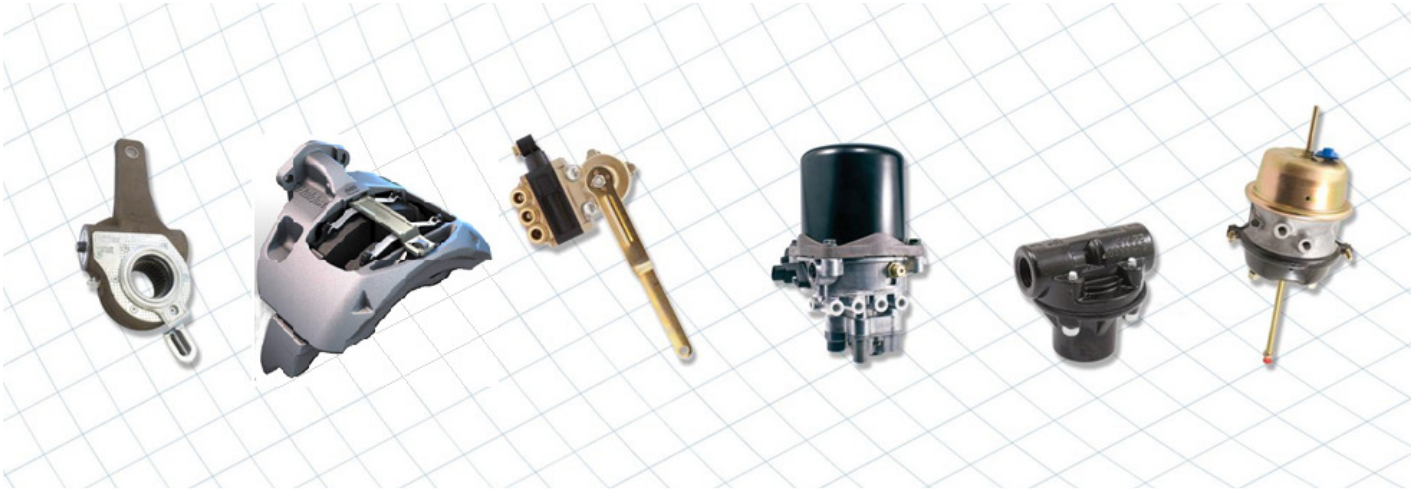
Supplier Quality Manual

Customer Specific Requirements

Haldex AB



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1. Introduction

1.1 Policy and Vision

It is the policy of Haldex AB to achieve a clear competitive advantage through continuous improvement in quality, service, delivery, and cost from our suppliers in the total supply chain.

It is the vision of Haldex AB that suppliers shall:

Do it Right the First Time	by planning, preparing, and being trained to supply quality products and services.
Do it Right Every Time	by assuring consistent quality products and services through addressing all concerns.
Continually Improve	by proactively improving the quality and value of products and services.

1.2 Purpose

This document describes the fundamental quality and environmental system requirements for all suppliers to Haldex AB, its subsidiaries and affiliates, irrespective of their global location. The basis of Haldex ability to compete is the high quality of the product and services. Guaranteeing a high and uniform quality level assures customer satisfaction and is also a prerequisite for mutual survival.

Haldex expect our suppliers to be committed to a zero-defect approach and to demonstrate that commitment through on-time delivery of fully conforming products, rigorous adherence to defined processes and requirements, and active participation in value improvement. We require the effective application of quality management systems, including effective Advanced Product Quality Planning (APQP) and corrective/preventive action processes. We will maintain a constant focus on continuous improvement of both ourselves and each supplier. We will measure and monitor performance, rewarding those who exceed our expectations.

1.3 Scope

This manual applies to all external direct material/component suppliers, including sub- tier special process suppliers, i.e., heat treat, coating, plating, etc. This manual applies to indirect material/component suppliers only when it is required by a Haldex Purchase Order.

1.4 Authorized SQM Haldex Representative

The authorized Haldex representative regarding the SQM is the assigned member of the Supplier Development and Supplier Quality Assurance Organization.

1.5 Haldex Supplier Portal

The Haldex Supplier Portal is available at Haldex.com under “Suppliers”: https://www.haldex.com/en/int/supplier/
The documents in section “Supplier Documents” are mandatory for conducting business with Haldex. Compliance to these documents is required.

2. General Requirements

Haldex requirements stated in this document are general requirements. Requirements for specific parts are specified in product specifications and purchase order documents.

2.1 Quality System Requirements

Haldex requires its suppliers to 3rd party certified to the latest revision of IATF 16949 by an IATF-recognized certification body or have a plan in place to achieve this by October 2019.

2.1.1 Requirements towards tier 2 suppliers

The method of communicating Haldex requirements to sub-suppliers has to be in line with the Haldex Supply Agreement between the supplier and Haldex in order to prevent revealing of confidential information to unauthorized parties.

Haldex's suppliers are responsible to communicate and ensure conformity to Haldex's requirements throughout the entire supplier chain.

