



North America eAxle Project

Virtual Technical Discussion

Agenda

(15 min prior to start time) Teams Meeting opens so all suppliers can join anonymously

- 15 min PPE presents general project information
- 30 min ENG presents drawings, specs, norms, etc...
 - 10 min break. (Suggestion to suppliers: use this time to submit any technical questions)
 - Meeting will resume at 9:55 EST
- 15 min PUQ to present VQP and safe launch requirements
- 15 min PQT presents audit and technical assessments requirements
- 20 min PUR to present next steps and SupplyOn deadlines
- 20 min for questions and answers review

During the meeting, questions should be submitted to:

Justin.Horne@us.bosch.com

Haley.Russell@us.bosch.com

We will paste only the submitted Questions into a slide to be discussed during the Q&A.

Virtual Technical Discussion

Purpose

- Present the same information to all suppliers.
- Significantly reduce 1:1 meeting times and travel.
- Fast track information flow:
 - Supplier understands project scope and expectations
 - Supplier obtains the information to accurately quote.
 - Reduces back<>forth dialog

Virtual Technical Discussion

Additional Considerations

- Information presented will be emailed to all participants after the meeting.
- These projects are fluid and subject to changes.
- The designs discussed today may not be the final versions.

- All questions during this meeting need to be sent to:
 - Justin.Horne@us.bosch.com
 - Haley.Russell@us.bosch.com

- Effort will be made to answer all questions at the end of this meeting.

Virtual Technical Discussion

Bosch Team Introduction

Bosch Presenters:

- PPE: Mr. Horne; Project Purchasing (Justin.Horne@us.bosch.com)
- Bearing Carrier ENG: Mr. Karthikeyan Kanthasamy (Karthikeyan.Kanthasamy@in.bosch.com)
- Gearbox Cover ENG: Mr. Eduard Boettcher (Eduard.Boettcher@de.bosch.com)
 - Future Contact: Mr. Paul (Paul.Frick@us.bosch.com)
- PQT: Mr. Fabian Patrizio (Patrizio.Fabian@us.bosch.com)
- PUQ: Ms. Barbara Martinez Castillo (Barbara.Martinez@mx.bosch.com)
- PUR: Mr. Javier Lua Francisco (Francisco.Lua@mx.bosch.com)

Please contact responsible contact for related topics/concerns.

NA HEV120 boost eAxle

Project Overview

- Project Name → NA Large HEV 120kW
- Application → Rear Boost eAxle
- Power → 120kW @ 350V Torque → 3400 Nm
- Manufacturing Facility → Charleston, SC USA (ChP)
- Incoterms → FCA
- RFQ Currency → USD
- Supply Model → Consignment @ ChP
- Customer SOP → Q1 2029 EOP → 2034
- Total expected project volume → 435k pcs
- MPE Sheet must be filled for quotation
- Alloy for quotation should be A383 @ 3.00 USD/kg for the quote
 - Suppliers current market driven price per kg should be included in the quotation as well for reference
- Quotation of the coating on sealing interfaces should be quoted as a separate add-on

RFQC#	Part
RFQC638285	120_Bearing Carrier
RFQC639361	120_Gear Cover

NA HEV120 boost eAxle

High Level Project Info

▪ Volume

2029	2030	2031	2032	2033	2034	Total
43,050	91,444	92,036	92,157	92,157	23,039	~435,000

▪ Key Milestones

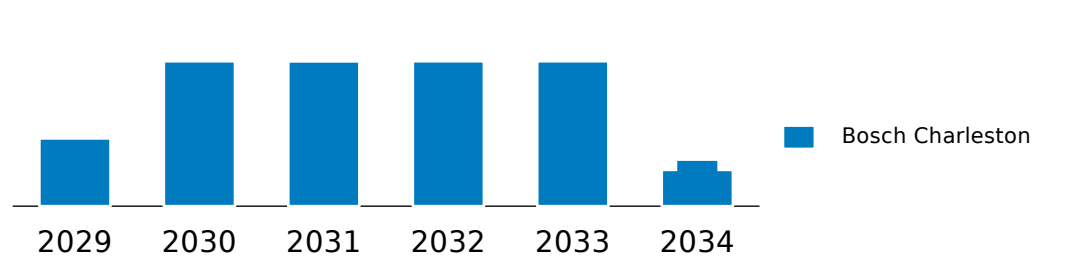
Phase	Location	Date
C-Sample	US/ChP	9/30/2027
D-Sample	US/ChP	4/30/2028
SOP Bosch	US/ChP	11/30/2028

