

TRUMPF

maintenance checklist

Machine type: TruPrint 3000 (G02)
 Machine nr: S0721Q0022
 Customer: _____
 Version: _____

Maintenance contract: Classic
 Maintenance coverage: Einmal Wartung
 Date current maintenance: 11.04.2023
 Version: 08.04.2022

Options: Zirol sensor, Singlelaser, Powder Bed Monitoring

Nr.	Icon ID	maintenance point	maintenance operation	actual value	status
1.00		maintenance preparation			
1.01			check of the last maintenance list		⊖ ?
1.02			dialogue with the customer about machine problems		⊖ ?
1.03			leakage test before maintenance	0.0	✖ ✓

Status legend:

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2.00		Filter unit			
2.01	132	Pipe installation	Oxygen sensors must be replaced		✖ ✓
2.02	155	Operating panel	HEPA Filter differential pressure must be checked		⊖ ✓
			Differential pressure [mbar]: 0,4		⊖ ✓

3.00		Exterior area of the machine			
3.01	4	Machine leg	Leveling of the machine must be set		⊖ ✓
			TruPrint 3000 Serial release: 0.05		⊖ ✓
3.02	124	Top of the machine	Temperature and moisture sensor must be cleaned		✖ ✓
3.03	159	Enclosed protective housing	Machine covering must be cleaned		✖ ✓

4.00		Shielding gas system			
4.01	103	Operating panel	Gas valves (Boost, Regulation, Dust extractor): flow rate must be set		⊖ ✓
			Flow rate [l/min]: 158		⊖ ✓
			Flow rate [l/min]: 30		⊖ ✓
			Flow rate [l/min]: 120		⊖ ✓
4.02	108	Outlet valve	Filter element must be replaced		✖ ✓
4.03	128	Device panel	Compressed air pressure must be set		⊖ ✓
			Measuring variable [bar]: 6,0		⊖ ✓
4.04	137	Shielding gas system	Oxygen sensors safety must be replaced		✖ ✓
4.05	149	Machine gas connection	Gas inlet pressure must be checked		⊖ ✓
			Pressure [bar]: 6,1		⊖ ✓

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4.07	162	Operating panel	wet separator for compressed air must be checked		✓
4.08	90	Operating panel	Oxygen sensors: operating hours must be reset		✓
4.09	136	Substrate plate	Flow speed must be measured		✓
5.00 Control					
5.01	29	Operating panel	Machine data must be saved		✓
5.02	35	IPC	Buffer battery must be replaced		✓
5.03	34	IPC	Connector must be checked		✓
5.04	37	Process chamber monitoring	Camera image must be checked		✓

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Nr.	Icon ID	maintenance point	maintenance operation	actual value	status
6.00		Process chamber			
6.01	44	Process chamber	Surfaces must be cleaned		✖✓
6.02	107	Process chamber door	Door seals must be replaced		✖✓
6.03	54	Overflow container	Pipe clip seals must be replaced		✖✓
6.04	94	Process chamber	Camera protective glass must be cleaned		✖✓
6.05	106	Process chamber - rear space	Coater: cover belt must be checked		✖✓
6.06	130	Process chamber - interior	O-rings seal cap must be cleaned		✖✓
6.07	42	Process chamber	LED lighting must be cleaned		✖✓
6.08	56	Process chamber - rear space	Rear space must be cleaned		✖✓
6.09	48	Process chamber - rear space	Coater: mechanics must be checked		✖✓
6.10	138	Process chamber - rear space	Coater drive: belt tension must be checked		✖✓
6.11	177	Process chamber - rear space	Lubricate the drive belt must be checked		✖✓
7.00		Optics			
7.01	179	Substrate plate	Focus and focus shift must be checked		✖✓
7.02	65	Substrate plate	Scanfield must be calibrated		✖✓
8.00		Laser			
8.01	83	LLC (Laser light cable)	LLC visual inspection must be performed		✖✓
9.00		Electrics			
9.01	10	Transformer	Fan function must be checked		✖✓
9.02	9	Switch cabinet	Fan function must be checked		✖✓
9.03	99	Power pack	30V voltage supply must be measured	Voltage [V]: 29.9	✖✓
9.04	102	Switch cabinet	Safety function must be checked	Emergency stop: OK Upper door switch: OK Lower door switch: OK Light barrier: OK Cylinder presence switch (check all 3): OK Laser Off, Pump Off [when O2 >3%]: OK	✖✓ ✖✓ ✖✓ ✖✓ ✖✓ ✖✓
9.05	127	Switch cabinet	PLC: buffer battery must be replaced		✖✓
9.06	11	Power pack	24 V voltage supply must be measured	Voltage [V]: 24	✖✓
10.00		Water cooling			
10.01	111	Switch cabinet	Heat exchanger (leakage) must be checked		✖✓
10.02	129	Switch cabinet	Drive modules cooling for leakage must be checked		✖✓
10.04	119	Cooling circuit	Cooling water must be cleaned		✖✓
10.05	112	Cooling circuit	Filter elements must be replaced		✖✓
10.06	115	Cooling circuit	Copper inhibitor must be refilled		✖✓
10.08	113	Cooling circuit	Filling of cooling water tank should be refilled if required		✖✓
10.09	116	Cooling circuit	Temperature sensors must be checked		✖✓
10.10	117	Cooling circuit	Pressure reducer must be set	Pressure [bar]: 2	✖✓
10.11	168	Cooling circuit	Flow sensors must be checked		✖✓
10.12	191	Cooling circuit	Cleaning cycle with ST 40 must be performed		✖✓
11.00		Zirox sensor			

