

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE**ISUZU PROTOTYPE QUALITY PROCEDURES (IPQP)
FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE**

This procedure applies to all suppliers (AFFILIATED, ALLIED, AND OUTSIDE) providing new pre-prototype & prototype material. All material shall be in accordance with requirements set forth in this procedure. The term “supplier” shall be used to indicate the primary contractor for Isuzu. The term “Isuzu” shall be used to indicate Isuzu Motors America (ISZA).

The intent of the pre-prototype & prototype activity is to assemble and test production intent parts, assembly systems and vehicles for design and assembly process validation. Part approval at pre-prototype & prototype ensures part problems are identified and corrected to minimize the impact of part variation upon design evaluation, manufacturing and assembly.

This procedure specifies supplier requirements for pre-prototype & prototype parts, including the shipment of material directly to the receiving location and required documentation of records by the supplier. It also specifies uniform minimum requirements for suppliers preparing parts and documentation for evaluation by Isuzu prior to shipment of material to the receiving location.

This procedure contains the following:

- 1-0 PRE-PROTOTYPE & PROTOTYPE PART AND DOCUMENTATION REQUIREMENTS
- 2-0 SUBMISSION REQUIREMENTS
- 3-0 SHIPPING METHODS
- 4-0 RECORD RETENTION REQUIREMENTS
- 5-0 APPENDIX/EXHIBITS

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE

1-0 PRE-PROTOTYPE & PROTOTYPE PART & DOCUMENTATION REQUIREMENTS - Parts are to be made to Isuzu authorized drawings, templates, models and/or other engineering design records, using specified material(s). For deviation from engineering requirements contact your Isuzu Motors America (ISZA) Prototype Development Coordinator for formal authorization. ALL SUPPLIERS OF PRE-PROTOTYPE & PROTOTYPE PARTS ARE REQUIRED TO HAVE COMPLETED, DOCUMENTED AND HAVE AVAILABLE FOR REVIEW THE ITEMS LISTED BELOW.

1. ISUZU SUPPLIER WARRANT OF MATERIAL FOR PROTOTYPE (EXHIBIT A)
2. DESIGN RECORDS
3. INSPECTION RESULTS AND INSPECTION AND/OR TEST DEVICES
4. MATERIAL CERTIFICATION
5. PART WEIGHT (MASS)
6. SERIALIZATION INFORMATION
7. PRODUCTION MATERIAL & PROCESSES

1-1 ISUZU SUPPLIER WARRANT OF MATERIAL FOR PROTOTYPE - An Isuzu Supplier Warrant of Material for prototype shall be completed in full and signed by an authorized official of the supplier who is responsible for the preparation and shipment of parts. There shall be a separate warrant form for each part number and each part shipment to Isuzu. When agreed to by Isuzu, a group of part numbers different in colors only, or a right and left hand of the same part, may be covered on one warrant form.

If parts do not meet specifications, but are deemed usable for prototype by the Isuzu Design Responsible Engineer (DRE), the corrective action plan, pg. 2 of the warrant, must be completed in full and submitted to your Isuzu Prototype Development Coordinator prior to submission. Your Isuzu Prototype Development Coordinator will submit the Corrective Action Plan to Isuzu Motors Japan (ISZJ) Prototype Department for appropriate signatures. Your Isuzu Prototype Development Coordinator will coordinate and act as a Liaison between the supplier and Isuzu to ensure that: the appropriate signatures are acquired quickly, or to provide feedback if the suppliers corrective action is rejected. Please see the step by step instructions on how to complete the warrant on pg. 7 of this document.

1-2 DESIGN RECORD - Design records may include but are not limited to sketches, marked prints, Math data, blueprints, and other auxiliary drawings (i.g. GDT - Drawing). The part number, design record number, design record date, change revision number, and Isuzu responsible engineer's signature shall appear on the above, except in the electronic release process.

1-3 INSPECTION RESULTS AND INSPECTION AND/OR TEST DEVICE - Suppliers are responsible for having performed, the inspections and/or tests required to substantiate conformance to design record, coordinate measuring machine printout or facsimile. These actual measurements must be cross-referenced to the design record supplied by the customer or the design record used to inspect the material. (Dimensional results for CMM inspected parts are to be documented as referenced in Appendix II of this document.)

On parts that differ in color only, the complete inspection may be completed on one color. Reference must be made to the part number upon which the complete inspection was performed for all other color parts with the same less finish number.

