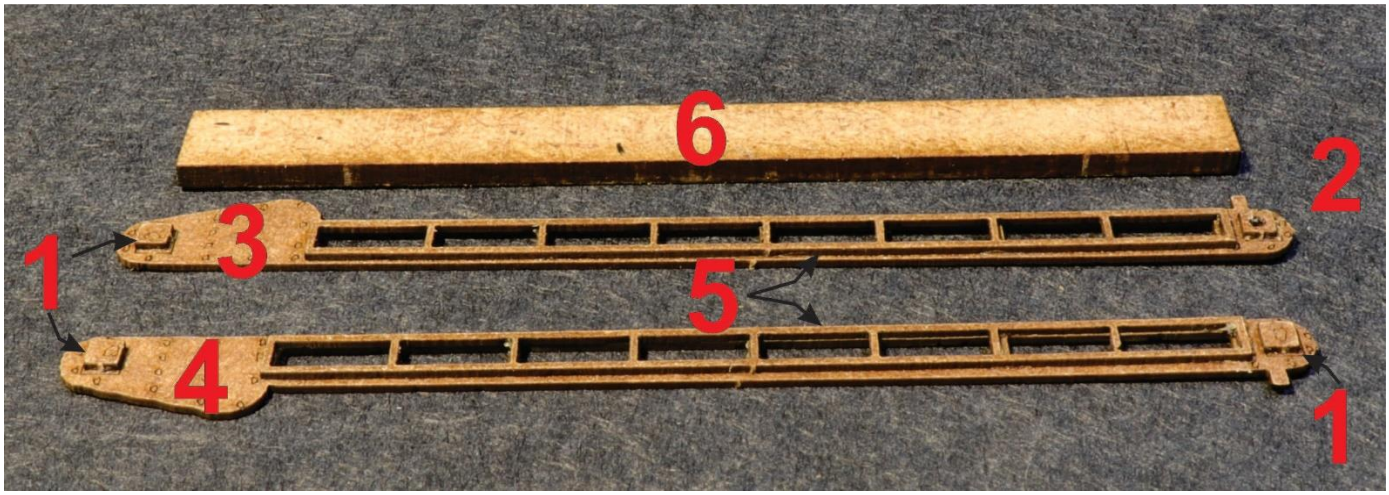
Conveyor

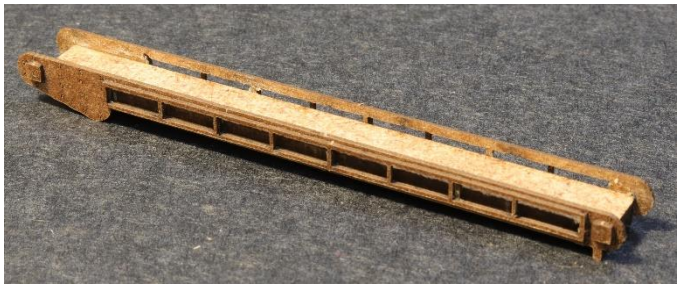
A conveyor is an interesting feature of any shipping transfer scene. An essential piece of equipment for transferring coal, gravel, and other aggregate between modes of transportation. The conveyor can be used in a variety of scenes such as a coal and fuel dealer, team track, landscape and building supply, and municipalities. Check out McGuirk Coal on our website for further examples. The conveyor is designed as a static model.

You're going to build the conveyor in 4 sub-assemblies; the conveyor track, the leg supports, the chute, and the wheels. These will combine into the main conveyor.

1. The conveyor track sides are built using parts #1-5. Start by attaching three #1 (small squares) on top of the small squares that are engraved on each end of #3&4. Part #2 has a hole in the middle. This lines up with the small hole in the square at the one end of #3. This hole is used in a later step for a brass rod. Next add the two parts #5 to the engraved sides of #3 & 4. The center rib of the #5 line up with the center ribs on #3&4.

