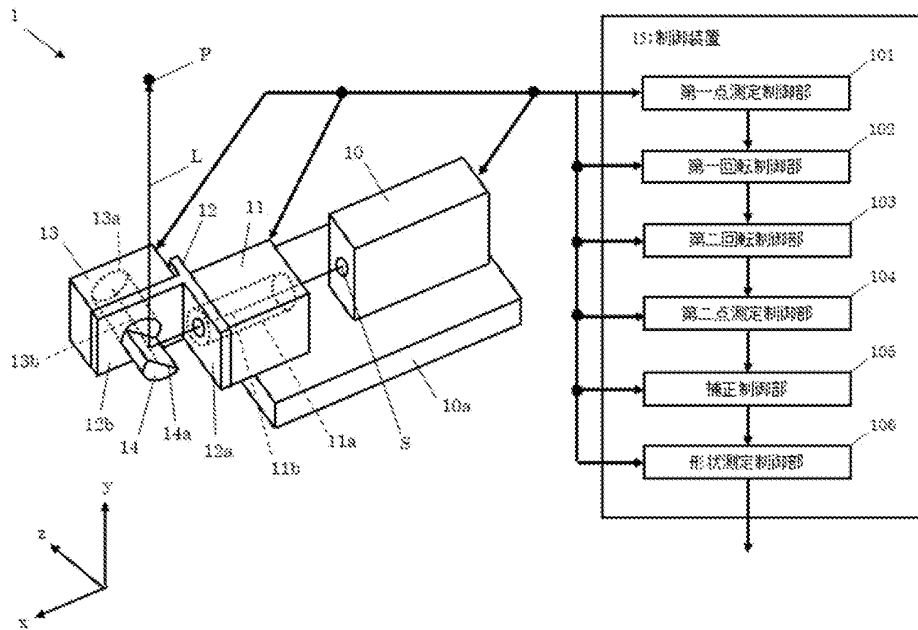
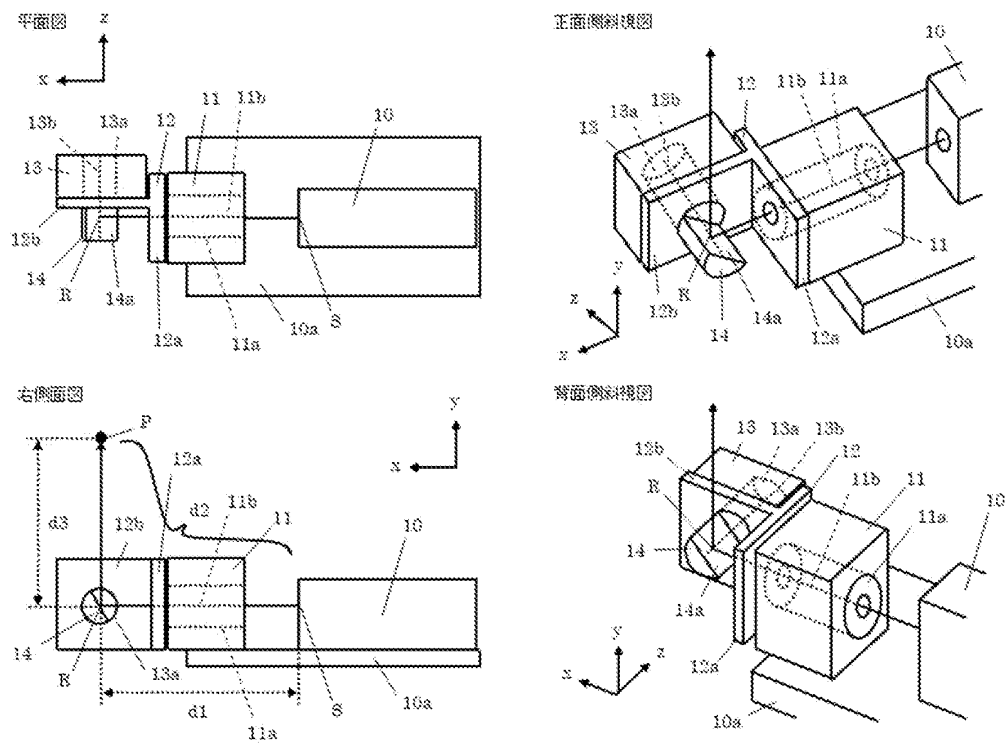


