

Containerised Gensets



POWER SOLUTIONS 3 X GROWTH



Containerised Gensets



Background

- Solutions FY06 Plan is £68m
- FY05 FGW Made Approx. 350 Packaged Genset Containers
- Identified as Growth Opportunity for Solutions
- Renowned Quality



Containerised Gensets



...However

Dealers have been buying elsewhere because FGW:

- Enquiry Responses Too Slow and Poor Quality
- Long Production Lead time
- Price

Containerised Gensets



Mission

3 x Power Solutions, £150m p.a., 1,000 Containers p.a.

Vision

Dealers See FGW as a Preferred Enclosure Supplier:

- Same Day Technical Quotes With General Arrangements
- Product Available At Genset RTS + 1 to 2 Weeks
- Competitive Price For Scope Offered



Containerised Gensets



How Do We Do This?

- Standard Catalogue of Common Components
- Common Design
- Flow Lines for Common Manufacture and Assembly

Containerised Gensets



Common Components

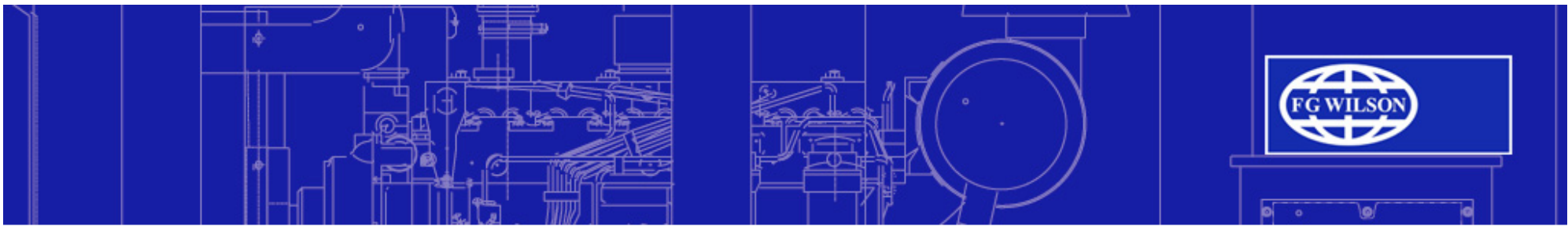
- Standard Wall Panel Sizes
- Door Frames = 2 x Panel Widths
- Standard Small Power Looms
- Etc

Containerised Gensets



Common Flowlines

- Investment in Flow Lines of £2.25 million
- Target is to ultimately produce a packaged container every 2 hours.
- Plan is to Ship > 1,000 Containers p.a.



6 SIGMA

Improve Fabrication and Assembly Process for SVR Enclosures

Patrick Breslin
Black Belt

Why are we doing this?

- Current high cost and high lead time
- Increase Capacity
- Supports Growth
- Use Bay K strengths
 - Highly skilled labour
 - Fabrication expertise