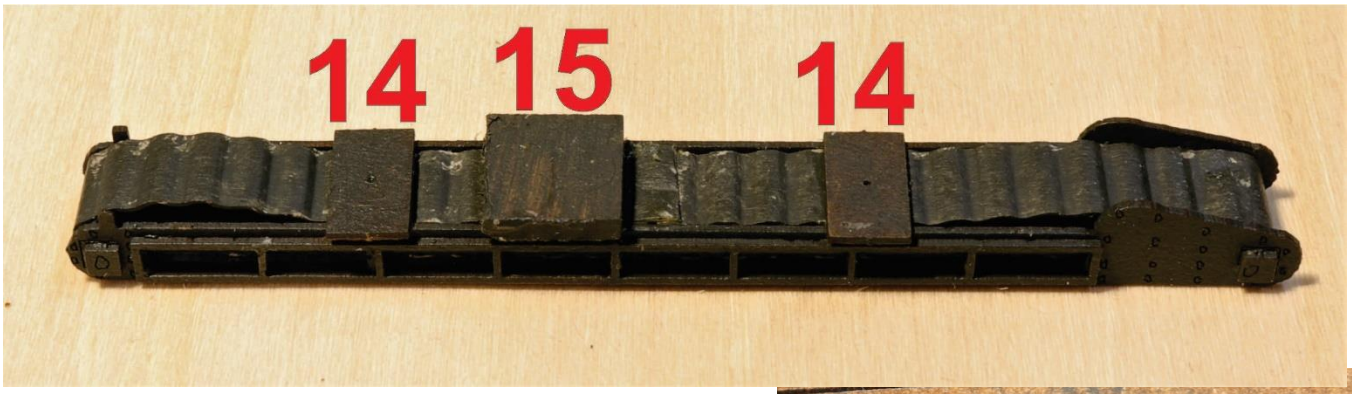


2. Attach the 2 side assemblies to #6 with the engraved sides facing out. Part #6 is centered between the small squares on each end.



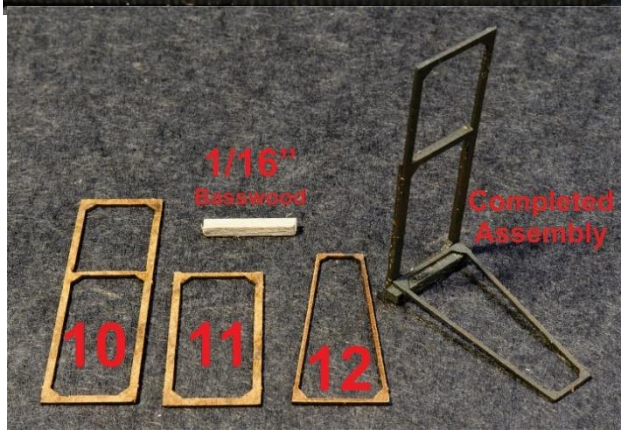
3. Paint the assembly a grimy black color, and the strip of corrugated silver paper #13. Attach one end to the bottom middle of #6. Wrap the remaining strip around #6. Trim the length to meet up with the other end and glue in place.

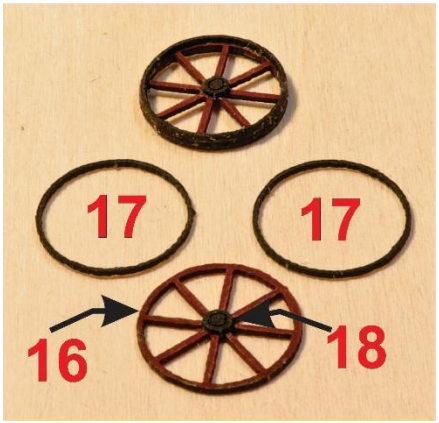
4. Attach part #15 to cover up the seam of the corrugated track, in the middle, bottom of the track assembly. Also add two part #14 to the bottom. Each of #14 is found near the 2nd rib from each end of the sides #3&4.
5. Now assemble the chute parts #7,8,9. Add the tampered sides #8&9 to the long edges of #7. We found it



easiest to do this step while #7 remained in the parts sheet. It helps square up this small assembly.

6. Next is the spindly leg assembly parts #10,11,12, & 1/16" x 1/16" basswood. Part #11 is layered on top of #10, so the two large rectangular openings align. Cut a piece of 1/16" basswood about 9/16" long. Glue the basswood to the end of #10, the opposite side of #11. Now attach #12, the wide tapered end on top of the basswood, up against #10.

