



TEST REPORT

PRODUCT ENGINEERING LABORATORY	RL.	130198	REV 1
-----------------------------------	-----	---------------	--------------

Material / Parts description:	PN:	Rev:
.187S Faston Rec.	881623-2	M
.250 Series Faston	880683-2	C1
MQS Contact	928999-1/-5	T4
Terminal Sumitomo 8100-3370	2133568-1	-
Terminal Lear 26869 201 176	2133570-1	A

Requester:	Dept:
Willian Oliveira	PRODUCT ENG. - AUTOMOTIVE

Customer:	Supplier:
Takata Petri / VW	TE

Confidentiality:	Distribution:
() 1- CONFIDENTIAL	(X) REQUESTER
() 2- TE CONNECTIVITY RESTRICTED	(X) DM-TEC
(X) 3- ADDRESSED CUSTOMER	()
()	()

Purpose: Product development	Historic: - Terminals used in VW products PN: 2133555-1, 2133556-1, 2133557-1, 2133558-1, 2133559-1 e 2133560-1 supplied to Takata.
---------------------------------	--

Test(s) Made : According to test plan attachment.	Specification (s): VW 6030- Issue 2009 ISO8092-1 Issue 1996
--	---

Conclusion:

Samples met requirements.

8/nov/12
Date

SIGNATURE ON FILE
Executed by
JÉSUS V. DE OLIVEIRA PRETO
LABORATORY ENGINEER

SIGNATURE ON FILE
Responsible
ROBERTO PINTO DE OLIVEIRA
PRINCIPAL AND LABORATORY MANAGER



TEST REPORT

PRODUCT ENGINEERING
LABORATORY

RL.

130198

Index:

Page

1 - Stripping.....	3
2 - Conductor end.....	4
3 - Damage on the contact elements.....	5
4 - Conductor extraction force.....	5
5 - Pull-out force of crimp connections.....	6
6 - Attachment 1 Pictures.....	8
7 - Attachment 2 Test Plan.....	10

1 - Stripping

Samples

5 samples .187S Faston Rec. PN 881623-2
5 samples .250 Series Faston PN 880683-2
5 samples MQS Contact PN 928999-1/-5
5 samples Sumitomo Terminal PN 2133568-1
5 samples Lear Terminal PN 2133570-1

Equipments

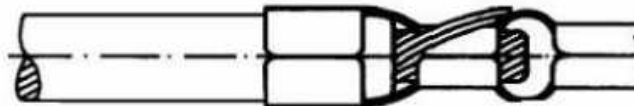
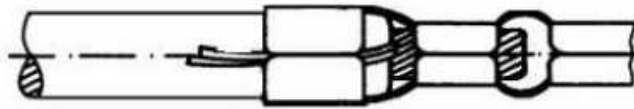
Microscope Stemi 2000-C equipped with digital camera JVC TK-C1381
Digital Camera Cannon model EOS DIGITAL REBEL XTII.

Specification

VW 60330 Issue 2009 - Item 3.2.1

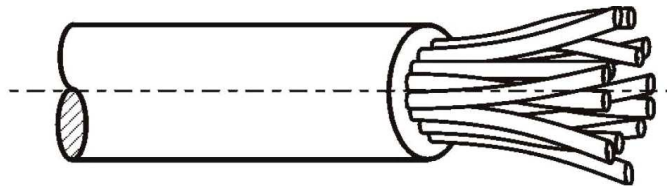
Requirements

- 1 - No strands may be cut off.
- 2 - It is not permissible for strands to protrude; see figure below.



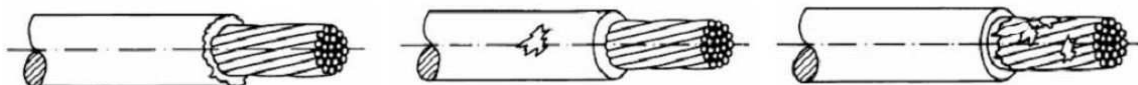
Protruding strands.

- 3 - Fanning out of the strands is not permissible; see figure below.