- 1-3A. COMPLETE CHARACTERISTIC INSPECTION
- 1-3B. IMPORTANT QUALITIES CHARACTERISTIC INSPECTION
- 1-3C. ENGINEERING CHANGE INSPECTION
- 1-3D. ASSEMBLIES AND DETAIL PARTS
- 1-3E. INSPECTION AND/OR TESTING DEVICES (WHEN REQUESTED)

1-3A COMPLETE CHARACTERISTIC INSPECTION - A complete inspection shall be conducted on the first three (3) parts unless otherwise specified by Isuzu.

1-3B IMPORTANT QUALITIES CHARACTERISTIC INSPECTION - On all parts produced in excess of the quantity specified in 1-3A, measurements of important qualities, such as safety/compliance and fit/function product characteristic inspection points shall be checked for conformance to requirements, unless otherwise specified by Isuzu.

1-3C ENGINEERING CHANGE INSPECTION - Submission requirements because of an engineering change or a correction to the original part only require that the changed portion and any other area affected by the change be inspected. The results shall be submitted in the box with the parts or as directed by Isuzu.

1-3D ASSEMBLIES AND DETAIL PARTS - When inspecting and/or testing an assembly, all dimensions and specifications shown on the assembly design record shall be checked. The supplier is responsible for the acceptability of each detail component and shall furnish evidence of conformance to requirements when requested to do so by Isuzu.

1-3E INSPECTION AND/OR TESTING DEVICES - When an inspection and/or testing device such as a gage, fixture, check-aid, or template is used to inspect and/or test a part, the supplier is responsible for inspecting and verifying that the device has been constructed to the same engineering release and change number as the part being inspected and/or tested.

Suppliers are expected to use an appropriate method to inspect parts. CMM inspection may be required at the direction of Isuzu.

Supplementary inspection sheets need to include part number, design record level, design record date, delivery order number, and supplier's name.

1-4 MATERIAL CERTIFICATION - The material certification is a document from the material producer that states manufacturing location, lot number, product identification number, product name, dates of test, and test data required to show compliance to the Isuzu product specifications. Material certification shall be on file at the supplier location and available for review by Isuzu upon request.

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE

1-5 PART UNIT WEIGHT (MASS) - The supplier is to furnish part unit weight (mass) data for each part number supplied to Isuzu. The weight (mass) is to be expressed in kilograms to the third decimal (0.000). A minimum of ten (10) parts are to be individually weighed. Report the individual weight on the Supplier Warrant of Material for Prototype (i.e., PTD02-1) next to their serial numbers. In instances of parts weighing less than 0.1 kg., such as fasteners, etc., a quantity of ten (10) pieces should be weighed together and the results divided by ten for reporting purposes. If the quantity of parts ordered is less than 10, weigh the available quantity to establish an average weight. Parts are to be weighed less lubricants, coolants, etc.

1-6 SERIALIZATION INFORMATION - Parts shall be numerically serialized and referenced to test/inspection results. Serial numbers shall begin with S-0001 and continue in sequence through the last part shipped. Placement of the serial number on each part shall not affect the appearance, fit or function of the part. Design records, test results, and supplementary inspection result sheets must have the part serial number(s) clearly indicated. Part serialization is required unless otherwise specified by Isuzu.

1-7 PRODUCTION MATERIAL AND PROCESSES - When production material and the complete production process is utilized the supplier should begin to complete requirements of the Production Part Approval Process. Consult your production buyer for direction.

GENERAL INFORMATION

PRODUCTION APPROVED PARTS - Parts approved under the Production Part Approval Process are to be shipped directly to the receiving location to meet Isuzu's shipping schedule and shall follow the procedures specified in 2-1, level A. Parts that do not meet design record requirements will be subject to a PR/C (Problem Report & Countermeasure). Isuzu may request inspection data for production parts.

2-0 SUBMISSION REQUIREMENTS - Isuzu will specify the submission requirement. Suppliers not informed of the submission requirement should follow the procedures specified in 2-1, level B, unless they are providing Production Approved Material; see the previous paragraph. For all submission requirements, the following shall be sent as directed in sections 2-1 and 2-2:

- a. The completed Isuzu Supplier Warrant of Material for Prototype (Warrant).
- b. A completed corrective action plan signed by the Isuzu Authorized Person when parts do not meet the design record requirements.

When parts are nonconforming, Isuzu may require additional documentation beyond what is described above.

