

FIG.1

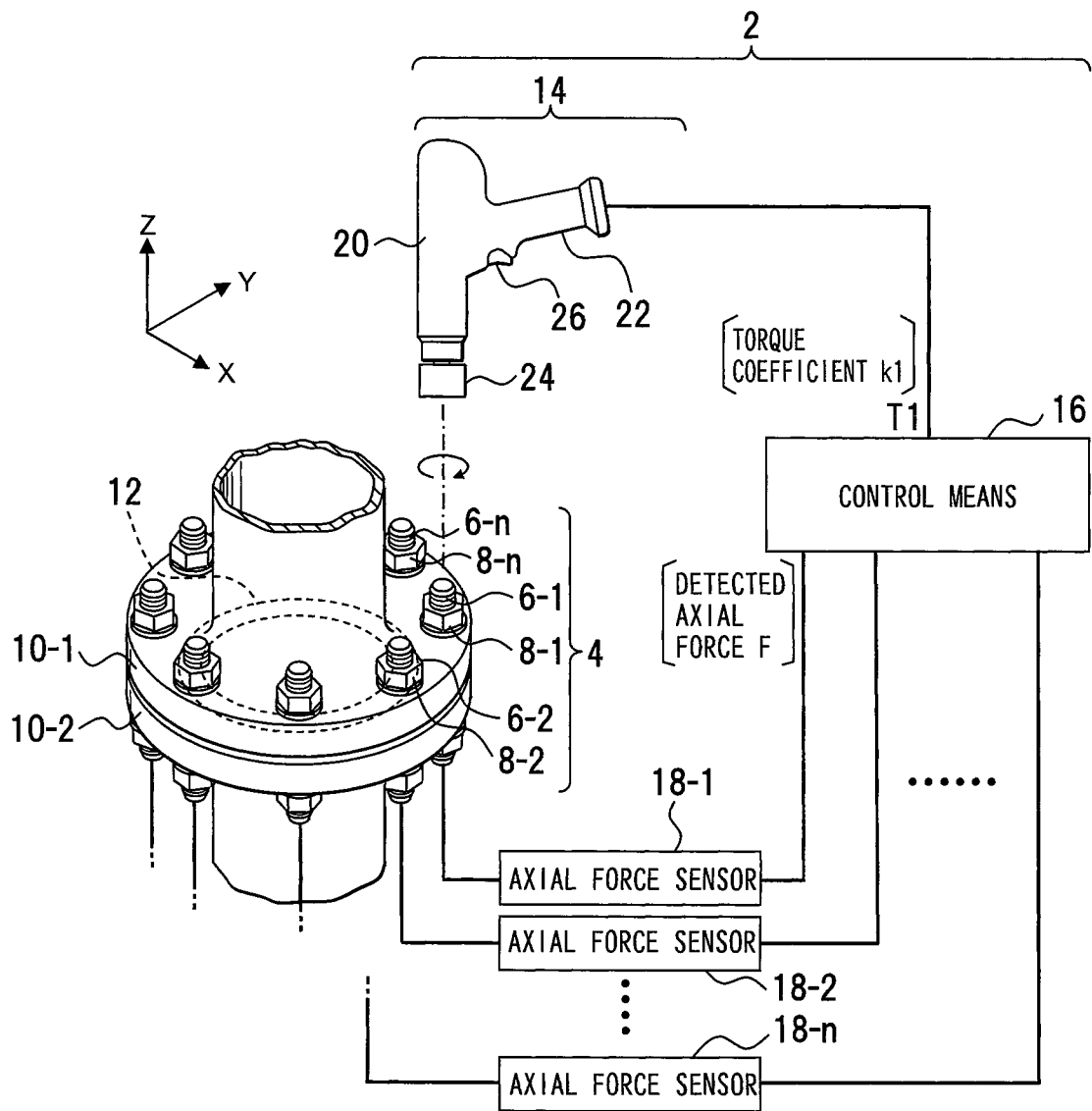


FIG.2

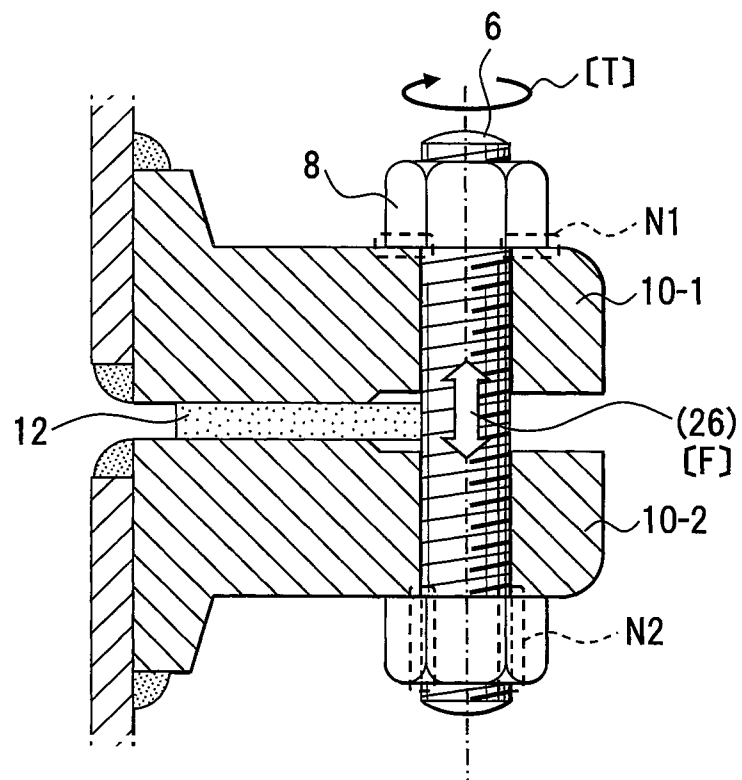


FIG.3

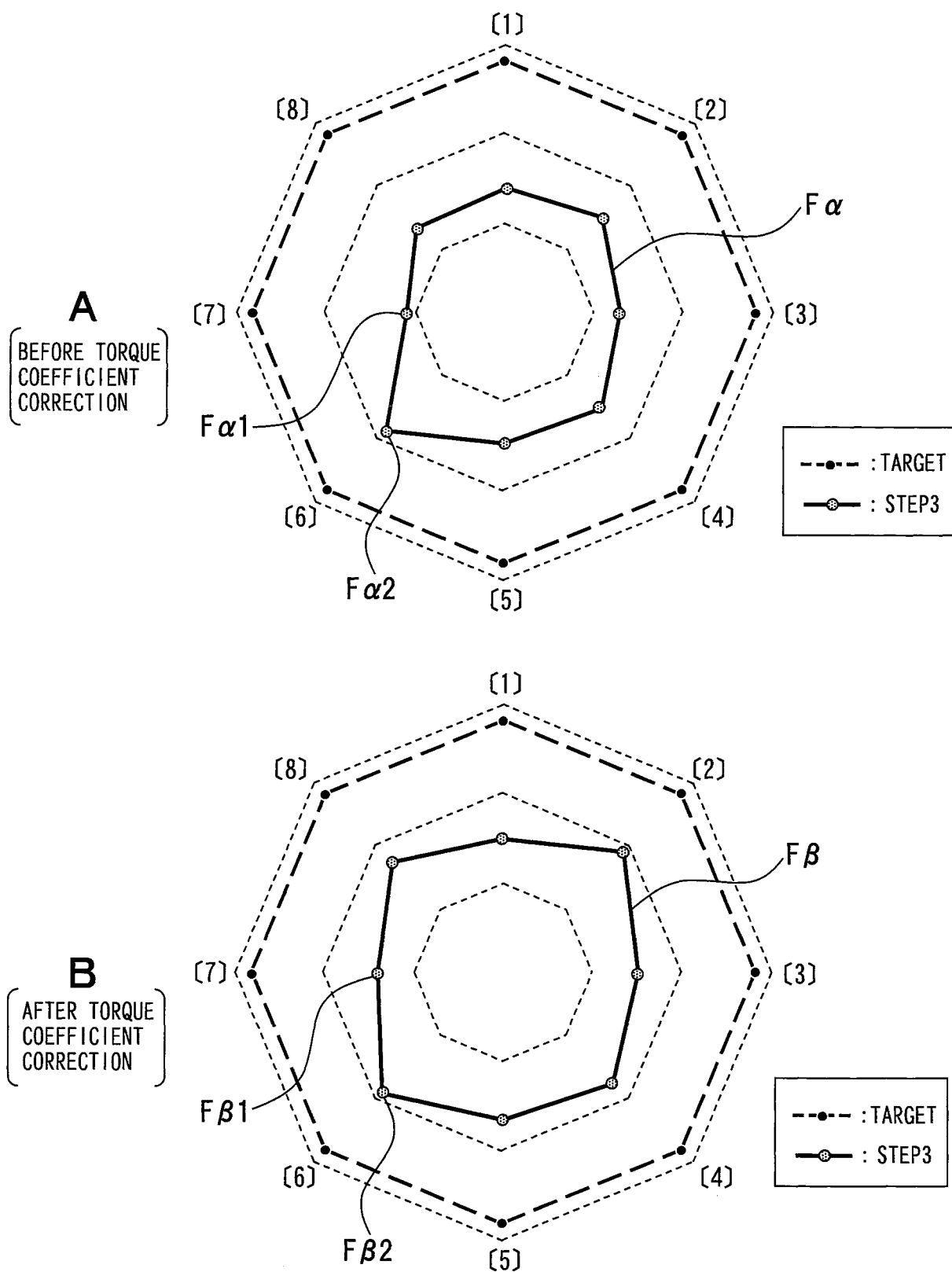


FIG.4

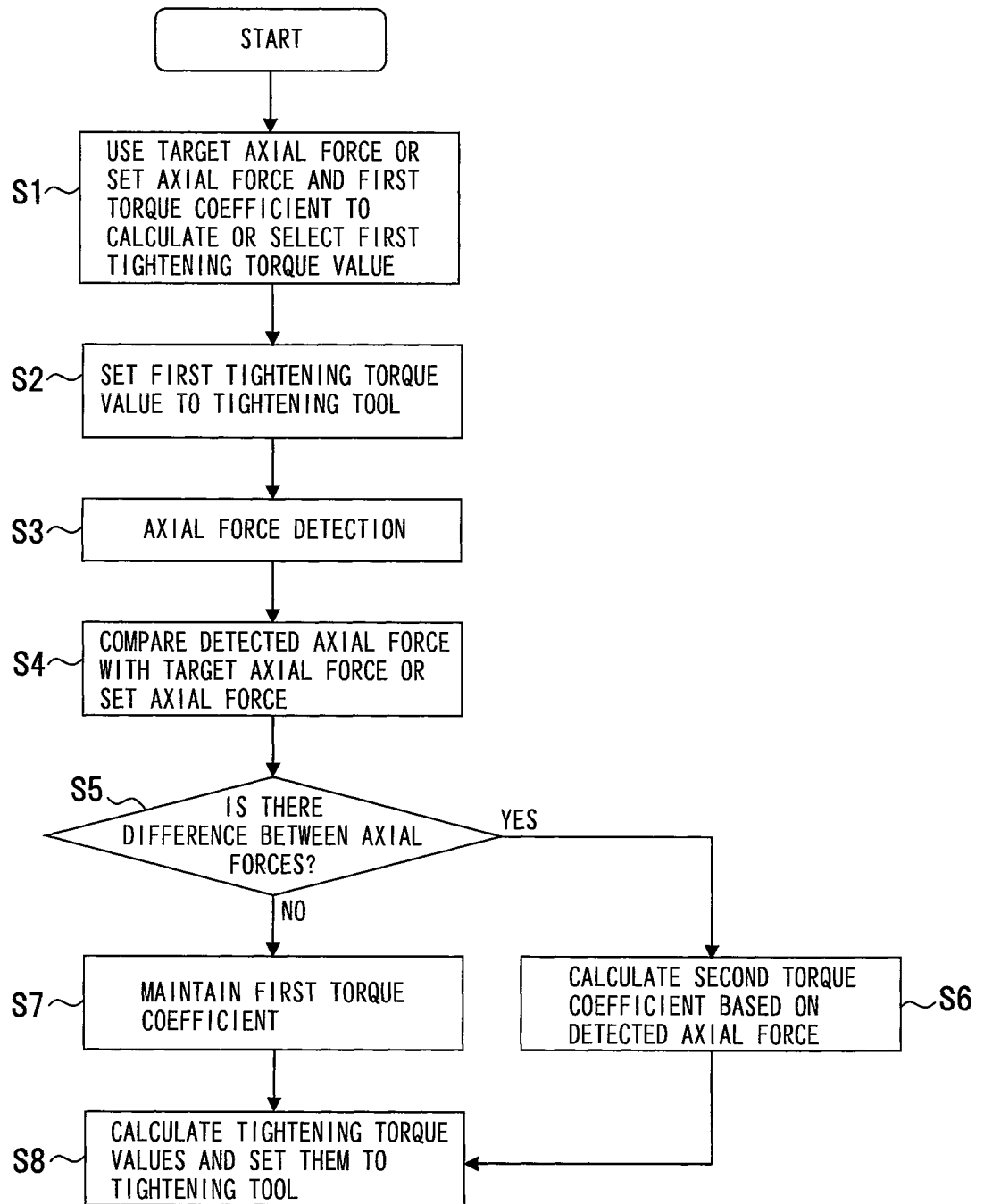


FIG.5

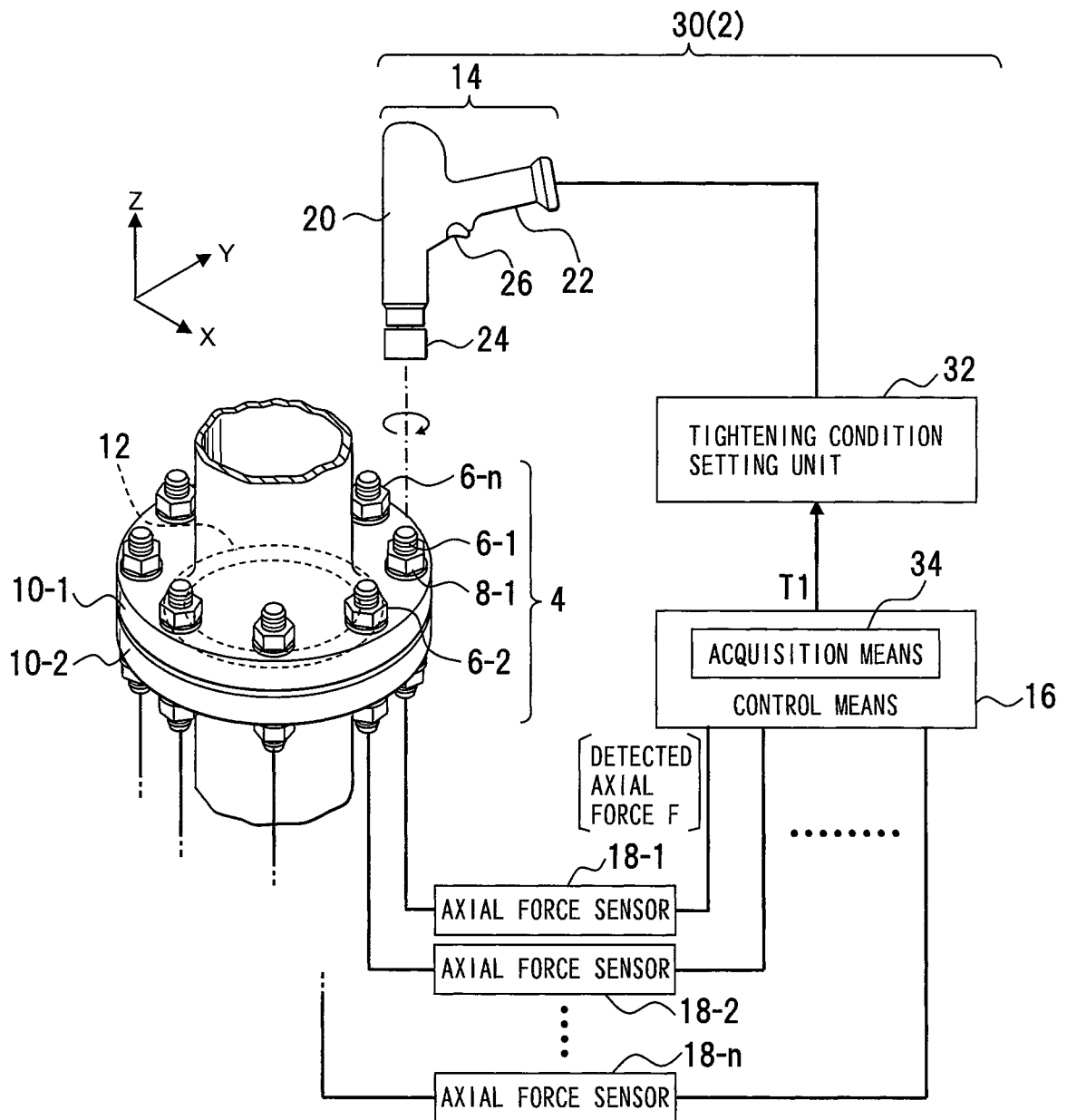


FIG.6

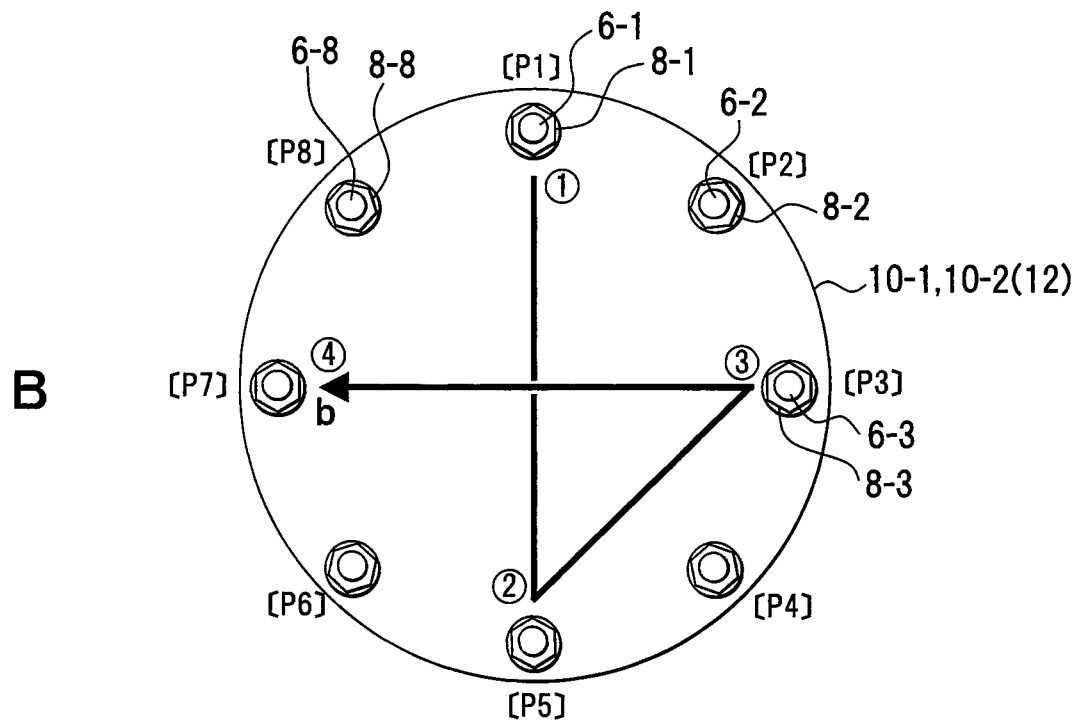
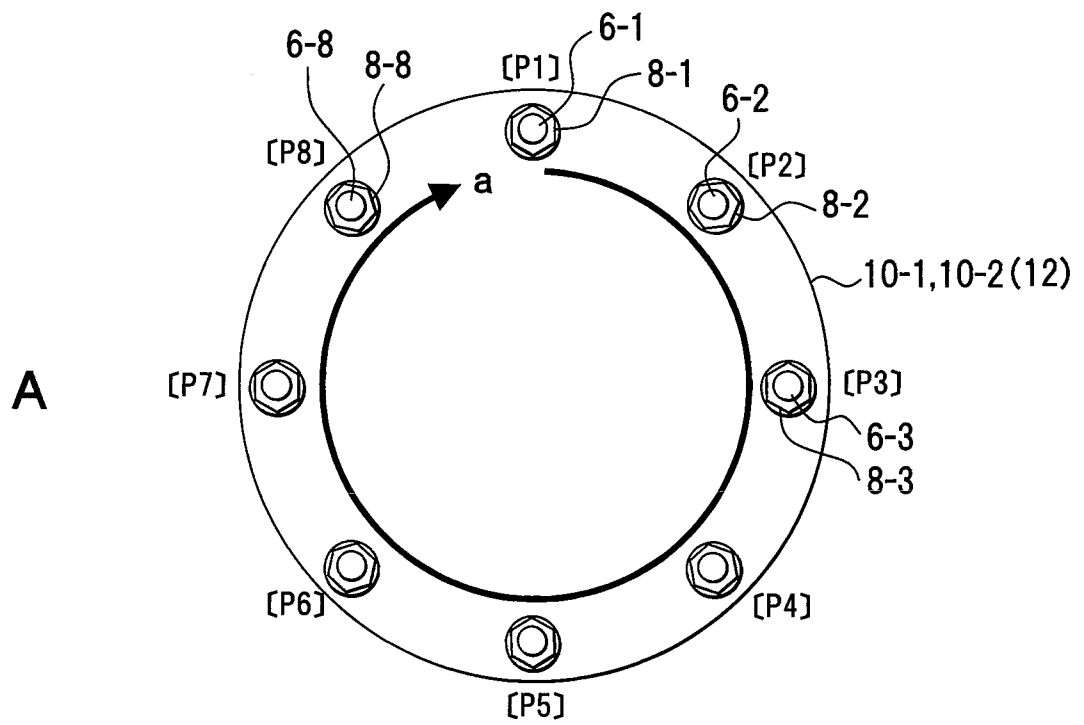


FIG.7

TIGHTENING INSTRUCTION INFORMATION TABLE 40

STEP	IMPLEMENTATION CONTENTS	PROCEDURE
1	TIGHTENING WITH TORQUE OF 10% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k1)	DIAGONAL TIGHTENING
2	TIGHTENING WITH TORQUE OF 20% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k1)	DIAGONAL TIGHTENING
