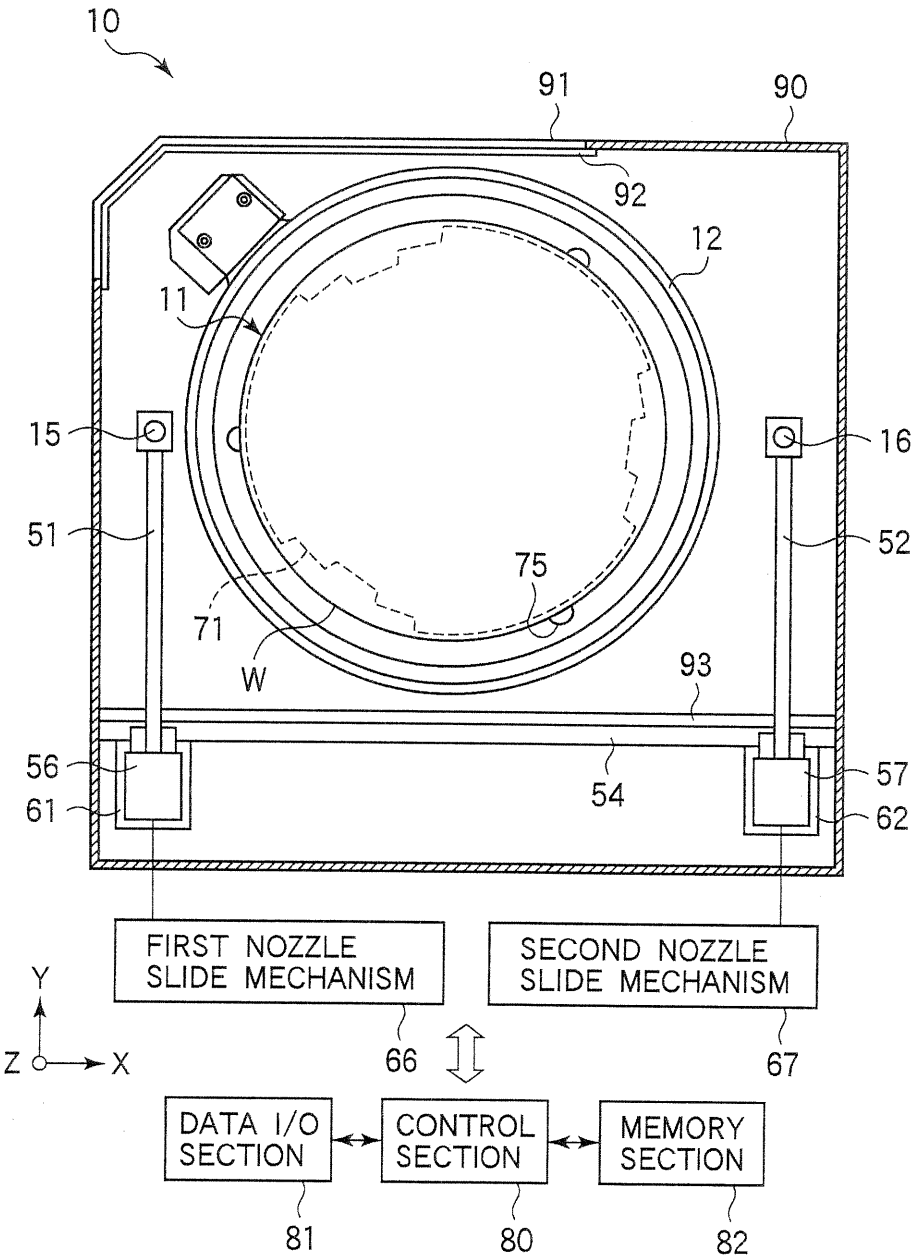

10
91
90
92
12
11
15
16
51
52
75
71
W
93
56
57
54
61
62
FIRST NOZZLE SLIDE MECHANISM
SECOND NOZZLE SLIDE MECHANISM
Y
Z
X
66
67
DATA I/O SECTION
CONTROL SECTION
MEMORY SECTION
81
80
82

