

EA02-025

TEXAS INSTRUMENTS, INC.'S

09/10/03

LETTER TO ODI

REQUEST # 5

BOX 6

PART A-M

PART M

Morris, Irene

From: Beringhouse, Steven
Sent: Thursday, September 02, 1999 7:58 AM
To: Baumann, Russ
Subject: FW: Field Campaign Analysis Report

From: Beringhouse, Steven
Sent: Wednesday, September 01, 1999 6:31 PM
To: 'Steve Reimer'
Subject: Field Campaign Analysis Report

Steve,

Here is the summary document you requested. We were able to complete the analysis on all forty parts. Why don't you call me in the morning so we can discuss this in more detail.


Fieldcampaign.doc

Regards,
Steve 508-238-3378

77PSL2-1 Field Campaign Analysis Report
September 1, 1999

Objective:

The purpose of this report is to document the general condition of field campaign pressure switches obtained by TI.

Procedure:

- 1) TI visited and requested some of the local dealers to set replaced switches aside for TI to pick up later. As a result of the recent field campaign, dealers responded by saving the replaced switch for TI.
- 2) TI conducted the analysis per the attached sheet.

Results/Observations:

The condition and state of the switches received to be analyzed varied widely. Some were returned loose, some in the new switch box, some with mating connectors, some with seals, and some completely wrong part numbers. Only those switches that could be identified as TI part number 77PSL2-1 were included in this analysis.

To date 40 switches have been obtained and analyzed. The date codes obtained are as follows:

				2057					
				2057					
				2066					
				2054					
				2052	2079				
				2048	2068				
				2048	2088				
		1352	2014	2045	2085				
		1347	2013	2038	2083				
		1347	2009	2038	2082			2128	2287
		1345	2008	2036	2082	2120		2128	2276
1282	1331	1338	2008	2029	2082	2104		2126	2276
Oct '91	Nov '91	Dec '91	Jan '92	Feb '92	Mar '92	Apr '92	May '92	Oct '92	

From this group of switches the following observations were made:

- 1) There were no signs of fluid leakage into the connector cavity.
- 2) 28 switches were returned with foam connector seals. 1 with silicone seals and 11 with no seals.
- 3) Terminal to terminal resistance on all 40 switches was within specification.
- 4) With hexport grounded and terminals subject to 14 Vdc, there was no detectable current flowing from terminal to ground.
- 5) Internal inspection of the internal components (pin, arm, washers, converters, and Kapton) showed wear as would be expected in a part that has seen significant number of pressure cycles.
- 6) All switches pass the sensor leak check.
- 7) First layer of Teflon on all switches showed some signs of delamination, as would be expected with cycling, while some switches had two or three layers delaminated.
- 8) No cracking was seen on the second and third layer of Kapton.
- 9) Four switches had Kapton cracks on the first layer.
- 10) Wear from all of the internal components was seen to settle and discolor the converter side Kapton.
- 11) Environment seal gasket and internal pressure media seal gasket were present and in good condition on all switches.

- 13) Teardrops were seen on roughly 60% of the switches. No correlation between level of wear and teardrops.

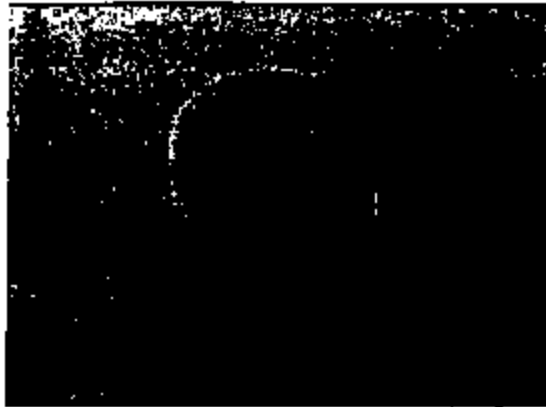


Figure 1. Ceramic pin with wear marks seen on top and around the sides.



Figure 2. Wear marks can be seen as a flat spot on the bump and curved discoloration on the arm.

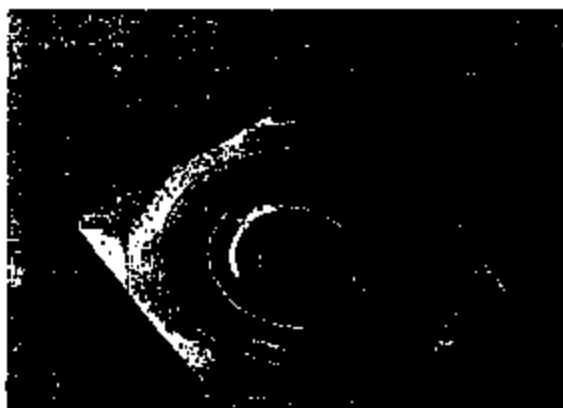


Figure 3. Delamination of the Teflon from the Kapton can be seen as a circular bubble.

77P5L2-1 Return Analysis Sheet

Device ID: _____ Date: _____
 Operator's Name: _____ SW Date Code: _____

Ford Part # _____
 Technician _____

1	Visual Inspection General condition of Switch. Signs of leakage into connector? Mating connector seal? compression? Wire Harness returned? Wire insulation compression?	Good No Rough Yes Yes	Silicone No No	Bad Yes		
2	Current draw: Terminal to Terminal? Terminal to Harness?	Ohms mA			14 Vdc supply Current limited to 10 amps.	
3	Open Crimp Ring					
4	Visual Inspection Connector Leak? Component wear? BP leak? Environment seal condition? If seal bad, Why? Corrosion? Pictans	No None No Good Yes		Yes Light Yes Bad No	Medium	Heavy
5	Leak Test Sensor Asm.	Pass		Fail		
6	Open Cup Crimp.					
7	Diaphragm Inspection					
	Nearest Fluid Fluid #1 Teflon Kapton	Converter Teflon	Middle Fluid Teflon	#2 Converter Kapton Teflon	Nearest Converter Field #3 Teflon	Converter Kapton
	Teflon Teflon stretch Teflon cracks Teflon delamination Kapton cracks Strain pattern Wear particles/discoloration					
8	Gasket Inspection					
	Protrusion Nibbles/missing material Gasket thickness	Yes Yes		No No		
	inches inches	inches				
9	Package and Store					
10	Analysis Summary:	NTF		Issues Discovered		

End of Document.

313-370-3286
John Jones

Pressure Cycling of Used Switches
Started 12/8/99
Completed 12/22/99

Switch ID	Date Code	# of Cycles	RO #
3	2015	58566	059120-A
11	2008	77837	097295-01
7	2014	254000	209054-A
8	2013	260000	105004-01
4	2281	294000	051062-50
10	2013	345000	163943-01
9	2008	350683	010265-01
2	2287	825196	062918-A
6	2278	894168	033881-02
6	2281	702551	058808-01
1	2294	828825	080759-51

Box # hold parts

SB,

FYI.

The Yellow Tags also have:

- > Eng #
- > Tag #
- > Supp

Only the TAG # and RO # seem to change with each switch

Bry

Beringhouse, Steven

From: Leonard, Kevin
Sent: Monday, September 11, 2000 6:06 PM
To: Beringhouse, Steven
Subject: Exponent update

Steve,

I went into Exponent on Friday to find they had 14 parts analyzed and one in progress. The tag numbers are:

Box 1

- 1) 0089425747 -
- 2) 0089494964 -
- 3) 007558996-5 -
- 4) 0071234289 -
- 5) 0070750090 -
- 6) 0070491787 -
- 7) 008852653-0 -
- 8) 007557504-8 -
- 9) 0070814834 -

Box 2

- 10) 0070231473 - Labeled as "3 vital parts" -
- 11) 0071118854 -
- 12) 0071103206
- 13) 0071311312
- 14) 0071184817
- 15) 0070893196 - in progress.

*Kevin
1/23*

Matt and everyone at Exponent were very accommodating and have no issues with me being there. I will try to get back in by Thursday and provide another update.

Kind Regards,
Kevin Leonard
Texas Instruments - Novi
PH (248) 305-5724
FX (248) 305-5734
CL (248) 613-6487

Brake Pressure Switch Table:

DEFINITIONS:

Resistance Measurement #1 - Resistance reading between connector terminals (NC switch)

Resistance Measurement #2 - Resistance reading between sensor case and threaded fitting.

Resistance Measurement #3 - Resistance reading between both connector pins and sensor case.