File Locations: RFQC→HEV120 RFQC Presentation

NA HEV120 boost eAxle

HEV120 Premises

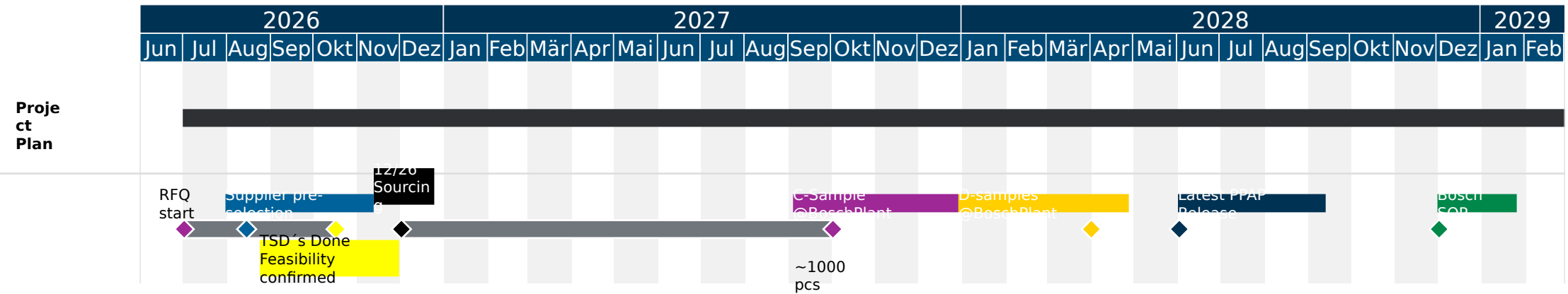
Volumes [k]



Maturity level of components

C-samples			D-samples		
Design	Tooling	Process	Design	Tooling	Process
C	Series	C	Series	Series	Series

