LAMPERT.
PRECISION WELDING


# **FUSION** OPERATING MANUAL

Lampert Werktechnik GmbH
Centrifugal casting machine

Issue EN 2026/03 (translation)

MADE IN GERMANY

| | |
|---|---|
| **Product:** | Centrifugal casting machine for precious metal rings |
| **Type:** | FUSION |
| **Manufacturer:** | Lampert Werktechnik GmbH<br>Ettlebener Strasse 27<br>97440 Werneck<br>Germany<br>phone: +49 (0)9722 94 59-0<br>e-mail: mail@lampert.info<br>website: www.lampert.info |
| **Revision index:** | 1.0 (translation) |
| **Revision date:** | – |

# Contents

**1 About this operating manual ..... 5**
1.1 General ..... 5
1.2 Presentation of information ..... 6
1.3 Structure of the warning notices ..... 6
**2 General safety regulations ..... 8**
2.1 Principles ..... 8
2.2 Intended use ..... 8
2.3 Foreseeable misuse ..... 9
2.4 General safety instructions ..... 9
2.5 Residual risks ..... 11
2.6 Personal protective equipment ..... 11
2.7 Handling of shielding gas cylinders ..... 12
2.8 Selection and qualification of personnel ..... 12
**3 Noise emissions ..... 13**
3.1 Sound pressure level ..... 13
3.2 Assessment in accordance with applied regulations ..... 13
3.3 Noise reduction measures (constructive) ..... 14
3.4 Nature of the noise ..... 15
3.5 Overview of noise emissions (summary) ..... 15
3.6 Further information ..... 16
**4 Structure and function ..... 16**
4.1 Functional description ..... 16
4.2 FUSION overview ..... 17

**5 Transport and storage ..... 18**

5.1 Transport ..... 18

5.2 Storage ..... 18

**6 Commissioning ..... 18**

6.1 Set up the device ..... 18

6.2 Connect the power supply ..... 19

6.3 Adjust the gas flow (if gas is connected) ..... 20

**7 Pouring ..... 21**

7.1 Preparation ..... 21

7.2 Casting process ..... 22

7.3 What to do in an emergency ..... 28

**8 Help with faults ..... 29**

**9 Maintenance and inspection work ..... 30**

9.1 Maintenance and inspection schedule ..... 30

9.2 Carry out maintenance and inspection work ..... 30

**10 Disposal and recycling ..... 30**

**11 Dimensions and technical specifications ..... 31**

11.1 Device dimensions ..... 31

11.2 Technical data ..... 31

**12 Appendix ..... 32**

12.1 Service address ..... 32

12.2 Spare and wear parts ..... 32

12.3 CE conformity ..... 33

12.4 Electromagnetic compatibility ..... 35

# 1 About this operating manual

Before operating the machine for the first time or carrying out any other work on it, you must read this operating manual carefully.

Please pay particular attention to the chapter 2
“General safety regulations“!

## 1.1 General

This operating manual is intended to help you familiarise yourself with the device and make use of its intended applications.

It contains important information on how to operate the appliance safely and correctly.

The operating manual must

- read in full and followed by everyone responsible for working on the machine.
- be kept in such a way that it is accessible at all times to all users at the site where the device is used.

When the equipment is transferred to a third party, it must be handed over together with all necessary documents.

Following the operating manual helps

- avoid hazards.
- reduce repair costs and downtime.
- increase the reliability and service life of the device.

In addition to the operating manual, the accident prevention and environmental protection regulations applicable in the country of use and at the place of use must also be observed.

Safety and hazard warnings on the equipment must be kept in a legible condition and must not be removed, covered or damaged.

The device shall be used only when in flawless condition and is intended exclusively for work in accordance with the intended use.

# 1.2 Presentation of information

## Instructions

The operating manual explains step by step which actions must be carried out and how to proceed.

In this operating manual,
are marked with the following symbols:

➢ The steps marked with this action symbol may be carried out in any order.

Numbered steps **must be carried out** exactly in the specified order.

✓ The result symbol describes the result or intermediate result of an action.

## Application tip

The "TIP" indicates additional information for the simple and safe use of the device.

**TIP:** Note on the optimal use of the device.

# 1.3 Structure of the warning notices

| Signal word | Prevention of … | Possible consequences if the warning is ignored: |
|---|---|---|
| **DANGER** | Personal injury (imminent danger) | Death or very serious injuries! |
| **WARNING** | Personal injury (possibly dangerous situation) | Death or very serious injuries! |
| **CAUTION** | Personal injury | Minor or slight injuries! |
| **NOTE** | Property damage | Damage to the device or its immediate surroundings! |

*Tab.1 .1 Warning levels*

The warning notices are structured as follows:

- Warning symbol with signal word corresponding to the warning level (see Table 1.1)
- Type of hazard (description of the hazard)
- Consequences of the hazard (description of the consequences of the hazard)
- Risk prevention (measures to prevent the hazard)

**DANGER!**

**Type of hazard**

Consequences of the hazard

- Hazard prevention (measures to prevent the hazard)

**Warning signs**

Specific warnings are provided at the relevant locations.
They are marked with the following pictograms:

**General warning sign**
This sign warns of personal injury.

In the case of a clearly identifiable source of danger,
one of the following pictograms is displayed:

**Electrical voltage**
Warning of a possible electric shock,
possibly with fatal consequences

**Hand injuries**
Warning of the risk of hand injuries

**Hot surfaces**
Warning of hot surfaces

**Pressurised containers**
Warning of fire and explosion hazard

# 2 General safety regulations

## 2.1 Principles

The device must only be operated when in perfect working order and must be used exclusively for work in accordance with its intended use.