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Nr.	Icon ID	maintenance point	maintenance operation	actual value	status
11.01	23	Process chamber - rear side	Oxygen sensor process control 50ppm (Zirol) must be checked		
12.00 Glove-Box					
12.01	41	Glove box	Gloves must be checked		

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Nr.	Icon ID	maintenance point	maintenance operation	actual value	status
13.00 Singlelaser					
13.01	71	Process chamber	Scanner: protective glass must be cleaned		✖ ✓
13.02	80	Substrate plate	Laser power must be measured		✖ ✓
			Measuring point 1 ± 5% [W]: 69		✖ ✓
			Measuring point 2 ± 5% [W]: 125		✖ ✓
			Measuring point 3 ± 5% [W]: 301		✖ ✓
			Measuring point 4 ± 5% [W]: 502		✖ ✓
			: 1		✖ ✓
13.03	91	Operating panel	Operating hours must be documented		⊖ ✓
			Operating hours NC [h]: 33745		⊖ ✓
			Operating hours laser On [h]: 46052		⊖ ✓
			Operating hours beam On [h]: 17508		⊖ ✓
15.00 Powder Bed Monitoring					
15.01	135	Process chamber - interior	LED flash protective glass must be cleaned		✖ ✓
15.02	144	Process chamber - interior	Powder Bed Monitoring must be calibrated		✖ ✓
16.00 Final activities					
16.01		leakage test after maintenance			✖ ✓
16.02		walkthrough the maintenance list with customer			⊖ ?
16.04		leaving maintenance checklist at the customer and send it via SIS-Mobile			✖ ✓
16.05		reset passwords and pull of service key and short-circuit plug			✖ ✓
16.06		fixing small problems up to max. 30min			✖ ✓

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Overview consumables

Machine type: TruPrint 3000 (G02)

Machine nr: S0721Q0022

Customer:

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Maintenance contract: Classic

