

# Instruction Manual

version 2.6 from 29.12.2005

## ZFC 3010 - 3015 Flow cups / Immersion flow cups



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Enclosure:

Certificate of manufacturer

**Exclusion of liability**

Illustrations, descriptions as well as the technical specifications accord with the instruction manual in hand for the time of printing. Subject to change resulting from technical improvement, modified construction or similar changes.

This instruction manual has been written with the utmost care. Nevertheless, errors can not entirely be eliminated. The manufacturer shall not be liable for errors contained herein or for incidental or consequential damages resulting from possible errors.

We would therefore welcome any suggestions and references to errors.

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## 1. Safety precautions and warnings

- The ZFC 3010 - 3015 is exclusively designed for the determination of the flow time of liquids. Any other application is not in accordance with the regulations. The manufacturer is not liable for damage resulting from inappropriate application. The user bears the full responsibility.
- Only spare parts and optional components provided by the manufacturer may be used in combination with the ZFC 3010 - 3015. If components other than provided by ZEHNTNER are used with the ZFC 3010 - 3015, there is no guarantee by ZEHNTNER for resulting damages, defects or malfunctions.
- Unauthorised modifications and changes of the ZFC 3010 - 3015 are not allowed. These will invalidate the guarantee. The manufacturer is not liable for damages resulting from unauthorised modifications; the user bears the full responsibility.

## 2. Standard extent of delivery

### 2.1 Damages during carriage

After unpacking the instrument, please look for any transport damage in case of which we kindly ask you to inform the insurance company and **ZEHNTNER GmbH TESTING INSTRUMENTS** respectively.

### 2.2 Extent of delivery

The following parts are included in the delivery:

- 1 flow cup
- Certificate of manufacturer

### 2.3 Optional accessories

**to ZFC 3010, ZFC 3011 and ZFC 3013:**

- ACC 072 three-foot stand, warranty: 2 years
- ACC 152 glass plate

**to ZFC 3010 - 3015:**

- ZKZ 005 calibration and certification (incl. certificate)

### 3. Handling Flow cups

Valid for our products ZFC 3010, ZFC 3011 and ZFC 3013:

- choose a flow cup that will give a flow time of between 30 s and 100 s (depending on the standard)
- put the flow cup into the levelled three-foot stand
- close the orifice of the cup by a finger and fill the cup with the liquid under test, avoiding the formation of air bubbles
- slide a glass plate over the rim of the cup so that no air bubbles will be formed between the glass plate and the surface of the sample
- draw the glass plate horizontally away, remove the finger from the orifice of the cup and simultaneously start the timing-device
  - take care that the surface of the sample is horizontally
- stop the timing-device as soon as the stream of the sample first breaks close to the orifice

### 4. Handling Immersion flow cups

Valid for our products ZFC 3012, ZFC 3013 and ZFC 3015:

- immerse the immersion flow cup entirely below the surface of the liquid under test
- withdraw the cup vertically and start the timing-device
- stop the timing-device as soon as the stream of the sample first breaks close to the orifice
- the average out of 3 measurements will give the flow time

## 5. Technical specification

version	description
ZFC 3010	Flow cup in accordance with ASTM D 1200 (Ford) with fixed jet No. 1, 2, 3, 4 or 5.
ZFC 3011	Flow cup with fixed jet No. 1, 2, 3, 4*, 5, 6, 7 or 8.
ZFC 3012	Immersion flow cup with handle with fixed jet No. 1, 2, 3, 4*, 5, 6, 7 or 8.
ZFC 3013	Flow cup in accordance with DIN EN ISO 2431 with fixed jet No. 3, 4, 5 or 6.
ZFC 3014	Immersion flow cup with handle in accordance with DIN EN ISO 2431 with fixed jet No. 3, 4, 5 or 6.
ZFC 3015	Immersion flow cup with handle in accordance with ASTM D 1200 (Ford) with fixed jet No. 1, 2, 3, 4, 5 or 6.

\* Jet No. 4 in accordance with DIN 53211, standard withdrawn in October 1996.

material: Cup in anodized aluminium  
with jet in stainless steel

warranty: 2 years