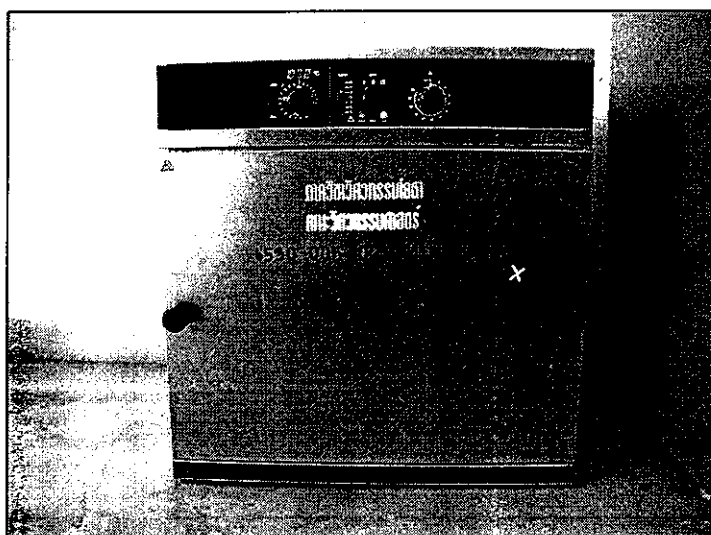


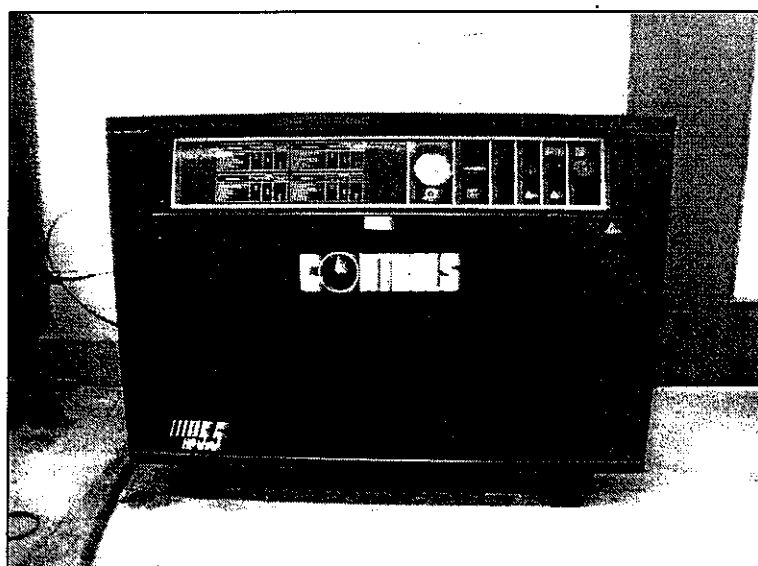
ภาคผนวก

ภาคผนวก

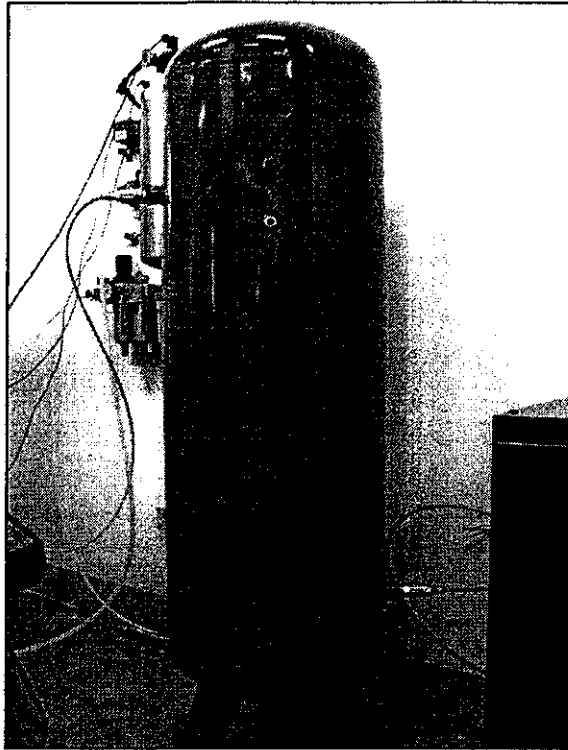
อุปกรณ์การทดลอง



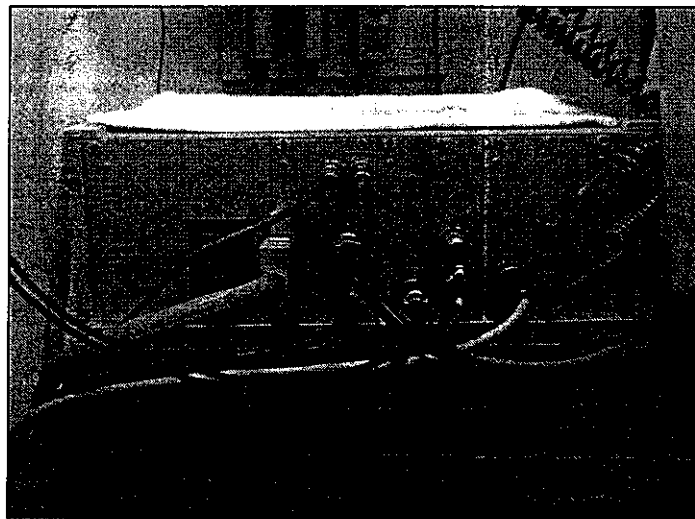
ตู้อบ



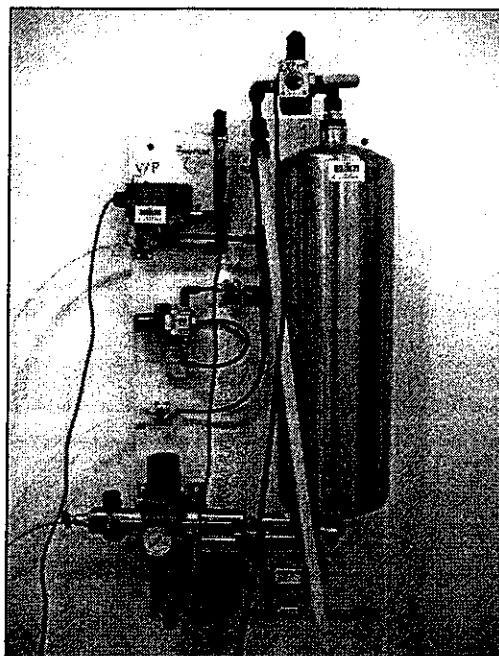
ป้อนลม



