CLAIMS

1. A method of assembling a rotor stack comprising a plurality of component parts, the method comprising:

determining (S2) swash measurements for interfacing surfaces of the plurality of parts;

calculating (S4) a runout estimate for a plurality of relative orientations of the parts;

applying (S8) an optimisation algorithm to identify an optimal orientation from the plurality of relative orientations based on the runout estimates; and

assembling the parts in the optimal orientation;

wherein at least one of the plurality of parts is selected from an inventory of available parts; characterised in that calculating the runout estimate comprises estimating deformation of the parts as a function of clamping load and in that the runout estimate is compared (S10) with a threshold value, and if it falls outside of the threshold value, a different combination of parts is selected.

2. A method as claimed in claim 1, further comprising identifying a plurality of combinations of parts from the inventory of available parts which fall within the threshold value.

3. A method as claimed in claim 1 or 2, wherein a likelihood of success value is provided based on an uncertainty and the proximity to the threshold.

4. A method as claimed in any preceding claim, wherein a message is generated containing instructions for assembling the parts.

5. A method as claimed in any preceding claim, wherein calculating the runout estimate comprises augmenting the swash measurements using a neural network to estimate the contact points between the interfacing surfaces.

6. A method as claimed in any preceding claim, wherein the runout estimation and the optimal orientation are calculated for individual joints and/or the overall stack.

7. A method as claimed in any preceding claim, wherein the optimisation algorithm is modified by user-defined settings.

8. A method as claimed in any preceding claim, wherein an optimisation goal is defined by vibration dynamics considerations.