

TOP NOTCH PRODUCTS CO.

# **CONTINENTAL A-65-8 SCALE DUMMY ENGINE KIT**



## **ASSEMBLY INSTRUCTIONS**

TNPC #2943

Note, this manual covers the construction of the 1/5th scale, 1/4 scale and 1/3 scale motor kits. All parts and labeling are the same however the material thickness may be different from those in the manual. The example used in the manual is the 1/4 scale engine.

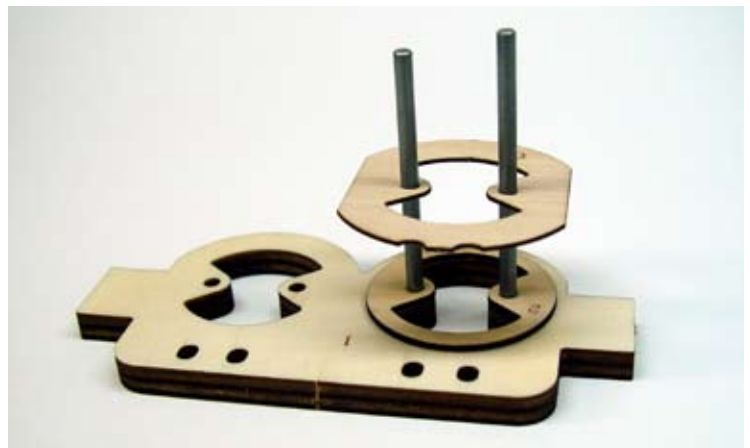
Your simulated engine kit contains laser cut sheets with the parts lightly retained in the sheets to keep them from warping and to keep them organized. Each sheet will produce one cylinder. When removing the fins, use a quick wipe on a piece of sandpaper to remove the nubs left by the retainer breaks. The type and application of finish is up to the builder.

The parts have been cut with 1/8" pin register holes to facilitate perfect alignment of the components. Take care when assembling not to get glue onto the steel pins as they have to be removed after the cylinder stack is completed. Use a pair of pliers to turn and pull the pins out when done.

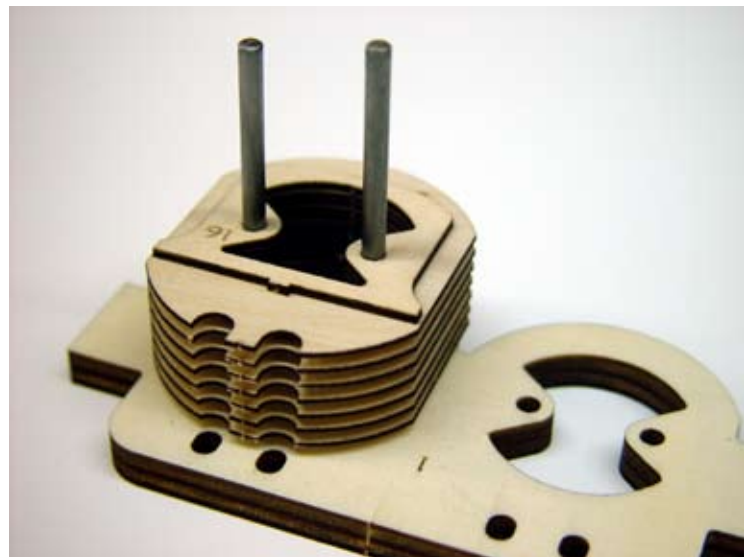
- 1 Install the register pins into part #1, (base) as shown in the photo. Each part will be installed by sliding down the pins until contacting the previous part. When installing fins 3,5,7,9,11,13 and 15 observe that the valve push rod tube notches are oriented correctly to align with the valve push rod tube holes in part #1. Refer to the Stack Order sheet for the correct sequence.