FIG.1

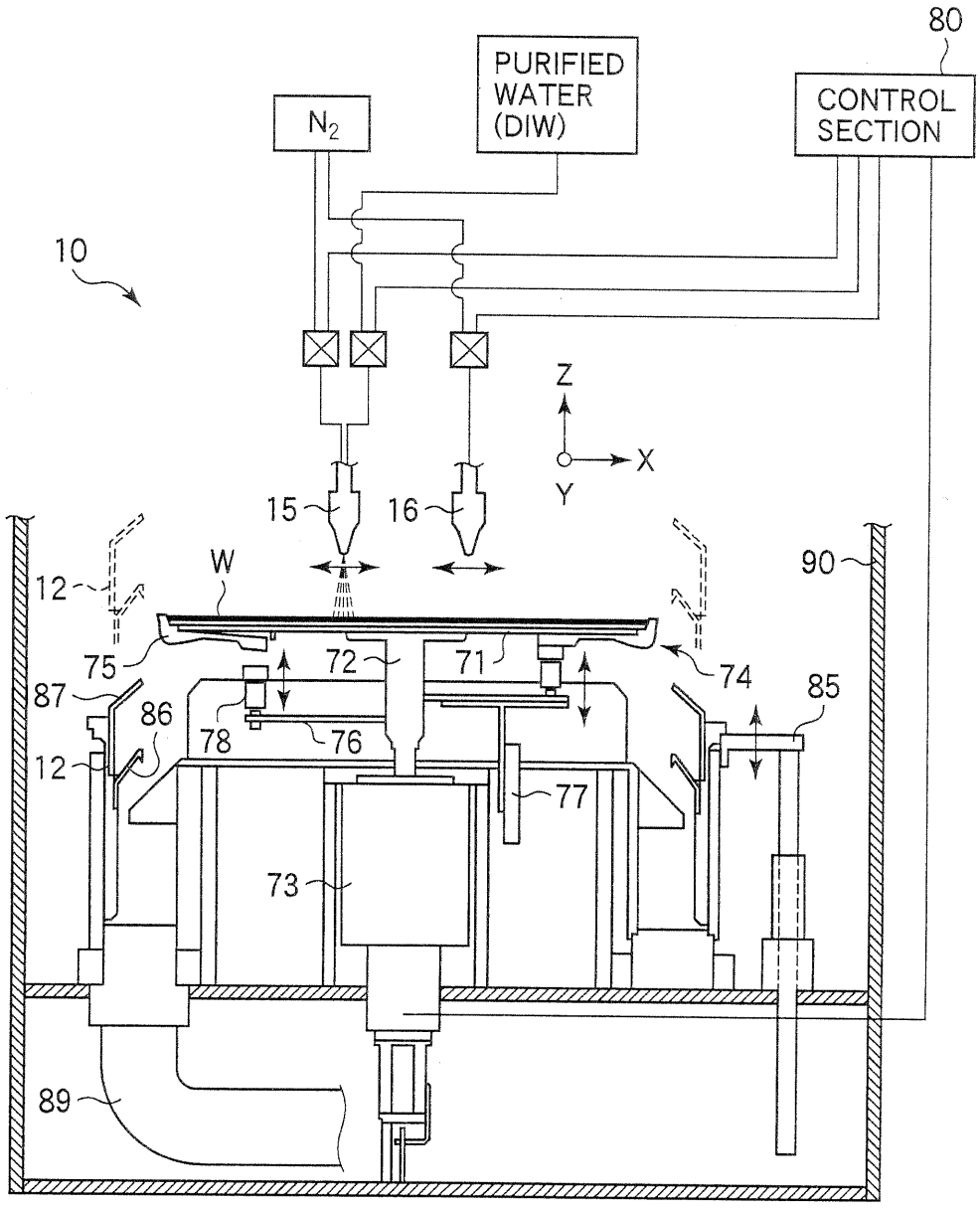

80
PURIFIED WATER (DIW)
N_2
CONTROL SECTION
10
Z
X
Y
15
16
W
90
12
75
72
71
74
85
87
86
78
76
12
77
73
89

FIG.2

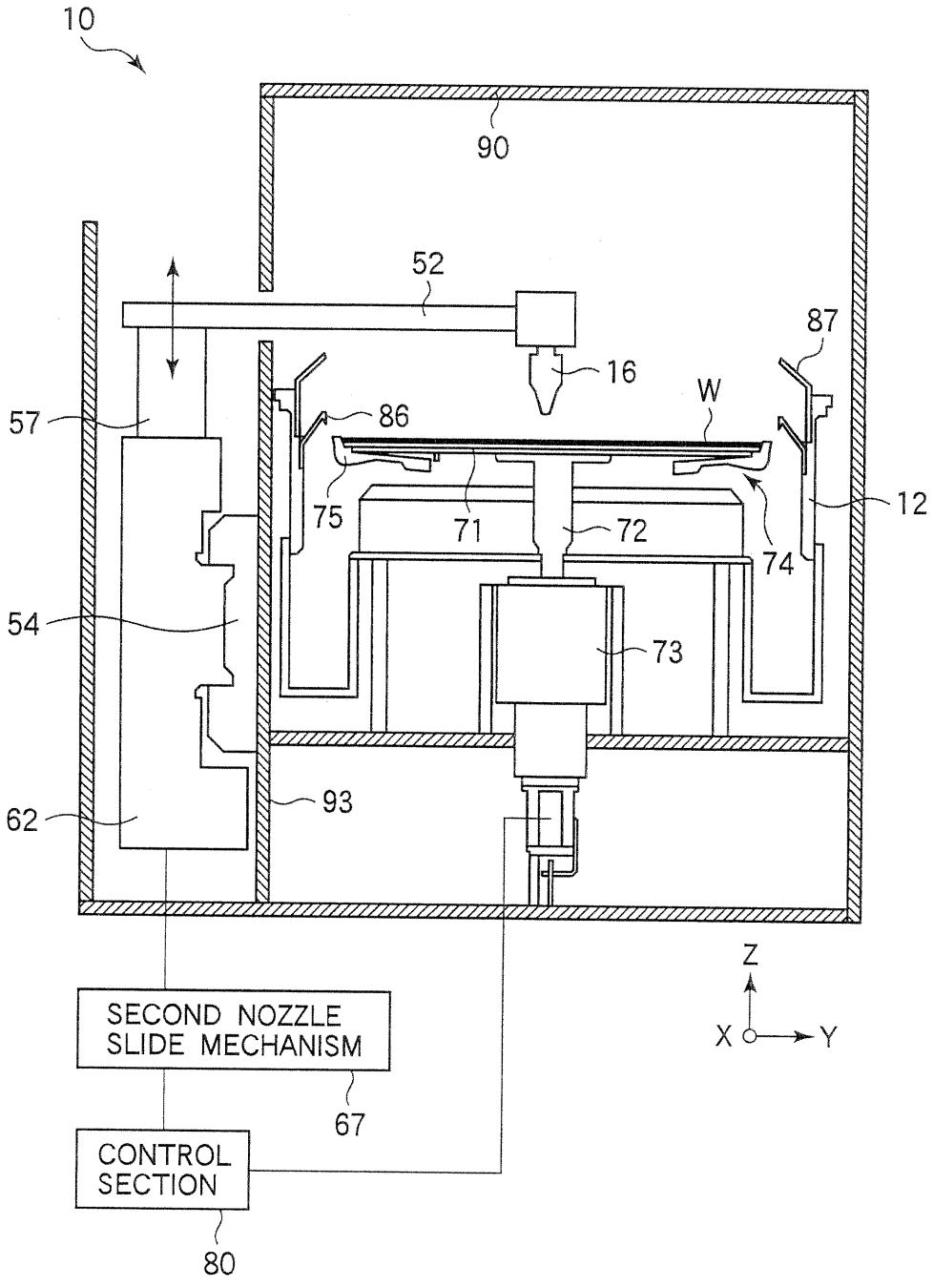

10
90
52
87