## 2.2 Intended use

The casting centrifuge is intended exclusively:

- for casting rings made of gold and silver alloys.
- for centrifugal casting with melt quantities of 5 – 15 grams.
- for use by trained personnel.
- for use in professional goldsmiths' or silversmiths' workshops.
- for use in training establishments under supervision.

Permitted materials:

- Gold and silver alloys in jewellery making
- Maximum melting capacity: 15 grams

The device is designed for use in industrial and commercial settings.
The manufacturer shall not be liable for damage resulting from use outside this intended area of application, the manufacturer accepts no liability.

Ambient air temperature range:

- during operation: +15 °C to +40 °C (59 °F to 104 °F)
- during transport and storage: -20 °C to +55 °C (-4 °F to 131 °F)

Relative humidity:

- 30 % to 80 %, non-condensing

The ambient air must be free from dust, acids or corrosive gases.

## 2.3 Foreseeable misuse

- Exceeding the maximum melting quantity (>15 g)
- Operation without the lid closed and without the housing screwed on
- Operation without personal protective equipment
- Opening the housing during operation
- Use by untrained persons
- Operation in enclosed spaces without ventilation
- Use of defective or damaged moulds
- Operation with a damaged power supply unit or cable
- Failure to take regular breaks during continuous operation
  (Risk of poor posture for the user)

## 2.4 General safety instructions

- If the device shows signs of damage, it must be taken out of service.
- If malfunctions occur, the device must be taken out of service.

**WARNING**

**Risk of burns from hot metal!**

DANGER TO LIFE due to severe burns!

- Molten gold and silver reach temperatures of more than 1,000 °C.
- Operate only with the lid closed and the housing screwed on
- ALWAYS wear heat-resistant protective gloves
  (up to at least 1,100 °C / at least EN 407)!
- ALWAYS wear safety goggles (risk of splashes)!
- Wear long-sleeved, non-flammable clothing!
- Recommended: protective apron made of leather or heat-resistant material
- Tie long hair back
- Do not wear jewellery (rings and bracelets can become hot)

Never touch:

- the mould during or immediately after use.
- freshly cast rings (cooling time at least 5 minutes).
- the interior of the housing.

**WARNING**

**Mechanical hazard**

RISK OF INJURY from rotating parts!

- NEVER open the housing during operation!
- After switching off, wait until the mould has come to a complete standstill!
- Do not reach into the pouring spout during operation!
- Keep loose clothing, hair and jewellery away from the appliance!

**WARNING**

**Fire hazard**

FIRE HAZARD from spilled hot liquid metal!

- Keep flammable materials (paper, wood, textiles) at least 50 cm away from the device!
- Place the appliance on a fireproof surface (metal, ceramic, stone)!
- Keep a suitable fire extinguisher to hand (class D for metal fires)!
- NEVER pour water onto burning metal!

**CAUTION**

**Electrical hazard**

RISK OF ELECTRIC SHOCK!

- Only use the power supply unit supplied!
- Check the power supply unit and cable for damage before each use!
- If damaged: Do not use; contact the manufacturer!
- Disconnect the device from the mains before carrying out any maintenance work!
- Do not allow liquids to come into contact with or enter the device

**WARNING**

**Health and safety**

Avoid METAL FUMES!

- Only operate the device in well-ventilated rooms!
- Recommended: extraction or extractor fan nearby
- If odours develop: ventilate the room immediately

## 2.5 Residual risks

Despite all safety measures, the following residual risks remain:

Burns due to carelessness
when handling hot metal

Splashes of molten metal during pouring

Burns from hot surfaces after operation

Minimisation by:

- Wearing the prescribed personal protective equipment
- Concentrated, distraction-free work
- Compliance with all safety instructions

## 2.6 Personal protective equipment

When operating the casting centrifuge, it is mandatory
the following protective equipment:

| | |
|---|---|
| **Protective gloves** | heat-resistant (minimum EN 407) |
| **Safety goggles** | with side protection |
| **Suitable clothing** | long-sleeved, non-flammable, close-fitting |

In addition, the components listed below
of the personal protective equipment listed below must be worn during every welding operation:

- Leather protective apron
- Closed, sturdy shoes
- Hairnet for long hair

In addition, the workplace must be adequately ventilated. If this cannot be ensured by a supply of fresh air, an extraction system must be installed.

## 2.7 Handling of shielding gas cylinders

Please observe the relevant safety precautions when handling inert gas cylinders, as well as the safety rules for handling gases!

Inert gas cylinders must be secured against tipping over and falling and must be protected from heat (max. 50 °C/122 °F), particularly in the event of prolonged sunlight, and from frost.

## 2.8 Selection and qualification of personnel

The operator undertakes to allow only those persons to work on the equipment who

- are familiar with the basic regulations on occupational safety and accident prevention and have been instructed in the handling of the equipment.
- have read and understood this operating manual, in particular Chapter 2 'General safety regulations'.
- have been trained in accordance with the requirements for the work results.

The safety-compliant working practices of the personnel must checked at regular intervals.

All persons assigned to work on the equipment undertake, before commencing work:

- comply with the basic regulations on occupational safety and accident prevention.
- to read this operating manual, in particular Chapter 2 'General safety regulations', and confirm by their signature that they have understood them and will comply with them.