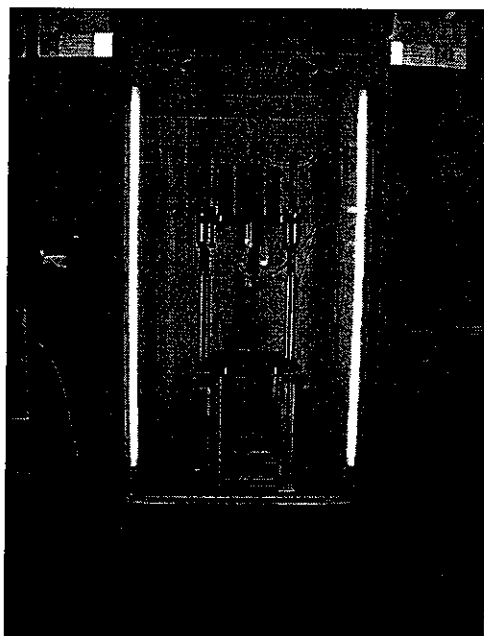
ถังเก็บลม



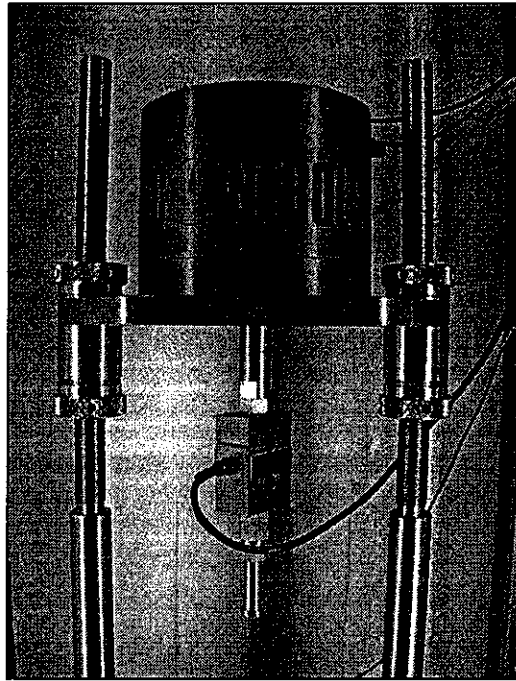
Interface Unit



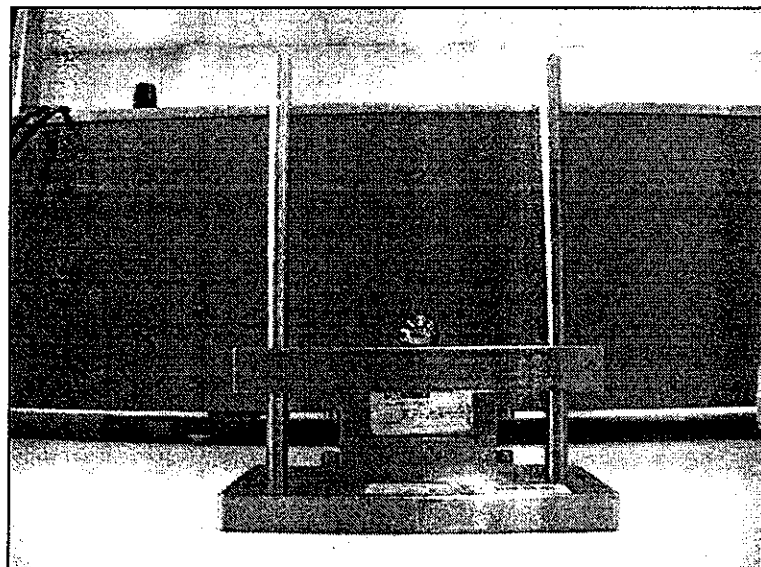
Pneumatic Unit



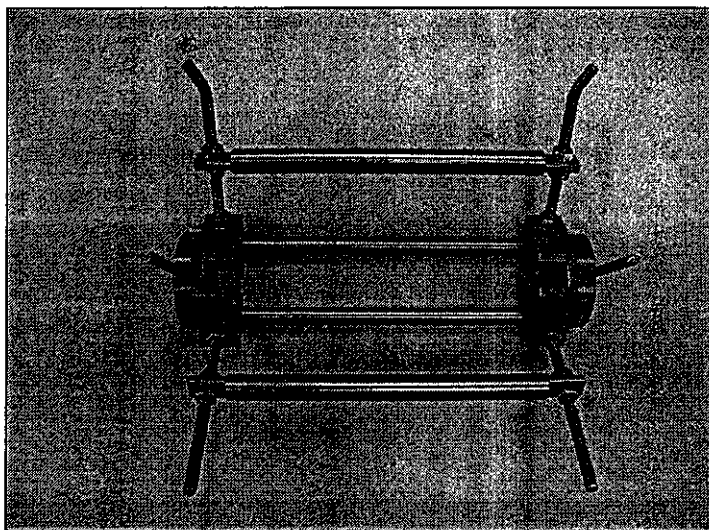
ตู้ควบคุมอุณหภูมิ



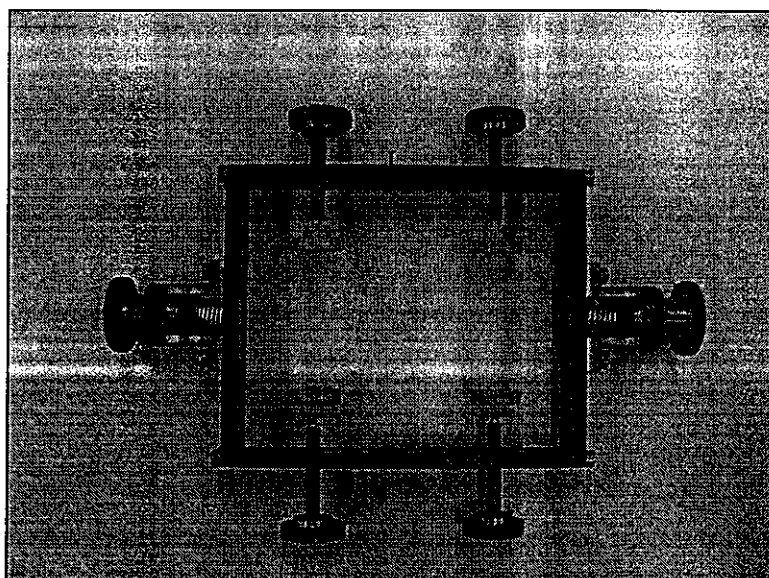
Load Cell