16
W
57
86
12
75
71
72
74
54
73
62
93
Z
X
Y
SECOND NOZZLE SLIDE MECHANISM
67
CONTROL SECTION
80

FIG.3

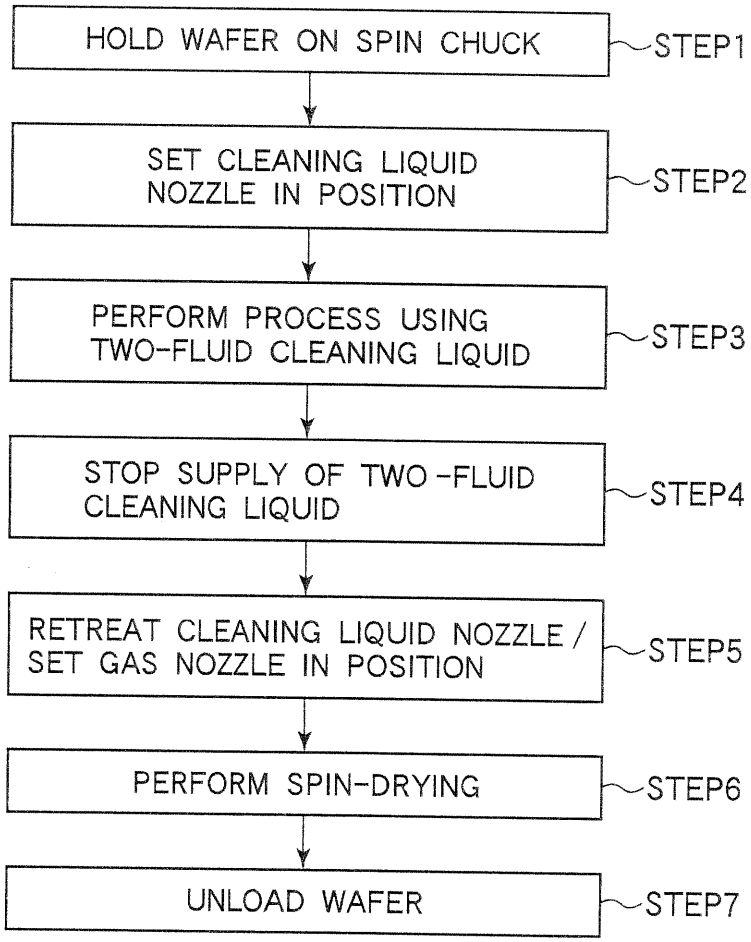

HOLD WAFER ON SPIN CHUCK
STEP1
SET CLEANING LIQUID NOZZLE IN POSITION
STEP2
PERFORM PROCESS USING TWO-FLUID CLEANING LIQUID
STEP3
STOP SUPPLY OF TWO-FLUID CLEANING LIQUID
STEP4
RETREAT CLEANING LIQUID NOZZLE / SET GAS NOZZLE IN POSITION
STEP5
PERFORM SPIN-DRYING
STEP6
UNLOAD WAFER
STEP7