3	TIGHTENING WITH TORQUE OF 60% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k1)	DIAGONAL TIGHTENING
4	TIGHTENING WITH TORQUE OF 100% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k2)	DIAGONAL TIGHTENING
5	TIGHTENING WITH TORQUE OF 100% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k2)	ROUND PATTERN TIGHTENING
6	TIGHTENING WITH TORQUE OF 100% FOR TARGET AXIAL FORCE (TORQUE COEFFICIENT k2)	ROUND PATTERN TIGHTENING
7	AFTER STEP 5 IS PERFORMED, AXIAL FORCE IS MEASURED IMMEDIATELY AFTER EACH BOLT IS TIGHTENED, TO CALCULATE TORQUE COEFFICIENT	ROUND PATTERN TIGHTENING
8	TIGHTENING WITH TARGET AXIAL FORCE OF 100% USING TORQUE COEFFICIENT CALCULATED IN STEP 7	ROUND PATTERN TIGHTENING
9	SIMILAR TO STEP 8	ROUND PATTERN TIGHTENING
10	SIMILAR TO STEP 8	ROUND PATTERN TIGHTENING

FIG.8

BOLT	TIGHTENING TORQUE T1	AXIAL FORCE Fx	AXIAL FORCE F	TORQUE COEFFICIENT k1	CORRECTED TORQUE COEFFICIENT k2	CORRECTED TORQUE T'
[No.]	[N · m]	[t]	[t]			[N · m]
1	198	5. 30	5. 30	0. 20	0. 20	NO CORRECTION
2	198	5. 30	5. 00	0. 20	0. 21	208
3	198	5. 30	4. 20	0. 20	0. 25	250
4	198	5. 30	4. 40	0. 20	0. 24	239
5	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....
.....						