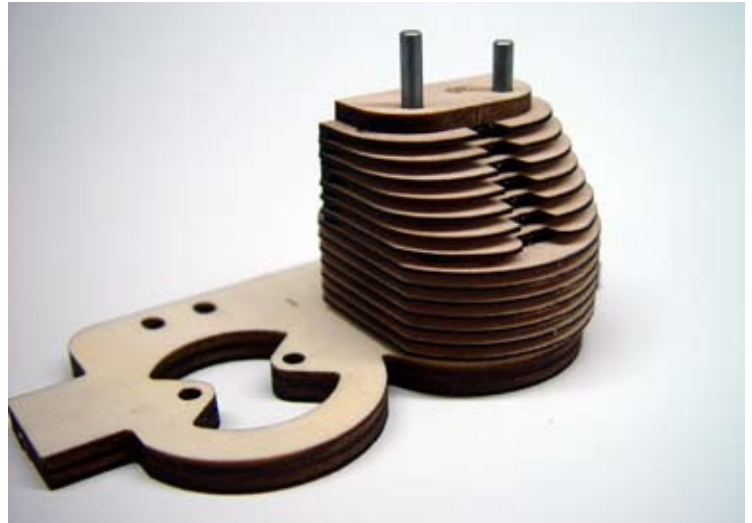
- 2 Beginning the assembly, spacer part #2 has been put into position and fin part #3 is being placed into position next. It is not necessary to glue these components at this time. They can all be glued in mass at a later time.



- 3 Simply stack parts in numerical order. Here parts #1 through #16 have been assembled.



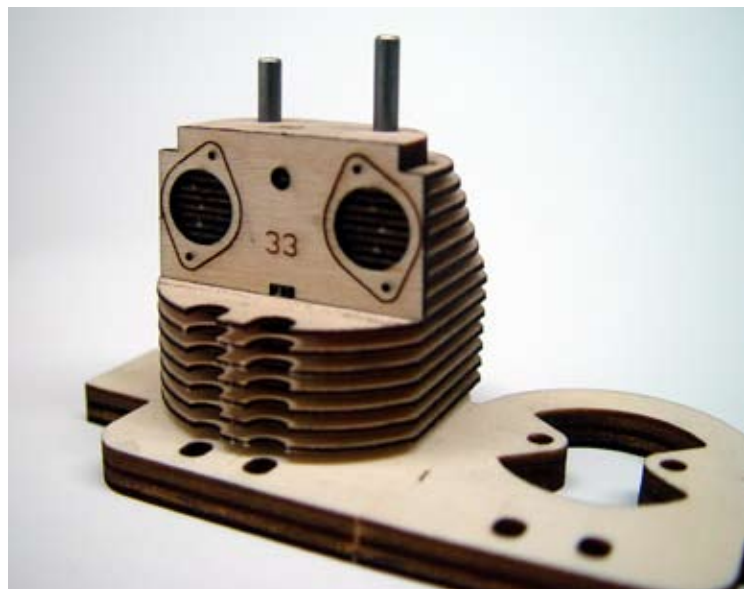
- 4 Stacking continues with parts #1 through #30 shown here.



- 5 Now is a good time to glue this much of the assembly together. This can be done by running a liberal application of thin CA along the front and back of the cylinder from the inside. Be sure to hold the assembly compressed when applying the CA and avoid getting CA onto the registration pins. If necessary, use a clamp to compress the assembly until the CA has set.



- 6 Install part #33 at this time. Due to minor variations in material thickness, it may be necessary to sand the top of #33 slightly so that it is perfectly flush with part #30.

