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COMMUNICATING WATER LEVEL 77

Manual

947-MA-0008-E

Content

1 Manual COMMUNICATING WATER LEVEL 77

..1.1 Introduction

Before you start

Read these operating instructions carefully before you work with the COMMUNICATING WATER LEVEL 77 for the first time.

Please also note the safety instructions.

..1.2 Name and address of the manufacturer

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Switzerland

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E-mail:	wyler@wylerag.com
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Country representatives: www.wylerag.com

..1.3 Safety references

To make it easier for you to read, the following references are used in this manual:

- "Note!:" This is to highlight useful tips.
- "Achtung!:" This is to avoid incorrect manipulations or disadvantages.

..1.4 Product brand and type designation

Product brand

COMMUNICATING WATER LEVEL 77

Type designation

COMMUNICATING WATER LEVEL 77

Item nubmer: **177-250-113 ***

* Depth micrometer opional

2 Product description, technical datas

..2.1 COMMUNICATING WATER LEVEL 77 in brief

The **COMMUNICATING WATER LEVEL 77** is based on the law of communicating vessels and is particularly suitable for measuring the difference in heights of two or more distant points, which are not in direct connection to each other

Graduation of the rule on the column**:** 1 mm

Purpose of the depth micrometer

The rod is approached to the water surface. Due to the surface tension of the water the liquid will „jump“ to the rod at the moment the rod touches the surface.
Thanks to the window slots at the side, the moment of the surface disturbance is very well detectable.

Reading: When used correctly it is possible to have 2 or more points within 0.05 mm to be adjusted to the same height or to determine the deviations.

Accesories:

Depth micrometer
Item number: 177-101
Scale division depth micrometer: 1 division = 1/100 mm

Connection hose (length to be determined by the customer)
Item number: 177-200

Dimensions:

Height measuring column without depth micrometer:	250 mm
Height measuring column with depth micrometer:	350 mm
Base diameter:	100 mm
Wooden box L x W x H / Weight:	290 x 290 x 135 mm / 2 kg

Weights:

Net (without wooden case):	5.0 kg
Gross (with wooden case):	7.0 kg
Depth micrometer:	0.15 kg
1 m hose:	0.1 kg

3 Safety instructions

..3.1 Intended use

The **COMMUNICATING WATER LEVEL 77** is used exclusively for measuring the height difference of two or moredistant points that are not directly connected to each other.

Warning!: No other uses are intended.

..3.2 Not intended use

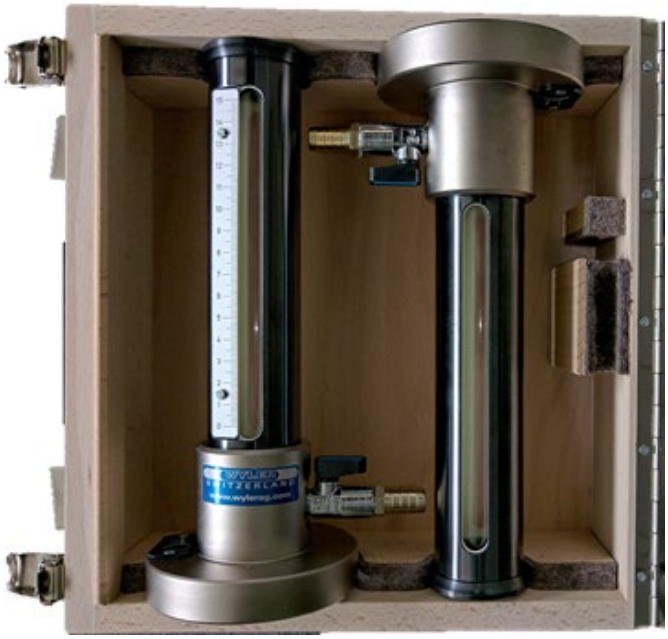
The **COMMUNICATING WATER LEVEL 77** must not

- be used as a drinking vessel.
- to be thrown. The housing can cause serious injury on people or damage on objects.

