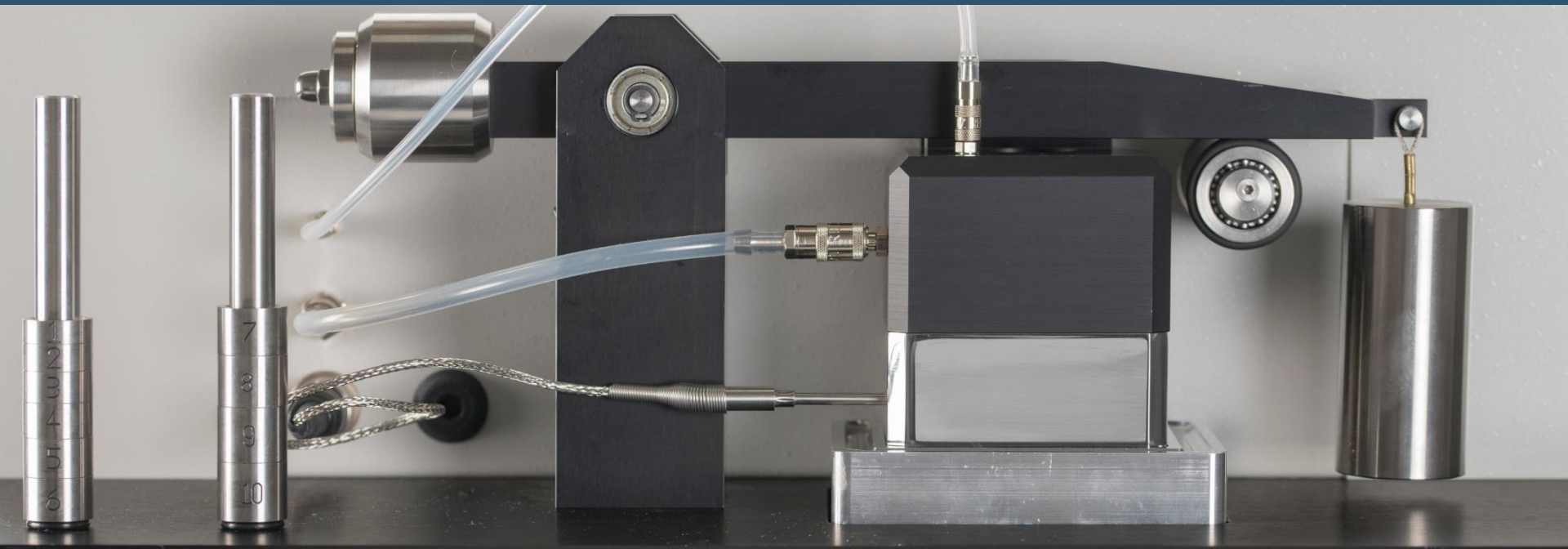


ABS OVERVIEW

PCS Instruments

LEADERS IN TRIBOLOGY TEST EQUIPMENT



'A Ball-on-Cylinder wear test system which provides a fast, repeatable assessment of the performance of jet fuels. Included in ASTM D5001 – 19'

More than 300 ABS systems have been sold worldwide.



- Fully Automated Microprocessor control of all instrument functions.
- Bench top mounted unit with simple user interface.
- Instrument functions can be upgraded by downloading new firmware.
- Standard **ASTM D5001** test sequence pre-loaded into microprocessor controller.
- Operator simply has to fit cleaned test specimens, add the fuel sample and press "Start".
- No operator-induced variability in test results.
- Automatic mass flow controllers for moist and dry air.
- Optional PC-based control and data logging software.
- Allows alternative test programmes to be downloaded into instrument, and test parameters to be recorded as a permanent record.
- Humidity and temperature measurement does not need to be re-calibrated - simply replace the combined RH and temperature probe with a pre-calibrated unit.

- D5001- 'Measurement of Lubricity of Aviation Turbine Fuels by the Ball-on-Cylinder Lubricity Evaluator'.
- PCS is the sole supplier of the fully automated BOCLE.
- PCS Instruments' ABS shows improved repeatability and reproducibility over existing instruments.

