The Toro Company

Supplier Quality Manual

COMMITMENT TO QUALITY

The Toro Company is committed to providing quality products and services that are safe, meet applicable requirements and exceed customer expectations.

TITLE: TTC Supplier Quality Manual

DOCUMENT ID: MN-0002
REVISION LEVEL: B
REVISION DATE 01/31/2024
EFFECTIVE DATE: 01/31/2024

About The Toro Company

With roots dating back to 1914, The Toro Company was built on a tradition of quality and caring relationships. Today, the company is a leading worldwide provider of innovative solutions for the outdoor environment including turf and landscape maintenance, snow and ice management, underground utility construction, rental and specialty construction, and irrigation and outdoor lighting solutions.

Through a strong network of professional distributors, dealers, rental stores and retailers in more than 125 countries, we proudly offer a wide range of products across a family of global brands to help golf courses, professional contractors, underground construction professionals, groundskeepers, agricultural growers, rental companies, government and educational institutions, and homeowners – in addition to many leading sports venues and historic sites around the world.

Introduction

The Toro Company (TTC) is a customer-focused and process driven company. This Supplier Quality Manual was developed and launched to provide requirements and expectations to any supplier providing products and services to TTC.

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1.0 SCOPE

The requirements of this document apply to all suppliers that furnish product, material, processes, or product related services to TTC as a contractual requirement regardless of Supplier's industry, regulatory accreditation, or certification status, and each Supplier shall be responsible for ensuring that all members of its supply chain comply with the requirements set forth herein.

2.0 NORMATIVE REFERENCES

It is the responsibility of the Supplier to obtain the latest revisions of all documents specified by this manual. These documents include, but may not be limited to, the following:

Document	**Title**
FR-0129	TTC PPAP Part Submission Warranty (PSW)
FR-0130	TTC PPAP Form
FR-0132	TTC Supplier Deviation From Specification (DFS) Form
FR-0133	Application Review Form

3.0 TERMS AND DEFINITIONS

3.1 Application Review

An application review is a process initiated during the design and discovery stage of the development cycle, product redesigns, or transfer of production to a new supplier. This review is intended to generate discussions between TTC and the supplier regarding proper application of the supplier's product to identify / evaluate the potential major failure modes and generate suggestions to improve the design. Input may include recommendations on design changes, material changes, clarification on appropriate usage or limitations on the application of the supplier's component.

3.2 Deviation from Specification (DFS)

A deviation from specification is used any time a component or product does not meet the agreed upon specification and the supplier feels the part or product will still meet the intended function. The process is established to ensure proper review and approval prior to accepting the deviation. During the review, the appropriate personnel ensure risk to fit, form or function is mitigated to ensure customer satisfaction. The DFS request should be submitted as early as possible to the appropriate buyer and/or supplier quality engineer (SQE) to allow adequate time for review. If approved, the DFS will be limited to a specific time period or quantity. Typically, a corrective action request will accompany all DFS approvals.

3.3 Supplier Development

Supplier Development is a process established to ensure processes are capable and in control. This process is a joint effort between TTC and the supplier to ensure the highest level of quality, delivery, and business process performance.

3.4 Quality Records

Records established to provide evidence of conformity to requirements, and the effective operation of the Quality Management System (QMS).

4.0 QUALITY MANAGEMENT SYSTEM (QMS)

4.1 General Requirements

4.1.1. Suppliers shall ensure quality at the source by implementing effective controls in their operations and driving controls throughout their supply chain.

4.1.1.1. Supplier shall take necessary corrective actions for any escape that impacts TTC operations or its customer.

4.1.1.2. For any significant event TTC shall consider some or all the following actions:

- Restricted Status – Denial of supplier conference room, no new business opportunities
- RCCM Corrective Action
- Presentation on site at TTC of the Corrective Action Plan to assure permanent resolution
- Review of the supplier's process failures (i.e., Change Control, Contract Review, Process Controls, etc.)
- Accountability & Recovery, via Warranty Agreement or other means making TTC whole for losses incurred. This may include but not limited to supplier on-site support for inspection, containment or rework, or compensation to TTC for the cost of poor quality
- Controlled Shipment (Phase 1: agreed upon control plan with regular submission of inspection / test results, Phase 2: Source inspection at the suppliers' expense) Supplier will be moved off Restricted/Controlled shipment in 'X' months if above are effectively addressed & performance meets TTC expectations.
- Validation of implemented actions & key processes
- Assurance the supplier has flowed down these requirements to Tier 2, 3, etc. as applicable.