4 Prepare product for use

..4.1 Case content: measuring cylinder and depth micrometer

- **COMMUNICATING WATER LEVEL 77**, left and right graduated cylinder
  Item number: 177-250-113
- Manual COMMUNICATING WATER LEVEL 77

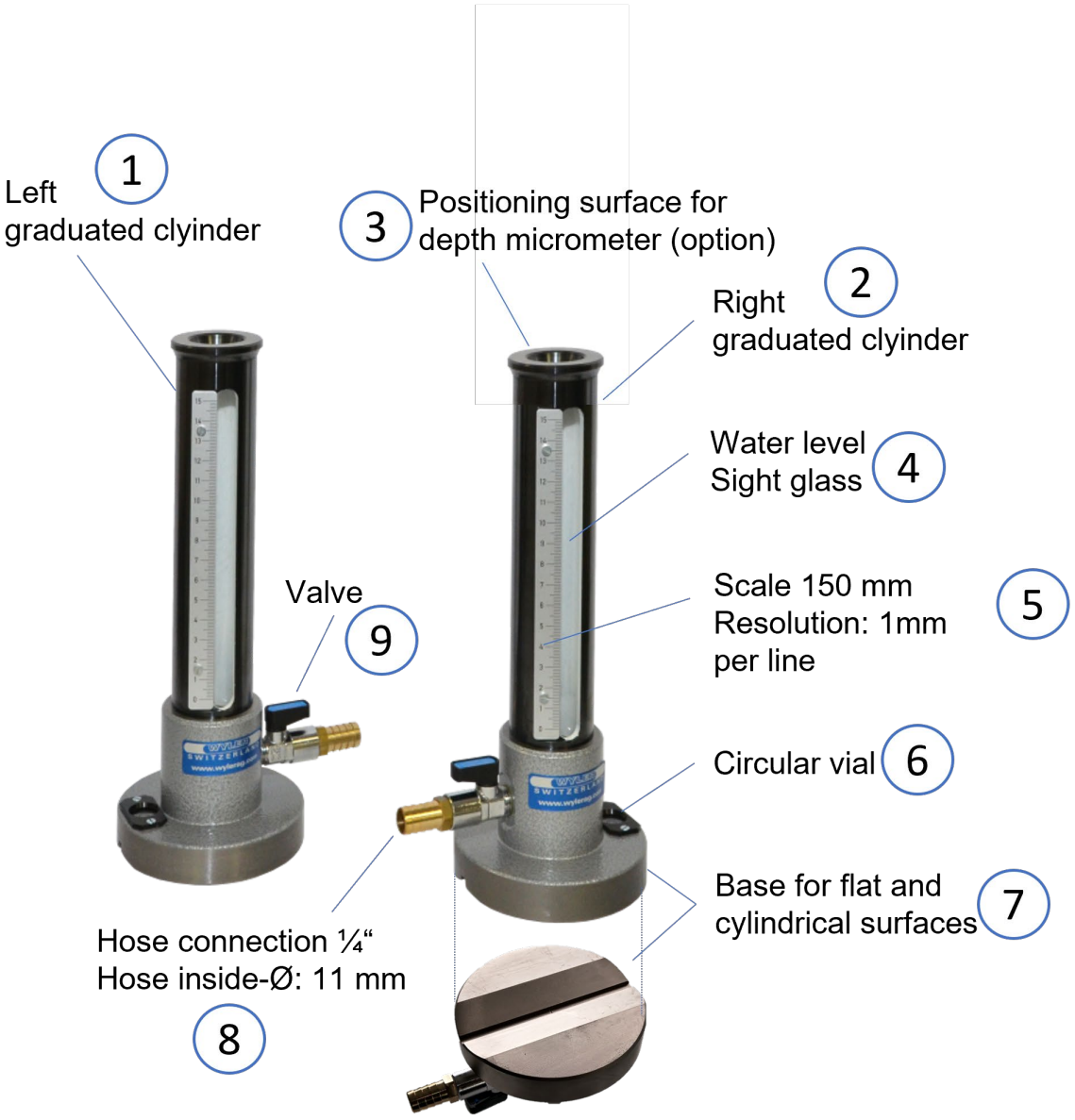


- **Depth micrometer with rod ***
  Item number: 177-101
- Manual COMMUNICATING WATER LEVEL 77
- Original factory instructions for use the depth micrometer

- **Hose** (optional)
  Item number: 177-200

* The product is modified by WYLER AG.
Please process all repair and guarantee claims only through WYLER AG Switzerland or their representatives.

