

# QUALITY REPORT

LFM-0122-100-001










ReportNumber:	01	ProjectNumber:	LFM-0122-100-001
PartNumber:	LFM-0122-100-001	InquiryNumber:	LFM-0122-100-001.001
Requirements:	DO-01	DrawingNumber:	LFM-0122-100-001.idw
PartTitle:	Femoral head 32mm	Visual testing date:	04.05.2022

## Testing information

Test standards:	DIN EN 13018	Printing process:	FDM (metal)
Test instruction:	internal	Order specifications:	Sintered (external)
Test scope:	100%	Acceptance rule:	internal
Test device:	Digital vernier caliper	Testing aids:	Lamp, Camera, Lens
Illuminance meter:	Voltcraft LX-10	Lux measured:	455
Measuring device no.:	1662853		

## Test results

Exam area		Target [mm]	Scope <sup>1)</sup> / Actual [mm]	Visual inspection - documentation according to DIN EN 13018																									Evaluation <sup>2)</sup>		Remark			
				100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	118-a	118-b	201	202	301	302	303	A		NA		
Part properties																																		
	Outer sphere		ES100	x															x											X				
	Drilling		ES100	x																											X			
	Initial layer		ES100	x	x																										X			
Part dimensions																																		
	Overall diameter		31,90																												X			
	Overall height		27,04																													X		
	Hole depth		21,50																													X		
	Initial hole width		15,49																													X		

### Legend:

- <sup>1)</sup> ES ... Exterior surfaces (e.g. ES100%)  
 S ... Support (e.g. S0%, S100%)
- <sup>2)</sup> A ... Requirements are accepted  
 NA ... Requirements are **not** accepted

### Surface irregularities:

100 General  
 101 Rough surface  
 102 Blobs on surface  
 103 Over extrusion  
 104 Under extrusion  
 105 Gaps in Walls  
 106 Stringing  
 107 Layer delamination  
 108 Curling  
 109 Warping  
 110 Overheating  
 111 Layershifting  
 112 Bad support structures  
 113 Missing support

114 Bad corners  
 115 Bad overhangs  
 116 Waves on surfaces  
 117 z-seam on surfaces  
 118 Dimensional issue  
 118-a Undersize  
 118-b Oversize

### Infill irregularities:

201 False infill  
 202 Defect infill

### Other irregularities:

301 Clogged extruder  
 302 Broken filament  
 303 No print bed adhesion

Appendix <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO (Description/Pages)	General test instructions, acceptance rule, part properties/ 3 pages
Remarks:	<ul style="list-style-type: none"> <li>Parts were safely packed</li> <li>Clear defects visible after sintering</li> <li>Further processing of defective parts for validation of the documentation process</li> </ul>


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Checked		Rated		Customer release (if requested)	
Name:	<u>Inspector #1</u>	Name:	<u>Production manager</u>	Name:	<u></u>
Test location:	<u>Test area</u>				
Date:	<u>04.05.2022</u>	Date:	<u>04.05.2022</u>	Date:	<u></u>
Signature:	<u>xxx</u>	Signature:	<u>xxx</u>	Signature:	<u></u>

## Appendix

<b>Test instruction</b>	<ul style="list-style-type: none"> <li>• The assessment and evaluation must be carried out by experienced and trained personnel.</li> <li>• Visual inspection after receiving the part from the sintering service provider.</li> <li>• The surfaces must be free of any coating, dirt, dust, powder etc.</li> <li>• The testing/ inspection is carried out in daylight or under artificial light. The illuminance during the test must be at least 350lx, 500lx is recommended.</li> </ul>
<b>Acceptance rule</b>	<ul style="list-style-type: none"> <li>• There is currently no existing standard for 3D printing that defines the possible irregularities and limits for evaluation.</li> <li>• For this reason, only internal evaluation standards can be used.</li> <li>• The acceptance of the examinations here is based on the individual assessment of the examiner.</li> </ul>
<b>Part images for final quality control</b>	
<b>General view after receiving the parts</b>	

<p>View under test conditions</p>	
<p>View of the defects (if occurred)</p>	
<p>Rough initial surface</p>	

<p>Z-seam on outer sur- face</p>	
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