

Instructions for Crucible Care & Handling



1 INSPECT CRUCIBLES WHEN RECEIVED.



7 KEEP FURNACE LINING IN GOOD REPAIR.

The furnace lining must be in good repair, and as concentric as possible. This will stop flame deflection/impingement in flame-fired furnaces, and will assure proper melting in induction furnaces.



2 STORE IN A DRY PLACE.



8 CHARGE CRUCIBLES CAREFULLY.

Don't wedge.



3 MOVE CRUCIBLES PROPERLY.

Do not roll or shimmy. Use a hand cart.



9 USE SLIGHTLY OXIDIZING FLAME.

Don't let flame impinge directly on crucible. Centre line of burner should be at juncture of crucible and base block.



4 USE THE PROPER PEDESTAL.

Same material - right size.



10 CRUCIBLE SHANKS MUST FIT PROPERLY.

They must support the crucible bottom at all times.



5 NEVER WEDGE THE CRUCIBLE.

Let crucible expand and contract.



11 USE THE RECOMMENDED FOSECO FLUX.

Follow application instructions set in the Technical Data Sheet.



6 AVOID TOP SMOTHERING.

The furnace cover or lid should not rest on the top crucible wall. In electric resistance furnaces, the fibre blanket should not be fully compressed on the top of the crucible.



12 KEEP YOUR CRUCIBLE CLEAN.

Remove dross build-up carefully while the crucible is hot.



Various steps for crucible maintenance

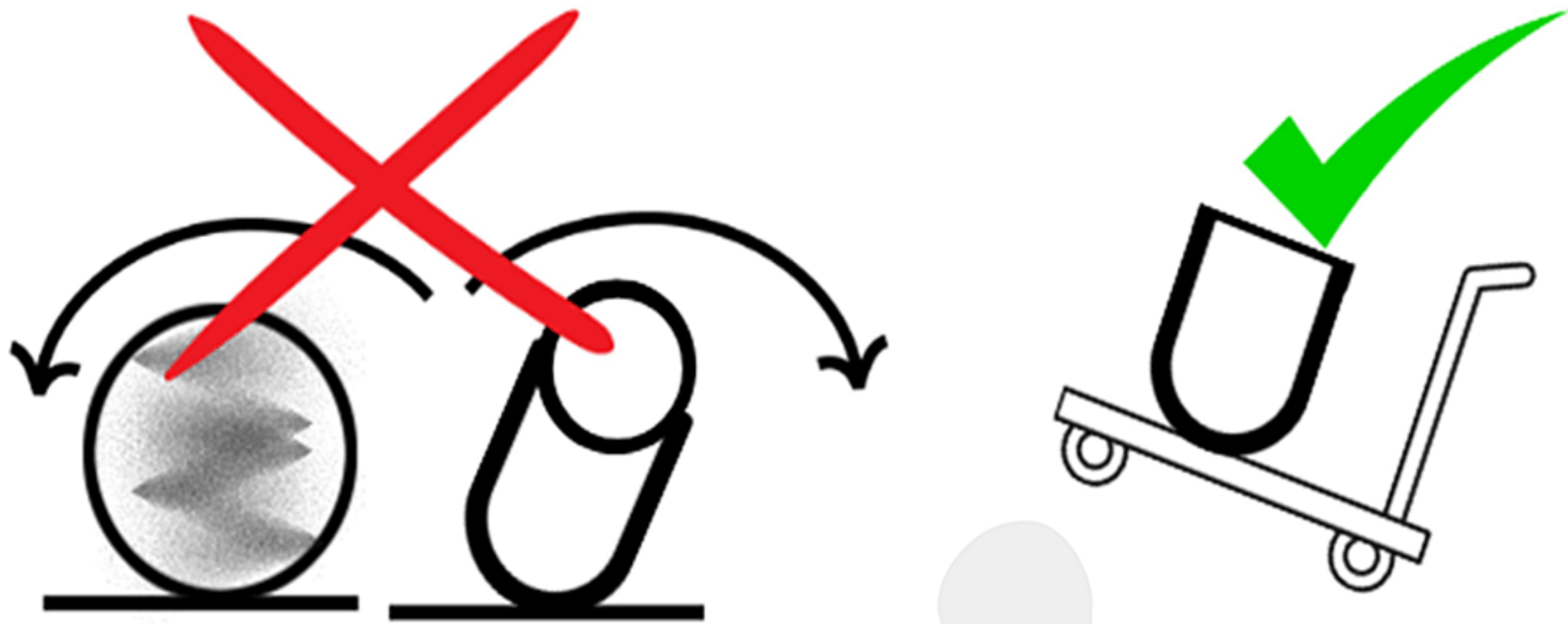
Below are the various steps which show and explain how to maintain crucible



