

中国认可 国际互认 检测 TESTING CNAS L6478

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TEST REPORT

Reference No.
Applicant
Address
Manufacturer
Sample Name
Model No.
Test Requested
Test Method

WTF18F10127684C

Mid Ocean Brands B.V.

7/F., Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong 114628

Watch

MO9582

In accordance with the RoHS Directive 2011/65/EU

1) With reference to IEC 62321-2:2013, disassembly, disjointment and mechanical sample preparation

- 2) With reference to IEC 62321-3-1:2013, screening Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry
- 3) With reference to IEC 62321-4:2013+AMD1:2017 CSV, determination of Mercury by ICP-OES
- 4) With reference to IEC 62321-5:2013, determination of Lead and Cadmium by ICP-OES
- 5) With reference to IEC 62321-7-2:2017 and IEC 62321-7-1:2015, determination of Hexavalent Chromium by UV-Vis
- 6) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS

Test Conclusion:Date of Receipt sample....:Date of Test:Date of Issue:Test Result:

Based on the performed tests on the submitted samples, the results comply with the RoHS Directive 2011/65/EU 2018-11-01 2018-11-01 to 2018-11-16

2018-11-01

Please refer to next page (s)

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Compiled by:

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Approved by: Dino Zhang / Lab Manager



Test	Results:
ICOL	nesuits.

Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
1th	THE THE NUTE WITH N	Cd	BL	L A A	Lit.	
	The she was so a	Pb	BL	et aller antie waite	mer m	
.1	Beige wood band	Hg	BL	NA	Comply	
	in which which which we	Cr	, ⊢ BL, ∕	THE JEEK STREET	NUTE MALL	
		Br	BL	white where where we		
	a net inter whe whe	Cd	BL	at at at .	IT IT	
		Pb 💉	BL	inter white white wh	241.	
2	Silvery metal sheet	Hg	BL	Cr ⁶⁺ : Negative	Comply	
	which when the the	Cr	N	It with mite white	with a	
	at at at and	Br	M BLM	211, 24, 4	×	
56	net when when we we	Cd	BL 🖉	t let set set	INLIN IN	
		Pb	BL	are more me	24. 1.	
3	Silvery metal screw	Hg	BL	A NA A	Comply	
	- Jul - Jul	Cr	BL	White white white w		
	t get get is with	Br 🐠	BL			
Inth	Mrt. Mrs. M. S.	Cd	BL	THE STREE WITE WAL	Comply	
	at at a star	Pb	BL	NA MILIE		
4	White plastic sheet	Hg	BL			
		Cr	BL			
		Br	BL			
10	- In In	Cd	BL	NUTE INTE MALE	n m	
	at let tex the	Pb	BL		at at	
5	Black rubber gasket	Hg	BL	NA	Comply	
		Cr S	JUBL V			
		Br	BL		A NITER	
a.	Sev Sev A	Cd	BL	in which which	24, 1	
		Pb	BL	the second second	lit .	
6	Transparent plastic cover with black printing	Hg	BL	NA	Comply	
	black printing	Cr	BL	an an a	1	
	The water water water we	Br	BL	alt alt after a	NUT NUL	
	. I A A A	Cd	BL	WE WE WE W		
		Pb	BL	at at at .	It JIE	
~7	White paper adhesive sheet with		BL	NAN W	Comply	
	yellow printing	Croff	Ju BL		t st	
NUT	ant whe when so	, Br ,	BL	IE LIER NITE WIT	WILL W	
4	at at at at	Cd	IL BLUE	211. 24. 2		
		Pb	BL	t at the set	INLIE INL	
8 💊	Golden metal pin with	Hg	BL	NA NA	Comply	
	white-black coating	Cr S	BL	a at at		
	when the the	Br	BL	outer white white we	it was	