Suppliers to Haldex are expected to use PPAP as the product approval process for parts they purchase from sub-suppliers, unless otherwise specified by Haldex authorized representative.

Sub-suppliers to 2nd tier supplier (i.e. Tier 3...Tier n-suppliers), shall use a quality assurance system to secure parts to their customer guaranteeing fulfillment of technical specifications.

Any tooling, test equipment, gages etc. which belong to Haldex, the supplier shall excise care with them and include the control of them within the supplier's own quality management system.

Haldex reserves the right to directly assess second-tier processes which have significant impact on product quality.

In case of Haldex direct appointed sub-supplier, the supplier shall still ensure full responsibility of the control of the supplier chain, unless specific agreements defined by the Haldex Supply Agreement.

2.2 Environmental Requirements

2.2.1 Environmental Management System

All Haldex suppliers shall comply with the latest version of ISO 14001.

2.2.2 REACH

All Haldex suppliers shall comply with the latest version of EU Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (EC) 1907/2006.

2.2.3 RoHS

All Haldex suppliers shall comply with the latest version of RoHS Restriction of Hazardous Substances (RoHS) – EU Directive 2002/95/EC, Directive 2011/65/EU, and Directive 2015/863

2.2.4 California Proposition 65

All Haldex suppliers shall comply with the prevailing version of Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1986 (California Proposition 65.

2.2.5 IMDS

All suppliers shall sign up for IMDS (International Material Data System) and implement a process to report MDS (Material Data Sheet). If requested, the supplier shall register the part or substance in the International Material Data System, IMDS, before any delivery to Haldex. For further information refer to chapter **11** reference [B].

The supplier must meet the Global Automotive Declarable Substance List (GADSL) www.gadsl.org requirements regarding chemicals or materials used in products and/or services. Any presence of listed chemicals must be accounted for and the supplier must initiate phase-out plans.

2.3 Sustainable Business and Code of Conduct Policy

Haldex will use appropriate methods to assess and choose suppliers based on their ability to meet the requirements of Haldex's "Code of Conduct for our Suppliers" and other social principles.

To become a supplier to Haldex, the supplier must conduct and pass the Self-Assessment- Questionnaire about Corporate Social Responsibility. Haldex uses a 3rd party to provide the evaluation service of the assessment

2.4 Applicable Statutory and Regulatory Requirements

The supplier shall ensure the supplier chain is in compliance with all applicable statutory and regulatory requirements where Haldex operates including country of receipt, country of shipment, and any Haldex customer identified country of destination provided. Haldex will provide this information to the supplier during the initial quoting and quality planning processes. The supplier is responsible to

ensure their supply chain is also in compliance.

2.5 Conflict Mineral Requirements

Haldex requires its suppliers to implement a policy that addresses the sourcing of conflict minerals within its supply chain as a socially responsible supplier to Haldex; failure to do so will result in Haldex to remedy the concerns which will include re-evaluating supplier affiliations.

As a part of Haldex' Sourcing Process, potential suppliers are requested to complete the CFSI public Conflict Mineral Reporting Template (CMRT) and submit to Haldex for verification.

All current supplier must annually update the CMRT and submit it to Haldex for re-verification or when contacted by the Haldex compliance team for resubmission. Suppliers that have not submitted a current CMRT will not be allowed to supply to Haldex.

2.6 Continuity Planning

Contingency planning shall be according the latest version of IATF 16949.

In addition to the preparation of contingency plans, the supplier shall perform a thorough and systematic risk analysis of (business) interruption, also called Business Continuity Planning (BCP). It identifies risk areas, creates solutions, implements improvements, performs acceptance tests and maintenance of the BCP. The aim is to map and prevent unexpected delivery stops to Haldex.

2.7 Special Characteristics

2.7.1 Special Characteristic Definition:

A product characteristic or manufacturing process parameter that can affect safety or compliance with regulations, fit, function, performance, or subsequent processing of product.

Safety: A special characteristic related to those product requirements (dimensions, specifications, tests or process parameters) which can affect compliance with government regulations, safe vehicle/product function, or endanger any operator of manufacturing and/or assembly processes.

Significant: A special characteristic that identifies those product parameters and requirements that are deemed important for customer satisfaction with a focus on capability to maximize customer satisfaction.

Product features and dimensions should be considered significant if reasonably anticipated variation would affect reliability, durability, fit, function, assembly or manufacturability, or customer satisfaction (including internal customers).

2.7.2 Control of Characteristic:

Control method and checking frequency to be agreed by SQA during the APQP & PPAP processes.

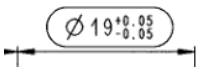
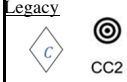
Controls for Special Characteristics include:

- Error proofing
- Significant Characteristics typically require that variation management activities must be performed to maintain the process that influences the characteristic, often with an established dimensional target. The expectations are that the processes are in control and the designated level of process capability has been established. Appropriate monitoring methodologies shall then be implemented to assure continued performance.
- If specified capability level for safety and significant characteristics cannot be achieved, 100% inspection is required.