ABS Specimens and Accessories



- ***“Test Ring, of SAE 8720 steel, having a Rockwell hardness “C” scale, (HRC) number of 58 to 62 and a surface finish of 0.56 to 0.71 μm root mean square.***
Test Balls, chrome alloy steel, made from AISI standard steel No. E-52100, with a diameter of 12.7 mm, Grade 5 to 10. The balls are described in ISO 3290-1:2008. The HRC shall be 64 to 66, a closer limit than is found in the ISO requirement.” – D5001.
- Standard Specimen Packs (for 100 tests):
 - Pack of 10 standard test rings PCS-002758
 - Pack of 100 standard test balls PCS-002757
- **PCS are the sole supplier of the test rig and specimens - this is to ensure higher levels of quality control.**
- Reference Fuels, available in 1 litre bottles:
 - Reference Fluid A PCS-002728
 - Reference Fluid B PCS-002729



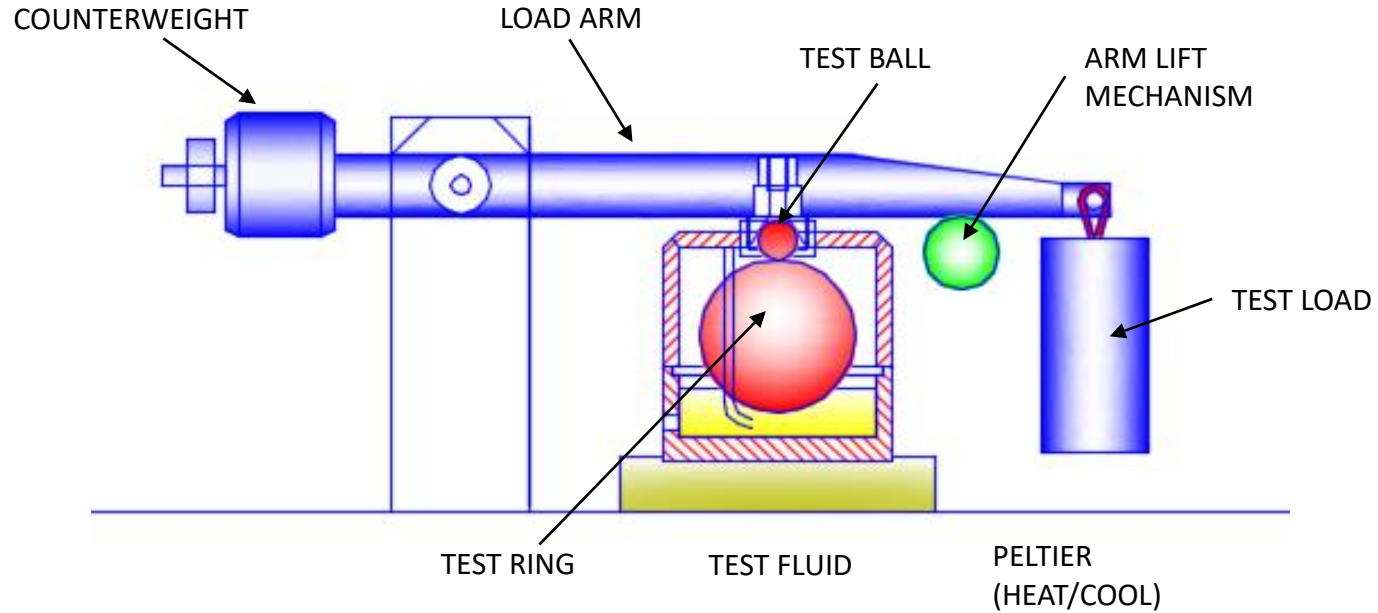
“Microscope, capable of 100x magnification and suitable of measuring the wear scar on the ball to the nearest 0.01mm”- D5001.

- PCS Microscope - metallurgical microscope with calibrated micrometer stage:
 - (PCS-005310)
- PCS wear scar camera fits to the top of the microscope:
 - (PCS-002967)
- An ultrasonic seamless stainless steel tank is required with adequate capacity and cleaning power:
 - (PCS-005307, 230V)
 - (PCS-005306, 100-120V)