FIG.4

FIG.5A

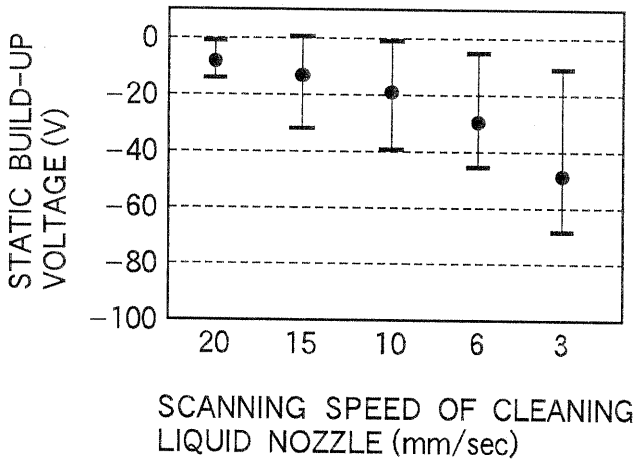
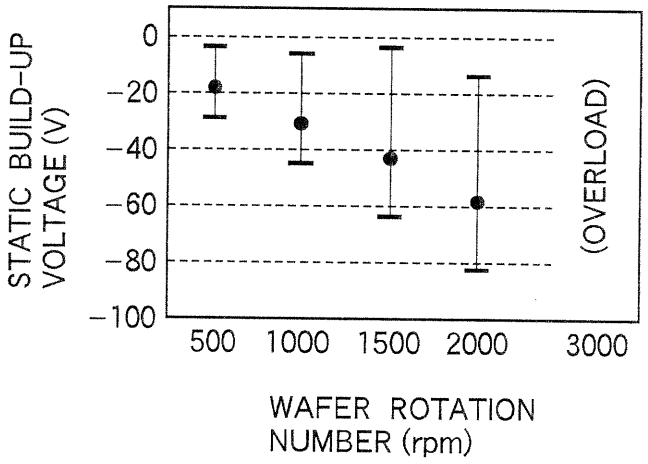

STATIC BUILD-UP VOLTAGE (V)
0
-20
-40
-60
-80
-100
20
15
10
6
3
SCANNING SPEED OF CLEANING LIQUID NOZZLE (mm/sec)

FIG.5B


STATIC BUILD-UP VOLTAGE (V)
0
-20
-40
-60
-80
-100
500
1000
1500
2000
3000
(OVERLOAD)
WAFER ROTATION NUMBER (rpm)