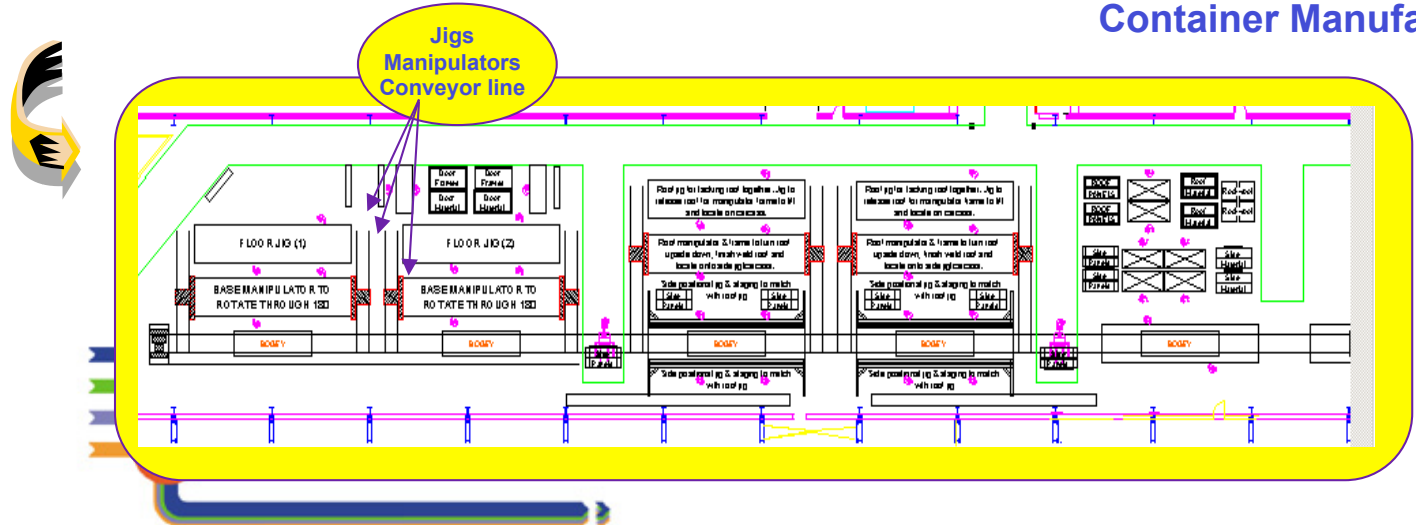


Poor material flow



Time consuming process

Container Manufacturing Line



Takt Time Vision

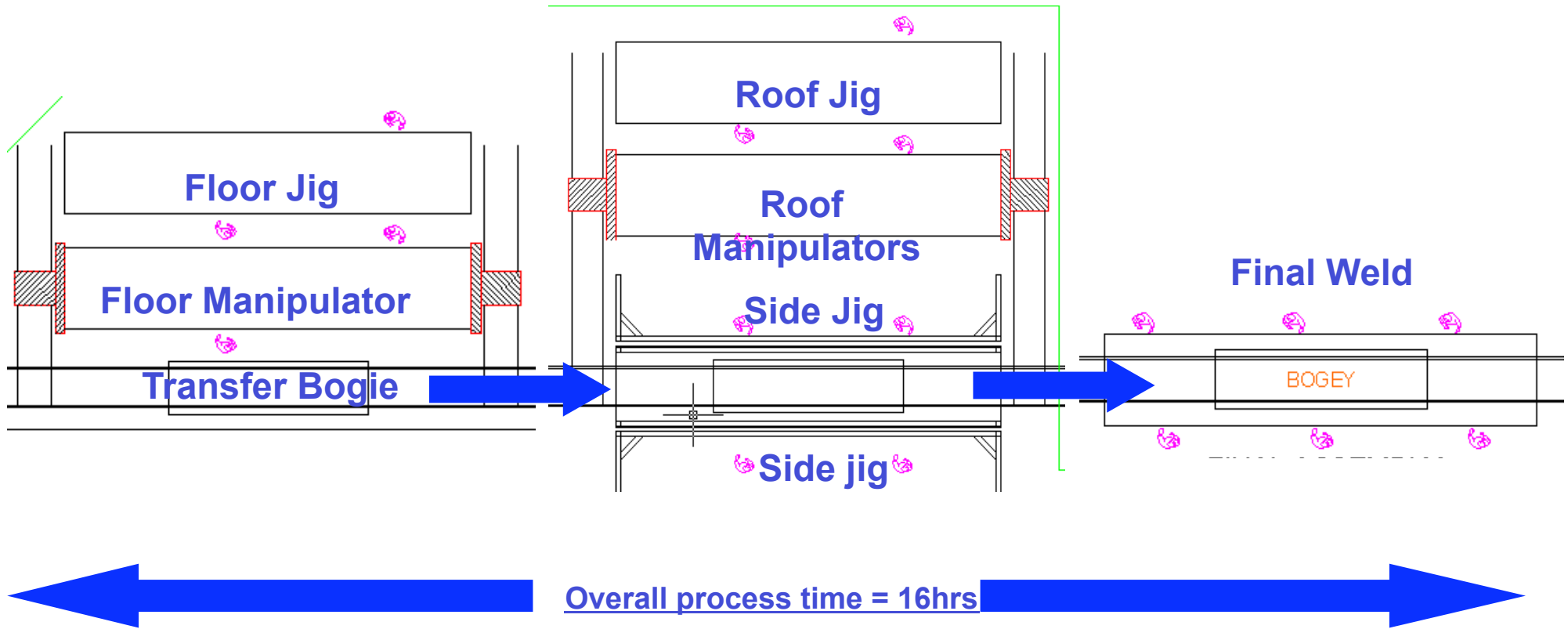
2 hrs



Direction of Product Flow



Bay K Flow line



Bay K Flow line



Station 1: Floor Jig

This jig permanently mounted to the floor has been designed by specialist Jig manufactures. The jig will allow us to assemble the container floor and tack it together.

Station 2: Floor Manipulators

This driven head and tail stock will be used to rotate the container floor through 180 degrees and allow us to fully weld the floor

Station 3: Roof Jig

This jig will be very similar to the floor jig. It will allow us to assemble the container roof and tack it together.

Station 4: Floor Manipulators

This station will be very similar to the station 2. It will allow to produce a fully welded roof.

Station 5 : Side Jigs

Station 5 will consist of a Left hand and Right hand side jig. These will locate onto the Container floor as it is transported from station 2 and will allow us to build both sets of sides in the vertical, directly onto the container floor.