TABLE 1- REQUIRED LEVEL OF PERFORMANCE

CHARACTERISTIC	SHORT TERM CAPABILITY REQUIREMENT Ppk/Cpk	LONG TERM CAPABILITY REQUIREMENT Ppk/Cpk
Safety ▽	Index ≥ 1.67	Index ≥ 1.67
Significant ◇	Index ≥ 1.67	Index ≥ 1.33

TABLE 2- SYMBOLS USED ON HALDEX DRAWINGS

Used globally since 2016	Used on Heidelberg drawings prior to 2016	Used on Reddtich/MIRA drawings prior to 2016	Used on Landskrona Air controls drawings prior to ~2003	Used on Kansas City drawings prior to 2016	
Safety ▽/ Significant ◇	Framed dimensions/ Specification 		[CC]		Legacy 
					Legacy 
Section 2.7.1 above	Function is dependent on the marked dimension - on individual drawing	GS0190	CRITICAL CHARACTERISTIC: PROCESS CONTROL AND DOCUMENTATION OF PROCESS RESULT MAND ATORY on individual drawing	• Ppk ≥ 1,67 • Cpk ≥ 1,66 • Independent 100% inspection • Or equivalent method for demonstrating compliance to spec/drawing (i.e. reliability analysis, mistake proving)	

2.8 Internal and External Laboratory Requirements

All suppliers will comply with the latest IATF 16949 requirements.

2.9 Identification and Traceability

The supplier shall define an appropriate traceability system that enable to identify and segregate nonconforming and/or suspect product, and to ensure appropriate system is applied to the sub-tier supplier.

The supplier is requested to provide full traceability for products with safety characteristics assigned on the drawing specifications.

When delivery of unique shipments such as deviation approved material, reworked material, PPAP samples, prototypes, etc. the packaging and labelling shall conform to Haldex requirements.

All Haldex owned properties, such as tooling, equipment, gages, fixtures etc. need to be identified properly and changes, maintenance or modifications made to those need to be fully traceable with retained documents. The tooling life expectancy is requested as a part of the RFQ and the remaining tooling life shall be reported to Haldex on agreed frequency.

2.10 Embedded Software

Suppliers who are responsible for development of products with embedded software shall demonstrate capability through the software development assessment methodology Automotive SPICE and are required to implement and maintain a process for software quality assurance.

2.11 Supplier Audit

Haldex reserves the right to conduct system and/or product & process audits based on IATF 16949, VDA, and any Haldex specific requirements. Audits may be conducted at any time at the supplier's site or at any sub-supplier site to evaluate the supplier's production line and process capability to produce parts according to Haldex requirements. Depending on the results of an audit, the supplier or its sub-supplier is required to establish and implement an action plan which shall be defined and agreed upon within the context of the audit

2.12 Communication between Haldex and Supplier

All official communication with Haldex shall be in English; Documents that are not in English will not be considered valid.

3. Glossary of Terms

Where inconsistent terminology exists between IATF 16949 and this document, this document shall take precedence. Otherwise, the definitions from IATF 16949 apply to this document.

8-D	8-Discipline (Corrective Action)
AIAG	Automotive Industry Action Group
APQP	Advanced Product Quality Planning (AIAG)
C_{pk}	Capability Index
MSA	Measurement Systems Analysis
NCR	Non-Conformity Report
PO	Purchase Order
PPAP	Production Part Approval Process
P_{pk}	Performance Index
PPM	Parts Per Million
PSW	Part Submission Warrant
PTR	Production Test Run
RFQ	Request for Quotation
R&R	Gage Repeatability and Reproducibility
SCR	Supplier Change Request
SPC	Statistical Process Control
SQA	Supplier Quality Assurance
SQM	Supplier Quality Manual

4. Prototype Material

Prototype material shall be delivered separately from other deliveries with a separate delivery note. Address labels and delivery notes shall be marked “Prototype material”. The packing shall be marked with a goods label “PROTOTYPE MATERIAL”. If the parts are delivered in an envelope or small package, the goods label shall be placed inside the envelope or inside the package. The associated documents shall always accompany the goods in a plastic pocket or envelope and are not to be sent separately.

Unless otherwise specified by Haldex, dimensional measurement report and material certificate should always be provided in the shipment.

5. Advanced Product Quality Planning

Haldex requires its suppliers to use APQP for product & process development, both for changes and new products. All APQP activities shall be carried out using Haldex APQP documentation. the latest AIAG core tools manuals, IATF 16949, and all Haldex customer specific requirements.

DFMEA (If applicable)

Haldex must have documented approval of any product safety related design characteristics when supplier is design responsible, during APQP prior to PPAP

PFMEA

Haldex must have documented approval of any product safety related process characteristics in supplier manufacturing process during APQP prior to PPAP. Supplier shall provide copies of FMEA documents upon request.

