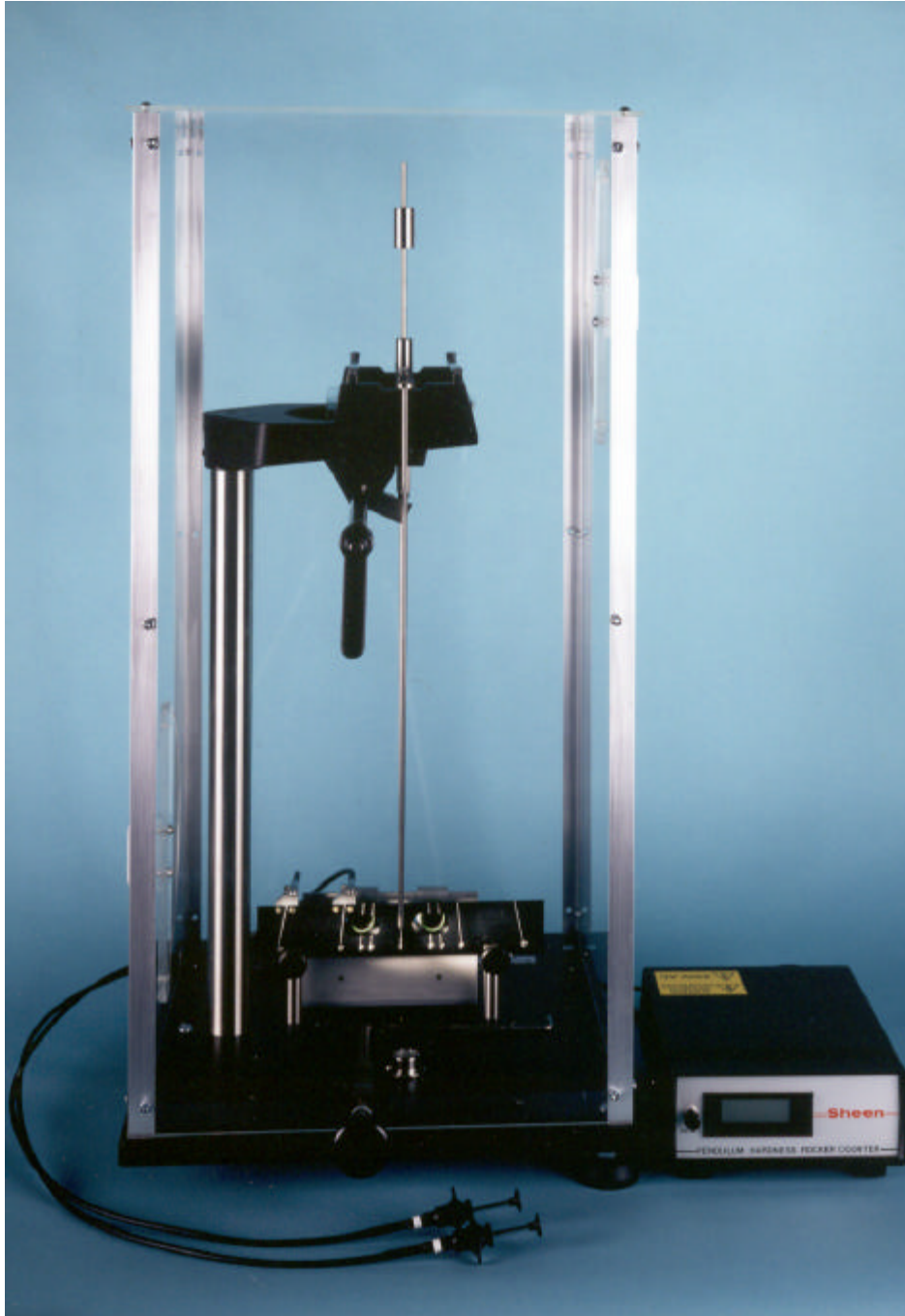




REF. 707 PENDULUM HARDNESS ROCKER



INTRODUCTION

The pendulum hardness test is based on the principle that the amplitude of the pendulum's oscillation will decrease more quickly when supported on a softer surface. There are several hardness tests which relate the damping of an oscillation motion to hardness of surfaces.

The Persoz test measures the time for the amplitude to decrease from 12° to 4° . The Konig measures time taken from 6° to 3° .

The times taken in Persoz tests are approximately double those in Konig tests and so the Persoz has a greater degree of discrimination. The Persoz does, however tend to skid on harder surfaces.

DESCRIPTION

The essential part of this apparatus is the pendulum. The Konig and Persoz specifications require differing pendulums. For Konig the pendulum is triangular with an adjustable counterpoise. The assembly swings supported on two ball bearings of 5mm diameter which rest on the test surface. The counterpoise is used to adjust the period of oscillation to the specified 1.4 seconds.

The Persoz pendulum is a square frame with a pointer. It is supported on ball bearings of 8mm diameter and the overall weight is greater than the Konig pendulum.

The instrument is supported on a heavy cast base for stability. The apparatus must be levelled. The base is fitted with levelling screws, and a spirit level is mounted to the test panel support platform.

The mechanism to support the test panels is common to both tests. A platform, onto which the test panel is placed, is lifted, by means of a remote lever arrangement, using a handle outside of the instrument's case. As it is lifted the bearings of the pendulum come into contact with the test surface, and the weight of the pendulum is taken by the sample.

When the pendulum is not resting on a sample surface, it falls onto locating points. These ensure that the pendulum is positioned squarely across the sample and directly above the zero point on the scale below.

In addition to the zero point, the scale is marked at the angles relevant to the test specifications, i.e. 12 and 4, or 6 and 3, or all four angles. At these limits a photo-sensor is accurately positioned to register swings of the pendulum.

The pendulum is set with a swinging arm which is, again, operated from outside the instrument's case. It is held in its start position by a lockable pin, which is released from outside the case via a flexible cable trigger.

The hardness of any given coating is given by the number of oscillations made by the pendulum within the specified limits of amplitude. The signals from the photo-sensor are registered by an automatic electronic counter, and the result of a test is shown on the digital display.

The influence of surface smoothness, film thickness, temperature and relative humidity must all be carefully controlled. The instrument is housed in a perspex case to prevent air movement from interfering with the operation, whilst allowing full visual access to the apparatus. The whole case is easily removed if required, access points with quick release covers, allow tests to be set up with the case in place.

STANDARDS:

Ref: 707K (Konig) ASTM - D4366, DIN 53157, ISO 1522, BS 3900-E5
Ref: 707P (Persoz) ASTM - D4366, NFT 30-016, ISO 1522, BS 3900-E5
Ref: 707KP All above test methods

	Persoz	Konig
Amplitude limits	12 - 4	6 - 3
Period of oscillation	1 sec	1.4 secs
Damping time on glass plate	420 secs	250 secs
Pendulum weight	500g \pm 0.1	200g \pm 0.2
Ball bearing diameter	8mm	5mm

ORDERING INFORMATION

Ref. 707K Pendulum Hardness Tester equipped for Konig test. (Hard coatings)
Ref. 707P Pendulum Hardness Tester equipped for Persoz test. (Soft coatings)
Ref. 707KP Pendulum Hardness Tester equipped for both tests.

All models supplied with full operating and calibration instructions.

Owing to continuous development, we reserve the right to introduce improvements and modify specifications without prior notice.

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