

TEST PLANS BROETJE-AUTOMATION

Additional supplier information

Broetje-Automation GmbH

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COMPOSED TO COMPETE

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I Documentation of components

Legal basis

In order to ensure the safety of products, state laws and regulations of private organizations oblige manufacturers and installers of technical products to provide "technical documentation".

In the EU, relevant [EC directives](#) such as the [Machinery Directive](#), the [ATEX Directive](#), the [Low Voltage Directive](#), the [Pressure Equipment Directive](#) or the Product Safety Directive, which have been transposed into national law by the member states (e.g. [German Product Safety Act](#) or [Medical Devices Act](#)), must be mentioned.

In the event of damage, faulty technical documentation leads to [liability](#) on the part of the manufacturer arising from the [Product Liability Act](#), the [German Civil Code](#) (§ 823 Liability for damages) and any individual contractual obligations.

Due to these requirements, it is essential that Broetje-Automation and its suppliers ensure complete documentation.

- 1. Minimum requirements for documents are to be delivered**
- 2. The complete documentation must be sent to the mail address of the delivery address of the respective BA Group with goods issue.**
SQA@Broetje-Automation.de (Address: Broetje-Automation GmbH, Am Autobahnkreuz 14, 26180 Rastede)
SQA-BAC@Broetje-Automation.com (Address: Site BA China) [see SLIDE 4](#)
- 3. Each delivery is accompanied by the delivery note and the accompanying documents required according to the respective component-related test plan for the unambiguous identification of the components.**
- 4. The delivery of an order item is only regarded as complete and forwarded for invoice release if the goods including the required documents are available.**

II Provision of documentation

Requirements

According to Broetje requirement the documentation is to be delivered in digital format:

- Document „Provision of Documentation“ is available on the Broetje Homepage via Downloads: <http://www.broetje-automation.de/en/downloads/>

Quality Assurance

[8D-Report_01.pdf](#)

[Application for rework_BA](#)

[Provision of Documentation](#)

Partial deliveries

In the case of partial deliveries, the uniqueness of delivered components in the documentation supplied must be maintained.

- *Documents to be produced per drawing must be sent with the respective part at the time of delivery.*
- *Cross-sectional documents must also be adapted to the deliveries. Example: certificate of compliance:*
 - For each partial delivery, a certificate of compliance with the order must be enclosed with the individual order items delivered.

