

peterson

POWER KNOB™ DRAWKNOB ACTION

INTRODUCTION

After extensive development and design evolution, Peterson proudly introduced the unique Power Knob™ drawknob action.

Our innovative design is based on two precision hinges of the type used in our popular Power Tab™ tongue tablet unit and a velveteen bushing in which the shank is supported. The hinges are adjusted to have virtually no friction, but hardly detectable free play. Toggle is achieved by the noiseless, frictionless attraction of two permanent magnets. Peterson's patented "tip polarization" concept is also applied which enables an improved attraction of the armature by the coil, resulting in a good toggle feel-to-power ratio. The design of the Peterson Power Knob™ results in a smooth, quiet, gliding feel that is impossible to achieve when a heavy core must move in a solenoid as in traditional electric drawknob designs.

The special two part mounting system allows "bushing assemblies", made up of a bushing attached to a flat plate, to be laid out and mounted to the stop jamb without the Power Knob™ "main assemblies" in the way. Each main assembly is then fastened to its bushing assembly unit with two long thumbscrews. This innovative mounting system, along with the familiar Peterson EZ-Wire™ connector, allows efficient installation and the type of modularity that is characteristic of all Peterson systems.

Our short overall depth (3-7/8"), possible by using straight connector pins can prove to be valuable when a longer drawknob would require the whole console to be wider.

INSTALLATION INSTRUCTIONS

*Please read all of the following information **before** beginning work.* Note that the correct coil common polarity must be used for proper operation. The polarity for which each unit is built is indicated with a (-) or (+) sign on the coil side of each circuit board. Negative coil common is standard for use with Peterson combination actions.

Because of the high, narrow form factor of our double-hinge design, mounting requirements are different than with a solenoid type drawknob. The layout for the maximum density of Power Knobs™ on a stop jamb is shown in *Figure 1*. Note that when different vertical and horizontal spacings are desired between Power Knobs™, the angle "A" that must be used is different, which will increase some border dimension requirements and decrease others.

1.- Determine the layout of bushing assemblies for the desired hole spacings on a 3/4" thick jamb. This layout can be determined on the back side of the stop jamb by placing the assemblies on the surface with the gasket side down (see *Figure 4*). Remember that the beveled edges will be in the opposite positions when the assemblies are flipped over.

2.- Mark the hole locations and drill clearance holes for the velveteen covered bushings. It is best to drill these clearance holes to 15/16" diameter, then chamfer each hole using a countersink or stone (part #173742), to a depth of about 1/8", on the back side of the stop jamb. This will provide a neat appearance and an excellent surface to mount the Power Knob™ bushing assemblies.

3.- Position the bushing assemblies in place, being careful not to mar the bushing felt. Note that each mounting plate assembly has two 5/16" diameter holes located diagonally which provide clearance for the heads of two screws on the Power Knob™ main assembly (see *Figures 1 & 4*). Both gaskets on the bushing assembly have holes in this position, but only one end has holes all the way through the metal plate. The bushing assembly must be mounted so that the end with the holes, marked with a red dot, is **above** the bushing. Push all mounting plate assemblies against the back surface of the stop jamb and mount each one with two screws provided.

4.- Position each Power Knob™ main assembly in place so that the screw heads fit into the clearance holes in the mounting plate. Slide the plastic shank through the bushing carefully. Secure each main assembly with the two thumbscrews. Tighten the thumbscrews, being sure to align the mating plates so that the plastic shank moves freely and doesn't drag inside the bushing. Using fingers or a pliers, tighten the thumbscrews securely to prevent rattles, but do not overtighten. Do not allow any thumbscrews or other part of one Power Knob™ to touch the electrical foils on the circuit board of another Power Knob™.

5.- Wire each Power Knob™ to the combination action and relay. Each connector pin is labelled on the foil side of the circuit board as to its electrical function. If a Peterson combination action cable is used, simply plug the connectors onto each Power Knob™.

Note: For absolute minimum depth, 3 7/8", Power Knobs™ can be supplied with "straight connector pins". Please contact the factory with your requirements.