FIG.9

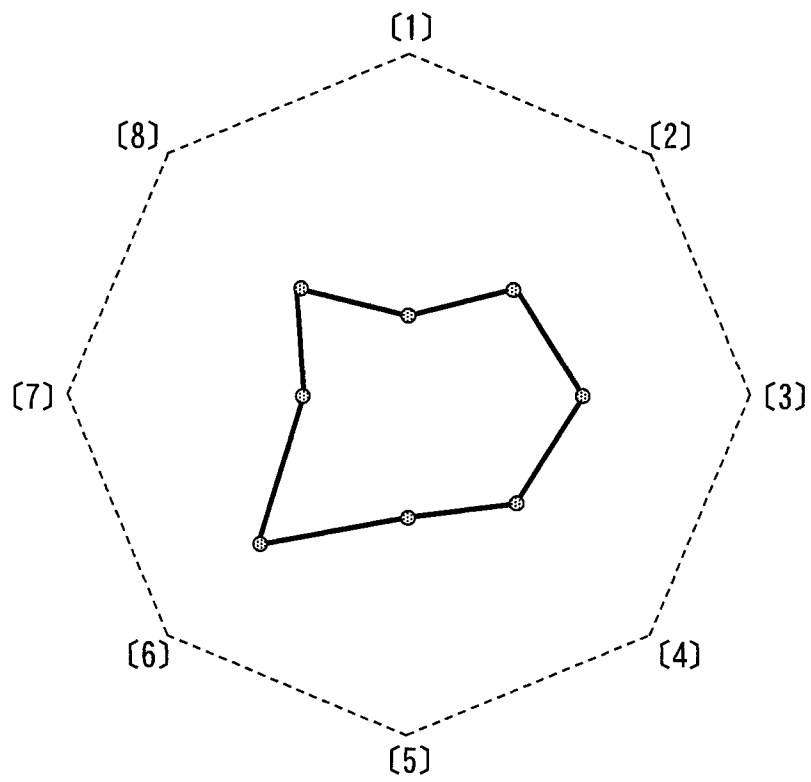


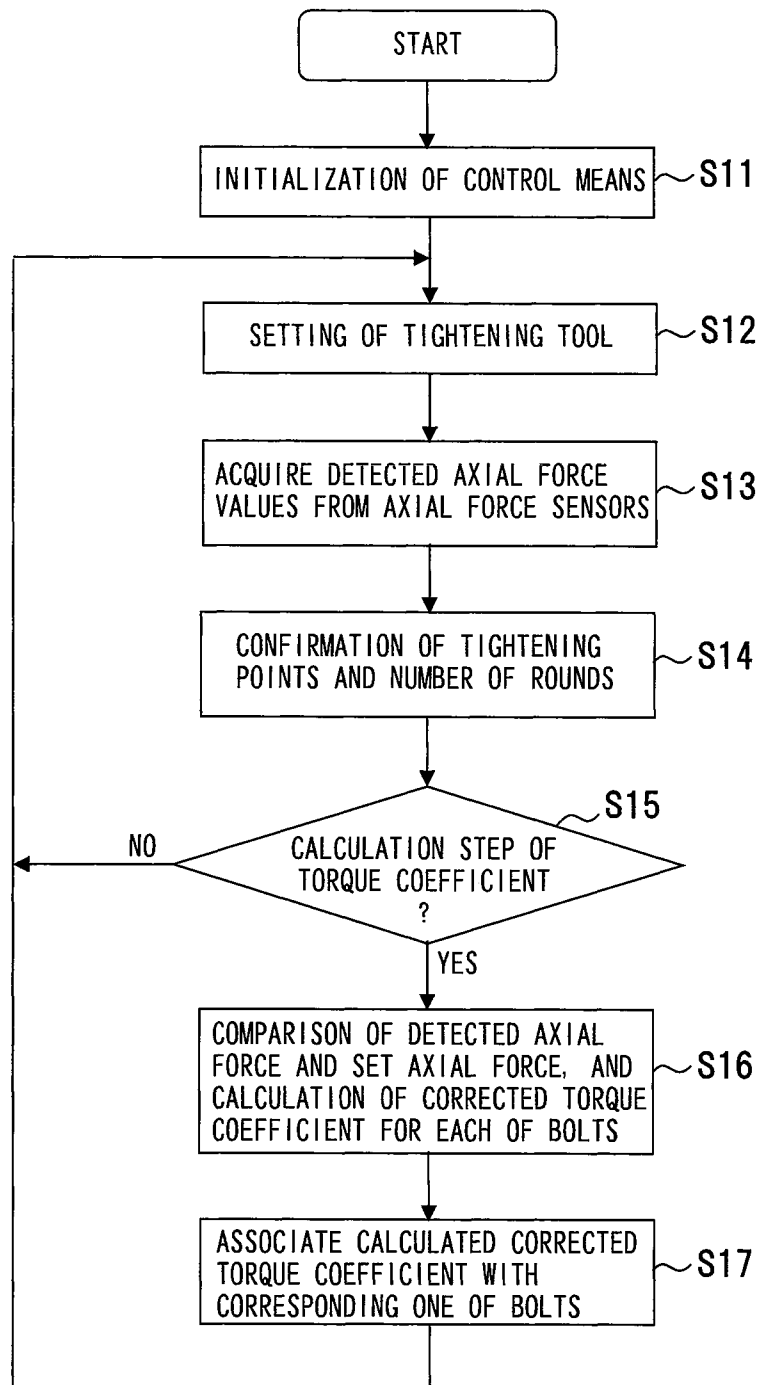
FIG.10

FIG.11