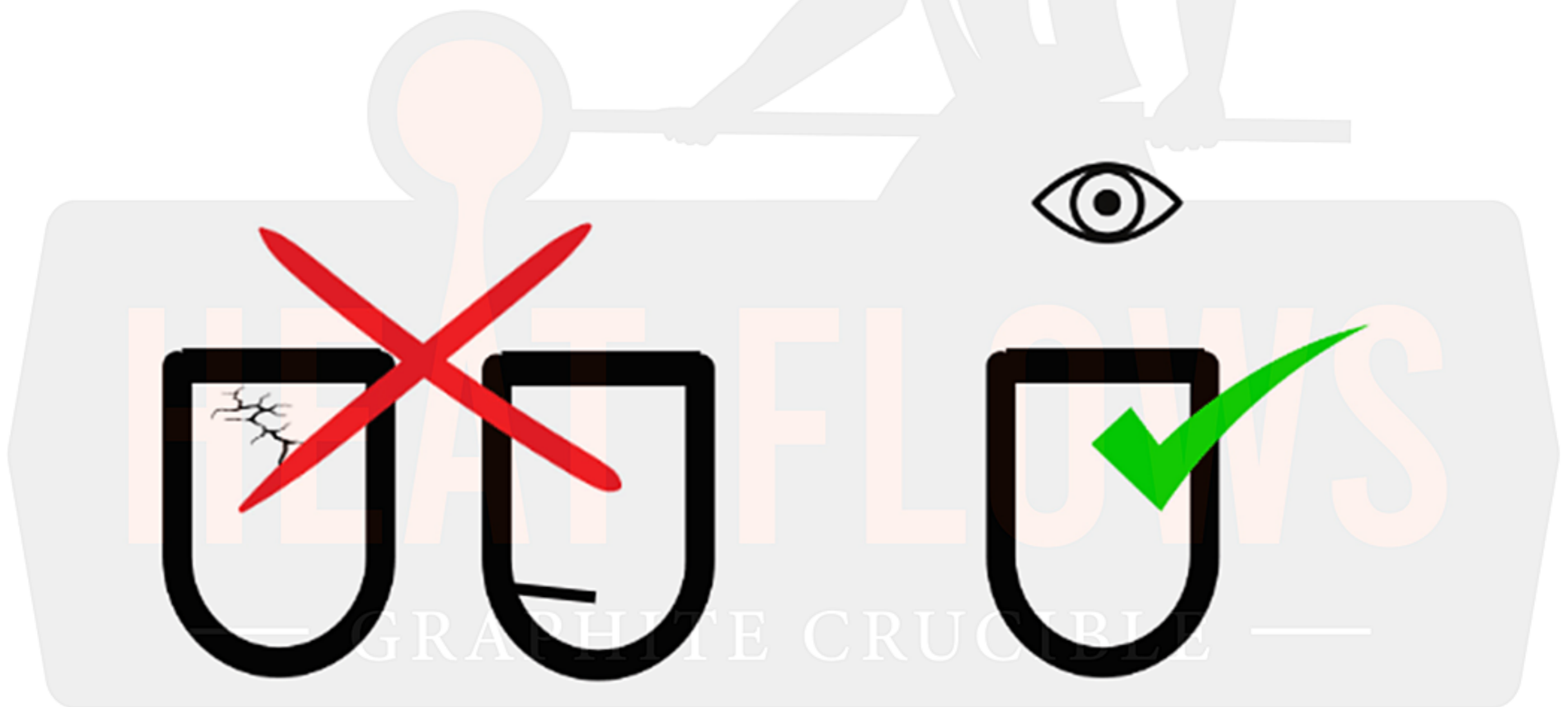
Store off the floor in a dry, warm place



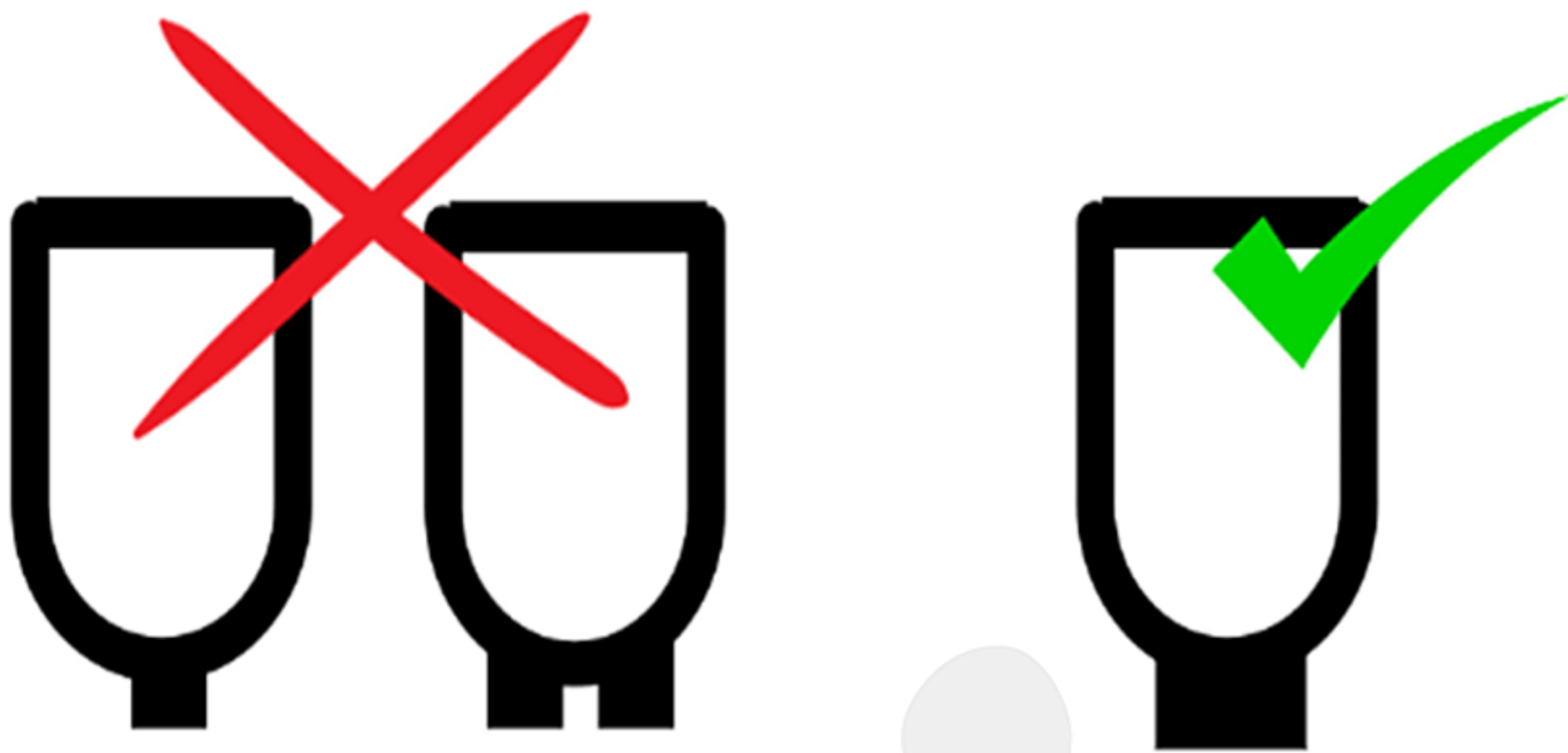
Do not nest one inside another. Seperate layers with hardboard