Note

- Reference attached matrix. (Appendix I, Exhibit B)
- All suppliers of Pre-Prototype & Prototype parts are required to have completed, documented and retained on file, all requirements listed in section 1.0, regardless of the submission level.

2-1 PARTS SHIPPED DIRECTLY TO RECEIVING LOCATION

LEVEL A PARTS SHIPPED DIRECTLY TO DESIGNATED RECEIVING LOCATION. WARRANT AND CORRECTIVE ACTION PLAN (IF NECESSARY) SHOULD BE IN THE BOX WITH THE PARTS UNLESS OTHERWISE DIRECTED BY ISUZU.

Prototype Parts, which are tagged and labeled as described in sections 3.2 and 3.3, shall be shipped by the supplier to the receiving location designated on the delivery order. The warrant shall be packaged with the parts unless otherwise directed by Isuzu. All Production Approved parts shall be shipped at level A unless otherwise directed by Isuzu.

LEVEL B PARTS SHIPPED DIRECTLY TO DESIGNATED RECEIVING LOCATION. THE COMPLETED WARRANT AND CORRECTIVE ACTION PLAN (IF NECESSARY), DESIGN RECORD (DRAWING USED IN INSPECTION), AND INSPECTION RESULTS. COMPLETE DOCUMENTATION SHOULD BE IN THE BOX WITH THE PARTS UNLESS OTHERWISE DIRECT BY ISUZU.

Prototype Parts, which are tagged and labeled as described in sections 3.2 and 3.3, shall be shipped by the supplier to the receiving location designated on the delivery order. The warrant, design records, and inspection results shall be inside the box unless otherwise directed by Isuzu. If parts do not meet specification, the supplier must contact their Isuzu Prototype Development Coordinator to request part disposition prior to shipment of material. Suppliers shipping nonconforming parts to the receiving location without a part disposition are subject to rejection and will be documented in the Problem Report and Countermeasure (PR/C) system.

2-2 EVALUATION AND AUTHORIZATION TO SHIP GIVEN BY ISUZU PRIOR TO SHIPMENT TO THE RECEIVING LOCATION

LEVEL C THE COMPLETED WARRANT AND CORRECTIVE ACTION (IF NECESSARY), DESIGN RECORD (DRAWING USED IN INSPECTION), AND INSPECTION RESULTS. COMPLETE DOCUMENTATION SHOULD BE DIRECTED TO THE LOCATION DESIGNATED BY ISUZU.

Prior to shipment of parts to the receiving location, the warrant shall be directed to the location designated by Isuzu. Isuzu will inform a part disposition, which is authorization for part shipments. Parts, which are tagged and labeled as described in sections 3.2 and 3.3, shall be shipped by the supplier, with documentation inside the box, to the receiving location designated on the delivery order.

LEVEL D PARTS WITH COMPLETE DOCUMENTATION AND INSPECTION/TEST DEVICE (IF REQUESTED). (THIS LEVEL IS USUALLY REQUIRED FOR ON SITE/JOINT INSPECTION).

Prior to shipment of parts to the receiving location, the warrant, design records, inspection results, inspection devices (if requested) and the number of parts specified by Isuzu shall be directed to the location designated by Isuzu. Part shipments will be authorized after Isuzu informs a part disposition. Parts, which are tagged and labeled as described in sections 3.2 and 3.3, shall be shipped by the supplier, with

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE

PART CLASSIFICATION – The supplier shall be notified by Isuzu if submission is Usable or Rejected.

A. APPROVED FOR PRE-PROTOTYPE & PROTOTYPE
This status indicates that the supplier has manufactured material that conforms to all specifications. This is NOT a production approval.

B. USABLE FOR PRE-PROTOTYPE & PROTOTYPE -
This status permits the usage of the nonconforming part. A corrective action plan is required and must be signed by an authorized person at Isuzu.

C. REJECTED FOR PRE-PROTOTYPE & PROTOTYPE -
This status indicates that parts failed to meet requirements. Corrected parts shall be reevaluated prior to shipment. See the Isuzu Prototype Processes and Procedures Manual (PTM03) for additional information regarding non-conforming parts.

3-0 SHIPPING METHODS- Suppliers are to ship parts using the approved shipping method specified by Isuzu. Shipping methods must provide traceability. See the Isuzu Prototype Processes and Procedures Manual (PTM03) for additional information regarding shipping methods.