..4.2 Naming of the parts



Depth micrometer see page 12..

5 Application

..5.1 Important hints and information

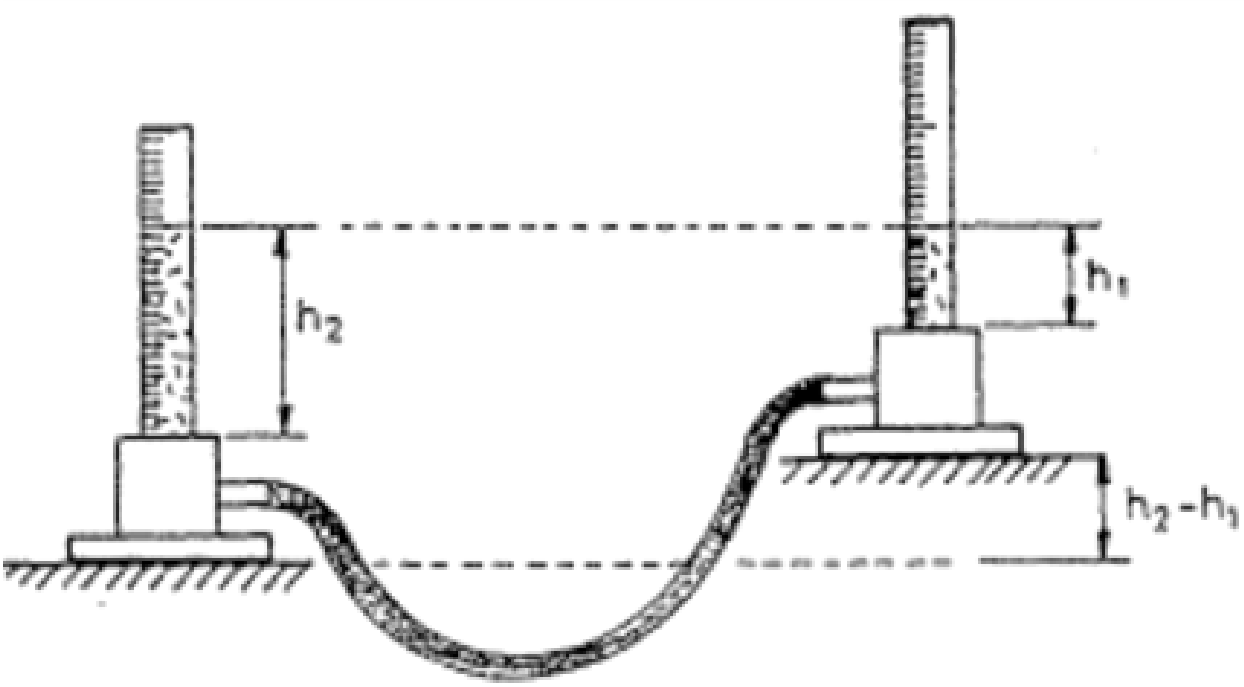
- To avoid calcification, we recommend using distilled water.
- The hose should be flexible, transparent and must has an inside diameter of 11mm.

- Theoretical:

  The measurement with the COMMUNICATING WATER LEVEL 77 is a measurement of **difference** between two points.

  It is the vertical difference of height Δ between two measuring points.

$$\Delta = h_2 - h_1$$



..5.2 Fill, set up, read

a) Set up the two measuring cylinders in that way, the reading is ensured.

b) For a correct reading, align the two measuring cylinders using the circular levels. The bubble should lie within the black circle.