6.-Test the operation of each Power Knob™ individually, using a test lead to apply a voltage momentarily to each on coil terminal and off coil terminal. The coil common terminals of the Power Knobs™ must be connected to the proper polarity as explained (in step #1 above). **IMPORTANT: Never connect power to a Solid State Combination Action of any manufacture until you have followed all of the instructions for making connections to the power source(s) and checked your wiring for accuracy.** The amount of voltage available to move the Power Knobs™ has a great effect on their performance. As with any moving device that hits a stop, it is desirable to avoid using a lot more power than is necessary to move the Power Knob™. An excessively high voltage will cause the units to hit the stop harder and result in more noise. We recommend use of a Peterson Pulse Power Supply, which supplies a voltage that is high initially, then "dies down" to about 10 volts by the time the knobs have moved to their new positions. Otherwise, for best results apply about 14 volts D.C. to each coil.

7.- Attach engraved heads to their stems. The stems may then be glued into position so that the engraving is horizontal. Epoxy and solvent glue for styrene are both suitable glues for this purpose. Since excess glue will be forced out under pressure, we recommend using only a drop placed inside the shank.

We welcome your comments and ideas about the Power Knob™, as well as on all of our other products. And, of course, we're here ready to help if you have questions or problems. Feel free to call us at 1(708)388-3311 or on our toll-free number, 1(800) 341-3311. *A simple phone call could save much time and money.*