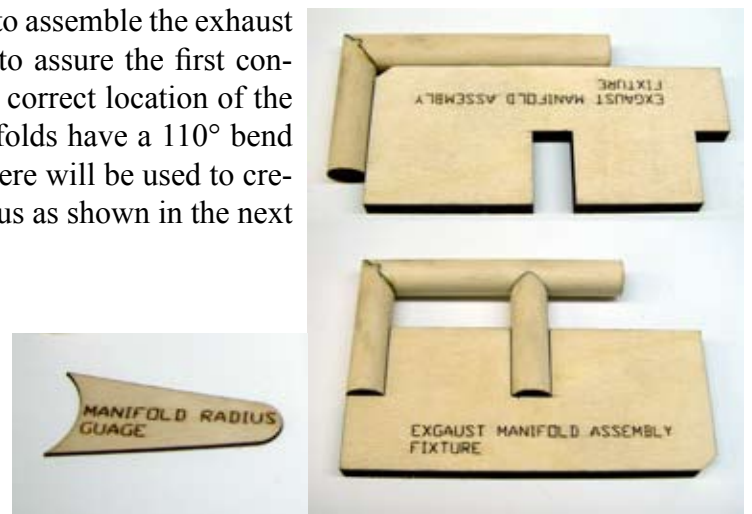


- 7 Assemble part #31 (1/8" Basswood) and part #32 (1/32" Plywood) as shown at the right. Part #31 must be tapered to the guide lines around the entire circumference of the part. It must also be tapered from the outer edge to the indicated line on the push rod side as shown. After shaping, install onto the cylinder stack.



Before proceeding, see Finishing Notes on page 5 of this manual.

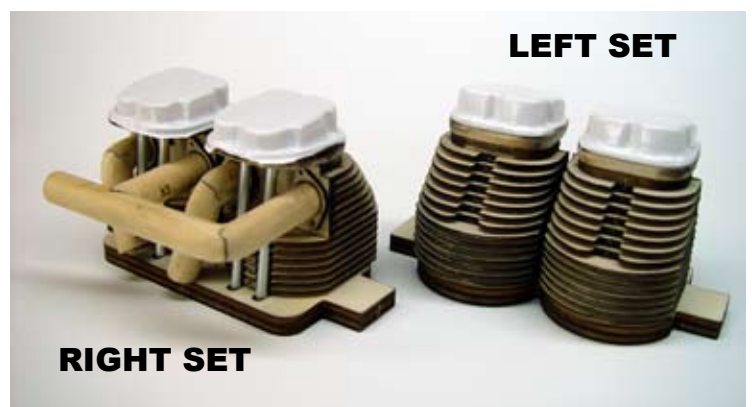
- 8 Use the Exhaust Manifold Assembly Fixture to assemble the exhaust manifold as shown at the right. First use it to assure the first connector is square and then use it to assure the correct location of the second connector. Note that the intake manifolds have a 110° bend in them. The manifold radius gauge shown here will be used to create the internal fillet and gauge the outer radius as shown in the next step.



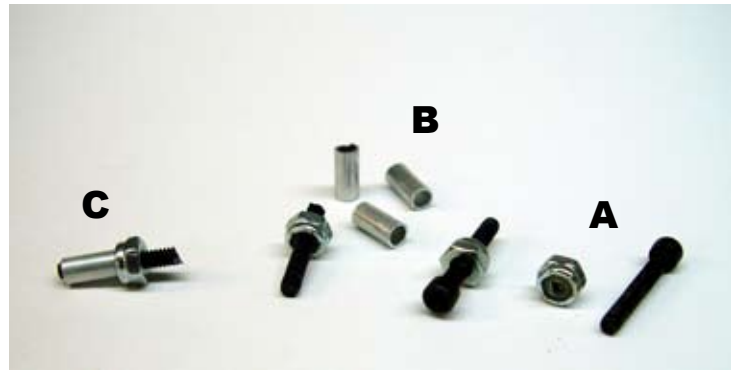
- 9 The intake and exhaust systems after shaping and ready for finishing or installation. The ply flanges are purely cosmetic. See the 3-view sheet for proper orientation of the headers. Here, wood filler has been used to fill the inside of the angles to form the radius. The manifold radius gauge should be used to accomplish this.



- 10 Almost completed cylinders. Note that the rocker box covers, manifolds and push rod tubes are not permanently attached yet. They will be permanently installed after painting.



