CLAIMS

1. A pile upending tool (1), comprising a hoisting element (3) for being mounted to a hoisting cable, a lifting body (5) including at least two fixation members (6, 7) for temporarily fixing a monopile (2), which fixation members (6, 7) are located at a distance from each other, a first link (8) which is pivotally coupled to the hoisting element (3) through a first hoisting element pivot (9) and to the lifting body (5) through a first lifting body pivot (10), a second link (13) which is pivotally coupled to the hoisting element (3) through a second hoisting element pivot (14) and to the lifting body (5) through a second lifting body pivot (15) being located at a distance from the first lifting body pivot (10), wherein the second link (13) is adaptable such that pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15) are mutually displaceable between a first relative position and a second relative position, wherein in the first relative position an angle between a plane through pivot axes of the first hoisting element pivot (9) and the first lifting body pivot (10) and a plane through the pivot axes of the first lifting body pivot (10) and the second lifting body pivot (15) is different than in the second relative position.

2. The pile upending tool (1) according to claim 1, wherein in the second relative position the distance between the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15) is larger than in the first relative position, and optionally,

wherein in the first relative position the first link (8) and the lifting body (5) are folded to each other and in the second relative position the first link (8) and the lifting body (5) are unfolded with respect to each other.

3. The pile upending tool (1) according to any one of the preceding claims, wherein the second link (13) is articulated, including a first part (16) and a second part (17) which are pivotally coupled to each other through a second link pivot (18) including a pivot axis, and optionally, wherein the geometry of the second link (13) is selected such that in the first relative position the first part (16) and the second part (17) are folded to each other such that the first part (16) and the second part(17) at least partly overlap each other.

4. A pile upending tool (1) according to claim 3, wherein in the first relative position the first link (8) and the first part (16) of the second link (13) at least partly 10 overlap each other, and/or,

wherein the geometry of the second link (13) is selected such that in the second relative position the pivot axes of the second hoisting element pivot (14), the second lifting body pivot (15) and the second link pivot (18) lie in a plane whereas the pivot axis of the second link pivot (18) is located between the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15).

5. The pile upending tool (1) according to any one of the preceding claims, wherein under operating conditions when the hoisting element (3) is lifted and the first and second links (8, 13) are suspended from the hoisting element (3), in the first relative position the pivot axes of the first hoisting element pivot (9) and the first lifting body pivot (10) lie in a substantially vertical plane.

6. The pile upending tool (1) according to claim 5 and any one of the claims 3-4, wherein in the first relative position at least one of the pivot axis of the second link pivot (18) and the pivot axis of the second lifting body pivot (15) lies at a distance from the plane.

7. The pile upending tool (1) according to any one of the preceding claims, wherein the pivot axes of the first and second hoisting element pivots (9, 14) coincide, and/or,

wherein the first link (8) is a rigid first link.

8. The pile upending tool (1) according to any one of the preceding claims, wherein the fixation members (6, 7) are displaceable with respect to each other.

9. The pile upending tool (1) according to any one of the preceding claims, wherein at least one of the fixation members (6, 7) comprises an engaging element (27) which is movable with respect to the lifting body (5) in order to be inserted into a hole (28) of a monopile (2) so as to engage the monopile (2), and optionally,

wherein the at least one of the fixation members (6, 7) is provided with a wedge (33) which is movable with respect to the engaging element (28) for being inserted into a space between the engaging element (28) and an edge of the hole (28).

10. The pile upending tool (1) according to any one of the preceding claims, wherein the pile upending tool (1) comprises a rotation device (35, 36, 37) for rotating the pile upending tool (1) about a centreline of the monopile (2) when the pile upending tool (1) contacts a monopile (2) in the first relative position of the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15), and optionally,

wherein the rotation device comprises a pin (35) which is movable with respect to the lifting body (5) in order to be inserted into a hole (28) of a monopile (2) so as to engage the monopile (2) and an actuator (37) for subsequently rotating the pile upending tool (1) with respect to the monopile (2),

wherein the actuator (37) engages the pin (35) and the lifting body (5).

11. The pile upending tool (1) according to any one of the preceding claims, wherein the pile upending tool (1) has a locking member (22) for locking the first link (8) with respect to the lifting body (5) when the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15) are in the first relative position.

12. The pile upending tool (1) according to any one of the preceding claims, wherein the pile upending tool (1) comprises an actuator for rotating the first link (8) and the lifting body (5) with respect to each other.

13. The pile upending tool (1) according to any one of the preceding claims, wherein under operating conditions when the hoisting element (3) is lifted and the first and second links (8, 13) are suspended from the hoisting element (3), the fixation members (6, 7) lie above each other in the first relative position, wherein in the second relative position respective imaginary lines through the pivot axes of the first hoisting element pivot (9) and the first lifting body pivot (10), through the pivot axes of the second hoisting element
pivot (14) and the second lifting body pivot (15) and through the pivot axes of the first and second lifting body pivots (10, 15) form a triangle of which the imaginary line through the pivot axes of the first and second lifting body pivots (10, 15) forms a basis, and the fixation members (6, 7) lie at a distance from each other in horizontal direction, and/or,

wherein at least one of the first hoisting element pivot (9), the first lifting body pivot (10), the second hoisting element pivot (14) and the second lifting body pivot

(15) is provided with a spherical bearing for transferring a force in longitudinal direction of its pivot axis.

14. An assembly of the pile upending tool (1) according to any one of the preceding claims and a supporting carriage (19) for supporting the pile upending tool (1) when the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15) are in the first relative position, wherein the supporting carriage (19) is movable in horizontal direction when it is supported on a surface (20).

15. An assembly of the pile upending tool (1) according to any one of the claims 1-13 and a cradle (21) for supporting the pile upending tool (1) when it is out-of-use.

16. The assembly according to claim 15 and dependent on claim 11, wherein the cradle (21) is configured to support the pile upending tool (1) in a condition in which the pivot axes of the second hoisting element pivot (14) and the second lifting body pivot (15) are in the first relative position and the fixation members (6, 7) lie at a distance from each other in horizontal direction.