# 3 Noise emissions

## 3.1 Sound pressure level

The centrifugal casting machine has been assessed for its noise emissions in accordance with recognised acoustic measurement procedures.

A-weighted emission sound pressure level at the workplace:

LpA = 40 dB(A) ± 3 dB

**Measurement conditions:**

| Parameter | Value |
|---|---|
| Operating condition | Idling at 2,750 rpm (without casting process) |
| Measurement method | EN ISO 3744:2010 (envelope method, accuracy class 2) |
| Measurement distance | 1.0 m from the machine surface |
| Measurement height | 1.6 m (at the operator's ear level) |
| Measurement environment | Workshop with normal reflection |
| Number of measurement points | 4 measurement points around the machine |
| Background noise | < 45 dB(A) (sufficiently low background noise) |

**Peak value of the instantaneous sound pressure level:**
The maximum value of the instantaneous C-weighted emission sound pressure level is < 63 Pa (130 dB relative to 20 µPa).
No impulsive noises or impacts occur.

## 3.2 Assessment in accordance with occupational health and safety regulations

**Classification in accordance with the Noise and Vibration Occupational Safety Regulation**
(LärmVibrationsArbSchV):

| Sound level | Assessment | Status |
|---|---|---|
| < 80 dB(A) | Below the lower trigger value | not exceeded |
| < 85 dB(A) | Upper trigger value | below |
| < 87 dB(A) | Maximum value | below |

Result:

The measured emission sound pressure level of 40 dB(A) is well below the lower trigger value of 80 dB(A) according to the Noise and Vibration Occupational Safety Regulation (LärmVibrationsArbSchV).

Hearing protection is NOT required during normal, intended use.

## 3.3 Noise reduction measures (constructive)

The manufacturer has implemented the following noise reduction measures at the source:

Design measures:

| Measure | Description | Effect |
|---|---|---|
| BLDC motor | Brushless DC motor<br>without mechanical sliding contacts | Reduction of mechanical noise<br>by approx. 5 – 10 dB |
| Enclosed housing | Fully enclosed metal housing<br>with sound insulation | Attenuation of airborne sound propagation |
| Vibration damping | Rubber feet and elastic motor mounting | Reduction of structure-borne noise and vibrations |
| Smooth surfaces | Mould and interior of housing<br>without sharp edges | Reduction of air turbulence |
| Short operating cycles | Typical operating time:<br>30 seconds per casting cycle | Short-term noise exposure |

**Operating mode:**
The machine is not used in continuous operation. Typical usage:

- Duty cycle: 1 minute per casting cycle
- Frequency: 10 – 50 pouring operations per day
- Total operating time: 5 – 25 minutes per day
- Downtime: Cooling-off periods between casting cycles (at least 5 minutes)

**Resulting noise exposure:**

Due to the short operating times, the operator's actual noise exposure for the operator is even lower than the measured sound pressure level.
.

## 3.4 Nature of the noise

Description of the noise

The noise generated by the casting centrifuge has the following characteristics:
**Steady:** Constant speed, no fluctuations
**Broadband:** No dominant single tone (no whistling or humming)
**Non-impulsive**: No sudden knocks or bangs
**Temporary**: only approx. 30 seconds per casting cycle

**Subjective assessment**

Most users do not find the noise disturbing, as it:

- is steady and predictable.
- does not contain high-pitched, shrill frequencies.
- only occurs briefly.
- is comparable to a small fan or mixer.

## 3.5 Overview of noise emissions (summary)

**Quick overview**

| Characteristic | Value |
|---|---|
| Sound pressure level | 40 dB(A) ± 3 dB |
| Threshold value reached? | No (< 80 dB(A)) |
| Hearing protection required? | No |
| Mark noise zone? | No |
| Risk assessment recommended? | Yes (entire workplace) |
| Measurement standard | EN ISO 3744:2010 |

## 3.6 Further information

If you have any questions regarding noise emissions, please contact:

Lampert Werktechnik GmbH
Ettlebener Strasse 27
97440 Werneck
Germany
e-mail: support@lampert.info

# 4 Structure and function

## 4.1 Functional description

The FUSION centrifugal casting machine is a machine for centrifugal casting of rings made from gold and silver alloys.

### Purpose

- Casting of rings made from gold and silver alloys
- Centrifugal casting with melt weights of approx. 5 – max. 15 grams
- For use in professional goldsmith's or silversmith's workshops

### Contents

- 1x casting centrifuge (main unit)
- 1x casting mould for rings Ø 24 mm (outer diameter)
- 1x mould housing
- 1x fireproof fireclay shelf
- 1x melting crucible
- 1x casting ladle
- 1x power supply unit (100 V – 230 V AC ⟶ 24 V DC)
- 1x power cable
- 1x gas hose
- 2x hex wrenches
- 1x user manual

## 4.2 FUSION overview


*Fig.4 .1 Front view of the FUSION casting machine with rotary push-button control and integrated display, mounted casting mould, mould housing, ladle and crucible*

