

**_Quality
Assurance
Agreement**

Contractor

Quality assurance agreement

Preamble

As national and international competition continues to grow, quality has become a decisive factor.

The PRETTL production process extensively utilizes finished components. The flawless quality and reliability of these products significantly influences the quality of the resulting items. In order for these standards to be sustained over the middle and longer term, the quality of products and services must be ensured in conjunction with competent, reliable and quality-conscious partners.

The cornerstones of quality awareness are:

- | | |
|--------------------------------------|---|
| QA | i.e. systematic, preliminary forward-planning risk assessments of product and process (the idea being to prevent rather than check for defects) |
| • Statistical process control | i.e. constant monitoring of quality level and immediate intervention where necessary |
| • Continuous | i.e. Quality and productivity improvement process must be continuously improved if profitability and market position are to be secured. |

The quality of goods and services as well as the competencies and reliability of our contractors, are therefore essential factors in the decision to purchase from PRETTL.

1 Scope

This agreement forms an integral part of every PRETTL supply contract.

Contractual items are detailed individually in the appendix.

2 Contractor's quality management system

The contractor undertakes to implement and maintain a timely and comprehensive QM system based on the international standard ISO 9001 / 2000 or similar, e.g. TS 16949, VDA 6.1, aiming to achieve zero-defect quality and to bring about continuous improvement in all areas of performance.

2.1 Sub-contractor's quality management system

Likewise, the contractor obligates its sub-contractors to implement, comprehensively apply and maintain a similar QM system, aiming to guarantee flawless/contractually compliant quality of purchased parts.

2.2 Audit

Should the occasion arise, the contractor shall allow PRETTL to conduct audits in order to establish whether its QA measures meet PRETTL's requirements. These may take the form of system, process or product audits, and shall be announced in good time.

PRETTL shall notify the contractor of audit results in writing. Should PRETTL consider that corrective measures are required, the contractor shall undertake to draw up an action plan at its earliest convenience, to implement it in due time, and to inform PRETTL thereof.

Certificates and audits by other customers may be recognized.

2.3 Technical documents

Quality assessment is based on the following technical documents:

- Drawings, technical specifications, requirements and functional specifications, inspection and packaging stipulations, industrial standards, customer-specific requirements and other provisions.

The contractor shall obtain from PRETTL the latest version of technical documents and shall ensure, either through internal measures or where appropriate, via its sub-contractor, that products are manufactured exclusively in accordance with the latest revision status.

Modifications requested by the contractor shall require PRETTL's written approval.

2.4 Quality assurance in the pilot production phase

Production capacity assessment

Prior to the proposal submittal, the contractor shall ascertain whether the component can be produced, based on the technical documents available.

- The stipulated number of items can be produced in the planned production facilities.
- All technical stipulations must conform to the specified minimum capacity (see also process capacity).
- Measures for improving production capacity and quality may be proposed by the contractor. However, they shall still require PRETTL's written approval prior to being introduced/implemented.

By submitting the proposal, the contractor expressly confirms that the goods can be manufactured within the scope of the agreement.

Furthermore, and prior to any of the following:

- Replacement of raw material / material
- (including by sub-contractors)
- Replacement of sub-contractors
- Significant changes to the production process,

e.g. Turning: 1 shaft TM more than one shaft
Spraying: single tool TM multiple tool
Press Moulding TM Injection Moulding
Soldering TM Welding

- Modifications to production facilities,
e.g. Replacement of tool parts
- Change in test methods, testing accuracy, testing facilities,
- Relocation of production sites

the contractor undertakes to obtain PRETTL's consent and provide the requisite proof of quality.

All aforementioned changes made to products/processes shall be logged in the product maintenance history.

In the event that commitments such as quality criteria, deadlines or supply quantities cannot be met or fulfilled in a timely manner, PRETTL shall be informed immediately.

Design/process FMEA


Risk assessment in the form of design/process FMEA is required when a contractor's products are based on its own design drawings. In addition, a process FMEA must be performed.

For risk priority numbers exceeding 100, remedial measures must be planned and implemented. (see VDA vol. 4, section 2).

QM plan

The contractor shall draw up a monitoring plan (flow-chart / QM plan) showing the individually planned operation/test sequences.

Determination of process capacity

The contractor shall conduct process capacity analyses for all characteristics indicated by the  symbol and having a particular effect on function or safety, or having an important quality-determining property. These analyses shall be based on VDA vol. 4, section 1.

