THAT WHICH IS CLAIMED:

1. A pallet positioning station for positioning a pallet on a roller conveyor to be impacted by a pallet impact station, the pallet positioning station comprising:

a frame adjacent the roller conveyor and aligned with the pallet impact station;

a pallet lift assembly carried by said frame and positioned below the roller conveyor, and comprising a lift grate moveable between a retracted position and an extended position, with said lift grate recessed below an upper surface of the roller conveyor when in the retracted position, and with said lift grate extending above the upper surface of the roller conveyor when in the extended position;

a pallet push arm assembly carried by said frame and comprising a pallet push arm movable between a retracted position and a pallet positioning position; and

a controller configured to

move said pallet push arm and said lift grate to the retracted positions to receive the pallet for positioning,

move said lift grate to the extended position when the pallet is to be positioned for impact by the pallet impact station, with the pallet being lifted off of the roller conveyor by said lift grate, and

move said pallet push arm to the pallet positioning position to move the pallet towards the pallet impact station until an impact side of the pallet is aligned with an impact reference plane.

2. The pallet positioning station according to Claim 1 further comprising a movement sensor carried by said frame and configured to generate a signal corresponding to movement of said pallet push arm when in the pallet positioning position; and wherein said controller is further configured to move said pallet push arm in the pallet positioning position until the generated signal reaches a predetermined value, with the predetermined value corresponding to when the impact side of the pallet is aligned with the impact reference plane.

3. The pallet positioning station according to Claim 1 wherein said controller is further configured to move said pallet push arm back to the retracted position after the impact side of the pallet is aligned with the impact reference plane.

4. The pallet positioning station according to Claim 1 wherein the roller conveyor comprises a plurality of spaced apart elongated rollers that are parallel to one another; and wherein said lift grate comprises a plurality of spaced apart elongated lift elements, with each respective lift element sized to fit between two adjacent rollers.

5. The pallet positioning station according to Claim 1 wherein said pallet lift assembly further comprises a plurality of vertical actuators extending between said frame and said lift grate for moving said lift grate when activated via said controller between the retracted position and the extended position.

6. The pallet positioning station according to Claim 5 wherein said pallet lift assembly further comprises at least one horizontal actuator for moving said lift grate in a horizontal direction between the impact reference plane and said pallet push arm; and wherein said controller is further configured to move said lift grate in the horizontal direction towards the pallet push arm so that the pallet contacts said pallet push arm before said pallet push arm is moved to the pallet positioning position.

7. The pallet positioning station according to Claim 6 wherein said pallet lift assembly further comprises:

a radius arm rotatably coupled to said frame; and

a link extending between said radius arm and said lift grate;

with said at least one horizontal actuator extending between said frame and said radius arm.

8. The pallet positioning station according to Claim 6 wherein said controller is further configured to operate said plurality of vertical actuators and said at least one horizontal actuator simultaneously.

9. The pallet positioning station according to Claim 6 wherein said plurality of vertical actuators and said at least one horizontal actuator each comprises a hydraulic actuator.

10. The pallet positioning station according to Claim 1 wherein said pallet push arm assembly comprises:

a pair of spaced apart radius arms rotatably coupled to said frame;

a pair of spaced apart links extending between said pair of radius arms and said pallet push arm; and

a pair of actuators extending between said frame and said pair of radius arms for moving the pallet when activated via said controller.

11. The pallet positioning station according to Claim 10 wherein said movement sensor comprises a linear variable differential transformer (LVDT) extending between said frame and one of said radius arms.

12. The pallet positioning station according to Claim 1 wherein the pallet carries a unit load during impact with the pallet impact station; wherein the pallet impact station comprises a stationary unit load push bar positioned above the roller conveyor and adjacent the impact reference plane; and as said controller moves said pallet push arm in the pallet positioning position to move the pallet, the unit load contacts the stationary unit load push bar as the impact side of the pallet continues to move towards the impact reference plane.