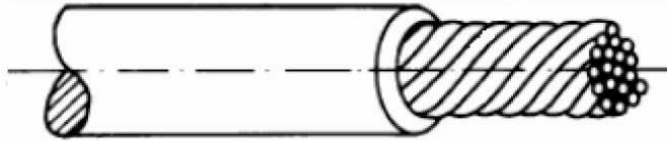
Fanned out stranded wire.

- 4 - Unclean cutting of the insulation, damage to the insulation, or the presence of insulation residues on the stripped portion of the conductor is not permitted; see below.



Defective insulation.

5 - Strands must not be over twisted in order to prevent severing or damaging of the strands during the crimping operation; see figure below.



Over twisted conductor end.

Procedures

Visual analysis and photographic record.

Results

All samples met requirements, please see pictures attached.

2 - Conductor end

Samples

- 5 samples .187S Faston Rec. PN 881623-2
- 5 samples .250 Series Faston PN 880683-2
- 5 samples MQS Contact PN 928999-1/-5
- 5 samples Sumitomo Terminal PN 2133568-1
- 5 samples Lear Terminal PN 2133570-1

Equipments

Microscope Stemi 2000-C equipped with digital camera JVC TK-C1381
Digital Camera Cannon model EOS DIGITAL REBEL XTl.

Specification

VW 60330 Issue 2009 - Item 3.2.2

Requirements

The insulation end must be visible in the window between the wire crimp barrel and insulation crimp barrel. No cable insulation must be caught in the conductor crimp.

Procedures

Visual analysis and photographic record.

Results

All samples met requirements, please see pictures attached.

3 - Damage on the contact elements

Samples

5 samples .187S Faston Rec. PN 881623-2
5 samples .250 Series Faston PN 880683-2
5 samples MQS Contact PN 928999-1/-5
5 samples Sumitomo Terminal PN 2133568-1
5 samples Lear Terminal PN 2133570-1

Equipments

Microscope Stemi 2000-C equipped with digital camera JVC TK-C1381
Digital Camera Cannon model EOS DIGITAL REBEL XTI.

Requirements

The contact range and the locking pins must not be damaged or deformed after the crimping operation.
Deformations of the contact range of the contact element as a result of crimping are not permitted.

Specification

VW 60330 Issue 2009 - Item 3.3.2

Procedures

Visual analysis and photographic record.

Results

All samples met requirements, please see pictures attached.

4 - Conductor extraction force

Samples

5 samples .187S Faston Rec. PN 881623-2
5 samples .250 Series Faston PN 880683-2
5 samples MQS Contact PN 928999-1/-5
5 samples Sumitomo Terminal PN 2133568-1
5 samples Lear Terminal PN 2133570-1

Equipments

Digital dynamometer Mecmesin, model AFG 2500, TE number 92-339017-008.

Requirements

Minimum extraction force = 85N.

Specification

VW 60330 Issue 2009 - Item 4.5.1

Procedures

Measure the conductor extraction force. Velocity: 50mm/minute.

Results

Lear Terminal PN 2133568	
Sample	Force (N)
1	124,1
2	112,8
3	113,7
4	122,6
5	129,5
Min.	112,8
Max.	129,5
Aver.	120,5

.250 Series Faston PN 880683	
Sample	Force (N)
6	125,0
7	119,6
8	116,7
9	117,7
10	115,8
Min.	115,8
Max.	125,0
Aver.	119,0

.187S Faston Rec. PN 881623	
Sample	Force (N)
11	111,3
12	111,8
13	114,3
14	119,6
15	111,8
Min.	111,3
Max.	119,6
Aver.	113,8

MQS Contact PN 928999	
Sample	Force (N)
16	110,3
17	104,8
18	103,5
19	113,3
20	109,8
Min.	103,5
Max.	113,3
Aver.	108,3

Terminal Sumitomo PN 2133570	
Sample	Force (N)
21	103,0
22	104,9
23	105,4
24	108,9
25	102,0
Min.	102,0
Max.	108,9
Aver.	104,8

All samples met requirements.

5 - Pull-out force of crimp connections

Samples

5 samples .187S Faston Rec. PN 881623-2

5 samples .250 Series Faston PN 880683-2

Equipments

Digital dynamometer IMADA, model DPS-11R, TE number 92-339017-076.

