

QUALIFICATION TEST REPORT

tyco
Electronics
AMP Italia S.p.A.

						DR G. Scala	NUMBER 501-20.062	REV A
						CHK G.P. Cattaneo		
A	ET00-0191-02	M.B.	20/14/02	O.C.	20/14/02	APP A. Genta		
1		G.S.	07/10/01	G.P.C.	10/10/01	32 POSITIONS CONNECTOR FOR AIRBAG SYSTEM		
REV LTR	REVISION RECORD	DR	DATE	CHK	DATE			

QUALIFICATION TEST REPORT
CONFIDENTIAL FOR CUSTOMER

32 POSITIONS AIRBAG CONNECTOR SYSTEM

PRODUCT PARTS N°

284423-3, -4, -6 32 positions Kit Ass'y
144969-2 MQS Gold contact crimped onto 0,35 sqmm wire

FOREWARD

TESTING HAS BEEN MADE ACCORDING TO THE FIAT SPECIFICATION 9.91320/02, AND PER TEST METHOD OF FIAT SPECIFICATION 7Z.8260.

AMP PRODUCT SPECIFICATION 108-20.223 REV. A1 HAS BEEN TAKEN OF REFERENCE IF INDICATED.

EACH USED SAMPLE WAS FULLY LOADED AND MATED WITH THE RELEVANT COMPONENT COUNTERPART.
EACH TEST WAS PERFORMED WITH THE PARAMETERS AND THE SEQUENCE AS REQUIRED IN THE A.M. SPECIFICATIONS.

Test Group	Para. of Product Spec.	Used Qty	Test Description	Results	Comments	Requir.	Pass Yes/No
------------	------------------------	----------	------------------	---------	----------	---------	-------------

MECHANICAL PERFORMANCE AND CHARACTERISTICS

A	2.1a	5 Connectors	Mating Force 1 st cycle	From 21,5 to 22,5 N Aver. 22,14 N	Check on continuity of short Circuit bar : OK	≤ 70N	yes
A	2.1b	5 Connectors	Mating Force 10 th cycle	From 20,0 to 23,1 N Aver. 22,0	Check on continuity of short Circuit bar : OK	≤ 70N	yes

A	2.2a	5 Connectors	Unmating Force 1 st cycle	From 10,0 to 11,8N Aver. 10,8 N	Check on continuity of short Circuit bar : OK	≤ 70N	yes
A	2.2b	5 Connectors	Unmating Force 10 th cycle	From 9,7 to 13,2 N Aver. 11,4 N	Check on continuity of short Circuit bar : OK	≤ 70N	yes
A	2.3	5 Connectors	Connector Locking Strength	Applying the required force both axially and perpendic..	No detachment nor damage has been observed	≥ 100N	yes
B	2.6	30 contacts	Contact Insertion in Housing Cavity	From 2,8 to 3,9 N Aver. 3,2 N	Test made both on 0,35 and 0,50 sqmm	≤ 5 N	yes
C	2.7	30 contacts	Contact Extraction Primary Locking only	From 66 to 90 N Aver. 73,6 N	Test made both on 0,35 and 0,50 sqmm	≥ 60N	yes
D	2.8	3 Connectors	Secondary Lock Effectiveness	Applying the required force to secondary lock , with one contact not properly inserted	The Secondary lock does not fit into position	≥ 80 N	yes
E	2.9	3 Connectors	Polarization Effectiveness	Applying a force as indicated in the Product Specification	No contact engaging, nor damage has been observed	≥ 150 N	yes
F	2.4	3 Connectors	Housing Retention on Frame	Pulling on wires bundle	No Damage observed	≥ 100 N	yes
F	2.5	3 Connectors	Lever Retention – Closed	100 N for 30 sec pushing on the lever	No Damage observed	≥ 100 N	yes
F	2.11	3 Connectors	Lever robustness (in opened position)	100 N applied in the direction indicated in the Product Specification	No Damage observed	≥ 100 N	yes

ELECTRICAL PERFORMANCE AND CHARACTERISTICS

A	3.1	64 pcs	MilliVolt Drop at rated current at new	From 2,5 to 4,4 mV/A Aver 3,5 mV/A	After wire subtraction	≤ 5 mV/A	yes
----------	------------	--------	---	--	---------------------------	-------------	-----