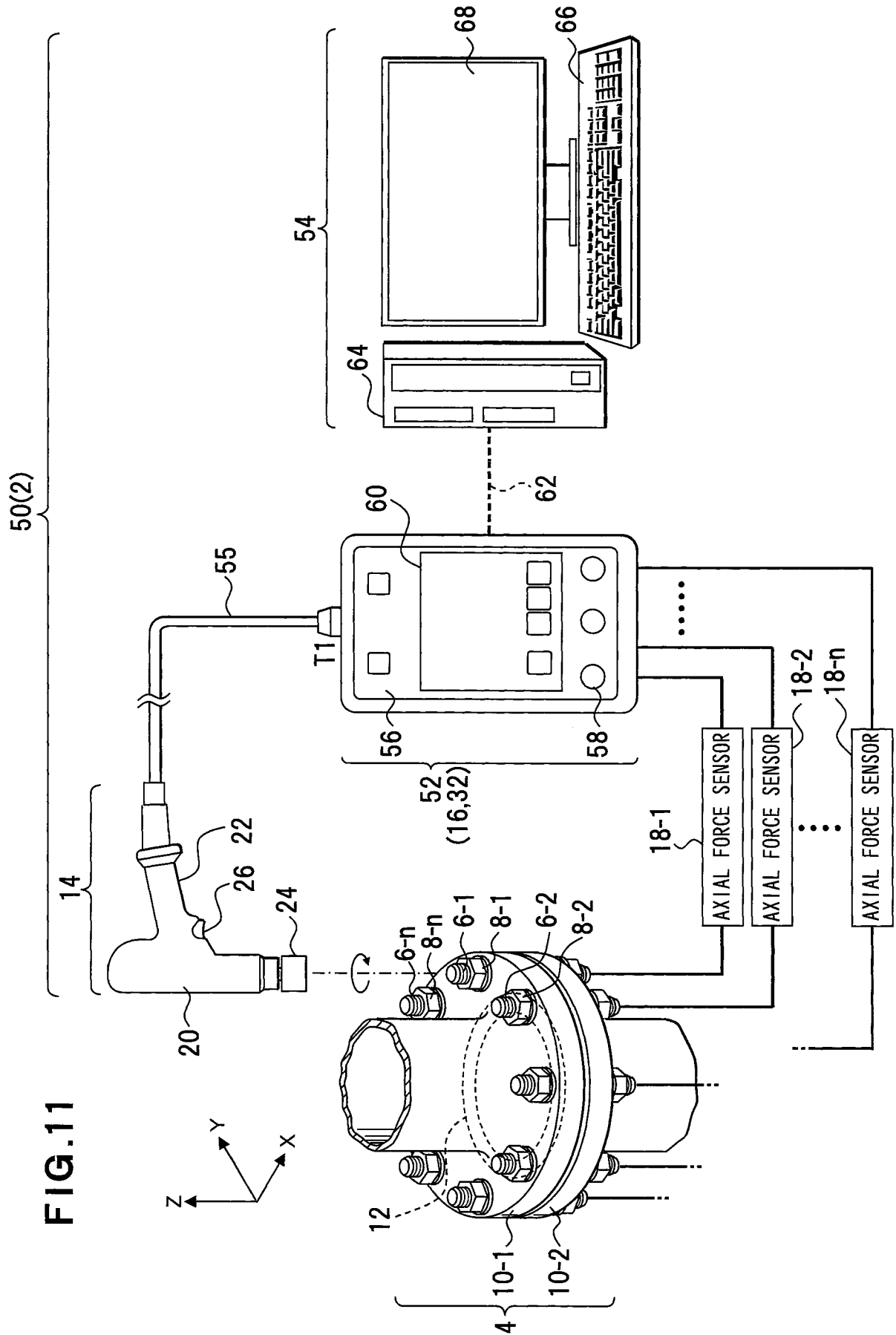


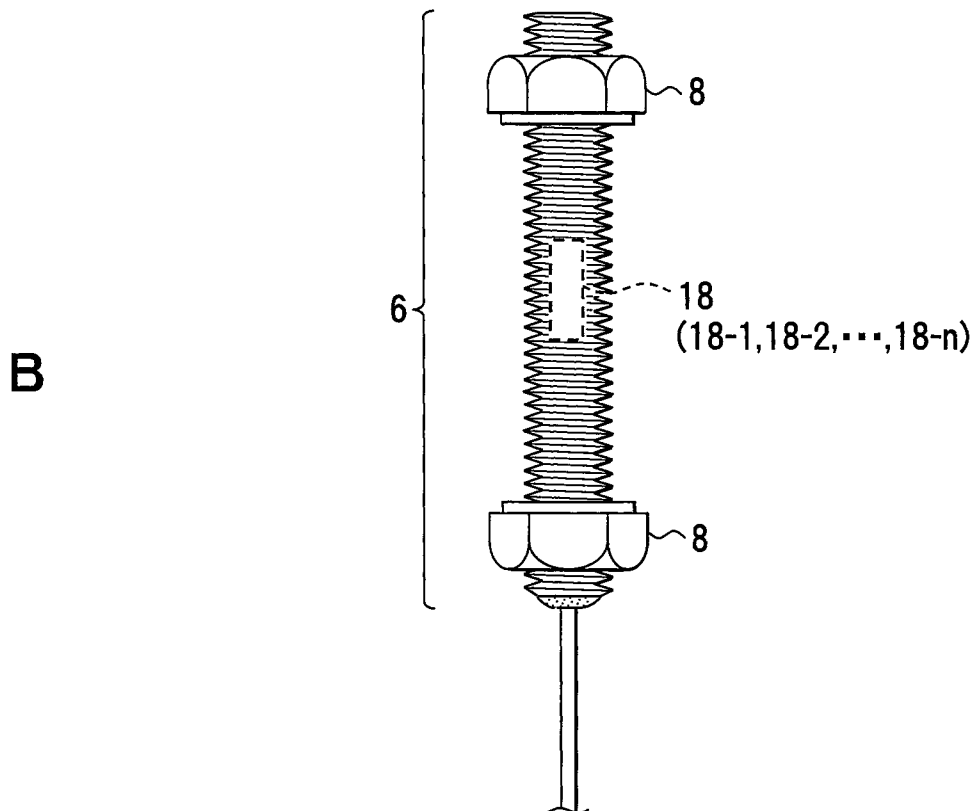
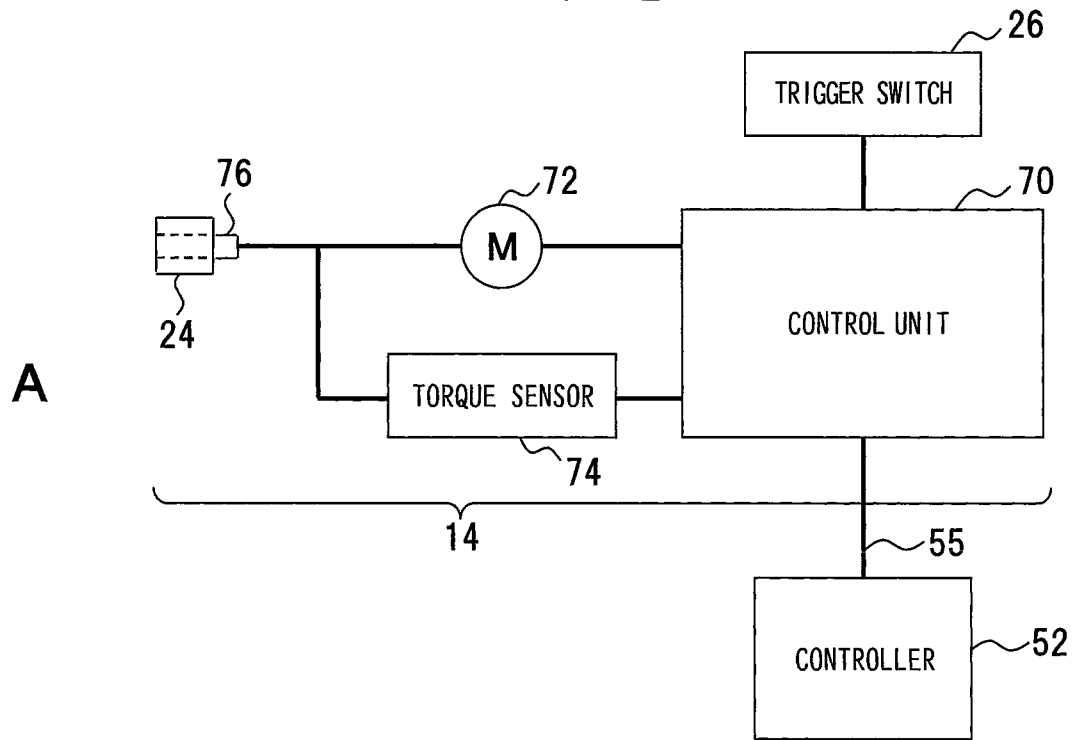
FIG.12