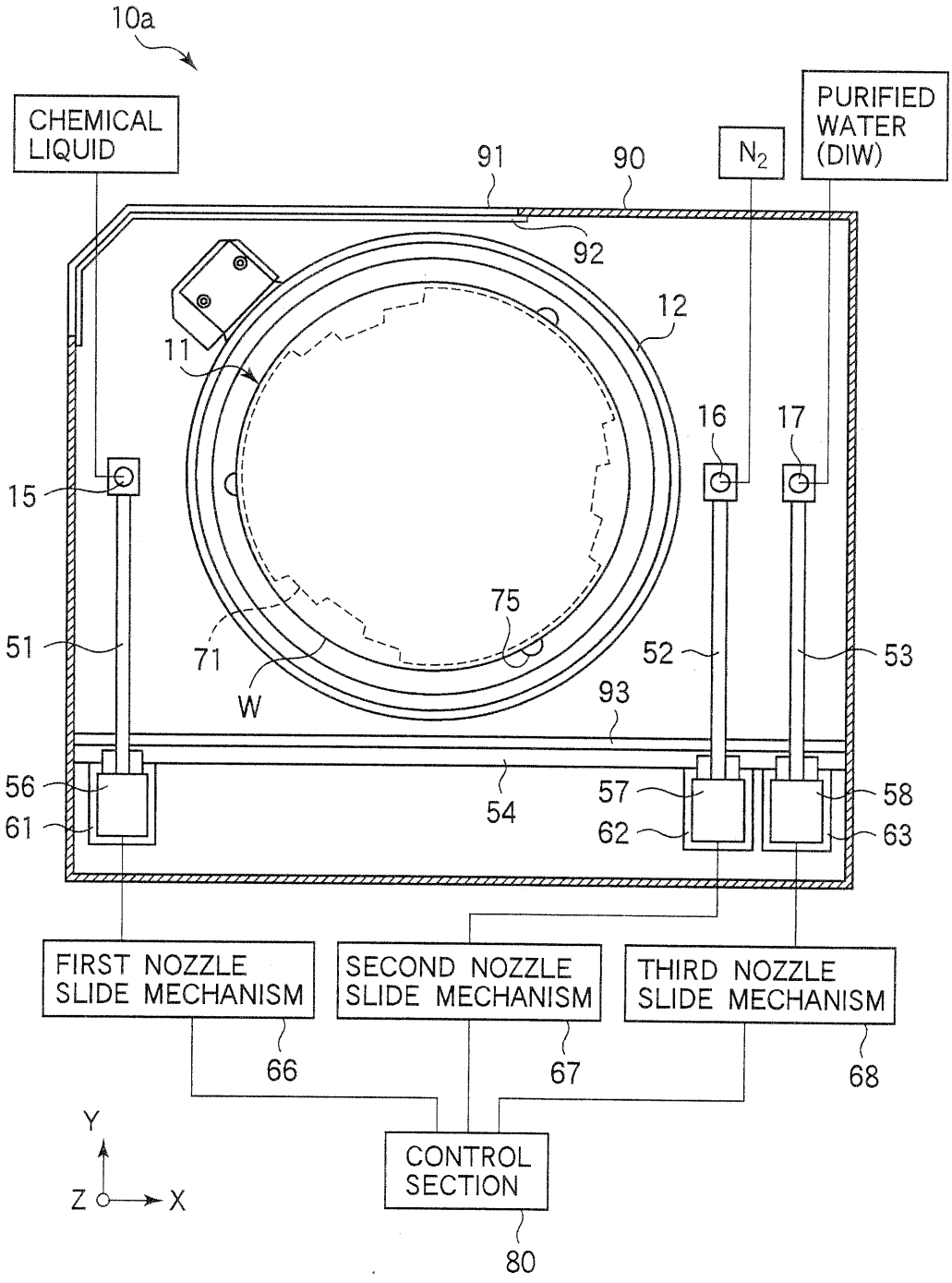

10a
CHEMICAL LIQUID
PURIFIED WATER (DIW)
N_2
91
90
92
12
11
16
17
15
75
51
71
52
53
W
93
56
54
57
58
61
62
63
FIRST NOZZLE SLIDE MECHANISM
SECOND NOZZLE SLIDE MECHANISM
THIRD NOZZLE SLIDE MECHANISM
66
67
68
Y
Z
X
CONTROL SECTION
80