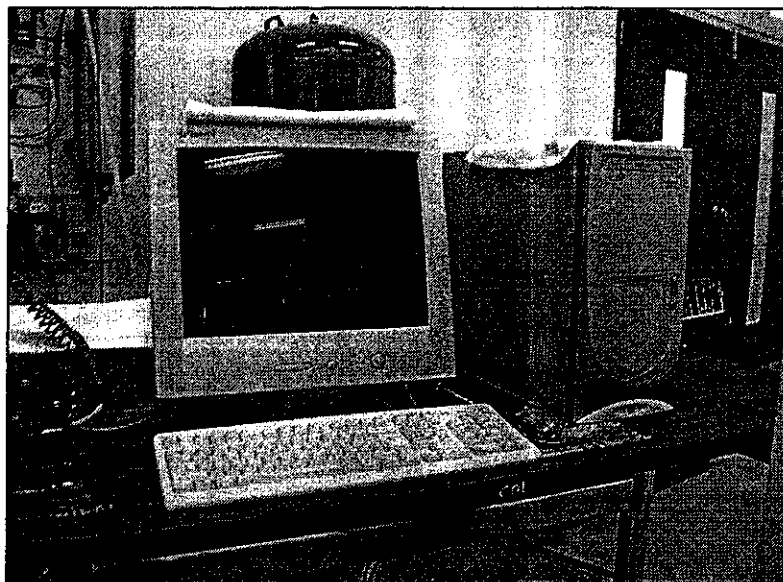
IT sub-frame



Alignment jig and Crossbars



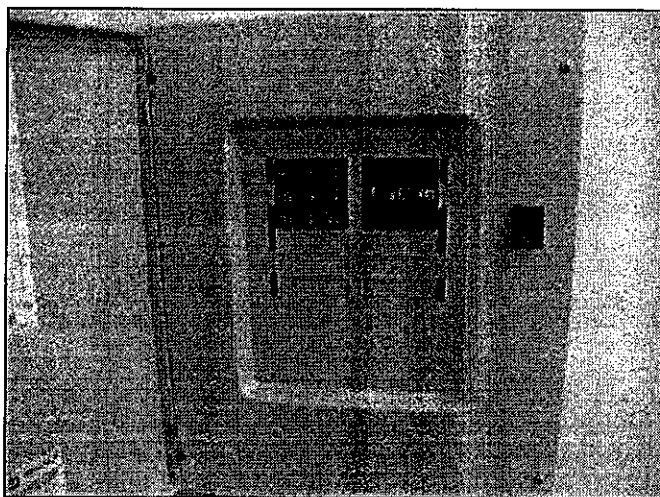
VDT yoke



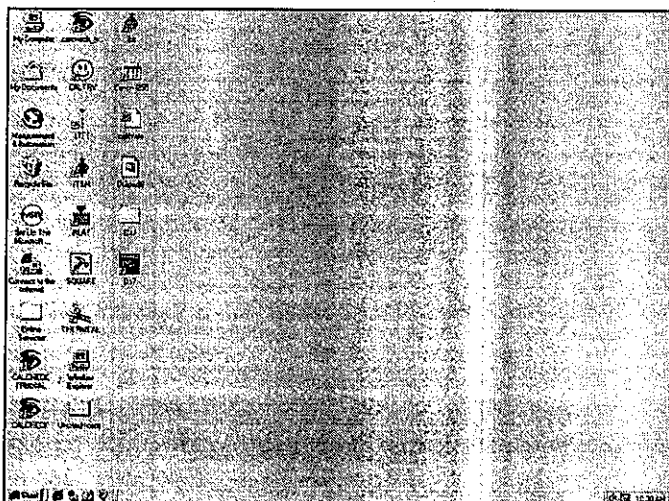
Computer

วิธีการใช้เครื่องและโปรแกรม

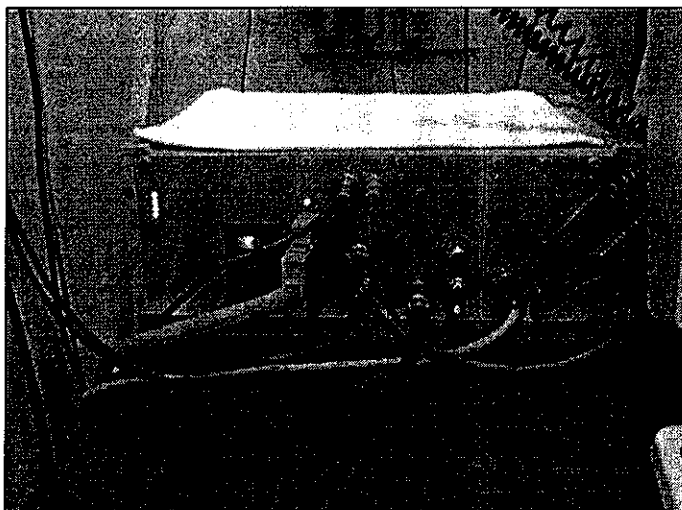
1. เปิดสวิตช์ปั้มลม