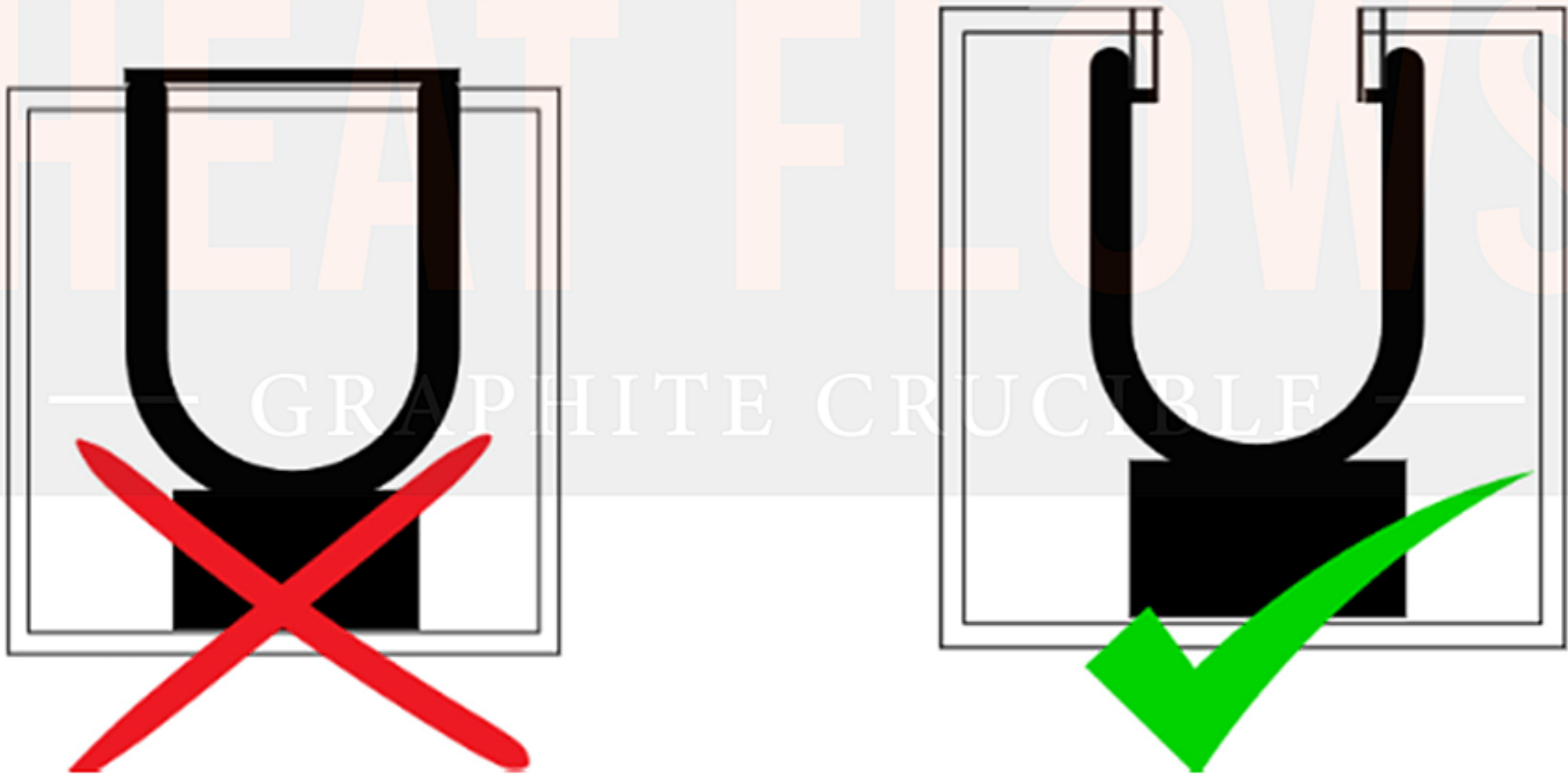
Do not roll. Move using a sack truck with padding