The supplier may write FMEAs for families of parts, where typically the only difference in the parts is dimensional, not form, application or function. Concurrence needs to be obtained by Haldex prior to use of family PFMEA

Control Plan

Haldex must have documented approval of the control method of any product safety characteristics during APQP prior to PPAP. Supplier shall provide copies of Control Plan documents upon request.

6. Part Approval Process

The Haldex Approval Process is according to the AIAG Production Part Approval Process (Fourth edition), Appendix H Truck Industry specific requirements. Refer to chapter **11** reference [C] for AIAG information. It is the expectation of Haldex that PPAPs will be submitted free of charge.

Suppliers that have been approved by other Haldex AB Group operating units will be recognized as such by this operating unit.

The SQA organization is a part of Global Sourcing and the PPAP approval done by any SQE within the SQA organization is done in a global manner and is not site specific.

Whenever possible, back-up or alternative process shall be considered in initial PPAP approval. If PPAP approval doesn't currently cover the alternative process, a deviation approval must be granted, including inspection, measuring, test, and error proofing devices.

Note that PPAP approval is only an approval to deliver. Haldex is not taking over the responsibility for the quality of the parts. The Supplier bears full responsibility at all times for the quality of goods supplied to Haldex, that all parts (including assigned parts) fulfill all specifications and requirements and is the respondent party for Haldex.

6.1 PPAP Submission Level

The supplier shall provide PPAP submission level 3 for all new PPAP deliveries to Haldex unless otherwise specified by the Haldex Supplier Quality Engineer or other authorized Haldex representative. Regardless of requested submission level, Haldex expects the supplier to complete all applicable PPAP elements and retain records.

6.2 Bulk Material

Bulk material PPAP requirements are defined by a completed Bulk Material Requirements Checklist available in the AIAG PPAP reference manual.

6.3 Significant Production Run

PPAP samples must be taken from a significant production run. A significant production run shall be carried out according to the PPAP manual 4th edition. The size of the significant production run shall be 1 to 8 hours' continuous production of minimum 300 pieces, unless otherwise stated in the purchase order or agreed upon with the authorized Haldex representative. Haldex shall be informed of the production run date to allow attendance.

Refer to Appendix H- Truck Industry – specific requirements in AIAG PPAP manual 4th Edition for low volume parts.

6.4 PPAP Sample Delivery

Unless otherwise stated by the authorized Haldex representative, submission of a sample product is always required, and provided samples must conform to all design requirements. If not otherwise specified, the supplier shall send marked sample(s) to Haldex. The sample(s) shall be sent as a separate shipment and with a separate delivery note. The package and documents must always be marked "PPAP", and addressed to the attention of the person at Haldex who ordered the PPAP. Regular production part deliveries are not permitted before approval has been granted by Haldex. This approval is sent to the supplier via a returned and signed Part Submission Warrant stating if the PPAP is approved or rejected.

6.5 Further Requirements in addition to PPAP (Fourth edition)

PPAP 2.2.2 Authorized Engineering Change Documents

When Haldex changes any specification, a formal change order is issued to the supplier. In case of any change in process at supplier (not affecting design or drawing) and PPAP is required by Haldex, a copy of the engineering change order shall be submitted in the PPAP. Refer to chapter 7 for further information regarding the change management process.

PPAP 2.2.8 Measurement System Analysis Studies

The supplier shall conduct and maintain applicable Measurement Systems Analysis studies (e.g., gage R&R, bias, linearity, and stability) for all new or modified gages, measurement, and test equipment referenced in the Control Plan. The analysis shall be done according the Measurement Systems Analysis Manual (see MSA manual, 4th edition).

PPAP 2.2.9 Dimensional Results

It is the supplier's responsibility to provide dimensional measurement results. If a third-party inspection service has been used, this must be stated on the result sheet. Any compensation for costs using external services will not be accepted by Haldex unless previously authorized in writing by the authorized Haldex representative.

PPAP 2.2.11 Initial Process Studies

The level of initial process capability or performance shall be determined to be acceptable prior to submission for all Special Characteristics designated by Haldex or the supplier.

Unless otherwise agreed by Haldex, the initial process studies shall be performed on consecutive parts taken from the significant production run. Refer to chapter 2.7 of this Manual for complete requirements of Special Characteristics.

100% inspection is required if achieved capability fails to meet the acceptance criteria. Corrective action plans shall be developed to address the issues affecting process capability. These plans shall be submitted in writing to the authorized Haldex representative prior to PPAP submission, and agreed between the supplier and Haldex.

Special processes, which cannot be verified by means of control and testing afterwards, should be tested, documented and controlled in order to guarantee that the specifications are fulfilled

PPAP 2.2.14 Sample Production Parts

The supplier shall provide production level parts as requested on the order. Parts must be manufactured according to the methods and with the equipment intended for future serial production.

Unless otherwise agreed upon, the organization must perform inspection and testing on 5 different parts, marked 1, 2, 3, 4, 5. If there are unique molds/cavities, the submission should include three samples per each unique mold/cavity.

PPAP samples shall be submitted free of charge.