Milestones



File Locations: RFQC→HEV120 RFQC Presentation



NA HEV120 boost eAxle

Documents Needed by Phase

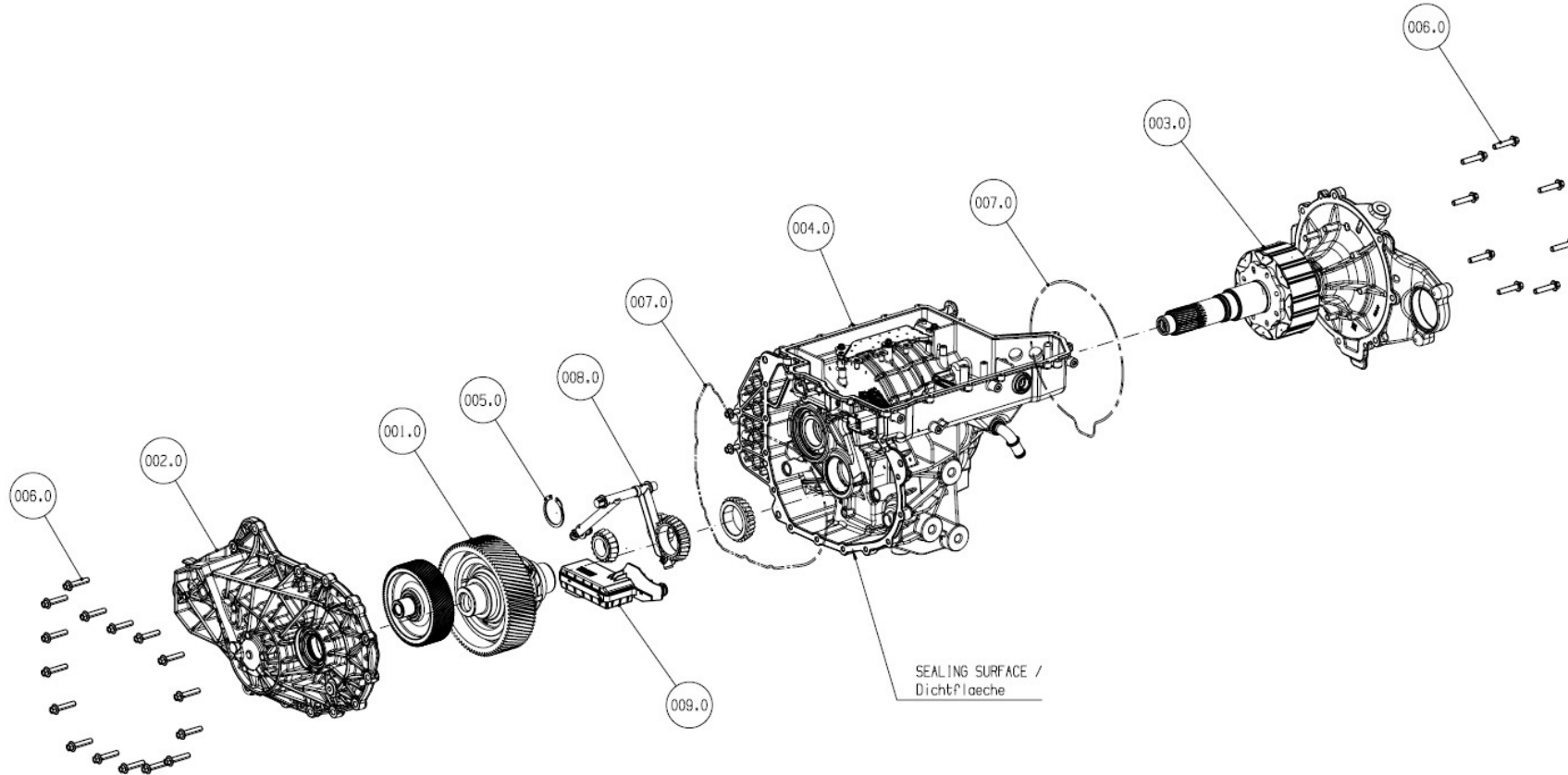
Required Document from Supplier	Due Date
Feasibility Confirmation (FC)	If FC confirmed: with quotations If FC not confirmed: before quotations
Material Process Evaluation (MPE) Sheet	With quotation
Technical Supplier Discussion (TSD) Questionnaire	“TSD Light” with quotation
Component Supply Chain Chart (CSCC)	Draft with quotation
Cost Breakdown Sheet (CBDS) for Tooling	With quotation
Early Production and Containment (EPC) Agreement Signed (PDF of Word File)	With quotation
Confirmation of Capacity	With quotation

Required Document from Bosch	Pre-Sourcing RFQC
Important Characteristics List (ICL)	Draft submitted with RFQ
Sampling Agreement (SA)	Draft submitted with RFQ
Launch Control Plan (EPC/LCP)	Draft submitted with RFQ

- Required forms must be completed and submitted by the deadline given.
- All information will be reviewed by the Bosch team.
- All forms must be signed, dated, and provided as PDF's

Virtual Technical Discussion

General Exploded View



Virtual Technical Discussion

Project Timing

- When quoting: In your quotes, provide feasible dates for the milestones. Accurate feedback is vital at this stage.

Milestone	Expected Date
Quotes and required signed forms due	8/12/2026
C-Samples delivered to Bosch ChP	9/30/2027
SOP Bosch	11/30/2028

Virtual Technical Discussion

Required Forms - Feasibility Confirmation

- List all documents provided.
 - (Use the provided BOMs)
- 1 completed form for each part quoted
- Must be provided as PDF and digitally signed.
- Any answers other than “yes” require clear explanation to be discussed with Bosch’s sourcing team.