These side jigs will also allow the fully welded roof to be located on the container sides and tacked in position

Station 6: Final Assembly

At station 6 we do the final down hand and internal welding



Improve the Container Packaging Process in Bay F

6 SIGMA

Packaging Process for Enclosures in Pat Magee Black Belt

Why are we doing this

- Current high cost and high level
- Increase Capacity

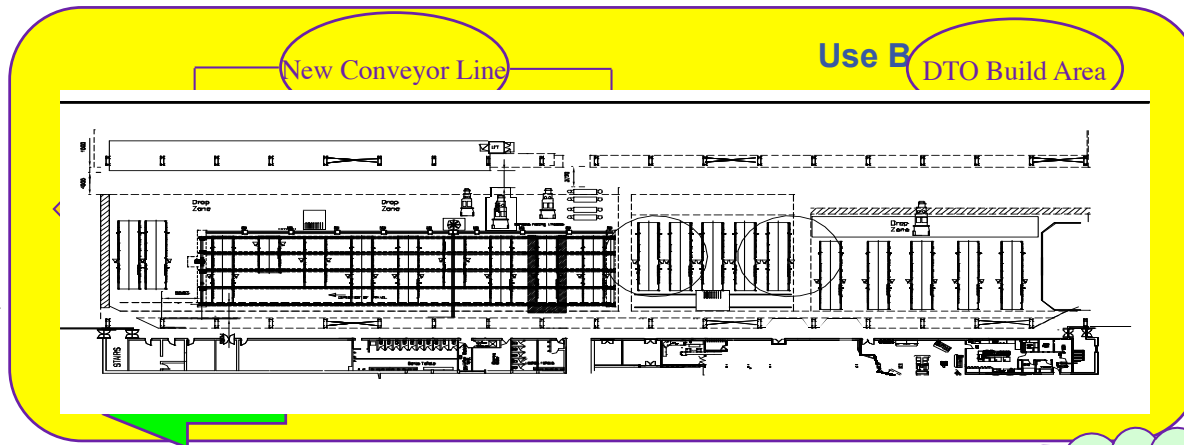
Bay F 'As is situation'



← Time consuming process

Conveyor Line For Container Packaging Supports Growth

Poor Production flow



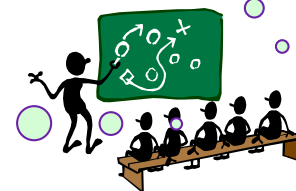
Takt time Vision 2hrs



Direction Of Product Flow

Large Amount of Material Handling

High Proportion of Non- Value Added Time



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Containerised Gensets



Quote Times

Developed “Clip Drag & Drop” designs:
Common Components → Prices and Supporting Information.
Quotes produced quickly for most configurations with full
specification and arrangement drawing.

