

Evaluation Test of Chrysler VLP Connector

1. PURPOSE

To satisfy ED level testing for S0 level build prototype product being supplied to Chrysler.

2. RESULTS

2.1. Testing was performed between February 2003 and May 2003 to PF-9600, Change A dated 08/95 and PF-9590 Change A. No Certificate of Conformance stating the revision levels was received.

2.2. Unless otherwise specified, the following environmental conditions prevailed during testing:

- Temperature: 15 to 35° C
- Relative Humidity: 20 to 80%

2.3. Wire used in all test groups was 12 inch lengths of 19 strand white 18 AWG wire with .0795 inch overall diameter and .0095 strand diameter.

Test Description	Requirement	Result
Test Group 1A		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.4.2. Connector-to-connector engaging force.	Less than or equal to 75 N.	Passed. See Figure 3.
PF-9600, Section 6.1.1. Visual examination, final.	No damage to form, fit or function.	Passed.
Test Group 1B		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.4.2. Connector-to-connector disengaging force, latch deflected.	Less than or equal to 75 N.	Passed. See Figure 4.
PF-9600, Section 6.1.1. Visual examination, final.	No damage to form, fit or function.	Passed.
Test Group 3D		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.6.8. Pressure/vacuum.	Slowly increase the air pressure of the regulated pressure source supplying the tube in each specimen until the gauge reads 7 psi and observe for 15 seconds. Switch the regulated source to vacuum and slowly apply 14.25 in-Hg of vacuum to the specimens for 15 seconds.	Passed.

Figure 1 (cont)

Test Description	Requirement	Result
PF-9600, Section 6.1.1. Visual examination.	No ingress of fluid.	Passed.
PRC-OP-020. Heat age.	Expose specimens to 155°C for 72 hours.	Passed.
PF-9600, Section 6.6.8. Pressure/vacuum.	Slowly increase the air pressure of the regulated pressure source supplying the tube in each specimen until the gauge reads 4 psi and observe for 15 seconds. Switch the regulated source to vacuum and slowly apply 8.14 in-Hg of vacuum to the specimens for 15 seconds.	Passed.
PF-9600, Section 6.1.1. Visual examination, final.	No ingress of fluid.	Passed.
Test Group 3E		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.6.6. Fluid resistance, transmission fluid.	Expose to fluid for 5 minutes. No ingress of fluid or damage to seals.	Passed.
PF-9600, Section 6.1.1. Visual examination, final.	No ingress of fluid.	Passed.
Test Group 3F		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.6.8. Pressure/vacuum, after fluid resistance.	Slowly increase the air pressure of the regulated pressure source supplying the tube in each specimen until the gauge reads 4 psi and observe for 15 seconds. Switch the regulated source to vacuum and slowly apply 8.14 in-Hg of vacuum to the specimens for 15 seconds.	Passed.
PF-9600, Section 6.1.1. Visual examination, final.	No ingress of fluid.	Passed.
Test Group 4G		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9590, Section 2.6.2. Connector cavity strength.	No sign of cracking or damage.	Passed. See Figure 5.
PF-9600, Section 6.1.1. Visual examination, final.	No damage to form, fit or function.	Passed.

Figure 1 (cont)

Test Description	Requirement	Result
Test Group 5H		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9590, Section 2.5.1. Terminal-to-terminal engaging force.	No damage to form, fit or function.	Passed. See Figure 6.
PF-9590, Section 2.5.1. Terminal-to-terminal disengaging force.	No damage to form, fit or function.	Passed. See Figure 7.
PF-9600, Section 6.1.1. Visual examination, final.	No damage to form, fit or function.	Passed.
Test Group 6J		
PF-9600, Section 6.1.1. Visual examination, initial.	No damage to form, fit or function.	Passed.
PF-9600, Section 6.4.2. Connector-to-connector disengaging force, with latch engaged.	Greater than or equal to 110 N.	Passed. See Figure 8.
PF-9600, Section 6.1.1. Visual examination, final.	No damage to form, fit or function.	Passed.

Figure 1 (end)

3. TEST SPECIMENS

Test specimens were representative of normal production lots. Specimens identified with the following part numbers were used for test:

Test Group	Quantity	Part Number	Description
All	15	1488617-1	VLP connector assembly
	15	638514-1	6 position plug assembly
	15	638513-1	3position plug assembly
	15	638512-3	2 position plug assembly
	175	1326028-5	0.64 mm terminal crimped to 18 AWG wire
	2	1488611-1	Lead array

Figure 2

Specimen Type	Engaging Force (N)		
	Minimum	Maximum	Mean
5 position plug	20.99	22.62	22.04
3 position plug	19.82	23.57	21.26
2 position plug	20.13	25.80	23.69

Figure 3
Connector-To-Connector Engaging Force

Specimen Type	Disengaging Force (N)		
	Minimum	Maximum	Mean
5 position plug	28.01	30.41	28.96
3 position plug	19.53	22.77	21.12
2 position plug	19.07	22.61	20.91

Figure 4
Connector-To-Connector Disengaging Force
(with latch deflected)

Specimen Type	Cavity Strength (N)		
	Minimum	Maximum	Mean
5 position plug, latch side	135.50	136.50	136.00
5 position plug, top side	135.90	136.80	136.43
5 position plug, left side	136.00	136.80	136.37
5 position plug, bottom side	136.10	136.90	136.38
3 position plug, latch side	135.40	136.80	136.07
3 position plug, top side	136.10	137.40	137.05
3 position plug, left side	136.10	137.10	136.68
3 position plug, bottom side	135.80	136.80	136.27
2 position plug, latch side	135.70	137.20	136.37
2 position plug, top side	136.00	137.20	136.75
2 position plug, left side	135.90	137.40	136.75
2 position plug, bottom side	135.80	137.20	136.57

Figure 5
Connector Cavity Strength

Cycle Number	Engaging Force (N)		
	Minimum	Maximum	Mean
1	1.36	2.06	1.70
10	0.93	1.82	1.35

Figure 6
Terminal-To-Terminal Engaging Force

Cycle Number	Disengaging Force (N)		
	Minimum	Maximum	Mean
1	0.62	1.15	0.81
10	0.66	1.21	0.86

Figure 7
Terminal-To-Terminal Disengaging Force
(with latch engaged)

Specimen Type	Disengaging Force (N)		
	Minimum	Maximum	Mean
5 position plug	206.9	232.5	223.7
3 position plug	219.9	231.7	226.2
2 position plug	145.6	163.4	151.6

Figure 8
Connector-To-Connector Disengaging Force
(with latch engaged)