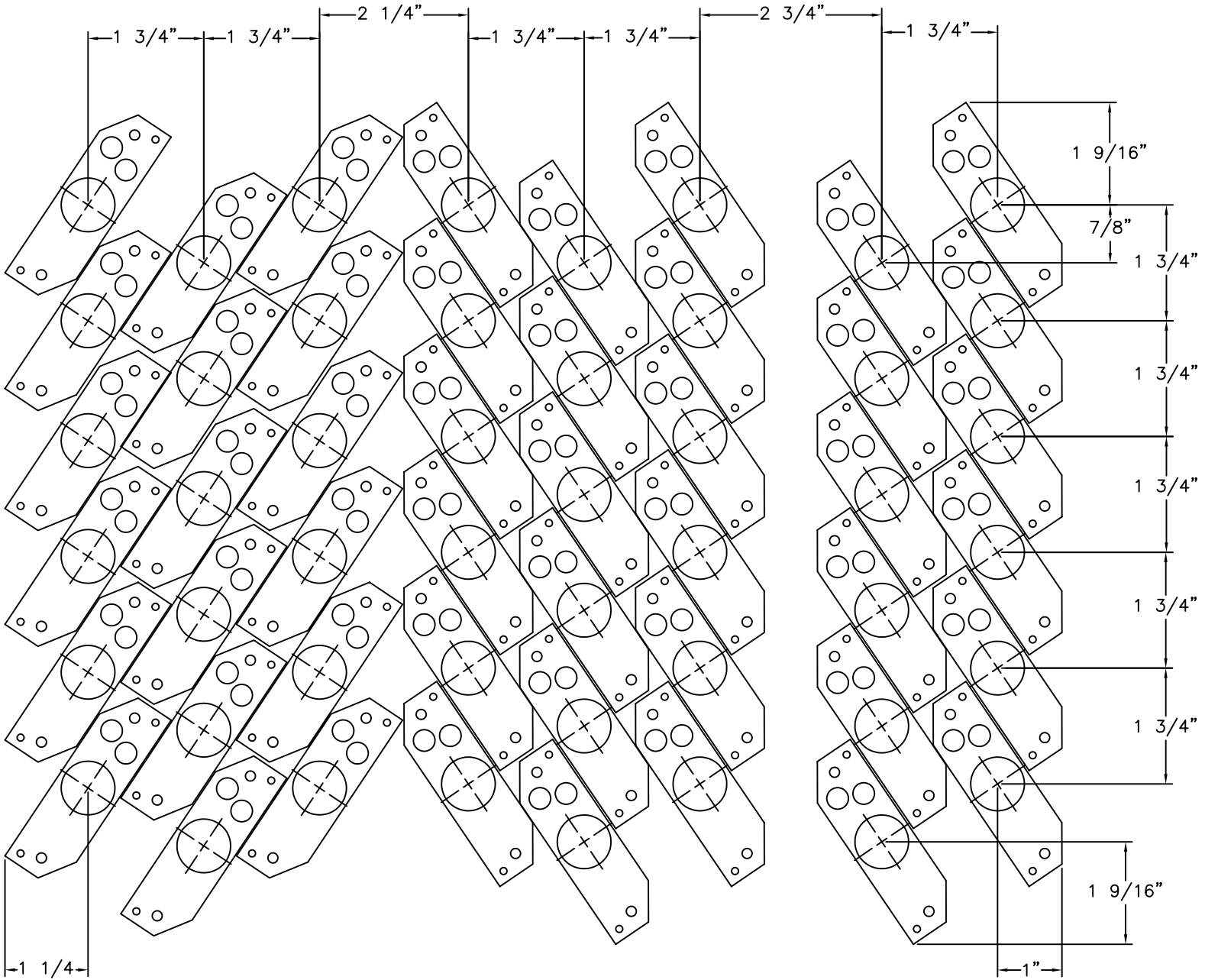
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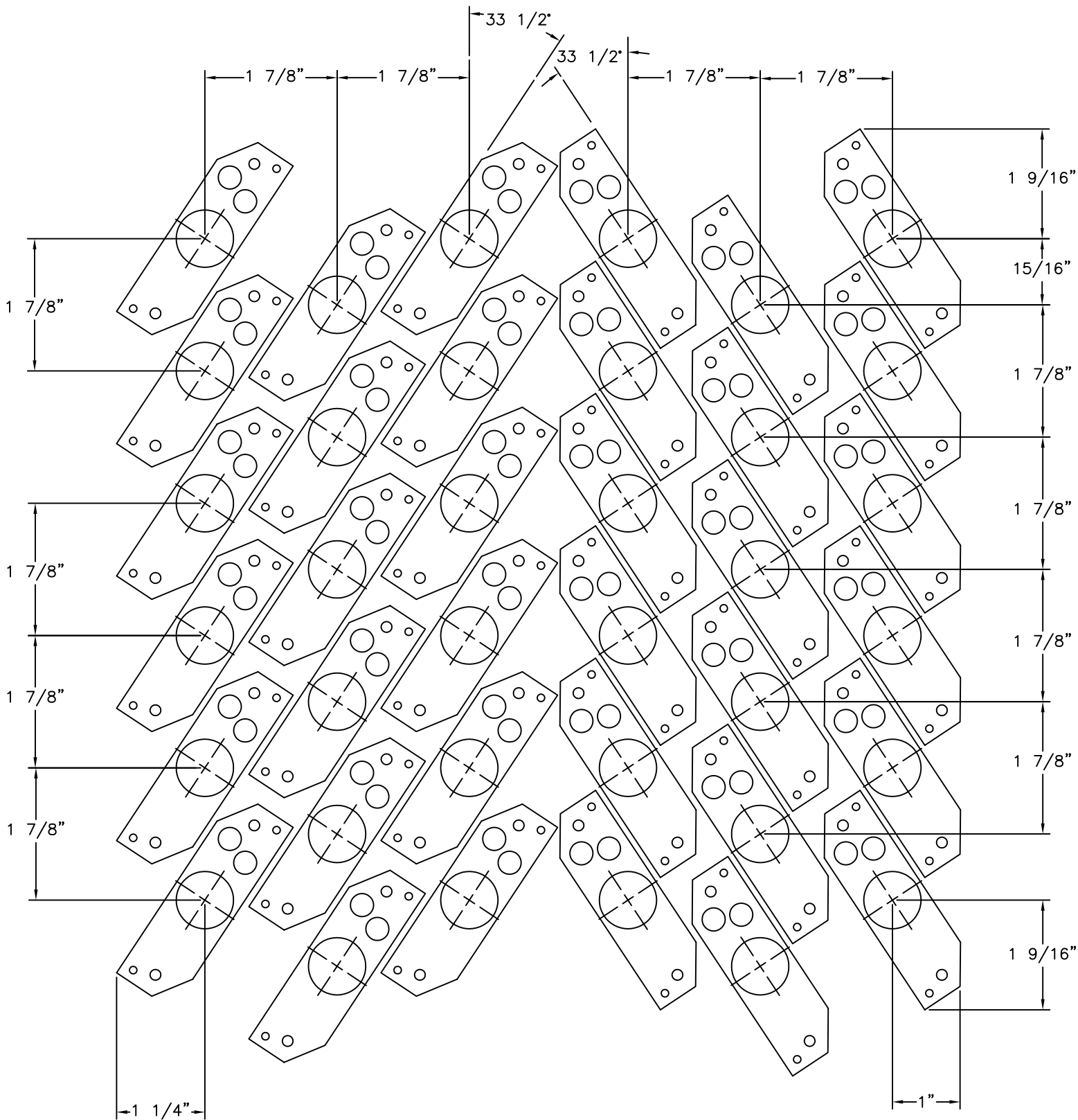
TYPICAL HIGH DENSITY STOP JAMB LAYOUT