Supplier Code	Year	Zin Code	Res. #1	Res. #2	Res. #3
2MELM75W7NX762858	7-92	79164	0.4 Ohm	11.60 M Ohms	Inf. Ohm
ILNLM81W2PY774256	7-91	67149	0.4 Ohm	1.0 Ohm	Inf. Ohm
ILNLM82W8PY724063	3-91	71337	0.4 Ohm	3.5 Ohm	Inf. Ohm
ILNLM81W8PY628170	9-92	88087	0.4 Ohm	16 M Ohms	Inf. Ohm
ILNLM82W4PY632329	9-92	98349	0.1 Ohm	Inf. Ohm	Inf. Ohm
ILNLM82W0PY729611	3-93	47325	0.4 Ohm	111.9 Ohm	Inf. Ohm
2MECM74W7NX738439	4-92	86922	0.4 Ohm	6.80 Ohm	Inf. Ohm
2EALP74W4PX160223	1-91	61614	0.4 Ohm	3.2 Ohm	Inf. Ohm
2MELM74W4PX632766	12-92	98133	0.6 Ohm	Inf. Ohm	Inf. Ohm
ILNLM81W7PY669375	12-92	82224	0.4 Ohm	Inf. Ohm	Inf. Ohm
ILNLM82W0PY726066	3-91	91318	0.4 Ohm	Inf. Ohm	Inf. Ohm
ILNLM81W3PY727899	3-91	88135	0.4 Ohm	0.6 Ohm	Inf. Ohm

TI-NHTSA 9548

Brake Pressure Switch Table:

Definitions:

Resistance Measurement #1 = Resistance reading between connector terminals (NC switch)

Resistance Measurement #2 = Resistance reading between sensor case and threaded fitting.

Resistance Measurement #3 = Resistance reading between both connector pins and sensor case.

Sensor	Id Code	Date	Zig Code	Res. #1	Res. #2	Res. #3
#1	FY754573	5-93	42621	0.2 Ohm	167.0 Ohms	Inf. Resistance
#2	NY740208	6-92	53237	0.3 Ohm	0.3 Ohms	Inf. Resistance
#3	PY688795	1-93	NA	0.3 Ohm	4.48 M Ohms	Inf. Resistance
#4	PX629934	11-92	68302	0.2 Ohm	1.5 Ohms	Inf. Resistance
#5	PY690225	10-92	72114	0.2 Ohm	1.7 Ohms	Inf. Resistance
#6	PX638867	12-92	55333	0.3 Ohm	17 K Ohms	Inf. Resistance
#7	PX665270	4-93	66689	0.3 Ohm	2.9 Ohms	Inf. Resistance
#8	PX643515	12-92	43331	0.2 Ohm	0.4 Ohms	Inf. Resistance
#9	PX623672	10-92	94145	0.2 Ohm	24 M Ohms	Inf. Resistance
#10	PY693374	1-93	NA	0.2 Ohm	11.30 M Ohms	Inf. Resistance
"E" #11	NX758774	7-92	97199	0.2 Ohm	6.79 M Ohms	Inf. Resistance
#12	BY639984	9-93	97199	0.2 Ohm	0.2 Ohms	Inf. Resistance
"D" Leaking sensor	VIN 2FALP71W1VX145373			0.4 Ohm	1.1 Ohms	4.80 M Ohms
New sensor #1				0.2 Ohm	1.34	140K GROUND TO SM Inf. Resistance DRAIN
New sensor #2				0.2 Ohm	1.1 Ohm	Inf. Resistance UNSTABLE

"F" 9MSLW05 2126
1WLM8ZW1NY760055 4MS

300K - 2M

116117

Device 1A Failed @ 2,962,862 cycles



Diaphragm #1 (Fluid Side)

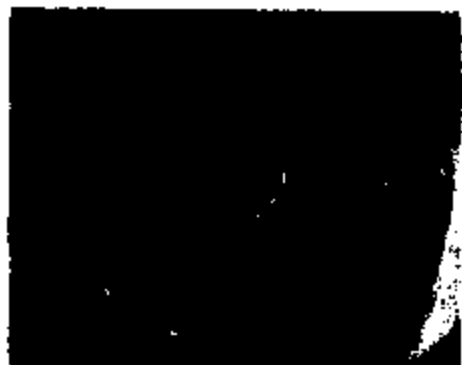


Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

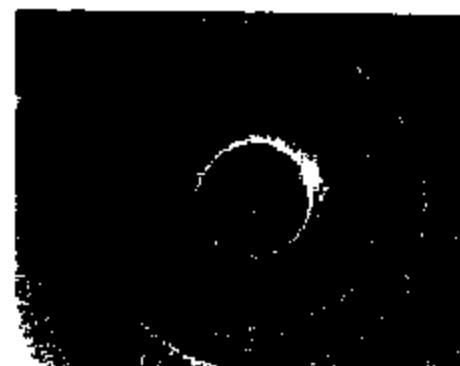
Device 2A Pass 3,000,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 3A Pass 3,000,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 4A Failed @ 2,905,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device #4B Failed @ 2,998,015 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 6B Failed @ 2,725,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 2B Pass 3,000,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 3B Pass 3,000,000 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 5A Failed @ 2,925,825 cycles



Diaphragm #1 (Fluid Side)

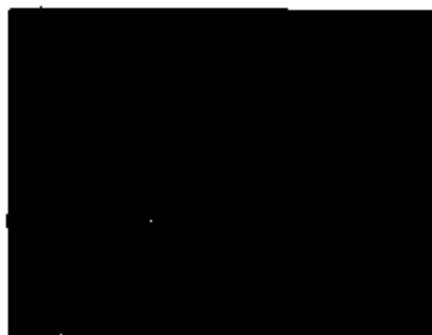


Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 12A Failed function test after 3,000,000 cycles. Number of cycles @ leakage unknown.



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 2 Pass 3,000,000 cycles



Diaphragm #1 (Field Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

Device 7 Failed @ 2,990,886 cycles



Diaphragm #1 (Field Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Washer/Converter Side)

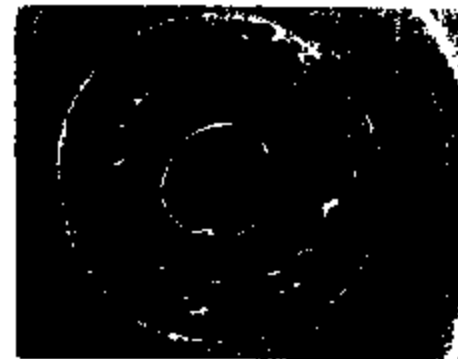
Device12 Failed @ 2,728,198 cycles



Diaphragm #1 (Fluid Side)



Diaphragm #2 (Middle Layer)



Diaphragm #3 (Meshed/Converter Side)

TI-NHTSA 9556

Sheet 28

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	07/27/77	07/28/77	07/29/77	07/31/77	08/01/77	08/02/77	08/03/77	08/04/77	08/05/77	08/06/77	08/07/77	08/08/77	08/09/77	08/10/77	08/11/77	08/12/77	08/13/77	08/14/77
1 Visual Inspection																		
General condition of Switch	G	N	N	N	N	N	G	G	G	G	G	G	G	G	G	G	G	G
Signs of moisture into connector?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Mating connector seal compromised?	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Date Code	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201
Part #4 (MIL-PRC-39010-11)	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
2 Current Status																		
Terminal in Tension? (CH-48)	0.7	0.2	0.3	0.2	0.2	0.6	0.3	0.8	0.3	0.6	0.3	0.2	0.2	0.6	0.2	0.2	0.2	0.2
Terminal in Tension? (M)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Open Clip Ring																		
4 Visual Inspection																		
Connector Lock?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Connector seal?	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP Seal?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Connector seal condition?	G	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Free End, Wty?																		
Condition?	N	N	N	Y	N	Y	N	Y	N	Y	Y	Y	N	N	Y	Y	N	N
Plasma																		
5 Leak Test Sensor App.	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
6 Open Clip Contact																		
Estimated number of spots																		
7 Mechanical Inspection																		
Tether switch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Tether switch	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tether disconnection	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
System switch	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Static padding	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Wire path/condition	LC	10	C	C	C	C	C	LC	10	LC	C	C	C	12	C	C	C	C
8 Surface Inspection																		
Protein	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Microbiological growth	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

TI-NHTSA 9557

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

TI-NHTSA 9536

	TOTAL	BB	AB	AA
Apr-91	3	3	0	0
May-91	26	26	0	0
Jun-91	0	0	0	0
Jul-91	0	0	0	0
Aug-91	0	0	0	0
Sep-91	47	47	0	0
Oct-91	168	168	0	0
Nov-91	121	97	24	0
Dec-91	293	0	293	0
Jan-92	385	0	385	0
Feb-92	554	0	554	0
Mar-92	373	0	373	0
Apr-92	340	0	111	229
May-92	330	0	84	246
Jun-92	79	0	0	79
Jul-92	60	0	0	60
Aug-92	61	0	0	61
Sep-92	108	0	44	64
Oct-92	88	0	74	14
Nov-92	1	0	1	0
Dec-92	1	0	1	0
1993	6	0	6	0
1994	20	0	13	7
1995	4	0	0	4
1996	22	0	16	6
1997	24	0	20	4
1998	4	0	4	0
1999	<u>97</u>	<u>0</u>	<u>97</u>	<u>0</u>
	3215	341	2100	774
		10.60%	65.30%	24.10%

Attorney-Client Privileged Information

END OF TODAY

	Total	-BB	-AB	-AA
4/91	3	3	—	—
5/91	26	26	—	—
6/91	—	—	—	—
7/91	—	—	—	—
8/91	—	—	—	—
9/91	47	47	—	—
10/91	168	168	—	—
11/91	121	97	—	—
12/91	293	—	24	—
1/92	385	—	293	—
2/92	554	—	385	—
3/92	373	—	554	—
4/92	340	—	373	—
5/92	330	—	—	229
6/92	79	—	84	246
7/92	60	—	—	79
8/92	61	—	—	60
9/92	108	—	—	61
10/92	84	—	74	64
11/92	1	—	—	14
12/92	1	—	—	—
1993	6	—	—	—
1994	20	—	13	7
1995	4	—	—	4
1996	22	—	16	4
1997	24	—	20	6
1998	4	—	4	4
1999	97	—	97	—