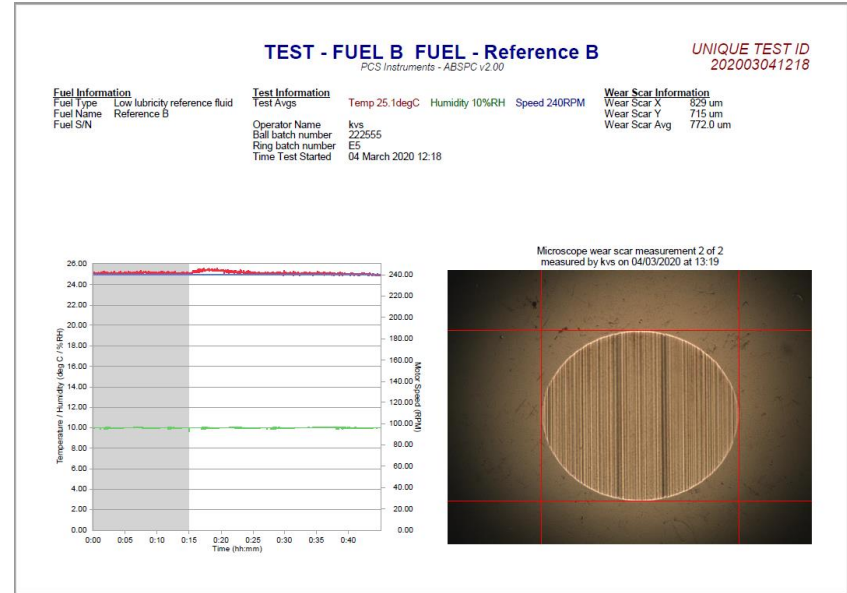
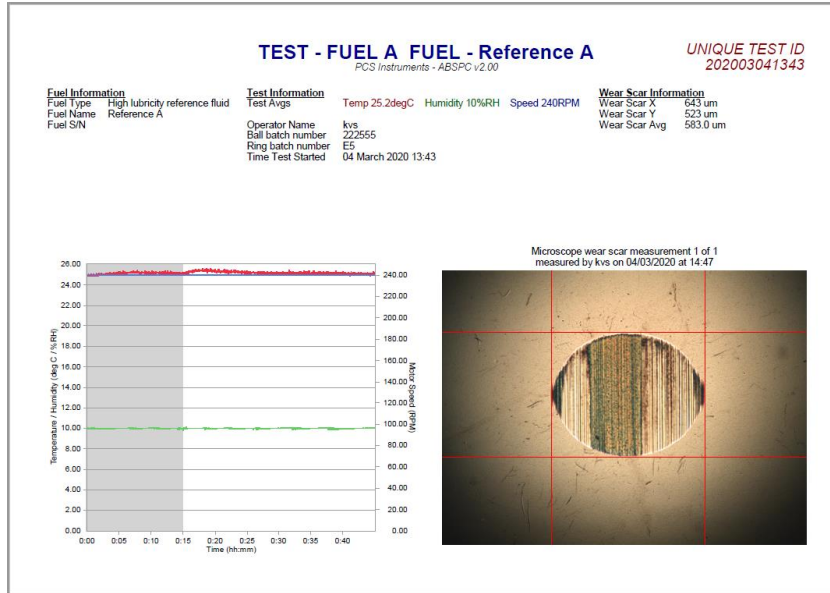
- Optional PC allows all test data to be recorded during the test and a summary print out confirming that all parameters are within the specified limits. Includes:
 - Data logging software
 - Connecting Cable
- The ABS can be ordered with PC supplied (PCS-002761), or the customer can supply their own PC (PCS-002760) (serial port required).
- Zero Air Generator removes trace hydrocarbons, and comes in 2 options:
 - Compressor, dryer and zero air generator (PCS-002744)
 - Zero air generator only, requires dry air supply (PCS-004831)





The ABS test is fully automatic. The test sequence is as follows:

1. **STABILISE TEMPERATURE** (APPROXIMATELY 7 MINUTES)
 - Heats the fuel bath to 25 Degrees Celsius.
2. **STABILISE HUMIDITY** (APPROXIMATELY 7 MINUTES)
 - The instrument stabilises the humidity to 10%RH.
3. **PRECONDITIONING PHASE** (15 MINUTES)
 - The fuel and fuel bath chamber is conditioned to 10%RH.
4. **TEST PHASE** (30 MINUTES)
 - Conditioning of the fuel is stopped, but conditioning of the fuel bath chamber is continued. The ball is lowered onto the rotating disc.



Typical results using Wear Scar Camera and using standard reference fuels

Power: 100-230 V, 50/60 Hz, 750 VA

Weight: 34 kg - 75 lb

Size (h x w x d): 350mm/14in x 520mm/20in x 520mm/20in

Accessories and calibration parts supplied with instrument in protective case.



Recommended parts for fast turnaround of tests:

- PCS-002748 ABS Ball Holder Assembly (incl. Collar, screw, washer)
- PCS-002736 ABS Test Ring Clamp Washer
- PCS-002735 ABS Test Ring Retaining Screw
- PCS-002749 ABS Test Ring Adaptor
- PCS-002738 ABS Fuel Bath
- PCS-002737 ABS Fuel Bath Cover

Recommended spares for one year:

- PCS-002732 ABS Temperature Probe
- PCS-002748 ABS Ball Holder Assembly (incl. Collar, screw, washer)
- PCS-002736 ABS Test Ring Clamp Washer
- PCS-002735 ABS Test Ring Retaining Screw
- PCS-002749 ABS Test Ring Adaptor
- PCS-002746 ABS Large Air Pipe + Fittings
- PCS-002745 ABS Small Air Pipe + Fittings

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PCS Instruments,
78 Stanley Gardens, London,
W3 7SZ



+44 (0)20 8600 9920
info@pcs-instruments.com



www.pcs-instruments.com