Part No.	Part Description	Part Description Result		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
. Att	THE STREE SHITE WALTE W	Cd	BL	· · · · · ·	Lit.	
× .	In the second	Pb	S BL S	et intre intre water	mr m	
9	White plastic sleeve	Hg	BL	NA	Comply	
and and a second	in the the service	Cr	, ₀⊱ BL,⊘ ⁺	THE STREE STREET	Intit whit	
	i at at at	Br	BL	Wer all and		
	intite white white white	Cd	BL	at at at	THE NUTE	
- nu		Pb	BL	when when when wh	20	
10	Golden metal pin with black	Hg W	BL	NA	Comply	
nt.	Coating	Cr 👉	BL	TE NITE INTE MAIN	with s	
SL.	at at set set out	Br	S BL	20 20	*	
	NET WALL WAT WAT THE	Cd	, BL ,	t tet uter uter	In Lin M	
1	the state	Pb	BL	and the shirt	24. 4.	
11	Black plastic adhesive label	Hg	BL	NA A	Comply	
m	w w w	Cr	BL	white white white w		
	- ret ster st aute	Br M	BL			
JUL .	when when we are	Cd	BL	THE STREE WITE WAL	with	
	at at a st	Pb	BL	NA NA	1	
12	Golden metal sheet	Hg	BL		Comply	
		Cr	BL			
et .		Br	BL			
N	Mr. M. S.	Cd	BL	NA	Comply	
	at left felt fill	Pb	BL			
13	Golden metal pin	Hg	BL			
-20-		Cr N	BL 🤇	n m m		
J.F.Y		Br	BL	t at the S	A LIER	
u.	20. 20.	Cd	BL	in the second	24	
At		Pb	BL		t	
14	Silvery metal knob with black	Hg	BL	Cr ⁶⁺ : Negative	Comply	
4	coating	Cr	IN	The the training		
	TEN MITE WALL WILL WILL	Br	BL	THE THE STREET	NUTE WALT	
14		Cd	BL	Wer me m n		
<u>_</u>	alifet outer antite antite	Pb	BL	t at at	IF JER	
15	Silvery metal sleeve	Hg	BL	Cr ⁶⁺ : Negative	Comply	
A	aft aft aft with	Croff	10 IN 10		t st	
NUT	white white white white	Br A	BL	re lifet nifet intre	with s	
	at at at at	Cd	JAN BLAN	The the sec		
	Life until wait wat w	Pb	BL	t set set set	NITER N	
16	Black plastic sheet	Hg	BL	NA NA	Comply	
-		Cr	BL	i i it	- Compry	
- Mr.	when when we want	Br	BL	JER NITE MIT W	r wit	



Part No.	Part Description Result of		of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
.et	THE STREE WITH WATE SHE	Cd	BL	1 A A A	Let .	
		Pb	BL	er intre intre white	when wh	
17	White plastic ring with black	Hg	BL	NA	Comply	
	printing	Cr	, − BL	THE JEEK NITER.	NHIE WAL	
20	a at at at	Br	BL	The Mr. M. A		
.5	all water water water	Cd	BL	at let let	SET SUFE	
m	shi the st	Pb	BL	inter white white wh	- Un	
18	Transparent plastic sheet	Hg	BL	NA	Comply	
N ^L .	when when we want the	Cr	BL	TE NUTER INTE WAIT	with a	
st.	at let set set	Br	an Bran	241. 24. 1	*	
	with white white with	Cd	, BL ,	t let uter uter	Inthe M	
20	i it it it	Pb	BL	RUT MUS MIL	20. 0.	
19	White plastic gear	Hg	BL	NA A	Comply	
m	with the state	Cr	BL	white white white w		
	- ret stet strant	Br w	BL		it it	
JAL	when when when you	Cd	BL	JET STE MITE MI	white	
	at at a set	Pb	BL	- m m r	Comply	
20	Green plastic gear	Hg	BL	NA		
		Cr	BL			
et .		Br	BL		Att is	
Ju.	Mr. Mr. a	Cd	BL	NUTE JAIT WAL	n m	
	at set ster see	Pb	BL		1 1	
21	Transparent plastic sleeve	Hg	BL	NA NA	Comply	
		Cr v	J BL			
JEN	and and and the	Br	BL	t at the st	A NUTER	
n-	20. 3.	Cd	BL	it with with	24	
.et		Pb	BL		. Alt	
22	White plastic sleeve	Hg	BL	NA	Comply	
4	at all the tet of	Cr	BL	20 20 2	at a	
in.	white white white we	Br	BL	THE ITER LITER	NUT INUT	
	at at at at	Cd	BL	W Mr. W. V		
	NETER INTE WALL WALL	Pb	BL	at at at	THE THE	
23	Dark grey magnetic core	,⊘Hg _∕	BL	Cr ⁶⁺ : ND	Comply	
.et	TEX ITEX WITER MUTE	n Cron	~ IN ~		t dit	
	nut me m	Br 🖉	BL	IE SLIER NUTE MALTE	with s	
4	at at ret ret	Cd	IN BLAN	M. In.	1.t	
	LITE WALT WALL WALL W	Pb	BL	t set set set	INLIE IN	
24	Silvery metal sheet	Hg	BL	NA NA	Comply	
-	et alter mile until wat	Cr	BL	it at at	JEK JE	
Mr	when we we	Br	BL	outer with white wi	in m	

