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01 Lean IRS Axle Assembly

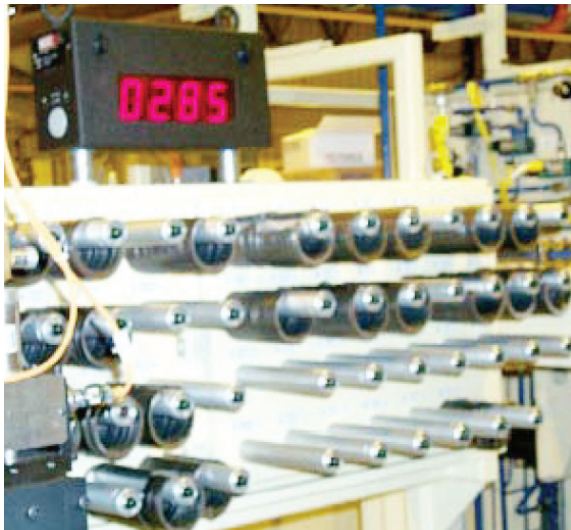
02 Lean IRS Axle Assembly

03 Lean IRS Axle Assembly

- 200,000 -250,000 axles p.a.
- Cycle Time: 47 seconds
- 3 ABB Test/Gage machines
- 15 Auto and semi-automatic stations
- 2 Manual stations
- 45 Meters of ABB MS-7 conveyor
- 2 to 13 Operators depending upon production volumes

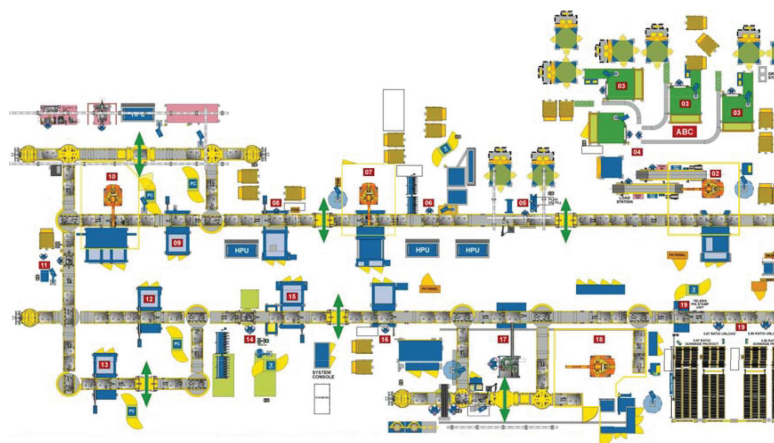
- Build of 3 products with no manual changeover
- Multi-phased expedited implementation schedule
- Installation on weekends, holiday, and 3rd shift
- 30 second cycle time
- Three new, 9 retooled, and 3 relocated auto stations
- One new and 1 retooled semi-automatic stations
- Two new and 1 retooled manual stations
- Components
- ABB assembly machines
- 15 new and 100 reworked pallets
- Andon Board and integrator
- ABB MS7 conveyor for new product feature and repair area

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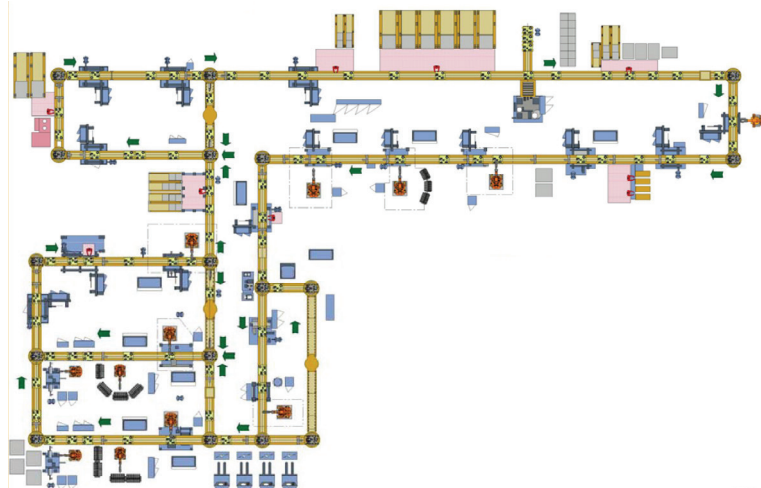