1. OVERVIEW TEST PLANS

Including Revision updates

1 Overview test plans

		Prüfpläne / Test Plans / 测试计划											
BROETJE AUTOMATION		nur Sichtkontrolle BA <i>only visual check by BA</i> 仅目测 BA	Mess- und Prüfmittel <i>Measurement and test equipment</i> 测量以及检测设备	CNC Teile <i>CNC parts</i> 数控加工零件		SVT Teile <i>Welding parts</i> 焊接零件				Beschaffung Baugruppen/ <i>Gewerk</i> <i>Procurement of assembly / sections</i> 组件/模块的采购	Zusatzanforderungen <i>additional requirements</i> 附加要求		
Kontext <i>context</i> 内容	test plan requirement (EN)	检测方案要求 (CN)	07	08	10	11	20	23	25	27	29	BGR/GEW	13
Verksbescheinigung <i>Certificate of conformity</i> 合格证书	Certificate of conformity: Verification per purchase order according to document template "Cert of Conformity" provided on Broetje-Automation homepage (Downloads) (DIN EN 10204-2.1).	合格证书: 按照宝尔捷自动化主页(下载)上提供的文档模板"合格证书(Cert of Conformity)"为每个采购订单进行验证(DIN EN 10204-2.1)。			X	X	X	X	X	X	X		
Messprotokoll <i>measurement report</i> 测量报告	Measurement report: all test dimensions recorded for every part (no measurement allowed on machining center or manufacturing machine).	测量报告: 记录每个零件的所有检测尺寸(不允许在加工中心或制造用机器上进行测量)。			X	X	X	X	X	X	X		
Härte <i>Hardness</i> 硬度	Hardness test certificate: Hardness specifications must be verified according to DIN EN ISO 6506-1, 6507-1, 6508-1 Chapter inspection report.	硬度检测证书: 硬度规格必须根据 DIN EN ISO 6506-1, 6507-1, 6508-1中"检测报告"章节来进行验证。				X							
Lackierung <i>coating</i> 涂装	Coating: Confirmation of professional execution according to purchase order must be provided by confirmation of paint thickness and color.	涂装: 请确认涂层厚度和颜色, 依据采购订单, 确认按照专业方式执行。				X	X	X	X	X	X		
Personalqualifikation <i>personnel qualification</i> 人员资质	Welder's qualification test certificates on request according to DIN EN ISO 9806 .	根据 DIN EN ISO 9806 要求提供焊工的操作证书。					X	X	X	X	X		
CE <i>认证</i>	CE marking and declaration of performance according to DIN EN 1090-1 .	CE 标志和性能声明符合 DIN EN 1090-1 标准。					X	X					
Prüfbescheinigungen <i>inspection certificates</i> 检测证书	3.1 Inspection certificate (verification per part and traceability for every part necessary).	3.1 检查证书(必需验证每个零件并追溯每个零件)				X							
	2.2 Test report (verification per part and traceability for every part necessary).	2.2 检测报告(必需验证每个零件并追溯每个零件)	<i>BA internal</i>										
	Test certificate acc. EN 10204 . Steel/Cast < 275N/mm ² : Test report 2.2 Steel/Cast > 275N/mm ² : inspection certificate 3.1 Aluminium: Inspection certificate 3.1	测试报告, 依照 EN 10204 钢/铸 < 275N/mm ² : 2.2 测试报告 钢/铸 > 275N/mm ² : 3.1 检查证书 铝合金: 3.1 检查证书					X	X	X	X			
Schweißausführung <i>welding execution</i> 焊接实施	Inspection and documentation of weld seams according to DIN EN 1090-2 chapter 12.4.2	依据 DIN EN 1090-2 第 12.4.2 节检查焊缝并进行相应的文档记录					X						
	Inspection and documentation of weld seams according to DIN EN 1090-3 chapter B.2.3	依据 DIN EN 1090-3 第 B.2.3 节检查焊缝并进行相应的文档记录					X						
	Visual inspection of welds according to ISO 17637 . Inspector qualified according to ISO 9712 and valid eye test required. For welded parts according to test plan 29, only to be supplied on request. If necessary, further NDT according to requirements in drawing/order.	根据 ISO 17637 对焊缝进行目视检查, 检查员根据 ISO 9712 获得资格并需要进行有效的眼睛测试。 对于焊接件, 根据检验计划 23, 仅应要求提供。 如有必要, 根据图纸/订单中的要求进行进一步的无损检测							X	X	X		
	Test reports ZIP as indicated on the drawing	无损材料检测的检测报告符合图纸上的要求。							X	X			
	Heat treatment record (if heating is indicated on the drawing)	热处理记录(如果图纸上标明热处理)				X			X	X	X		
Zusatzanforderungen <i>additional requirements</i> 附加要求	additional requirement, see purchase order	附加的要求, 请参见采购订单。											X
Anforderungen Baugruppen/ <i>Gewerk</i> <i>assembly / sections requirements</i> 组件 / 行业要求	requirement needs to be defined in writing between BA and supplier before placing of order. See purchase order.	在下订单之前, 必须书面单独确定宝尔捷与供应商之间的要求, 请参见采购订单。										X	