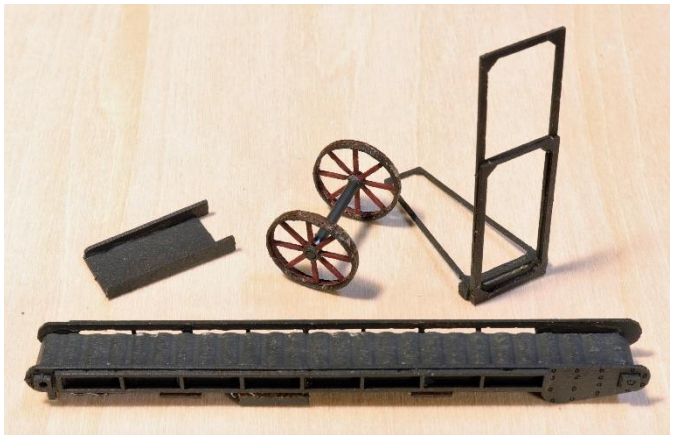




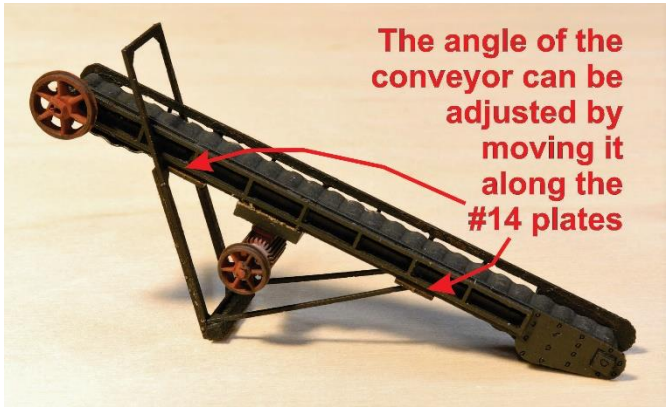
7. The last of the major sub-assemblies are the wheels. Each wheel has four parts #16,17(x2),18. You may want to paint these parts before assembly to have clean lines. Part #18 is a small "hubcap" that attaches to the center of #16. The two #17 are thin rings that thicken the width of the tire. They align on each side of the main spoked wheel #16.
8. Cut the 1/16" aluminum tube to 5/8" long. This is the axle that connects the two-wheel assemblies. Glue a wheel on each end using Cyanoacrylate (CA) glue or another adhesive that is compatible with aluminum and wood.

All 4 sub-assemblies should be built now.

Time for the fun part… creating the conveyor!

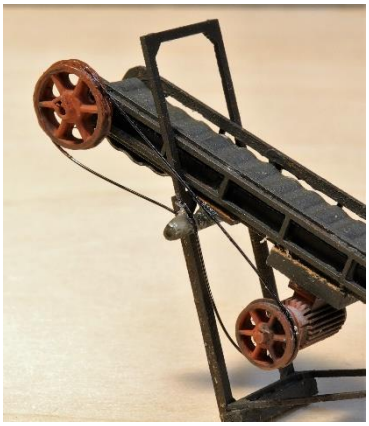


9. The kit is provided with 3D printed parts. There is a motor #19, a small pulley wheel #20, and a large pulley wheel #21. Gently wash these parts off with soap and water before priming and painting. The small wheel has a center hole that needs to be cleared with a .032" #67 drill bit. Then glue it onto the post that is on the motor #19. This assembly is glued onto the thick bottom plate #15.
10. A piece of the 1/32" brass rod is cut to 1/4" long and glued into the hole of the large wheel #21. It should stick out of the smooth side of #21. Then drill another .032" (machinist #61) hole into the top of the conveyor, through part #2. The wheel will stick out from #2 by about 1/32". You can use a scrap of the parts sheet as a spacer.

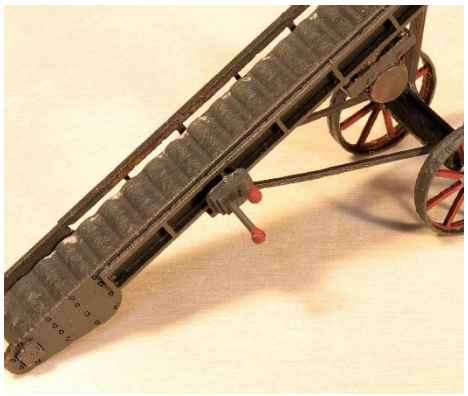


11. The first two assemblies to connect are conveyor track and the legs. Carefully slip the conveyor through the top smaller rectangular opening in the legs. The narrow-tapered end of #12 should rest on the plate #14 that is nearest the wider bottom side of the conveyor belt. The other plate #14 should rest on the crossbar of the leg assembly. The angle can be slightly adjusted by moving the belt along both #14 plates. Glue in place when satisfied with the position.
12. Attach the wheel assembly to the bottom of the 1/16" basswood on the legs. The aluminum axle can be glued to the basswood using the CA glue.
13. Now add the chute assembly to the top of the conveyor belt. The two wings on the chute will slip over the outside of the conveyor belt assembly. Adjust the angle of the chute to your liking. You may want to evaluate it while it is up against the model truck it may be filling.