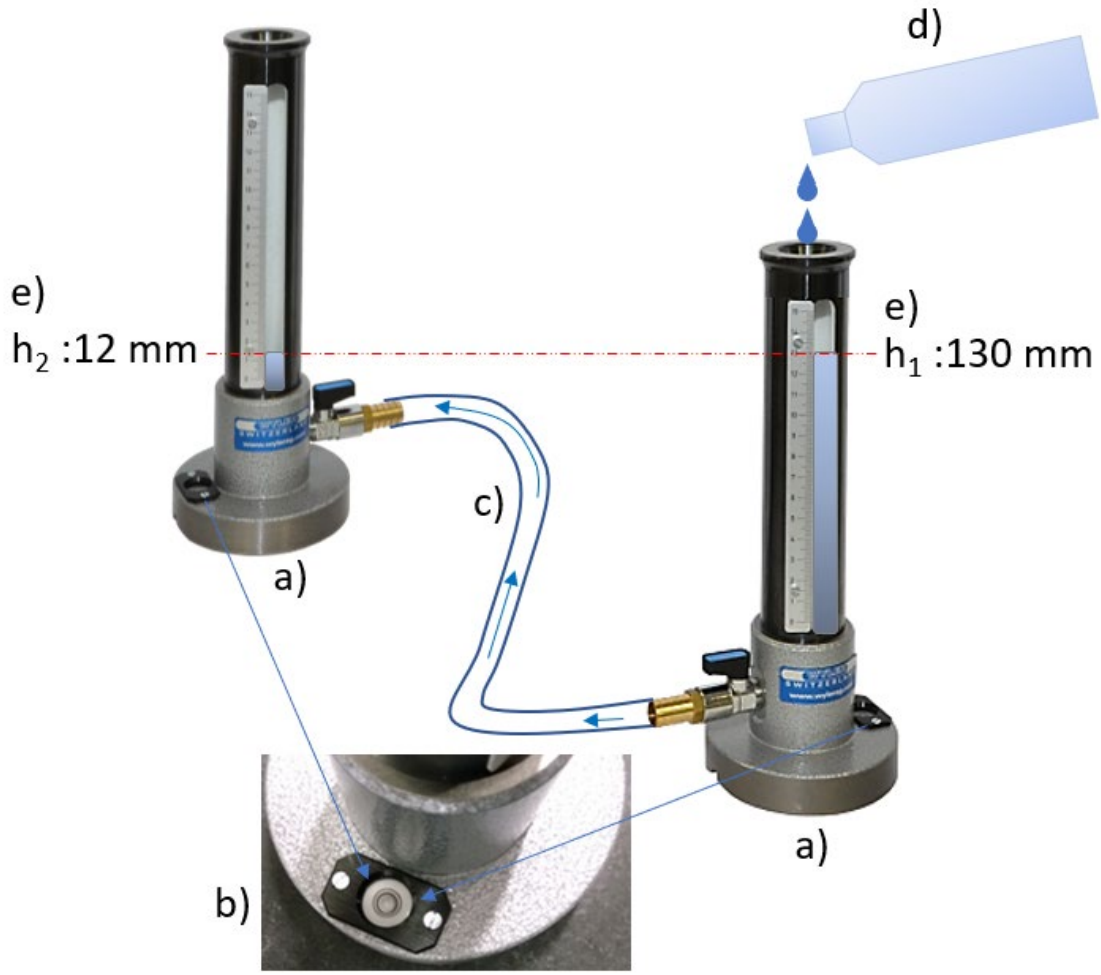
c) Connect the measuring cylinder with the hose (1/4 "connection, Inner tube diameter: 11 mm)

d) Slowly fill the lower measuring cylinder with distilled water and observe the rising water level in the sight glass and in the hose. Avoid any blistering from filling too quickly. Fill up until in both graduated cylinders a readable water level can be determined.

e) Read off the heights h1 and h2 on the rulers.