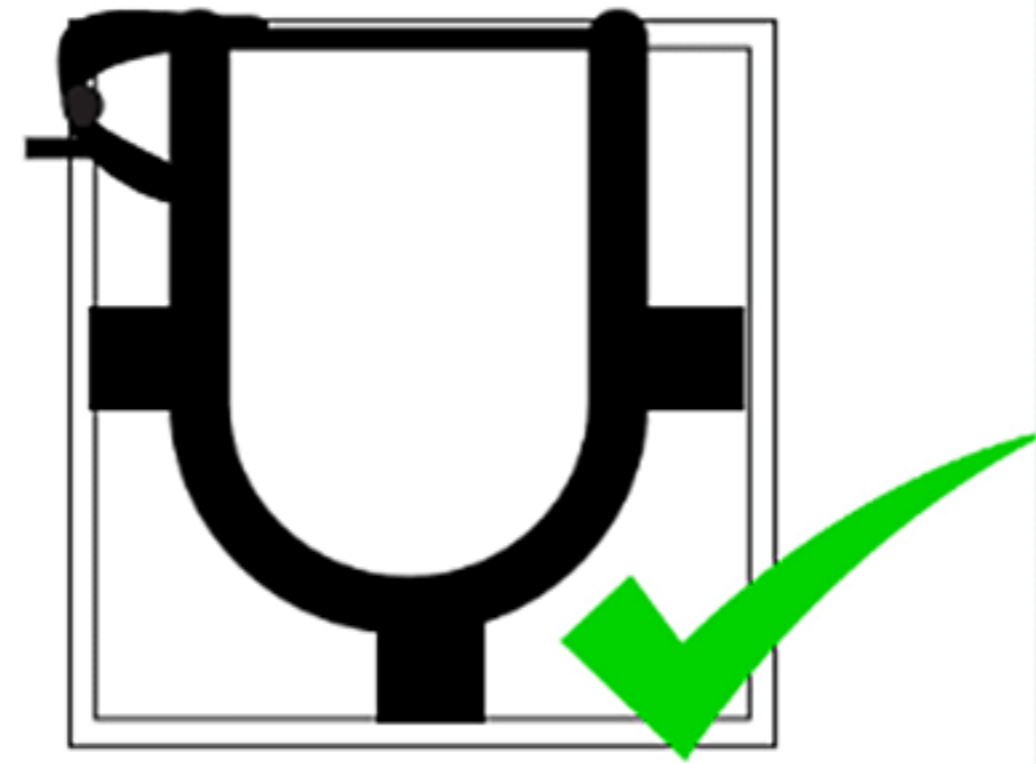
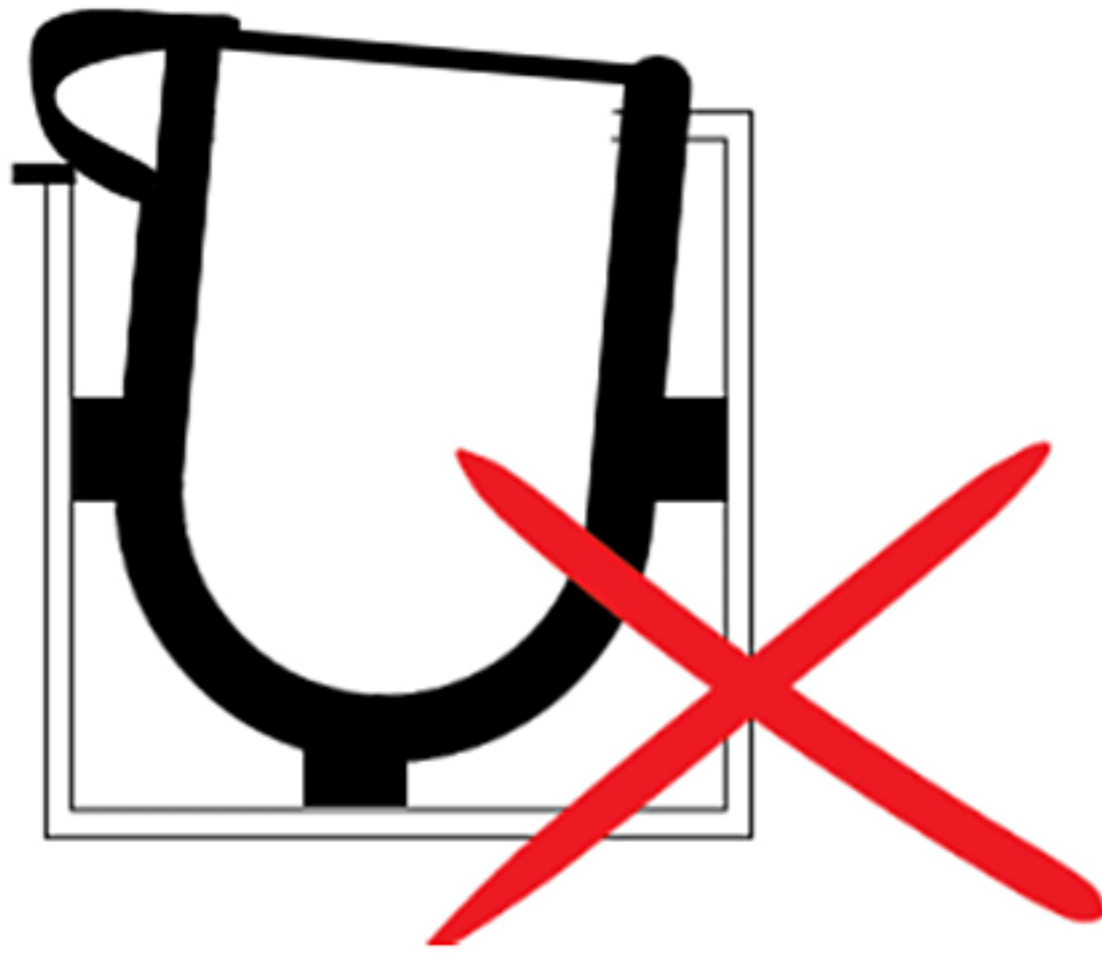
Check thoroughly for cracks or damage before use



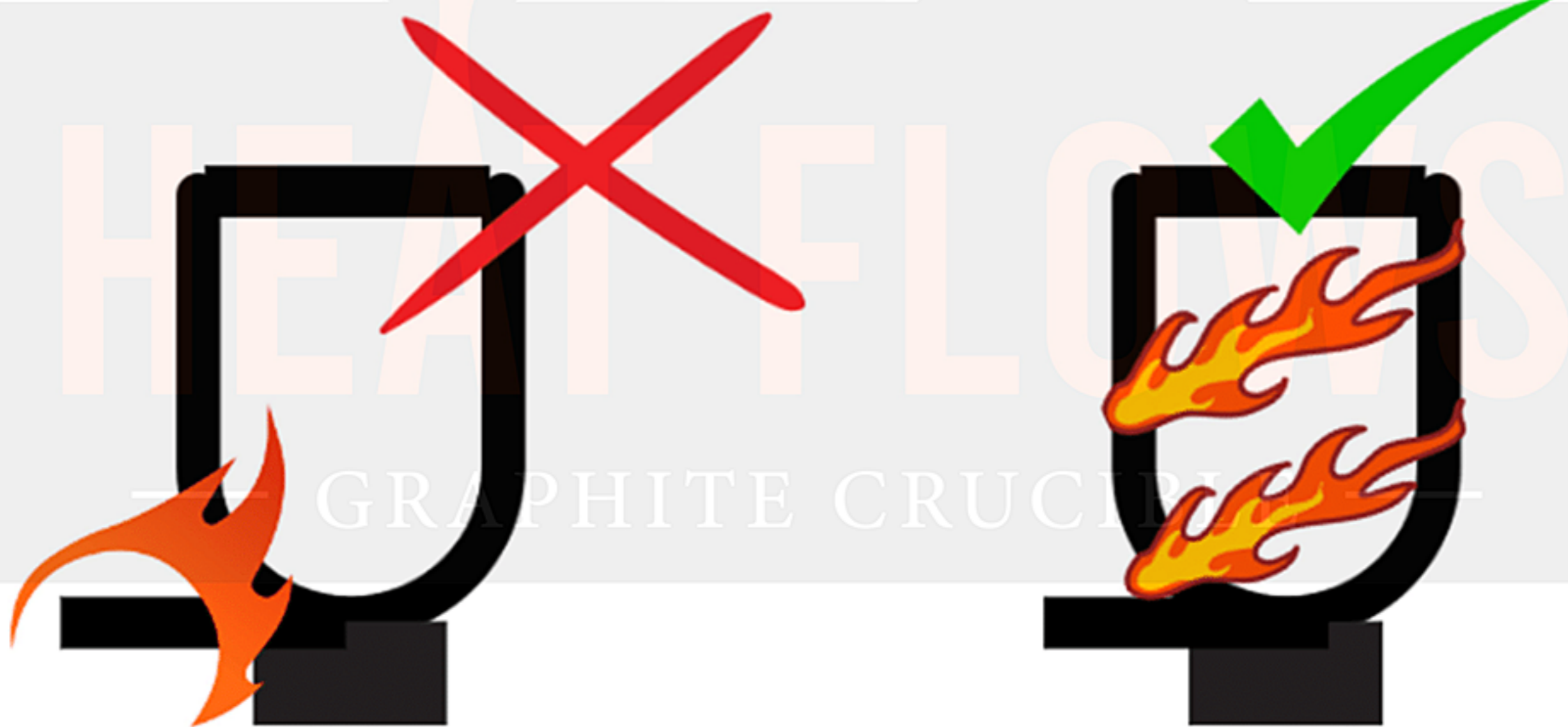
Use the correct stand which must be central and support the whole base