2. DETAIL INFORMATION TEST PLANS

Incl. changes in Revision

2 Additional information

Test plan request (EN)	Additional information	Change (Rev4)
<p>Certificate of conformity: Certificate of conformity: Verification per purchase order according to document template "Cert of Conformity" provided on Broetje-Automation homepage (Downloads) (DIN EN 10204-2.1)</p>	<p>Detection options:</p> <ul style="list-style-type: none"> – Broetje-Automation template on homepage (http://www.broetje-automation.de/de/downloads/) or – Document acc. EN 10240-2.1 <p>One document per order delivery is to be created. One document per delivery in case of partial deliveries (see slide 4). Example see slide 10/11</p>	<p>No change.</p>
<p>Measurement report: Measurement report: all test dimensions recorded for every part (no measurement allowed on machining center or manufacturing machine).</p>	<p>If an inspection dimension is indicated on the drawing, all inspection dimensions must be recorded in the drawing and documented on the measurement report. Example see slide 13</p>	<p>No change.</p>
<p>Hardness: Hardness test certificate: Hardness specifications must be verified according to DIN EN ISO 6506-1, 6507-1, 6508-1 Chapter inspection report.</p>	<p>In the chapters "Test report" of the required standards you will find a list of the information that must be verified.</p> <p>Alternatively, the design according to DIN EN 10204 in chapter "Acceptance Test Certificate 3.1" is also possible for confirmation.</p>	<p>No change.</p>

2 Additional information

Test plan request (EN)	Additional information	Change (Rev4)
<p>Coating: If applicable: Confirmation of professional execution according to purchase order must be provided with confirmation of paint thickness and colour.</p>	<ol style="list-style-type: none"> 1. <u>Possible verification layer thickness:</u> Paint layer thickness: Values to be noted on drawing 2. <u>Proof of colour shade:</u> Delivery note for painter <p>All other types of coating (if required on the drawing) are confirmed by the supplier by means of proof of the works certificate.</p>	<p>No change.</p>
<p>Personnel qualification: Welder's qualification test certificates on request according to DIN EN ISO 9606.</p>	<p>For every welding part the test certificate of the qualified person who welded the part is to be delivered.</p> <p>Note data security: Minimum identification requirement on certificate that must not be blackened: Full employee name of the certificate holder.</p>	<p>No change.</p>
<p>CE: CE marking and declaration of performance in accordance with DIN EN 1090-1.</p>	<p>Delivery of the CE if requested according to DIN EN 1090-1.</p>	<p>No change.</p>

2 Additional information

Test plan request (EN)	Additional information	Change (Rev4)
Inspection certificates: 3.1 Inspection certificate (verification per part and traceability for every part necessary).	Document to be supplied for semi-finished products according to DIN EN 10204. The certificate shall be assignable to the part.	No change.
Inspection certificates: 2.2 Test report (verification per part and traceability for every part necessary).	Document to be supplied for semi-finished products according to DIN EN 10204. The certificate shall be assignable to the part.	No change.
Inspection certificates: Material test certificates in accordance with DIN EN 1090-2, Chapter 5.2 table1 (<i>steel</i>), DIN EN 1090-3, table A3 section 5 (<i>aluminium</i>) respectively.	Execution and delivery of documentation according to standard requirements. Overview regarding material allocation + test certificates, please see slide 18	No change.
Welding execution: Inspection and documentation of welding seams according to DIN EN 1090-chapter 12.4.2	Execution and delivery of documentation according to standard requirements	No change.
Welding execution: Inspection and documentation of welding seams according to DIN EN 1090-3 chapter B.2.3	Execution and delivery of documentation according to standard requirements	No change.

2 Additional information

Test plan request (EN)	Additional information	Change (Rev4)
<p>Welding execution: Visual inspection of welds according to ISO 17637. Inspector qualified according to ISO 9712 and valid eye test required. For welded parts according to test plan 29, only to be supplied on request. If necessary, further NDT according to requirements in drawing/order.</p>	<p>Options for verification:</p> <ul style="list-style-type: none"> – BA Template on homepage (http://www.broetje-automation.de/de/downloads/) or – Document with identical information created by the supplier <p>Test personnel: qualified and appropriate personnel on an adequate qualification level according to DIN EN ISO 9712 and valid eye test.</p>	<p>New wording. Formerly: Documented visual inspection (VT): Document template BA according to template Certificate of Compliance on homepage Broetje-Automation (Downloads). For welded parts according to test plan 29, to be supplied on request only. Addition: further Zfp.</p>
<p>Test reports ZfP according to requirements on the drawing</p>	<p>If NDT records are required in addition to the visual inspection (VT, see requirement above), this is indicated on the drawing on the respective welding symbol. See also BA company standard BN 30.070.</p> <p>Test personnel: qualified and appropriate personnel on an adequate quality level according to DIN EN ISO 9712</p>	<p>Removed – included into point “welding inspection”.</p>
<p>Welding execution: Heat treatment record (if heating is indicated on the drawing).</p>	<p>Documented execution according to welding stamp on the drawing or welding-related technical drawing appendix (on old drawings) according to ISO TR14745.</p>	<p>No change</p>
<p>Additional requirement, see purchase order.</p>	<p>This is an additional request that exceeds the standard test plans due to e.g. additional Broetje customer requirements. If required, details are additionally included into the purchase order.</p>	<p>No change</p>