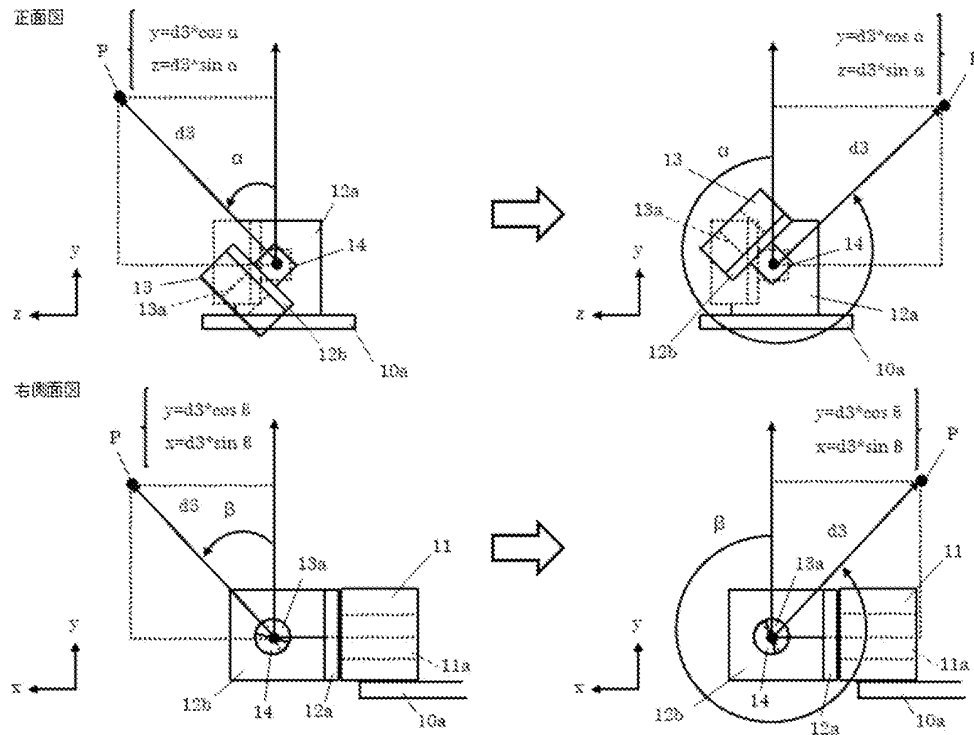
[図1]



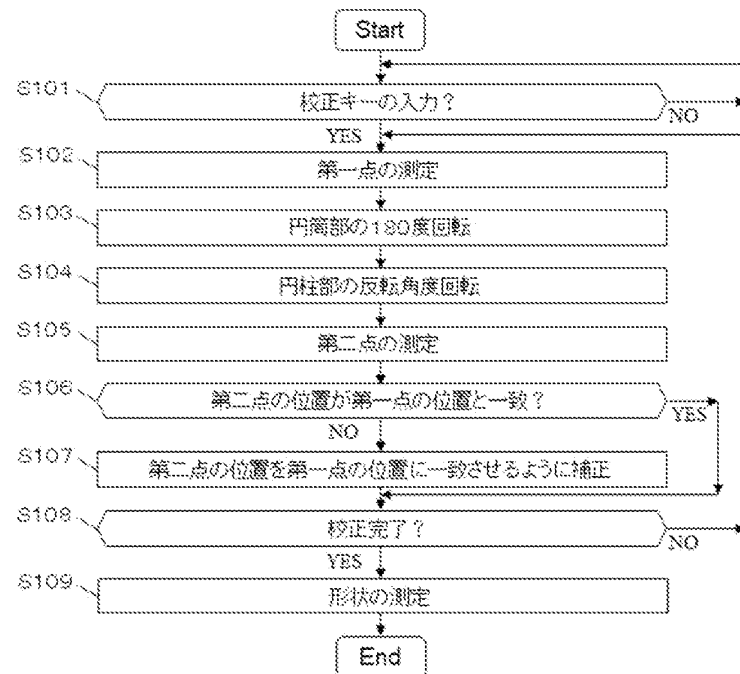
[図2]