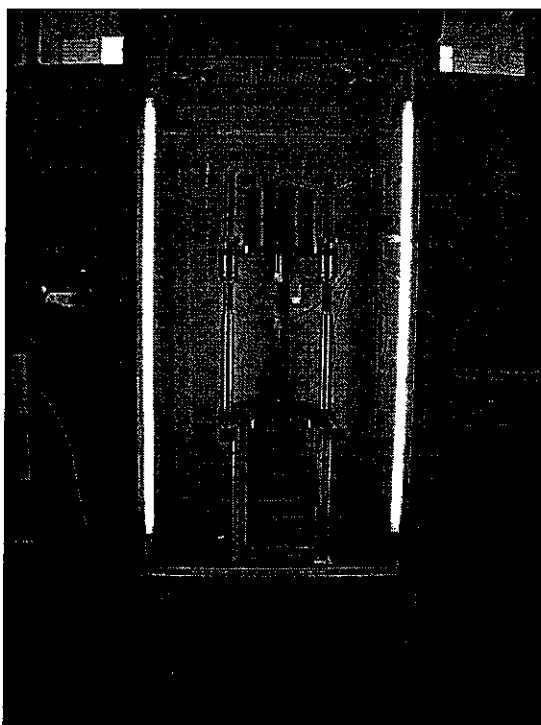
2. เปิดสวิตช์ Computer



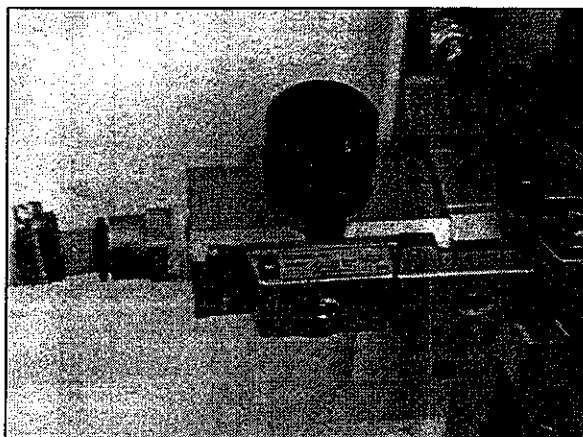
3. เปิดสวิตช์ Interface Unit



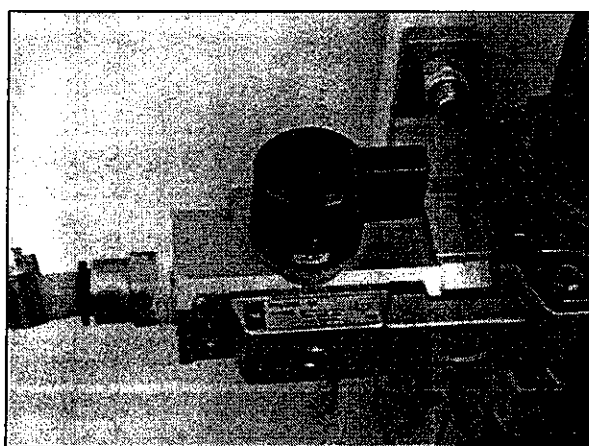
4. เปิดสวิตช์ตู้ควบคุมอุณหภูมิ



5. เปิด solenoid วาล์วของ Pneumatic Unit

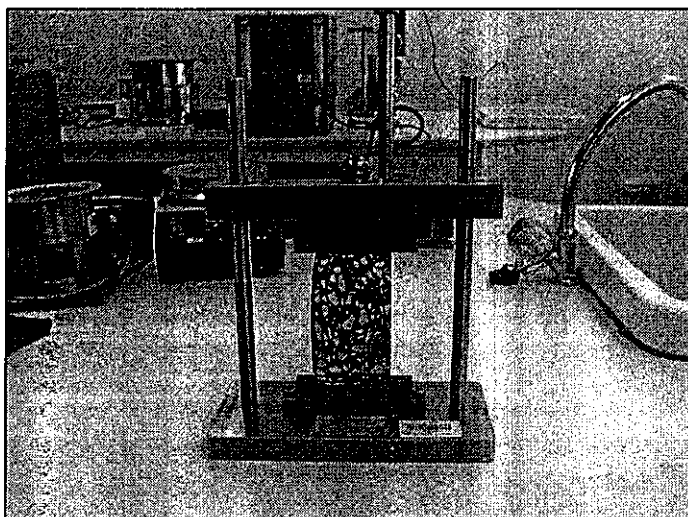