Allow space for expansion between this and furnace lining/cover



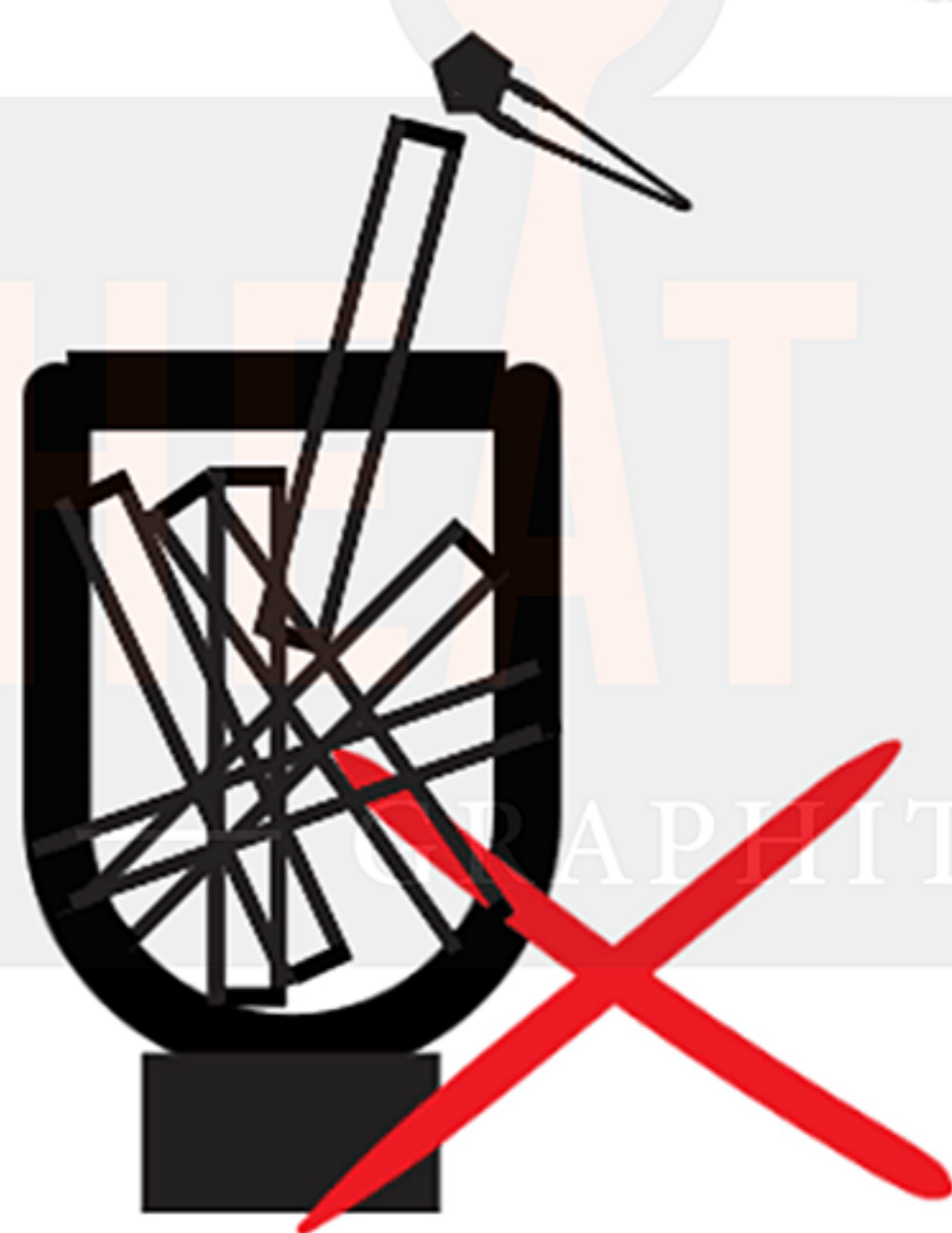
Use correctly positioned grip bricks in tilting furnaces, leaving gaps for expansion. Do not hang it on spout