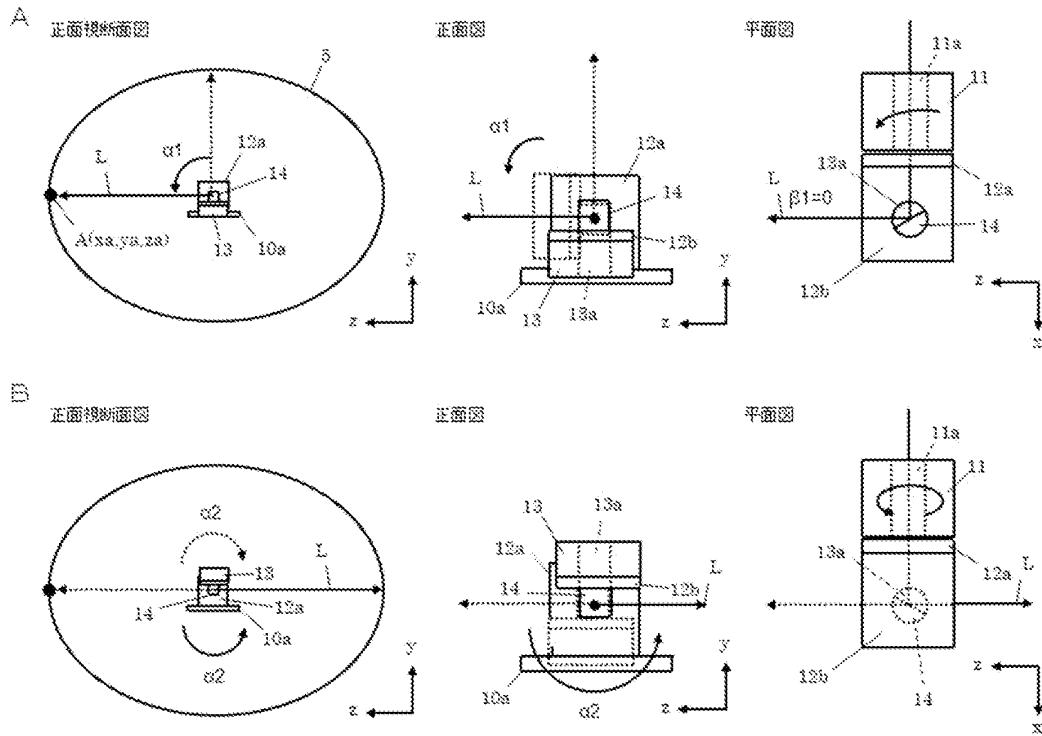
[図3]



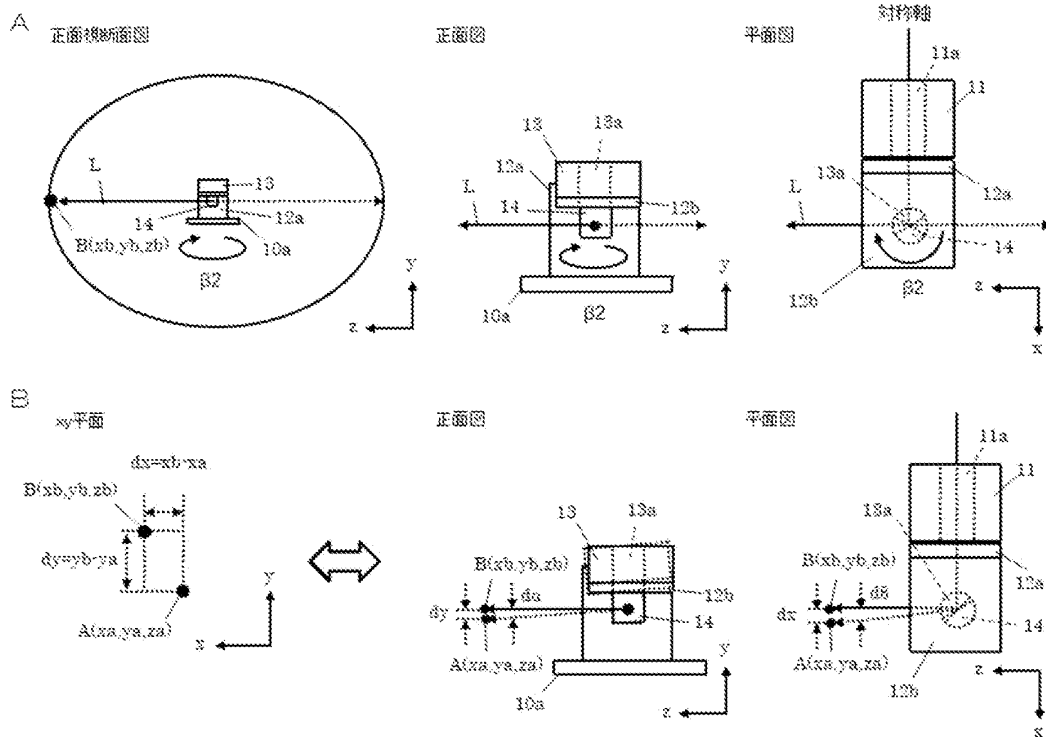
[図4]