NOTE: THIS IS A VIEW OF THE BACK SIDE OF A STOP JAMB
(FROM INSIDE THE CONSOLE)

FIGURE 1

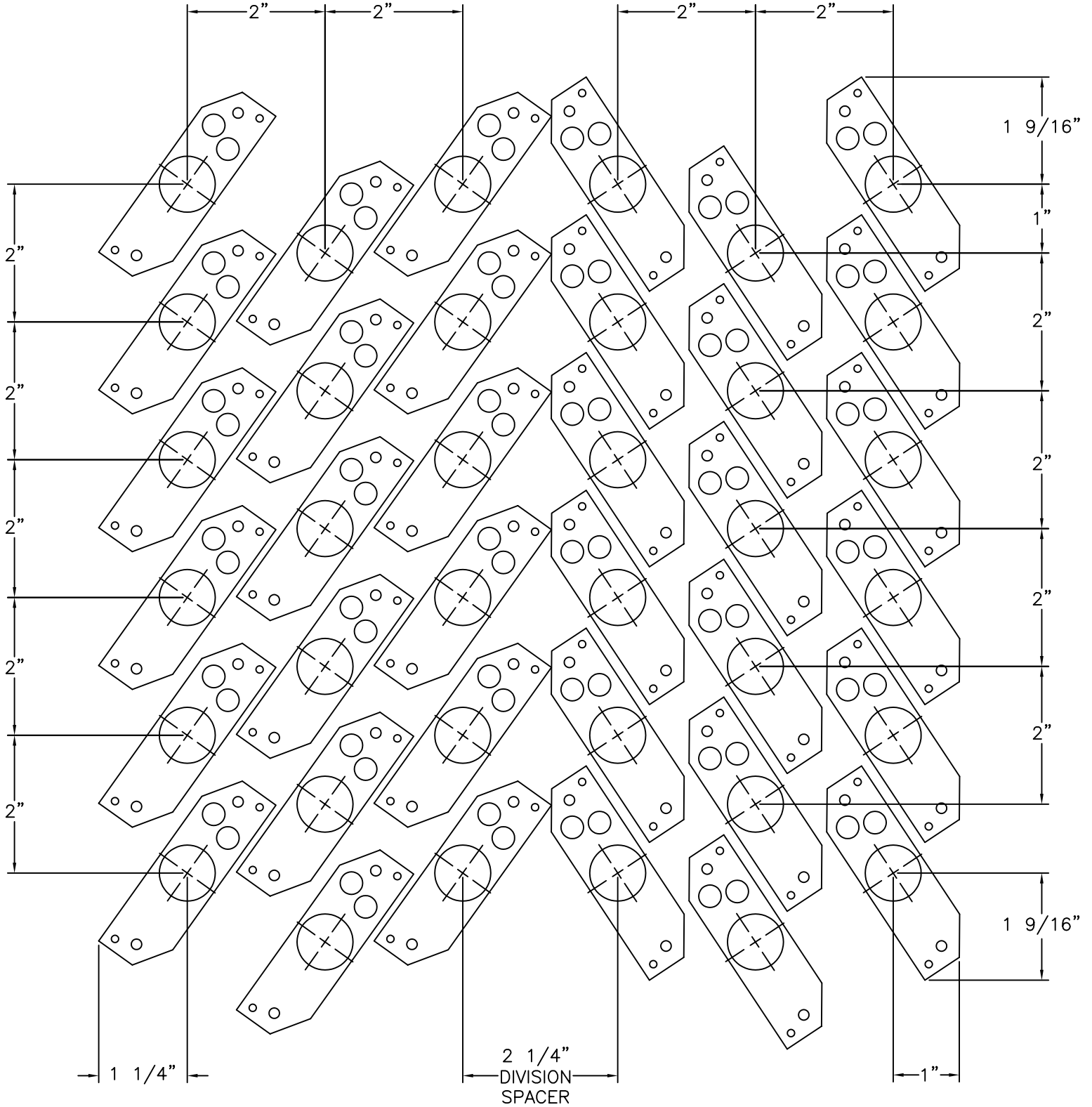
STOP JAMB LAYOUT FOR 1 7/8 INCH MATRIX



NOTE: THIS IS A VIEW OF THE BACK SIDE OF A STOP JAMB
(FROM INSIDE THE CONSOLE)

