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Direct Marking Setup Rules

The Model 105 marking system is capable of “direct marking” as well as “offset marking” processes. Setups for direct marking require certain considerations.

Die selection. Die material must be compatible with the surface being marked. For marking hard surfaces, soft resilient die materials are needed such as rubber or synthetic polymers. The die must be soft and resilient enough to conform to the marking surface with minimal force.

Candidate parts. Parts that are suitable for direct stamp marking are ones that have a flat, or nearly flat marking surface and are uniform in height from one part to the next.

Part size limitations. The maximum height of part depends on the work table configuration. The standard 105 four post table is capable of direct imprinting parts only about 0.5” tall. Machines equipped with the EW work table can direct imprint parts up to about 2.5” tall, or be fitted with work tables of other design.

Ideally, the marking surface (the entire surface of the part that is on the same plane as the mark) should fit between the guide rails of the machine print arm, a distance of about 4.25” (108 mm). The reason is that by design, the underside of the guide rails are on the same plane as the face of the print die. Any portion of the marking surface plane that is beneath the guide rails will be contacted by the guide rails when the part is marked. In some cases, such contact by the guide rails may be tolerable if no damage is caused to the parts being marked. The guide rails are suspended by light springs that enable the guide rails to deflect a small amount and return to the set adjustment. In such cases, it may be useful to use threadlocker on the guiderail adjustment screws to prevent them from turning due to repeated jarring in operation.

Mark location. The maximum reach for marking in from the edge of the marking surface that is positioned inboard toward the machine is about 2” (50 mm). That is because the rotating ink plate under the print arm of the machine is by design also on the same plane as the die face. Any portion of the marking surface that extends into the machine far enough, will be kissed by the ink plate at the same time the part is marked, depositing unwanted ink on the part.

Part retention. In addition to indexing the marking surface in X, Y, and Z locations, your part positioning jigs may also need to provide for part retention. That is because the inks used for marking are tacky. There is a lifting force on the part when an inked die is retracted from the part. In some cases when the mark is small enough and the part heavy enough, no provision for retention is necessary. It becomes more of a consideration as relative mark size increases and part mass decreases. Some means often used for providing retention are friction, magnetics, and vacuum. Spring side loads such as from detent plungers may provide enough friction to retain parts in a jig. Magnets may work for ferrous parts. Vacuum ports are a viable solution if a vacuum source is convenient. For short runs, even some sticky-back tape at the index location may be all that is needed to get the job done.

Where to go for help. We at JanTech have seen and used a wide variety of “tricks of the trade” that we are more than willing to share with you. Give us a call if you can use a recommendation.

Find us on the Internet at <http://www.jantech.com>