Requirements

1st Insertion max. = 45 N.

1st Extraction max. = 45 N.

10th Extraction min. = 18N.

Specification

ISO8092-1 Issue 1996

Procedures

Do insertion and extraction manually, measuring forces.

PRODUCT ENGINEERING
LABORATORY

RL.

130198

Results

.250 Series Faston PN 880683-2				
Sample	Insertion (N)		Extraction (N)	
	1st	10th	1st	10th
26	44,31	15,31	44,74	18,74
27	35,28	19,12	41,36	20,32
28	33,84	22,30	43,18	28,12
29	38,36	16,23	44,73	25,71
30	40,70	16,06	44,36	22,03
Min.	33,84	15,31	41,36	18,74
Max.	44,31	22,30	44,74	28,12
Aver.	38,50	17,80	43,67	22,98

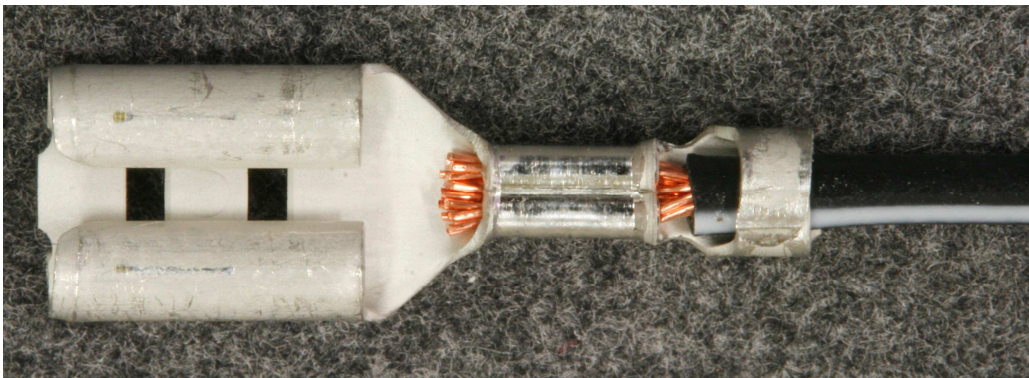
.187S Faston Rec. PN 881623-2				
Sample	Insertion (N)		Extraction (N)	
	1st	10th	1st	10th
31	24,64	14,84	29,42	20,59
32	24,71	15,31	26,40	22,12
33	22,69	16,46	20,12	20,36
34	23,16	16,67	20,49	18,13
35	19,77	17,10	14,82	18,04
Min.	19,77	14,84	14,82	18,04
Max.	24,71	17,10	29,42	22,12
Aver.	22,99	16,08	22,25	19,85

All samples met requirements.

6 - Attachment 1 Pictures



Wire



.187S Faston Rec. PN 881623-2



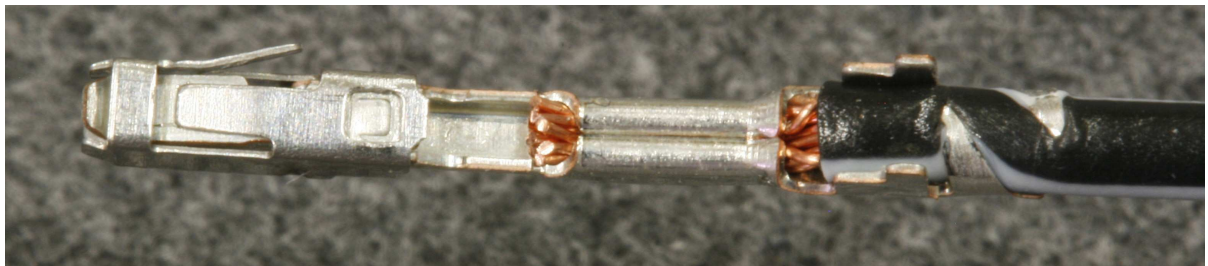
.250 Series Faston PN 880683-2



MQS Contact PN 928999-1/-5



Sumitomo Terminal PN 2133568-1



Lear Terminal PN 2133570-1

