surface of the router table. **TIP:** To limit tear-out on the back surface of the track, a backer board is recommended.

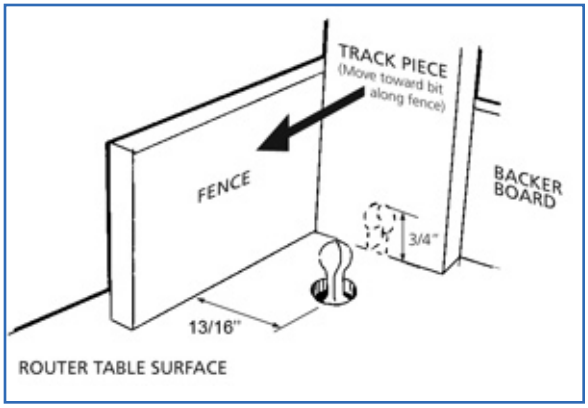

Figure 6

4. Position the router table fence so that the Female Connector Bit's cut path is centered across the width of the track. For 1-5/8" wide track, use the set-up shown in **Figure 6**.

5. Move the Right Angle Fixture and stock through the cut at a steady, moderate pace. Keep the fixture in firm contact with the fence and surface of the table throughout the cut.

Cutting the Female Connectors in Curved Track

1. For best results in cutting connectors in the curved track, attach curved braces to the Right Angle Fixture to help support the track (see **Figure 7**). The braces must be positioned so that the end the curved track pieces will rest flat on the surface of the router table during the cut.

TIP: To make the braces, trace the inside curve of a piece of track onto two pieces of scrap material and cut along the lines. Also, remember that you will need to remove the braces later on when you cut the male connectors in the straight track. Attach the braces with screws only, instead of glue or nails.

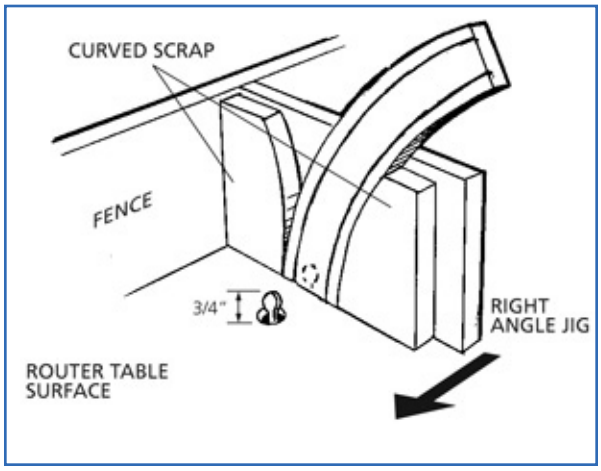

Figure 7

2. Clamp a section of curved track to the face of the Right Angle Fixture. Make sure that the end of the track is positioned to rest flat on the surface of the router table.

3. Position the router table fence so that the Female Connector Bit's cut path is centered across the width of the track. As before, use a slow, steady pace when making the connector cut.

Section V - Cutting the Male Connectors

Cutting the Male Connectors in Curved Track

1. Mount the Male Connector Bit (**Rockler # 21472**) and set the cut height at 11/16".

2. With the curved braces still in place, clamp the section of track to the Right Angle Fixture, making sure that the end of the track rests flat on the surface of the router table.

3. Position the fence to cut the one side of the male connector (see **Figure 8**).

TIP: The position of the male connector cuts must be accurate for the track to fit together correctly. Also, to make the track easy to assemble, the fit between the male and female connectors should be slightly loose. For best results, use one of the female connectors you've cut as a guide to check the position male connector cut -- plan on making a few test cuts to get set up.

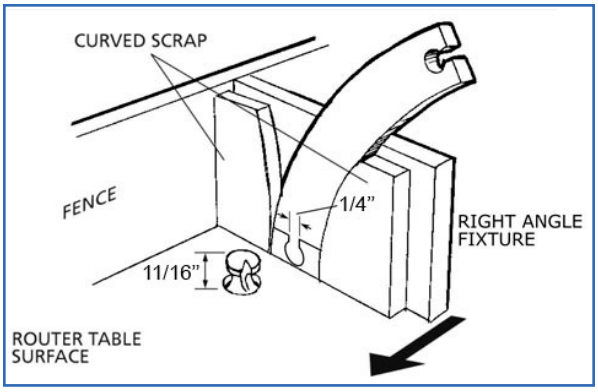

Figure 8

Cutting Male Connectors in Straight Track

1. Remove the curved braces from the Right Angle Fixture.

2. Cutting the male connectors in the straight track is similar to cutting the male connectors in the curved track – the bit height and the dimensions of the connector do not change. The male connector must be centered across the width of the track. The width of the track will determine the correct fence position. For 1-5/8" track, use the fence setting shown in **Figure 9**.

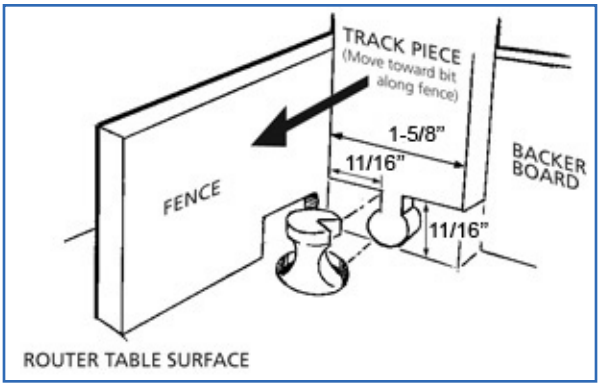

Figure 9

Rockler Parts List

	Part	Rockler #
A	Makes "male" connector	21472
B	Makes "female" connector	27288
C	Makes single groove	20953
D	Makes double groove	26400
	Complete Train Track Bit Set Includes bits #21472, #27288, #20953, and #26400	23613