FIG.13

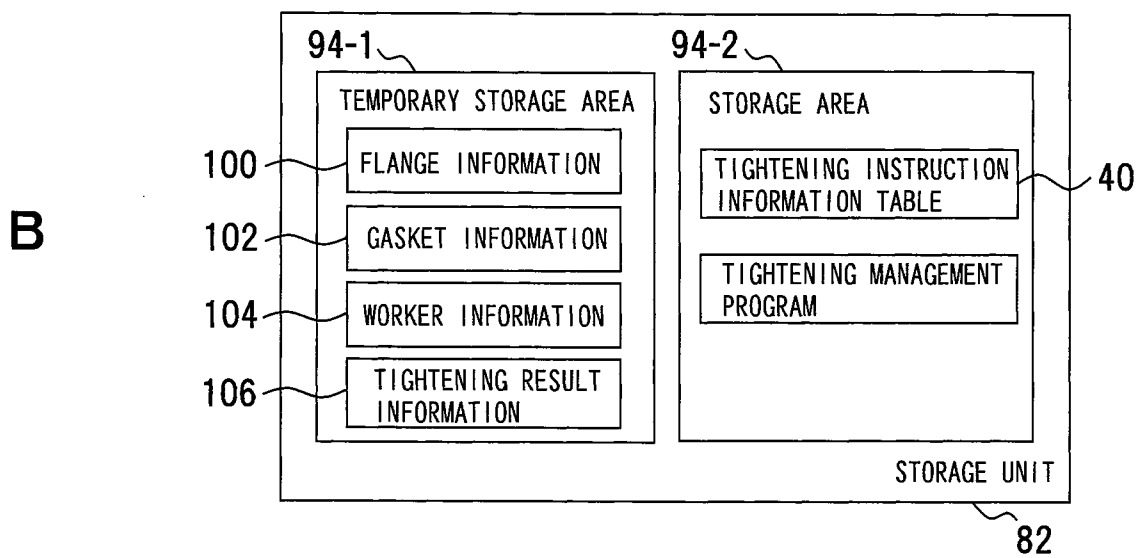
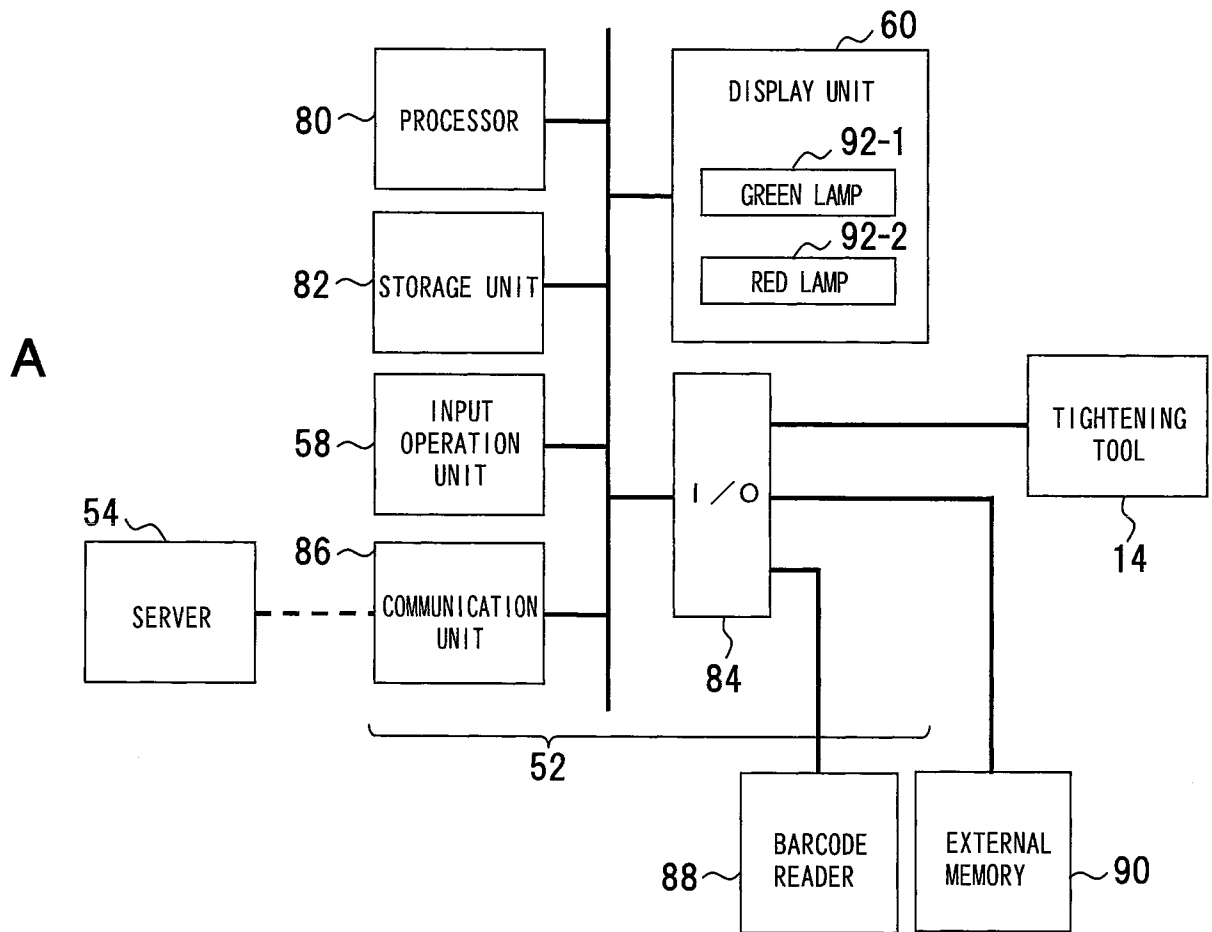


