CONSTRUCTION INDUSTRY COUNCIL 建造業議會

HONG KONG CONSTRUCTION INDUSTRY TRADE TESTING CENTRE
香港建造業工藝測試中心

Refrigeration/Air-conditioning/ Ventilation Mechanic (Water System)Trade Test Practical Test Mock Paper

(Version：EAW-PM-EN-02)

此文件關於空調製冷設備技工（水系統）技能測試實務測試模擬試題。

如需索取中文版本，請致電 2100 9000 與香港建造業工藝測試中心聯絡。

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Enquiries

Enquiries on this material may be made to Hong Kong Construction Industry Trade Testing Centre (HKCITTC) at:

Address: 95 Yue Kwong Road, Aberdeen, Hong Kong
Tel: (852) 2100 9000
Fax: (852) 2100 9090
Email: hkcittc@cic.hk
Website: www.cic.hk

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Refrigeration/Air-conditioning/Ventilation Mechanic (Water System) Trade Test Practical Test Mock Paper

Title: Refrigeration/Air-conditioning/Ventilation Mechanic (Water System)

Skill level: Skilled Worker

Test Requirements and Duration:

Procedures and requirements	Duration
1. Dynamic risk assessment prior to work Conduct dynamic risk assessment on worksite environment, equipment and tools, materials and safety equipment prior to work, including identification of potential hazards and taking countermeasures to ensure that potential hazards are eliminated and/or risks are reduced before commencement of work.	5 minutes
2. Preparation prior to work and protection to work site Review the worksite delivered by the person-in-charge / worker of the previous work process, and perform proper protection as well as appropriate preparations before commencement of work according to the worksite environment and the conditions of the workpiece etc.	5 minutes
3. Practical Test Carry out the works in accordance with the requirements, specifications and drawing(s), and complete the specified works at the designated locations. **Test Content** **1. Installation of Fan Coil Unit (FCU)** i. Adjust, level and securely fix the fan coil unit in accordance with Working Drawing (1). The lowest point of the drain pan shall be 1930 mm above floor level. ii. Use a spirit level to check and adjust the fan coil unit to ensure it is level, taking the top of the unit as the reference. iii. Install and connect the chilled water inlet and outlet copper pipes and associated fittings, including: Two-way motorized valve, Copper connectors and Thermal insulation. iv. Install and connect the condensate drain pipe.	3 hours

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Refrigeration/Air-conditioning/Ventilation Mechanic (Water System) Trade Test Practical Test Mock Paper (Con't)

Test Requirements and Duration (con't):

Procedures and requirements	Duration
Test Content (Con't) **1. Installation of Fan Coil Unit (FCU) (con't)** The following procedures shall only be carried out in the presence of an examiner for inspection and verification: v. Carry out the air venting procedure for the fan coil unit. vi. Pressurize the newly installed system to 1035 kPa (150 psi) using a hand-operated test pump and perform a 10-minute leakage test. vii. Conduct a water test on the condensate drain pipe to verify proper drainage performance. viii. Complete the leakage test record. **2. Installation of Chilled Water Pump Pipework and Fittings in accordance with Working Drawing (2)** i. Align and assemble the pipework components at the suction inlet of the chilled water pump. ii. Carry out arc welding on the chilled water pipework at Section A. The black steel pipe shall be welded while mounted on the support frame. The following procedures shall only be carried out in the presence of an examiner for inspection and verification: iii. Pressurize the newly installed system to 1035 kPa (150 psi) using a hand-operated test pump and conduct a 10-minute leakage test. iv. Complete the leakage test record.	Refer to previous page

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Refrigeration/Air-conditioning/Ventilation Mechanic (Water System) Trade Test Practical Test Mock Paper (Con't)

Test Requirements and Duration (con't):

Procedures and requirements	Duration
4 . **Housekeeping after work and final touch-up on work before handover** After completion of work, clean and tidy up the worksite, equipment, tools and materials, and review the quality of workpiece taking into account of the possible impact on the upcoming work process. The finished workpiece should be properly handled in preparation for delivery along with the worksite.	5 minutes

Note:

1. Candidates should read the attached "Notes to Candidate" before commencement of work and comply with all test related rules and requirements.

2. Practical test assessment framework is comprised of "Technical Assessment" and "Dynamic Risk Assessment and Safety Practice Assessment". Candidates must fulfil the passing requirements for both assessment parts to achieve an overall "Pass" grade in the practical test.

Passing Requirement for "Technical Assessment"	Passing Requirement for "Dynamic risk Assessment and Safety Practice Assessment"
Achieve 60 marks out of 100 marks; and meet the specific requirement(s) in the critical assessment items of the technical assessment.	Achieve 60 marks out of 100 marks; and meet the specific requirement(s) in the critical assessment items of "Dynamic Risk Assessment and Safety Practice Assessment".

Precautions

This document is provided as reference for test preparation only. Under all circumstances all content in the official test papers, including but not limited to the terms and conditions therein, prevails.

