Component Tool Transfer from Precision Stamping to Delphi FW84

Terminal: 15424713
Affected assembly: 15424715
October 2017
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As a leading edge suppliers of automotive interconnect products, Delphi supports its customers through continuous improvement to promote competitive and reliable solutions to meet the aggressive targets of the automotive industry.

Consistent with our customer focus, Delphi Centec 3 is transferring some stamping tools due to insourcing restructuring that will enhance our value stream bringing benefits to our customers.

This manufacturing restructuring will:
- Enable broader deployment of lean manufacturing principles
- Enhance quality - built in metrics by ensuring quality in station processing
- Enable process feed forward; process feedback processes

Customer benefits – Delphi product risk mitigations through:
- Enhanced product delivery flow
- Enhanced quality flow

In the pages that follow, Delphi outlines our plan to accomplish this transfer

We ask your review and approval of these plans
Affected Sites

- Delphi DCS Centec 3 located on Coahuila, Mexico
- Delphi DCS Centec 2 located on Coahuila, Mexico
- Flextronics
- Kimball
- TTI (Distributor)
- PSG (Distributor)
Transfer Activity

◆ Planned Transfers
  – Centec 3 has capacity to insource terminals from outside suppliers and supply those terminals to Centec 2, assembly plant located 10 Miles distance from Centec 3
  – The terminal 15424713 is assembly in header part number 15424715
  – Other terminal (15424714) used in same header (15424715) is already being stamped in Centec 3
  – Plan is to bring 15424713 into Centec 3 with existing die
  – No physical changes or print changes are planned

◆ Buffer Planning
  – Planned bank with 6-8 weeks are calculated based on the transfer scheduled timing below.

<table>
<thead>
<tr>
<th>Transfer Bank Planning Timetable</th>
<th>Duration Days</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
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</thead>
<tbody>
<tr>
<td>Prepare stamping die</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ship stamping die</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tool debug</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial terminal PPAP run</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPAP review</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit terminal PPAP to C2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ship terminals to C2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Run PPAP header</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPAP review</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Submit PPAP to Customer</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approval to ship</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Transfers Pre-requisite

- No Transfers without customer approved plan - Including OEM when required.

- Full plan to be pre-agreed before implementation.

- Revalidation is required from receiving site. Negotiation on a case by case basis to minimize cost and time.

- Transfers only to ISO/TS 16949 (or VDA 6.1) qualified sites with customer visit to confirm capability if is required.

- No change in process between sending and receiving sites.

- No disruption of supplies

- No quality risk to their operation
Timing Overview
Timing

Transfer activity will be staggered to best utilize available resources to insure realistic completion timing without stressing the organization.

<table>
<thead>
<tr>
<th>Transfer timing</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer notification</td>
<td>In Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer approval</td>
<td>In Process</td>
<td>In Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank construction</td>
<td></td>
<td></td>
<td>In Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer tool and PPAP</td>
<td></td>
<td>In Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer approval and start shipping</td>
<td></td>
<td></td>
<td></td>
<td>In Process</td>
<td></td>
<td>In Process</td>
</tr>
</tbody>
</table>
## Customer Approval Matrix

Transfer Customer Approval status

### CUSTOMER APPROVAL AND RELEASE MATRIX

<table>
<thead>
<tr>
<th>Part Number</th>
<th>FLEXTRONIC</th>
<th>KIMBALL</th>
<th>TTI</th>
<th>PSG</th>
</tr>
</thead>
<tbody>
<tr>
<td>15424715</td>
<td>NOT YET NOTIFIED</td>
<td>NOT YET NOTIFIED</td>
<td>NOT YET NOTIFIED</td>
<td>NOT YET NOTIFIED</td>
</tr>
</tbody>
</table>
Transfer Strategy within Delphi

Back Up Information
Risk Assessment & Management
Individual assessments will be performed for every transfer.
- **Risk Mitigation**
- **Updated at each transfer gate**

### Phase 0 Feasibility

<table>
<thead>
<tr>
<th>No.</th>
<th>Issue</th>
<th>Potential Failure Mode</th>
<th>Current Controls</th>
<th>Nature</th>
<th>Criticality</th>
<th>Action Required</th>
<th>Responsible</th>
<th>Planmed Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Receiving Site Program Manager not nominated</td>
<td>Poorly planned Transfer</td>
<td>TM nominated at outset; Red Flag procedure</td>
<td>Delivery</td>
<td>Low Risk</td>
<td>Transfer Steering Committee review</td>
<td>Cost</td>
<td>Cost</td>
</tr>
<tr>
<td>2</td>
<td>Sending Site Coordinator not nominated</td>
<td>Poorly planned Transfer</td>
<td>SC nominated at outset; Red Flag procedure</td>
<td>Delivery</td>
<td>Low Risk</td>
<td>Transfer Steering Committee review</td>
<td>Cost</td>
<td>Cost</td>
</tr>
<tr>
<td>3</td>
<td>No Team formed on Sending Site</td>
<td>No transfer of expertise/know-how</td>
<td>Team nominated at outset; Red Flag procedure</td>
<td>Delivery</td>
<td>Low Risk</td>
<td>Transfer Steering Committee review</td>
<td>Cost</td>
<td>Cost</td>
</tr>
</tbody>
</table>