~~3215~~
3215

~~941~~
941
10.6%

2100
65.39%

774
24.1%

Block#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1																				
Visual Inspection																				
Control cabinet Switch																				
Sign of leakage into laboratory																				
Using container with																				
impurities																				
Date Date																				
Foot for marker (pencil or tape)																				
2																				
Control Area:																				
Surface Treated (Clean)																				
Surface Impurities																				
3																				
Open Chain Map																				
4																				
Ward Inspection																				
Complex List?																				
Complex Map?																				
RF List?																				
Surface Impurities?																				
Is surface, why?																				
Control?																				
Notes																				
5																				
Leak Test Setup Ann.																				
6																				
Open Cup Check																				
Substrate number of cycles																				
7																				
Discharge/Impurities																				
Tube depth																				
Tube width																				
Tube thickness																				
Hydrostatic																				
Over-pull																				
Wear particle analysis																				
8																				
Control Impurities																				
Protein																				
Substrate Impurities																				

TI-NHTSA 9501

Block #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1 Visual Inspection																					
Clearance of Deck	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Sign of leakage into collector?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Moisture on deck?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Moisture?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Date Code	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200
2 Computer:																					
Terminal Terminal ground	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02	02
Substrate Repair/Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Open Coil Map																					
4 Visual Inspection																					
Computer Lead?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Computer?	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
SP lead?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Substrate and adjacent	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
of adjacent map?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Component	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Pinout	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5 Leak Test Sample App.	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
6 Open Coil Map																					
Substrate of coil																					
7 Diagnostic Inspection																					
Reference	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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Table status	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Table pinout	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Table pinout description	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8 Visual Inspection																					
Moist	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Moisture on deck?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Moisture?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

TI-NHTSA 9503

TI-NHTSA 8565

A large, dense grid of vertical lines, possibly representing a barcode or a corrupted data table. The grid is composed of many thin, closely spaced vertical bars of varying heights and thicknesses, creating a complex, textured appearance. It occupies the right half of the page and extends from the top of the main content area down to the footer.

LINE	DESCRIPTION	AMOUNT	CREDIT	DEBIT	BALANCE
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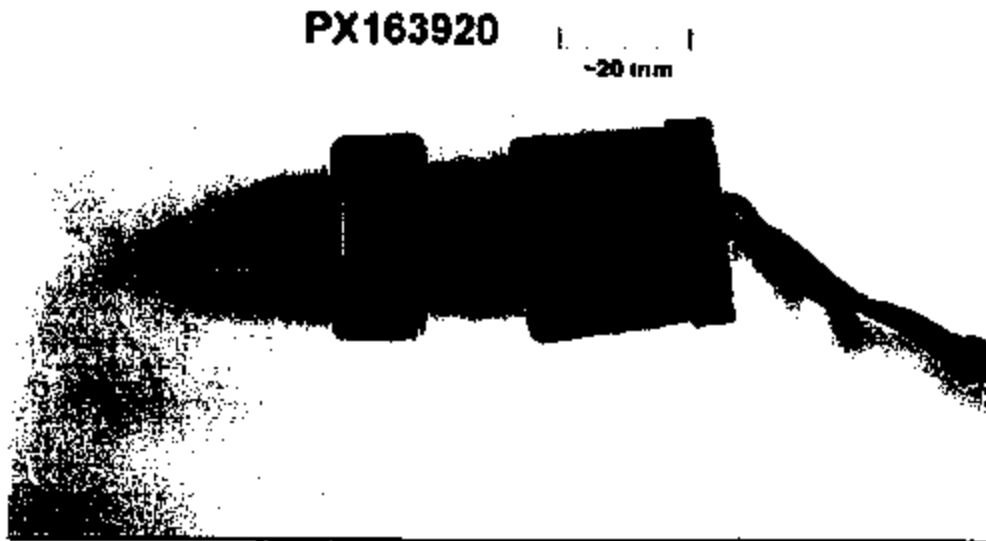


Figure 1: PX163920.

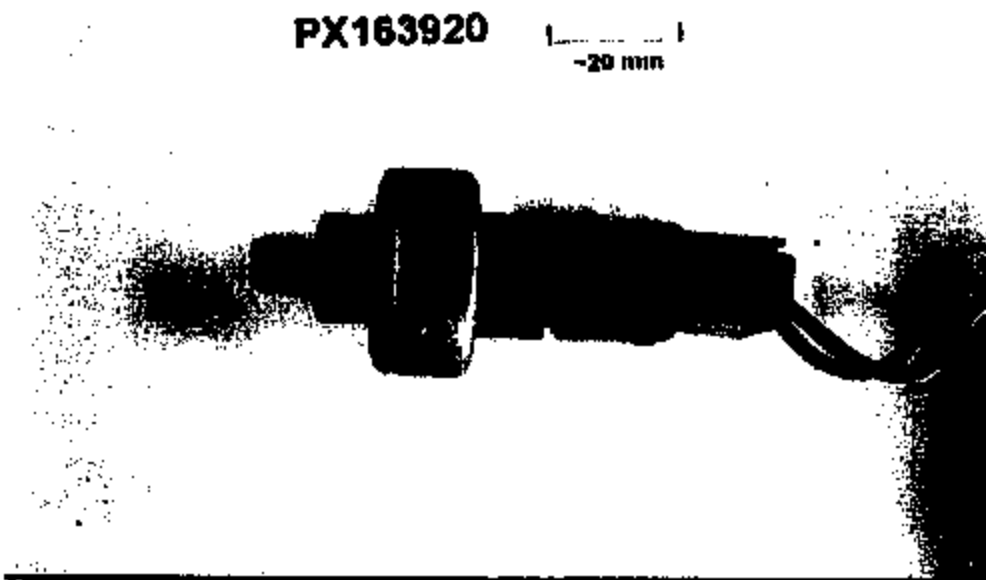


Figure 2: PX163920.



PX163920



~10 mm

Figure 3: PX163920.

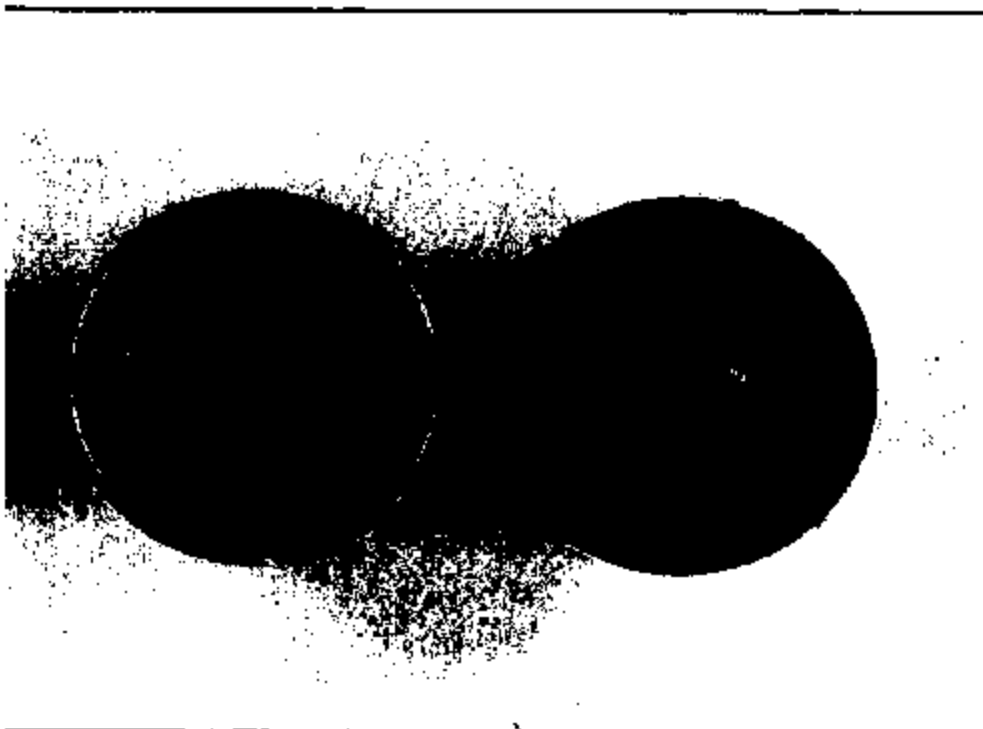


Figure 4: PX163920.

