CLAIMS

1. A tubular system, comprising:

a first tubular (102) having a recess (204) formed at a pin end (108);

a second tubular (104) having a box end (112), the pin end (108) mating with the box end (112) and joining the first tubular (102) to the second tubular (104) via respective threads (116, 118);

an anti-rotation system (200) configured to block rotation of the first tubular (102) and the second tubular (104) in a first direction (702) that disengages the respective threads (116, 118), the anti-rotation system (200) comprising:

a key (202) arranged within the recess (204), the key (202) having teeth (214) along a lower edge;

a retention fastener (206), extending through an aperture (210) of the key (202), coupling the key (202) to the first tubular (102), wherein the aperture of the key is an elongated aperture; and

an installation fastener (208) coupling the key (202) to the first tubular (102), the installation fastener (208) engaging a tapered receptacle (212) of the key (202);

wherein the key (202) is transitioned between a shipping configuration and an engaged configuration via engagement, by the installation fastener (208), exceeding a threshold amount, the engaged position driving rotation of the key (202) about the retention fastener (206) and, in response to rotation in the first direction (702) corresponding to a breakout condition, drives the teeth (214) into the second tubular (104), and wherein the retention fastener moves from a first edge to a second edge in response to rotation of the first tubular in the first direction.

2. The system of claim 1, wherein the key (202) further comprises:

an extension (504) arranged at a first end, the extension (502) moving, in response to rotation about the retention fastener (206), into engagement with a recess shoulder (510) to generate a force to drive the teeth (214) into the second tubular (104); and

a stop shoulder (704), on a second end opposite the first end, the stop shoulder (704) engaging the second tubular (104) to block penetration, by the teeth (214), beyond a predetermined amount.

3. The system of claim 1, wherein the key (202) further comprises:

a first sloped area (514), along a top of the key (202), positioned to engage a first sloped shoulder (522) of the recess, wherein contact between the first sloped area (514) and the first sloped shoulder (522) generates a reactive force at a second end of the key (202) to drive the teeth (214) into the second tubular (104); and

a second sloped area (512), along a first end of the key (202), positioned to engage a second sloped shoulder (520) of the recess (204), wherein contact between the second sloped area (512) and the second sloped shoulder (520) blocks further movement of the key (202) within the recess (204).

4. The system of claim 1, wherein the installation fastener (208) includes a tapered face (304) that contacts a mating face (308) of the tapered receptacle (212), the installation fastener (208) being at a first position in the shipping configuration and a second position in the engaged configuration, the second position positioning the installation fastener (208) against a fastener stop (406) formed in the first tubular (102).

5. The system of claim 1, wherein the teeth (214) further comprise:

a first set of teeth (216); and

a second set of teeth (218), the first set of teeth (216) and second set of teeth (218) separated by a gap (220);

wherein the first set of teeth (216) generate an axial load in response to movement toward the engaged configuration and the second set of teeth (218) bite into the second tubular (104) in response to rotation in the first direction (702), the rotation relieving the axial load.

6. The system of claim 1, wherein the retention fastener (206) and the installation fastener (208) are arranged on independent axes at differential axial positions.

7. The system of claim 1, wherein the teeth (214) engage an upper region (114) of the second tubular (104) that does not have a mating profile corresponding to the teeth (114).

8. The system of claim 1, wherein the anti-rotation system is provided pre-installed on the first tubular (102) and is transitioned to the engaged configuration after the first tubular (102) is coupled to the second tubular (104).

9. A method for blocking rotation of a first tubular (102), comprising:

positioning a key (202) within a recess (204) of the first tubular (102);

securing the key (202) within the recess (204) via a retention fastener (206) extending through an elongated aperture formed in the key, the elongated aperture to permit movement of the retention fastener from a first edge to a second edge responsive to rotation of the first tubular;

securing the key (202) within the recess (204) via an installation fastener (208), the installation fastener (208) being installed at a first position less than a threshold;

engaging a box end (112) of a second tubular (104) with a pin end (108) of the first tubular (102); and

transitioning the installation fastener (208) to a second position that exceeds the threshold.

10. The method of claim 9, wherein the key (202) rotates about the retention fastener (206) in response to movement of the installation fastener (208) to the second position.

11. The method of claim 9, further comprising:

forming the recess (204) in the first tubular (102) (804).

12. The method of claim 9, further comprising:

providing, to a well site, the first tubular (102), the first tubular (102) having the key (202) installed within the recess (204) and being secured to the first tubular (102) via the retention fastener (206) and the installation fastener (208) (806).

13. The method of claim 9, wherein at least one of the retention fastener (206) or the installation fastener (208) comprises a bolt.