NR		-sy	7
	N		2
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Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
.et	THE STILL MUTE WALL W	Cd	BL	· · · · ·	
L. W		Pb	BL	er intite white white	we we
25	Silvery metal axle	Hg	BL	NA	Comply
NIC!	The wat was sure our	Cr	,,⊢ BL,,∕*	TEX TEX NITER .	INLIE WAL
		Br	BL	We we we	
	white white white white	Cd	BL	at at at	
m		Pb 🗸	OL	internet war wa	20
26	Silvery metal sleeve	M Hg	BL	[#] Pb :2.37×10 ⁴	Comply
		Cr 🖉	BL	TE NITE INTE MAIN	with .
1.L	at set set set	Br	an Bra	211 25	A
	in white white white you	Cd	BL 🖉	t the the the	Intra M
		Pb	BL	aut and an	24. 2.
27	Silvery metal axle	Hg	BL	NA NA	Comply
m		Cr	BL	White white white w	
		Br w	BL	with the second	it it
JNL.	when when we are	Cd	BL	I A SITE MITE MA	Comply
		Pb	BL	- Mr. W. A.	
28	Coppery metal winding	Hg	BL	- MARTINE NA	
		Cr	BL		
et .		Br	BL		
Ju.	Mr. M. S.	Cd	BL	NUTE JAIT WALL	n n
0		Pb	BL		1 10
29	Silvery metal sheet	Hg	BL	NA SNA ST	Comply
		Cr of	JUBL V	n m m	
JEN		Br	BL	t at at a	A STER
	Government of the second s	Cd	BL	- MAL WAL	14
1th		Pb	BL		. Et
30	Chip IC	Hg	BL	PBBs : ND PBDEs : ND	Comply
L .		Cr	BL	PBDES. ND	*
	it white white when we	Br	IN 🔶	Let Jet Jet	NUTE MI
1	L A At At	Cd	BL	War with with a	
1		Pb	IN	at at at	LET JEE
31	Solder	Hg	BL	Pb :102	Comply
A	ret ret tret when	Crv ¹	BL 7		t st
L'	in the the second	Br	BL	IF STER NUTE MAIN	with y
4	at at at alt	Cd	IN BLAN	M. In	A
	LIET WALTE WALT WALT W	Pb	BL		NITE IN
32	Green PCB	Hg	BL	PBBs : ND	Comply
-		Cr	BL	PBDEs : ND	1th 5t
m		Br	IN	outer with which we	. when



Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS	
1 th	THE STREE STREET STREET STREET	Cd	BL	1 A At At	. Att	
	and say and	Pb	BL	" NITE WITT WALL	we we	
33	Silvery body of oscillator	Hg	BL	NA	Comply	
16. 11	the work when we we	Cr	st BL st	THE STREE MITCH	INTE MAL	
	i is at at all	Br	BL	a me me m	i i	
- <u>.</u>	at all water water water	Cd	BL	at at at	Comply	
-2012	Son Street At	Pb 💉	BL	Ne were we we		
34	Silvery metal pin of oscillator	Hg W	BL	NA NA		
NN		Cr 👉	BL			
. L		Br	M BLM			
J.	NET WAL WAL WIT W	Cd	, BL ,	THE THE THE	Intit wat	
~	i i it it it	Pb	BL	Mr. Mr. M.	21. 2.	
35	Dark brown wood band	Hg	BL	NA NA	Comply	
m	11 - N. V	Cr	BL	untite while which w	1 201-	
1	t ret ret is oute	Br w	BL		it it	
MAL	when when you are	Cd 🖉	BL	THE STEE MIT MIT	wint	
	White poper adhesing sheet with	Pb	BL	111 - 111	*	
36	White paper adhesive sheet with - brown printing -	Hg	BL	NAC S	Comply	
		Cr	BL	white whe wh		
.et	TEL TEL NUTE WAY	Br	BL	it it it	JEK J	



Remark:

(1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr⁶⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	$LOD < IN < (150+3\sigma) \le OL$
Pb	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) <in< td=""><td>BL ≤ (500-3σ) < IN</td></in<>	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	We share white white w	BL ≤ (250-3σ) < IN

BL= Below Limit OL= Over Limit LOD = Limit of Detection -- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) ppm = mg / kg, based on the dry weight of tested sample.
- (5) ND = Not Detected, less than the value of Method Detection Limit.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit, it was not need to conduct the wet chemical testing.