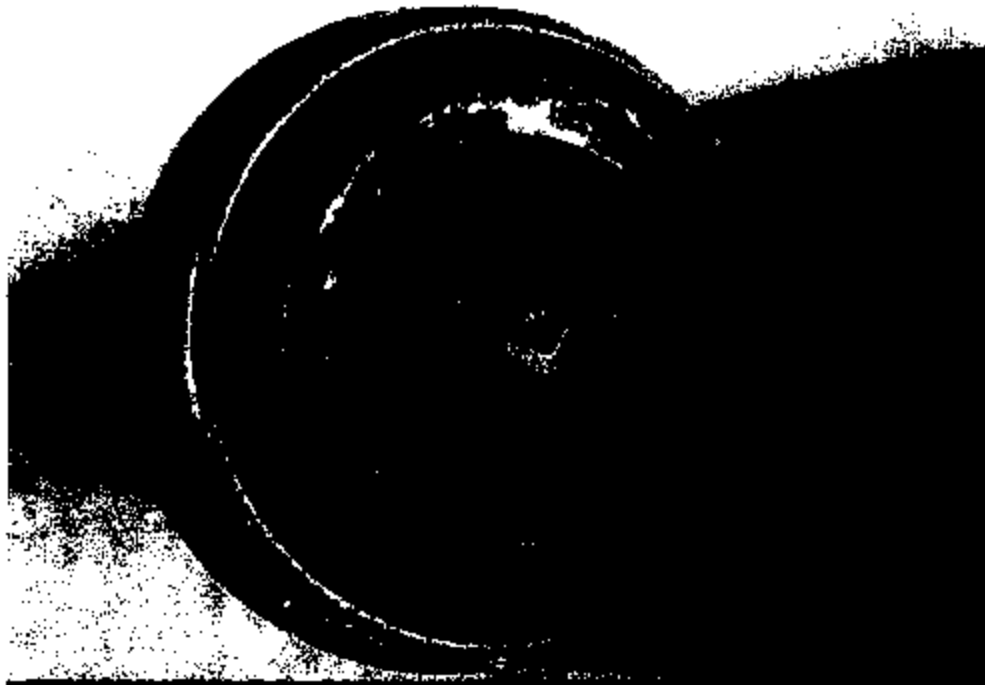


Figure 5: PX163920.



Figure 6: PX163920.

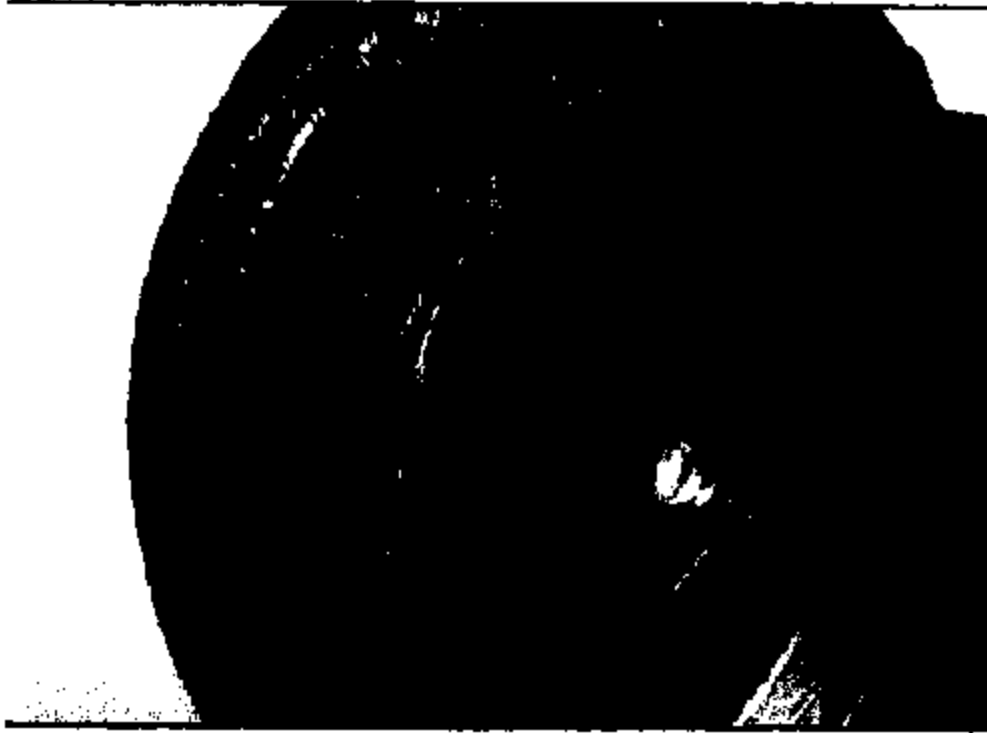


Figure 7: PX163920.

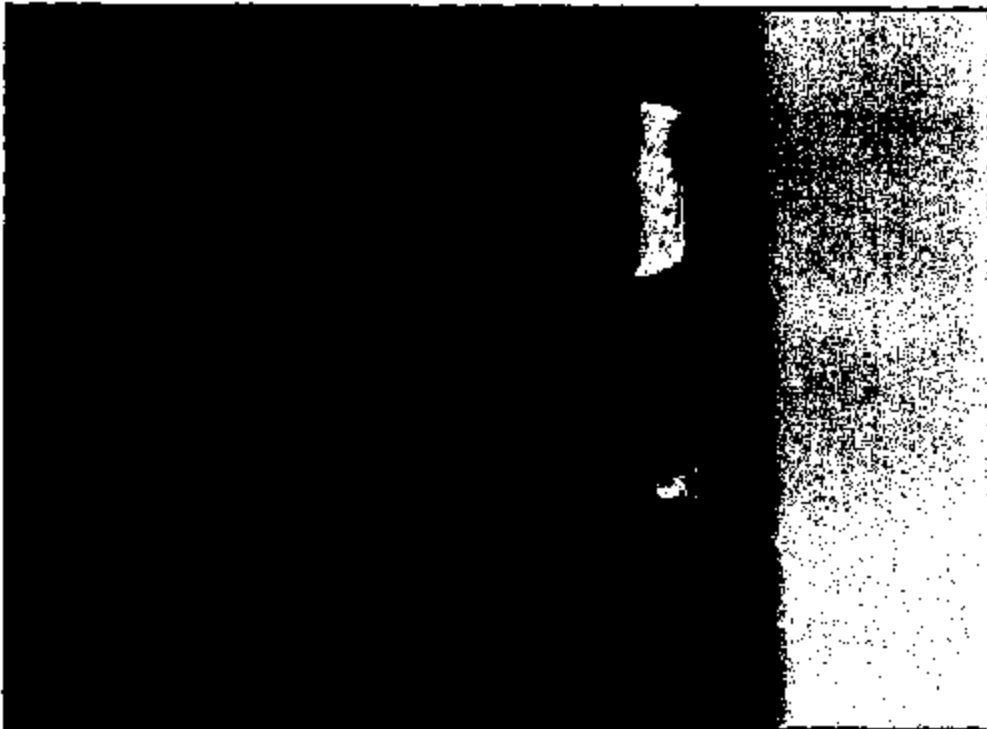


Figure 8: PX163920.

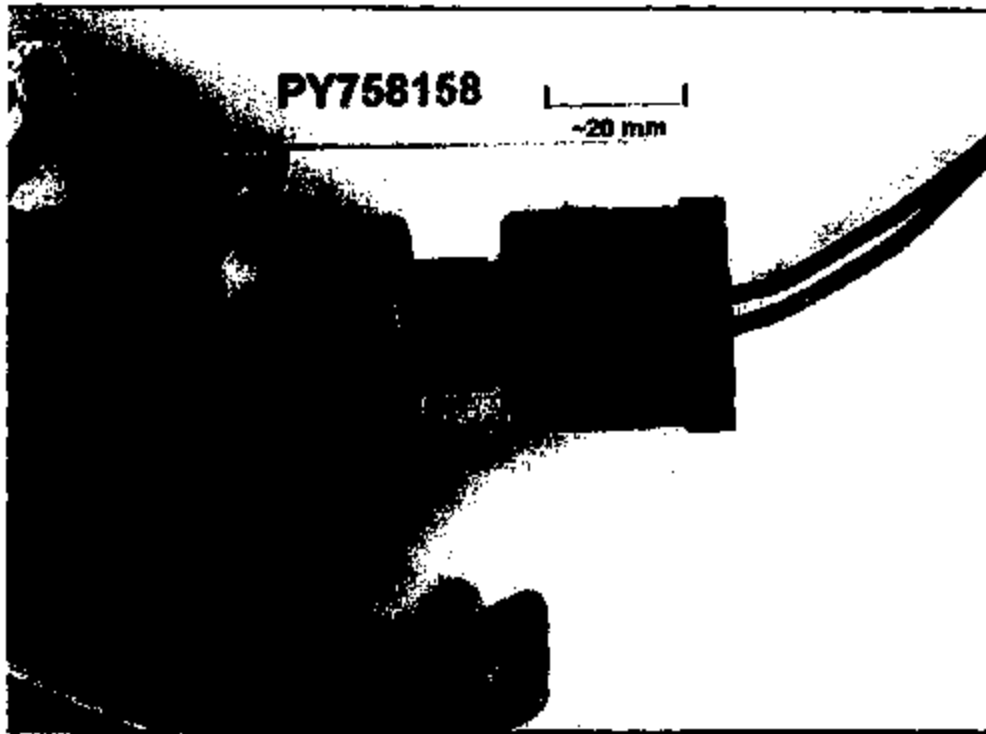


Figure 9: PY758158.