A	3.1	64 pcs	MilliVolt Drop at rated current after 10 Mating /Unmat. cycles	From 2,8 to 4,6 mV/A Aver 3,6 mV/A	After wire subtraction	≤ 5 mV/A	yes
G	3.5	6 pcs	Current Cycling with Overload	Already tested as MQS Contact	T-rise over Ambient	≤ 60 °C	yes
H	3.1	2 pcs	MilliVolt Drop at rated current at new	From 3,7 to 5 mV/A Aver 4,2 mV/A	After wire subtraction	≤ 5 mV/A	yes
H	3.3	2 pcs	Insulation Resistance (at new)	From 450 to 500 GΩ Aver 470 GΩ	Between adjacent ctcs	≥10 MΩ	yes
H	3.2	2 pcs	Dielectric Strength (at new)	From 1,2 to 1,3 KV Aver 1,25 KV	Between adjacent ctcs	≥1KVac	yes
I	3.4	2 pcs	Temp.Rise in Oven	Already tested as MQS Contact	T-rise over Oven Temp.	≤ 50 °C	yes

ENVIRONMENTAL PERFORMANCE AND CHARACTERISTICS

E	2.10	2 pcs	VIBRATION, Random, Body Compartment	No micro discontinuities have been detected .	No damage,no loosening of parts	-	yes
E	3.1	64 pcs	MilliVolt Drop at rated current at new	From 3,2 to 4,8 mV/A Aver. 4,23	After wire subtraction	≤ 5 mV/A	yes
E	3.1	64 pcs	MilliVolt Drop at rated current after Vibration	From 3,1 to 5,0 mV/A Aver. 4,53 mV/A	After wire subtraction	≤ 5 mV/A	yes
L	4.1	2 pcs	Thermal Cumulative Ageing	5 Thermal Shocks 5 Therm. Cycling 200Hrs@+105°C	-	-	yes
L	3.1	64pcs	MilliVolt Drop at rated current after thermal cumulative ageing	From 2,9 to 6,8 mV/A Aver 4,1 mV/A	After wire subtraction	≤ 10 mV/A	yes
L	3.3	2 pcs	Insulation Resistance after thermal cumulative ageing	From 200 to 250 GΩ Aver 220 GΩ	Between adjacent ctcs	≥10 MΩ	yes
L	3.2	2 pcs	Dielectric Strength after thermal cumulative ageing	From 1,1 to 1,3 KV Aver 1,20 KV	Between adjacent ctcs	≥1KVac	yes

AMP Italia S.p.A.

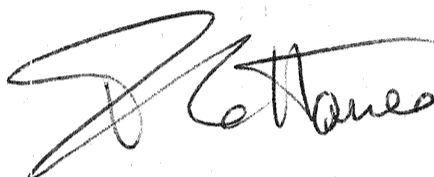
M	4.2	2 pcs	Salt Spray 96 Hrs	Already tested as MQS Contact	-	-	yes
N	4.3	20 pcs	Kesternich , 2L, 4 days	Already tested as MQS Contact	-	-	yes

Validation :