4.1.2. Suppliers shall establish, implement, maintain, and continually improve a Quality Management System (QMS) compliant to ISO 9001 and documented to the extent necessary to assure the quality of products produced.

4.1.3. Suppliers shall notify TTC prior to any change in process, component, or manufacturing location that may impact the fit, form, function, reliability, and/or regulatory compliance. Qualification documents shall accompany this notification (i.e., PPAP and appropriate test records)

4.1.4. Suppliers shall make TTC financially whole whenever TTC must rework, repair, or replace product, reschedule production, or miss retail due to a supplier's error.

4.1.5. TTC has a Zero Tolerance for a repeat of major events. Supplier shall ensure:

4.1.5.1. They demonstrate a sense of urgency, engagement, and ownership;

4.1.5.2. Permanent resolution of issues;

4.1.5.3. No other major events;

4.1.5.4. If necessary, written agreement for a Quality protection plan (i.e., Controlled Shipment, TTC SQE on site, etc.)

4.1.6. Supplier shall participate when selected for supplier development activities, application reviews, design reviews, product realization reviews, general performance reviews, or any other request.

4.2 Communication with TTC

4.2.1. General Communication Requirements

4.2.1.1. Supplier shall only accept agreements and instructions in writing (i.e., purchase order, purchase agreement, etc.). Verbal agreements and instructions shall not be construed as TTC approval or authorization.

4.2.1.2. Supplier shall have the capability to communicate in English including following documents unless otherwise approved by TTC:

- Quality Manual
- First level Quality procedures
- Process documentation requiring TTC approval
- All formal communication

4.2.1.3. Supplier shall notify TTC in writing prior to implementing any changes that may affect quality and/or product fit, form, of function as required by TTC (i.e., a change in design characteristic, manufacturing or assembly process, inspection method, tooling, materials, etc.)

4.2.1.4. Supplier shall notify TTC prior to any planned work transfers (i.e., from one supplier facility to another, from the supplier to a member of its supply chain, from one member of its supply chain to another). Prior approval shall be obtained when required by TTC.

4.2.1.5. Supplier shall notify TTC of any changes in its certification, registration, or accreditation.

4.2.1.6. TTC has the right of entry into a supplier's facility or that of their subcontractors, suppliers and/or business partners. Access shall be provided to quality system documentation, quality records as well as the ability to conduct audits, verify product and processes.

4.2.1.7. When a supplier is notified of a quality escape, the supplier shall respond accordingly by the required due date. If the Supplier is unable to determine corrective action by the due date, they shall notify TTC with justification and request an extension.

- Initial containment shall be completed and communicated within 24 hours
- If an RMA is requested, the number shall be provided within 48 hours.

4.2.2. Methods of Communication

4.2.2.1. Supplier shall notify TTC using FR-0132 when requesting a deviation from specification.

4.2.2.2. Supplier shall complete all applicable sections of FR-0133 when conducting an Application Review, unless agreed upon by TTC.

4.3 Compliance and Requirements Flow Down

4.3.1. Supplier shall comply with the latest revisions of this manual, and other documents referenced herein.

4.3.2. Supplier shall reduce process risk and variation through Design Failure Mode and Effects Analysis (DFMEA), Process Failure Mode and Effects Analysis (PFMEA), and control plans.

4.4 Documented Information

4.4.1. Changes to documented information (i.e., work instructions, travelers, routers, test reports, shipping documents, etc.) shall be recorded, dated, and traceable to a qualified person making the change (i.e., name, signature, stamp, electronic signature) with a permanent marking method and the original information being legible and retrievable after the change.

4.4.2. Supplier shall keep all TTC-related quality records for at least ten years unless otherwise specified.

4.5 Control of Nonconforming Product

4.5.1. Supplier shall have a root cause and corrective action process consistent with 8D methodology.

4.5.2. Supplier shall inform TTC within 24 hours of discovery of suspect nonconforming product that has been shipped.

4.5.3. All product rework shall have documented work instructions.

4.5.4. Supplier shall have a documented process in place for implementing corrective actions to ensure 100% over-inspection (i.e., additional independent inspection) is performed of the non-conforming characteristics for a minimum of the next three consecutive manufacturing lots unless otherwise specified by TTC.