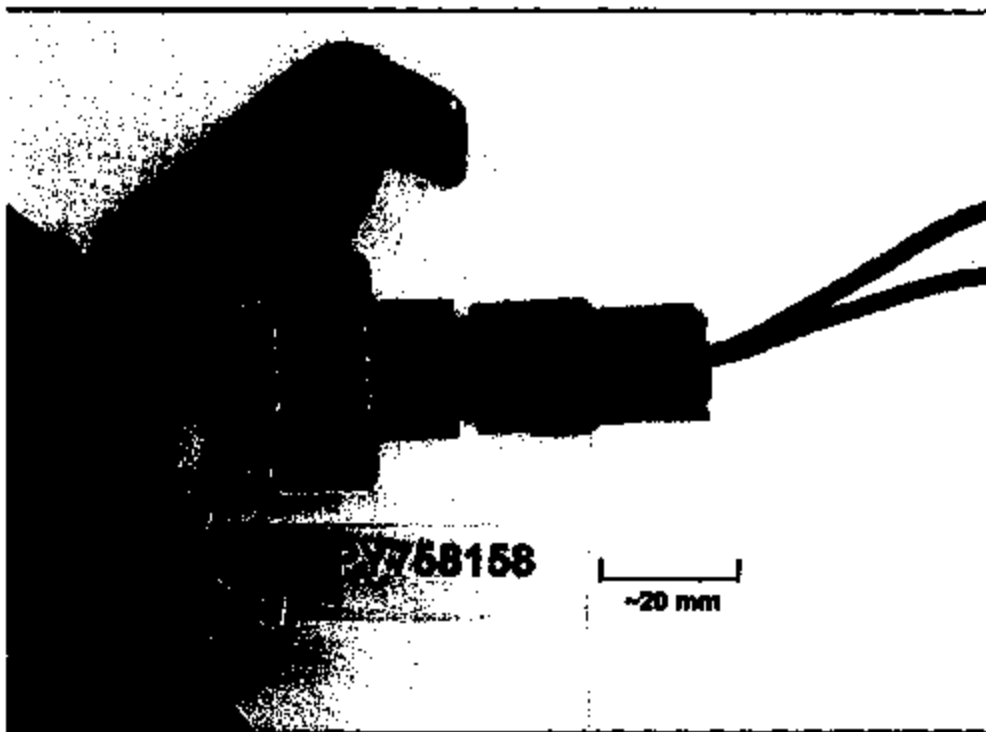


Figure 10: PY758158.

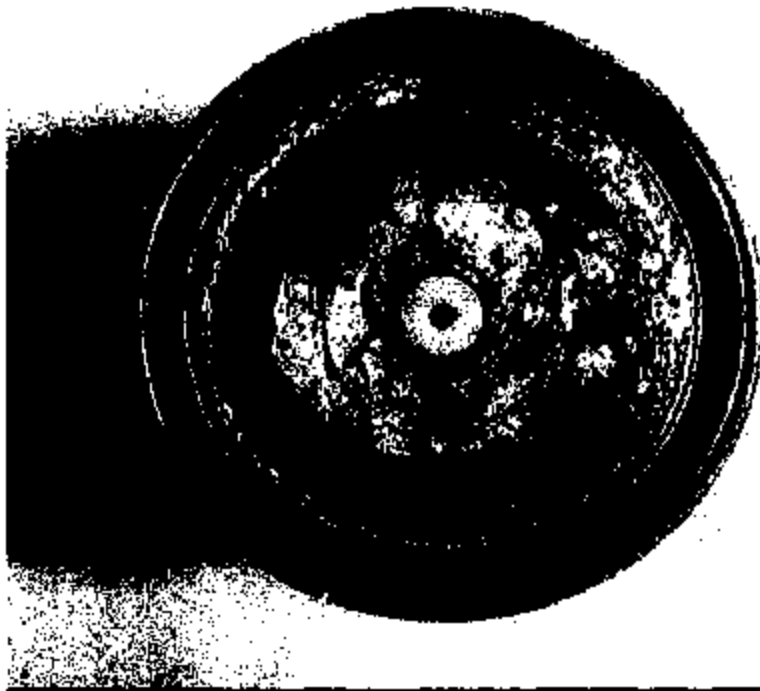


Figure 11: PY758158.

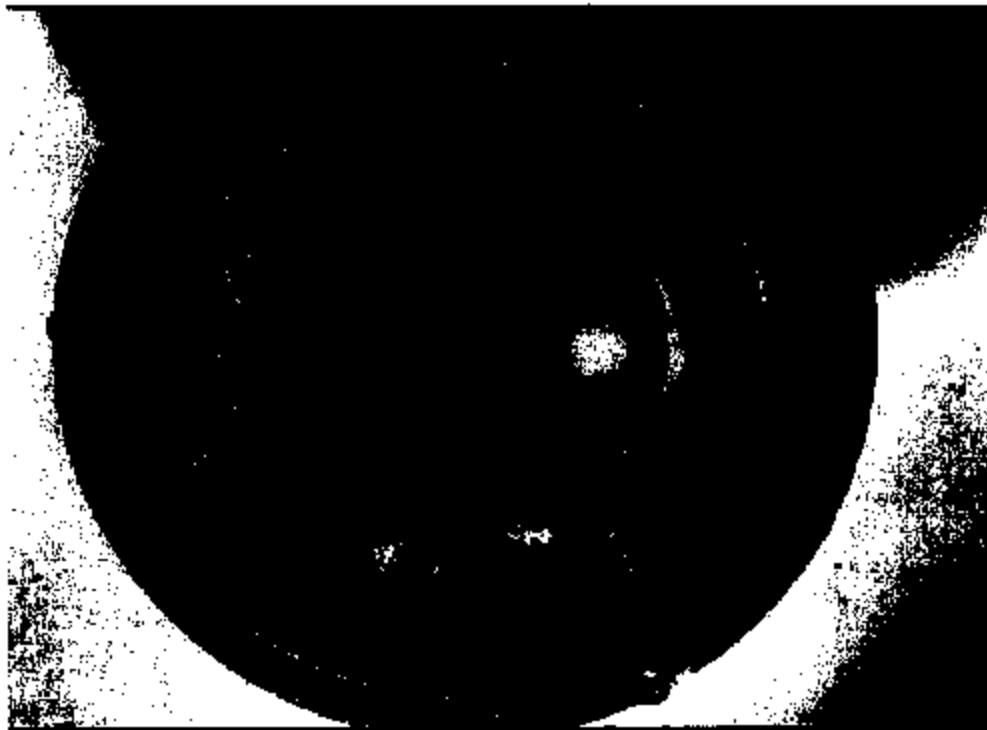


Figure 12: PY758158.

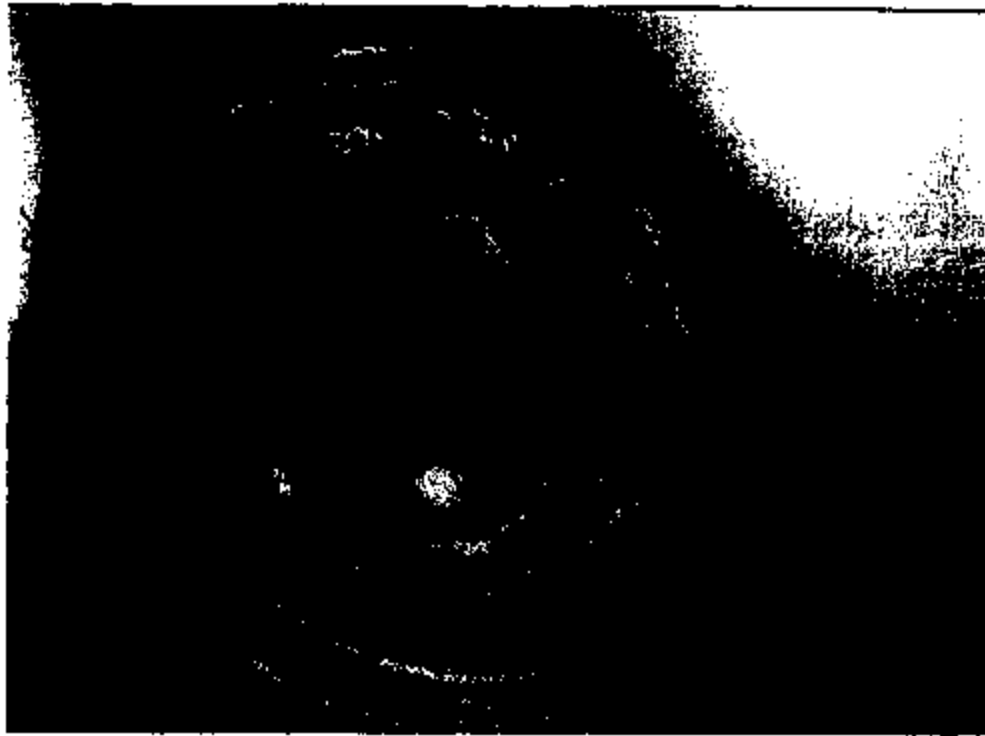


Figure 13: PY758158.

