

Title (en)
MULTIPLE POINT POSITION SCANNING SYSTEM

Title (de)
MEHRSTELLUNGSABTASTSYSTEM

Title (fr)
SCANNEUR A POSITIONNEMENT MULTIPLE

Publication
EP 0996963 A1 20000503 (EN)

Application
EP 98931251 A 19980618

Priority
• US 9812239 W 19980618
• US 89081697 A 19970711

Abstract (en)
[origin: WO9902996A2] A multiple point scanning system is suitable for determining the orientation in space of a substrate such as a flat panel display or semiconductor wafer. The substrate or semiconductor display may be positioned in the wafer carrier, and the system of the present invention can determine the position of the carrier, in order to calibrate and teach a positioning robot or other mechanism the position of the carrier. Using top scanning sensors, X-Y coordinates of the wafer or substrate can be determined, and the actual position of the wafer calculated. The system includes a scanning end effector (100,102) which may be utilized with an end effector structure, the end effector structure having a first end and a second end, the first end including a forward scanning sensor (FS) and the second end including top scanning sensors (TS). The scanning end effector may be rotated about a Z-axis extending through a robotic arm, such as a global positioning arm to position the scanning end effector relative to both the wafer holder and the substrates. The system may also include a rear scanning sensor (424) coupled to a sensor frame (450). The sensor frame may be positioned along the Z-axis when an end effector engages the scanning frame and moves the frame along the Z-axis in conjunction with the scanning motion of the end effector. In yet another alternative embodiment of the present invention, three sensors are located in a chamber or front-end set-up at three different locations in an X-Y plane, to sense the Z-axis coordinates of a substrate or wafer in a front-end processor which is positionable on an elevator or global alignment elevator. The system may be used in conjunction with a robotic arm or global positioning robot having one or more vertical detection sensors.

IPC 1-7
H01L 21/00

IPC 8 full level
B25J 9/16 (2006.01); **G01B 11/00** (2006.01); **G05B 19/401** (2006.01); **H01L 21/00** (2006.01); **H01L 21/68** (2006.01)

CPC (source: EP)
B25J 9/1697 (2013.01); **G05B 19/401** (2013.01); **H01L 21/67259** (2013.01); **H01L 21/67265** (2013.01); **H01L 21/68** (2013.01); **G05B 2219/37061** (2013.01); **G05B 2219/37608** (2013.01); **G05B 2219/39012** (2013.01); **G05B 2219/40564** (2013.01); **G05B 2219/41111** (2013.01); **G05B 2219/49143** (2013.01)

Cited by
US11673275B2

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)
WO 9902996 A2 19990121; WO 9902996 A3 19990429; EP 0996963 A1 20000503; EP 0996963 A4 20060118; JP 2001509643 A 20010724

DOCDB simple family (application)
US 9812239 W 19980618; EP 98931251 A 19980618; JP 2000502425 A 19980618