

Policy

Per Tachi-S Purchase order, a supplier is requested to submit PSW and inspection data with the supplier prototype parts.

The objective of the Parts Submission Warrant (PSW) Process is to document the quality of the parts being supplied to Tachi-S Engineering. Quality is defined as the degree to which Tachi-S requirements are met. This includes:

- Actual physical dimensions
- Available test data
- Control of processes used to make parts (i.e. welding, plastics processing, etc.)
- Material selection process

Parts certification is required for all parts being used for a scheduled prototype build program.

It is not required for subsequent mass production pilots being built for Tachi-S or its subsidiaries or, unless requested, special order parts.

Parts Submission: The PSW requires appropriate documentation be submitted when parts are shipped to Tachi-S. The object is to document the quality of the supplied parts and avoid potential questions that may arise during evaluation of prototype vehicles. On multiple shipment Lots, documentation is to be sent only when first shipment is sent.

Complete documentation includes:

1. **Page 1** – Parts Submission Warrant (PSW) including all Tachi-S requirements are met. (Cover Document)
Warrant must include:
 - a. Supplier name
 - b. Part name and number
 - c. Actual single part weight¹ and base material thickness. (Required for potential weight control efforts and as a reference for crash test evaluation.)
 - d. Certification that parts are or are not to print². (Drawing Deviation Request (DDR) required when part or material does not meet identified specifications.)
2. **Page 2/3** – All inspection and test data for the parts in question³. Use supplied data sheet or equivalent. Be sure to indicate measurement method and include:
 - a. Unless otherwise specified, mounting and interface points.
 - b. “Data Map” or “Bubble Diagram” that shows inspection points.
 - c. Digital pictures of measurement setup / method / equipment used.

¹ The weight for a part may be determined either by weighing a single sample or by weighing a group of parts and dividing by the number of parts in the sample. The supplier must document the method used on the Part Submission Warrant.

² A supplier should be aware that when there is a “conflict” between Tachi-S models (3D) and 2D data regarding dimensional requirements, 2D would take precedent.

³ Supplier should tag or otherwise identify samples that were measured as part of the submission process.

3. **Other** – Fabrication Process Certification. This includes:
 - a. Weld certification checks or
 - b. Process control data for plastic parts and components or
 - c. Metallurgical analysis of cast parts.

Supplier should use whatever data sheet they feel appropriate for their operation.

4. Visual Characteristics Checklist (optional)
5. A **“Drawing Deviation Request” (DDR)** that identifies any characteristics that do not meet Tachi-S requirements. (Required to show all non-spec. conditions that exist but are usable for intended application.) The DDR document should include the following:
 - a. What is being deviated – Be specific and include actual measurements.
 - b. Why will Tachi-S requirements not be met?
 - c. How many parts will be deviated? Do not use terms such as “all” or “entire build”. Indicate how many parts will be identified.
 - d. What are the countermeasures that will be put in place that will prevent any additional out of specification situation for the next build and or mass production?

A “Parts Warrant” package is required each time tooling for an individual part is set up and run and after the implementation of any countermeasure efforts.⁴ **Submissions are to be sent electronically to the Tachi-S Quality Department at T.Kralik@tachi-s.com and/or S.Hamilton@tachi-s.com at the time parts are shipped.**

Note:

Data must include critical to quality characteristics that impact “fit and function” of the parts in question. **Unless specified by commodity requirements or pre agreed to “red pen meetings”, all mounting and interface dimensions must be included. How were parts verified OK?**

The data included for the PSW should be for the first piece assembled or fabricated. In addition, data should be taken (but not submitted) for additional parts built for the order. If problems do occur then the data should be made available to Tachi-S.

Additional data is to be kept at the supplier’s location for a minimum of one year (or in accordance with the supplier’s record retention procedures) and is to be provided to Tachi-S upon request.

⁴ In these cases, only changed items need to be covered.

Suggested Inspection Table

| Order Size | Suggested Parts Inspection |
|------------|----------------------------|
| 1 - 10 | 1, 3, Last Part |
| 11 - 20 | 1, 7, 12, LP |
| 21 - 30 | 1, 8, 12, 18, LP |
| 31 - 40 | 1, 10, 20, 30, LP |
| 41 - 50 | 1, 10, 25, 38, LP |
| > 50 | 1, 10, 25, 40, LP |

Drawing Deviation Request (DDR) The DDR serves to notify all parties that there is a known part discrepancy and that a “work around” may be required.

A supplier is to request a deviation when their initial inspection or evaluation indicates an out of specification condition exists that cannot be corrected prior to parts shipment. Tachi-S will initiate a DDR when timing or other considerations require that drawing intent may be compromised due to tooling constraints, “child part” availability, etc. The DDR document shall indicate the following data:

- a. **What** is being deviated? – Be specific and include actual measurements.
- b. **Why** will Tachi-S requirements not be met?
- c. **How many parts** will be deviated? Do not use terms like “all” or “entire build”. Indicate how parts will be identified.
- d. **What are the countermeasures** that will be put in place that will prevent any additional out of spec situations for the next build and or mass production?
- e. Any pre-agreed to situations that have been approved by design activities.

A DDR is to be submitted electronically to the Tachi-S Buyer as soon as the concern is identified. Include a signed Tachi-S approved copy of the DDR with the PSW package when parts are sent. Such conditions will not be counted as defects during any subsequent inspection.

Parts Returns: Rejected material returned to a supplier shall be tagged with a “Rejected Parts Return” tag. The tag shall be filled out by the Tachi-S Quality department and affixed to the part. The part number, PO number and quantity returned shall be indicated. The supplier shall rework, re-inspect and return material to Tachi-S Quality. Tachi-S Quality shall verify changes and release material as OK to build.

Rejected parts shall either be returned to the supplier at their expense or, if agreed upon, disposed of by Tachi-S.

Guidelines for Parts Submission Warrant

In order to ensure that your data is received and processed in a timely and appropriate manner, we appreciate your diligence in following the listed guidelines.

1. **Submit only one PSW per e-mail.** For document recovery and recognition, submit only one PSW per e-mail. The purchase order number in the “Subject” line of the e-mail is the tracking mechanism and, therefore, the PSW and data must be e-mailed separately for each PO number.
2. **E-Mail “Subject” should read as follows:**
 - PSW: <Part Number>, <PO Number>, <Supplier Name>
 - When sending a signed DDR use:
DDR: <Part Number>, <PO Number>, <Supplier Name>
3. **Unless specifically requested, PSW data for mass productions parts are not required.** A mass production part will be identified as such by Tachi-S and a determination by the program team as to whether the parts need additional quality measurements.
4. **PSW documentation must include the following:**
 - a. PSW cover sheet
 - b. Inspection data
 - c. Data “map” (or “bubble” diagram) showing where inspection points were taken.
 - d. Digital photos showing measurement setup / method / equipment used.
 - e. Process Control data for welding and/or plastic parts fabrication and/or casting process.
 - f. A Drawing Deviation Request (DDR) when parts are not meeting drawing specifications. These should be “pre agreed” to with Tachi-S.

Please include copies of all inspection data with actual parts.