Prepared by

Laboratory Manager

Pietro G. Cattaneo



Approved by

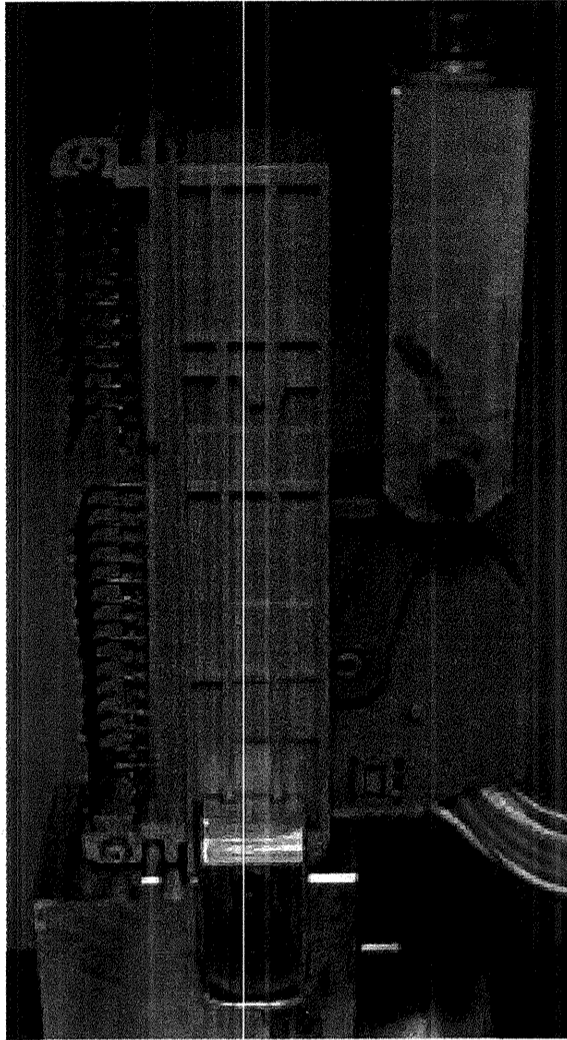
Project Leader

Oscare Canuto

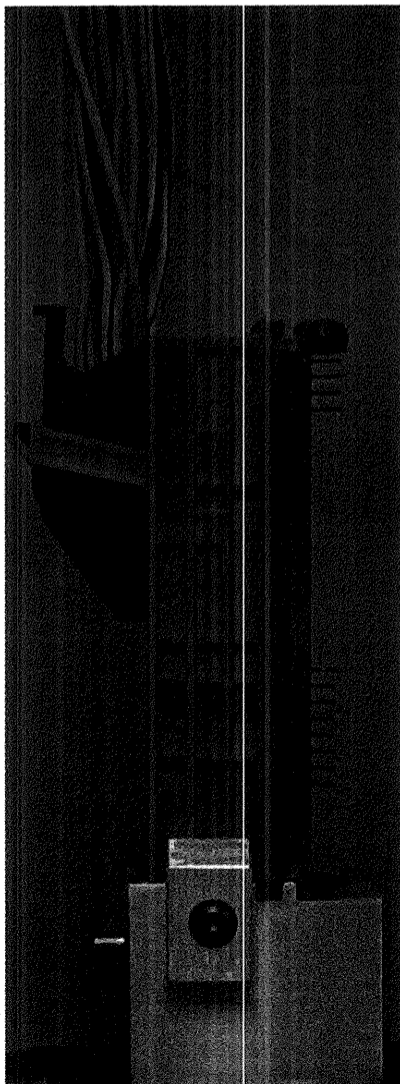


