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High Performance Positioning Systems for Flat Panel Display Manufacturing

 **DANAHER**
MOTION



Why Danaher Motion and Dover Positioning Systems?

As the leading global supplier in the design and manufacture of high performance positioning systems, for Flat Panel Display (FPD) manufacturing, Danaher Motion is the expert in meeting the demanding and ever-changing needs of the FPD industry. We understand the dynamics of the FPD manufacturing process and work diligently to provide solutions with the smoothest, most accurate operation.

Danaher Motion's Dover branded positioning systems have been the preferred choice of Original Equipment Manufacturer's (OEM's) for over 40 years. Rooted in the Danaher philosophy of continuous improvement and execution of quality, delivery and cost, Dover positioning systems are the best choice for your demanding FPD requirements.

Danaher Motion's Competitive Edge:

- Pioneers in the use of air bearings for commercial, high precision applications.
- Field proven designs improve time to market.
- Extensive application expertise provides flexibility to meet your exact requirements.
- Worldwide field service support.
- Detailed specification review in the proposal phase of the project reduces technical risk.
- State-of-the-art manufacturing facility to support large volume production.
- Rapid prototyping capabilities.
- Rigorous project management system based on key project milestones.



Danaher Motion positioning systems are shipped complete, including base, with vibration isolation, high performance motion controller, X-Y positioner and additional axes. Use of an exclusive, patented gantry control algorithm provides unmatched servo positioning control. This systems-level approach results in positioning systems that are complete, and optimized for superior performance.

System Architecture

The choice of positioning system architecture is dependant upon your specific application and performance requirements. Danaher Motion supplies X-Y positioning systems with the three most commonly used architectures in FPD manufacturing.

X-Y Gantry Positioner

The glass is stationary, with the “tool” moving over the glass in the X and Y axes.



◀ *Figure 1 :
X-Y Gantry for
Generation 6 and 7*



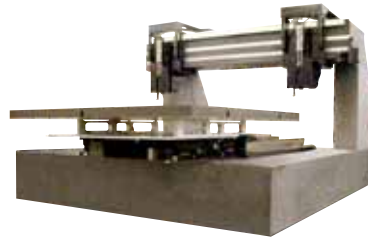
◀ *Figure 2 :
X-Y Gantry for
Generation 6 and 7
with Dual Heads*

X-Y Split Axis Positioner

The glass moves in one direction, while the “tool” moves in the orthogonal direction over the glass.



◀ *Figure 3 :
X-Y Split Axis
Positioner*



◀ *Figure 4 :
X-Y Split Axis
Positioner with
Multiple Heads*

X-Y Planar Positioner

The glass moves in both the X and Y axes, typically underneath a stationary bridge that supports the tool.



◀ *Figure 5 :
Planar X-Y Stage
with Bridge*



◀ *Figure 6 :
X-Y Planar for
Generation 6*

Alternative System Architectures for Generation 6 and 7

Given the potentially large footprint of the Generation 6 and 7 systems, alternative positioning system design approaches are available.

- Split axes systems that can be partially disassembled for shipping. In this case, the system is built and tested at our facility. Prior to shipping, the system is broken down into several major sub-assemblies, which can be re-assembled at your facility by our technicians.
- Modular positioners can be supplied as finished, tested units to be mounted on customer supplied base granite, for our large OEM customers.



◀ *Figure 7 :
Generation 6 System
can be disassembled
for shipping*



◀ *Figure 8 :
Module Air Bearing
and Non-Air Bearing
Positioner*

New Name, Established Brands

Danaher Motion's wide range of motion control systems and components offer customers an unprecedented choice in selecting the right solution for their particular application requirements. Our product innovations have been improving the efficiency and productivity of complex manufacturing operations for over 60 years through trusted brand names such as Dover, Kollmorgen, Pacific Scientific, Portescap and Thomson in industries as diverse as semiconductor, aerospace and defense, mobile-off-highway, packaging, medical and robotics.

Danaher Motion's growing family of leading motion control products and application expertise tells only half the story. With a worldwide service and support infrastructure, our field service engineers and support teams are available when you need them. It is part of the Danaher Corporation's unrelenting focus on you, our customer. That's why more and more design engineers are turning to Danaher Motion to meet their motion control requirements.



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