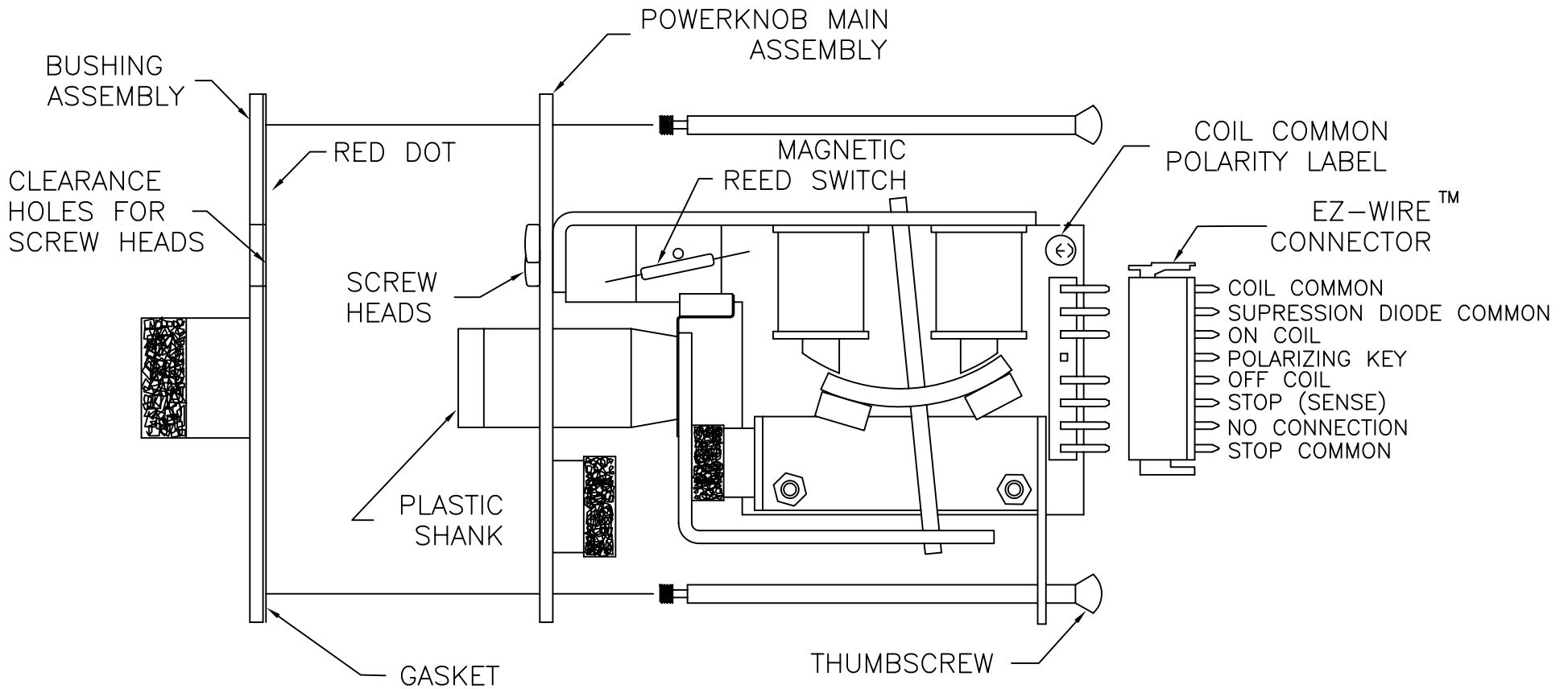
FIGURE 2

STOP JAMB LAYOUT FOR 2 INCH MATRIX



NOTE: THIS IS A VIEW OF THE BACK SIDE OF A STOP JAMB
(FROM INSIDE THE CONSOLE)

FIGURE 3



INSTALL POWERKNOB UPSIDE DOWN FROM OLD WAY FOR BEST RESULTS.

THE PETERSON "POWERKNOB"
FIGURE 4