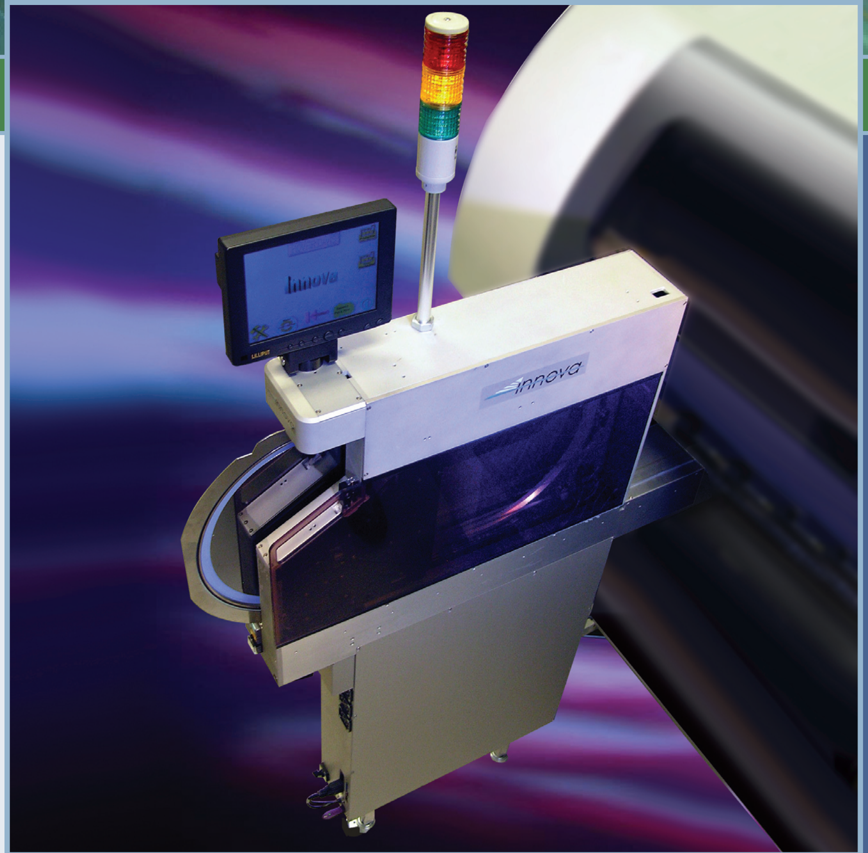
DDf Innova Direct Die Feeder



Wafer Feeding

The DDf Innova perfects die feeding. Single wafers, are vertically loaded into the feeder, positioned automatically, then precisely located by a vision system. The DDf Innova may use either ink dot recognition or wafer mapping to ensure that only good die are extracted from the wafer frame.

Bare die are rotated by 90˚ and placed on the transfer shuttle. Flip chips are inverted by rotating them upward, placed on an intermediate transfer nozzle, and then delivered to the transfer shuttle. The loaded shuttle delivers the sorted die to the placement machine, where the die are picked for assembly.

Customer Value

Using Direct Die Feeders from Hover-Davis lowers overall capital investment and reduces assembly costs. By utilizing DDf technology, customers may realize significant savings by:

- Eliminating separate and dedicated production lines for SMT, bare die, and flip chip by combining them into one.
- Enabling total assembly solutions with much higher speed and flexibility, resulting in lower cost per placement.
- Eliminating costly, non-value added processes, such as intermediate die transfer into pocketed tape, surf-tape, or waffle packs prior to placement.

The DDf Innova technology will turn a chip shooter into a Flip Chip Shooter, a SMT machine into an Advanced Semiconductor Assembly solution, and a custom automation platform into a Flexible Semi-conductor Assembly solution.

Hover-Davis Direct Die Feeding is your application solution.

Target Applications

With this feeding technology, world class assembly solutions can be configured to support a wide variety of products, including:

- Hybrid Circuits and Sensors
- Multi-Chip Modules
- Semiconductor Components, including SIP
- RFID Tags
- 3-D Assemblies
- MEMS
- Solar Cell Assemblies

HOVER-DAVIS
The Feeder Company

DDf Innova Direct Die Feeder

Specification table

Performance	
Speed	Up to 5000 cph, flip chip * Up to 3500 cph, direct die * * application dependent and require application review
Die Size	0.7 mm - 11.0 mm * 0.075 mm - 4.0 mm thickness * Dimensions above require application review
Wafer Size	100 mm - 300 mm diameter
Operations	
Vision System	Thresholding Pattern Matching Ink Dot Detection Corner Detection Solder Bump Detection Wafer Mapping (Optional)
Ejection	Piercing or Non-Piercing Programmable
Handling Mode	Flip Chip Direct Die
Shuttle Presentation	7 Nest Modular Tooling
User Interface	Graphical User Interface Touch Screen Programmable
Mechanical	
Dimensions	Height 1569 mm Length 1318 mm Width 127 mm Weight 45 kg
Machine Interface	RS232 Standard Serial Isolated Standard Parallel
Utilities	Voltage 110 / 220 Auto Sensing Power 375 Watts Air Supply 5.5 Bar (minimum) - 8.2 Bar (maximum) Air Flow 272 lpm
Ambient Factors	Temperature 15 to 35° Centigrade Humidity 30 to 75% Non-condensing

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