Any feedback regarding supplier requested design changes or acceptable deviations for a specific amount of cost saving should be identified in the FC form!

RFQC→Forms.zip

→Feasibility Confirmation_EN_DE.xlsx

Internal C-SC1 | MPPE-HP-US | 2026-02-11

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Feasibility Confirmation of Supplier

Part No. : Machined Stator Housing F03Z.200.33W

Designation: Charleston, South Carolina US

Supplier / plant:

Date:

The feasibility confirmation is based on the results of the necessary feasibility analysis conducted by the supplier.
The feasibility analysis must be present only at the supplier.

The feasibility analysis and feasibility confirmation is based on the following documents:
- part list(s), drawing(s), specifications (ordering specifications, inspection / test specifications, norms etc.)
(please list below and indicate change- / version-number)

document number:	document type	change- / version number:
F03Z.200.33W	BOM	Includes all sub-documents (Cast and machined)

If there is no data available from series part production at this stage of planning, please refer to existing data from similar processes / parts or from the vendor of the machine and explain these in field below.

Comments/remarks:

Is the product sufficiently defined to allow a feasibility study to be done?

If the answer is "no", please add explanations (in field below):

Comments/remarks:

Can all requirements be met (e.g. drawing, technical specification, reliability, standards, specifications, test, surface cleanliness, residual contamination specifications)?

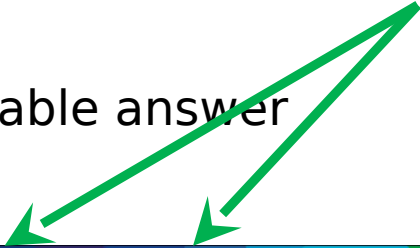
If the answer is „no“, which ones can not be met?

Please specify in field below:

Comments/remarks:

Virtual Technical Discussion Required Forms - General TSD Questionnaire

- Provide supplier team contacts
- Only provide information in these 2 columns. Do not give input to “actions”
- N/A is acceptable answer



	Topic / Question	Yes No Not Applicable	Remarks	Actions, if necessary (with responsible and due date) --> to be tracked in separate OPL
1	General Questions			
1.1	Have the technical project, component specific information and the overall function of Bosch-product incl. assembly been		To be discussed in initial TSD meeting	
1.2	Is the Bosch project plan feasible for sample phases, ramp-up phase and series delivery regarding schedule and quantities?			
1.3	Is the supplier able and willing to contribute with his know-how to optimize the specification?			
1.4	Are all parts of the specifications explained by Bosch and understood by supplier? (incl. attributive details e.g. edges, burrs etc.) Hint: Also consider unwritten specifications, like free of damage, scratches --> limit sample catalogue		General specifications and requirements will be discussed during initial TSD meeting	
1.5	Are there any production relevant topics (e.g. clamping surface, measurement topics, allowed cleaning media) which have to be implemented in the specification?			
2	Feasibility of specification			
2.1	Any expansion of tolerances required in order to achieve feasibility? Hint: The specification is valid for the delivered part, not for pre-stages (e.g. before heat treatment).			
2.2	Are all drawing characteristics measurable (e.g. envelope principle)? Are measurement devices for all characteristics available?			
2.3	Is the measurement uncertainty considered?			

RFQC→Forms.zip →TSD_EN.xlsx

“TSD Light” Questions presented by PQT

TSD - Technical Supplier Discussion - General Information				 BOSCH Technik fürs Leben
Project-Name (+ Number):	Stellantis Assembled System Housing F03Z2003B9_D_01	Supplier:		
Part-No.:	F03Z2003B9_D_01	Supplier-No.:		
Part Description:	System Housing assembled	Location of TSD:		
Change Status BOM:	F03Z.200.3B9-02 BOM	Date of TSD:		
Change Status DRW:	F03Z2003B9	Updated on:		
Quality Requirements:	https://www.bosch.com/company/supply-chain/information-for-business-partners/			
Consider additional material specific questionnaires (e.g. heat treatment, forging, MIM, spring, alu die casting)				