FIG.6

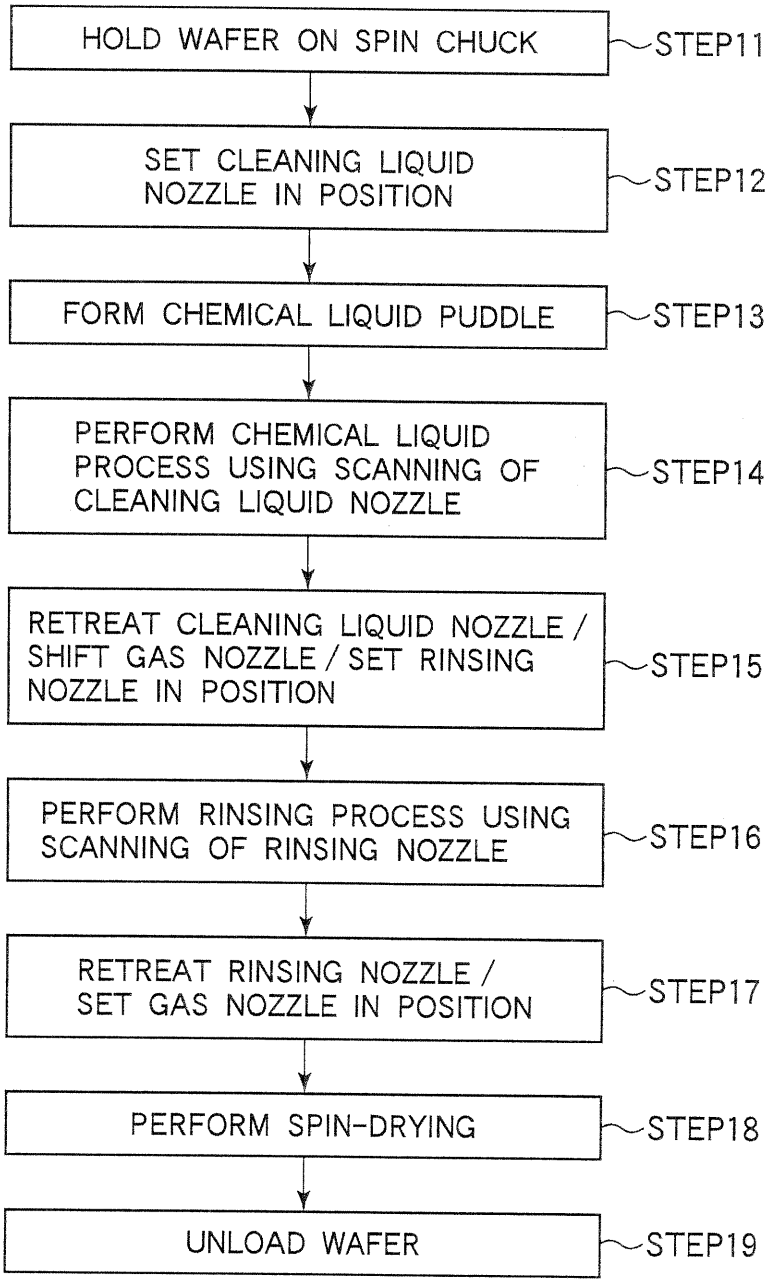

HOLD WAFER ON SPIN CHUCK
STEP11
SET CLEANING LIQUID NOZZLE IN POSITION
STEP12
FORM CHEMICAL LIQUID PUDDLE
STEP13
PERFORM CHEMICAL LIQUID PROCESS USING SCANNING OF CLEANING LIQUID NOZZLE
STEP14
RETREAT CLEANING LIQUID NOZZLE / SHIFT GAS NOZZLE / SET RINSING NOZZLE IN POSITION
STEP15
PERFORM RINSING PROCESS USING SCANNING OF RINSING NOZZLE
STEP16
RETREAT RINSING NOZZLE / SET GAS NOZZLE IN POSITION
STEP17
PERFORM SPIN-DRYING
STEP18
UNLOAD WAFER
STEP19

FIG.7

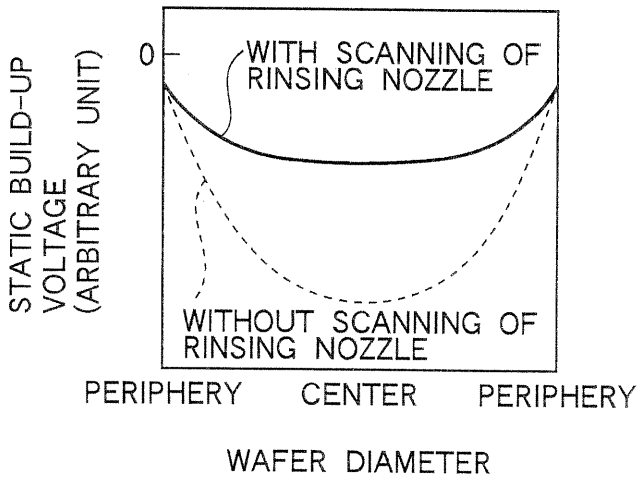

STATIC BUILD-UP VOLTAGE (ARBITRARY UNIT)
0
WITH SCANNING OF RINSING NOZZLE
WITHOUT SCANNING OF RINSING NOZZLE
PERIPHERY
CENTER
PERIPHERY
WAFER DIAMETER