### Phase 1 Assessment & Planning

<table>
<thead>
<tr>
<th>No.</th>
<th>Issue</th>
<th>Potential Failure Mode</th>
<th>Current Controls</th>
<th>Nature</th>
<th>Criticality</th>
<th>Action Required</th>
<th>Responsible</th>
<th>Planmed Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>No Team formed on Receiving Site</td>
<td>Transfer not feasible</td>
<td>Team nominated at outset; Red Flag procedure</td>
<td>Delivery</td>
<td>Low Risk</td>
<td>Transfer Steering Committee review</td>
<td>Cost</td>
<td>Cost</td>
</tr>
<tr>
<td>5</td>
<td>Negative cost benefit analysis</td>
<td>Loss at Receiving Site</td>
<td>Transfer Steering Committee review</td>
<td>Quality</td>
<td>Low Risk</td>
<td>Transfer Steering Committee review</td>
<td>Cost</td>
<td>Cost</td>
</tr>
</tbody>
</table>

**ADD ADDITIONAL RISKS ASSOCIATED WITH THIS TRANSFER AS APPROPRIATE**
Knowledge Transfer
Delphi Way

Successful proven transfers

PDS System

Experience

Core Teams

Transfer Procedure
DPGP-2.6 CB1-BU-05-rev2
PDS System
PDS - Some key points

- Delphi **Product Development System:**
  - Software that allows the detailed tracking and documentation of transfer activities including Management gate review approvals

- Brings people together on a global basis and affords effective communication & information flow – Core teams

- Ensures all actions are completed & in sequence – Deliverables and assignments

- Ensures timing is on track – Key milestones

- Ensures all relevant documentation and data is stored centrally - Folders
DPGP-2.6 CB1-BU-05-rev 2 – Global Transfer Procedure
Transfer Organization

- Director MOS & TQM
- Director Global Manufacturing Eng.
- Global Operations Project Manager
- Regional MD
- Plant Manager
- Project Manager Receiving Site
- Coordinator Sending Site
- Core Team Receiving Site
- Core Team Sending Site

Overall Transfer responsibility for timing, budget, resources
Support PM to ensure an efficient transfer

Escalation through Program Alert Procedure
OP OS Phases: 1 – 4

Phase 1
Feasibility & Project Definition

Phase 2
Process Design

Phase 3
Process Realization & Qualification

Phase 4
Production Ramp up

Approval to Start
Gate Review 1
Gate Review 2
Gate Review 3
Gate Review 4
Knowledge Transfer: Training Plan

Program Management
- Understanding of scope through shared information (PDS)
- Resource planning
- Technical overview
- Financial analysis
- Risk assessment

Quality Engineering
- Quality History of the product – verify availability of 8D Reports and updates in Lynx
- Verify present status of the product vs. last PPAP
- Present Quality Status of the product with respect to Customer Complaints, PPM and CPMS.
- Verify Product Drawing with respect to key characteristics, updates and customer approval
- Verify Control Plan with special emphasis on key characteristics.
- Verify PPAP Documents submitted to customer.

Tool Maker
- Tool maintenance with specific reference to Key Dimensions and Process parameters
- Tool drawings and designs
- List of key spare parts to be maintained
- Tool history

Manufacturing Engineering
- Verify the Process Flow
- Verify PFMEA with respect to critical dimensions / characteristics
- Verify and understand the Poke Yokes in place
- Verify and understand the Maintenance aspects
- Targets for Scrap, OEE and Run at Rate
- Verify the Work Instructions
- Understand the pending improvements
- Verify the BOM
- Understand: Machine / Equipment; Process Validation; Resource requirements

Production Supervisor
- Setup & first offs
- Understand assembly / molding / process
- Efficiency
- Quality level of the product
- Machine capabilities

Automation Engineer
- Machine maintenance with specific emphasis on achieving key dimensions, key process parameters, Poke Yoke and safety.
- Setup and debugging
- Disassembly and installation
Core Teams
Core Team Alignment

- **TRANSFER MANAGER**
- **PRODUCT ENGINEERING**
- **QUALITY**
- **ACCOUNT MANAGER**
- **MPC (SUPPLY CHAIN)**
  - sending & receiving
- **MANUFACTURING/INDUSTRIAL ENGINEER**
  - sending & receiving
- **GSM (PURCHASING & LOGISTICS)**
  - sending & receiving
- **SENDING SITE COORDINATOR**
  - sending & receiving
Re-qualification
Transfer Re-qualification

- We adopt a standard and open approach with all our customers on the issue of re-qualification and seek agreement up front
- PPAP L4 with a limited dimensional report on selected critical/functional dimensions through agreement compared before and after the transfer
- No PV Testing
- This approach has been agreed with the majority of our Customers including OEMs
- Included in Customer Communication Pack
- Rationale for proposal
  - The assembly process will remain unchanged
  - The molding process will remain unchanged
  - The product design (specification) will remain unchanged
  - Material Spec’s will remain unchanged.
- Delphi actively employs a safe launch procedure on all transfers
- Pragmatic approach with minimized risk and save valuable time and resources during an period of intensified activity
- **We have proven experience and a proven process**
PPAP Submission Proposal

- PPAP Level 4
  - PSW
  - Control Plan
  - Limited Dimensional Report
    - Selected critical/functional dimensions through agreement
  - Capability study
    - Selected SPC dimensions through agreement.
  - Delphi Customer Drawing
  - Flow Chart
  - PFMEA – cover sheet

- No PV Testing as the product or process will not change
- Actively employ a safe launch procedure on all transfers
Transfer Criteria

- The detail transfer dates for each part number will be provided in the SICR

- The process shutdown and relocation will not occur until:
  - Bank build is complete
  - Customer approval to transfer is received
  - DCS Management approve movement
Thank you in advance for your assistance in this move.

We encourage you to voice concerns and/or additional demand information to your Account Manager.

Your Account Manager is part of a large transfer team meeting almost daily so your information will receive prompt attention.

Sincerely,
Delphi Connection Systems