

Sensor holder for Stirling engine G U11372

Instruction manual

02/11 SD/ALF



1. Description

The sensor holder for the Stirling engine G model attaches both a relative pressure sensor (U11323) and a displacement sensor (U11371) to the Stirling engine (U10050), making it possible to plot a graph of pressure against volume for the Stirling engine with the help of the 3B NET/og™ interface (U11300-115 or U11300-230).

2. Included

- 1 Sensor holder
- 1 String with spring and cap nut
- 2 Knurled screws M6 x 10
- 1 Silicone hose, 20 cm

3. Assembly

- Attach the sensor holder to the base plate of the Stirling engine as illustrated.



Fig. 1 Assembly of sensor holder

- Screw the pressure sensor into place in the bottom hole of the sensor holder using a knurled screw. Connect the nozzle marked “+” on the sensor to the hose nozzle on the working piston using a silicone hose.



Fig. 2 Assembly of pressure sensor

- Screw the cap nut attached to the string onto the threaded rod of the working piston and fit the displacement sensor in the top hole using a knurled screw.



Fig. 3 Attachment of string to working piston and assembly of displacement sensor

- Move the working piston and the pulley to the centre of their movement. Wrap the string around the pulley and attach the spring to the threaded rod. The string needs to go around the small screw on the pulley.

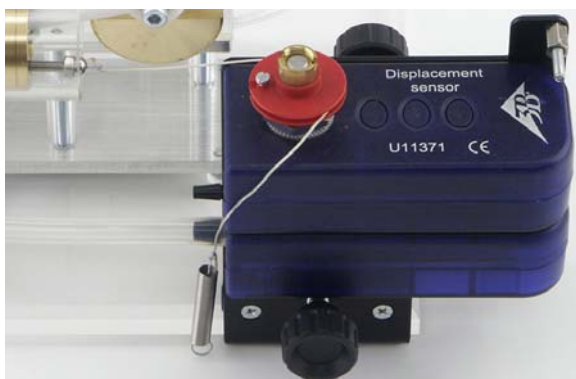


Fig. 4 Positioning of working piston and pulley and how to thread the string



Fig. 5 How the string is threaded around the pulley

- Move the working piston out all the way, then move the sensor holder in such a way that the spring is at its minimum extension. The attachments should be aligned such that the spring, the string and the working piston all move in the same plane.



Fig. 6 Alignment of sensor holder

- Slowly turn the Stirling engine by hand and check that none of the moving parts catch on the sensor holder. Make sure, too, that the pulley does not turn to its limit and that it is not touched by the spring. If the spring does touch the pulley, it will be extended too far when the working piston is at the limit of its movement.



Fig. 7 Poorly aligned sensor holder whereby the string sags at full extension

- Next, gently tighten the screw so that the pulley cannot shift position.
- Connect the pressure sensor to analog input A of the 3B NET/log™ unit and the displacement sensor to analog input B.



Fig. 8 Securing the string

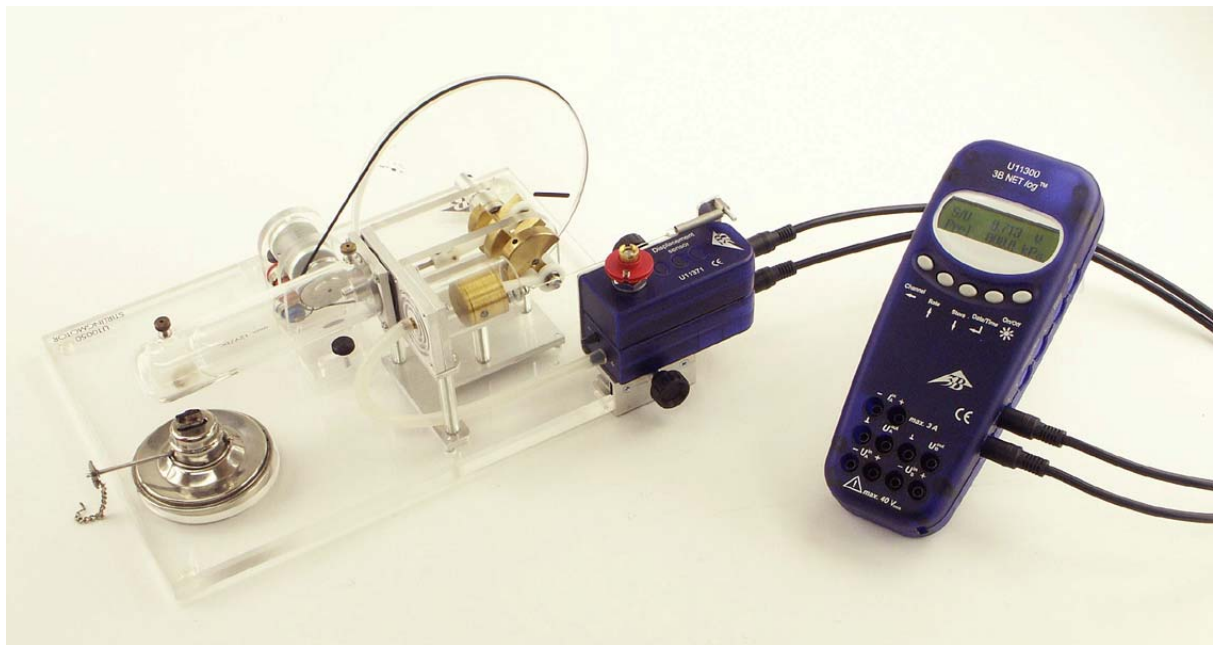


Fig. 9 Set-up for plotting a graph of pressure against volume