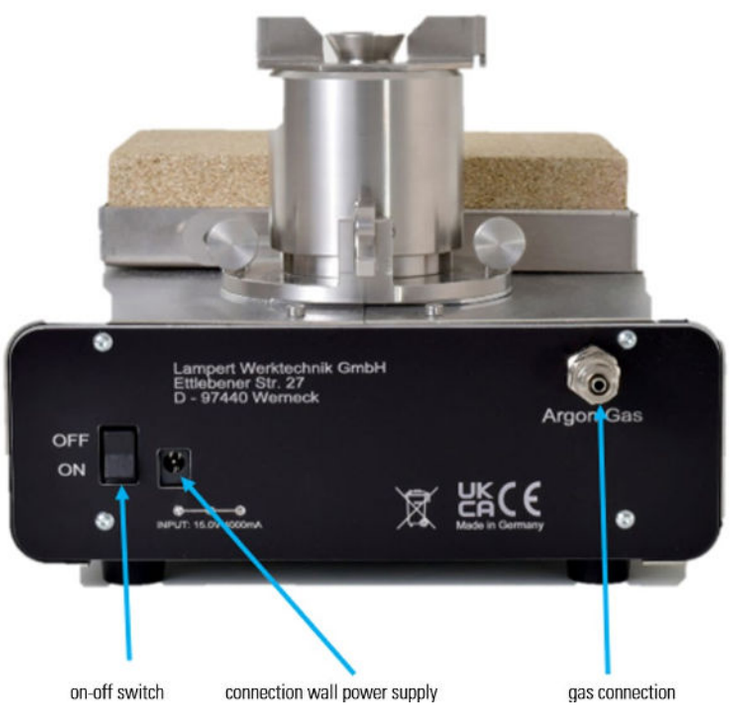



*Fig. 4.2 Rear view of the FUSION casting centrifuge with connections and control elements*

# 5 Transport and storage

## 5.1 Transport

- Switch off the unit and disconnect it from the mains
- Transport the power supply unit and cables separately
- Protect the device from knocks and vibrations
- Use the original packaging (if possible)
- Do not transport at temperatures below -10 °C (14 °F)

## 5.2 Storage

- Dry, dust-free room
- Temperature range: -10 °C to +50 °C (14 °F to 122 °F)
- Protected from direct sunlight
- Protected from moisture
- out of reach of children

# 6 Commissioning

## 6.1 Set up the device

NOTE:
If the unit has been stored in a cool place, allow it to acclimate to the intended operating environment until all components have reached room temperature.

- use only indoors
- flat, stable, non-flammable surface (metal, stone, ceramic)
- ensure ergonomic positioning
- adequate ventilation (windows or extraction)
- clear working area of at least 50 cm around the appliance

- good workplace lighting
- 230 V (or 115 V) socket nearby
- fire extinguisher (class D) within easy reach

Minimum distances:

- from flammable materials: 50 cm
- from the wall: 10 cm (ventilation)
- from the edge of the table: 10 cm (stability)

Do not place on:

- flammable surfaces (wood, plastic)
- uneven surfaces
- near flammable materials
- in closed cupboards
- in damp rooms
- outdoors

## 6.2 Connect the power supply

**Electrical supply**

Plug the connection cable of the supplied mains adapter into the 24 V connection socket (p. 17, fig. 4.2) on the rear of the unit. Then plug the mains plug into a socket with the appropriate mains voltage.

**Inert gas supply, if available**

**WARNING**

**Pressurised containers**

Risk of fire and explosion

➢ Check gas cylinders and supply lines for leaks.

- Attach the appropriate flow regulator to the shielding gas cylinder using the correct tool. CAUTION: It is essential to follow the manufacturer's separate operating manual provided.
- Use only inert gases as shielding gas, e.g. argon 4.6.
- Connect the supplied gas hose to the "Argon gas" connection on the rear of the unit (p. 17, fig. 4.2) and to the flow regulator on the gas cylinder. Tighten the union nuts on the flow regulator and on the FUSION by hand without using tools (check before each use).

# 6.3 Adjust the gas flow (if gas is connected)

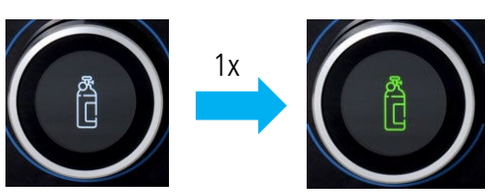
The FUSION is equipped with an inert gas connection, and for best possible casting results, we recommend carrying out the casting process in an inert gas atmosphere (pure argon only, e.g. Argon 4.6, / see also Section 7.2).

Before starting the actual casting process, the shielding gas supply in the machine should be activated and the gas flow correctly adjusted at the flow regulator.

To activate the inert gas supply, proceed as follows:

1. Close the flow regulator. If you are using a flow regulator from Lampert, turn the black knob anticlockwise ( – ) as far as it will go.
2. Carefully open the main valve on the shielding gas cylinder using both hands.
3. Switch on FUSION: set the main switch on the rear of the housing to “ON”


4. Press and hold the central rotary-push control on the front of the FUSION until the symbol for the shielding gas supply appears.
   Press once briefly, and the colour of the shielding gas supply symbol will change from white to green.
   => The shielding gas supply is now activated.




5. Press the rotary-push control for 2 seconds, and the FUSION is ready for operation.

6. Press the rotary-push control briefly, and the mould begins to rotate (the colour of the speed indicator changes from white to green). This also automatically causes shielding gas to flow into the mould.


7. You can now set the gas flow on the flow regulator to approximately 2 litres per minute. If you are using a Lampert flow regulator, turn the regulator clockwise ( + ). Please also be sure to follow the separate operating instructions for the flow regulator being used!

8. Stop the flow of shielding gas into the mould by pressing the rotary-push control again. The rotating mould stops, and the colour of the speed indicator changes back from green to white.


