

NOCC-A21 Electrician: Competence Package

Relevant Occupation/trade title: Electrician			SAQA ID: 91761		
Learning Area 7: Install wire, test and maintain electrical motors and associated control systems - Basic			Total Hours:		56
Learning Project 3: Install and wire single phase alternating current (AC) motors			Total Hours:		8
Requisite learning areas/projects to be in place (Pre-requisite and co-requisite):		• LA 6			
Learning project description: Install and wire single phase alternating current motors					
Activity phase	Practical Skills Modules Content	Underpinning Knowledge Module Content	Work Experience Module Content	Didactical-methodological advice	Learning materials/Tools and Equipment
Reference to QCTO Curriculum	PM-01 (PS01, 02,03,04) PM-02 (PS01, 02,03) PM-03 (PS01, 02,03) PM-04 (PS01, 02,03) PM-05 (PS01- 06) PM-06 (PS01, 02)	KM-06-KT01	WM-01 (WE01, 02,03) WM-02 (WE01, 02,03) WM-03 (WE01, 02,03) WM-04 (WE01, 02,03)		
Planning/ Preparation	<u>Provide access to (Given):</u> <ul style="list-style-type: none">Single phase motorsRotary switch (forward/reverse)Contactors (forward/reverse)Starter/training panel Job cards, material and equipment as per last column; <u>Apprentices must be able to do/perform the following (hard and soft) skills:</u> <ul style="list-style-type: none">Select and wear PPERead and interpret task instructionsConduct risk assessmentSelect the correct tools and equipmentTransport tools and equipment to workstation safely	<u>Knowledge of:</u> <ul style="list-style-type: none">Discharging capacitors safelyReading and interpreting power circuit diagramsThe operating/working principles of single phase motors.Range: includes but not limited to capacitor start, capacitor start capacitor run, permanent capacitor motors, resistance start capacitor run (split phase motor)Main components of single phase motor: Range: Capacitor, centrifugal switch, starting windings, running windingsChanging the direction of rotation of single phase motor using a rotary switch and contactors	<u>Under supervision:</u> <ul style="list-style-type: none">Install and wire single phase starter(s)Install single phase cable from the supply to a starterPerform single phase motor test(s)Connect single phase motor to a starterCommission single phase system(s)	Lecture, presentations DVDs, audio-visual Group/individual work Internet Motor Trainer	Print materials, electronic files, software applications incl.: <ul style="list-style-type: none">Training manuals for trainers and apprentices incl. multimedia softwareSet of presentation aids (videos, slides) for overhead or LED/LCD projectors Tools, equipment and materials incl.: Range of materials and tools to be covered (minimum): <ul style="list-style-type: none">Electricians toolbox Materials:

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Implementation/ Execution	<ul style="list-style-type: none">Wire starterPerform motor test on a single phase motorConnect starter to motorCommission the system	<ul style="list-style-type: none">Motor test to be performed on single phase motors. Range: continuity test, insulation resistance between components, insulation resistance between conductors and earth, mechanical examination.Advantages and disadvantages of single phase motors			<ul style="list-style-type: none">CableCable GlandsCable trayCable tieswall plugsLugsFerrules
Evaluation/ Documentation	<ul style="list-style-type: none">Evaluate the correctness of the completed task according to drawings and/or instructionsReport work progress to appropriate personnelInspect and clean toolsStore and secure tools and materialsComplete applicable work documentationPerform housekeeping				Tools <ul style="list-style-type: none">Multi-meterInsulation resistance testerDrilling machineDrill bitsCrimping toolCable strapping tool
Total	Hours: 8				
Specialisation additions	Equipment that requires authorisation				
Assessment guidance					
<ul style="list-style-type: none">Self assessmentGroup assessmentTheory test Criteria for assessment: <ul style="list-style-type: none">Correct PPE is wornTask is completed as per job cardCorrect cable size usedOverloads are at the correct settingOver-current devices selected are at the correct ratingSafety procedures are followedRisk assessment undertakenMotor test report completedHousekeeping performed					