f) Calculate: Δ = h2 - h1 = 12-130 = - 118 mm

Result: h1 is 118 mm lower than h2



..5.3 Measurement with the depth micrometer

.5.3.1 Preface

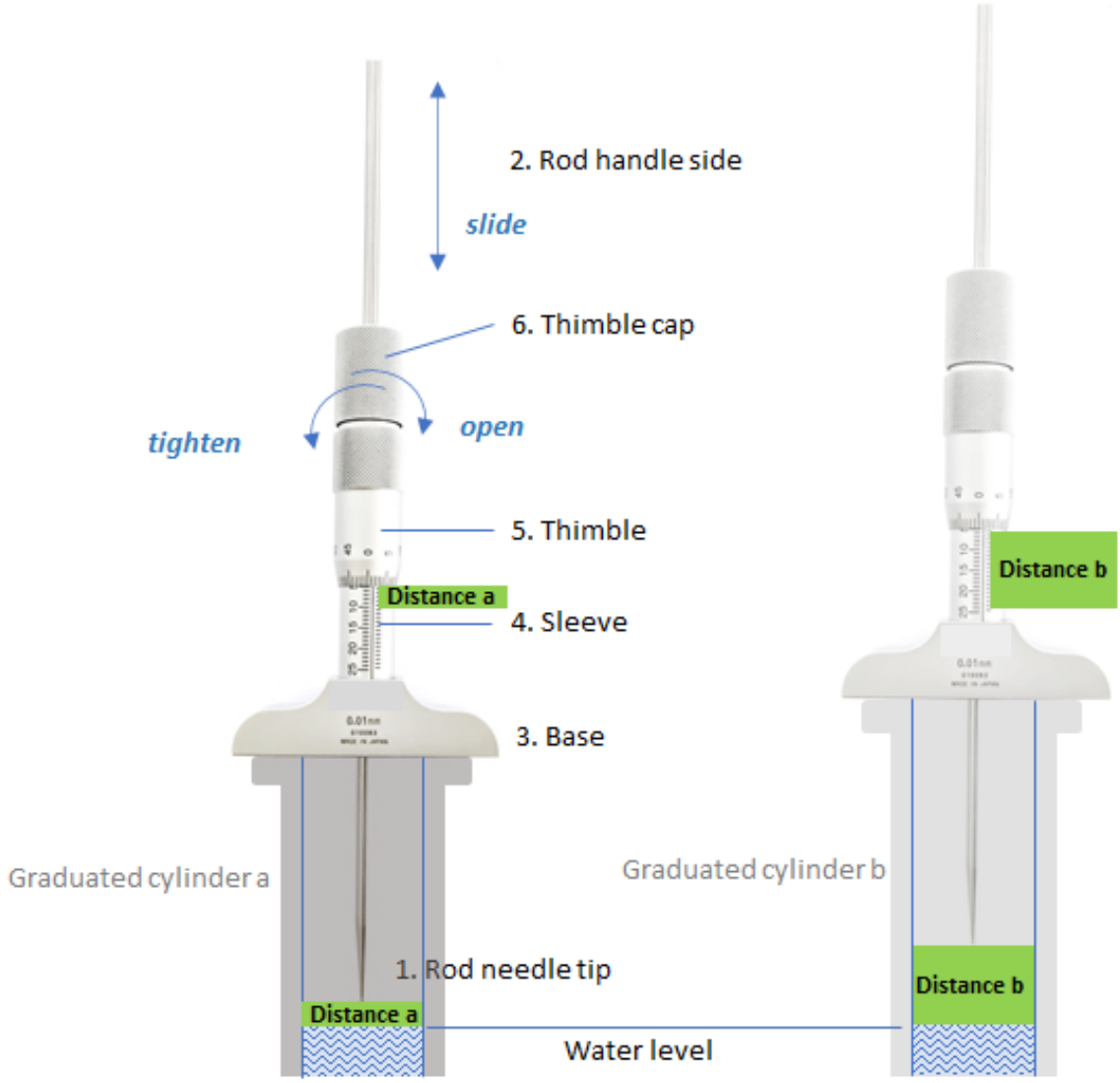
The optionally available depth micrometer (Art. No. 177-101) is modified by WYLER AG.

Before use, read these manual (947-MA-0008-D) and the enclosed original instructions from the manufacturer of the depth micrometer.

ATTENTION!:
The use of a modified measuring needle eliminates the need for a high-speed drive (sensory ratchet).

All functions in connection with the high-speed drive (part 13 in the original instructions) are no longer applicable.