# 7 Pouring

## 7.1 Preparation

### Before each casting operation

Prepare the workstation:

- Clear the work area (remove flammable materials)
- Place a fireproof mat under the equipment
- Have the ladle and crucible ready
- Prepare the cooling area (fireproof mat)
- Have tongs ready for removing the ring

Put on personal protective equipment:

- heat-resistant protective gloves (MANDATORY! / at least EN 407)
- Safety goggles (MANDATORY!)
- Long-sleeved, non-flammable clothing
- Tie hair back (if you have long hair)
- Remove jewellery

Prepare equipment:

- Visual inspection: The mould must be clean and undamaged.
- NEVER start up the FUSION without the mould housing (risk of injury from rotating parts)
- Keep the pouring spout freely accessible

## 7.2 Casting process

**WARNING**

**Risk of burns from hot metal!**

DANGER TO LIFE due to severe burns!

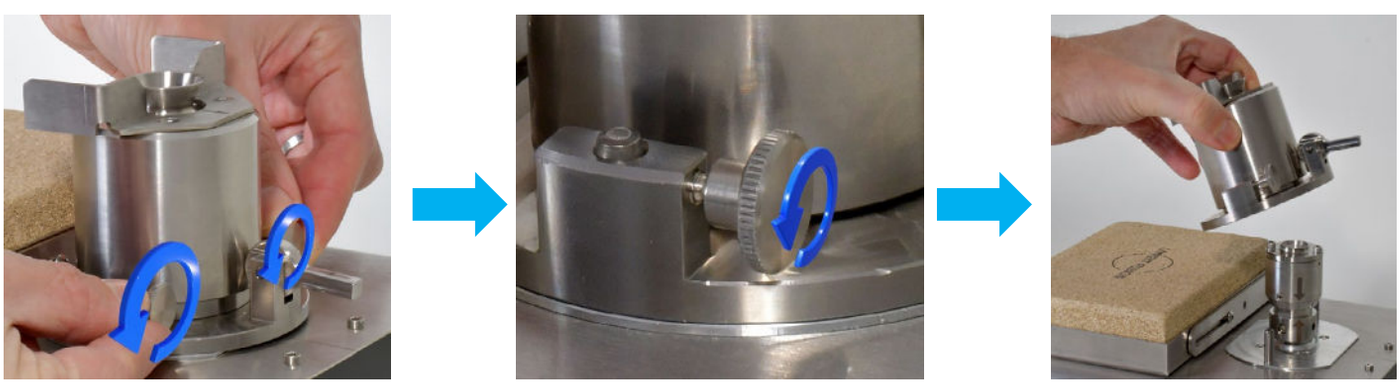
No distractions during the casting process!

- No interruptions
- Focus fully on the task at hand
- Be sure to observe all safety instructions, particularly those in sections 2.4 / 2.5 / 2.6 / 2.7

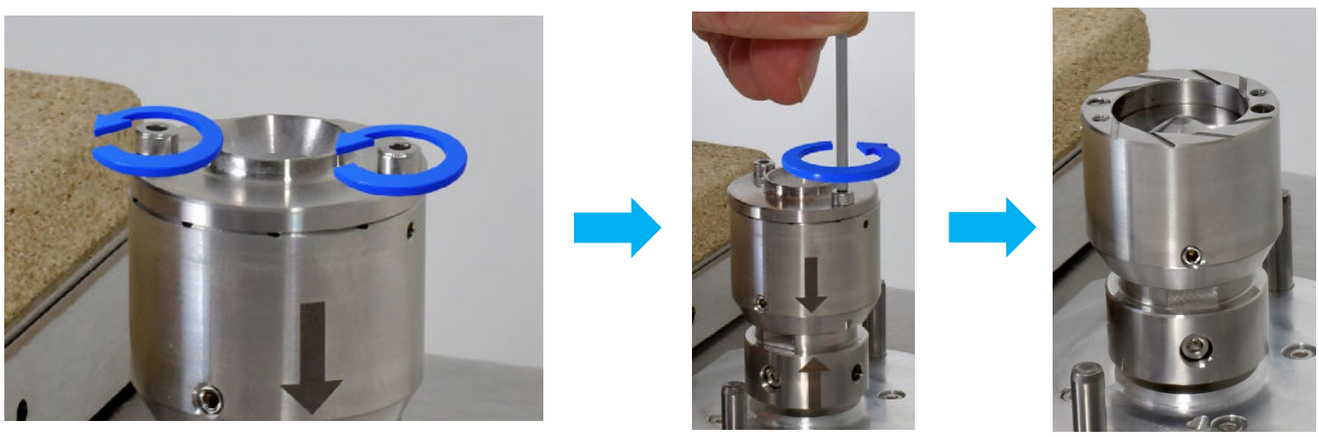
### Step-by-step instructions:

- Step 1: Preparing the FUSION

1. Loosen the two knurled fixing screws on the base of the mould housing, and remove the entire mould housing with the base.



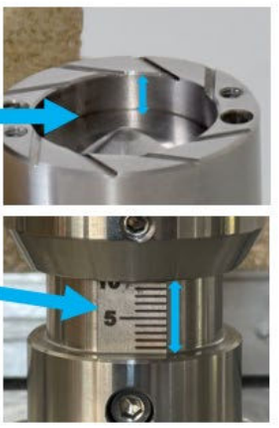
2. Loosen the two hexagon sockets on the now visible mould cover using the larger of the two supplied hex wrenches, turning them anti-clockwise, and remove the cover.