Project Team / Participants BOSCH		
Department:	Name:	E-Mail:
PPx Responsible:	David Dulaney	david.dulaney@us.bosch.com
PPx Responsible:	Karsten Kirchoff	Karsten.Kirchoff@de.bosch.com
PMQ Responsible	Josh Whaley	Joshua.Whaley@us.bosch.com
ENG Responsible:	Florian Mueller	Florian.Mueller7@de.bosch.com
PQT responsible:	Josh Whaley	Joshua.Whaley@us.bosch.com
Project Team / Participants Supplier		
Department:	Name:	E-Mail:
Project Leader responsible:		
Supplier:		

Virtual Technical Discussion

Required Forms - Casting Specific TSD Questionnaire

- Complete 1 for each part being quoted
- Complete (“Y/N” and “Remarks” columns only)

“TSD Light” Questions presented by PQT

Project-Name:		Supplier
Project-No.:		Supplier-No.
Part-No.:		Location of Technical Supplier Discussion:
Part Description:		Date of Technical Supplier Discussion:
Change Status BOM:		1. Version issued on:
Change Date BOM:		updated on:
		documents stored in:

	Frage	Question	Y N N/A	remarks	action necessary?	actions
1	Tooling Discussion					
1.1	Was ist die garantierte Werkzeuglebensdauer für einen kompletten Werkzeugsatz inkl. Ersatzteile (Schusszahl)?	What is the guaranteed tool lifetime for a complete tool set including spare inserts (number of shots)?				
1.2	Sind Wechseleinsätze notwendig bzw. enthalten? Wie viel Satz Wechseleinsätze sind enthalten / geplant? Sind Wechseleinsätze (Teileinsätze) geplant? Wenn ja, in welchen Bereichen?	Are more than one insert necessary? How many sets of inserts per form half are planned? Are partial inserts planned? (e.g. at heat sinks) If yes, in which areas of the tool?				
1.3	Welche Verfahren kommen zur Herstellung der Formkontur zum Einsatz? (Senkerodieren, Hochgeschwindigkeitsfräsen, ...?)	Which processes are used to create the tool? (eroding, high speed milling, ...)				
1.4	Welche Warmarbeitsstähle kommen zum Einsatz? Wie wird der richtige Härteprozess während der Herstellung überwacht?	Which hot working steels are applied? How will the correct hardening procedure be safeguarded during manufacturing?				
1.5	Mit welchen Maßnahmen wird die Entformbarkeit im Produktionsprozess sichergestellt?	Which are the measures that will be implemented to improve the extractability?				
1.6	Wie ist die generelle Werkzeugauslegung (Giesswerkzeug, Stanzwerkzeug)?	How is the general rating of the tool design (cast tool, trim die)?				
1.7	Sind Schieber erforderlich? Welches Schieberkonzept wird angewandt (z.B. Kulissee etc.)	Are sliders necessary? Which slider concept is used?				
1.8	Wo liegen die Auswerfer (innerhalb oder außerhalb der Bauteilkontur)? Sind die Bereiche in denen die Auswerfer gesetzt werden dürfen ausreichend groß um die Entformbarkeit sicherzustellen?	Where are the ejector positioned (inside or outside of the cavity)? Are the areas in which ejectors are allowed big enough to assure good extractability?				

RFQC→Forms.zip →TSD_EN.xlsx→ TSD Questionnaire (Sheet 2)

Virtual Technical Discussion

Required Forms - Early Production Containment



- Complete 1 form for each part
- Purpose is to ensure quality gate during ramp-up phase
- Complements Launch Control Plan
- Based on Quantity, Time, or # of shipments
- Defined quantities and/or timing to be determined between supplier and PMQ prior to awarding business.