FIG.14

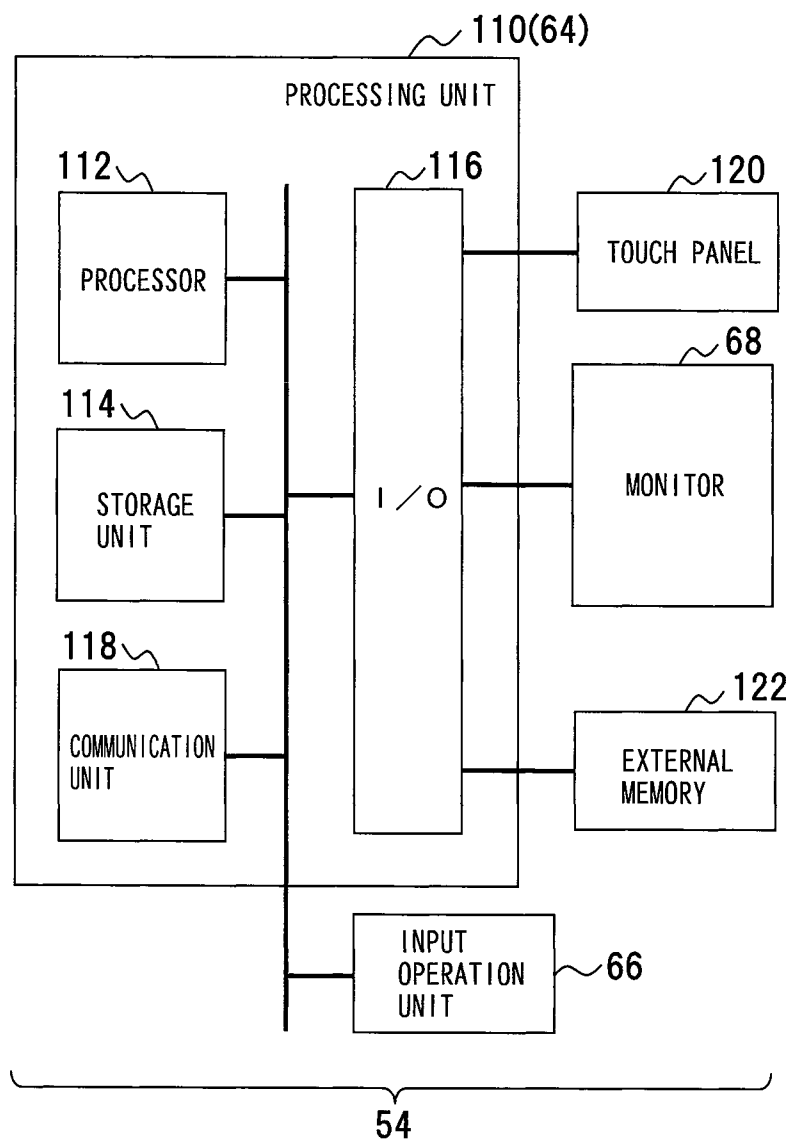
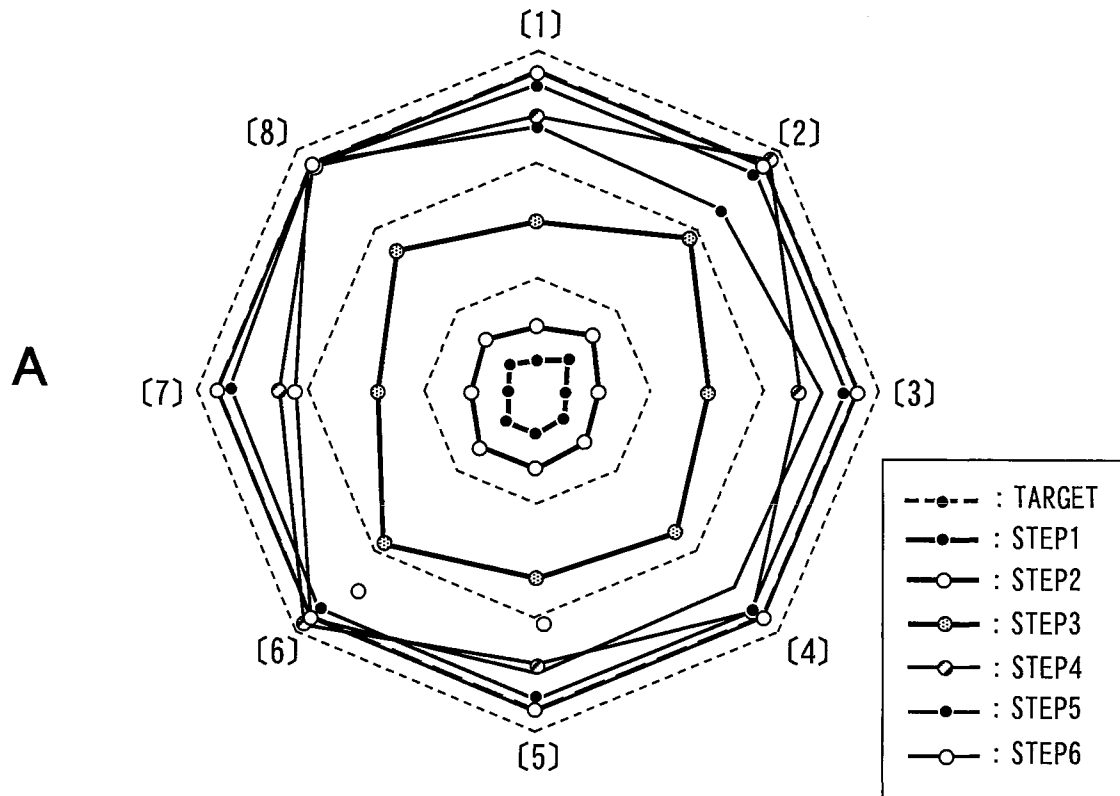


FIG.15**DETECTION RESULTS**

(UNIT : kN)

Bolt No.	PROCEDURE	1	2	3	4	5	6	7	8
STEP1	DIAGONAL	2.9	4.0	2.6	3.4	3.6	3.6	2.5	3.2
STEP2	DIAGONAL	5.6	7.0	5.4	6.3	6.6	6.9	5.7	6.3
STEP3	DIAGONAL	15.0	19.2	15.1	17.5	16.3	19.0	14.0	17.3
STEP4	DIAGONAL	24.1	29.1	23.1	27.2	24.0	28.9	22.5	27.9
STEP5	ROUND PATTERN	27.0	27.2	27.3	27.0	27.1	27.0	27.0	28.1
STEP6	ROUND PATTERN	28.1	28.3	28.1	28.0	28.3	28.0	28.2	28.1