PPAP 2.2.18 Part Submission Warrant (PSW)

The supplier shall use the Part Submission Warrant (PSW) template and sign the PSW upon completion of all PPAP requirements.

A separate PSW shall be completed for each Haldex part number unless otherwise agreed by the authorized Haldex representative.

The PSW may be submitted electronically.

7. Change Management Process

7.1 General

A cross-functional change management team coordinates all changes of an article's properties. In this context, the word "property" means change of dimension, process, performance, raw material, or sub-supplier. Changes are not allowed without a formal change order from Haldex.

7.2 Change Process

The change process at Haldex takes place in three steps:

1. Initial Change Request (e.g., Supplier Change Request)
2. Change Request (e.g., engineering change request)
3. Change Order (e.g., engineering change order)

The sourcing department coordinates requests, proposals and orders for change of product or process. Changes initiated by Haldex or customer shall be sent to the supplier for review. Changes requested by a supplier shall be sent to Haldex sourcing department for internal investigation.

When a change is investigated and planned, Haldex issues an engineering change order specifying all necessary data for a correct implementation of the actual change. The supplier is responsible for acting according to the specified change order.

7.3 Changes proposed by the supplier (SCR)

Suppliers are required to notify Haldex of any intended product or manufacturing process changes, including those at sub-suppliers. Typical changes include, but are not limited to, new or refurbished tooling, a change in manufacturing site, sub-supplier change, material changes or substitutions, etc. Refer to the PPAP manual for a complete list of changes that require customer notification.

All requests for changes of product or manufacturing process from the supplier shall be specified on the Supplier Change Request (SCR) form, available at the Supplier Portal, and sent to the Haldex sourcing department. The request is then investigated internally within Haldex. The supplier is informed about the Haldex decision in any case, whether the request is approved or not.

8. Production Requirements

8.1 Quality Requirements

8.1.1 Quality Performance Indices

Haldex utilize the following quality performance indices for serial production deliveries listed in Table 2.

Quality Performance Index	Unit	Requirement
Defective Parts	Parts Per Million (PPM)*	0
Non-Conformity Report (NCR)	Number of NCR's	0

Table 2 Serial Production Quality Requirements

*Parts Per Million (PPM) is used as a quality performance index and defined as the ratio of non-conforming parts received per one million parts supplied.

$$PPM = \frac{\text{Number of non-conforming parts delivered during the time period}}{\text{Total number of parts delivered during the time period}} \times 1000000$$

8.1.2 Layout inspection and functional/validation testing

Haldex requires the performance of annual layout inspections and functional / validation testing to be submitted to Haldex upon request, free of charge.

8.1.3 Statistical Process Control and Cpk Report

Haldex requires the performance of statistical process control and Cpk analysis for all special characteristics. Results shall be available for Haldex review within 24 hours of request and may be required with each shipment.

8.1.4 Material, heat treatment, and surface treatment certificate

The material certificate may be requested according EN 10204. Material, heat treatment, and surface treatment certificate shall be available for Haldex review within 24 hours of request and may be required with each shipment. Haldex may require material certification be conducted by a ISO 17025 certified laboratory.

The supplier shall analyze and test raw material or heat treat at least one sample per batch to determine the material's conformance to specifications for chemical composition mechanical properties and hardness. The requirement applies to both purchased material and material produced by the supplier.

8.1.5 Preservation

According to latest version of IATF 16949.

8.2 Delivery Requirements

Haldex has expectation of 100% delivery performance from its suppliers (on-time and with correct quantity). The supplier shall communicate any delay or risk

to the affected Haldex site.

8.3 Non-Conforming Parts

Non-conforming product must not be shipped to Haldex. The only allowable exception is if a signed Request for Deviation has been provided by the Haldex authorized representative prior to shipment, according to IATF 16949, Section 8.7.1.1. Customer authorization for concession.

In case of any rework or repair components is just allowed by Haldex approval via signed Request for Deviation. Not allowed to complete any rework or repair activity with safety critical parts. According to IATF 16949, Section 8.7.1.4 Reworked product and 8.7.1.5 Repaired product.

In the event of a Non-Conformance being identified at Haldex the supplier shall implement containment actions, approved by Haldex, prior to dispatch) and advise Haldex Quality Engineer and SQE of all stock in transit. Support stock sorting as requested by receiving plant. All cost according Haldex Supply Agreement

8.4 Claim Procedure

If Haldex receives a delivery with non-conformities, the supplier will be informed of this through a non-conformity report. The supplier must implement immediate short- term (containment) actions and describe these in writing to Haldex within 24 hours. The supplier may be required to conduct sorting and remedy the nonconformity at Haldex. If the supplier is not able to conduct sorting, without delay after notification from Haldex, Haldex may conduct the sorting and invoice the cost to the supplier.

The supplier shall present an 8-D report listing the root cause, corrective and preventive actions and send to Haldex no later than ten (10) calendar days after receipt of the nonconformance report. Implementation may take longer than 10 days, but Haldex must be kept appraised of the timeline of implementation. If the supplier does not submit the 8-D report in the agreed upon time, the issue will be escalated using the Haldex escalation process to attempt to close the issue. Final step of the escalation process is phase out of the supplier.