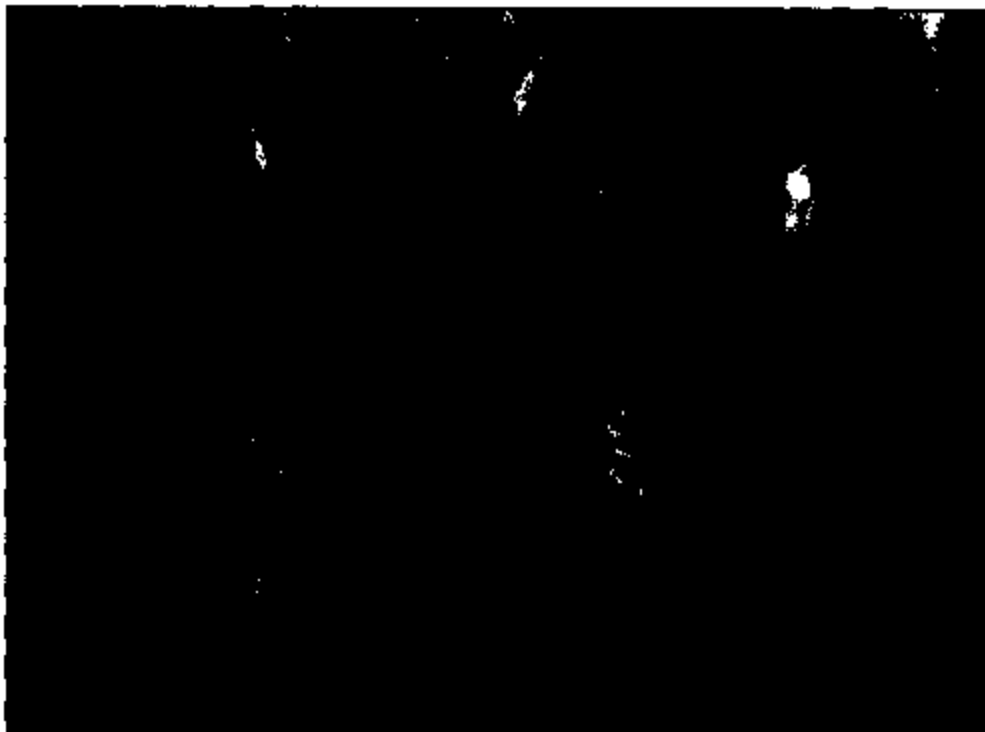


Figure 14: PY758158.

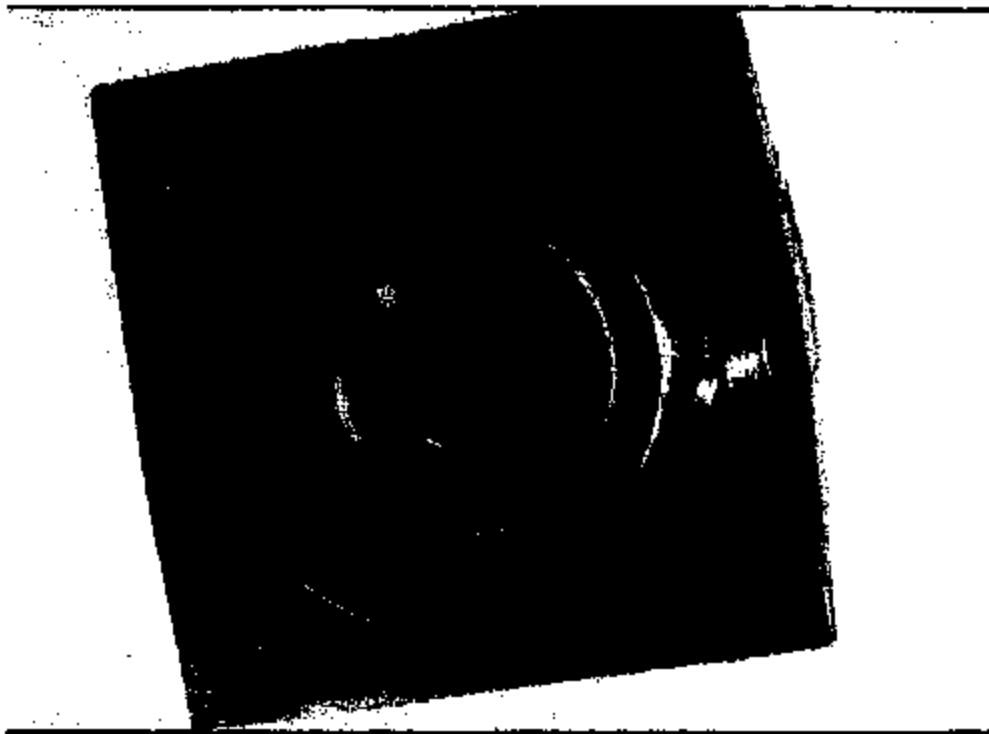


Figure 15: PX163820, seal 1 fluid side.



Figure 16: PX163820, seal 1 fluid side.

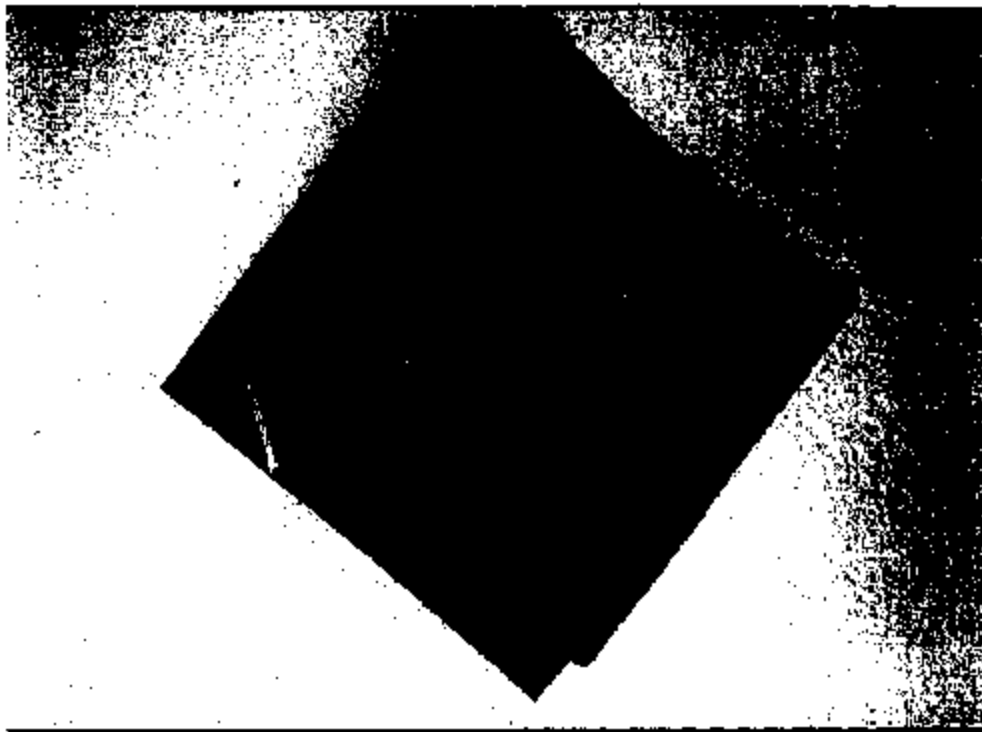


Figure 17: PX163820, seal 2.

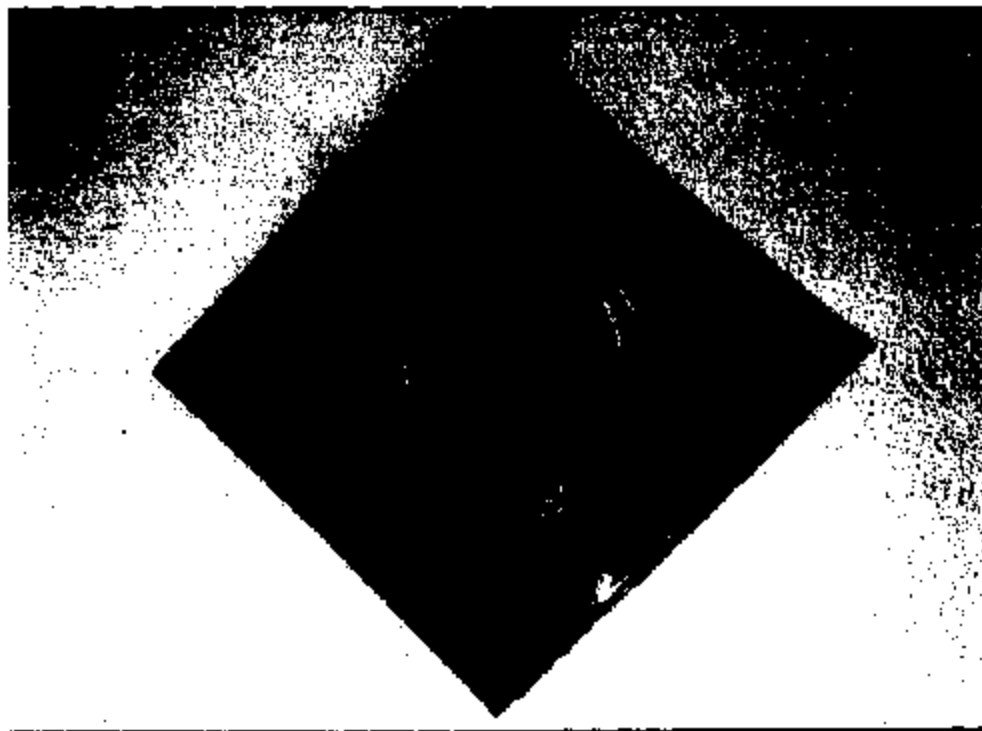


Figure 18: PX163820, seal 3.



