Drum Heating Cabinet
Presentation
Index of contents

1. AMARC Drum Heating Cabinet
2. Drum Heating Cabinet Process
3. Drum Heating Cabinet Features
4. Drum / IBC Capacity
5. Temperature Range and Heating Source
6. Optional
   A. Standard Base
   B. Base Frame with legs
   C. Collection sump
   D. Collection sump + Base frame with legs
   E. Hazardous Area Installation
   F. Outdoor Installation Kit
   G. Stainless Steel Construction
   H. Controls
   I. Air Pollution Control
7. Certifications
8. Gallery
1. AMARC Drum Heating Cabinets

» AMARC has many years of experience in designing and manufacturing Drum Heating systems.

» Drum Heating Cabinets solve heating issues for drum contained materials used in manufacturing industries in a clean, safe, reliable and affordable way.

» Whenever materials such as tar, resins, fats, oils and other viscous substances, need to be kept at a constant temperature or heated in order to change viscosity before processing, our Drum Heating Cabinets solve exactly these issues.
1. AMARC Drum Heating Cabinets

» **Chemical**: such as BASF, Dow Group, Nalco, Clariant, Sun Chemical, Ecolab.
» **Chemical/inks, coatings and glues**: Akzo Nobel, Hammerite, ICI Paint, Henkel Loctite, Degussa Evonik
» **Chemical/detergents and pastes**: Henkel, Unilever, P&G, Colgate Palmolive etc.
» **Petrochemical/refining**: Shell Oil, Petronas, Total, Exxon, Texaco.
» **Food and Beverage**: Nestlè
» **Cosmetics**: Estee Lauder
» **Pharmaceutical**: Bayer, Teva, Sanofi-Aventis, Sandoz, Shering, Menarini, Angelini ACRAF
2. Drum Heating Cabinet Process

» Good insulation and a high air turbulence are at the basis of an effective heat transfer process.

» Heating takes place through a forced and continuous air circulation process that impinges on the heating system.

» The air inside the cabinet is drawn upwards by the fans, conveyed inside the delivery channel and pushed through the heater.

» The temperature is controlled by a digital regulator located on electrical control board with temperature sensor fitted inside the chamber.
3. Drum Heating Cabinet Features

- AMARC designs and produces a wide range of standard Drum Heating Cabinets.
- To meet each customer's needs, drum ovens can vary according to:
  - Drum/IBC capacity
  - Temperature range
  - Heating source
  - Materials
  - Safety or Hazardous (ATEX) installation area
  - Indoor or Outdoor installation
- A wide range of options are also available.
4. Drums / IBC Capacity

» Standard Drum Heating Cabinet capacity: from 1 to 12 compartments. Below some example schemes. These are just part of our wider range:

![Diagram of different compartment capacities]

» **Standard compartment** capacity: 1400mm (W) x 1400 (D) x 1350 (H), suitable for 4 drums on a chemical pallet (1200 mm x 1200 mm) or 1000L IBC container (1000 x 1200 x 1200).

» **Eur compartment** capacity: 1900mm (W) x 1400 (D) x 1350 (H), suitable for 2x euro pallet (800mm x 1200 mm) or 1000L IBC container (1000 x 1200 x 1200). *Available on request.*
4. Drums / 1 IBC Capacity

4x Drum Heating Cabinet

Standard compartment

4x Drum Heating Cabinet

Eur compartment
5. Temperature Range & Heating Source

» **Temperature Range**
   Amarc produces two series of standard Drum Heating Cabinets
   - **Operating Temperature**: up to 100°C
   - **Operating Temperature**: up to 150°C

» **Heating Source**
   Drum Heating Cabinets are characterized by different heating methods:
   - Electrical
   - Steam
   - Diathermic Oil
   - Hot Water
   - Gas
6. Optional

6.A – Standard Base:

Standard base: 3,0 mm metal sheet. Enables loading by mean’s of a pallet truck.

(1/2) 2x Drums Heating Cabinet, up to 150°C, electric operation, AISI304 stainless steel construction, with standard base during loading operations

(2/2) 2x Drums Heating Cabinet, up to 150°C, electric operation, AISI304 stainless steel construction, with standard base during loading operations
6. Optional

6.B – Baseframe with legs:

As an alternative: tubular base frame with leg’s. Enables loading operation by mean’s of a pedestrian stacker

4x Drums Heating Cabinet, up to 150°C, electric heating, with tubular base frame with leg’s

Pedestrian stackers
6. Optional

6.C – Collection Sump with grid:

Collects possible leakage from drums/IBC breakage, for environmental safety concern. Capacity: 1/3 of the entire heated volume. Larger capacity available on request.
6. Optional

6.D – Base frame with Legs + Collection sump:

Collection Sump with grid and base frame with legs can be provided together.

(1/2) 8x Drums Heating Cabinet, EUR compartments, up to 100°C, superheated water operation, ATEX rated, with base frame with legs + collection sump, AISI304 stainless steel construction, exhaust system with interlocked doors.