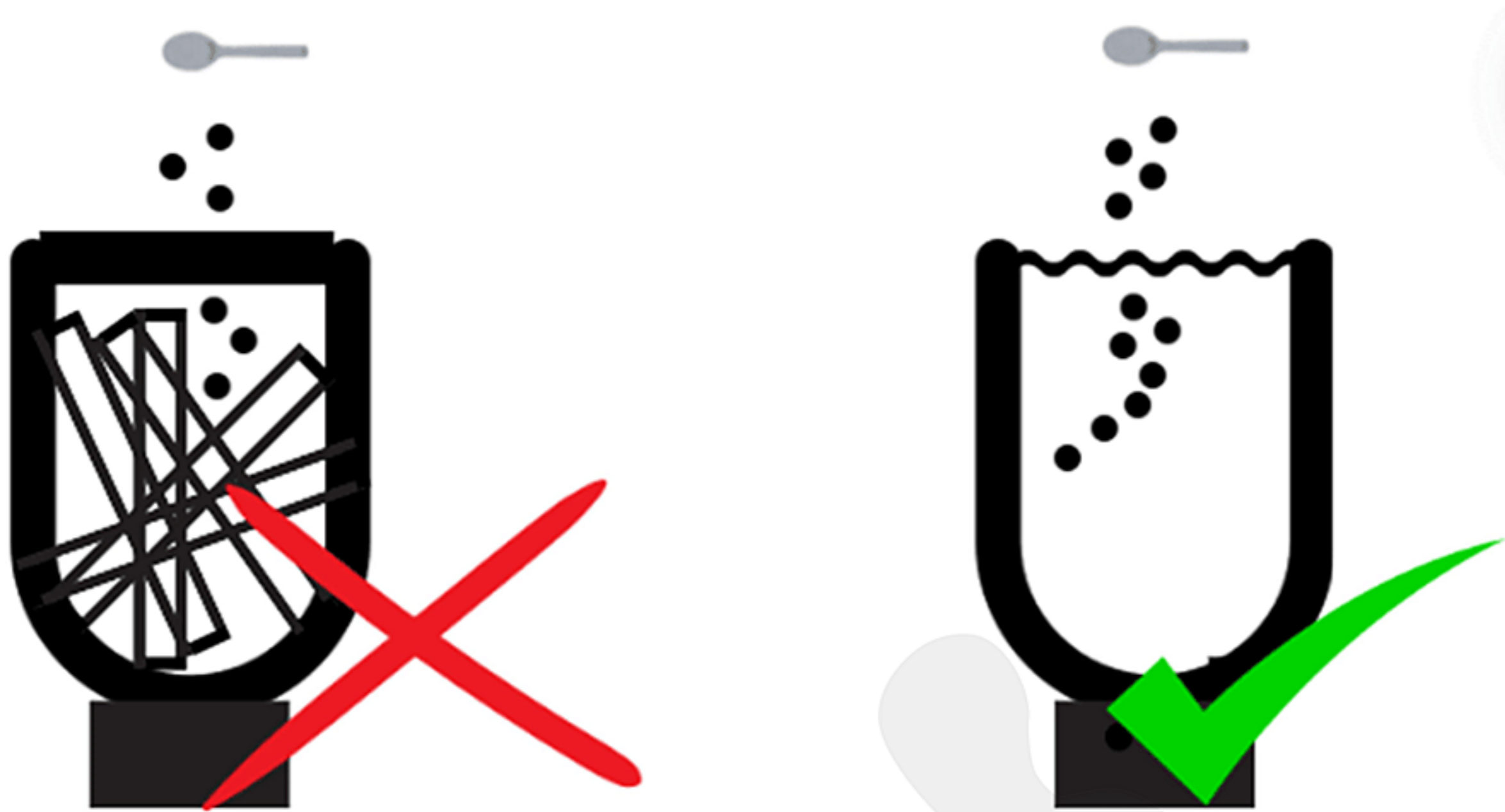
The flame path must be tangential to it



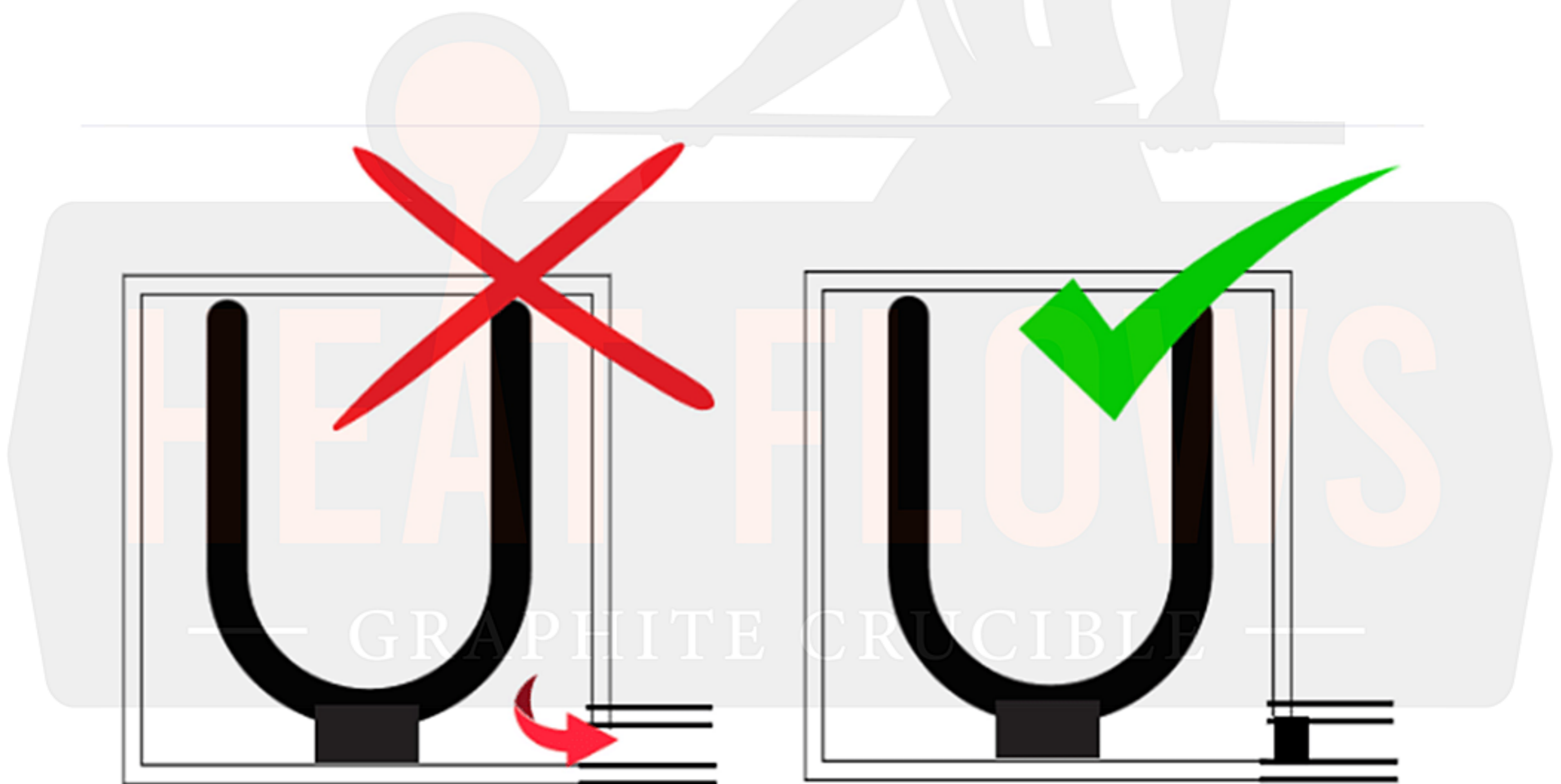
Ingots should be loaded carefully using tongs