Figure 19: PX163920, cup, washer, converter, disc.

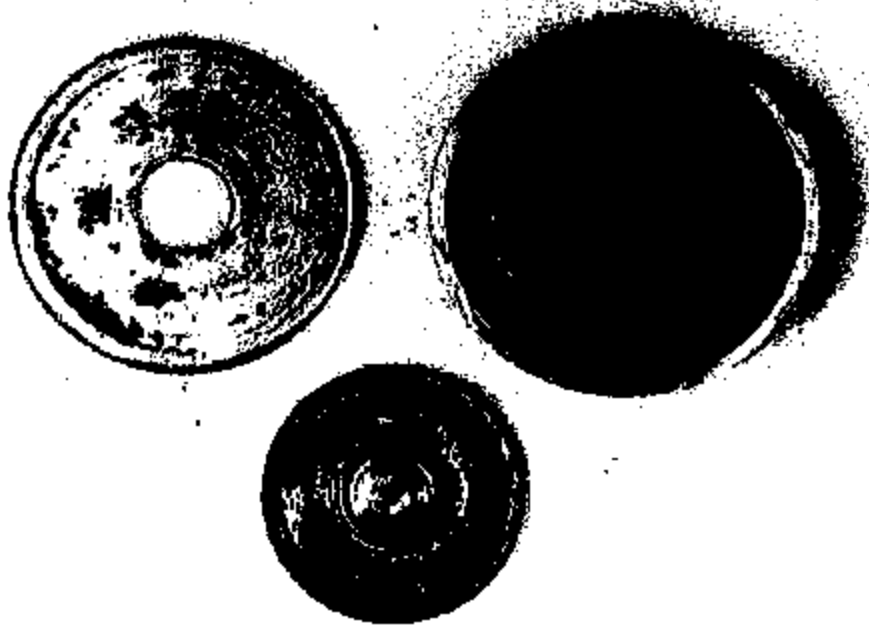


Figure 20: PX163920, cup, washer, converter, disc.

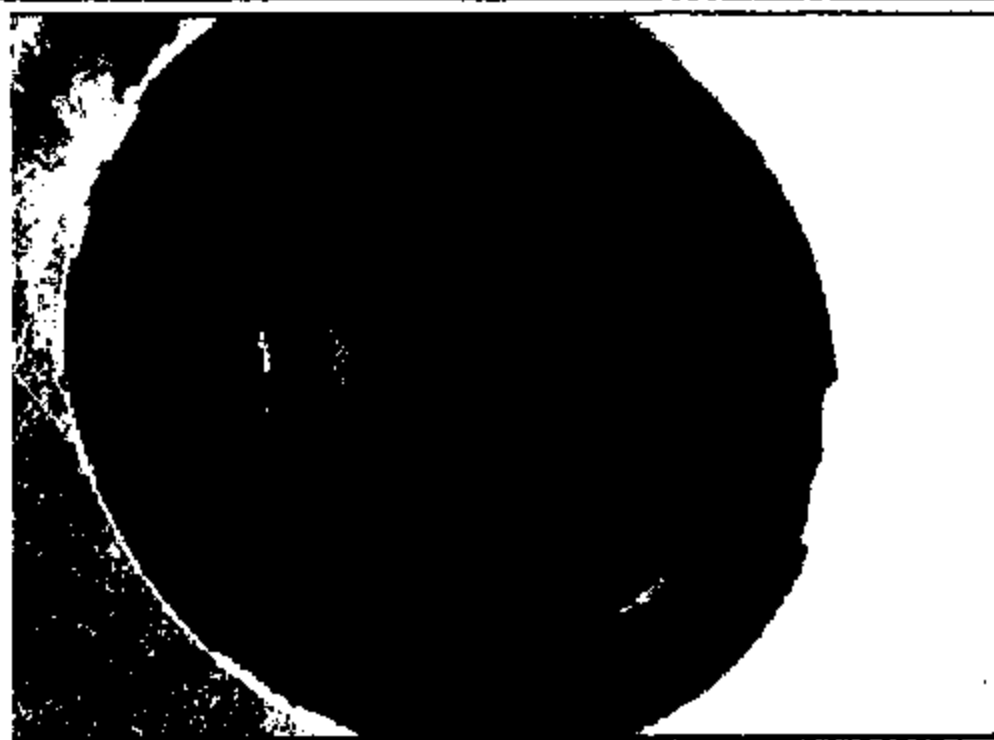


Figure 21: PX163920, hexport cavity.

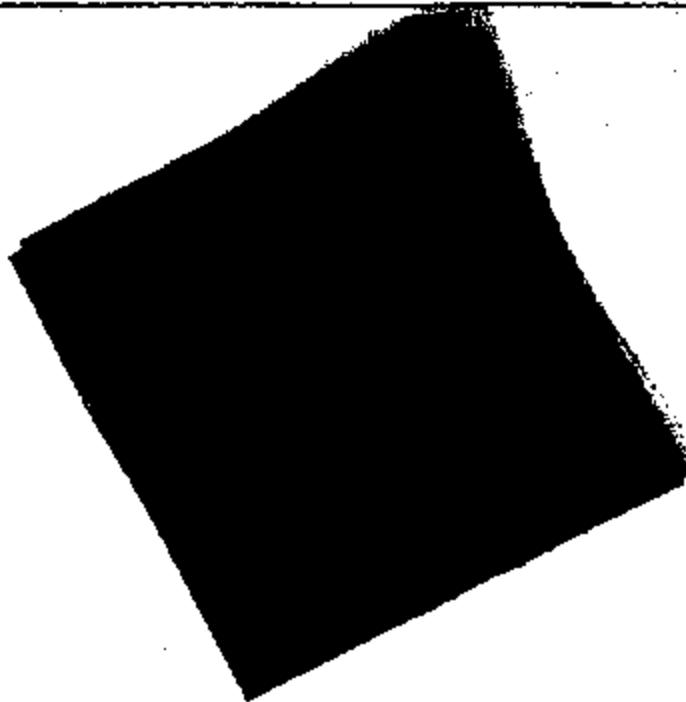


Figure 22: PY758158, seal 1 fluid side.

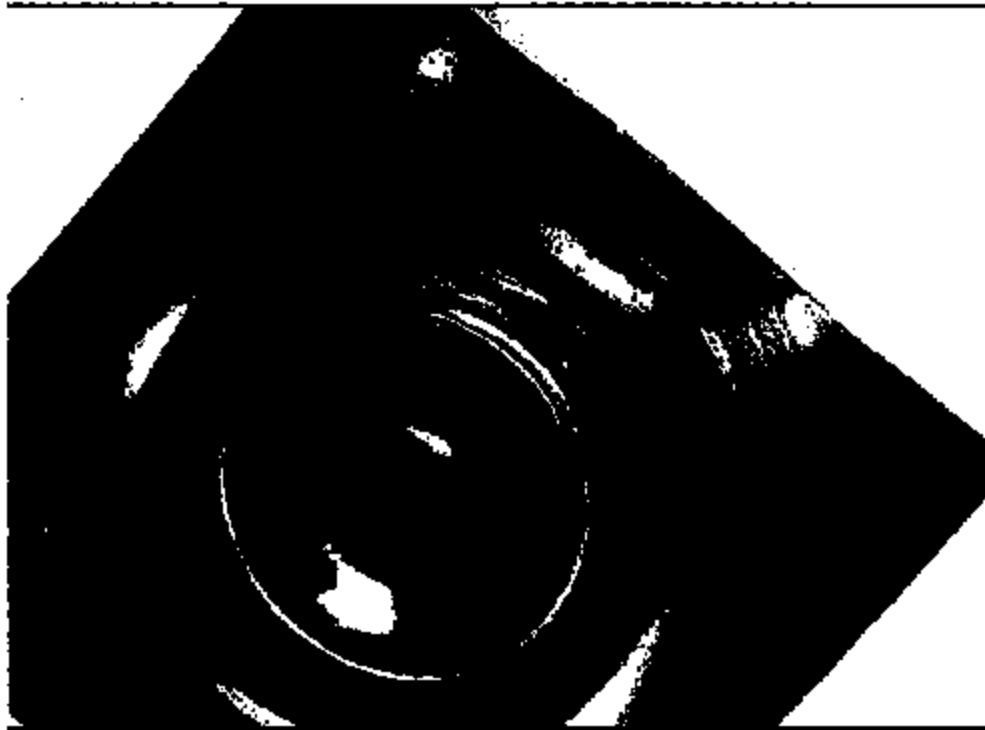


Figure 23: PY758158, seal 1 fluid side.