B

FIG.16

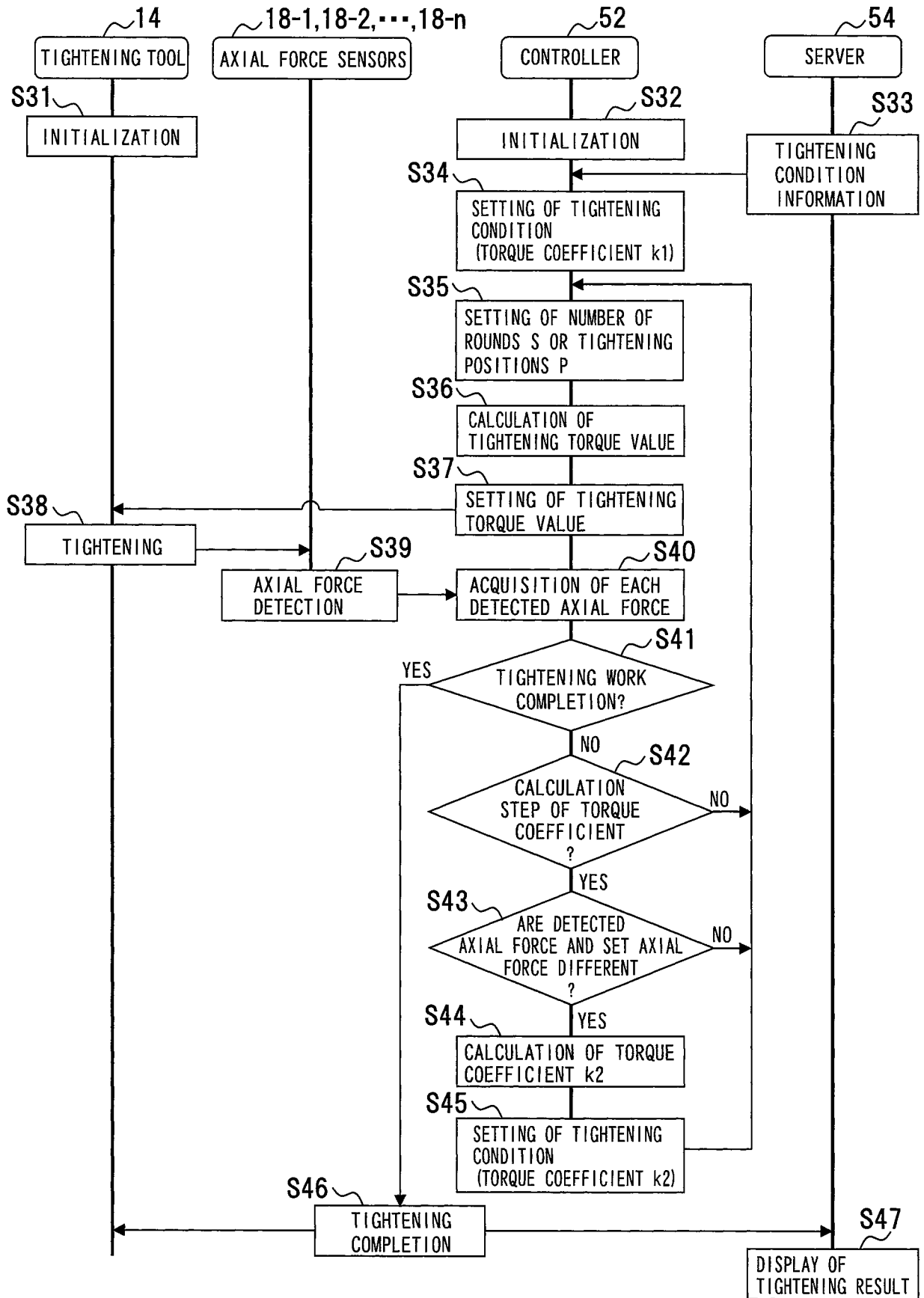


FIG.17

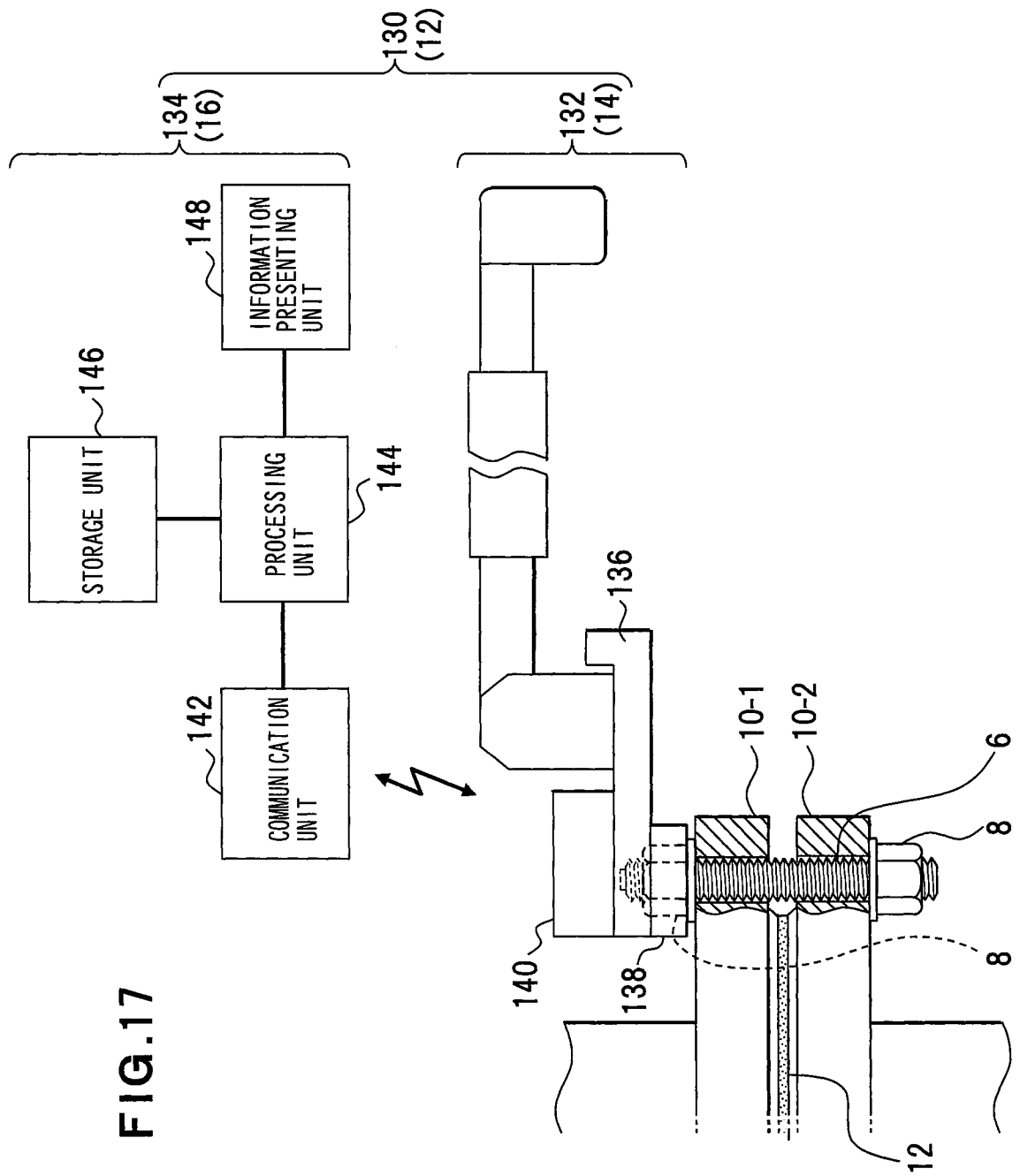
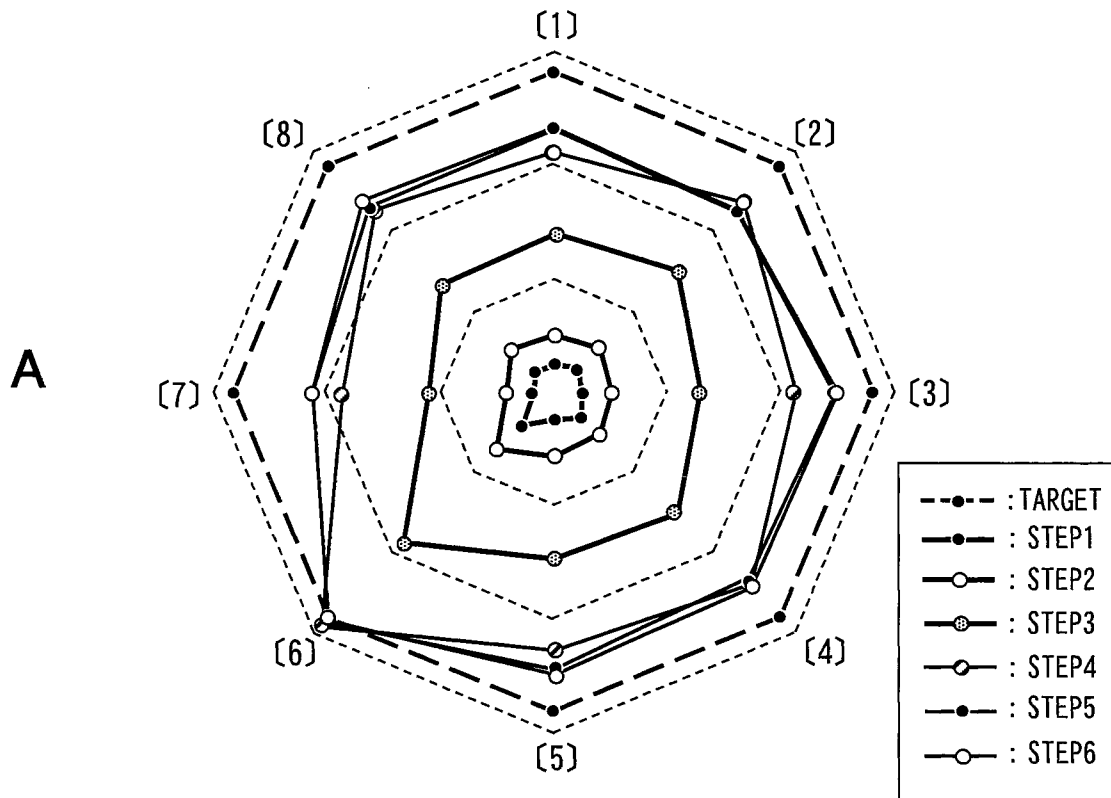


FIG.18**B** DETECTION RESULTS

[UNIT : kN]

Bolt No.	PROCEDURE	1	2	3	4	5	6	7	8
STEP1	DIAGONAL	2.4	2.8	2.3	3.3	2.5	4.0	1.9	2.5
STEP2	DIAGONAL	4.9	5.6	5.0	5.4	5.7	7.1	4.2	5.2
STEP3	DIAGONAL	13.9	15.2	12.8	15.2	14.6	18.8	11.0	13.7
STEP4	DIAGONAL	21.1	23.6	21.4	24.5	22.8	28.9	18.7	22.5
STEP5	ROUND PATTERN	23.3	22.8	24.6	24.0	24.4	28.2	21.4	23.4
STEP6	ROUND PATTERN	23.2	23.0	24.9	24.3	25.0	28.1	21.3	23.8