ก่อนเปิด solenoid valve

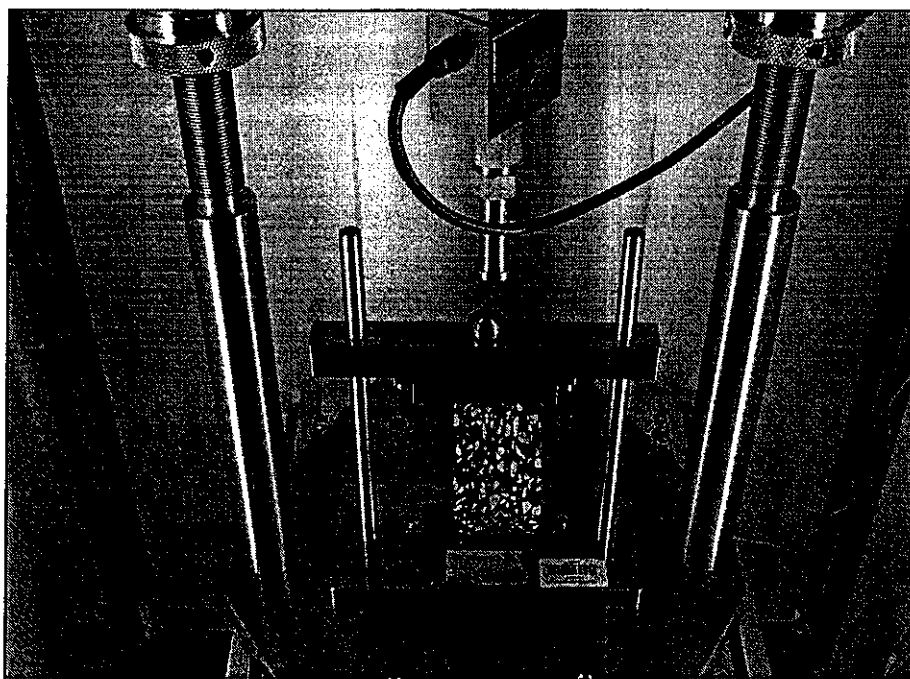


เปิด solenoid valve โดยบิดไปทางขวามือ

6. นำก้อนตัวอย่างใส่ใน IT sub-frame



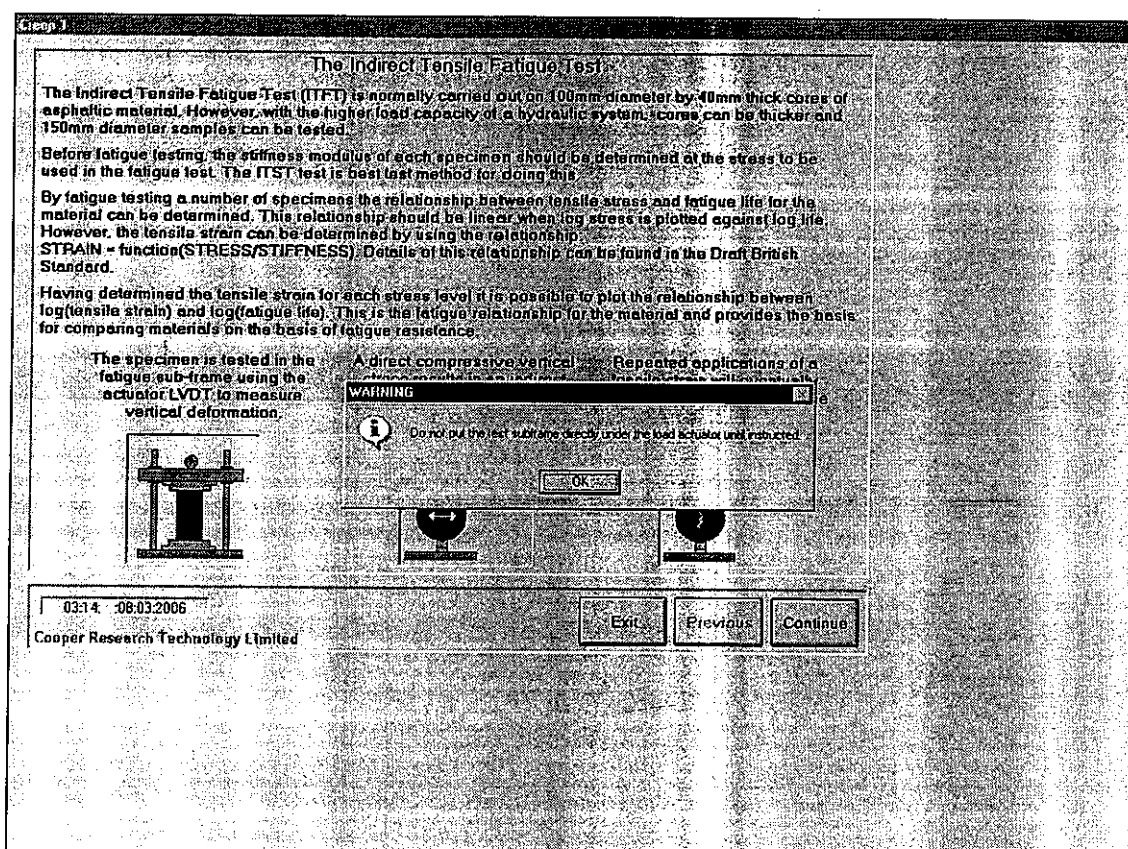
7. นำ IT sub-frame ใส่ไว้ในตู้ควบคุมอุณหภูมิที่ปรับอุณหภูมิแล้ว พักไว้ครึ่งชั่วโมง