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01 IRS Axle Assembly

02 Front Axle Assembly

03 Front Axle Assembly

04 Front Axle Assembly

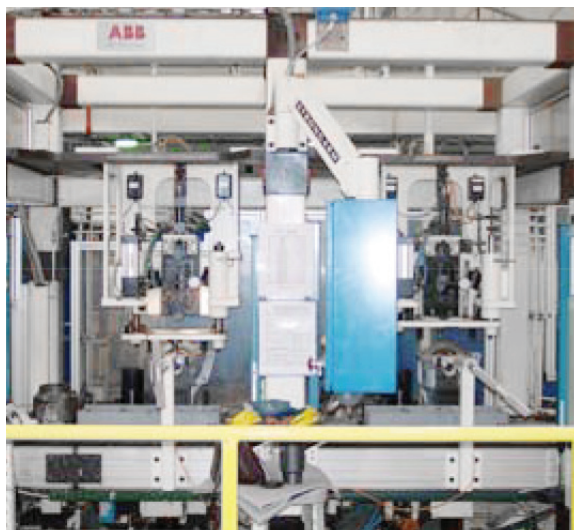
IRS Axle Assembly

- 200,000 -250,000 axles p.a.
- Cycle Time: 50 seconds
- 5 ABB Test/Gage machines
- 20 Auto and semi-automatic stations
- Integrated MTE test machine
- 5 Manual stations
- 5 Robots
- 100 Meters of ABB MS-7 conveyor

Front Axle Assembly

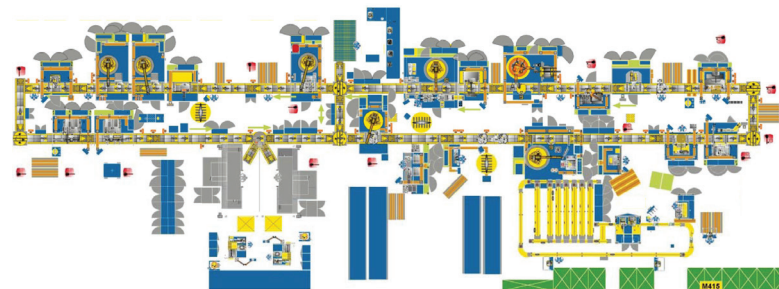
- 300,000 to 400,000 independent front axles p.a.
- Cycle Time: 30 seconds
- 13 Robots
- 25 Auto and semi-automatic stations
- 4 Manual stations
- 220 Meters of ABB MS-7 conveyor

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01 Front and Rear
Axle Assembly

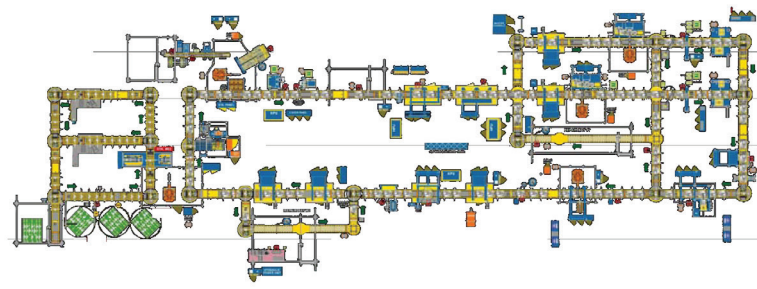
02 High Volume
Front Axle Ass'y

03 Front and Rear
Axle Assembly

04 High Volume
Front Axle Ass'y

Front and Rear Axle Assembly

- 300,000 independent front and rear axles p.a.
- Cycle Time: 54 seconds
- 3 Robots
- 22 Auto and semi-automatic stations
- 7 Manual stations
- 150 Meters of ABB MS-4 conveyor
- Floorspace: 900 sq. meters
- 6 Axle variants



02

High Volume Front Axle Ass'y

- 300,000 rear carriers p.a.
- Cycle Time: 33 seconds
- 6 Robots
- 29 Auto and semi-automatic stations
- 8 Manual stations
- 3 ABB Dynamic backlash machines
- E-locker differential test machine
- 160 Meters of ABB MS-7 conveyor
- 100 Axle assembly pallets

03



04



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