



**GAS APPLIANCES**  
**TECHNICAL GUIDANCE BULLETIN**

**Bulletin Number:** 20  
**Bulletin Date:** 1 December 2022  
**Product Type:** Small Gas Engine Driven Appliances  
**Relevant Standard(s):** AS 5263.1.11 2020 *Gas appliances, Part 1.11: Small gas engine driven appliances*  
**Relevant Clause(s)** Clause 4.101 – Engine starting at maximum and minimum limiting conditions  
**Subject:** Test method clarification for battery operated starting systems.

**Guidance to be provided:**

**Modified Requirements**

Section ZB 101 is to be modified as details in appendix A.

---

**Reason:** For some engines with battery operated starting systems, removal of the battery and replacing with a separate power supply is not practical. As an alternative it is permitted to use the existing battery to operate the start system during this test.

**Action(s):** Conformity assessment bodies are to consider the above assessment option when assessing the product type for certification.

**Transition:** Immediate.

**Proposed Revision(s) to Standard(s):**

AS/NZS5263.1.11 will be reviewed to consider the above requirements in the next update, at which time the requirements of the standard will apply and will supersede this bulletin.

This bulletin provides technical guidance from the Gas Technical Regulators to Conformity Assessment Bodies that are JASANZ accredited for the certification of gas appliances required to comply with AS3645. This technical guidance is provided where the technical requirements or test methodologies from current technical standards are inadequate or can be misinterpreted. This bulletin is valid until such time as the relevant technical standard is revised or amended accordingly.



## **ZB.101 Engine starting at maximum and minimum limiting conditions**

### **ZB.101.1 Scope**

This method sets out the procedure to assess the safe starting of the appliance at maximum and minimum limiting conditions.

### **Principle**

The normal starting procedure is carried out and the appliance is monitored for smooth starting of the engine whether hot or cold (5°C) with all gases and the engine start time recorded.

### **Apparatus**

The following apparatus shall be used:

- (a) Equipment as specified in Appendix F.
- (b) Suitable timing device.
- (c) A means of cooling the engine to 5 °C prior to start.
- (d) Means of monitoring engine operation.
- (e) For appliances in which fuel is supplied from a cylinder, the largest cylinder size recommended by the manufacturer.
- (f) **Suitable voltage measuring device**
- (g) **For mains operated engine starting systems, means to supply a voltage equivalent to 85% and 110% of mains supply voltage.**
- (h) **For battery operated engine starting systems, means to supply a voltage equivalent to 80% of the nominal voltage of the battery.**

### **Materials**

Test gas as **specified in Table 4.101** at pressures to satisfy the test conditions shall be used.

### **Preparation of apparatus**

The apparatus shall be prepared as follows:

- (a) Install the appliance in accordance with Clause 3.2 in the temperature-controlled test area
- (b) Set up test the test equipment.
- (c) Ensure the engine starting system is complete and is installed according to the manufacturer's instructions.
- (d) In the case of mains voltage engine starting systems voltage equivalent to both 85 % and 110 % of the voltage is applied to the appliance.
- (e) **For battery operated engine starting systems: connect a battery at 80% of the nominal voltage to the supply contacts of the battery holder or disconnect the battery and apply a power source equivalent to 80 % of the nominal voltage.**
- (f) Shut-off the gas and allow the appliance to stand at 5 °C until temperature equilibrium is reached.

This bulletin provides technical guidance from the Gas Technical Regulators to Conformity Assessment Bodies that are JASANZ accredited for the certification of gas appliances required to comply with AS3645. This technical guidance is provided where the technical requirements or test methodologies from current technical standards are inadequate or can be misinterpreted. This bulletin is valid until such time as the relevant technical standard is revised or amended accordingly.



(g) Shut down cooling apparatus.

### **Procedure**

The procedure shall be as follows:

- (a) Initially test with the appliance in the cold condition.
- (b) Purge the gas line to the control valve.
- (c) Turn on gas control valve and start the timing device at the same time.
- (d) Operate the engine starting system in accordance with the manufacturer's instructions.
- (e) Turn off the engine. Repeat (c) and (d) 5 times, allowing 1 minute between tests**
- (f) Repeat the procedure with the appliance in the hot condition.
- (g) Repeat the procedure with each test gas and under each limiting condition.

NOTE: Ensure the gas lines are purged after each test gas.

### **Test report**

All relevant observations shall be reported, including the following at each limiting condition:

- (a) The number of times engine starting was effective.
- (b) Average time for engine starting.
- (c) Engine starting characteristics.