.5.3.2 Parts of the depth micrometer, adjusting the rod

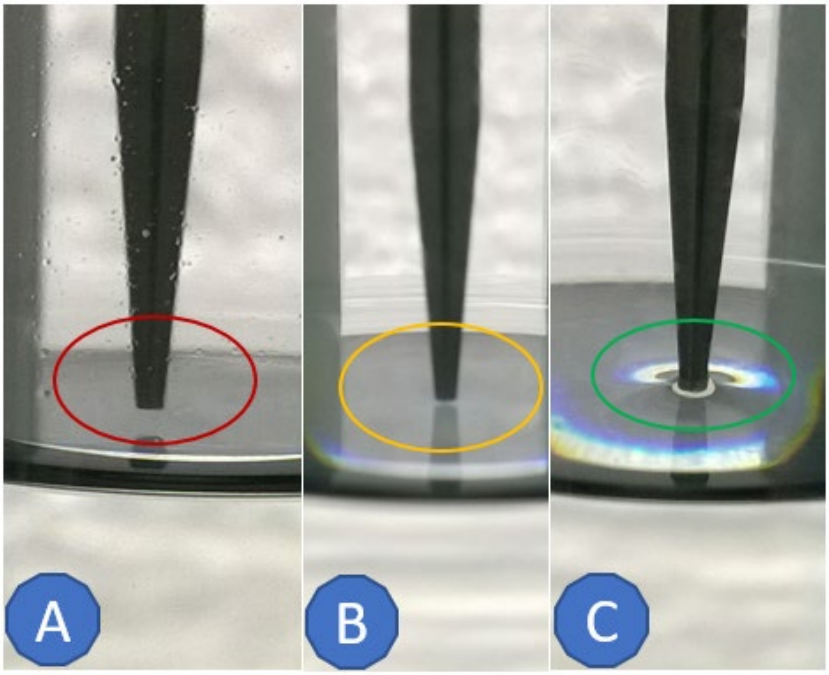


Adjusting the rode:

To adjust the rode, carry out the following steps:

- Take the depth micrometer in your left hand and set the bridge (3) on one of the graduated cylinders.
- Loosen the graduated drum cap (6) with your right hand.
- Push the rod on the handle side (2) close to the surface of the water.
  Note that this setting must also be within the adjustment range of the depth micrometer (25 mm) for the 2nd measuring cylinder and its water level.
- Tighten the graduated drum cap (6) again.

.5.3.3 Touch the water surface, read it and form the difference



- A) Turn the graduated drum (5) to the left to bring the rod with its flattened tip closer and closer to the surface of the water.
- B) When the rod is just above the surface of the water, continue turning slowly.
- C) As soon as the water "jumps" to the rod, please stop the process immediately.

Reading

Note !: Consult the original instructions for use of the depth micrometer point 5

- Read off the measured value with the graduated sleeve and the graduated drum.

In this example: **7.83 mm**

Perform steps A-C on the 2nd measuring cylinder.

- Read off the measured value with the help of the graduated sleeve and the graduated drum

  In this example: **21.81**

The difference is: 21.81 -7.83 = <u>13.98 mm</u> = Amount of height difference between the graduated cylinders.

6 Maintenance, disposal

..6.1 Cleaning, storage

- Close the valves of the measuring cylinder after use.
- Loosen the hose and empty it before storing it.
- Empty the graduated cylinders and let them dry.
- If limescale builds up, clean with vinegar.

- Important: Oil the contact surfaces. These could rust.

- After drying, keep the measuring cylinders in the wooden case.

- Dry the depth micrometer and keep it in the case.

..6.2 Address customer service

WYLER AG
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Homepage:	www.wylerag.com

Country representatives: www.wylerag.com

..6.3 Decommissioning

When decommissioning the PRECISION HOSE LEVEL 77, the local regulations for the disposal of metal waste must be met.

7 Document version and change information

August 2021:
Author: A. Schuhmacher
R2.0: New and completely revised version with a new depth micrometer.
19. Oktober 2021:
Autor: A. Schuhmacher
R3.0: Pagee 5 Weight and dimension of wooden box introduced.