PICTURES AND GRAPHS IN ATTACHMENT

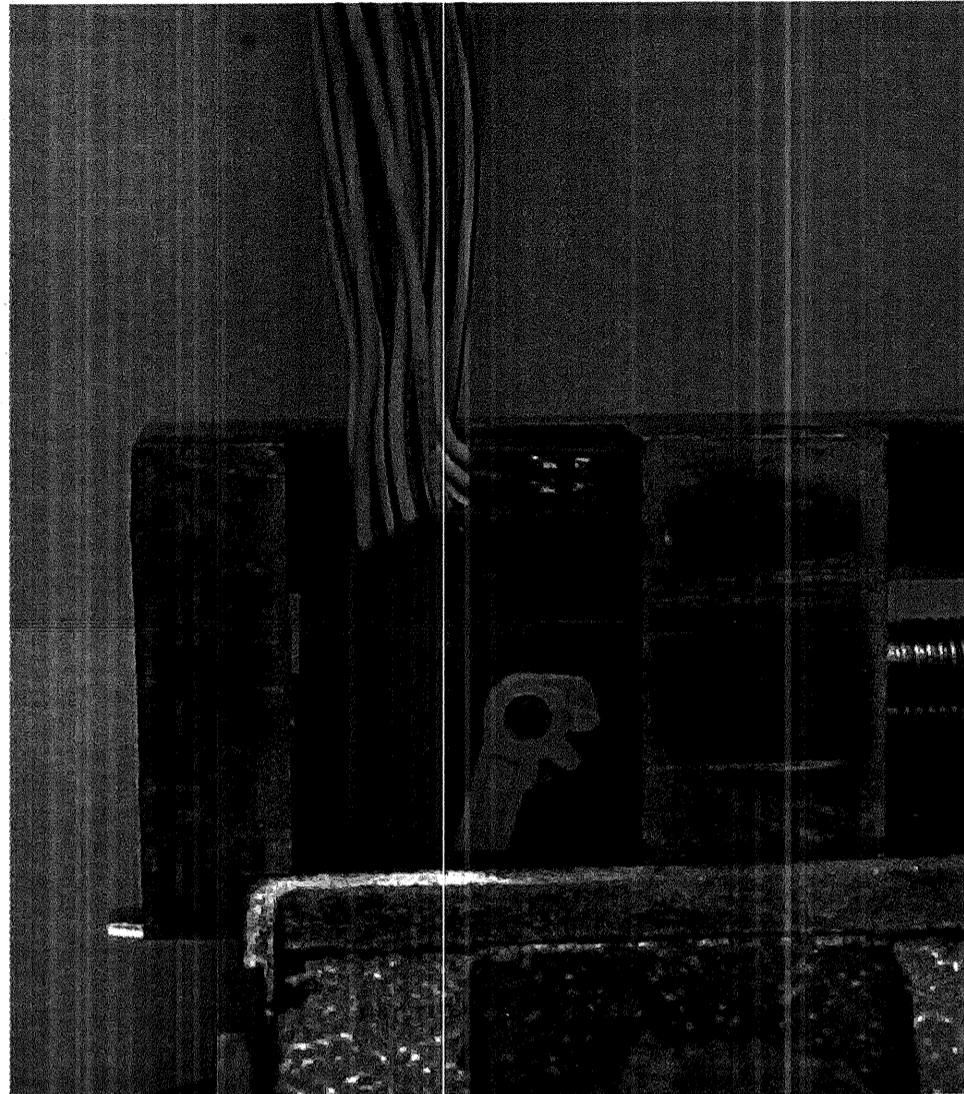
To follow



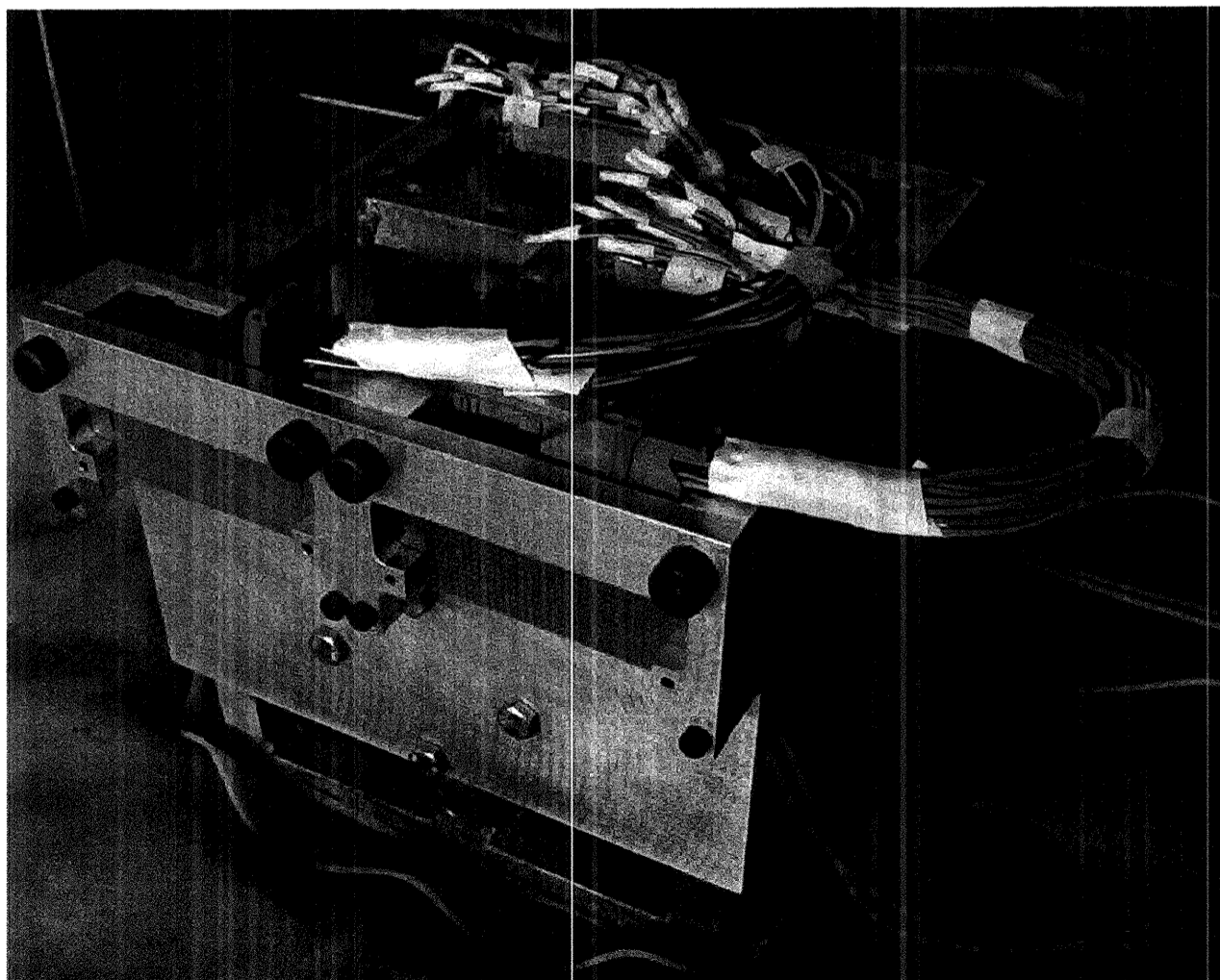
Picture 1 : Example of Mating Force Measurement