- 11 The spark plug is assembled from a #4-40 x 3/4" bolt and 1 #4-40 Ny-Lock nut (A). Thread the bolt through until 5/16" of thread is exposed on the top of the nut (B). Glue a 1/4" length of 5/32" aluminum tube over the exposed threads and then cut the head of the bolt off (C).  
Drill a 3/32" hole at 45° through the cylinder at the location indicated on the 3-views and glue the plug into position.



- 12 Assembled plug temporarily installed into the cylinders. A 3" piece of 1/8" heat shrink tubing is slid half way down the aluminum tube and then heated. The tubing can be thinned by pulling while heating. Use a dab of CA at the plug interface to prevent the heat shrink from slipping off the plugs.



Below right, Rocker box covers and plugs installed with heat shrink plug wires. Left, the push rod tubes have been installed. Manifold tubes will be permanently installed after the cylinders are attached to the cowl.



**NOTE:**

In order to reproduce as much detail as possible, the valve covers are formed with thin ABS plastic and can be damaged easily. It is advised to reinforce these components by lining the inside of the valve covers with Elmer's Wood Filler as shown at the right. You can also paint the inside with a slurry of Epoxy and microballones to protect against hanger rash or other damage.



- 13 Right, The rocker box covers are rough cut and thin CA is used to glue part RB into them. The rocker box covers edges are then sanded down to RB before installing onto the cylinder. Use the register pins to position the covers and then remove the register pins.



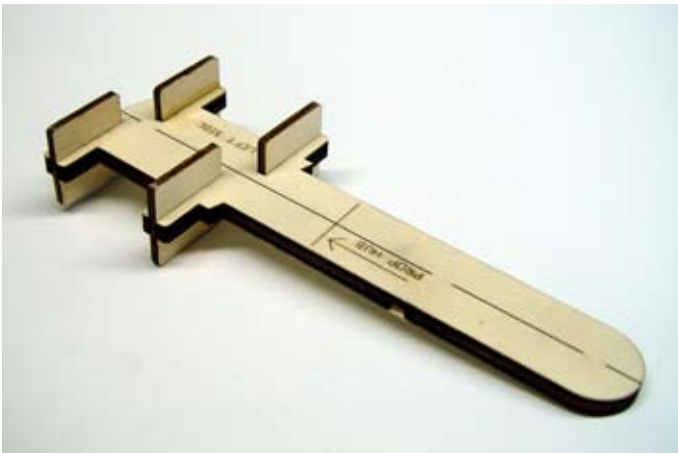
## FINISHING NOTES

I recommend a liberal coat of thinned Epoxy finishing resin be brushed onto the cylinder stacks, inside and out. Do the same to the finished manifold parts as well.

This will bond all components together and add significant strength to the assembly. Painting the engine is up to the modeler, I have seen these engines with aluminum, black or painted silver cylinders. Most exhaust headers are rust colored however I have seen them in chrome and black. The rocker box covers are usually chrome.

## Installation

The exact nature of your installation will depend on the model, the type of power you are using and other factors however the dummy cylinders should be attached to your cowl firmly to accommodate expected engine vibration. Use Epoxy or a mixture of Epoxy and glass bead filler to attach the engine. The distance from cylinder head to cylinder head should not exceed 6.25" for scale purposes. This may require that you remove some of the lower portion of the engine assembly for clearance inside the cowl. Location of the prop hub is indicated on the installation fixture. The opening template supplied allows an offset of .25" from the actual cylinders. The inside dashed line is the actual cylinder size.



This installation fixture is supplied to facilitate the installation of the cylinder sets. The fixture is quick to assemble and will keep the cylinders in the correct orientation for an accurate scale appearance once installed.



The completed engine assembly mounted on the installation fixture and ready for mounting to your cowl. Note that the installation fixture is designed to be split after installation to facilitate removal of the mounting fixture.