8.5 Documentation Retention

Document	Examples	Shall be maintained for
APQP and PPAP documentation/activities	Technical specifications, drawings, process flow charts, control plans, FMEA, manufacturing instructions, master samples, etc.	the length of time that the part (or family of parts) is active for production and service requirements **plus one (1) calendar year** unless otherwise specified by Haldex
Quality performance records	Control charts, inspection and test results, product audits, layout inspection, functional testing, etc.	the length of time that the part (or family of parts) is active for production and service requirements **plus one (1) calendar year** unless otherwise specified by Haldex
Quality system records	Internal quality system audits and management reviews	Three (3) calendar years
Product Safety related records		a minimum of 15 years from the date of manufacture

Table 3 Documentation retention requirement

The time periods in Table 3 shall be regarded as minimum. Retention periods may be specified longer by the supplier. The requirements in Table 3 do not replace regulatory requirements.

9. Supply Chain Improvement Program (SCIP)

9.1 Rating

The objective of the Supply Chain Improvement Program is to create a mindset in the supply chain that results in continuous improvement in all value-added aspects of the business relationship between Haldex and its suppliers.

Haldex evaluates its suppliers in the areas of quality, delivery, value and support.

Further information regarding the supplier rating system may be found in the SCIP requirement document available at the Haldex Supplier Portal.

10. Haldex Customer Specific Requirements

Clause	Description	Haldex Requirements
4.3	scope of the quality management system	Section 2.1 of SQM
4.4.1.2 8.3.2.1 8.3.3.3	Product Safety Design and development planning - supplemental Special Characteristics	Haldex documented approval of DFMEA (as applicable), PFMEA, and Control Plan during APQP phase (prior to PPAP approval) for Product Safety characteristics is required. Sections 5. of SQM
7.5.1.1	Measurement System Analysis	Section 6.5 - PPAP 2.2.8 of SQM
7.5.3.2.1	Record Retention	Section 8.5 of SQM
8.1.2 8.4.2.3	Confidentiality Supplier Quality management system development	Section 2.1.1 of SQM
8.2.3.1.2	Customer-designated special characteristics	Section 2.7.2 Table 1 and Table 2 of SQM
8.3.2.1	Design and development planning - supplemental	Section 5. of SQM - Haldex requires use of APQP for product planning and realization
8.3.3.3	Special Characteristics	Section 2.7.2 Table 1 of SQM
8.3.4.4	Product Approval Process	Section 6 - according to PPAP Manual 4th Edition Appendix H
8.4	Control of Externally provided processes, products, and services	Section 2.1.1 of SQM
8.4.2.4	Supplier monitoring	Section 9.0 of SQM - SCIP Program.
8.4.2.4.1	Second-party audits	Section 2.11 of SQM - Haldex may audit a second tier supplier
8.4.3.3.	Statutory and regulatory requirements	Sections 2.2 in SQM manual
8.5.2	Identification and traceability	Section 4 of SQM - prototype material marking. Section 2.9 of SQM - Traceability
8.5.3	Property belonging to Customers	Section 2.9 of SQM
8.5.6.1	Control of changes - supplemental	Section 7 of SQM
8.6.2	Layout inspection and functional testing	Section 8.1.2 of SQM - Annual lay out inspection is required.
9.1.1.2	Identification of statistical tools	Section 8.1.3 of SQM - CPk required for all special characteristics.
9.1.2.1	Customer Satisfaction - supplemental	Section 9 of SQM - Quarterly supplier performance evaluation.
10.2	Non-conformity and corrective action	Section 8.4of SQM -8D methodology shall be used to ensure root cause correction and problem prevention. Escalation is to be applied with consideration to criticality and responsiveness

11. References

[A] European Commission REACH at http://www.hse.gov.uk/reach/

[B] International Material Data System at http://www.mdsystem.com

[C] Automotive Industry Action Group at http://www.aiag.org

[D] European Commission RoHS at http://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm

[E] Global Automotive Declarable Substance List (GADSL) https://www.gadsl.org/

12. Revision changes:

Issue 11 2021-06-21	Added rework and repair requirements at 8.3. Non-conforming products: "In case of any rework or repair components is just allowed by Haldex approval via signed Request for Deviation. Not allowed to complete any rework or repair activity with safety critical parts. According to IATF 16949, Section 8.7.1.4 Reworked product and 8.7.1.5 Repaired product."
Issue 10 2018-12-17	Foreword removed (1) 1.2 Purpose, a. Added text "*Haldex expect our suppliers to be committed to a zero-defect approach and to demonstrate that commitment through on-time delivery of fully conforming products, rigorous adherence to defined processes and requirements, and active participation in value improvement. We require the effective application of quality management systems, including effective Advanced Product Quality Planning (APQP) and corrective/preventive action processes. We will maintain a constant focus on continuous improvement of both ourselves and each supplier. We will measure and monitor performance, rewarding those who exceed our expectations*" – previously located in the Foreword. b. Removed text "*This document is a supplement to and does not replace or alter conditions covered by the general purchase agreement. Consequently, any deviation to a particular requirement stated in this document must be separately defined in the general purchase agreement. By submitting a quotation to Haldex, the supplier acknowledges having read, understood, and agrees to comply with all requirements and demands set forth in the Supplier*

