

# Hamburg (Immersion) Wheel Tracker

CRT-WTIM



The only truly sinusoidal Hamburg wheel tracker on the market.  
Another representation of Cooper quality and attention to detail



## BRIEF INTRODUCTION

The Hamburg type dual arm immersion wheel tracker is widely used to evaluate the resistance to rutting and moisture susceptibility of asphalt mixtures following either EN12697-22 or AASHTO-T324.

The device was developed in the 1970's by Esso A.G. of Hamburg, Germany. It was based on the TRL wheel tracker which is also now included in EN12697-22. Originally the Hamburg test was used by the City of Hamburg to measure rutting susceptibility. The test was performed for 9,540 wheel passes at either 40 or 50°C. Water was used to obtain the required test temperature rather than air. The City of Hamburg later increased the number of wheel passes to 19,200 and found that some mixtures began to deteriorate from moisture damage. Greater than 10,000 wheel passes was generally needed to show the effects of moisture damage.

Specimens can be prepared in the laboratory, or cores taken from the road can be used. Loaded steel or rubber wheels track a sample under regulated load, speed and temperature, whilst the development of the rut is constantly monitored and recorded throughout the test.

## KEY FEATURES

- Able to perform AASHTO-T324 and EN 12697-22
- State of the art software which provides higher level users with options, and lab technicians ease of use
- A dedicated immersion wheel tracker (wet and dry wheel trackers compromise on temperature control)
- A mechanical re-circulating water bath controls the temperature to within  $\pm 0.5^{\circ}\text{C}$  in a range of (20-75)  $^{\circ}\text{C}$
- Variable speed range between 15 and 30RPM
- Two displacement transducers attached to the wheel support arms measure the depth of the ruts as they develop with a resolution of 0.01mm to a maximum rut depth of 50mm
- The depth of the rut is measured automatically and constantly as specified in the AASHTO and EN standards
- Rubber or stainless steel wheels, and various widths to alter the applied pressure
- Various mould options including laboratory compacted and cores (AASHTO and EN)
- UKAS Certificate supplied
- Cooper is the world number one wheel tracker manufacturer

## KEY USES

- Investigation of resistance to rutting
- Investigation of moisture susceptibility
- Testing of laboratory compacted slabs
- Testing of field cores
- Production of creep slope, stripping inflection point and stripping slope

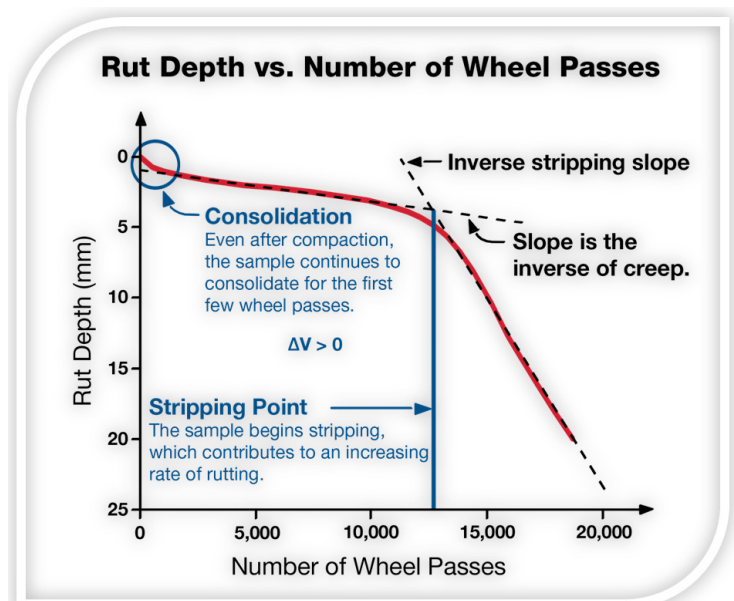
## STANDARDS

- EN 12697-22
- AASHTO-T324
- Other national standards where relevant

## SYSTEM ELEMENTS

The CRT-WTIM is comprised of:

- Electrically driven loaded wheel arms
- Temperature controlled water bath
- Highly accurate rut measurement system
- Windows based software