8. ทำการทดสอบโดยใช้โปรแกรม ITSFT โดยมีขั้นตอนการใช้โปรแกรมดังนี้

8.1 เปิดโปรแกรม ITFT ขึ้นมาโปรแกรมจะเตือนว่าอย่าวาง IT sub-frame ไว้ใต้ Load

Actuator Unit แล้วคลิกที่ปุ่ม OK



8.2 ๓๓ Continue

Creep 1

The Indirect Tensile Fatigue Test

The Indirect Tensile Fatigue Test (ITFT) is normally carried out on 100mm diameter by 40mm thick cores of asphaltic material. However, with the higher load capacity of a hydraulic system, cores can be thicker and 150mm diameter samples can be tested.

Before fatigue testing, the stiffness modulus of each specimen should be determined at the stress to be used in the fatigue test. The ITST test is best used method for doing this.

By fatigue testing a number of specimens the relationship between tensile stress and fatigue life for the material can be determined. This relationship should be linear when log stress is plotted against log life. However, the tensile strain can be determined by using the relationship: $STRAIN = function(STRESS/STIFFNESS)$. Details of this relationship can be found in the Draft British Standard.

Having determined the tensile strain for each stress level it is possible to plot the relationship between log(tensile strain) and log(fatigue life). This is the fatigue relationship for the material and provides the basis for comparing materials on the basis of fatigue resistance.

The specimen is tested in the fatigue sub-frame using the actuator LVDT to measure vertical deformation.



A direct compressive vertical stress results in an indirect tensile stress (and strain) acting horizontally.



Repeated applications of a tensile strain will eventually result in a vertical crack in the centre of the specimen.

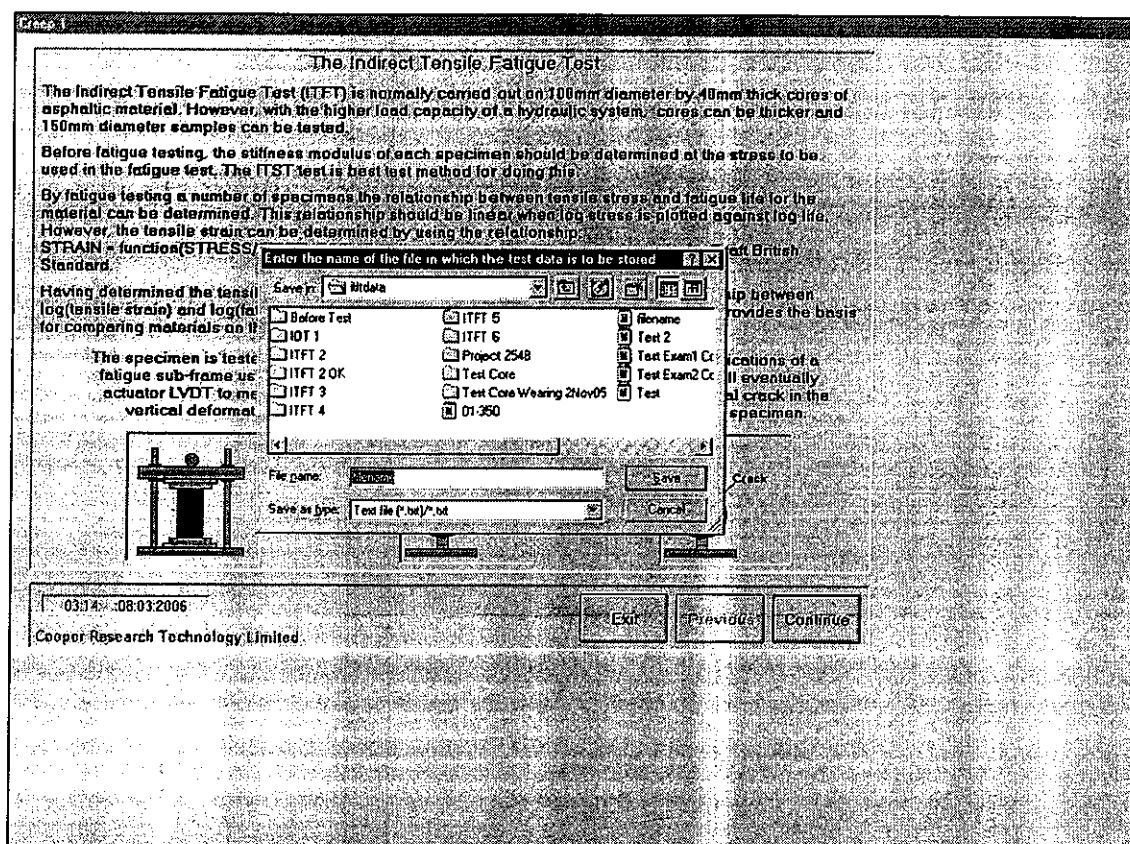


03.14 08.03.2006

Cooper Research Technology Limited

Exit Previous Continue

8.3 ตั้งชื่อ File และ กด Save



8.4 ตั้งชื่อการทดสอบแล้วกด Add และกด Continue

Operator

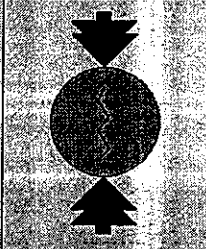
Select the test operator name. Add a new name or delete unwanted names from the list.