3. Replace the mould body if necessary
Mould bodies with diameters for different ring sizes are available; if necessary, replace the mould body as follows:
Loosen the fitted mould body by opening the two **lower**, laterally opposite hexagon sockets anti-clockwise using the larger of the two supplied hex wrenches. Lift the mould body upwards, replace it with the desired one and fit it back onto the drive shaft.

Then tighten the two side screws firmly using the spanner in the opposite direction to when loosening them.

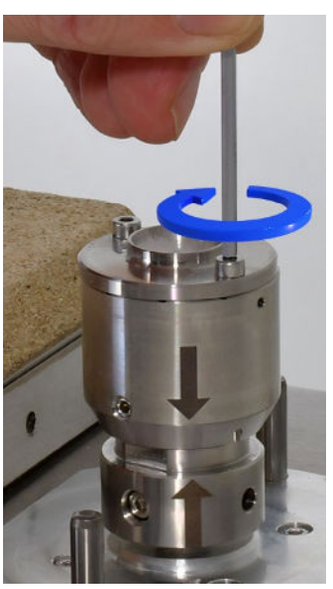
4. Adjusting the height (width of the ring rail):
Loosen the mould by opening the two **upper**, opposite hexagon socket screws on the sides using the smaller of the two hex wrenches supplied, turning them anti-clockwise. Adjust the mould to the desired height, i.e. the width of the ring rail (max. 10 mm), and secure the two side screws firmly again using the hex wrench.



CAUTION: The mould will only sit correctly on the drive shaft if the two vertical arrows on the sides are exactly aligned after tightening the two hexagon socket screws.

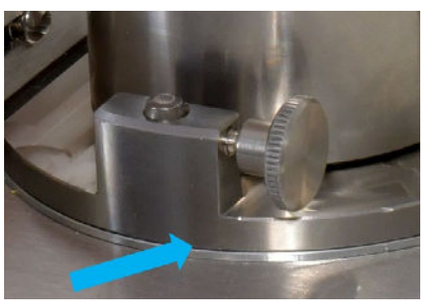
5. If necessary, pre-treat all components that may come into contact with the melt with a suitable release agent.

6. Screw the mould cover back onto the mould, and tighten the two hexagon socket screws tightly using the supplied hex wrench.



7. Place the mould housing with the base flat on the FUSION, then tighten the two knurled fixing screws by hand.

CAUTION:



There must be no gap visible between the base of the mould housing and the surface of the FUSION in the area of the knurled screws. If necessary, turn the mould housing anticlockwise until there is no gap.

8. Unscrew the mould housing by hand clockwise as far as it will go. Important: Make sure you have tightened the two knurled fixing screws securely beforehand. Once you have screwed the mould housing on as far as it will go, turn it back anti-clockwise until the arrows on the housing and the fixing lever are aligned. Then flip the locking lever to secure the mould housing. Once the locking lever has been flipped, the mould housing must no longer be able to rotate.

- Step 2: Switch on the device

1. Set the toggle switch on the rear of the FUSION to “ON”.


a. If a shielding gas supply is connected:
Carefully open the main valve on the shielding gas cylinder.
Press the rotary-push control on the front of the FUSION until the white gas cylinder symbol appears on the display. Press once briefly, and the colour of the shielding gas supply symbol will change from white to green: the shielding gas supply is now activated. Press the rotary-push control for 2 seconds: The FUSION is ready for operation.


(For setting the correct gas flow, see also section 6.3)

b. If no shielding gas supply is connected: Press the rotary-push control briefly, and the FUSION is ready for operation.


2. Turn the rotary-push control to set the desired mould speed on the display (selection range between 500 and 3000 rpm).

3. Press the rotary push-button control again: the motor starts, shielding gas flows into the mould (if the shielding gas supply is activated), and the mould rotates at the preset speed.
The speed display appears in green.


Wait a few seconds until the preset speed is reached.

- Step 3: Melt the metal using an external device
  (TIP: ideally using a propane-oxygen gas mix)
  Follow the separate operating instructions and safety regulations!

  1. Place the required amount of metal (max. 15 grams) into the crucible.

  2. Heat the alloy to the desired temperature and melt it.
     Please monitor the temperature of the melt constantly
     to avoid overheating the material.

  3. The metal must be melted completely
     and have the correct viscosity.

- Step 4: Pouring

  1. Take the correct position:
     stand firmly, keep both hands free, and maintain a safe distance
     from all parts during all stages of the process
  2. Pick up the ladle containing the molten metal
  3. Guide it calmly to the pouring hole
  4. Slowly tilt the ladle over the pouring hole
  5. Allow the metal to flow evenly into the rotating mould
  6. DO NOT pour too quickly! (risk of splashes!)
  7. Maximum 15 grams! Do not overfill!

CAUTION:
Do not insert the pouring ladle into the pouring spout

Keep a safe distance from rotating parts!

- Step 5: Cooling

  1. Press the rotary-push button once briefly. The motor stops, as does the inert gas supply (if activated).
  2. Wait at least 5 minutes until the mould has cooled down.
  3. DO NOT open the casing whilst it is still hot!