[図5]

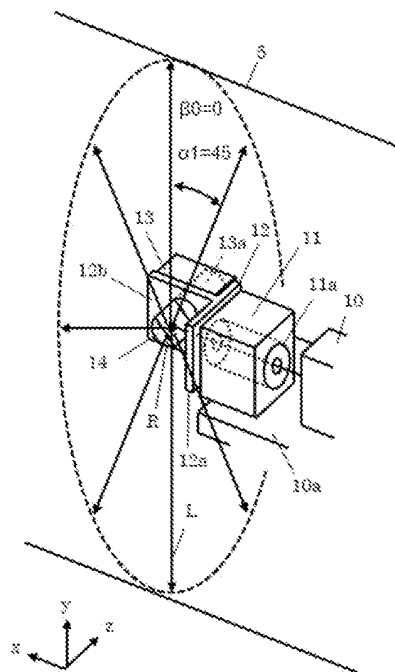


[図6]

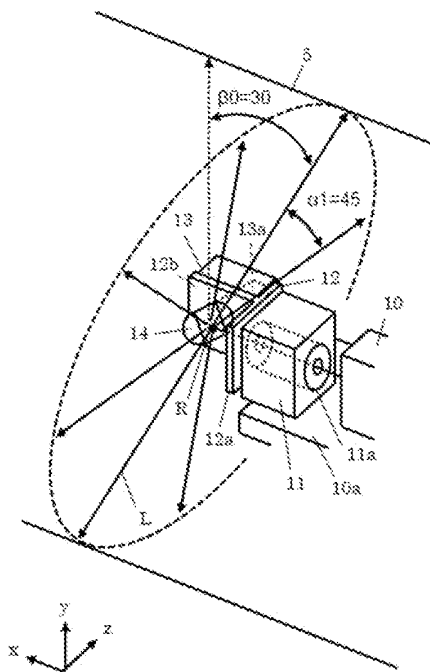


[図7]

A

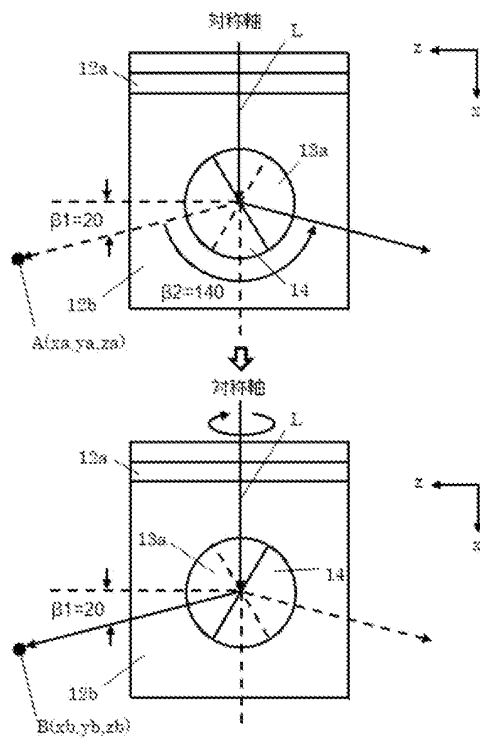


B

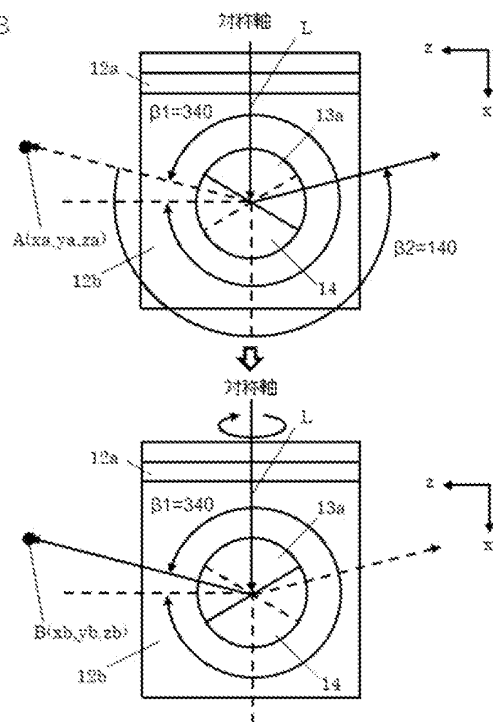


[図8]