Maintenance coverage: Einmal Wartung

Date current maintenance: 11.04.2023

Classic

Options: Zirox sensor, Singlelaser, Powder Bed Monitoring

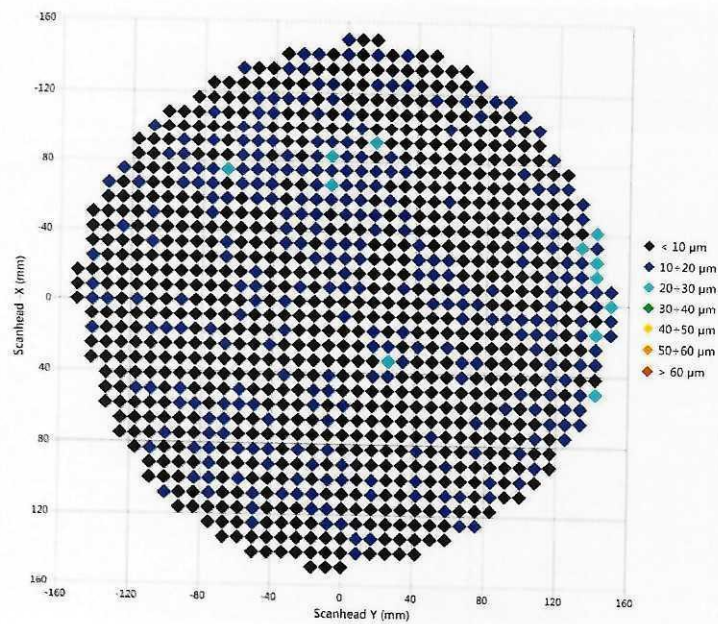
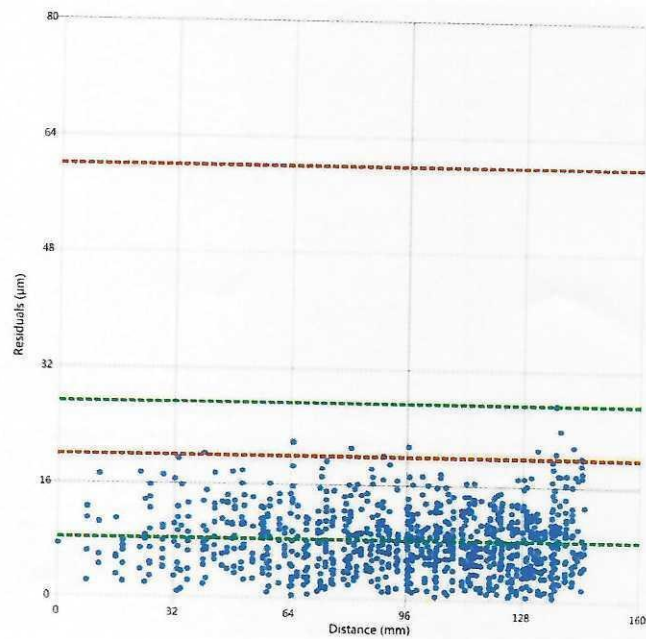
Consumable designation	Material number	Amount	ME
Oxygen sensor Pewatron	2619082	2	Stück
Oxygen sensor Maxtech 250	2249087	2	Stück
Filter elements set	2261280	1	Stück
Lithium battery Renata CR2477N	0129563	2	Stück
Process chamber door seal	2328074	2	Stück
Seal - overflow bin	2270528	2	Stück
Cleaning tissue PROSAT soaked with alc.	1433449	2	Stück
Check plate focus position TruPrint	2556201	3	Stück
Scanner - calibration plate	2418352	1	Stück



Scanfield Calibration Report

Machine Serial Number	S0721Q0022 PreSeries_B_8	Calibration File Name	D3_1354_P.ct5
Operator	Ottmueller	Calibration File Data	2019/03/19

Results			
	Measured Value	Max. Value Accepted	Passed
Average error	8 μm	20 μm	V
Maximum error	27 μm	60 μm	



maintenance report

customer and machine information

Customer:
Contact person:

Service agreement: Classic
Type of maintenance: Einmal Wartung

Machine type: TruPrint 3000 (G02)
Machine number: S0721Q0022
Laser type: SP-500C
Laser number: 402965

TRUMPF technician: ARANOWSKI

Date current maintenance: 11.04.2023
Date next maintenance: 12.04.2024
Date last maintenance: 15.04.2022

Operating hours NC: 33745
Laser on: 46052
Beam on: 17508

WCLM Version: 08.04.2022

Report

Machine status

Machine can produce unrestricted.

R 1.

Summary of needed repairs and spare parts

Nr. maintenance point Comment TRUMPF technician

Nr. maintenance point Needed spareparts

TRUMPF Mat-Nr. Amount:

① For the purpose of repair commission or spare part order, please get in contact with your TRUMPF Service.

R 2.

Further comments

R 3.

Customer adverted to open points / repairs

customer adverted to the maintenance points according to the user manual,
which have to be performed between the yearly maintenance interval.

not needed

not needed

R 4.

Signature

Signature and short name TRUMPF technician:

Date: 14.04.2023

Name & signature customer: