

The English translation is believed to be accurate. In case of discrepancies the German version shall govern.

VOLKSWAGEN AG	Push-on Connection on and in Electric and Electronic Components in Vehicle Requirements	VW 801 06
Konzernnorm		

Descriptors: Housing plug, plug, push-on connection, requirements

Changes

The following changes have been made as compared to the February 2000 issue:

- Scope extended
- Section 2.1 General requirements added
- Section 2.4 Plug pins, layer thickness added

Previous Issues

First issue: 1994-01 Last change: 2000-02

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1 Scope

This standard defines requirements for push-on connections on and in electric and electronic components that occur in vehicles.

Only the requirements stated in sections 2.5 and 2.6 also apply to push-on connections in electric and electronic components.

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2 Requirements

2.1 General requirements

Approval of first supply and changes according to VW 011 55.

General requirements according to VW 801 01 apply.

Avoidance of hazardous substances according to VW 911 01.

2.2 Connector mating force

The plugging force when assembling the connector housing shall be <100 N. The maximum permissible force is 150 N. This requirement applies independently of the number of terminals. If necessary, sliders or levers shall be used as actuation aids. Forces must not be carried by the contact housing.

2.3 Push-on connection

The push-on connectors must be shown and dimensioned on a separate drawing and must be indicated on the component drawing.

2.4 Plug pins

The plug pins of the push-on connector must be indicated with the standard part number on the drawing.

The standard part drawing must contain the following information:

- Plug shape
- Material
- Dimensions
- Surface
- Layer thickness

2.4.1 Plug resilience and pull-out strength

Plug resilience according to Table 1:

Forces shall not be carried by solder points.

Test rate 100 mm/min

Crimped and push-on connections according to VW 751 73 and VW 603 30

Table 1: Connector types and forces

Flat terminal on the device		
Width x thickness (mm)	Possible mating connector	Plug resilience/ pull out strength (N)
9.5 x 1.2	Flat contact (maxi-power timer)	≥ 200
7.7 x 0.8	Flat contact	≥ 180
6.3 x 0.8	Flat contact	≥ 150
5.0 x 0.8	Flat contact	≥ 150
5.0 x 0.6	Flat contact	≥ 70
4.8 x 0.8	Flat contact (standard-power timer)	≥ 120
2.8 x 0.8	Flat contact	≥ 80
2.8 x 0.5	Flat contact (junior-power timer)	≥ 80
1.5 x 0.6	Flat contact (micro-timer)	≥ 55
1.6 x 0.8	Flat contact	≥ 55
0.63 x 0.63	Box connector 0.63 mm	≥ 50
Round connector on the device		
Ø (mm)	Possible mating connector	Plug resilience/ pull out strength (N)
4.0	Round connector 4.0 mm	≥ 150
2.5	Round connector 2.5 mm	≥ 80
1.6	Round connector 1.6 mm	≥ 40
1.0	Round connector 1.0 mm	≥ 40
The forces are measured at room temperature		

2.5 Contact corrosion

To prevent galvanic corrosion, the same materials (uncoated contacts) or the same surface protection (coated contacts) shall be used in the push-on connection (male/female connector).

2.6 Contacts with gold-plated surfaces

Gold contacts shall be used for:

- Signal currents below 3 mA
- Open-circuit voltages below 3 mV,
By agreement for open-circuit voltages between 3 mV and 1 V
- Signal currents below 25 mA and temperatures above 130 °C
- Signal currents below 25 mA and increased vibration stress

For special requirements (e.g. safety components), to which the criteria listed in this section do not apply, whether to use gold-plated contacts must be specially decided.

2.7 Push-on connection

The plugs shall be arranged on the housing in rows (single or multiple rows). To extend the current leak path, a plastic socket in a honeycomb shape, for example, shall be selected.

The push-on connection is generally on the electric/electronic component. The coding shall not be done by arranging the plug pins, but by the outside contour. The push-on connection is compact and shall not be designed as individual connections.

The contacts shall be made solid (not folded), fixed and pressed in or injected. The push-on connection must have a catch for the connector housing (on the cable side).

2.8 Protective collars

Pin and protective collars shall be designed as mechanical components. The edges and the sealing area must be free of burrs.

2.8.1 Improper plugging

To avoid improper plugging, the protective collar shall be coded by shape.

2.8.2 Guides

The wall of the plug receptacle must be stable in shape and remain so, even under mechanical and thermal stress.

A high enough wall in connection with guide ribs or other aids can prevent damage to the contact elements by accidentally and/or willfully plugging in crooked or in the wrong socket, and sufficiently secure guiding of the connector housing prior to contact is ensured.

2.8.3 Protection against mechanical contact

Design measures (e.g., spacing material, height of protective collar) shall prevent the contacts from being bent due to contact (even with counter-coupling).