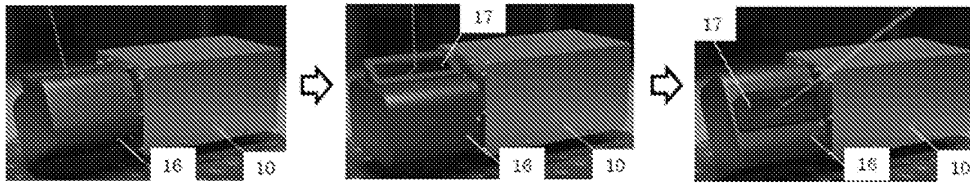
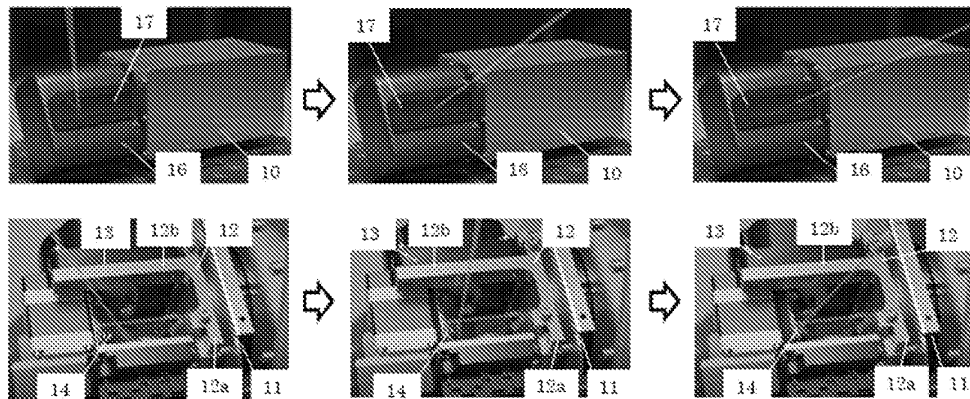
A



B

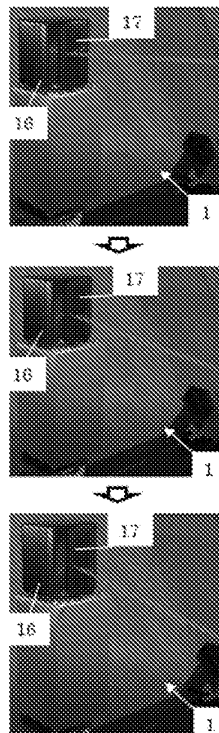


[図9]

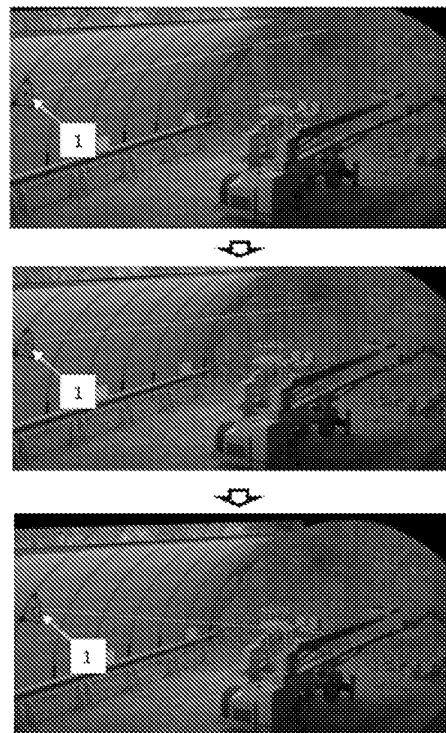
第一の回転角度 α での回転第二の回転角度 β での回転

[図10]