13. A pallet positioning station for positioning a pallet on a roller conveyor to be impacted by a pallet impact station, with the roller conveyor initially positioning the pallet adjacent the pallet impact station, the pallet positioning station comprising:

a frame adjacent the roller conveyor and aligned with the pallet impact station;

a pallet lift assembly carried by said frame and positioned below the roller conveyor, and comprising a lift grate moveable between a retracted position and an extended position, with said lift grate recessed below an upper surface of the

roller conveyor when in the retracted position, and with said lift grate extending above the upper surface of the roller conveyor when in the extended position;

a pallet push arm assembly carried by said frame and comprising a pallet push arm movable between a retracted position and a pallet positioning position;

a movement sensor carried by said frame and configured to generate a signal corresponding to movement of said pallet push arm when in the pallet positioning position; and

a controller configured to

move said pallet push arm and said lift grate to the retracted positions to receive the pallet for positioning,

move said lift grate to the extended position when the pallet is to be positioned for impact by the pallet impact station, with the pallet being lifted off of the roller conveyor by said lift grate, and

move said pallet push arm to the pallet positioning position to move the pallet towards the pallet impact station until an impact side of the pallet is aligned with an impact reference plane based on the generated signal reaching a predetermined value, with the predetermined value corresponding to when the impact side of the pallet is aligned with the impact reference plane.

14. The pallet positioning station according to Claim 13 wherein said controller is further configured to move said pallet push arm back to the retracted position after the impact side of the pallet is aligned with the impact reference plane.

15. The pallet positioning station according to Claim 13 wherein the roller conveyor comprises a plurality of spaced apart elongated rollers that are parallel to one another; and wherein said lift grate comprises a plurality of spaced apart elongated lift elements, with each respective lift element sized to fit between two adjacent rollers.

16. The pallet positioning station according to Claim 13 wherein said pallet lift assembly further comprises a plurality of vertical actuators extending

between said frame and said lift grate for moving said lift grate when activated via said controller between the retracted position and the extended position.

17. The pallet positioning station according to Claim 16 wherein said pallet lift assembly further comprises at least one horizontal actuator for moving said lift grate in a horizontal direction between the impact reference plane and said pallet push arm; and wherein said controller is further configured to move said lift grate in the horizontal direction towards the pallet push arm so that the pallet contacts said pallet push arm before said pallet push arm is moved to the pallet positioning position.

18. The pallet positioning station according to Claim 16 wherein said controller is further configured to operate said plurality of vertical actuators and said at least one horizontal actuator simultaneously.

19. A method for operating a pallet positioning station for positioning a pallet on a roller conveyor to be impacted by a pallet impact station, the pallet positioning station comprising a frame adjacent the roller conveyor and aligned with the pallet impact station; a pallet lift assembly carried by the frame and positioned below the roller conveyor, and comprising a lift grate moveable between a retracted position and an extended position, with the lift grate recessed below an upper surface of the roller conveyor when in the retracted position, and with the lift grate extending above the upper surface of the roller conveyor when in the extended position; and a pallet push arm assembly carried by the frame and comprising a pallet push arm movable between a retracted position and a pallet positioning position, the method comprising:

moving the pallet push arm and the lift grate to the retracted positions to receive the pallet for positioning;

moving the lift grate to the extended position when the pallet is to be positioned for impact by the pallet impact station, with the pallet being lifted off of the roller conveyor by the lift grate; and

moving the pallet push arm to the pallet positioning position to move the pallet towards the pallet impact station until an impact side of the pallet is aligned with an impact reference plane.

20. The method according to Claim 19 wherein the pallet positioning station further comprises a movement sensor carried by the frame and configured to generate a signal corresponding to movement of the pallet push arm when in the pallet positioning position; and wherein moving the pallet push arm to the pallet positioning position comprises moving the pallet push arm until the generated signal reaches a predetermined value, with the predetermined value corresponding to when the impact side of the pallet is aligned with the impact reference plane.