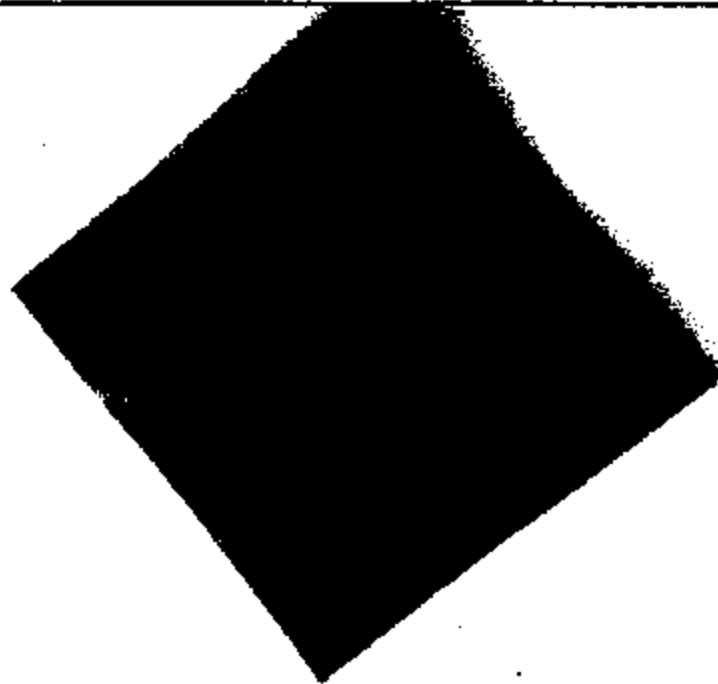


Figure 24: PY788158, seal 2.

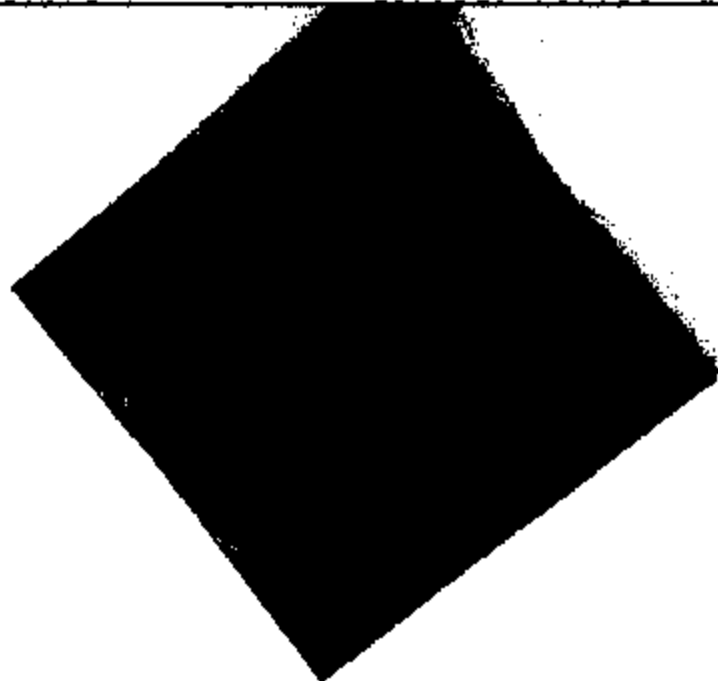


Figure 25: PY758158, seal 3.

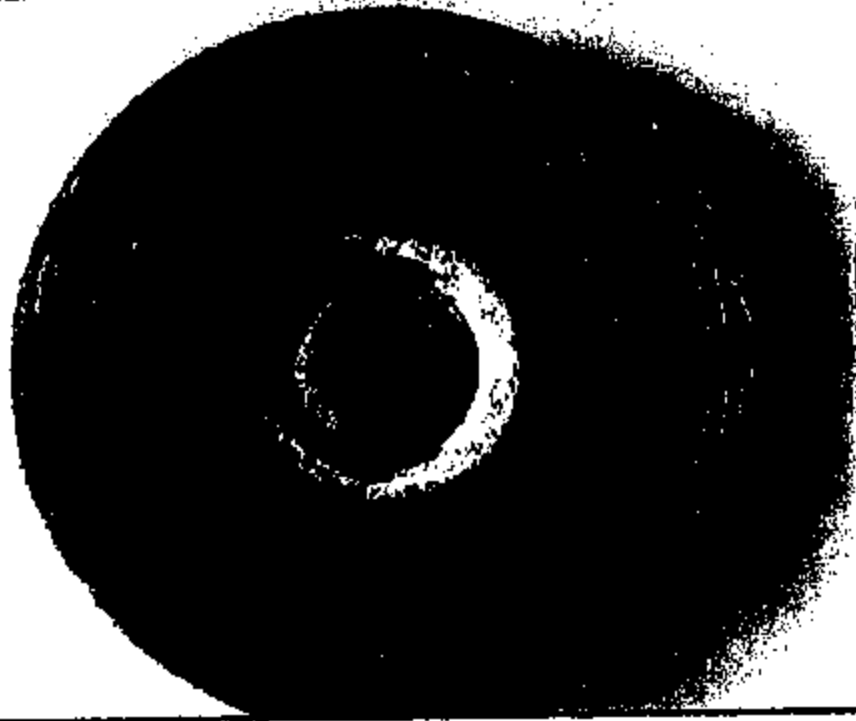


Figure 26: PY758158, cup, washer, converter, disc.

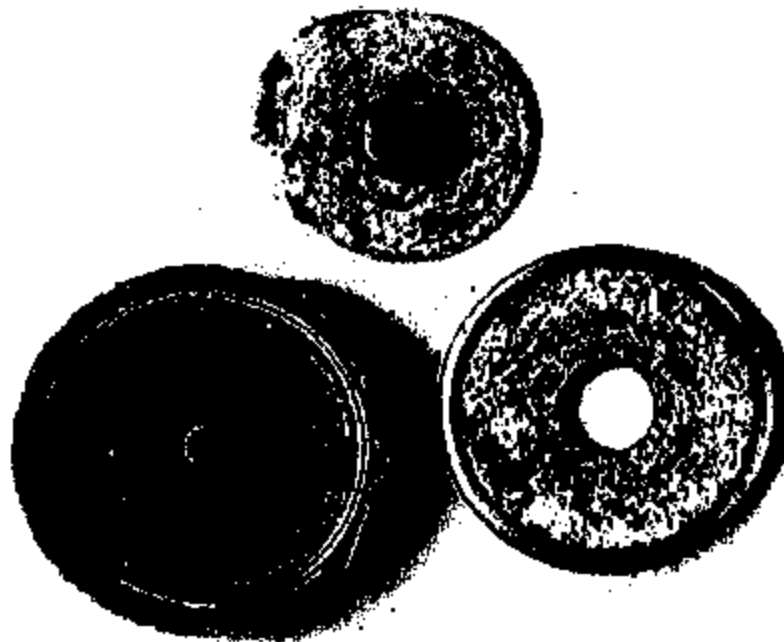


Figure 27: PY758158, cup, washer, converter, disc.

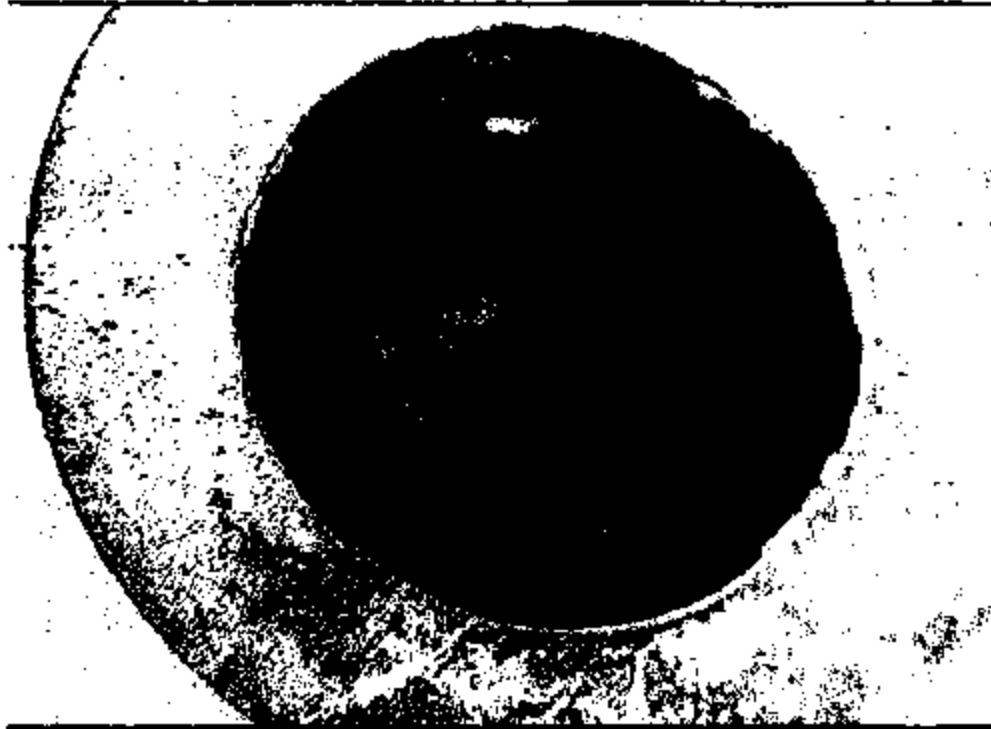


Figure 28: PY758158, hexport cavity.