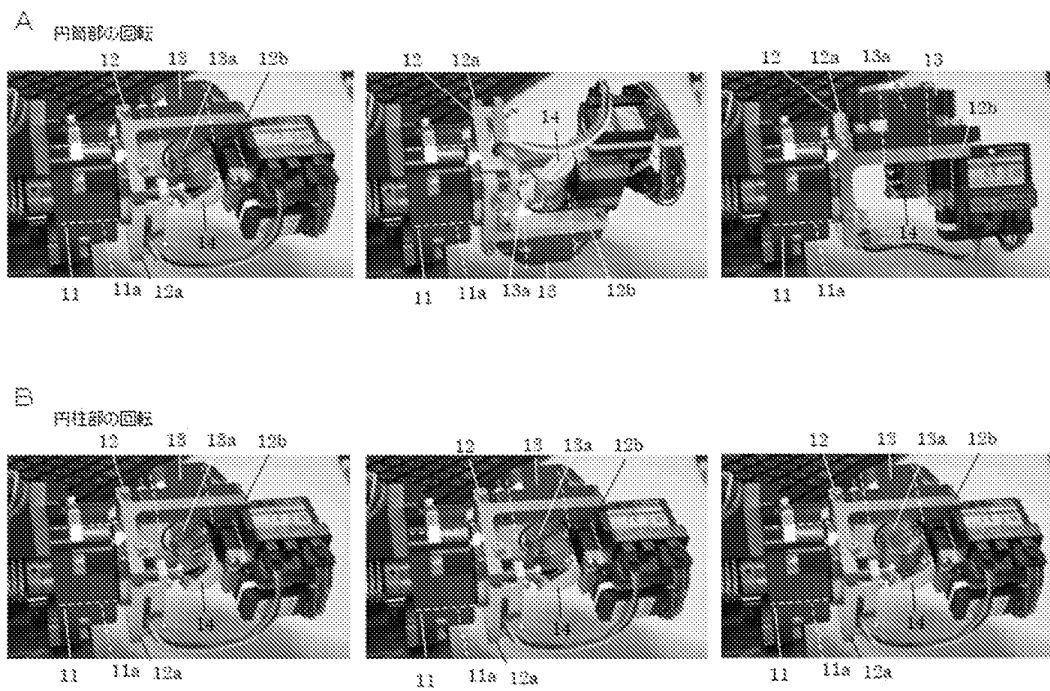
装置側



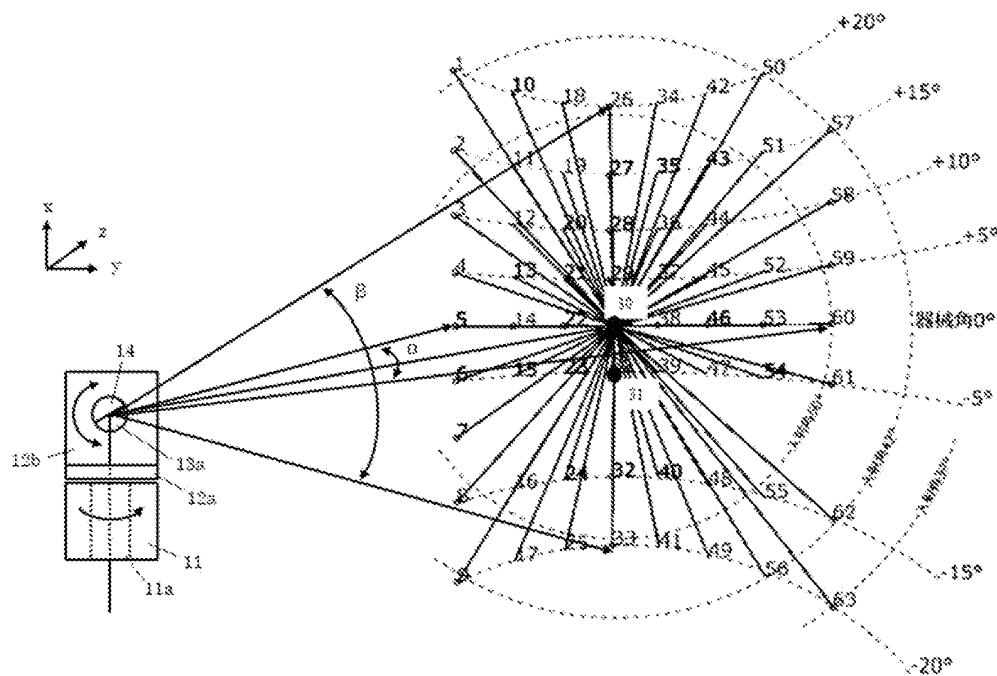
トンネル側



[図11]