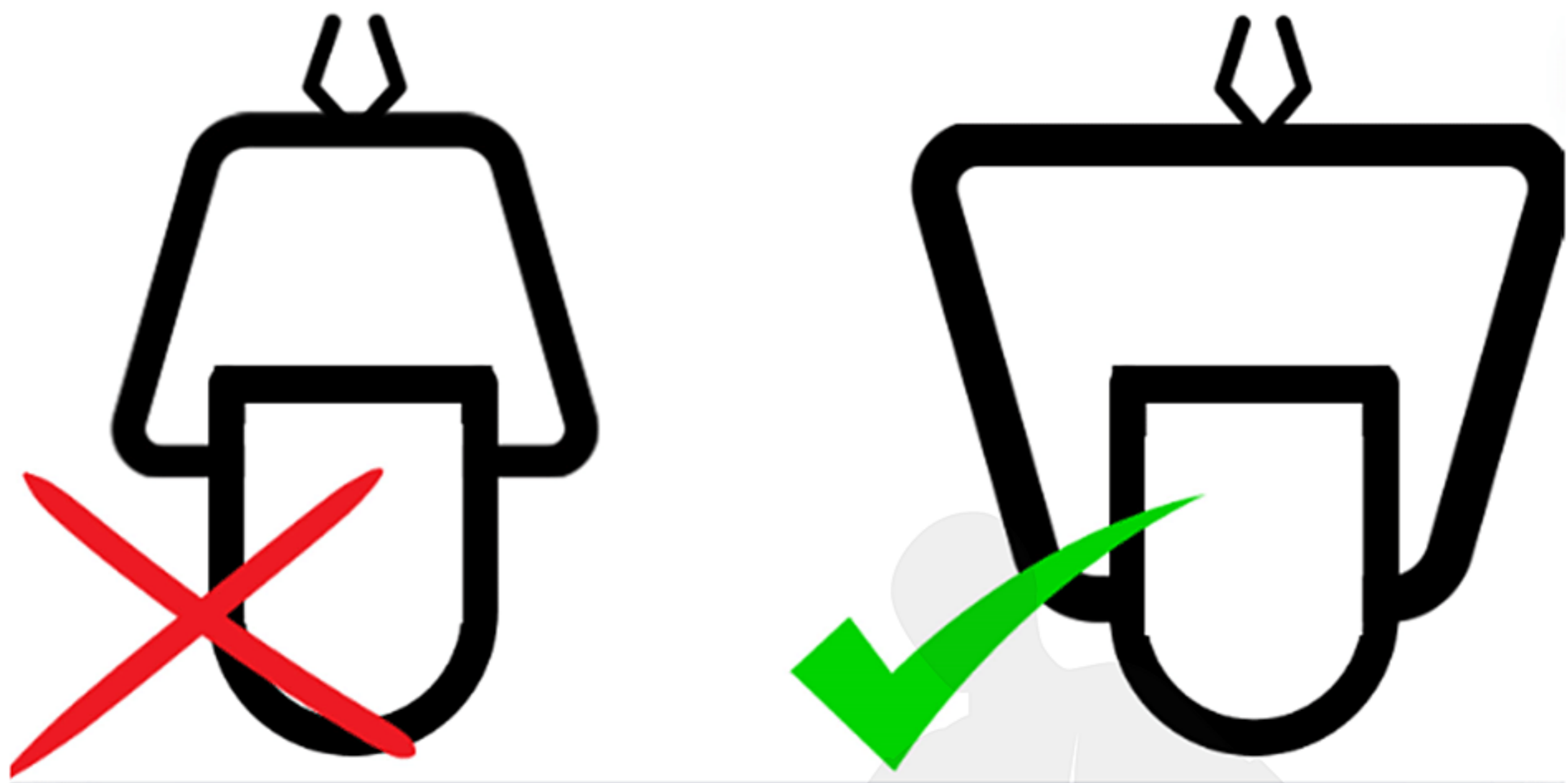
First charge with light returns, as a cushion, then add ingots vertically