Add

Delete

If the specimen dimensions and name or reference number have not already been noted, this should be done at this stage. Note that the specimen ends should be flat and the specimen should be clean and free from loose particles. The stiffness modulus of the specimen should have been measured before this test is carried out.

Indirect Tensile Fatigue Test



ITFT

03:14 08/03/2006

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Exit Previous Continue

8.5 ตั้งชื่อก่อนวัสดุที่ต้องการทดสอบ แล้วกด OK

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Data Entry

Target test temperature: 10°C To the nearest degree Celsius

Specimen diameter: 11 mm

Specimen thickness: 50 mm

Target test time: 1.24 and 1.50 sec

Maximum deformation: 3 mm

Target horizontal stress: 50 kPa To the nearest 10 kPa
Change: Blue x 50 kPa, Red x 10 kPa

Specimen reference

Enter specimen reference or identifying number

OK

Cancel

Specimen

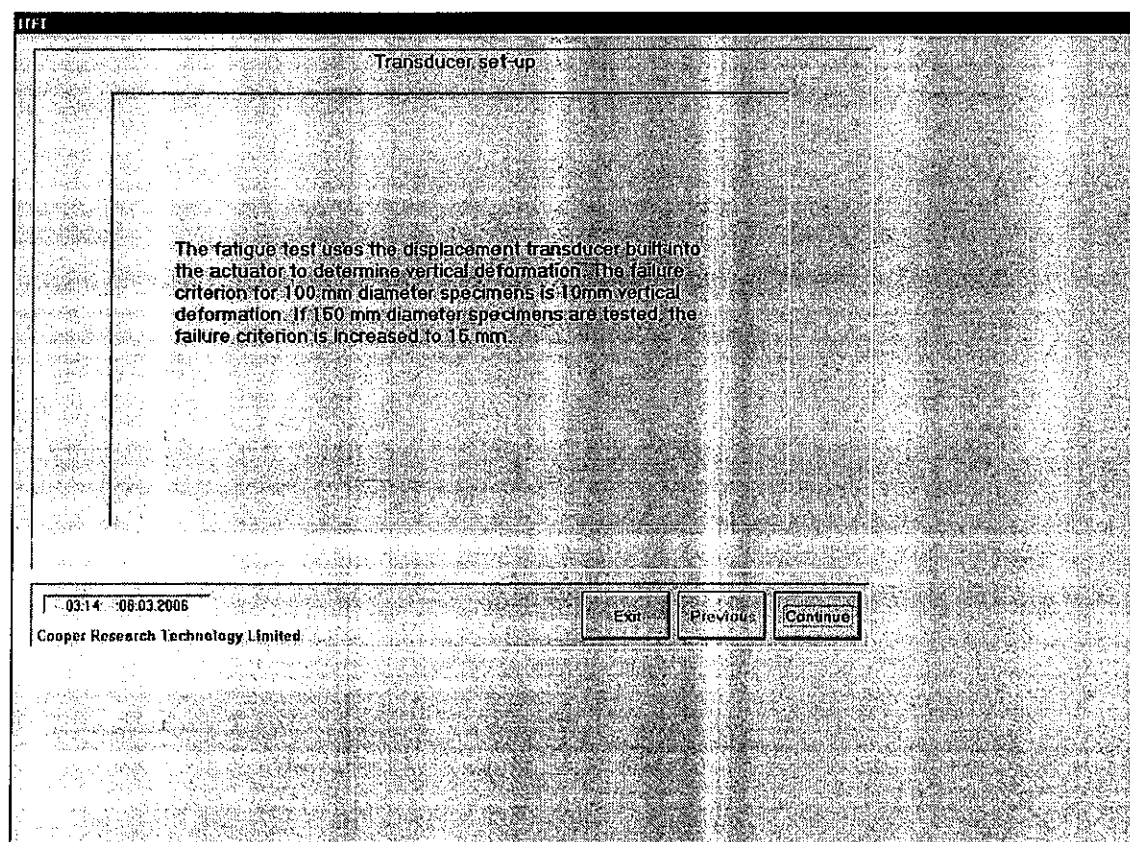
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Exit Previous Continue