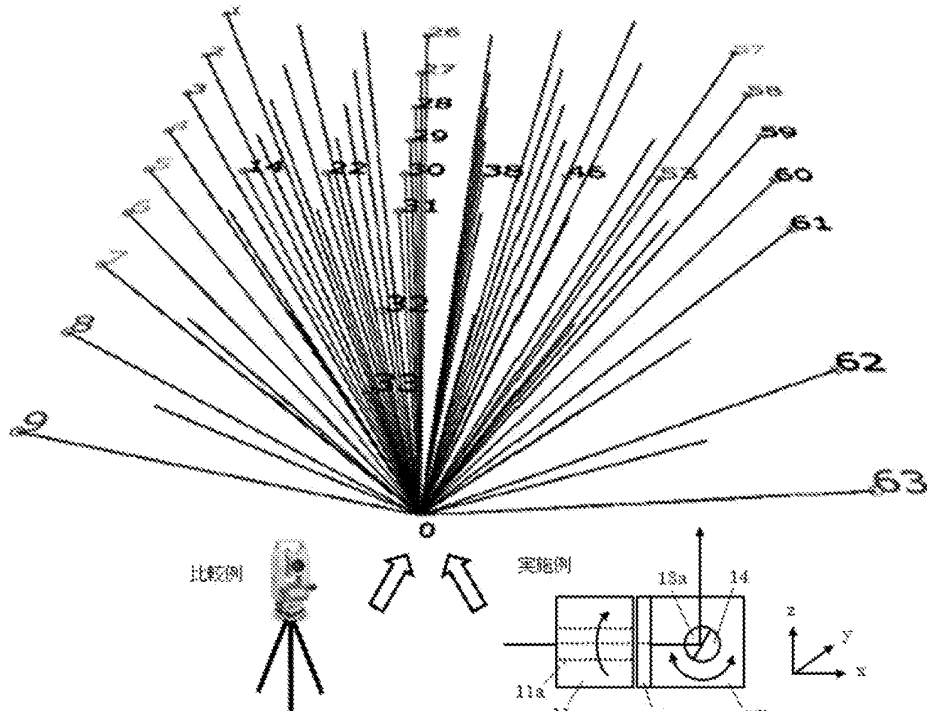
[図12]



[図13]

測点名	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10	No.11	No.12	No.13
最大値	2324.98	2357.82	2405.10	2345.95	2319.55	2342.82	2448.24	2644.26	2976.12	2731.82	2446.73	2262.85	2184.72
最小値	2384.11	2632.26	2454.24	2348.34	2310.55	2342.44	2447.82	2843.82	2989.34	2781.86	2446.22	2263.32	2164.48
差	0.52	0.56	0.66	0.62	0.33	0.33	0.54	0.94	0.94	0.42	0.54	0.54	0.26
10回平均値	2324.70	2352.69	2404.62	2345.81	2319.73	2342.56	2447.87	2644.38	2976.72	2731.68	2446.46	2263.55	2164.98
測点名	No.14	No.15	No.16	No.17	No.18	No.19	No.20	No.21	No.22	No.23	No.24	No.25	No.26
最大値	2133.06	2162.70	2441.88	2742.84	2692.58	2382.86	2156.40	2064.74	2032.60	2082.94	2329.22	2617.56	2578.64
最小値	2132.54	2161.96	2440.40	2742.38	2691.42	2382.90	2155.92	2064.24	2033.36	2082.82	2328.86	2616.82	2579.68
差	0.52	0.49	0.88	0.56	1.14	0.50	0.48	0.40	0.44	0.32	0.44	1.94	0.96
10回平均値	2132.80	2162.48	2440.76	2742.57	2692.08	2382.57	2159.12	2064.59	2033.50	2082.77	2329.07	2617.82	2578.28
測点名	No.27	No.28	No.29	No.30	No.31	No.32	No.33	No.34	No.35	No.36	No.37	No.38	No.39
最大値	2297.96	2127.18	2026.86	1976.12	2023.14	1980.20	2572.68	2607.68	2576.46	2147.18	2062.96	2073.90	2081.86
最小値	2292.66	2121.70	2028.16	1999.34	2027.86	2269.78	2571.80	2608.82	2520.00	2146.82	2052.40	2022.10	2051.44
差	0.50	0.48	0.46	0.58	0.36	0.42	0.78	1.05	0.46	0.54	0.50	0.68	0.34
10回平均値	2292.78	2121.92	2028.64	1999.54	2027.37	2290.01	2572.27	2607.46	2526.27	2146.54	2052.70	2022.67	2051.65
測点名	No.40	No.41	No.42	No.43	No.44	No.45	No.46	No.47	No.48	No.49	No.50	No.51	No.52
最大値	2319.04	2603.08	2718.66	2419.08	2237.50	2183.44	2108.08	2108.86	2417.90	2719.68	2928.58	2604.66	2302.76
最小値	2317.60	2602.50	2717.36	2418.60	2236.86	2183.56	2107.76	2108.24	2416.56	2719.56	2927.96	2603.38	2302.08
差	0.44	0.88	1.30	0.48	0.72	0.88	0.32	0.62	0.60	0.62	0.62	1.28	0.68
10回平均値	2317.78	2602.96	2718.26	2418.84	2237.23	2183.95	2107.90	2108.05	2416.94	2719.42	2928.27	2603.85	2302.51
測点名	No.53	No.54	No.55	No.56	No.57	No.58	No.59	No.60	No.61	No.62	No.63		
最大値	2268.74	2303.20	2803.60	2920.88	2918.64	2687.10	2577.84	2543.82	2679.84	2912.76	3071.02		
最小値	2268.14	2302.92	2802.40	2921.74	2914.44	2686.46	2576.54	2549.56	2576.18	2911.84	3070.08		
差	0.60	0.54	1.20	1.14	1.30	0.62	1.22	1.06	1.26	0.82	0.94		
10回平均値	2268.51	2303.14	2802.85	2922.38	2914.96	2686.86	2577.42	2549.23	2579.22	2912.46	3070.60		