Target Times to quote:

Standard Offering	See Attached Info
Variations of Above	24 hours
Design To Order (DTO)	2-4 days



Containerised Gensets



Lead Times

- Reduction in design time using rationalised design
- Reduction in manufacturing time from flow lines in Bay K & F

Typical Target Times To Deliver:	Set RTS+	Min
Standard Offering	2 weeks	7 weeks
Variation Of Above	2 weeks	8 weeks
Design To Order (DTO)	4 weeks	12 weeks

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Containerised Gensets



Confidence

Benefits of Buying FGW Containerised Package.

- Fully Integrated Design, No Compatibility Issues.
- Fully Validated Package, Cooling and Noise
- Technical Support Available at Quote or Tender Review.
- Predictive Performance Tools Using CFD and FEA.
- FGW Branded Package with Full FGW Warranty.
- Fully CE Certified Product.
- Project Management.
- Certified Noise Testing.



Containerised Gensets



Container Noise Levels

Lloyds approved quality assurance system enabling FG Wilson to certify noise levels under Annex VIII of European Noise Directive 2000/14/EC.

Where required, containers will be certified and labelled with sound power level in accordance with European Noise Directive 2000/14/EC.

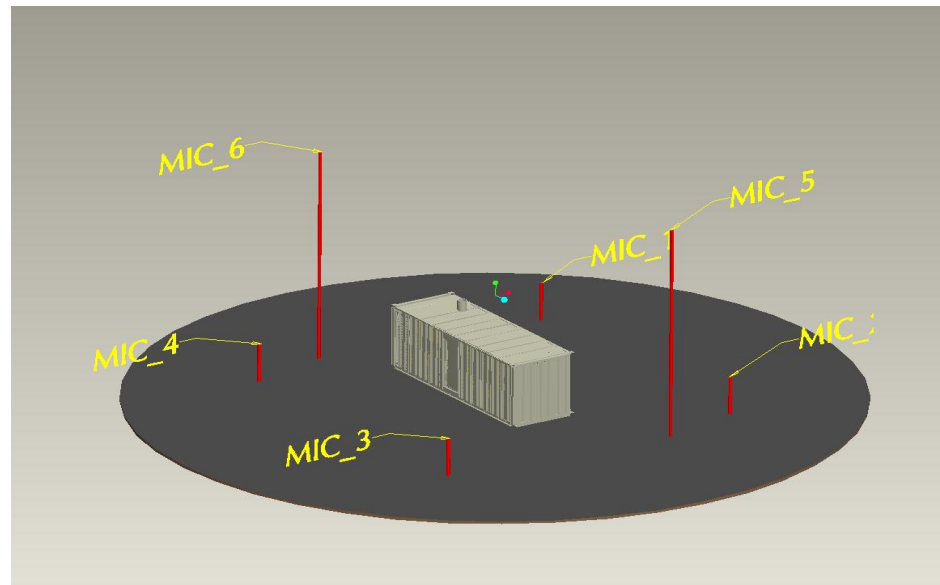
Containerised Gensets



Container Noise Levels

All noise levels are determined by testing in accordance with ISO3744.

- Free field conditions.
- 6 microphones located on a hemispherical surface.



Containerised Gensets



Pricing

- **Supply of Container Package.**
- **Upfit at FGW.**
- **Selection of Preconfigured Options**
- **More ISO Designs with Internal Silencers, Reduced Shipping and Installation Costs.**
- **Overall Reduction**