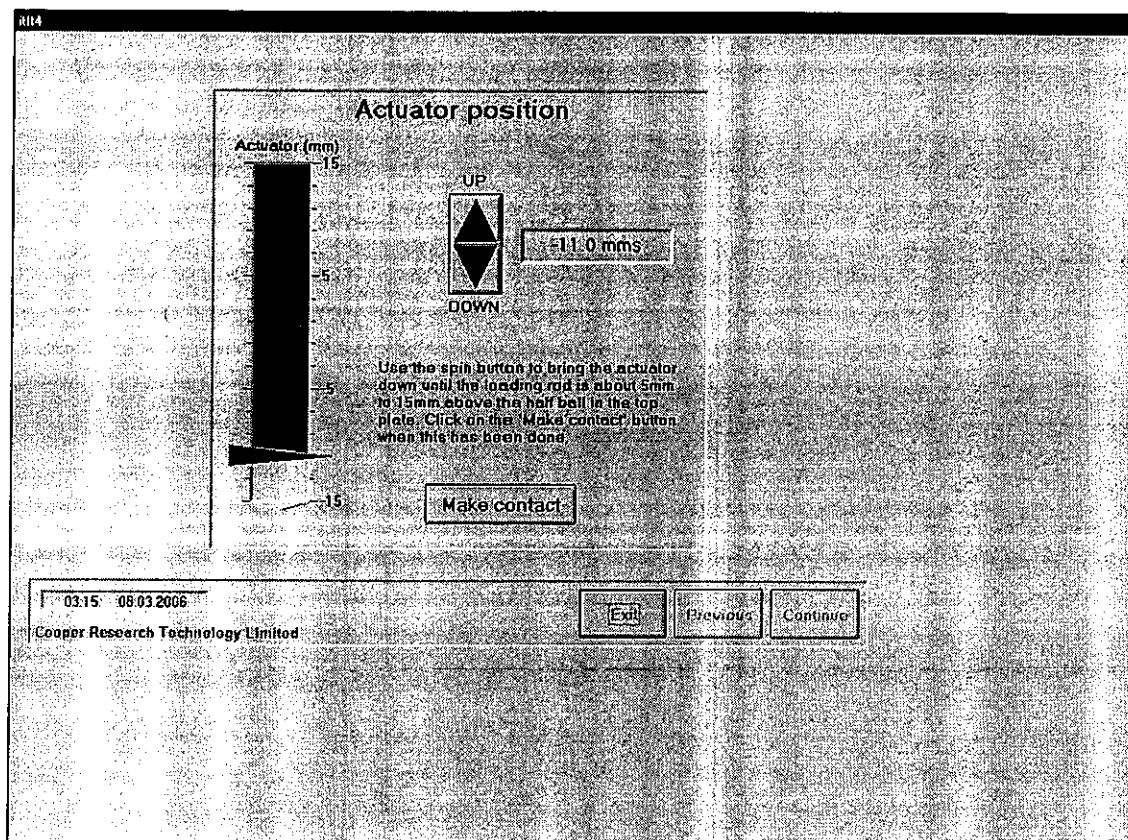
8.6 ทำการป้อนค่า โดยคลิกที่ลูกศรสีเหลืองเพื่อเพิ่มและลดค่า

- อุณหภูมิ
- Diameter
- Thickness
- Poisson's ratio
- Risetime
- Horizontal stress
- Number of conditioning pulses
- แล้วคลิกที่ Test along first diameter (ปุ่มสีเขียวปุ่มบน)

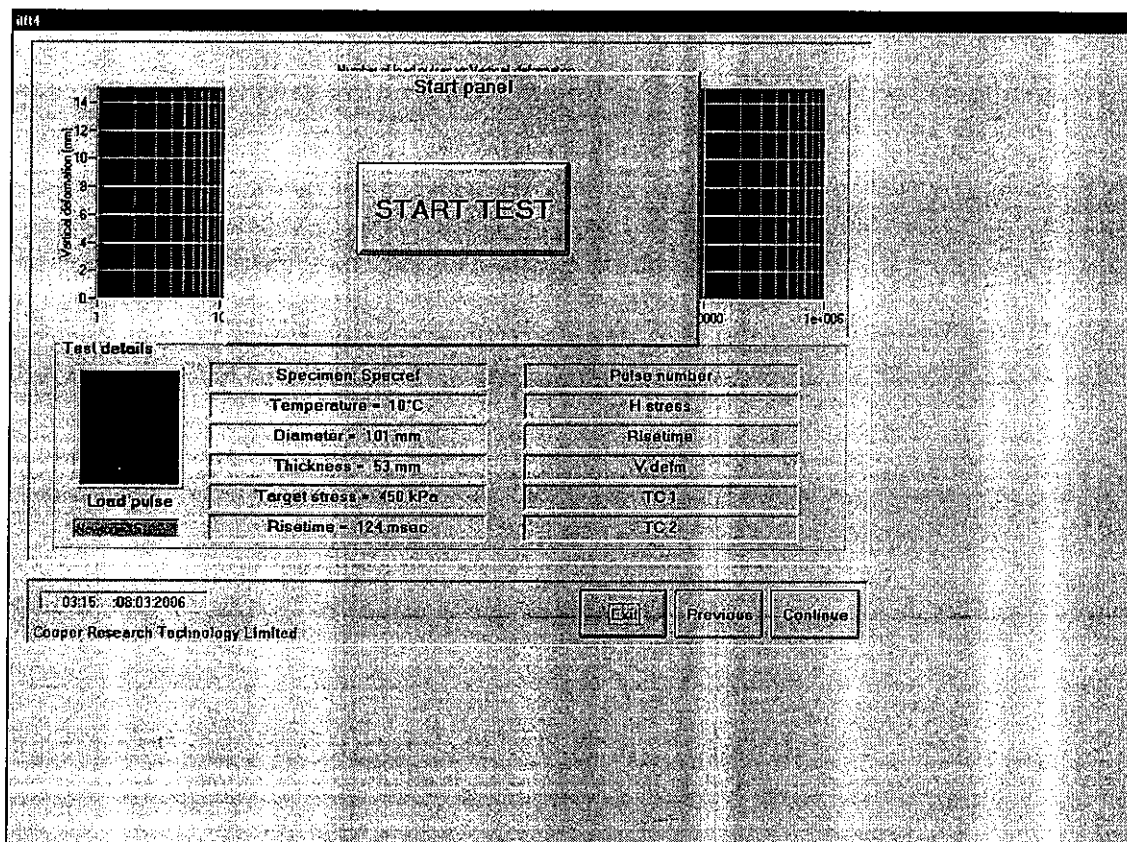
8.7 Transducer Setup กด Continue



8.8 กดmake contract แล้วกด continue



8.9 กด Start Test



8.10 เมื่อทำการทดสอบเสร็จแล้วกด Exit