2 Additional information

Test plan request (EN)	Additional information	Change (Rev4)
<p>Assembly / Sections requirements: Requirement needs to be defined in writing between BA and supplier before placing of order. See purchase order.</p>	/	No change.

3. TEMPLATES

Homepage Broetje-Automation

<http://www.broetje-automation.de/en/downloads/>

3.1 Template Certificate of conformity (1/2)

Certificate of Conformity acc. DIN EN 10204-2.1 Werksbescheinigung nach DIN EN 10204-2.1				
General part Allgemeiner Teil				
Customer Besteller	<input type="checkbox"/>	Broetje-Automation GmbH	Company / Supplier Firma / Lieferant	
	<input type="checkbox"/>	BA Services GmbH		
	<input type="checkbox"/>	Shanghai Broetje-Automation Equipment Trading Co.,Ltd		
	Bitte ankreuzen / Please mark.			
Order no. Bestellnr.		Delivery note no. Lieferscheinnr.		
		Order date Bestelldatum		
Order scope Bestellumfang				
Order position Bestellposition	Drawing no. / Revision no. Zeichnungsnr. / Revisions-Nr.	Quantity Liefermenge	Comment Bemerkung	
1				
2				
3				

Order no. Broetje-Automation

Supplier name and adress

Delivery note no.

Order date

Possible comments can be included here.

Order positions to be listed as indicated in the purchase order

Indication of drawing no. incl. revision no. with regards to single position no.

Ordered quantity per order position and drawing

3.1 Template Certificate of conformity (2/2)

Statement Bescheinigung		
<p>This is to certify that the prespecified product has been tested and complies with the order/ specification/ manufacturing documents.</p> <p>Hiermit wird bescheinigt, dass das vorbezeichnete Produkt geprüft worden ist und mit der Bestellung/ Spezifikation/ Bauunterlagen übereinstimmt.</p>		
Date Datum		Signature Unterschrift
Name Name		

Date and name creator of document

Signature necessary!

3.2 Template Visual inspection sheet

Fill-in aids via drop-down cells in the document header, e.g.: "acceptance standard"

To be filled out in case of imperfections/ irregularities according to the standard

Example shown here. To be filled out for the specific situation and part.

Name + Signature of examiner necessary!
(Example shown)