[図14]



[図15]

測定点	比較例			実施例			差		
	X	Y	Z	X	Y	Z	X	Y	Z
No.1	205.0	1682.0	1718.0	207.2	1681.4	1716.2	-2.2	0.6	1.8
No.2	231.0	1710.0	1718.0	232.8	1709.0	1716.8	-1.8	1.0	0.2
No.3	215.0	814.0	1716.0	216.6	813.1	1716.9	-0.6	0.9	2.1
No.4	218.0	239.0	1719.0	219.4	238.4	1716.2	-1.4	-0.4	2.8
No.5	221.0	-150.0	1720.0	222.8	-150.0	1716.8	-0.6	0.8	5.6
No.6	226.0	-538.0	1720.0	228.6	-536.4	1716.7	0.4	-0.8	8.3
No.7	228.0	-914.0	1721.0	230.7	-912.9	1717.0	-0.7	-1.7	9.7
No.8	231.0	-1407.0	1723.0	231.8	-1406.3	1719.0	-0.6	-0.7	4.0
No.9	235.0	-1876.0	1724.0	236.6	-1874.8	1719.9	-0.6	-0.7	4.1
No.14	628.0	-148.0	1717.0	627.1	-148.9	1716.2	-1.1	-0.7	0.8
No.22	880.0	-146.0	1716.0	881.0	-146.1	1714.6	-1.0	0.1	1.4
No.28	1209.0	1476.0	1716.0	1201.0	1476.8	1714.6	-1.0	-0.8	1.4
No.27	1302.0	698.0	1716.0	1304.1	698.6	1714.6	-2.1	-0.6	1.7
No.28	1309.0	698.0	1716.0	1306.7	696.1	1714.7	-1.7	-0.1	0.8
No.29	1308.0	136.0	1716.0	1308.9	136.8	1714.6	-0.9	1.2	1.0
No.30	1311.0	-144.0	1716.0	1311.0	-144.0	1716.1	0.0	0.0	-0.1
No.31	1313.0	-179.0	1717.0	1313.1	-179.0	1716.7	-0.1	0.0	1.3
No.32	1315.0	-1229.0	1721.0	1317.8	-1222.1	1720.6	0.2	-0.8	0.5
No.33	1320.0	-1712.0	1722.0	1320.9	-1711.9	1722.6	-0.9	-0.8	1.4
No.38	1638.0	-140.0	1716.0	1636.1	-141.6	1714.6	-1.1	-0.1	0.4
No.46	1989.0	-141.0	1716.0	1986.6	-139.7	1716.6	-1.8	-1.3	-0.8
No.53	2376.0	-158.0	1716.0	2378.6	-157.1	1718.3	-2.3	-0.9	0.7
No.57	2847.0	1289.0	1717.0	2850.1	1286.6	1714.8	-0.1	-8.8	2.7
No.58	2859.0	742.0	1718.0	2859.4	742.6	1716.0	-0.4	-0.6	2.0
No.59	2864.0	296.0	1717.0	2866.2	296.3	1716.2	-1.2	-0.8	0.8
No.60	2866.0	-134.0	1718.0	2867.7	-134.0	1717.9	-1.7	0.0	0.6
No.61	2869.0	-899.0	1722.0	2861.6	-898.8	1720.4	-1.6	-0.8	1.6
No.62	2868.0	-1804.0	1723.0	2866.8	-1803.1	1722.8	-0.8	-0.9	0.2
No.63	2866.0	-2161.0	1723.0	2868.7	-2160.0	1722.4	-0.7	-1.0	0.6