All suppliers shipping material to Isuzu shall indicate the following on the shipper:

- Isuzu Delivery Order No.
- Isuzu Part No.
- Quantity of parts
- Date shipped
- Delivery Point
- Carrier Tracking /Pro. No.
- GM PO No. for GM or Specialty Shipments

Shippers which do not contain the proper information may result in an issuance of a PR/C.

3-2 PART IDENTIFICATION - Each part must be identified with the Isuzu part number and the serial number. On small parts such as fasteners where individual part identification is not practical, the identification of the part number and serial number on each part is not required.

3-3 SHIPPING CONTAINER LABELING – Isuzu requires that a copy of the packing list be on the outside of the box for all prototype parts. Please see the Isuzu Prototype Processes and Procedures Manual (PTM03) for further instructions.

3-4 PACKAGING REQUIREMENTS – When a supplier ships cargo to a facility designated by Isuzu on a FOB Supplier's plant basis, the supplier is responsible for any discrepancies with regards to not only the parts shipped, but also the parts delivered to that facility. The reason is that ISZJ can not verify the cargo until it arrives at their facility.

- Protect parts from each other and separated from the corners and sides of the box to prevent damage.
- Use protective packaging such as plastic bags to prevent soilage (e.g. dirt, rust, corrosion)
- Use enough cushioning material to ensure that the parts won't move or shift inside the box during shipping and handling.
- Package parts suitable for air freight.
- Dangerous goods material (shocks, batteries, air bags, pressurised items, etc.) may require special packaging.

See the Isuzu Prototype Processes and Procedures Manual (PTM03) for additional information packaging requirements.

4-0 RECORD RETENTION REQUIREMENTS

All suppliers of pre-prototype & prototype parts are required to have completed, documented and have available for review the items listed in section 1-0. Records for pre-prototype & prototype parts for a specified model year shall be retained for two (2) months after the start of regular production for that model.

5-0 APPENDIX AND EXHIBITS

- Appendix I Exhibits of IPQP Forms
- Exhibit A Warrant and Corrective Action Plan
- Exhibit B IPQP Submission Requirements
- Appendix II Example of CMM Inspection Results

APPENDIX I, EXHIBIT A, pg. 2 OF 3
ISUZU PTD02-2: WARRANT & CORRECTIVE ACTION PLAN).

CORRECTIVE ACTION PLAN

Part Number 2 DO # 9

NONCONFORMANCE TYPE:

Check the nonconformance type that applies.

Dimensional per Design Record []

Functional per Design Record []

NONCONFORMANCE DESCRIPTION: 19

Horizontal lines for nonconformance description.

Quantity Suspected with Nonconformance: 20

IMMEDIATE FIX: 21

Horizontal lines for immediate fix details.

ROOT CAUSE: What is causing the nonconformance? 22

Horizontal lines for root cause details.

CORRECTIVE ACTION: What steps will be taken to assure that this nonconformance will not reoccur? 23

Horizontal lines for corrective action details.

Corrected Part promise date: 24

Midpoint progress date: 25

Is this Part usable for prototype? 26

Supplier Engineer Name (Please print): 27 Phone No. 27

Supplier Authorized Signature 27 Dated: 27

Isuzu Name (Please print): 28 Phone No. 28

Isuzu Authorized Signature: 28 Date: 28 Code: 28

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE

APPENDIX I, EXHIBIT A, pg. 3 of 3
Supplier Warrant of Material for Pre-Prototype & Prototype
Description Sheet

Part Information

1. **Part Name:** Enter the part name as indicated on the Design Record.
2. **Part Number:** Use the assembly part number.
3. **Engineering Design Record Chance Level and Date:** Use the proper engineering change level that the part submission represents.
4. **Checking Aid No.:** If applicable, enter number assigned to identify the checking aid (i.e., fixture). A Checking Aid is used in dimensional inspections.
5. **Checking Aid Engineering Change Level and Date:** Enter the engineering change level and date. Should be the same as the design record (i.e., checking aids should be to the latest engineering change level.)
6. **Application Vehicle:** Indicate the model year and vehicle or project number on which the part is to be used.
7. **Order Number:** Enter the Delivery Order number issued by Isuzu for the purchase of the prototype part.
8. **Weight:** Enter actual weight (mass) less lubricants, coolants, etc., in kilograms to three decimal places.
9. **Supplier Name and Address:** Complete address of the Supplier assigned by the Delivery order.
10. **Supplier Code:** Enter the supplier code assigned to the Supplier as shown on the Delivery order.

