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Adjustable Bricking Machine Design Explanation

We always start our design considerations for the FDEOR adjustable bricking machine from the smaller size needed. It is difficult to take a larger machine design and force it into a smaller diameter.

It is always more difficult to work with smaller size kiln diameters when designing adjustable bricking machines, and is also more difficult to go from a very small size kiln ID (3.0m or 3.3m) to a relative large size kiln ID (5m to 6m) with the same arch panel configuration and support frames.

When designing our adjustable rigs for a particular application we must first consider the smallest brick ID when determining how the machine will be used, then the maximum range of brick ID needs to be reviewed (it is not easy or desirable to change frames while in a kiln, so the designs must consider a frame size that accommodates all diameters in any particular kiln), then the maximum range over multiple kilns.

Our standard arch design adjusts to various brick ID diameters by inserting hinges between 3, 4 and 5 cylinder arch segments with a standard radius uniformly cut from a flat sheet of Aluminum. The different size of hinged panels (3 cylinder, 4 cylinder, and 5 cylinder) allows us to easily adjust our machines in or out of the kilns to various sizes with minimal scalloping and minimized chances for gaps in cylinder head coverage. This particular design allows us the best and easiest (in kiln) adjustability in the industry, with the fewest number of parts and the most coverage with a single frame (not to mention the ability to brick through tapers). Adding additional frames we expand the capability and capacity of the machine.

Unfortunately the design criteria line must be drawn somewhere on the downward side. For example if we were to design a machine to adjust from 3.0 to 4.0m we would have to use entirely different arch segments with a smaller radius in order to eliminate interference with the shell, minimize scalloping and cylinder misalignment and a frame that would maintain head room for the masons.

We must pay attention to the details of what we are offering any customer. This is why our design engineers are always insistent upon getting our kiln data sheets completed. It is always amazing how difficult it is to get this information.

The FDMOR is a more limited adjustable machine whose range of adjustment depends on the size of the kiln – in the 3 to 4m range the adjustment is 300mm in diameter and in the 4m and up range the adjustment is 500mm in diameter.

We hope that we did not give you too much information or confuse you, we hope you understand and we feel it is better that our agents understand why and how rather than saying yes or no.

We can say, “anything is possible”, but the trade off is cost, designing one machine to try to cover all situations at some point is not practical. We find that more complicated machines (like some of our older designs and those of our competitors) become so complex when trying to reconfigure them for various kiln sizes that they are damaged or taken out of service due to frustration or just plain too much time spent in the attempt. The beauty of our new design is that it covers a wider range with fewer parts and less complexity. However, even this design has limitations. Also we must consider the safety aspect of how these machines will be used. We do not compromise safety just to make a machine fit an application.