3 Referenced standards

VW 011 55	Vehicle Supply Parts - General, Approval of First Supply and Changes
VW 60330	Crimp Connections
VW 75173	Flat Terminal Connections
VW 801 01	Electric and Electronic Components in Vehicles
VW 911 01	Environmental Standard for Vehicles, Vehicle Parts, Materials, Operating Fluids, Avoidance of Hazardous Substances

VOLKSWAGENAG	Push-on Connection on and in Electric and Electronic Components in Vehicle Requirements	VW 80106
标准中心		55 00 0

更改:

相比于 2000 年 2 月的版本, 有以下的更改:

- 范围延伸
- 增加 2.1 部分的总体要求
- 增加 2.4 部分插针, 镀层厚度

旧版本

第一版: 1994-01 上一更改版本: 2000-02

内容

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 - 2. 7 推进连接
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- 3 相关标准

1 范围

此标准说明了车辆上使用的电子或电气配件在才拔连接上的要求。只有 2.5 和 2.6 部分的要求也适用于电子或电气配件的插拔连接。

2 要求

2. 1 总体要求

根据 VW01155, 对首次供应和更改批准

总体要求根据 VW801 01

避免有害物质, 根据 VW911 01

2. 2 连接器配合力

当安装于连接器外壳时, 插入力应 <100N, 最大允许为 150N。独立应用于端子数量。如有必要, 滑子或杠杆被做为活动辅助。力量不能由接触外壳执行。

2. 3 推进连接

推进连接器必须在图纸上显示并注明尺寸, 且必须指出配件图。

2. 4 插针

推进连接器的插针必须在图纸上标明标准部件名。标准部件图纸必须包括以下信息：

- 插头形状
- 材料
- 尺寸
- 表面
- 层厚度

2. 4. 1 插头弹力和拉力

插头弹力据表 1

力量不能由滑子点执行

测试率 100mm/分

卷缩和推进连接 据 VW751 73 和 VW 603 30

表 1 连接器类型和力量

装置上的扁平端子		
长度 X 厚度 (mm)	可配合的连接器	插头插入拔出强度 (N)
9.5X1.2	扁平接触 (超大马力计时器)	≥200
7.7X0.8	扁平接触	≥180
6.3X0.8	扁平接触	≥150
5.0X0.8	扁平接触	≥150
5.0X0.6	扁平接触	≥70
4.8X0.8	扁平接触 (标准马力计时器)	≥120
2.8X0.8	扁平接触	≥80
2.8X0.5	扁平接触 (小型马力计时器)	≥80
1.5X0.6	扁平接触 (微型计时器)	≥55
1.6X0.8	扁平接触	≥55
0.63X0.63	盒式端子 0.63mm	≥50
组件上的圆连接器		
φ (mm)	可配合的连接器	插拔力 (N)
4.0	圆形连接器 4.0mm	≥150
2.5	圆形连接器 2.5mm	≥80
1.6	圆形连接器 1.6mm	≥40
1.0	圆形连接器 1.0mm	≥40
插拔力测试在室温下测试		

2. 5 接触侵蚀

为防止电流侵蚀，同样材料（未电镀接触）或同样表面保护（电镀接触）应用于推进连接中（阳极/阴极连接器）

2. 6 镀金表面接触

金接触应用于：

- 信号电流低于 3mA
- 断路电路电压低于 3mV
据断路电路电压在 3mV 和 1V 之间的协议
- 信号电流低于 25mA，温度高于 130°C
- 信号电流低于 25mA，提高振动应力

对于特殊要求（如安全配件），这个列表中的标准不适用，要求是否用镀金接触再作决定。

2.7 推进连接

插头应成排安排在外壳里（单排或双排），为延伸电流泄漏通道，应选择一个塑料插座，例如蜂窝式的。

推进连接一般在电气/电子配件上，编码不应由插针做，而由外部周线。推进连接是紧密的，不应设计成单独的连接。

接触应是实心/可靠的（不折叠的），固定的，压入或注塑的，推进连接器必须有一个部位和连接器外壳匹配（在线缆边）

2.8 保护环套

针和保护环套必须按机械配件设计，边缘和密封区无飞边。

2.8.1 非正常堵塞

为避免非正常堵塞，保护环套应据形状制作。

2.8.2 导向

插座壁必须在形状上保持稳定，即使在机械应力和热力下也要保持。

和导向挡边连接必须有足够高的壁或其他辅助以阻止由于意外或蓄意地插入弯曲或错的插座而造成的损坏。在确保接触之前有足够的连接器外壳的安全导向。

2.8.3 机械接触的保护

设计尺寸（如空间材料，保护环套的高度）应阻止由于接触而造成弯曲的接触（即使和计数器耦合）

3 相应标准

VW01155 车辆供应部件-总体的，首次供应和更改的批准

VW60330 卷曲连接

VW75173 扁平端子连接

VW80101 车辆的电气和电子配件

VW91101 车辆的环境标准，