	Quality Manual. Late conditions and / or objections are not acceptable to ensure fair competition". (2) Section 1.4, title is changed from "Authorized Haldex Representative" to "Authorized SQM Haldex Representative" and the text is changed from "*The authorized Haldex representative is the assigned Haldex Sourcing Director, Supplier Quality Assurance Director, or Supplier Quality Assurance Manager*" to "*The authorized Haldex representative regarding the SQM is the assigned member of the Supplier Development and Supplier Quality Assurance Organization*". (3) Section 1.5, added web address and hyperlink to Haldex Supplier Portal. Added text "*The documents in section "Supplier Documents" are mandatory for conducting business with Haldex. Compliance to these documents is required.*". (4) Section 2.1, changed text from: "*Haldex requires its suppliers to be as a minimum certified to most current ISO 9001 and prefers its suppliers to be IATF 16949 certified through third party audit by an IATF-recognized certification body. Regardless of the current certification status, Haldex requires its suppliers to be compliant with IATF 16949 requirements.* *For any supplier, not currently certified to IATF 16949, Haldex expects the supplier to have a documented plan to develop, implement, and improve their quality management system to become IATF 16949 certified.* *Advanced Product Quality Planning (APQP) shall be used as means for achieving product realization*"; To: "*Haldex requires its suppliers to 3rd party certified to the latest revision of IATF 16949 by an IATF-recognized certification body or have a plan in place to achieve this by October 2019*". (5) Section 2.1.1, a. Added paragraph "*The method of communicating Haldex requirements to sub-suppliers has to be in line with the Haldex Supply Agreement between the supplier and Haldex in order to prevent revealing of confidential information to unauthorized parties"* b. Removed paragraph "*The method of communicating Haldex requirements to sub-suppliers has to be in line with the non-disclosure agreement (NDA) between the supplier and Haldex in order to prevent revealing of confidential information to unauthorized parties*". c. In last paragraph replaced text "*General Purchase Contract*", with "*Haldex Supply Agreement*" (6) Section 2.2.1,

	a. Renamed section from "*ISO 14001*" to "*Environmental Management System"* b. Changed text from "*Haldex prefers their suppliers to be certified to most current ISO 14001 by an accredited third- party certification body. Documented conformance to an equivalent environmental management system program is an acceptable alternative. Haldex also prefers the supplier to ensure that the Supplier request the same from their sub-suppliers*" to "*All Haldex suppliers shall comply with the latest version of ISO 14001"* (7) Section 2.2.2, a. Added text "…the latest version of…" b. Deleted second paragraph "*All chemicals used in the supplier's manufacturing processes at European sites shall be registered, by the supplier, according to the European Commission REACH regulation. For further information refer to chapter 12 reference [A]*". (8) Section 2.2.3 –new section for RoHS added with this section number; this section number was previously the "IMDS" section, which is now section 2.2.5. (9) Section 2.2.4 – new section for California Proposition 65. (10) Section 2.2.5 a. New section number for IMDS; previously was cited under section 2.2.3 b. Paragraph two re-written from "*The supplier must fulfill Haldex Black and Grey List regulating requirements regarding chemicals or materials used in products and/or services. Any presence of listed chemicals must be accounted for and the supplier must initiate phase-out plans. The Haldex Black and Grey lists are available at the Haldex Supplier Portal*" to "*The supplier must meet the Global Automotive Declarable Substance List (GADSL) www.gadsl.org requirements regarding chemicals or materials used in products and/or services. Any presence of listed chemicals must be accounted for and the supplier must initiate phase-out plans*" c. Paragraph three was deleted, "*The guidelines of Haldex environmental position are described in the environmental policy, available from an authorized Haldex representative*". (11) Section 2.3 a. Deleted paragraphs two, and three: "*Haldex's sustainability work is based on the UN's Universal Declaration on Human Rights, the UN Global Compact initiative, the International Labor Organization's (ILO) basic principles on labor law and the OECD guidelines for multinational companies*." "*Haldex's complete Sustainable Business and Supplier Code of*