Provisional process capacity is achieved when

$$C_m, P_p, C_p / C_{mk}, P_{pk}; C_{pk} > 1.67$$

Long-term process capacity is achieved when

$$C_p / C_{pk} > 1.67$$

A process capacity declaration is only valid if the analysis shows that the process is effectively controlled!

Packaging

Prior to the start of the series, packaging arrangements shall be sorted out with the PRETTL procurement department. Packaging instructions shall be stipulated in writing.

Process audit

Concomitantly to the first production lot, serial conditions shall be fully met if the contractor performs a combined product/process audit.

The objective is to:

- Audit all planned QA measures in terms of implementation / effectiveness, from receipt of goods through to dispatch
- Investigate/establish capacity for all serial production facilities
- Conduct initial sampling

Production process and product release

Prior to PRETTL's acceptance of the product series, product-series delivery for "new"/"newly delivered"/"modified" products must have been approved.

If the product series (first approval) has been approved by the "end" customer, PRETTL shall be satisfied if the contractor forwards this approval (PPAP cover sheet) to PRETTL quality management.

Otherwise, initial samples with complete PPAP shall be submitted.

(Basis: VDA, volume 2, bill 3501-3507)

i.e.- PPAP cover sheet

- test report, 3 sections / moulding post, compatible
- with measuring log, indicating provisionally
- achieved process capacity > 1.67
- material certificate / acceptance test certificate
- technical datasheet
- if necessary a declaration of conformity

Should additional specifications be stipulated for products being supplied, e.g. service life, temperature resistance, corrosion control, etc., these shall be confirmed by the appropriate tests.

Results of the aforementioned tests shall be submitted together with the PPAP.

If the contractor is unable to fulfil any of the required specifications, this shall be immediately notified in writing to the PRETTL quality management division!

Current customer-specific requirements also apply.

3 Product series quality assurance

3.1 Quality-assurance of goods supplied by sub-contractors

The contractor shall ensure that products supplied by its sub-contractors meet the agreed quality requirements. Fulfilment of these requirements shall also apply to sub-contractors.

3.2 Quality assurance of series production/test certificates

Appropriate methods such as statistical process control (SPC) shall be applied for the monitoring and control of the process. If no special agreements have been concluded with the contractor, **test/release certificates** shall be attached to the delivered goods, the content of which has been agreed upon with PRETTL quality management.

Goods shall be delivered in the agreed packaging, each packaging unit being identified in accordance with VDA-recommendation 4902.

If a modification has been completed, the first batch shall be identified separately.

As stipulated in 1., Delivery of modified products, "older versions of the product" may **no longer** be delivered.

3.3 Goods acceptance testing

PRETTL shall perform a limited, dynamic acceptance test focusing on statistical aspects. The aim is to obviate the need to perform an extensive acceptance test if quality is found to be satisfactory.

Testing accuracy can be determined from the sampling plan.

3.4 Delivery assessment system

The quality of accepted deliveries and products is assessed by the PRETTL procurement department. The contractor is informed of the results after the assessment or on an annual basis.

3.5 Deviations from specifications

If, during the performance of its own internal tests, the contractor finds that the product deviates from specifications, it may apply to the quality control function of the respective department for a waiver.

If the contractor suspects or confirms that its products are defective following delivery, the quality control function of the respective PRETTL department shall be immediately informed and presented with the relevant facts.

3.6 Complaints

If defects are found during the finishing stage, further to assembly problems, customer complaints or other checks, the contractor shall be immediately informed in writing.

After being apprized of the problem, the contractor shall undertake to immediately address the cause of failure or rectify failures during subsequent delivery.

Further requisite measures may include:

- Immediate replacement
- Return
- Sorting in situ (contractor/customer)
- Rework
- Processing at extra cost
- Scrapping

See PRETTL complaints form ref. PR 10/ 00022.

These measures/procedures shall be conveyed/stipulated by PRETTL in writing (fax/e-mail) and shall be answered by the contractor within 24 hours.

If no response is received from the contractor, PRETTL shall be entitled to initiate the appropriate/necessary measures.

In such an instance, PRETTL shall also be entitled to transfer all expenses arising from the complaint to the contractor, in accordance with the costs-by-cause principle.

Furthermore, PRETTL shall be entitled to charge the contractor a € 150 penalty for each justified complaint.

Faulty components shall be returned to the contractor within the agreed scope. The contractor undertakes to analyse each defect and to state its findings in an 8D-report. PRETTL shall be informed of these findings in writing, within 8 working days of the transfer.

