CLAIMS

1. A tool for evaluating the connection condition of a mechanical fitting of a fitting assembly, the tool comprising:

(i) a first component shaped to facilitate its engagement with the fitting assembly to be evaluated, wherein the first component comprises a recess for facilitating the engagement of the first component at least partially around the fitting assembly; and

(ii) a second component rotatably connected to, and moveable relative to, the first component about a rotation axis;

wherein a relative rotation between the first and second components establishes a measurement configuration of the tool in which the first component contacts a first surface of the fitting assembly and the second component contacts a second surface of the fitting assembly to be evaluated, said measurement configuration being directly or indirectly indicative of one or more predetermined connection conditions of the fitting.

2. A tool according to claim 1, wherein the tool is configured to measure any one of: the rotation angle; circumferential distance; and arc length travelled by the second component relative to the first component at the measurement configuration.

3. A tool according to any preceding claim, wherein the first component has a maximum length along a longitudinal axis which is longer than its maximum width along a width-wise axis, wherein said recess extends width-wise proximate one end of the first component, and wherein a central axis of the recess extends away from the first component at an angle of greater than 0 degrees relative to said width-wise axis of the first component.

4. A tool according to claim 1, 2 or 3, wherein the second component is, at least in part, in the form of a disc.

5. A tool according to any preceding claim, wherein at least part of a peripheral edge portion of the second component has a thickness in an axial direction which varies progressively around its circumference.

6. A tool according to claim 5, wherein a reference surface is defined on the second component at the circumferential meeting point between the minimum and maximum thicknesses of the peripheral edge portion of the second component.

7. A tool according to any preceding claim, wherein at least part of a fitting contact portion of the second component has a variable thickness.

8. A tool according to any preceding claim, wherein at least part of a fitting contact portion of the second component contacts the fitting surface at an angle.

9. A tool according to any preceding claim, wherein at least one of:
(i) one of the first component and the second component comprises a reference feature, and visually perceptible indicia are provided on the other of the first component and the second component for alignment with the reference feature so as to indicate said one or more connection conditions; and (ii) the tool comprises an electronic display for indicating the one or more connection conditions.

10. A tool according to any preceding claim, configured for pairing to a remote electronic device, wherein said measurement and/or said associated one or more predetermined connection conditions of the fitting is readable on said remote electronic device.

11. A method of evaluating the connection condition of a fitting comprising:

(i) providing a tool in accordance with any of claims 1 to 10;

(ii) engaging the first component with the fitting to be evaluated proximate the first and second surfaces thereof;

(iii) effecting relative movement between the first and second components until respective surfaces thereof each contact the first and second surfaces; and

(iv) establishing a measurement between said first and second surfaces,

wherein said measurement is directly or indirectly indicative of the one or more predetermined connection conditions.

12. A method according to claim 11, wherein said measurement is indicative of one or more predetermined connection conditions selected from the list comprising:

(i) over-tightened fastener;

(ii) under-tightened fastener;

(iii) incorrect fastener type;

(iv) incorrect fastener shape;

(v) incorrect fastener size;

(vi) incorrect internal or external components;

(vii) mixed fastener components from differing manufacturers;

(viii) more or less fastener components than the optimum number;

(ix) incorrect positioning of internal or external fastener components;

(x) presence of mixed imperial and metric fasteners;

(xi) fastener movement over time; and

(vii) incorrect fastener angle.

13. A method according to claim 11 or 12, wherein at least one of:

one of said first component and said second component is provided with visually perceptible indicia and the other of said first component and said second component comprises a reference feature, the method comprises discerning said measurement and/or associated one or more predetermined connection conditions of the fitting by virtue of the alignment of said indicia with said reference ; and

the tool comprises an electronic display for indicating the measurement and/or one or more connection conditions and the method comprises discerning said measurement and/or associated one or more predetermined connection conditions of the fitting from the electronic display.

14. A method according to claim 11, 12 or 13, wherein said tool is paired to a remote electronic device and the method comprises reading said measurement and/or associated one or more predetermined connection conditions of the fitting on said remote electronic device.

15. A method according to claim 14, wherein said measurement and/or associated predetermined connection conditions is/are stored on said remote electronic device and/or uploaded to a database for processing and/or comparison against acceptable tolerance values.