

CLAIMS:

1. A maintenance assembly for a wheel assembly of an amusement ride vehicle, the maintenance assembly comprising:

a foundational body;

at least one wheel engagement section extending a first distance from the foundational body, wherein each wheel engagement section of the at least one wheel engagement section is configured to contact a respective wheel surface of the wheel assembly; and

a datum section comprising a protrusion extending a second distance from the foundational body and configured to contact a pad of the wheel assembly, wherein the at least one wheel engagement section is rigidly positioned with respect to the datum section and the second distance is greater than the first distance, such that the maintenance assembly provides a fixed distance between a surface of the datum section configured to contact the pad and a surface of the at least one wheel engagement section configured to contact the respective wheel surface.

2. The maintenance assembly of claim 1, wherein the at least one wheel engagement section comprises a first rail-shaped interface configured to contact a first wheel and a second rail-shaped interface configured to contact a second wheel, and wherein the datum section is rigidly disposed between the first rail-shaped interface and the second rail-shaped interface.

3. The maintenance assembly of claim 1, comprising a grip section disposed between the datum section and each wheel engagement section of the at least one wheel engagement section, wherein the grip section comprises a handle configured to enable a user to hold and place the maintenance assembly.

4. The maintenance assembly of claim 3, wherein the handle comprises a hole extending into or through the foundational body.

5. The maintenance assembly of claim 1, wherein the datum section comprises a receptacle extending partially into the foundational body from a side of the foundational body that is opposite to a side of the foundational body from which the protrusion extends, and wherein the receptacle is configured to receive a clamp to secure the maintenance assembly to the wheel assembly of the amusement ride vehicle.

6. The maintenance assembly of claim 1, wherein the first distance is between six (6.0) millimeters and twenty (20.0) millimeters.

7. The maintenance assembly of claim 1, wherein the second distance is between ten (10.0) millimeters and forty (40.0) millimeters.

8. The maintenance assembly of claim 1, wherein the maintenance assembly weighs between one-quarter (0.25) kilogram and twenty (20.0) kilograms.

9. A method of maintaining an amusement ride vehicle, the method comprising:

exposing a wheel of the amusement ride vehicle by positioning the wheel out of engagement with a rail;

disposing a datum section extending from a foundational body of a handheld maintenance assembly against a pad coupled to the wheel; and

adjusting a bushing coupled to the wheel until a wheel surface of the wheel contacts a rail section extending from the foundational body of the handheld maintenance assembly while the datum section is disposed against the pad to provide a fixed distance between the pad and the wheel surface of the wheel.

10. The method of claim 9, comprising clamping the handheld maintenance assembly to a wheel assembly of the amusement ride vehicle, wherein the wheel assembly comprises the wheel.

11. The method of claim 10, comprising inserting a portion of a clamp into a receptacle disposed on an opposite side of the foundational body of the handheld maintenance assembly from the datum section.

12. The method of claim 9, comprising adjusting the datum section relative to the foundational body until the datum section extends the fixed distance from the foundational body.

13. A maintenance template for a wheel assembly of an amusement ride vehicle, the maintenance template comprising:

- a foundational body comprising an elongate geometry defined by a length of the foundational body that is greater than a width of the foundational body;

- a wheel engagement section extending a first distance from at least one end portion of the foundational body in a direction transverse to the length of the foundational body, wherein the wheel engagement section has a geometry corresponding to a track that the wheel assembly is configured to traverse, such that the wheel engagement section is configured to contact at least one wheel of the wheel assembly at a first contact location; and

- a datum section comprising a protrusion extending a second distance from the foundational body and configured to contact a pad of the wheel assembly at a second contact location, wherein the second distance is greater than the first distance, such that an offset distance is provided between the first contact location and the second contact location.

14. The maintenance template of claim 13, wherein the wheel engagement section comprises two rail sections rigidly coupled to the datum section, and wherein the datum section extends between the two rail sections.

15. The maintenance template of claim 13, comprising a passage extending into or through the maintenance template in a space between the datum section and the wheel engagement section to facilitate gripping and maneuvering the maintenance template.

16. The maintenance template of claim 13, comprising a receptacle in the foundational body through a side of the foundational body opposite a side from which the datum section extends, wherein the receptacle is configured to receive a clamp to secure the maintenance template to the wheel assembly of the amusement ride vehicle.

17. The maintenance template of claim 13, wherein the wheel engagement section has a curved face configured to engage with a complementary face of the at least one wheel.

18. The maintenance template of claim 13, wherein the foundational body, the wheel engagement section, and the datum section are integrally formed into a unified structure.

19. The maintenance template of claim 18, wherein the unified structure is a molded structure.

20. The maintenance template of claim 13, comprising an extender coupling the datum section to the foundational body, wherein the offset distance is adjustable based on actuation of the extender.