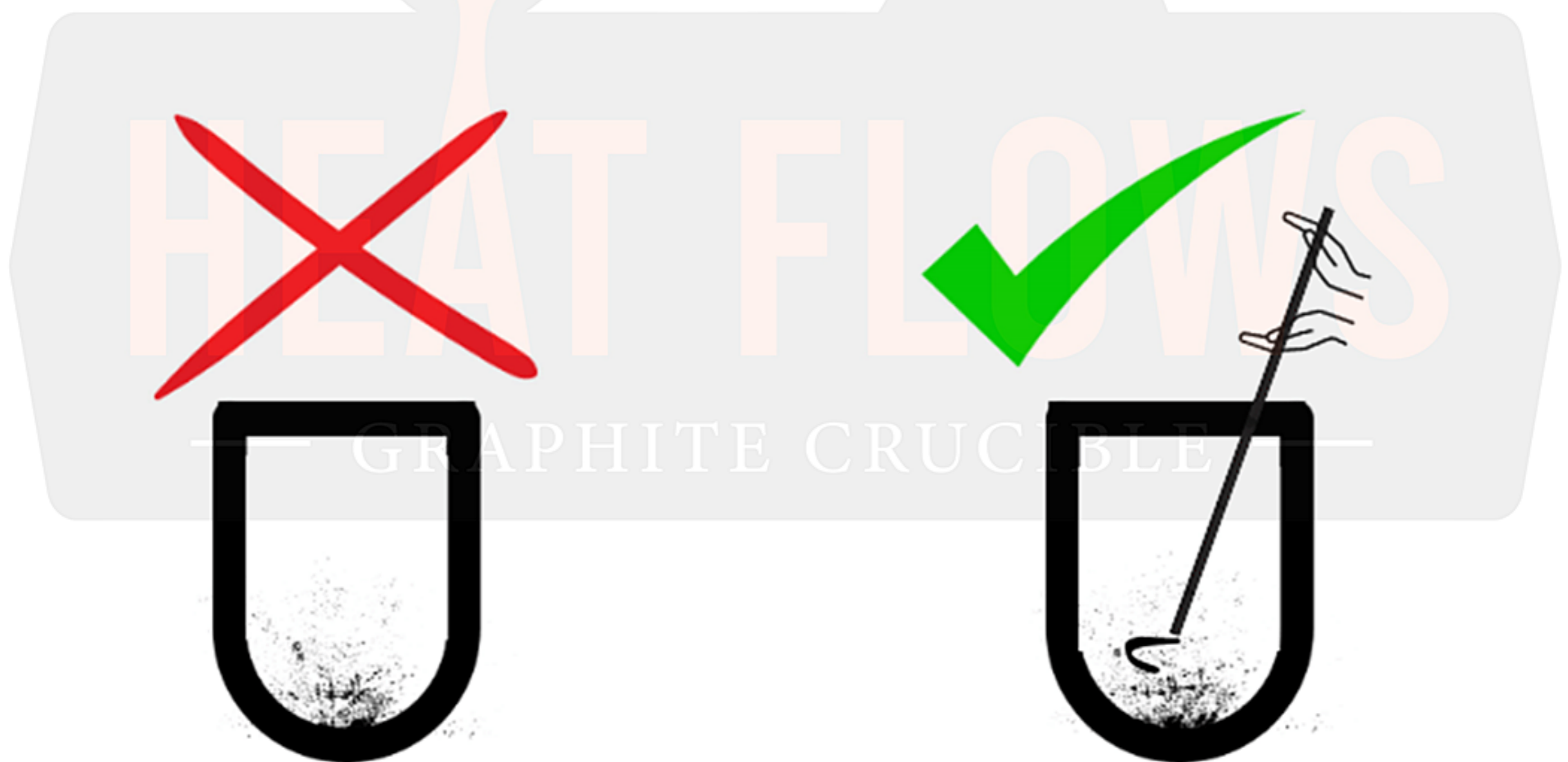
Only add flux after the metal is molten



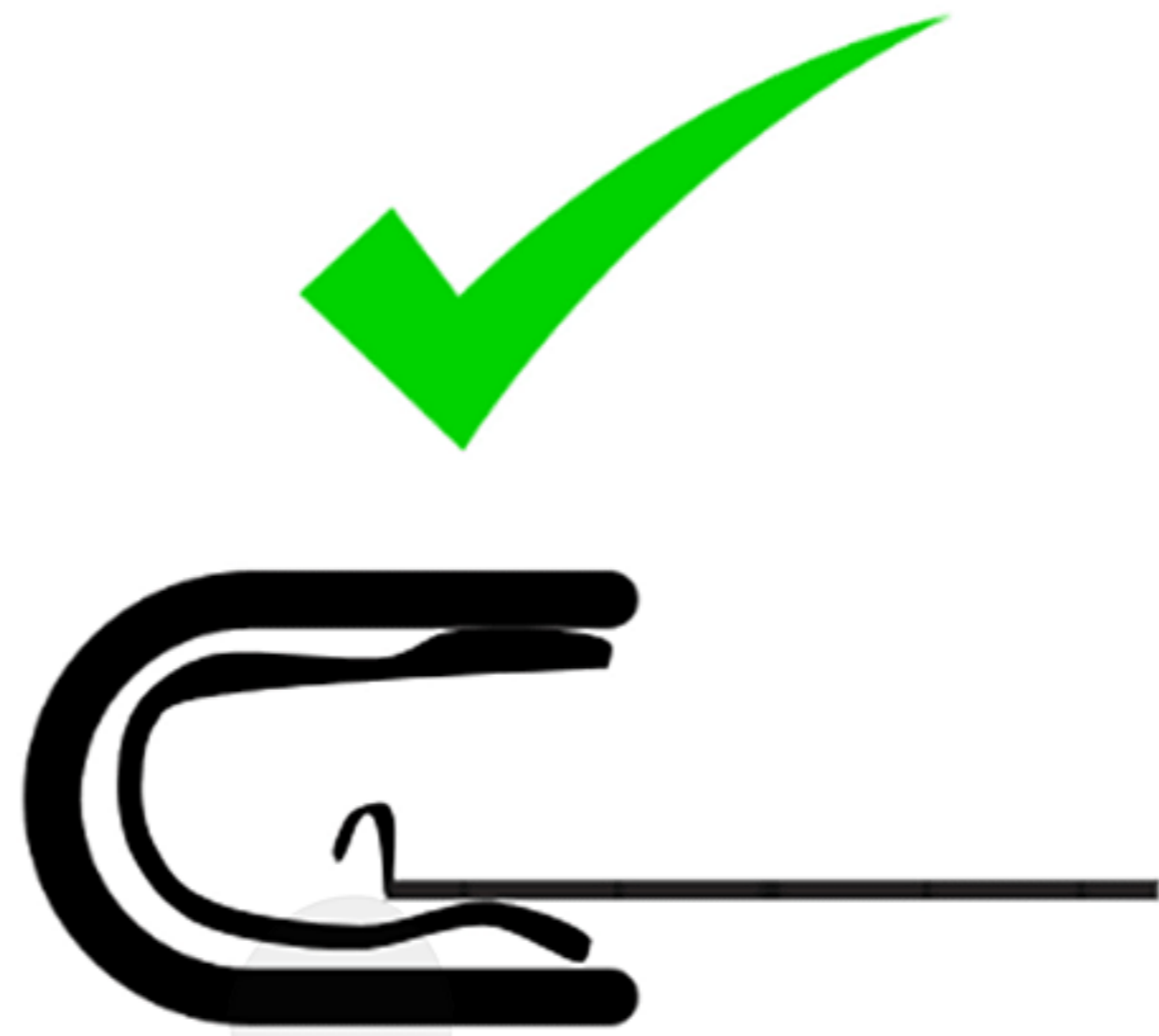
Avoid ingress of cold air by ensuring that the drain hole is sealed



Lift-out tongs should hold on its lower third and fit evenly on both sides



Must be emptied before switching off the furnace



Should be cleaned out carefully every day while still red hot



HEAT FLOWS

— GRAPHITE CRUCIBLE —

Crucible Care and Handling:

Conclusion

Proper care and handling of silicon carbide crucibles are essential to maximize their lifespan and ensure efficient performance in foundry operations. Here are key points for crucible care:

1. Pre-Use Inspection:

- Inspect for any visible damage or defects before use.
- Ensure they are clean and free from any foreign materials.

2. Proper Storage:

- Store in a dry, cool place.
- Avoid stacking directly on top of each other to prevent damage.

3. Correct Handling:

- Handle it with care, using appropriate tools and equipment.
- Avoid dropping or subjecting them to mechanical shock.

4. Heating Practices:

- Follow gradual heating procedures to prevent thermal shock.
- Use a controlled heating rate and avoid rapid temperature changes.

5. Loading and Melting:

- Load materials gently.
- Avoid overfilling to prevent spillage and uneven heating.

6. Cleaning and Maintenance:

- Regularly clean it to remove slag and buildup.
- Use recommended cleaning agents and tools that do not damage the surface.

7. Monitoring and Replacement:

- Regularly monitor the condition during and after use.
- Replace that show signs of wear, damage, or reduced performance.

By adhering to these guidelines, you can ensure the longevity and efficiency of silicon carbide crucibles, leading to optimal performance in your foundry operations. Proper care not only extends the life but also contributes to consistent, high-quality metal casting results.