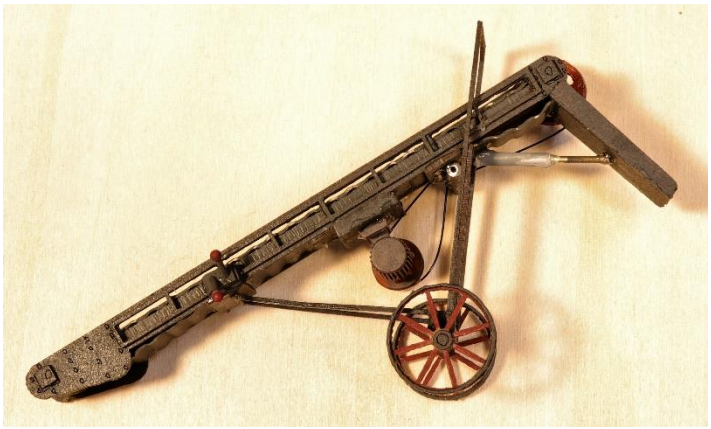
14. Add a ½" long piece of the 1/16" aluminum tube under the upper #14 plate. This will function as a tensioner bar for the belt line in the next step. The end sticking out should be even with the outside edge of the two pulley wheels. The belt will lay across it.
15. The next step is a little tricky but can be done with some patience… and some CA glue. Adding the belt drive onto the is done using the black monofilament line in the kit. To make it easier to wrap around the small diameter wheels, we pre-bent the line around the handle of an Xacto blade and heated it with a hairdryer. This created a curve in the line. Glue the curved section of line around one of the drive wheels. Stretch the line across the top to the other wheel and glue around that wheel. Use the aluminum tensioner from step 14 as the final gluing spot. Glue one end to the top of the tube and allow to thoroughly dry before trimming to the proper length. Glue the other end on top of the tube so it looks like a continuous belt. Allow to dry and trim the other side to length.

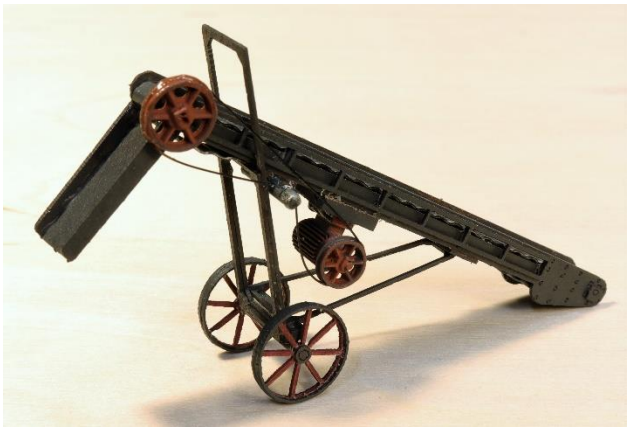


16. Paint and glue on the throttle control box part #22 to the opposite side of the motor wheels, near the bottom #14 plate from step 4.

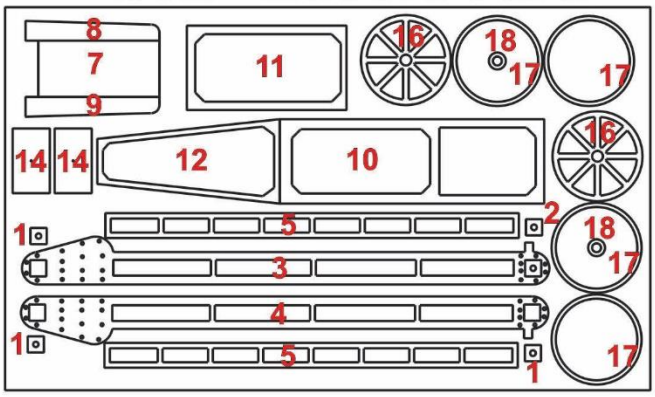


17. The last assembly to build is the hydraulic piston for the chute. It is made from a 3/8” long piece of 1/16” aluminum tube and a 3/8” long 1/32” brass rod. The rod can fit inside of the tube and slide to adjust the length. That depends on what angle you set your chute at. Turn the whole conveyor upside down and use tweezers to hold the rod and tube in place. Adjust the length and glue them together with a small drop of CA. Paint this piston and glue the brass end underneath the chute, and the tube end to the top of the middle cross brace on leg part #10.



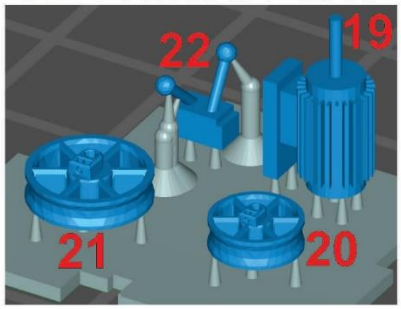


1/32” Laserboard

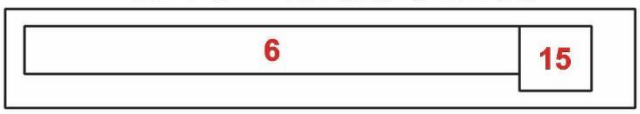


12” Black Monofilamemt

3D Printed Parts



1/16” Masonite



Silver Paper Corrugated