CLAIMS

1. A method for managing seal handling wherein a plurality of tightening points is set on flanges sandwiching a gasket, each of the tightening points is provided with a bolt and a nut, and bolts and nuts are tightened in each of rounds, and the method comprises steps of:

tightening the bolt and the nut provided for each of the tightening points with a tightening tool to which a first tightening torque value is set, in a round of the rounds;

detecting axial force of each of the bolts after tightening of each bolt or the bolts in the round;

calculating or selecting a torque coefficient of each of the bolts by use of the detected axial force of each of the bolts; and

calculating or selecting, for each of the tightening points on the bolt, a second tightening torque value of the bolt provided for each of the tightening points by use of the torque coefficient, and setting, for each of the tightening points, the second tightening torque value of the bolt provided for each of the tightening points to the tightening tool, in another round after the round.

2. The method for managing seal handling according to claim 1, further comprising a step of comparing the detected axial force of each of the bolts with target axial force, set axial force, or a predetermined threshold value to calculate or select the torque coefficient based on a comparison result.

3. The method for managing seal handling according to claim 1 or 2, further comprising steps of:

detecting one or both of the number of rounds of the tightening tool and the tightening points; and

changing set axial force or a tightening torque value set to the tightening tool stepwise or continuously in accordance with the number of rounds or the tightening points.

4. The method for managing seal handling according to any of

claims 1 to 3, further comprising a step of calculating or selecting the first tightening torque value by use of set axial force set for each tightening step and a torque coefficient selected in advance.

5. A seal handling management device wherein a plurality of tightening points is set on flanges sandwiching a gasket, each of the tightening points is provided with a bolt and a nut, and bolts and nuts are tightened in each of rounds, and the seal handling management device comprises:

a setting means that sets, the tightening points, the number of rounds of tightening, and a tightening torque value to a tightening tool;

an acquisition means that acquires axial force of the bolt; and

a control means that acquires the axial force of the bolt tightened by the tightening tool to which a first tightening torque value is set, in a round of the rounds, calculates or selects a torque coefficient of the bolt by use of the axial force, and sets, for each of the tightening points on the bolt, a second tightening torque value calculated or selected by use of the torque coefficient to the tightening tool, in another round after the round.

6. The seal handling management device according to claim 5, wherein the control means compares the detected axial force of the bolt with target axial force, set axial force, or a predetermined threshold value, and calculates or selects the torque coefficient based on a comparison result.

7. The seal handling management device according to claim 5 or 6, further comprising a detection means that detects one or both of the number of rounds of the tightening tool and the tightening points, wherein

the control means changes set axial force or a tightening torque value set to the tightening tool stepwise or continuously in accordance with the number of rounds or the

tightening points.

8. A program for managing seal handling to be implemented by a computer, the program causing the computer to implement functions of:

setting a first tightening torque value to a tightening tool that tightens a bolt and a nut mounted on each of tightening points of flanges sandwiching a gasket, wherein bolts and nuts are tightened in each of rounds;

acquiring a detection result of axial force of each of the bolts, which are mounted on the tightening points respectively, after tightening of each bolt or the bolts tightened by the tightening tool, to which the first tightening torque value is set, in a round of the rounds;

calculating or selecting a torque coefficient of each of the bolts by use of the detected axial force of each of the bolts; and

calculating or selecting, for each of the tightening points of the bolt, a second tightening torque value of the bolt provided for each of the tightening points by use of the torque coefficient, and setting, for each of the tightening points, the second tightening torque value of the bolt provided for each of the tightening points to the tightening tool, in another round after the round.

9. A seal handling management system wherein a plurality of tightening points is set on flanges sandwiching a gasket, each of the tightening points is provided with a bolt and a nut, and bolts and nuts are tightened in each of rounds, and the seal handling management system comprises:

a tightening tool that is capable of controlling a torque value applied to the bolt or the nut;

a sensor that detects axial force of the bolt; and

a controller that sets a first tightening torque value to the tightening tool, calculates or selects a torque coefficient of each of the bolts by use of the axial force of

each of the bolts, which are mounted on the tightening points respectively, after tightening of each bolt or the bolts tightened by the tightening tool, to which the first tightening torque value is set, in a round of the rounds, the axial force being detected by the sensor, and calculates or selects, for each of the tightening points on the bolt, a second tightening torque value of the bolt provided for each of the tightening points by use of the torque coefficient, and setting, for each of the tightening points, the second tightening torque value of the bolt provided for each of the tightening points to the tightening tool, in another round after the round.