FIG.8

FIG.9A

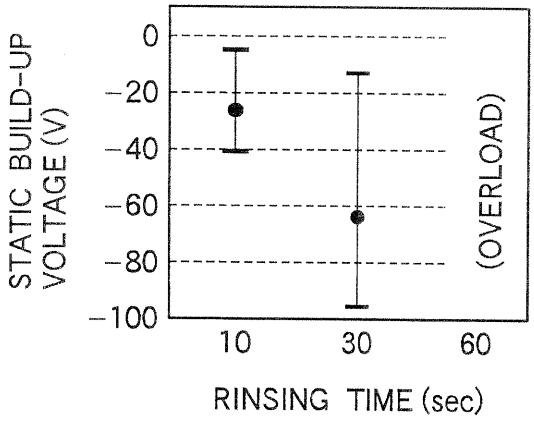


FIG.9B

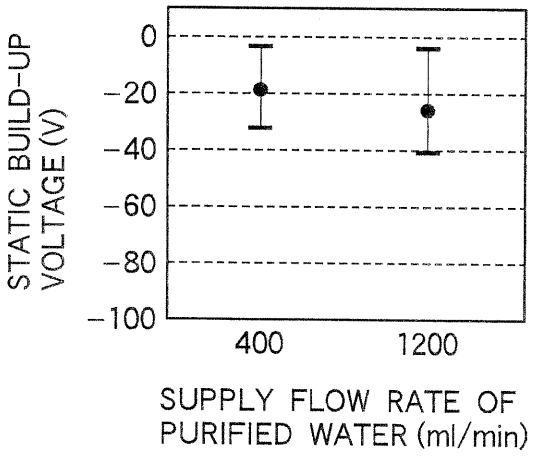
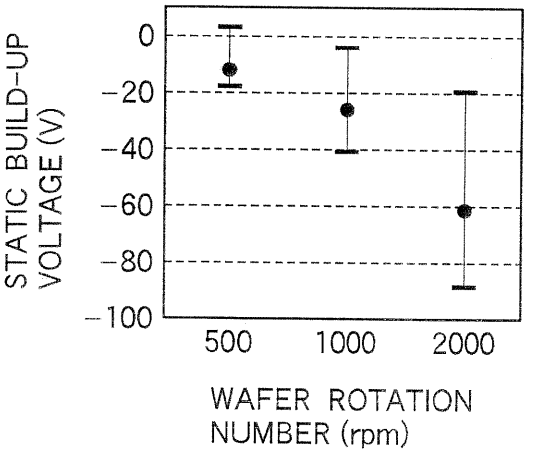


FIG.9C



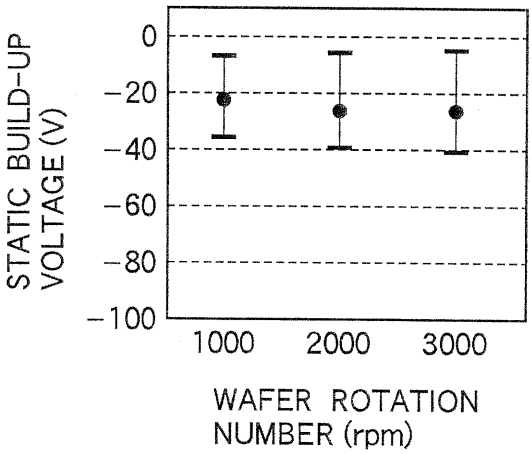

STATIC BUILD-UP VOLTAGE (V)
0
−20
−40
−60
−80
−100
1000
2000
3000
WAFER ROTATION NUMBER (rpm)

FIG.10