There are different versions of the test paper, content include but not limited to tools, materials, equipment, drawing, construction details or procedures and different simulated site environments. Candidates should refer to the official test documents during testing. The CIC reserves the right, at its sole and absolute discretion, to change, update or delete the contents in this document at any time without prior notice.

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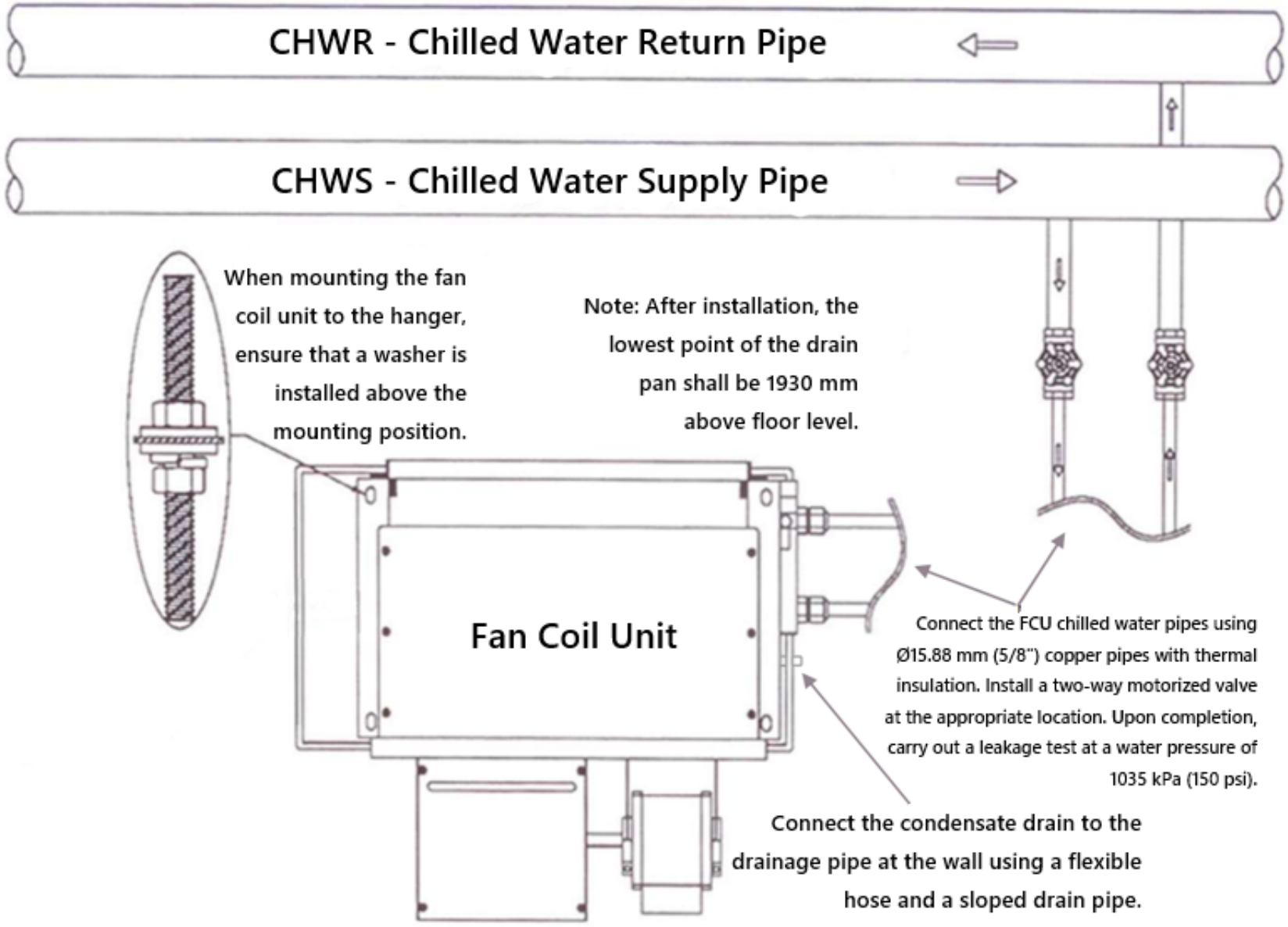
Working Drawing (1)



Note :

