

BRP-Powertrain
MAINTENANCE MANUAL

5) Checking the compression

General note See Fig. 5.



Risk of electric shock!
Ignition "OFF" and system grounded!

Special tools

To measure the compression pressure the following special tools and equipment are necessary.

Part number	Description
n.a.	Compressed air approx. 6 bar (87 psi).
n.a.	2 pressure gauges.
n.a.	Orifice jet*, of 1mm (0.04 in) inner diameter and 3 mm (0.12 in) length. * or equivalent e.g. orifice diameter 0.040 in., long 0.0250 in., 60° degree approach angle according to AC43.13, latest issue.
n.a.	Adapter to spark plug thread.
n.a.	Connect line.

Instruction

Testing is carried out using the **differential pressure test procedure**.

Step	Procedure
1	Operate the engine until the temperatures have stabilized for a period of 5 min (engine oil temperature between 50 to 70 °C (122 - 160 °F).
2	Started with cylinder head 1 move piston to TDC position.
3	Remove the upper spark plugs. Prevent dirt or other foreigner particles from penetrating the engine (A).
4	Screw adaptor (1) into the spark plug thread and connect up the two pressure gauges (2) with the orifice jet (3) between them (B).
5	Now put constant pressure, between 5,5-6 bar (80-87 psi) on the line and take readings at pressure gauge (C).
6	Repeat this proceeding at all 4 cylinder heads.

Value

The maximum permissible pressure drop is 25 %, e.g. from 6 to 4.5 bar (87 psi to 65 psi) (D).

If the pressure loss is less than 25% then the valve seats and piston rings are working properly. The spark plug has to be installed according to chap. 12-20-00 section: 14.2).

If the value is over 25% inspection, repair or overhaul must be carried out in accordance with the BRP-Powertrain instructions for continued airworthiness.

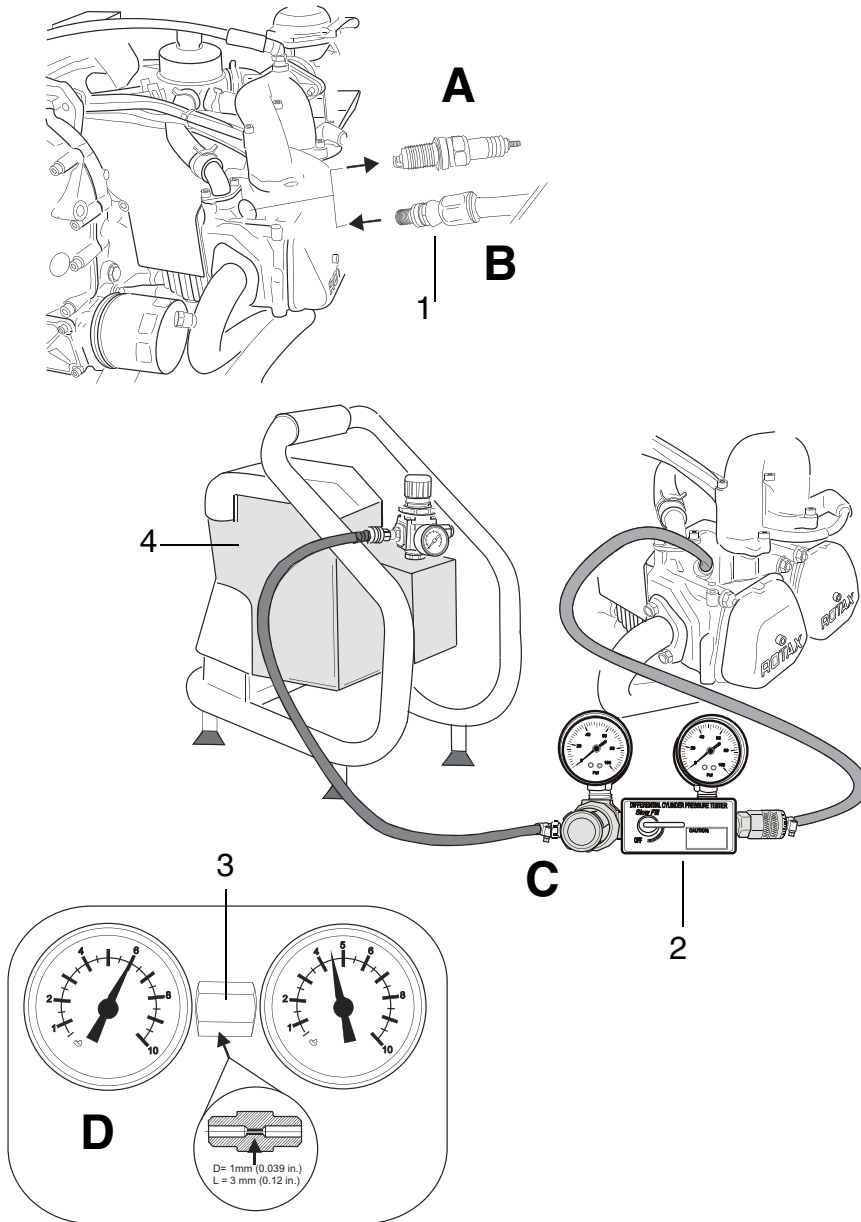
- Detailed inspection of affected engine components.

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Graphic

Checking the compression.



Part	Function
1	Adaptor
2	Manometer/Test gauges set
3	Orifice jet
4	Compressor

Fig. 5

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5.1) Compression check for fault-tracing

General note In the course of fault-tracing a **compression check** can also be performed.

A compression tester is required to check compression. The compression should be between 9 and 12 bar (130 and 174 psi).

Instruction Compression check for fault-tracing.

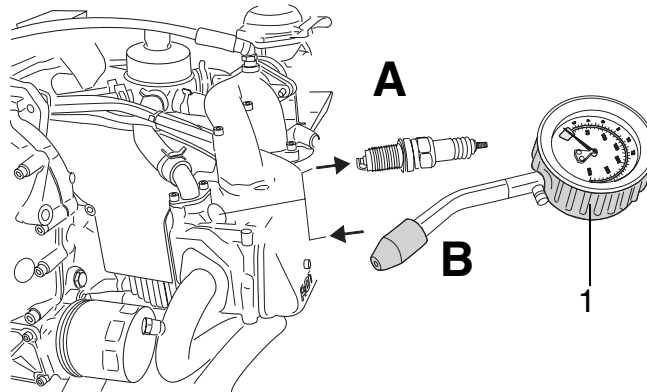
Step	Procedure
1	Operate the engine until the temperatures have stabilized for a period of 5 min (engine oil temperature between 50 to 70 °C (122 - 160 °F)).
2	Unscrew and remove top spark plugs.
3	Press compression tester (1) over the spark plug hole and use the starter to turn the engine over with open throttle until maximum pressure is reached.
4	Successively take readings on all four cylinders and compare results.

Measurement Individual readings for the cylinder must not differ by more than 2 bar (29 psi).

If the value is below 6 bar (87 psi), inspection, repair or overhaul must be carried out in accordance with the BRP-Powertrain instructions for continued airworthiness.

- Detailed inspection of affected engine components.

Graphic Compression check for fault-tracing



Part	Function
1	Compression tester

Fig. 6

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