Test Items	V Pb V	Cd	Hg	Cr ⁶⁺		PBB	PBDE		
Units	mg/kg	mg/kg	mg/kg	mg/kg	µg/cm ²	mg/kg	mg/kg		
MDL	2	2	2	2	0.1	5	5		

(7) MDL= Method Detection Limit in wet chemical test.

The MDL for single compound of PBBs and PBDEs is 5mg/kg, MDL of Cr⁶⁺ for polymer and composite sample is 2mg/kg and MDL of Cr⁶⁺ for metal sample is 0.1µg/cm².

(8) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than 0.10 ug/cm².

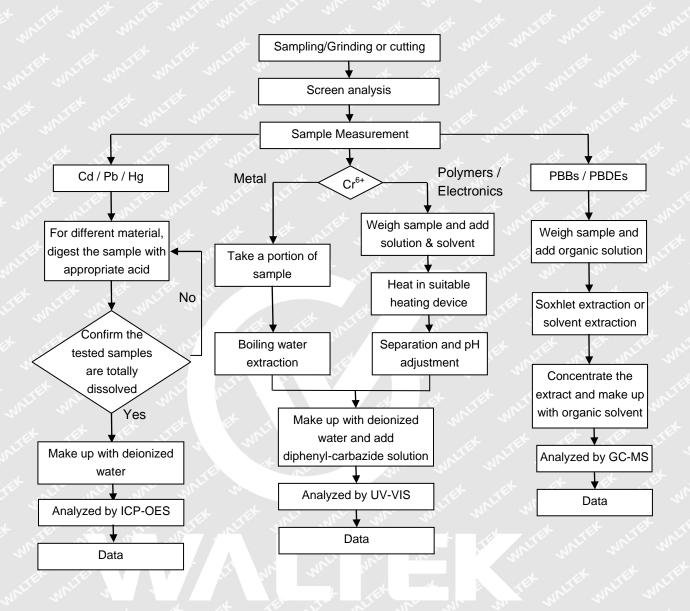
Positive = Presence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

- (9) As per client's requirement, all results of specimen are extracted from report No. WTF18F10127683A1C.
- $(10)^{\#}$ = According to the declaration from client, the source of lead in test sample could be from copper alloy while lead as copper alloy containing up to 4% lead by weight is exempted by Directive 2011/65/EU.



Measurement Flowchart:





Sample Photo:

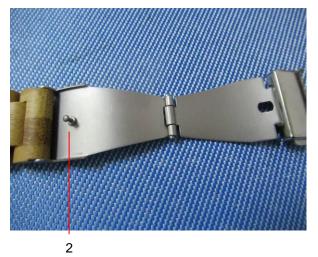




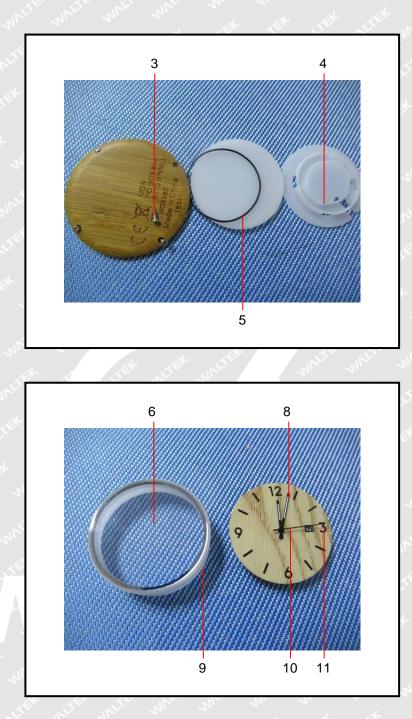


Photograph of parts tested:

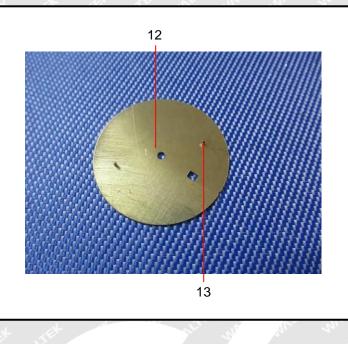


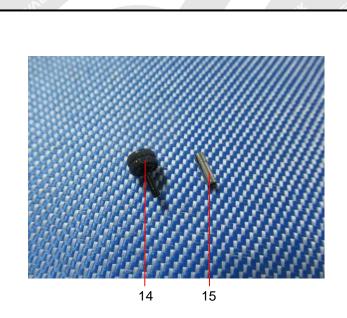




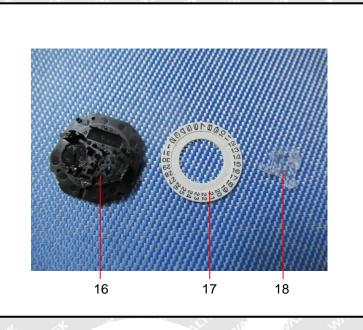


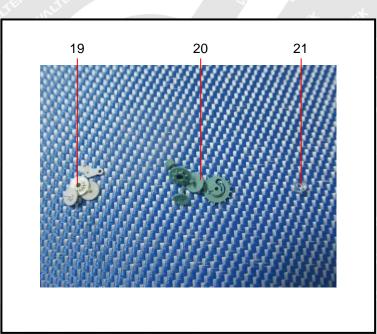




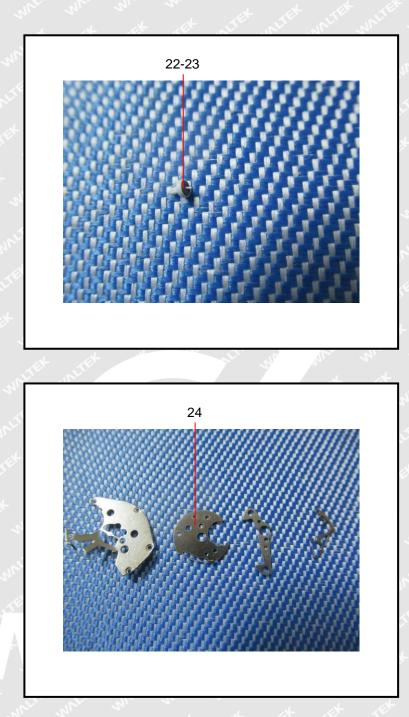




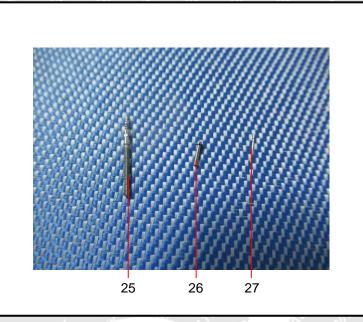


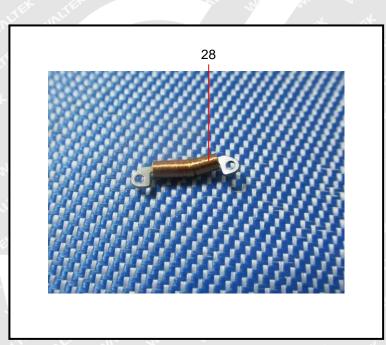






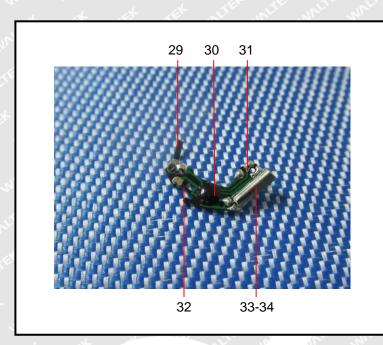


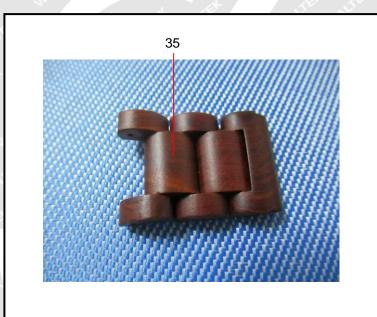




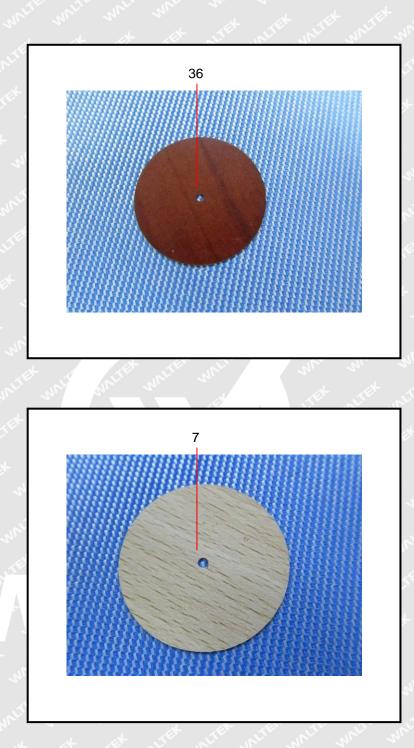
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===== End of Report ======