if required/ necessary

Visueller - Prüfbericht Visual-Inspection-Sheet					
Auftraggeber/Hersteller: client/manufacturer		Broetje-Automation		Bericht-Nr.: report no.	VT-01/2018
Auftragsnummer: order no.		BestelNr.: 4005101		Prüfart: place of examination	Loy
Bauteil/Objekt: component/product		Lastaufnahmepunkte am Aufnahmeträger		Zeichnungs-Nr.: drawing no.	270.223.103 / 04
Abmessung: size		L=76 mm a=6mm t=20mm		Oberflächenzustand: surface condition	geschliffen
Temperatur des Prüfobjekts: object temperature		18°C		Schweißverfahren: welding process	111
Prüfung nach: examination acc. to		DIN EN ISO 17637		Werkstoff: material	S355J2+N
Beleuchtungsstärke: illumination level		Soll 500 Ist 800 lux		Wärmebehandlung: heat treatment	<input checked="" type="checkbox"/> ja <input type="checkbox"/> nein
Skizze/Foto (Anlage): drawing/photo (attachment)		<input checked="" type="checkbox"/> ja <input type="checkbox"/> nein		Prüfbereich: area examined	SN + WEZ
				Prüfmfang: volume of examination	100%
				Bewertungsgruppe: evaluation group	C
				Prüfsystem/Hilfsmittel: Test System/aid	5 Skalenlehre, Stahlmaß, Meßschieber
Naht-Nr.: seam no.	Referenz Nr. reference no.	Lage und Beschreibung der festgestellten Unregelmäßigkeiten location and description of imperfections	Bewertung evaluation		
			e	ne	
1	2017	Pore bei länge 36mm - 37mm, d=1mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
1	503	Nahtüberhöhung bei länge 12mm - 14mm, h=2mm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
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			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
			<input type="checkbox"/>	<input type="checkbox"/>	
Bemerkungen oder Abweichungen von der Norm Remark or deviations from the standard					
Bauteil in Ordnung, Fehler gem. Norm zulässig.					
Referenz Nr. nach reference no acc. to:	DIN EN ISO 6520-1	Abkürzungen abbreviations	Ort: place	den date	15.11.2018
101 = Längsriss / longitudinal cracks	502/503 = Nahtüberhöhung / excess weld metal	e = erfüllt accepted	Prüfer: examiner	Name in block letters	
102 = Querriss / transversal cracks	509 = verlärtes Schweißgut / sagging	ne = nicht erfüllt not accepted	Prüfaufsicht: examination supervisor	[Signature]	
104 = Endkraterriss / crater crack	511 = Decklagenunterwölbung / incompletely filled groove		Sachverständiger: expert		
2017= Oberflächepore / surface pore	801 = Zündstelle / arc strike stray arc				
2025= Endkraterrisse / end crater pipe	602 = Spritzer / spatter				
501 = Einbrandkerbe / undercut	604 = Schleifkerbe / grinding mark				
507 = Kantensersatz / linear misalignment	610 = Anlauffarben / temper colours				

3.3 Template measurement report

Manually filled out protocols.

General information

Measurement device information

Results and evaluation

Examiner / signature / location

QA - Measurement Report
 QS - Messprotokoll

general part Allgemeiner Teil									
supplier / manufacturer: Auftraggeber / Hersteller:					component designation: Bauteilbezeichnung				
order no.: Bestell Nr.:					drawing no.: Zeichnungsnummer:				
Project: Projekt					drawing index.: Zeichnungsindex:				
module: Baugruppe:					serial number: Seriennummer:				
log number: Protokollnummer:									
used measurement device Verwendete Messmittel									
measurement device: Messmitteltyp:									
other measurement device: Sonstige Messmittel:									
device Ident. No.:									
Messmittelnummer:									
result Befund						evaluation Bewertung			
PM	inspec. Dim. Prüfmaß	set point Sollwert	tolerance Toleranz	act. value Istwert	deviation Abweichung	o.k i.O.	n.o.k n.i.O.	Remarks Bemerkungen	
1									
2									
3									
4									
5									
6									
7									
8									
10									
11									
12									
13									
14									
15									
16									
examiner Prüfer									
name of examiner: Name des Prüfers:					date of examination: Datum der Prüfung:				
signature of examiner: Unterschrift des Prüfers:					location of examin.: Ort der Prüfung:				

4 Additional information

Prüfbescheinigungen / test certificates

Zuordnung Material/ material allocation <-> Prüfbescheinigungen/ test certificate		
SWT-Teile/ welded parts		
Material/ material:	Prüfbescheinigung/ test certificate:	Hinweis/ reference:
S185; S235; S275	2.2	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
DC01; DD11...	2.2	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
Schweißzusätze/ welding fillers	2.2	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
≥ S355	3.1	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
Nichtrostende Stähle/ stainless steels (1.4301; 1.4305; 1.4571;	3.1	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
Aluminium (EXC1 / 3834-4)	2.2	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>
Aluminium (≥ EXC2 / 3834-3)	3.1	Bei Prüfplan 29 kein Materialzeugnis notwendig/ <i>no material certificate required for inspection plan 29</i>

4 Additional information

Test plan requirements according to the respective order are leading.

= If former inspection plans are still integrated in purchase orders, these form the requirement basis and have to be fulfilled by the supplier.

Broetje-Automation will of course support in case of need for clarification.

Contact persons:

- Purchaser of single purchase order
- Clarification will then be done internally at Broetje and information will be communicated back to the supplier.

THANK YOU!