Reason For Submission

11. Identify why parts are being submitted: Initial Submission, Engineering Change, etc.

Submission Requirements

12. Identify submission level requested Isuzu. If no specific level has been formally requested, submit under Level B (i.e., Parts shipped directly to designated Receiving Location. Warrant and Corrective Action Plan (If necessary) should be in the box with the parts unless otherwise directed by Isuzu.), unless they are providing Production Approved. Parts approved under the Production Part Approval Process are to be submitted at Warrant level A.

Submission Information

13. **Prototype Submission Checklist:** Respond "Yes" or "No" to each question. The exceptions are question #7, where the type of checking process is identified
14. **Serial Numbers for this Shipment:** Indicate all serial numbers corresponding to all parts included in this shipment.
15. **Explanation of "No" Answers or Comment Here:** Explain all "No" responses to the above checklist and provide additional details regarding this submission in the space provided. Use attachments if necessary.
16. The responsible Supplier official will sign and provide printed name, title, phone number, and date of submission. This official must have first hand knowledge of these parts and the submission package.
17. The Isuzu representative responsible for evaluating parts will sign and date the Warrant.

Corrective Action Plan Information

18. **Nonconformance Type:** Identify the nonconformance type for the Corrective Action Plan as Dimensional, or Functional.
19. **Nonconformance Description:** Include a detailed outline of all part discrepancies by defining dimensional specifications and actual part dimensions- Indicate any and all areas that this discrepancy may affect.
20. **Quantity Suspected with Nonconformance:** Identify how many parts have stated nonconformance.
21. **Immediate Fix:** Describe what is being done to the discrepant parts to make them Usable (e.g., hand working).
22. **Root Cause:** Describe what is causing the nonconformance.
23. **Corrective Action:** Describe what will be done to prevent this nonconformance from reoccurring.
24. **Corrected Part Promise Date:** Date must be agreed upon between Isuzu and Supplier as to when the nonconformance will be permanently fixed and corrected parts will be submitted for evaluation.
25. **Midpoint Progress date:** An approximate half-way point to the corrected part promise date when the supplier is to communicate, to their Isuzu Prototype Development Coordinator their progress towards correcting nonconformances and submitting for evaluation.
26. **Is This Part Usable for Prototype?** A "Yes" or "No" answer is provided by the Isuzu authorized person.
27. The responsible Supplier engineer will sign and provide printed name, phone number, and date of signature. This Engineer must have first-hand knowledge of these Parts, the submission package, and the Corrective Action Plan.
28. **Isuzu Authorized Person:** For a dimensional or functional nonconformance, Isuzu Authorized Person prints, signs and dates this section including his/her phone.

FOR SUPPLIERS OF MATERIAL FOR PRE-PROTOTYPE & PROTOTYPE

APPENDIX I, EXHIBIT B SUBMISSION REQUIREMENTS

	LEVEL A	LEVEL B	LEVEL C	LEVEL D
	SHIP DIRECT TO ISUZU PLANTS		EVALUATE BY THE ISUZU PROTOTYPE DEPT. PRIOR TO SHIPMENT	
PARTS	X	X		X
WARRANT	X	X	X	X
DESIGN RECORD (Drawing used in inspection)		X	X	X
INSPECTION RESULTS		X	X	X
INSPECT RESULTS ¹	MAINTAIN ON FILE			
INSPECTION DEVICE				X
MATERIAL CERTIFICATION	MAINTAIN ON FILE			
CORRECTIVE ACTION PLAN(s) ² (PTD01-2.doc)	X	X	X	X

NOTES:

¹ Required for production material and processes. (Isuzu may request inspection data for production parts.)

² Required if parts do not meet specs. Must have authorized signature from ISUZU. Please see instructions under section 1-1 on pg. 2 of this document.