- Step 6: Remove the ring

  1. After cooling: Loosen the two knurled screws and then remove the mould housing.
  2. Unscrew the mould cover
  3. Loosen the mould and slide it downwards, or CAREFULLY remove the ring from the mould using a suitable tool. Take great care to avoid scratching or damaging to the mould surface!
  4. Continue to wear protective gloves!
  5. Place the ring on a fireproof surface
  6. Wait for it to cool down further (approx. 2 – 3 minutes)

- Step 7: Switch off the device

  1. Set the FUSION's main switch to "OFF"!
  2. If the unit is not to be used for a prolonged period, disconnect the mains plug of the power supply from the mains
  3. Close the main valve on the gas cylinder

## 7.3 What to do in an emergency

STAY CALM!

If metal has been spilled:

- KEEP **YOUR DISTANCE**
- Switch off the appliance (set the switch on the back to "OFF")
- Allow the material to cool
- **NEVER** extinguish with water
- In the event of a fire: Use a Class D fire extinguisher

In the event of uncontrolled operation:

- **Immediately** switch the main switch on the rear of the unit to **"OFF"**
- Disconnect the power supply from the mains socket
- Keep a safe distance from the device
- Allow to cool
- Contact the manufacturer

In the event of burns:

- Cool the affected area **immediately** under running cold water (10 – 15 minutes)
- Do not apply any ointments or home remedies
- In the event of severe burns: seek medical attention
- Emergency number: 112

In case of fire:

- Use a Class D fire extinguisher
- **DO NOT** pour water onto burning metal
- Emergency number: 112
- Ventilate the room

# 8 Help with faults

| Problem | Possible cause | Solution |
|---|---|---|
| Motor does not start | Power supply not connected | Check the plug connection |
| | No mains voltage | Check the socket, check the fuse |
| | Switch faulty | Contact the manufacturer |
| Motor running unevenly | Mould is dirty | Clean mould |
| | Bearing worn | Contact the manufacturer |
| Motor stops during operation | Overload | Allow the unit to cool down, do not overfill |
| | Power supply overheating | Take a break, check ventilation |
| Splashes when pouring | Watered too quickly | Water more slowly |
| | Overfilling | Adhere to the maximum melt quantity of 15 g |
| | Metal too hot | Reduce temperature |
| Ring has bubbles | Metal not completely melted | Increase melting temperature |
| | Poured too slowly | Pour more quickly |
| Casing gets hot | Continuous operation | Take a break<br>(15 minutes after 5 pouring cycles) |
| | Ventilation blocked | Keep clearances clear |

*Table 8.1Causes of faults and troubleshooting*

# 9 Maintenance and inspection work

## 9.1 Maintenance and inspection schedule

| Interval | Maintenance and inspection tasks | Remarks |
|---|---|---|
| Before each use, at least weekly | Check the working environment | clean if necessary |
| | Check the condition and cleanliness of the device | Clean if necessary |
| | Check the gas hose for leaks | Shorten or replace if necessary |
| | Check the mains cable for damage | Replace with a new one if there is visible damage |
| After each use | Remove metal residue from the mould, clean with a brush | Do not use sharp or pointed objects => Risk of damage! |
| | Remove metal splashes from the pouring spout | Do not use sharp or pointed objects => Risk of damage! |

## 9.2 Carry out maintenance and inspection work

### Clean FUSION

- Use a dry or slightly damp cloth to remove dust and carefully clean the surfaces of the device
- For the front panel and display, you can use a non-abrasive glass cleaner (e.g., eyeglass cleaner).
- Do not perform any additional work: Do not open the device housing! The user must not clean or maintain any parts inside the housing; doing so may void the warranty.

# 10 Disposal and recycling

End-of-life devices must be rendered inoperable by removing the mains cable. For EU countries only: In accordance with European Directive 2012/19/EU on waste electrical and electronic equipment, used electrical appliances must be collected separately and sent for environmentally sound recycling.

# 11 Dimensions and technical specifications

## 11.1 Device dimensions

| Designation | | Value | Unit |
|---|---|---|---|
| Weight | | 5.0 | kg |
| Dimensions | Length | 310 | mm |
| | Width | 210 | mm |
| | Height | 175 | mm |

*Table11 .1 Machine dimensions*

## 11.2 Technical data

| Designation | Value | Unit |
|---|---|---|
| Operating voltage | 24 | V DC (SELV) |
| Mains voltage (power supply) | 100 – 240 | V AC |
| Frequency | 50 / 60 | Hz |
| Power consumption at 2,750 rpm | max. 5 | W |
| Mould rotation speed | max. 3,000 | rpm |
| Melting capacity | 5 – 15 | g |
| Max. ring size (outer diameter) | 24 | mm |

| **General data** | | | |
|---|---|---|---|
| Housing material | | stainless steel, brushed | |
| Max. external temperature | transport/ storage | -20 to +55<br>-4 to +131 | °C<br>°F |
| | operation | +15 – +40<br>+59 – +104 | °C<br>°F |
| Relative humidity | | up to 50 % at 40 °C (104 °F)<br>up to 90 % at 20 °C (68 °F) | |
| Noise level (see also chapter 3) | | max. 40 | dB(A) |
| Motor type | | brushless DC motor (BLDC) | |
| Protection class | | IP20 | |
| Inert gas (optional) | | Argon | |
| Max. permissible gas pressure | | 4 | bar |

*Table11 .2 Technical data for the machine*

# 12 Appendix

## 12.1 Service address

If you experience any problems with your FUSION casting centrifuge, please contact your Lampert partner company or Lampert dealer from whom you purchased the machine.