3.7 Testing and measuring devices

The contractor shall ensure that it has access to the appropriate measuring and testing devices for the monitoring of all specification criteria and that it uses these devices.

Measuring and testing devices shall undergo capability tests (DIN 55350, section 13, DIN 1319 sections 3 & 4).

Measuring and testing devices shall be routinely and regularly checked in accordance with a written procedure (VDI / VDE / DGQ 2618, DIN ISO 10012, section 1, etc.).

4 Identification / Traceability

During the entire production process from the receipt of goods up to the time of dispatch, components and materials shall be handled and identified in such a way as to ensure that they cannot be mixed up or confused.

In the event of any guarantee cases arising, an adequate tracking system shall be set up for the purpose of tracing back and limiting the scope to one specific batch.

5 Specific archiving requirements

Stipulations of this kind shall be made in writing!

6 Product liability

Despite all efforts to ensure product quality, customers may nevertheless receive defective products. The contractor undertakes to assume product liability and take out recall insurance.

7 Quality meetings

Every year, at least one quality meeting shall be held in order for PRETTL to assess supply status. The aim of this meeting is to agree on and establish targets. Where appropriate, the contractor shall disclose any QA documents during this meeting. The necessity and scope of this disclosure are subject to prior agreement.

In the event of quality shortcomings, PRETTL reserves the right to convene a quality meeting with the contractor at its earliest convenience.

In the course of the meeting, both parties shall jointly draw up a list of measures that shall include PRETTL technical support where appropriate.

This Quality Assurance Agreement has Validation for the PRETTL Consolidated companies:

PRETTL Automotive Electric

Companies PRETTL GmbH Magnet- und Schaltertechnik
 PRETTL Molding Automotive Polska
 PRETTL Endüstri Türkei
 PRETTL Kabelkonfektion
 PRETTL Hungaria
 PRETTL Kabel Ukraine
 PRETTL Vertriebs GmbH
 Pannonia
 PRETTL do Brazil
 PRETTL Korea
 PRETTL Nordkorea
 PRETTL Electric Shanghai
 PRETTL Electric Greenville USA
 PRETTL Manufacturing Greenville USA
 Dpi Doshi PRETTL USA
 PRETTL de Mexico
 PRETTL Electric de Mexico
 PRETTL Electric del Bajio Mexico
 Behr PRETTL Mexico

PRETTL Automotive Metal Components

Companies PRETTL metal components
 PRETTL metal components Outsourcing
 BHG Ungarn
 Hungarostahl

PRETTL Automotive Mechatronics

Companies PRETTL Automotive Tschechien
 F & P, Slowakei
 PRETTL Kabeltechnik
 Cablerie Automobile Luso Marocaine
 PRETTL Lighting France
 PRETTL Adion
 PRETTL Adion Polska
 PRETTL Adion Portuguesa
 PRETTL Pannonplast

PRETTL Consumer

Companies BERNAL Torantriebe
 ENDRESS Elektrogerätebau
 Kirsch Energy Systems

PRETTL Electric

Companies PRETTL Elektronik Radeberg
 PRETTL Elektroniksysteme Radeberg
 PRETTL Elektronik Lübeck
 PRETTL Elektronik Tschechien
 PRETTL Elektronik Hungaria
 Lesswire
 REFU Elektronik

as well subsidiaries Companies.

Detailed explanation

QA AGREEMENT, as of 04 / 2009

VDA series, "Quality management in the automobile industry"

Volume 1: Components subject to record-keeping by
automobile manufacturers and their sub-contractors

Volume 2: Quality assurance of supplied goods

Volume 4: Section 1 and section 2:
Quality assurance prior to start of series

Volume 6: Section 1: QM system audit
Section 3: Process audit

VDA recommendation 4902, Version 4 "Identification"

Document references:

Verband der Automobilindustrie e.V. (VDA)
Westendstraße 61
D-60325 Frankfurt am Main

QUALITY ASSURANCE AGREEMENT

between

And the manufacturer (contractor)

PRETTL

Both parties hereby acknowledge that the content of the QA agreement shall be used by contractors as a basis for further cooperation.

.....
Place

.....
Date

.....
PRETTL

.....
Place

.....
Date

.....
Contractor _____

8 Product-specific appendix

The following has additionally been agreed upon by the parties:

As regards the production of the aforementioned components/component groups, the contractor undertakes to manufacture these in accordance with the currently valid stipulations, technical documents (drawings), specifications set out in these documents, industrial standards and legal provisions, etc. and to meet all internally defined requirements.