(2/2) 8x Drums Heating Cabinet, EUR compartments, up to 100°C, superheated water operation, ATEX rated, with base frame with legs + collection sump, AISI304 stainless steel construction, exhaust system with interlocked doors.
6. Optional

6.E - Hazardous Area Installation

AMARC heating cabinets can be designed and built according to the ATEX 2014/34/UE directive, group II, category 2G in compliance with European standards EN 1127-1 / UNI CEI EN ISO 80079-36, which can be used with substances in group IIB, therefore they can be marked Atex CE Ex II 2G IIB T5-T1

16x Drums Heating Cabinet divided into 2 x 8 drums independent rooms, up to 150°C, hot oil operation, Atex rated.

48x Drums Heating Cabinet divided into 3 x 16 drums independent rooms, up to 150°C, steam operation, Atex rated.
6. Optional

6.F - Outdoor Installation Kit

» When the cabinet has to be installed outdoor’s all internal and external steel sheet joints are completely sealed in order to prevent penetration of moisture into the heat insulation.

» An additional galvanised corrugated sheet roof structure is also supplied for protection against bad weather.

» Standard electric control board is provided with double door panel for outdoor installation; ATEX control board is IP 66 classified.
6. Optional

6.G - Stainless Steel Construction

» AMARC standard drum ovens feature internal panels in self colour galvanised steel, while the external ones are in painted galvanized steel.

» AISI 304 (or AISI 316) Stainless Steel paneling (internal/external) is available on request.
6. Optional

6.H – Controls

» **PID CONTROL**: to get more accurate temperature control

» **DAILY/WEEKLY TIMER**: to switch on/off the cabinet automatically.

» **CYCLE TIMER**: to set heating cycle to default working time at some temperature setpoint

» **GRAPHIC SOFTWARE**: LCD TFT colour touch screen (3.5” or 5.7”) temperature programmer, extremely simple to use with following features: 1) 4-loop controller, 2) graphic trend and bar graph display 3) up to 300 steps in 100 programs 4) data logging (all data recorded can be downloaded in CSV format by means of USB support) 5) interconnection with other control systems, via Ethernet, RS485, and USB ports. Available protocols: Modbus RTU (Master), Modbus TCP, Profibus DP.
6. Optional

6.1 – Air Pollution control

» **EXAHUST AIR SYSTEM**: by means of exhaust fan prevents the operator and the working area from unwanted fumes that might be produced during heating cycle

» **GAS DETECTION**: to control the concentration of unwanted gas (explosive or toxic risky) inside the cabinet. Interlocked to alarm system.
7. Certifications

All AMARC heating cabinets are **CE marked**, therefore in compliance with:

- **2006/42/CE** machinery directive
- **2014/35/UE** low voltage directive
- **2014/30/UE** electromagnetic compatibility directive
- **2014/34/UE** Atex directive (when required)
- **2014/68/UE** directive for pressure parts
- **UNI EN ISO 3452-1** collection sumps are submitted to penetrant testing protocol
8. Gallery

4x Drums Heating Cabinet, up to 150°C, electric operation, Atex rated, with base frame with legs, exhaust system.

4x Drums Heating Cabinet, EUR compartment, up to 150°C, electric operation, with collection sump.
8. Gallery

8x Drums Heating Cabinet, horizontal, up to 100°C, electric operation, with collection sump.

8x Drums Heating Cabinet, EUR compartments, divided into 2 x 4 drums independent rooms, up to 100°C, electric operation, with collection sump and exhaust air system.
8. Gallery

8x Drums Heating Cabinet, vertical type, up to 100°C, electric operation.

12x Drums Heating Cabinet, horizontal type, up to 100°C, steam operation, with collection sump and exhaust air system.
8. Gallery

16x Drums Heating Cabinet, up to 150°C, electric operation, Atex rated.

16x Drums Heating Cabinet, divided into 2 x 8 drums room, up to 150°C, electric operation, with base frame with legs and collection sump, internal AISI304 stainless steel panelling, exhaust system with interlocked doors.
8. Gallery

24x Drums Heating Cabinet, up to 80°C, electric operation, with roller shutter doors (and remote control) and collection sump.

24x Drums Heating Cabinet, divided into 3 x 8 drums rooms, up to 100°C, steam operation, with collection sump.
8. Gallery

(1\2) FRONT  32x Drums Heating Cabinet, horizontal, divided into 2 x 16 drums independent rooms, up to 150°C, double energy electric +steam operation, Atex rated with collection sump.

(2\2) BACK  32x Drums Heating Cabinet, horizontal, divided into 2 x 16 drums independent rooms, up to 150°C, double energy electric +steam operation, Atex rated with collection sump.
8. Gallery

40x Drums Heating Cabinet, up to 90°C, electric operation.

48x Drums Heating Cabinet, horizontal, divided into 3x16 drums independent rooms, up to 150°C, hot oil operation, Atex rated with outdoor installation kit.