Maharaja Agrasen Institute of Technology, Delhi

EVENT REPORT

Date: 30th June 2026

Department	: Mechanical Engineering
Activity Category	: Training
Title of the Activity	: HVAC Skill Enhancement Program by Daikin Air Conditioning India Facility at Neemrana, Rajasthan
Theme/Focus Area	: HVAC, Refrigeration, Installation, Maintenance, Cooling, Ventilation

1. Basic Details

Date of Activity	: 15th - 26th June 2026
Day	: Monday to Friday
Time	: 9:00 AM - 5:00 PM
Venue/Platform	: Daikin India ACDC (Airconditioning Technology Development Centre)
Organised by	: Department of Mechanical Engineering
Activity Coordinator(s)	: Dr. Deshdeep Gambhir, Dr. Ved Nath Mathur, Mr. Surender Singh, Mr. Deepak Kumar
Number of Participants	:
• Students	: 26
• Faculty & Staff	: 4
• External Participants	: NA

2. Resource Person Details

Name	: Mr. S. P. Singh
Designation	: Head of the Training Centre / Senior Faculty
Organization	: ACDC - Air Conditioning Training and Development Centre
Area of Expertise	: Basics of Refrigeration, RAC Components, Laws of Thermodynamics, and advanced Daikin technologies.
Brief Profile	: Mr. S. P. Singh is a veteran technical educator and the Head of the Training Centre at the Daikin Air Conditioning Technology Development Centre (ACDC), Neemrana, Rajasthan. With extensive experience in HVAC and air conditioning technologies, he has been instrumental in designing and delivering industry-oriented training programs for students, faculty, and professionals. He is recognized for promoting

hands-on learning, technical skill development, and industry–academia collaboration, contributing significantly to the development of a skilled HVAC workforce.

3. Objectives of the Activity

The training was planned in order to address the following objectives:

- **Bridge Academia–Industry Gap:** Expose students to real-world manufacturing, production processes, and advanced HVAC technologies.
- **Enhance Technical Skills:** Build knowledge of VRV systems, chillers, inverter technology, and the use of diagnostic tools for troubleshooting.
- **Develop Professional Competencies:** Strengthen communication, workplace ethics, grooming, task management, and professional discipline.
- **Promote Safety and Practical Skills:** Familiarize students with industrial safety standards and hands-on practices such as copper piping, brazing, and refrigerant charging.

4. Description of the Activity

Purpose of the event: The HVAC Skill Enhancement Program at the Daikin Air Conditioning Technology Development Centre (ACDC), Neemrana, was organized to bridge the gap between academic learning and industrial practice by providing students with hands-on exposure to modern HVAC technologies and manufacturing processes. The program aimed to strengthen students' technical knowledge of air conditioning systems, refrigeration, energy-efficient cooling technologies, and diagnostic techniques while enhancing their practical skills in installation, servicing, troubleshooting, and maintenance. It also focused on developing professional competencies, workplace ethics, communication skills, and awareness of industrial safety standards, preparing students for successful careers in the HVAC industry.

Key Topics covered:

- HVAC fundamentals, refrigeration cycle, and psychrometry.
- VRV/VRF systems, chillers, inverter technology, and refrigerants.
- Energy efficiency, BEE ratings, and sustainable cooling technologies.
- Industrial safety (EHS), quality standards, and HVAC diagnostic instruments.
- Copper piping, brazing, refrigerant charging, and preventive maintenance.

Activities Conducted:

- Orientation sessions and behavioural skill development.
- Factory visits and observation of HVAC manufacturing and assembly lines.
- Hands-on practice in AC installation, brazing, copper pipe fabrication, refrigerant charging, and diagnostic testing.
- Demonstrations on VRV systems, refrigeration equipment, and routine maintenance procedures.
- Practical exercises on psychrometry and HVAC performance measurements.

Interaction Highlights:

- Interactive sessions with Daikin technical experts, HR professionals, and training faculty.
- Live demonstrations of advanced HVAC systems and manufacturing processes.
- Discussions on career opportunities, industry best practices, quality management, and workplace safety.
- Question-and-answer sessions and practical troubleshooting using professional diagnostic tools.

5. **Learning Outcomes / Impact**

Skills gained:

- Hands-on HVAC installation and servicing
- Copper pipe cutting, flaring, brazing, and bending
- Refrigerant gas charging and recovery techniques
- Operation of meggers, multimeters, clamp meters, and gauge manifolds
- HVAC system troubleshooting and preventive maintenance
- Performance testing using superheat and subcooling calculations

Knowledge enhancement:

- Fundamentals of refrigeration and psychrometry
- Working principles of VRV/VRF systems and chillers
- Inverter air conditioning technologies
- Energy-efficient HVAC systems and BEE/ISEER standards
- Refrigerants, environmental regulations, and sustainability
- HVAC controls, sensors, and diagnostic technique

Awareness created:

- Industrial safety (EHS) and ISO standards
- Workplace discipline and professional ethics
- Environmental impact of refrigerants
- Energy conservation and sustainable cooling practices
- Quality assurance in manufacturing and servicing
- Career opportunities in the HVAC industry

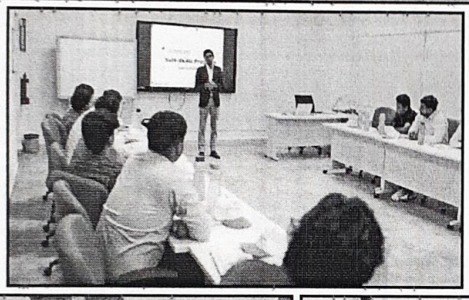
Innovation mindset development:

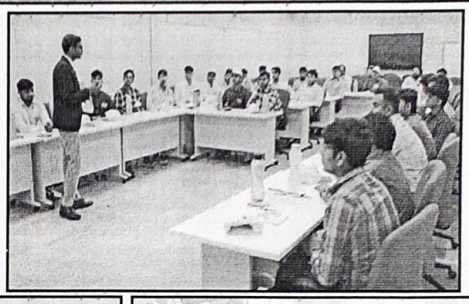
- Exposure to advanced HVAC manufacturing technologies
- Understanding of smart and energy-efficient cooling solutions
- Industry-oriented problem-solving and diagnostic approach
- Appreciation of modern automation and quality practices
- Integration of theoretical concepts with real-world applications
- Motivation for continuous learning and technological innovation

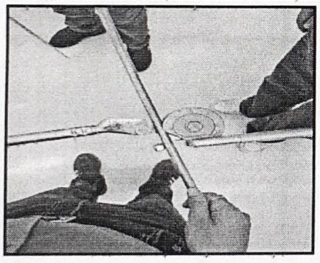
6. **Photographs & Documentation**

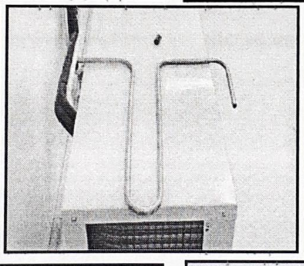
- **Geo-tagged photographs:**

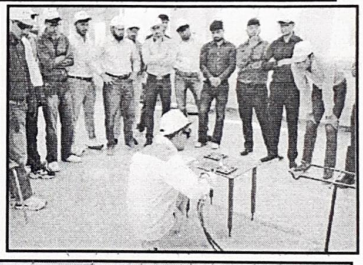

DAIKIN
Air-Conditioning Technology Development Centre
(A.C.D.C) Neemrana

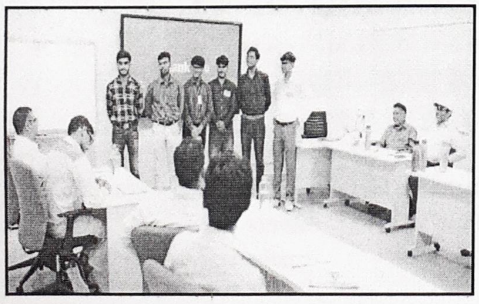


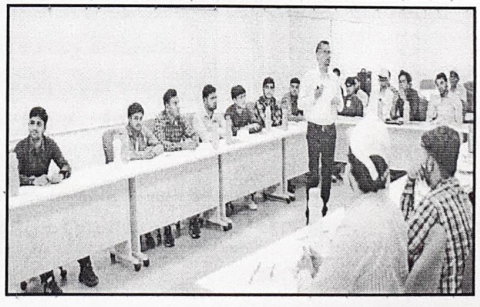


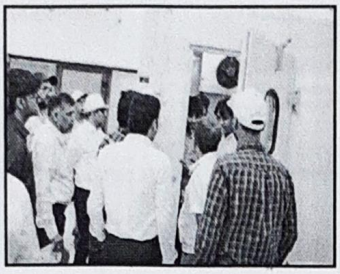
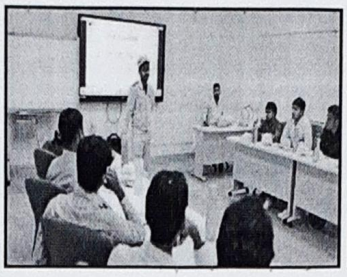











- **Attendance Sheet** : Attached as Annexure

7. **Feedback Summary**
   - **Mode of feedback collection:** Google Form
   - **Average rating** : 5.0/5.0 (Excellent)
   - **Key feedback insights** :
     - ❖ Training content was highly relevant to current industry requirements.
     - ❖ Hands-on practical sessions significantly enhanced technical understanding.
     - ❖ Factory visits provided valuable exposure to real-time manufacturing processes.
     - ❖ Interactive sessions with Daikin experts improved learning and career awareness.
     - ❖ Soft skills and safety training complemented technical learning effectively.
     - ❖ Participants appreciated the balance between theoretical concepts and practical applications.

8. **Challenges faced**

The challenges which were faced were:

- Limited time for advanced hands-on practice on all HVAC systems.
- Large batch size reduced individual practice opportunities.
- Extensive technical content within a short duration required intensive learning.
- Restricted access to certain manufacturing areas due to safety protocols.
- Managing practical sessions within the allotted schedule was challenging.

9. **Recommendations / Future Scope**

The following are the recommendations which can be included in future workshops:

- Organize advanced-level HVAC certification and specialized training programs.
- Increase the duration of practical and laboratory sessions.
- Conduct regular industry visits and internship opportunities with Daikin.
- Include training on smart HVAC systems, IoT-based controls, and Building Management Systems (BMS).
- Strengthen industry–academia collaboration through joint projects and expert lectures.
- Introduce case studies and live industrial problem-solving exercises to enhance practical competence.

10. Annexures

- Annexure I - Attendance Sheets
- Annexure II - Event Poster / Brochure
- Annexure III - Participant Feedback Summary

Report Prepared By:

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