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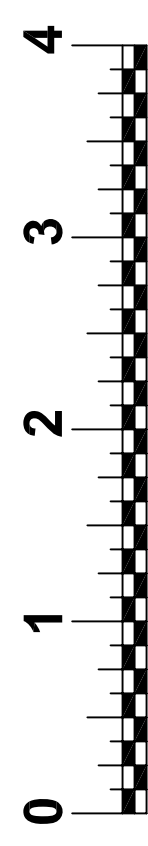
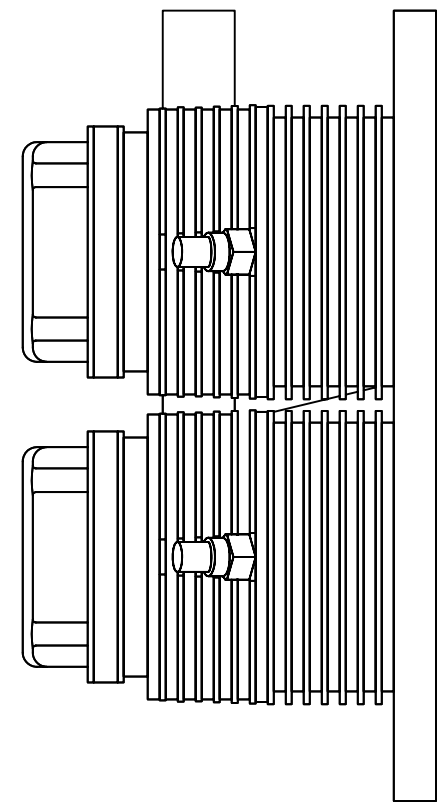
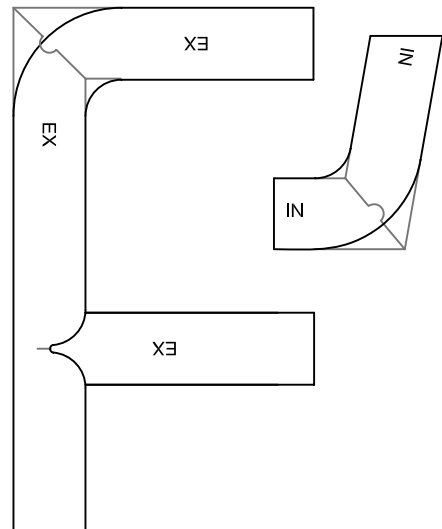
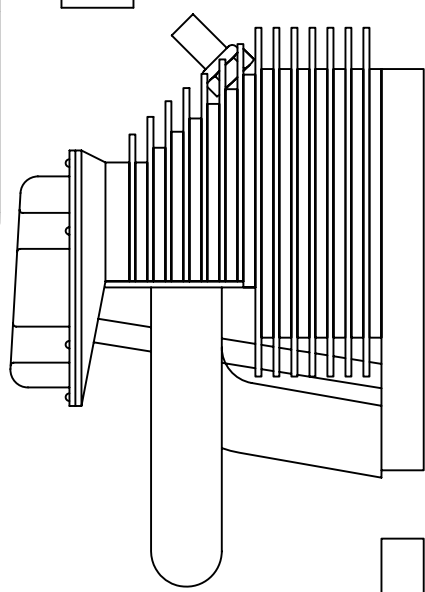
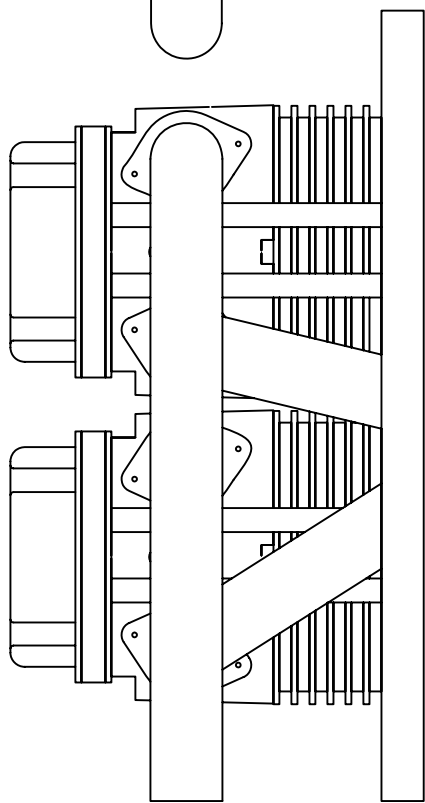