Any ambiguities or contradictions found in the documents shall be clarified with PRETTL or the end customer prior to production.

Quality control of the product series shall be performed by the contractor, as agreed with PRETTL/the end customer and as stipulated in writing within the scope of this agreement, on the basis of the contractor's internally valid QM plans applying to individual components/component groups.

In accordance with VDA provisions, the contractor shall inform PRETTL/the end customer in writing of any changes to these procedures, prior to serial production.

It shall obtain written approval where appropriate.

On the basis of this information, any repeat sampling conditions that may be deemed necessary shall be agreed upon and defined.

Within the scope of its product liability, the contractor shall archive the test results obtained from the agreed upon tests in reproducible form for the respective production lot / production time frame (min. 15 years).

Specific quality checks shall be performed on the actual goods to be delivered.

Individual characteristics shall be agreed upon in writing for specific individual components/component groups. See appendix.

Subject to prior notice and/or within the scope of product liability conditions, PRETTL may have recourse to this information.

The contractor undertakes to inform PRETTL of its test results at least once a year.

The conclusion of this agreement discharges the contractor from the partial transfer of inspection certificates, test certificates and other certifications for individual deliveries.

The contractor undertakes to identify batches clearly and visibly:

- Description:
- Part number:
- Modification status:
- Quantity:
- Batch number:

By referring to these markings, in association with the internal archiving/tracking system, the contractor shall – in the event of a complaint being raised by its customer with regard to individual deliveries – be able to trace any faults pertaining to production time, product batch, delivered quantity and delivery date.

Pfullingen, den

PRETTL Kabelkonfektion
Bollstr. 44
D-72793 Pfullingen

[Contractor:](#)

Procurement

/

Quality control

9 Contact

Contractor: GF

Technical dept

Procurement

QA
..... ..
..... ..

PRETTL: GF

Technical dept

Procurement

QA

ZQM
..... ..
..... ..

PPM agreement

between:

PRETTL

hereafter referred to as "PRETTL"

and

hereafter referred to as the "Contractor"

Validity period:

from 01/2009 to 01/2011

(if no validity period has been agreed upon, the agreement shall be valid for an unlimited period)

In the same way as PRETTL is obligated towards its customers, the contractor is obligated towards PRETTL to pursue a zero-defect target.

As an intermediate target and pending achievement of the zero-defect goal, PRETTL and the contractor have agreed on the following temporary error rate limits.

Lower deviations from the agreed PPM limits do not exonerate the contractor from its obligation to respond to any complaints arising within the agreed time frame, and to provide PRETTL with requested information in the form of an 8D report.

Furthermore, the contractor undertakes to implement and maintain a process of continuous improvement.

Scope:

Components - Description: Switching spring

Type - Part number: 1464.5.007

PPM limits:

The maximum error rate limit ⁽¹⁾ has been determined as follows:

As of 01/2009 : Maximum error rate limit 40 PPM

As of : Maximum error rate limit PPM

⁽¹⁾ Complaints following acceptance tests, production, customer complaints about new vehicles, Complaints for other reasons are distinguished.

Calculation method:

The PPM failure rate is calculated on the basis of the VDA and is defined as follows:

$$F = \frac{\text{Units which have caused a complaint (number of items) per time period}}{\text{Delivered units (number of items) per time period}} \times 1,000,000 \text{ [ppm]}$$

- The calculation is only applied to complaints for which the contractor is clearly responsible.
- It includes defective units / items, regardless of their complexity.
- Following an error analysis, the volume of quality complaints is adjusted by taking unjustified complaints into account.
- Indicated quantities relate to equivalent time periods.
- Where piece goods/tape goods are concerned, the calculated amount applies to full rolls, spools and reels.
- Error rate limits pertain to part numbers, but can also be brought down to contractor level.
- Logistical errors affecting the production process are also evaluated.
- Special cases are specifically processed and settled.

Information on quality results:

The contractor shall be informed in writing of the PPM error rate on a regular basis, at least once a year. The contractor shall receive a written warning if any deviations from the TARGET are detected.

Exceeding maximum error rate limits:

If the agreed error rate limits are exceeded, the contractor shall be requested to submit an action plan to the procurement department within the space of 2 weeks, formally describing the implementation of short-range remedial measures and providing evidence as to their degree of effectiveness.

Pfullingen, den

PRETTL Kabelkonfektion
Bollstr. 44
D-72793 Pfullingen

Contractor:

Procurement / Quality control