5.0 PRODUCTION PLANNING AND CONTROL

5.1 Management of Supply Chain

5.1.1. Supplier shall ensure that members of its supply chain are compliant with the applicable requirements of this manual.

5.2 Product Process Validation

5.2.1 Advanced (Supplier) Quality Planning Requirements

5.2.1.1. Supplier shall meet TTC's requirements for Advanced Quality Planning (sometimes referred to as Supplier Quality Planning – SQP) described below, including the TTC Production Part Approval Process (PPAP) Process.

5.2.1.2. Supplier Quality requirements are communicated to the supplier via methods such as:

- Participation in a joint quality planning event;
- Requirements listed on TTC's PPAP form;
- Or by other means such as email request.

5.2.1.3. The Quality Planning process is driven by the identification of key components and when necessary, the identification of Key Characteristics (KC) on part prints.

5.2.1.4. TTC may request the additional elements, above those listed for the TTC PPAP, as part of the Supplier's Advanced Quality Plan submission, as applicable.

- Application Review
- Design Review
- Agreement on the methods for and the performance of part/process qualification process. TTC's minimum acceptable process capability index is a Cpk value of 1.33 for variables and 500 PPM or less for attributes.
- Agreement on Quality Acceptance Standards as needed (critical appearance issues, functional issues, reliability issues, etc.)
- Unique or special packaging requirements must be documented during the contract review and/or the quality planning process. When no special packaging requirements are defined the supplier shall select packaging methods that will prevent damage and/or deterioration during shipment. Shipping containers must meet carrier's specifications as published in the Uniform Freight Classification.

5.2.2 TTC Production Part Approval Process (PPAP)

5.2.2.1. Supplier shall implement the TTC Production Part Approval Process when invoked by drawing related documents, purchase order, or any other contractual requirement.

5.2.2.2. Supplier shall complete PPAP documentation regardless of TTC request and maintain as quality record.

5.2.2.3. Unless otherwise specified by TTC AQE or SQE, PPAP requirements default to Level 3. Suppliers unwilling or unable to supply required PPAP documents will have PPAP requirements default to PPAP Level 5 for an on-site PPAP review by TTC at the supplier. Suppliers unwilling or unable to provide PPAP documents may also be subject to additional actions, such as restricted business or supplier development programs.

5.2.2.4. Supplier shall follow AIAG (Automotive Industry Action Group) standard when completing PPAP.

Figure 1: PPAP Quality Plan Level Requirements

QPL Level	Description	1 - Verification Warrant	2 - Sample Part(s) / Product PPAP Part(s)	3 - Design Record	4 - Application Review	5 - TTC / Supplier print Change documents (DFS approval)	6 - TTC Engineering Approval (Special Approval Prior to 1st Shipment)	7 - Mfg Process Map/Flow Diagram	8 - PFMEA	9 - Control Plan	10 - MSA / GRR for KCC's & Special Characteristics	11 - ISIR / Dimensional Layout	12 - Material / Metallurgical / Functional Test Results (as appropriate)	13.1 - Capability Study (Mini)	13.2 - Capability Study (Full)	14 - Compliance Records (CoC, Material Cert's, etc.)	15 - Appearance Approval Report	16 - Master Sample Parts
0	PSW Only	S																
1	PSW + PPAP Part Samples	S	S	R				R	R	R	R	R	R	R				
2	PSW + PPAP Part Samples + Data (Limited)	S	S	R	R	A	A	R	R	R	R	S	R	S		R	A	R
3	PSW + PPAP Part Samples + Data (Full)	S	S	R	S	A	A	S	S	S	S	S	S	N/A	S	S	A	R
4	PSW + PPAP Part Samples + Data + Special Requirements	S	S	R	S	A	A	S	S	S	S	S	S	N/A	S	S	A	R
5	PSW + PPAP Part Samples + On Site Review at Supplier's MFG Site	S	S	R	S	A	A	S	S	S	S	S	S	N/A	S	S	A	R
	S = Submission Requirement as part of the PPAP Package																	
	R = Documentation retained at supplier, provided upon **Request**																	
	A = Required if **Applicable** (at TTC discretion)																	

5.3 Monitoring and Measurement of Equipment

5.3.1. Supplier's control of monitoring and measuring equipment shall meet certified calibration standards (i.e., ISO 10012, ISO 17025, or ANSI/NCSL Z540.3., etc.)