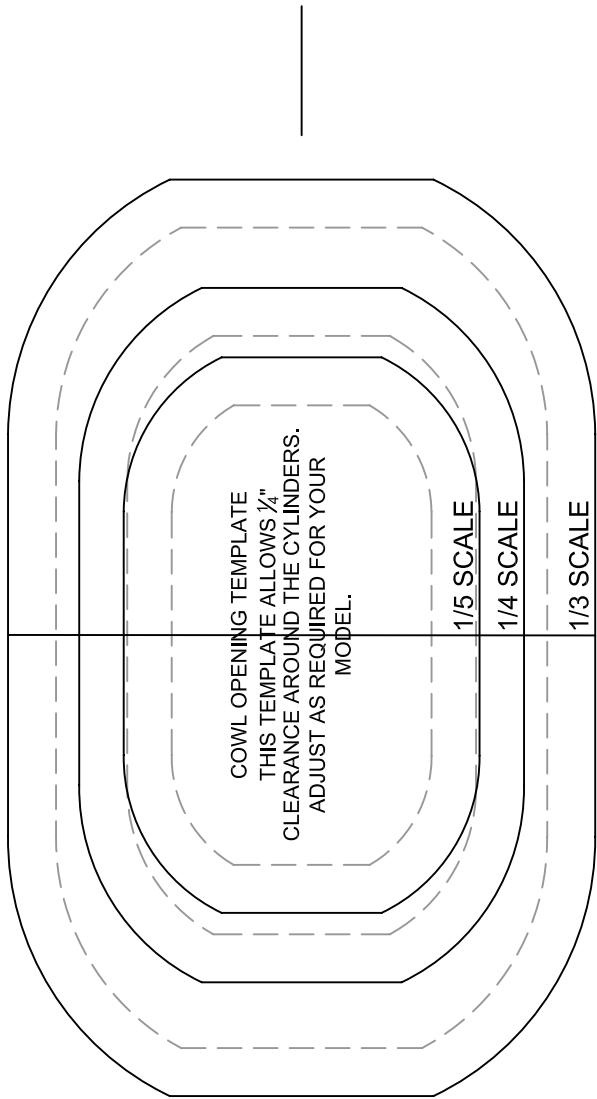
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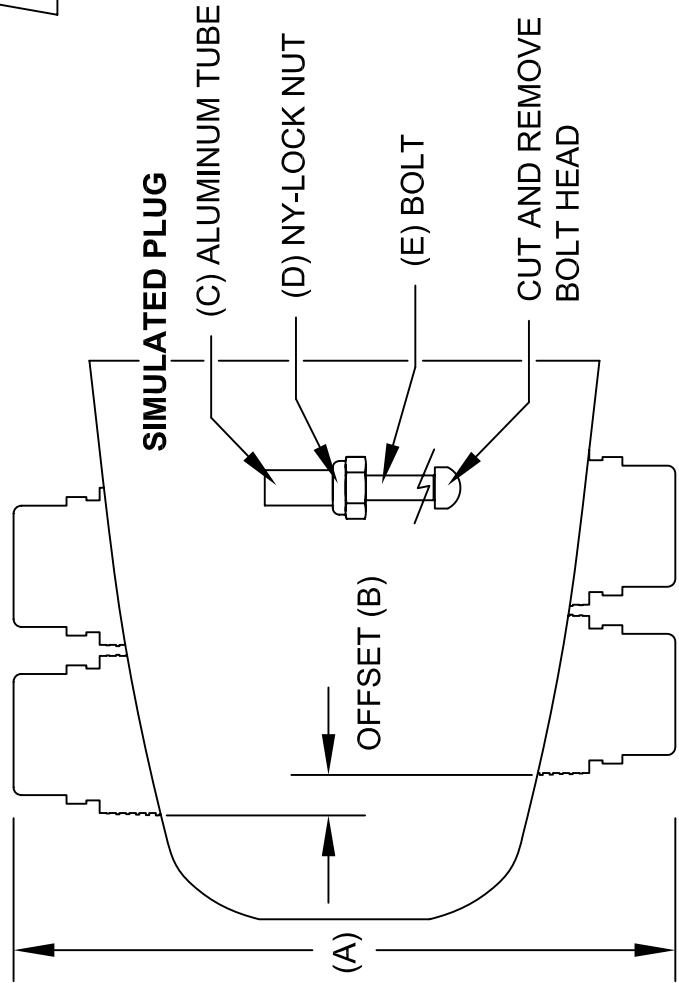
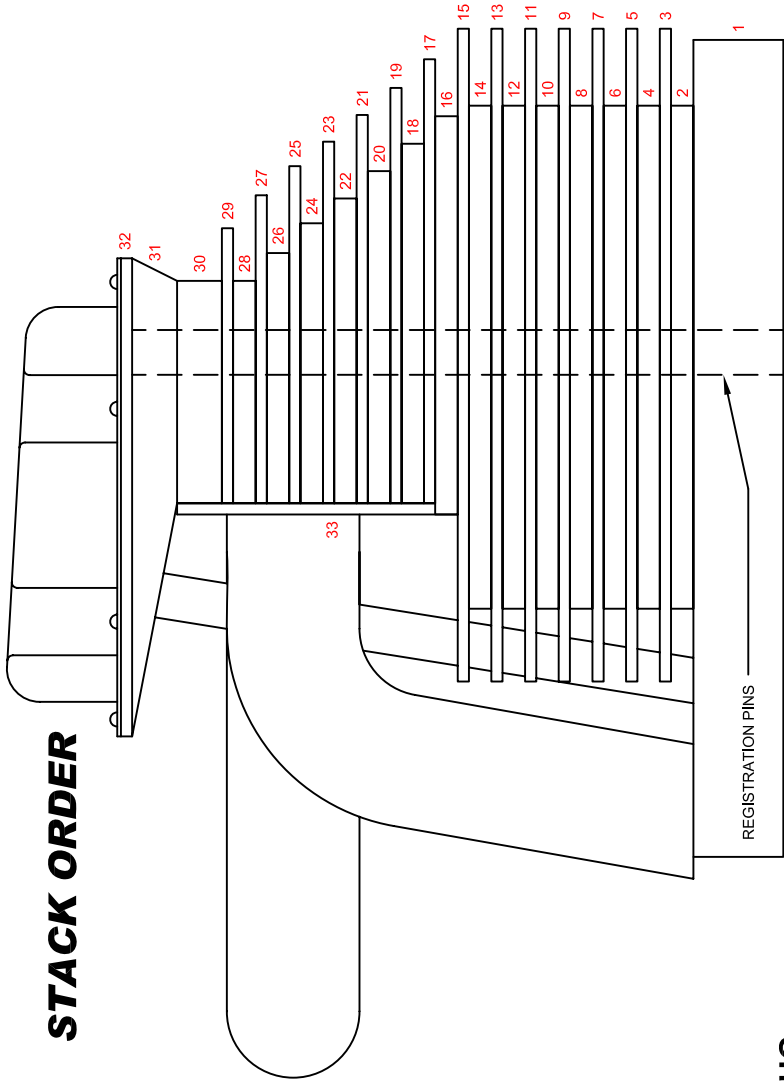
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MADE IN THE USA



# TOP NOTCH CONTINENTAL DUMMY ENGINE KIT

# STACK ORDER



Location	Dimensional Data		
	1/8th Scale	1/4th Scale	1/3rd Scale
A	6.375"	7.875"	10.375"
B	.3"	.375"	.5"
C	1/8"	5/32"	3/16"
D	#2-56	#4-40	#6-32
E	#2-56	#4-40	#6-32