Picture2 : Example of Connector Locking Strength Measurement

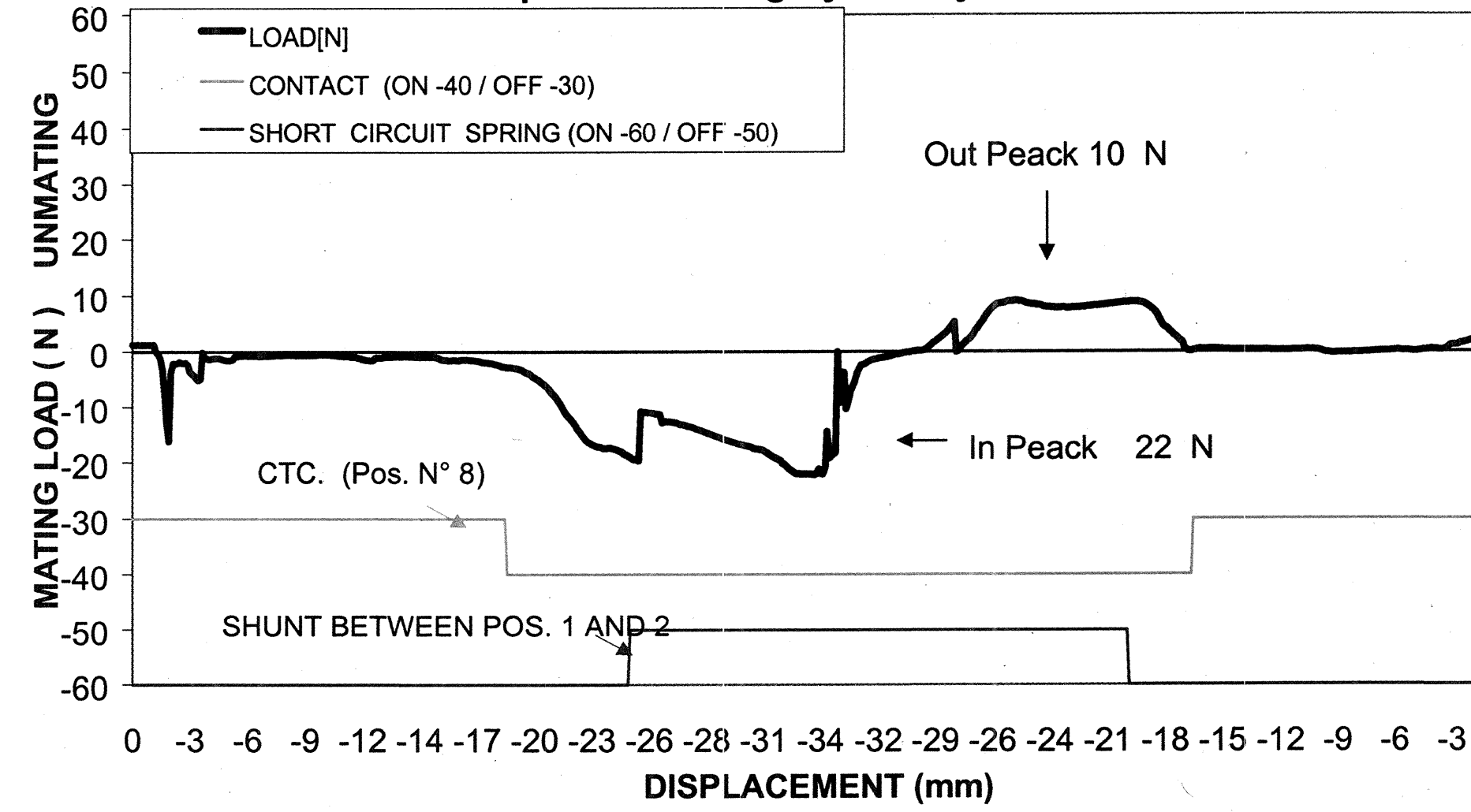


Picture 3: Example of Retention force (housing/frame) Measurement



Picture 4 : Vibration test

**Graph of Mating-Unmating Forces
Specimen N° 1 gray first cycle**



**Graph of X Mating-Unmating Forces
Specimen n° 1 gray tenth cycle**