① Drawing not to scale

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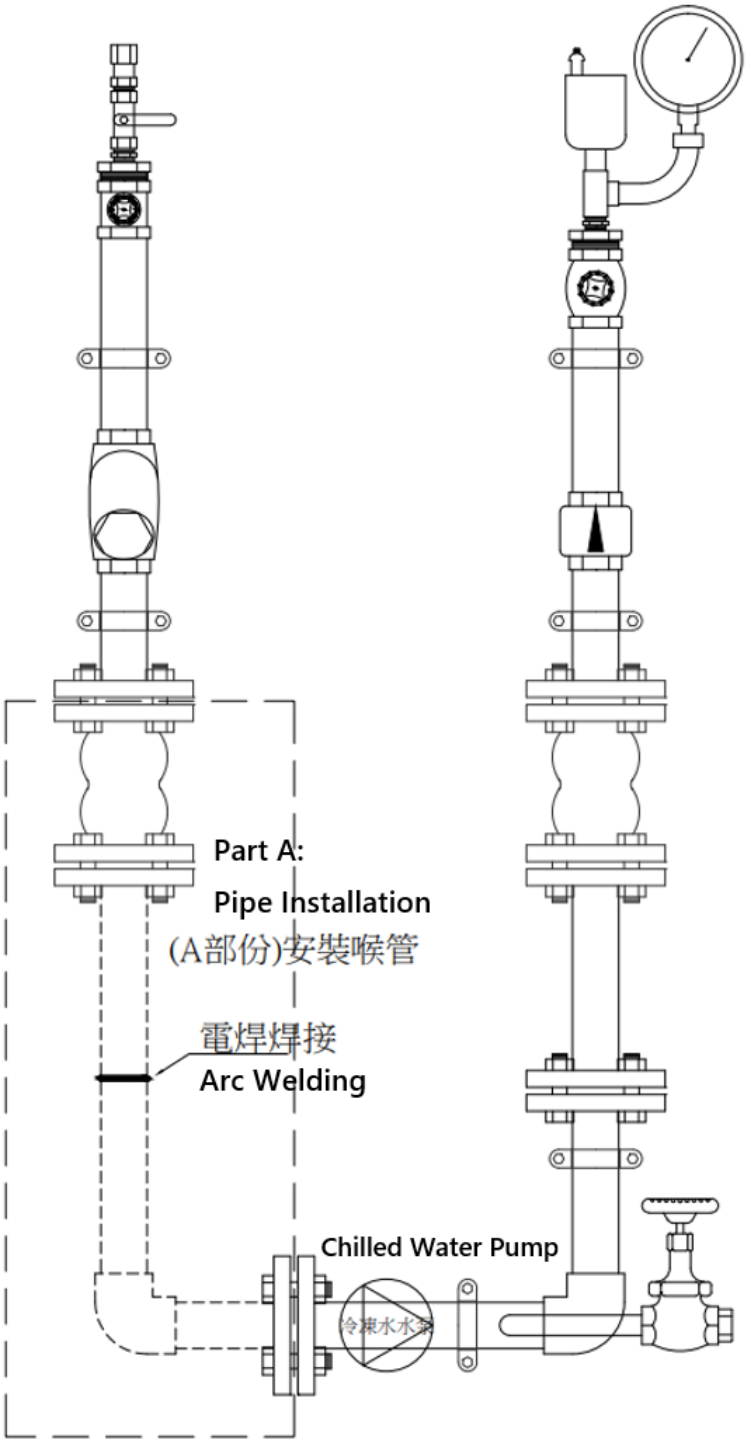
Working Drawing (2)



Note :

① Drawing not to scale

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Notes to Candidate

1. Candidates should read the test papers carefully and ask the invigilator for any queries.
2. The practical test making scheme is based on the following criteria:
   a. Understanding of drawing and specification
   b. Preparation work before commencement of test
   c. Working procedures, accuracy and quality of work
   d. Proper handling and use of materials
   e. Proper use of tools and equipment
   f. Housekeeping after completion of test
   g. Safety precautions
3. Candidates should study the drawings and specifications attached to the test paper, if any, before the test begins.
4. Candidates should carry out the test according to test papers, working drawings and specifications provided.
5. Candidates should bring their own safety shoes and appropriate workwear, other safety equipment will be provided by HKCITTC. Candidates must take all necessary safety precautions to ensure work safety.
6. All tools and materials required by the test will be provided by HKCITTC, candidates should check and ensure their adequacy and quality. All the tools must be returned to HKCITTC after the test. The candidates may ask the invigilator for any problems.
7. Candidates are required to handle and move the tools and materials for use in the test, and to carry out associated work.
8. All candidates must stop when time is up.
9. Candidates are required to return the test paper to invigilator after the test.
10. Invigilators will take record photos periodically during the test.
11. Candidates are not allowed to take any photo or video with cameras or mobile phones.
12. Candidates are not allowed to use their mobile phones during the trade tests, except for in an emergency.
13. Offering bribes to an invigilator is an offence in law and HKCITTC will report to the ICAC for any such case.
14. Subject to certain situations and/or conditions of the date of event, trade tests/courses could be at any moment suspended or postponed at discretion of the invigilators. Examples of such situation/condition could be, but not limited to, (a) sudden operation disruptions to classrooms, test venues, test equipment or tools etc. due to unforeseeable mishaps; (b) sickness or injury of candidates, students or elated staff of the HKCITTC; (c) adverse weather conditions. HKCITTC will rearrange another appointment, for free, with the candidates/students affected. Whilst every effort is made to ensure the smooth running of trade test/courses, the HKCITTC will not resume any liability any loss/damage directly or indirectly related to such arrangement.

In the event that the candidate fails to take any necessary safety precautions and / or works in any dangerous situations, he / she will be deemed failed.

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