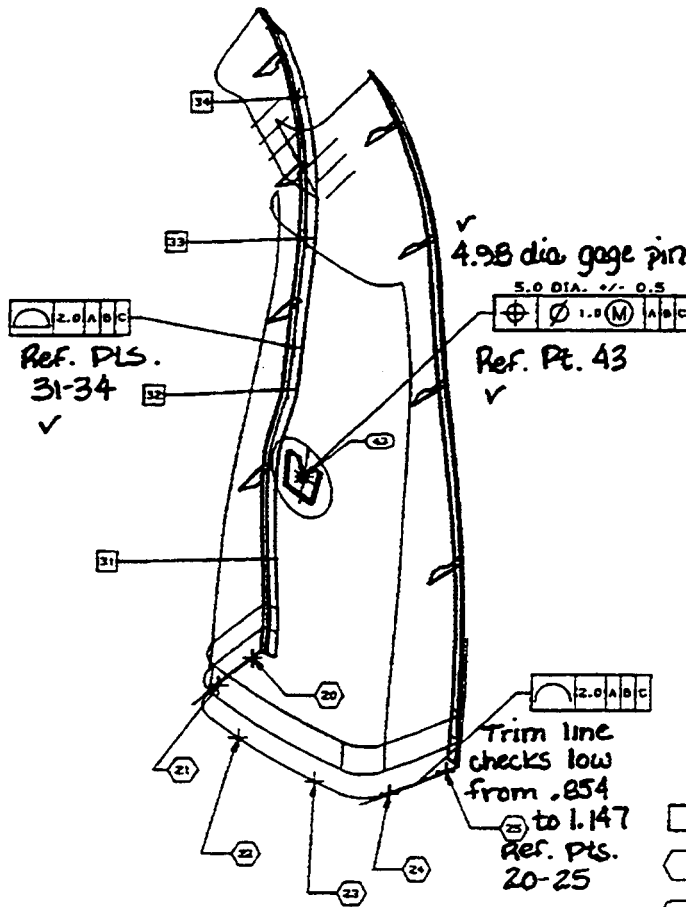
All records listed in Section 1-0 of the IPQP procedure shall be retained, by the supplier, for a minimum period of two (2) months beyond start of production for each specific model year (regardless of submission level). Inspection results must be cross-referenced to the design record.

APPENDIX I
EXAMPLE: REPORTING RESULTS FOR CMM INSPECTED PARTS

The following example demonstrates the proper method of reporting inspection results for CMM inspected parts. A drawing must be "ballooned" to indicate where data points were inspected to ensure compliance to the dimensional call-out. If a drawing is not available, then a pictorial representation of the part should be used. A description of the inspection results should also be included by each dimensional call-out which was out of spec. For example, Trim line checks low from .845 to 1.147.

Data points from the CMM printout or data checksheet must be referenced on the drawing/pictorial to indicate which data points were used to verify compliance to the dimensional call-out in question. For example, reference points 31-34. Additionally, a check mark- must be placed on the drawing/pictorial, next to reference points, when results are, within specification. Any features which were not inspected on the CNINI should have actual measurements recorded via the check drawing, method per the Pre-Prototype & Production Part Approval Process. For example, 4.99 DIA per gage pin.

The part pictured below is used to demonstrate the proper method of reporting inspection results for a surface, trim line, and hole, and is not intended to represent a complete dimensional inspection report.



	NOMINAL	ACTUAL	DISCREPANCY	TOL	OUT OF TOL.
20	L 3208.258 W 769.988 H 489.000	486.866	-2.134	+/- 1.0	-1.134
21	L 3216.408 W 719.988 H 489.000	487.112	-1.898	+/- 1.0	-0.898
22	L 3250.000 W 894.520 H 489.000	489.913	-2.087	+/- 1.0	-1.087
23	L 3350.000 W 832.850 H 489.000	486.580	-2.440	+/- 1.0	-1.440
24	L 3393.410 W 720.000 H 489.000	488.853	-2.147	+/- 1.0	-1.147
25	L 3402.730 W 770.000 H 489.000	487.186	-1.854	+/- 1.0	-0.854
31	L 3385.770 W 788.958 H 825.000	788.852	.108	+/- 1.0	---
32	L 3386.835 W 788.195 H 825.000	788.210	.015	+/- 1.0	---
33	L 3431.107 W 711.767 H 1025.000	711.823	.144	+/- 1.0	---
34	L 3435.187 W 683.640 H 1125.000	683.427	.213	+/- 1.0	---
CIR1 = GEOMETRIC / CIRCLE; XYZPL MANUAL/; 4 PTS. TAKEN PRINT_OPTION/AXES: XYZ					
43	L 3315.188 W 711.365 H 725.220	3315.210 711.421 725.305	.012 .028 .085	---	---

- = CROSS CAR SURFACE LOC. BETWEEN LINES CL & CJ
- = BOTTOM TRIM EDGE
- = HOLE LOCATION