If you did not purchase the machine from an authorised Lampert partner or are unable to identify one, please contact the manufacturer directly:

Lampert Werktechnik GmbH
Ettlebener Strasse 27
97440 Werneck
Germany
e-mail: mail@lampert.info

## 12.2 Spare and wear parts

Only genuine replacement and wear parts should be used for your FUSION centrifugal casting machine.

These can be obtained from an authorised Lampert partner or from the manufacturer.

# 12.3 CE conformity

## EU Declaration of Conformity

LAMPERT. PRECISION WELDING

**in accordance with the Machinery Directive 2006/42/EC, Annex II, Part 1, Section A**

**Original**

**The manufacturer bears sole responsibility for issuing this Declaration of Conformity**

Lampert Werktechnik GmbH
Ettlebener Straße 27
97440 Werneck
Germany
Tel.: +49 (0)9722 94 59 – 0
Email: mail@lampert.info
Web: www.lampert.info

**Authorized representative for technical documentation**

**Name:** Jürgen Fuchs
**Position:** Site Manager
Address and email address same as manufacturer

**Subject of this declaration**

| | |
|---|---|
| Product | Centrifugal casting machine |
| Type | FUSION |
| Trade name | Centrifugal casting machine for precious metal rings |
| Model | FUSION |

**The subject of the declaration described above complies with the relevant provisions of the following directives:**

| | |
|---|---|
| 2006/42/EC | Directive 2006/42/EC of the European Parliament and of the Council of May 17, 2006, on machinery and amending Directive 95/16/EC<br>*Published in the Official Journal of the European Union L 157 of June 9, 2006* |
| 2014/30/EU | Directive 2014/30/EU of the European Parliament and of the Council of February 26, 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast)<br>*Published in the Official Journal of the European Union L 96 of March 29, 2014* |
| 2011/65/EU | Corrigendum to Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment<br>*Published in the Official Journal of the European Union L 44/55 of February 14, 2014* |
| 2014/35/EU | Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits<br>*Published in the Official Journal of the European Union L 96 of March 29, 2014)* |

**Applied harmonized standards:**

| | |
|---|---|
| EN ISO 12100:2010 | Safety of machinery – General principles for design – Risk assessment and risk reduction |
| EN 60204-1:2018 | Safety of machinery – Electrical equipment of machines – Part 1: General requirements |
| EN 61000-6-2:2019 | Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments |
| EN 61000-6-4:2020 | Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission for industrial environments |
| EN ISO 3744:2010 | Acoustics – Determination of sound power and sound energy levels of noise sources from sound pressure measurements |
| EN 63000:2018 | Technical documentation for the assessment of electrical and electronic equipment regarding the restriction of hazardous substances |

**Other applicable technical specifications:**

- VDE 0113-1:2019 (corresponds to EN 60204-1) – Electrical equipment of industrial machinery
- DGUV Regulation 3 – Electrical Installations and Equipment (German Social Accident Insurance requirements)
- Internal Design Guideline LWT-QS-2024 – Strength Calculation of Enclosures for Rotating Components

1/2

### Conformity assessment procedure:

- The machine is not listed in Annex IV of the Machinery Directive 2006/42/EC.
- The conformity assessment procedure applied is: Conformity assessment with internal production control for the manufacture of machinery in accordance with Annex VIII of Directive 2006/42/EC (Article 12(2)).
- No notified body has been involved

### Technical documentation:

The technical documentation in accordance with Annex VII, Part A of the Machinery Directive 2006/42/EC has been compiled and is kept by the authorized representative named in section 2. The documentation includes:

- General description of the machine
- General arrangement drawings and circuit diagrams
- Risk assessment documentation in accordance with EN ISO 12100:2010
- List of applied standards and specifications
- Technical calculations (strength, speed, electrical safety)
- Test reports (electrical safety test, functional test, noise emission measurement)
- Operating instructions (original operating instructions in German, Version 1.0)

**Retention period:** The technical documentation shall be retained for at least **10 years** from the date of manufacture of the machine and made available to the competent authorities upon justified request

### Additional information

**Technical data**

| Parameters | Value |
|---|---|
| Operating voltage of the machine | 24 V DC (SELV – Safety Extra-Low Voltage) |
| Power supply voltage | 230 V AC, 50 Hz |
| Speed | Up to 3,000 rpm (variable) |
| Melting capacity | 12–15 grams |
| Protection class | IP20 |
| Motor type | Brushless DC motor (BLDC), interference-suppressed |

**Noise emission**
A-weighted sound pressure level at the workplace: [e.g., 36 dB(A) ± 3 dB]
*(Measured in accordance with EN ISO 3744:2010 at 2,750 rpm, measurement distance 1 m from the machine surface, height 1.60 m)*

**Signed for and on behalf of:**

LAMPERT. PRECISION WELDING
Lampert Werktechnik GmbH
Ettlebener Str. 27 - 97440 Werneck
T+49-9722-9459-0 - F+49-9722-9459-100
info@lampert.info

Werneck, March 18, 2026
Place, Date

Dr. Martin Plöckinger
Managing Director

Jürgen Fuchs
Head of Development

2/2

## 12.4 Electromagnetic compatibility

The manufacturer points out that the casting centrifuge FUSION has been developed and certified for use in industrial environments. When used in residential areas, electromagnetic interference can reach a level that impairs the proper functioning of radio and telecommunications equipment or other operating equipment. In such cases, the operator of the casting centrifuge FUSION must ensure that these interference influences are minimized to such an extent that such impairments are eliminated.

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