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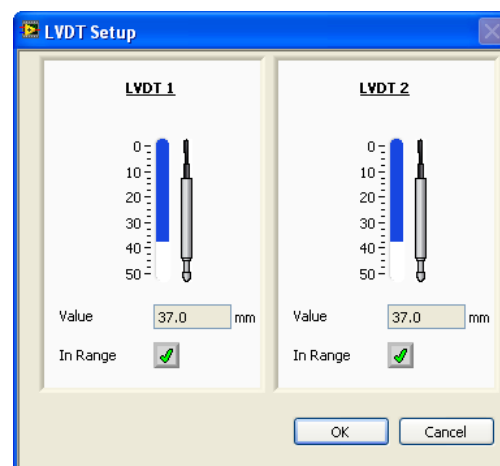
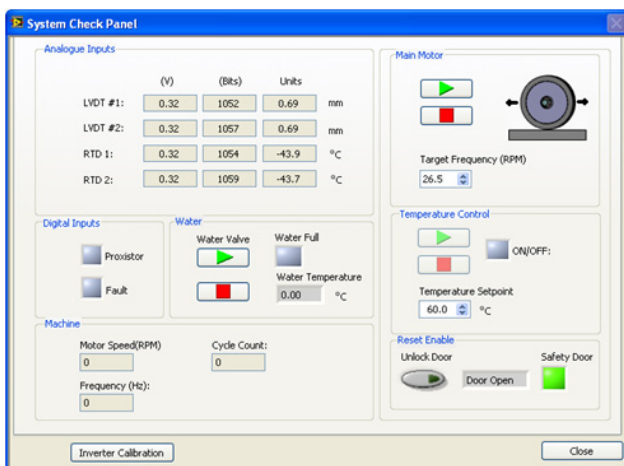


## SPECIFICATIONS

Wheel Speed	Variable up to 30 cycles (60 passes) per minute
Wheel Load	700 ± 10 N
Mould Dimensions mm	305 x 305 and 305 x 400 (others available, please contact us or see accessories)
Slab Thickness mm	50 - 100 (different thicknesses can be tested with spacers)
Rut Depth Transducer Range mm	50
Temperature Range	20 - 75 °C
Electrical Supply	380-415 Volts 50Hz @ 16A (others available)
Dimension mm (WxDxH)	1430 x 1380 x 1260
Estimated Weight Kg	687
PC	Included

## SOFTWARE

- User friendly, intuitive and reliable Windows™ software developed using LabVIEW™
- Software allows two standard but fully customisable testing methods AASHTO-T324 and EN 12697-22
- The operator is guided through every step of the test
- Real-time display of current water temperature, specimen temperature and rut depth
- Data is recorded to disk at regular intervals for further analysis
- Software communicates with the Immersion wheel tracker via the USB interface
- Utilities are included for transducer check, diagnostic routines and calibration
- Excel import data output



## Accessories

Accessories are not included in the price of the main device and may be purchased separately if required.

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**CRT-WTRCM-50SS**  
Stainless Steel Mould 305 x 305 x 50mm depth

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**CRT-WTRCM-100SS**  
Stainless Steel Moulds 305 x 305 x 100mm depth

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**CRT-RCM-50WSS**  
Stainless Steel Moulds 400 x 305 x 50mm depth

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**CRT-RCM-100WSS**  
Stainless Steel Moulds 400 x 305 x 100mm depth

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**CRT-WTIM-16050**  
Stainless Steel Moulds 320 x 160 x 50mm depth

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**CRT-WTIM-160100**  
Stainless Steel Moulds 320 x 160 x 100mm depth

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**CRT-WTIM-18050**  
Stainless Steel Moulds 320 x 180 x 50mm depth

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**CRT-WTIM-180100**  
Stainless Steel Moulds 320 x 180 x 100mm depth

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**CRT-WTIM-26050**  
Stainless Steel Moulds 320 x 260 x 50mm depth

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**CRT-WTIM-260100**  
Stainless Steel Moulds 320 x 260 x 100mm depth

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**CRT-WTIM-WHSS**  
Stainless steel wheel for Immersion Wheel Tracker according to AASHTO-T324

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**CRT-WTIM-WHR**  
Rubberised Stainless steel wheel for Immersion Wheel Tracker according to EN 12697-22

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**CRT-WTIM-LIFT**  
Mould lifting hoist

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**CRT-WTIM-CHILLER**  
Chiller cooling down to 20°C

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## Calibration & Maintenance

Calibration, Annual Service and Maintenance Contracts are available for this device. UKAS accreditation to satisfy typed testing as described in EN 13108. Please enquire for further details.

Note: This device should be checked and calibrated annually.