

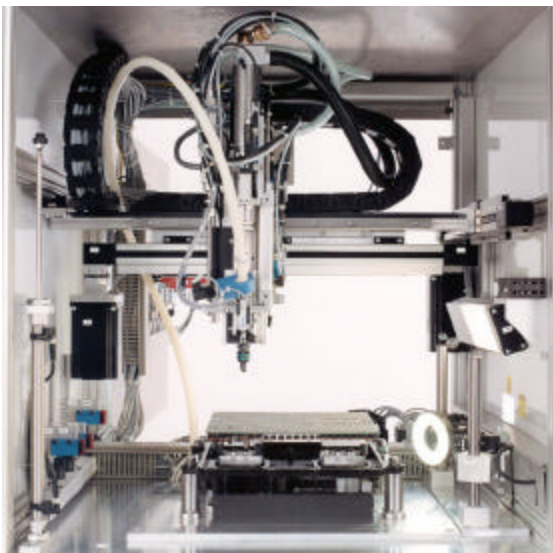
Please visit our web site at [www.deprag.com](http://www.deprag.com)

## DCAM [DEPRAG COMPACT ASSEMBLY MODULE] for



This machine was manufactured for The Morey Corporation [<http://www.moreycorp.com>], one of the market-leading turnkey electronic manufacturing and engineering concerns, located in Woodridge, Illinois. Morey serves their customer's needs with the ability to make high quality, high reliability products that endure. Specifically, Morey focuses on the smart display, wireless communication and industrial control markets with a strong emphasis on the hardening of electronic assemblies for harsh environmental specifications.

For one of their major clients, The Morey Corporation assigned DEPRAG with the requirement to design and build a custom DCAM "DEPRAG Compact Assembly Module", which has to perform multiple tasks.



View of the Screwdriving Head mounted to X-Y



View of complete Screwdriving Unit with the Feeders for 3 different screws

Here is a complete write-up of the cycle description, which demonstrates the flexibility and dexterity of the DCAM:

1. Operator removes the top of the circuit board pallet.
2. Operator places the bottom casting on the two plug cylinders. It is guided by four (4) posts with 'star' points that allows proper placement, but do not cause undue tension. Sensor(s) detect that the casting is in position. A mechanical guide prevents the casting from being placed in position incorrectly. Since the pallet arrives with Loctite already in place for sealing the lid, the operator has limited opportunity to press the casting down to force it into place. The four (4) posts must allow for smooth operation, yet allow close tolerances. A sensor detects if the spacer is in place.
3. Operator presses the 2-hand safety buttons – both plug cylinders rise to engage the circuit board.
4. The operator inverts the circuit board and places it on the plug cylinders. When the pallet sensors detect that a pallet is in the machine, the vacuum system starts. The operator releases the latches holding the pallet and removes the pallet.
5. After removal of the pallet, Operator presses the 2-hand safety buttons. A sensor detects if the pallet has been completely removed.
6. The circuit board is pulled down into position for the screwdriving process.
7. The driver assembles eight (8) long screws around the two (2) plugs in a particular pattern dictated by Morey.
8. The driver assembles six (6) short screws around the circuit board in a particular pattern dictated by Morey.
9. The driver assembles one (1) long screw to secure the spacer in a particular order dictated by Morey.
10. When all circuit board screws have been successfully driven, the controller tells the operator to insert the blue blocks.
11. When the operator has inserted the blocks, he presses the 2-hand safety buttons to activate detection of the blocks. Sensors detect that the blocks have been placed, and that they have been placed in the correct orientation.
12. When the blocks have been properly placed, the controller tells the operator to place the lid on the casting.
13. When the lid has been placed on the casting, sensor(s) detect that it has been placed properly.
14. Operator presses the 2-hand safety buttons and the driver drives fourteen (14) short screws in a particular pattern as dictated by Morey.
15. When all the screws have been successfully driven, the system tells the operator to remove the assembly.