	Early Production Containment	Issue/Amendment 2.0	Page 1/1
From CP/PP_	Supplier Commitment to Early Production Containment	Our Reference CP/PPx_Name	Date 30.01.2018

1 Subject matter

The objective of Early Production Containment (as specified in the following) is to verify and validate the supplier's series production process. It is an additional quality gate to ensure quality in the ramp-up phase.

Early Production Containment is a 100% visual inspection of the complete part produced by supplier as well as a possible increase of inspection frequency of single LCP (Launch Control Plan) characteristics in order to detect potential failures before shipping. The rough inspection scope and their exit criteria will be discussed in TLG (technical supplier discussion) and fixed later in a more detailed version in the Launch Control Plan (LCP). The detailed description of the supplier's responsibilities for Early Production Containment is set out in the LCP-document.

2 Duration of early production containment

We, as a supplier of parts to Bosch, hereby represent and undertake to install Early Production Containment in our production in C-Sample-Phase, latest after SOP for at least:

- ☐ A number of xx parts (e.g. 50000)
- ☐ A period of time of xx weeks (e.g. 12 weeks)
- ☐ A quantity of parts representing xx shipments (e.g. first 3 shipments)

RFQC→Forms.zip

→Early_Production_Containment_supplier

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Required Forms – Confirmation of Capacity

 BOSCH		CONFIRMATION OF CAPACITY		
I. Key Information (Robert Bosch)	Supplier name			
	Supplier no (RBSNO)			
	Production location			
	Part no			
	Part name			
	PILUM RFQC#			
II. Capacity Information (Supplier)		Year SOP	Year SOP+1	Year Peak Vol.
	Weekly capacity in 15 shifts (3x8h/day) in pcs			
	Yearly capacity in 15 shifts (3x8h/day) in pcs			
	Max. possible shifts per week			
	Max. quantity confirmed (Finished parts) in pcs			
III. Supplier Confirmation	Date			
	Name (authorized representative)		Title	
	Signature			

Virtual Technical Discussion

Required Forms –Component Supply Chain Chart

[illegible]

RFQC→Forms.zip →component-supply-chain-chart_en.xlsx

Virtual Technical Discussion

Sealing Interfaces Coating (Recommended: Sol Gel)

- Thermal resistance short term: 220°C
- Thermal resistance long term: 120°C
- Thickness needs to be ~5μm
- Loctite 5970 compatibility

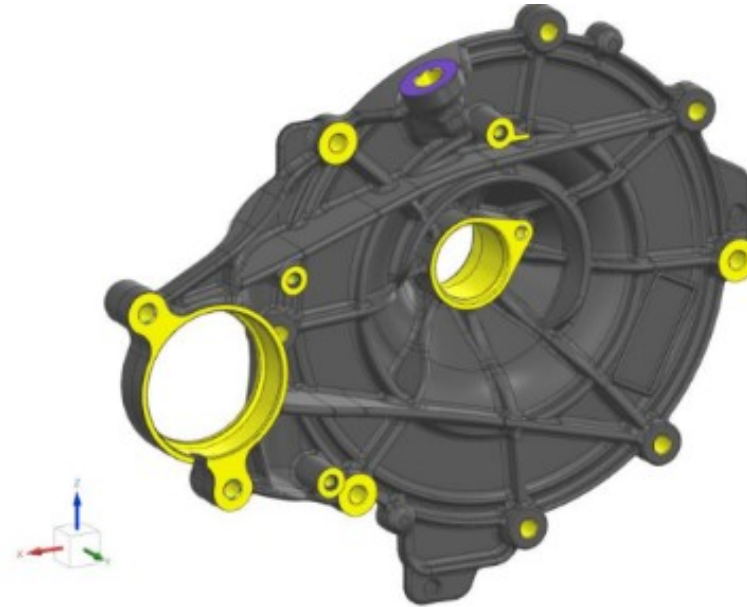


Figure-4_Coated surfaces for Breather interface

RFQC→Coating_sealing interfaces_F03ZY004SZ-BV_Draft.pdf

This document is not called out in the part BOM since it is an add on quotation request.