	Conduct Policy can be found on the Haldex website under "About Haldex" and "Suppliers"". b. Changed text in new paragraph two, second sentence from "*Haldex uses NQC to provide the evaluation service of the assessment*" to "*Haldex uses a 3rd party to provide the evaluation service of the assessment*". (12) Section 2.5 a. Paragraph one deleted "*Haldex has implemented a full scale Global Conflict Minerals Compliance Program that addresses governmental requirements. The compliance program incorporates the identification of origin of such minerals that can be incorporated into Haldex products by way of mapping, tracing and soliciting declarations from its suppliers*". b. Paragraph three deleted "*Conflict Minerals: Defined as Columbite-tantalite, also known as coltan (the metal ore from which tantalum is extracted); Cassiterite (the metal ore from which tin is extracted); gold: Wolframite (the metal ore from which tungsten is extracted; or their derivatives; or (B) any other mineral and or its derivatives determined as conflict in the Democratic Republic of the Congo (DRC) or an adjoining covered country, defined as a country that shares an internationally recognized border with DRC , which presently includes Angola, Burundi, Central Africa Republic, the Republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia*". c. Paragraph six deleted "*Refer to Haldex supplier portal for additional information about Haldex' expectation and policy regarding to Conflict minerals*". d. In new paragraph three, text is added to first sentence "*…or when contacted by the Haldex compliance team for resubmission*". (13) Section 2.6 a. Renamed section "Contingency / Continuity Planning" b. Added in new paragraph one "Contingency planning shall be according the latest version of IATF 16949". *c.* Deleted text "*The outcome of the analysis includes a contingency plan and an emergency plan.* *Contingency Plan shows specific solutions for different risks e.g. machine or tool break-down, media supply interruption, fire, flooding, storm, snow. (IATF 16949 clause 6.1.2.3). Emergency Plan shows the short-term actions and planning to take care of accidents and personal injuries*". (14) Section 2.7.2,

	a. Added new first paragraph "*Control method and checking frequency to be agreed by SQA during the APQP & PPAP processes*" b. Added Table 2 to show Symbols used on Haldex Drawings. (15) Section 2.8, Deleted text *"The supplier shall have a defined laboratory scope that includes its capability to perform the required inspection, test, or calibration services. Third-party accreditation to ISO/IEC 17025 may be used to demonstrate the internal laboratory conformity. Any external laboratory used for inspection, test, or calibration services must obtain certification to ISO/IC 17025 or national equivalent and the certificate shall cover the scope of measurement and testing*" and replaced with *"All suppliers will comply with the latest IATF 16949 requirements*". (16) Section 2.9, replaced text "*need to be*" with "*shall*". (17) Section 2.10, replaced text "*..demonstrate capability through a software development assessment methodology, i.e. SPICE or equivalent and…*" with "*… demonstrate capability through the software development assessment methodology Automotive SPICE and…*". (18) New section 2.11 – Supplier Audit – added (19) Section 2.12 (previously section 2.11), text changed from "*All official communication shall be in English when communicating both externally and internally, i.e. PPAP*", to "*All official communication with Haldex shall be in English; Documents that are not in English will not be considered valid*". (20) Removed previous section 4.0 Sourcing (21) Section 5.0, first paragraph text changed from "*Haldex requires its suppliers to use APQP for product & process development. If required by Haldex, the supplier shall provide an APQP time plan that lists all activities connected to the APQP for the specific part or, in special cases, families of parts. The Haldex APQP time plan template shall be completed by the supplier and sent to SQA for confirmation before any APQP activities are started. The APQP time plan template is provided by the SQA*" to "*Haldex requires its suppliers to use APQP for product & process development, both for changes and new products. All APQP activities shall be carried out using Haldex APQP documentation. the latest AIAG core tools manuals, IATF 16949, and all Haldex customer specific requirements*". (22) Section 6.0, added text "*according to*" and "*Appendix H Truck Industry specific requirements*" to the first sentence. Also added text "*It is the expectation of Haldex that PPAPs will be submitted free of charge*". (23) Section 6.1, added text "*Regardless of requested submission level, Haldex expects the supplier to complete all applicable PPAP elements and retain records*".

	(24) Section 6.4 amended to say "Unless otherwise stated by the authorized Haldex representative, submission of a sample product is always required, *and provided samples must conform to all design requirements*". (25) Section 8.1.2, text "*submitted to Haldex upon completion*" is changed to "*submitted to Haldex upon request, free of charge*". (26) Section 8.5, a. Changed title from "Control of goods in stock" to "Preservation" b. Deleted entire section text and replaced with "*According to latest version of IATF 16949*". (27) Section 8.3, deleted previous section 8.3 "Packaging Requirements" (28) Section 8.4, deleted previous section 8.4 "Required Delivery Documents" (29) Section 8.3, Non-conforming Parts, added second paragraph "*In the event of a Non-Conformance being identified at Haldex the supplier shall implement containment actions, approved by Haldex, prior to dispatch) and advise Haldex Quality Engineer and SQE of all stock in transit. Support stock sorting as requested by receiving plant. All cost according Haldex Supply Agreement*". (30) Section 8.4, second paragraph last sentence changed from "*The Haldex Escalation Model (HDX2-26-47) will be followed to ensure compliance to this requirement*" to *"If the supplier does not submit the 8-D report in the agreed upon time, the issue will be escalated using the Haldex escalation process to attempt to close the issue. Final step of the escalation process is phase out of the supplier*". (31) Deleted Section 8.5, "Costs related to Non-Conformities" (32) Section 10, updated references according to updates in SQM.