5.3.2. Supplier shall document an impact review whenever monitoring and measuring equipment is identified with a Significant-Out-Of-Tolerance condition (an out of tolerance condition exceeding 25% of the product tolerance or when measured error of the monitoring and measuring equipment is greater than two times the calibration tolerance when product tolerance is not known) and notify TTC within 24 hours of discovery if impacted product has been shipped.

5.4 Monitoring and Measurement of Product

Supplier shall select monitoring and measuring equipment with a minimum accuracy ratio or 4 to 1 (product tolerance to equipment tolerance) unless otherwise specified.

5.4.1 Sampling Requirements

5.4.1.2 Supplier shall establish an acceptance sampling plan referencing Figure 1 with a minimum Acceptable Quality Level (AQL) of 2.5% to ensure conformance to requirements.

Figure 2: Attribute, Accept on Zero (C=0) Sampling Plan

Acceptable Quality Level (AQL) Percent																
Lot Size	0.010	0.02	0.03	0.040	0.07	0.10	0.15	0.25	0.40	0.65	1.0	1.5	2.5	4.0	6.5	10
2-8	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	5	3	3	3
9-15	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	13	8	5	3	3	3
16-25	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	20	13	8	5	3	3	3
26-50	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	32	20	13	8	7	7	5	3
51-90	ALL	ALL	ALL	ALL	ALL	ALL	80	50	32	20	13	11	11	8	5	4
91-150	ALL	ALL	ALL	ALL	ALL	125	80	50	32	20	13	13	11	9	6	5
151-280	ALL	ALL	ALL	ALL	200	125	80	50	32	29	29	19	13	10	7	6
281-500	ALL	ALL	ALL	315	200	125	80	50	48	47	29	21	16	11	9	7
501-1200	ALL	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8
1201-3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9
3201-10000	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9
10001-35000	1250	800	500	315	300	294	189	135	108	77	60	46	35	29	15	9
35001-150000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9
150001-500000	1250	800	750	715	476	345	270	200	156	119	90	64	40	29	15	9
500001-Over	1250	1200	1112	715	556	435	303	244	189	143	102	64	40	29	15	9

NOTES:
(1) ALL indicates that the entire lot must be inspected
(2) **Critical** characteristics require 100% inspection
(3) **Major** characteristics require 0.65% AQL unless otherwise specified
(4) **Minor** characteristics require 2.5% AQL unless otherwise specified

5.4.1.3 Supplier shall maintain records of sampling usage and documentation shall be available and subject to review by TTC.

5.4.1.4Inspection personnel shall be trained in the application of sampling methods.

5.4.1.5 All plans shall have a “zero acceptance” number. The lot shall be rejected if a nonconformance is discovered in the sample. If a nonconformance is found in the sample, supplier shall inspect all pieces in the lot and remove all nonconforming pieces.

5.4.1.6 Sampling inspection shall not be permitted for characteristics affected by repair and rework.

5.4.1.7 Samples shall be randomly selected and representative of the population. No additions or exchanges may be made to the original sample.

5.4.1.8 The lot must be homogeneous and produced under the same conditions and the same time. If not, the items shall be segregated and treated as a separate lot.

5.4.1.9 Critical characteristics must be inspected 100%, unless otherwise specified.

5.4.1.10 For lots known to contain nonconformances during the production process, the nonconforming pieces shall be segregated.

5.4.1.11 When TTC detects a nonconformance not reported by the supplier or a TTC’s audit determines incorrect application of sampling, previous and/or subsequent lots shall be inspected as specified by TTC.

Revision History

REV	DATE	SUMMARY OF CHANGE	SECTION	PARAGRAPH	CREATED BY
A	05/23/2023	Initial Creation	ALL	ALL	Pat Hoover, Dale Lorge & Jacob Youngerberg
B	01/31/2024	Updated Toro logo on first page to match new branding requirements Changed Purpose, Mission, Vision, Guiding Principles to match new format	NA	NA	Jacob Youngerberg