



Practical Exam LEVEL 1

Project Title: PRACTICAL FINAL	Class: 14, Level 1 - 11/12/2024
Apprentice:	Instructor:

Procedure:	Notes:
<p>Part 1 - Connecting solid wire with wire nuts</p> <p>Use the proper wire nut and method to connect four (4) #14 solid wires together</p> <p>Time Limit: 5 minutes</p>	<p>Materials Needed:</p> <p>Four (4) 12" lengths of solid wire 1 labeled box of each of the following wire nuts:</p> <ul style="list-style-type: none">• Blue• Orange• Yellow• Red• Green <p>Tools Needed:</p> <ul style="list-style-type: none">• Wire strippers• Pliers• Wire cutters
<p>How to Pass:</p> <ul style="list-style-type: none">• Finish the task in under 5 minutes• Wires are stripped an appropriate length (not too long or short)• All copper wire is hidden under the wire nut• Wires have been stripped enough to make a good connection, without damaging the conductor• You may only ask for inspection and signature ONCE	

Visual References:

Part 1 - Connecting solid wire with wire nuts





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<p>Part 2 - Connecting stranded wire with wire nuts</p> <p>Use the proper wire nut and methods connect five (5) 12" lengths of stranded wire</p> <p>Time Limit: 5 minutes</p>	<p>Materials Needed:</p> <p>Five (5) 12" lengths of stranded wire 1 labeled of each of the following wire nuts:</p> <ul style="list-style-type: none">• Blue• Orange• Yellow• Red• Green <p>Tools Needed:</p> <ul style="list-style-type: none">• Wire strippers• Pliers• Wire cutters

How to Pass:

- Finish the task in under 5 minutes
- Strip the wires an appropriate length (not too long or short)
- All copper wire is hidden under the wire nut
- Wires have been stripped enough to make a good connection, without damaging the conductor
- You may only ask for inspection and signature ONCE



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<p>Part 3 - Crimping Wires</p> <p>Use the proper crimp to make the following three connections:</p> <ol style="list-style-type: none"> 1. Butt splice two (2) #14 wires together 2. Crimp a #12 wire to a fork Stakon 3. Crimp a #16 wire to a fork Stakon <p>Time Limit: 8 minutes</p>	<p>Materials Needed:</p> <p>Two (2) 12" lengths of #14 stranded wire</p> <p>Two (2) 12" lengths of #18 wire</p> <p>Two (2) 12" lengths of #12 wire</p> <p>1 labled box of each of the following crimps:</p> <ul style="list-style-type: none"> • Blue butt splice • Red butt splice • Yellow butt splice • Blue fork Stakon • Red fork Stakon • Yellow fork Stakon <p>Tools Needed:</p> <ul style="list-style-type: none"> • Wire strippers • Pliers • Wire cutters • Hand crimpers

<p>How to Pass:</p> <ul style="list-style-type: none"> • Finish the task in under 8 minutes • Wires are stripped an appropriate length (not too long or short) • All copper wire is hidden under crimp • Wires have been stripped enough to make a good connection, without damaging the conductor • Crimp is tight and connection is solid • You may only ask for inspection and signature ONCE



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<p>Part 4 - Rigid Conduit Bending</p> <p>Using a Chicago style bender and one (1) 5' piece of rigid conduit make the bends required to fit the following scenario:</p> <p>A jig will be made with and the apprentice must bend box offsets and a saddle to clear the obstacle. When the conduit is done, the student will be able to strap the conduit to the wooden jig.</p> <p>Time Limit: 20 minutes</p>	<p>Materials Needed:</p> <ul style="list-style-type: none"> • ¾ plywood 60" long x 18" wide • Two 4 x 4 boxes paced 48" apart • One 4 x 4 x 12" beam - Centered between the boxes • One (1) 5' piece of ½ rigid • Two (2) rigid set screw connectors • Two (2) rigid straps • 10 x ¾ #10 screws <p>Tools Needed:</p> <ul style="list-style-type: none"> • ¾ EMT hand bender • Bandsaw • Phillips screwdriver • Flat screwdriver • ½ round file

<p>How to Pass:</p> <ul style="list-style-type: none"> • Finish the task in under 20 minutes • Meet the requirements of the jig: <ol style="list-style-type: none"> 1. The box offsets are straight 2. The conduit lines up with the box opening 3. The conduit saddle is within ¾" of the obstacle at the middle point 4. The conduit is filed, strapped, straight and without dog legs • You may only ask for inspection and signature ONCE
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<p>Part 5 - Sealtight</p> <p>Install two pieces of sealtight using proper installation methods:</p> <ul style="list-style-type: none">• Box on the wall to a motor on the floor• Disconnect to motor• Simulate conduit from the ground to a motor <p>Time Limit: 15 minutes</p>	<p>Materials Needed:</p> <ul style="list-style-type: none">• 10' roll of 1/*2 sealtight• Four (4) ½ straight sealtight connectors• Four (4) ½ straight 45 degree connectors• Four (4) ½ 90 degree connectors• ½ straps• Screws <p>Tools Needed:</p> <ul style="list-style-type: none">• Bandsaw• Two (2) channel locks• Pliers• Phillips screwdriver or torque gun

<p>How to Pass:</p> <ul style="list-style-type: none">• Finish the task in under 15 minutes• Cleanly cut the sealtight and install the connectors properly• Run the sealtight on 90 degree bends• Ensure the sealtight is a good length for neatness and not too tight or loose• You may only ask for inspection and signature ONCE
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<p>Part 6 - Cable Tray</p> <p>Cut the pieces of cable tray so they are both the same length then join them together so the final length of cable tray is 24" long</p> <p>Time Limit: 15 minutes</p>	<p>Materials Needed:</p> <ul style="list-style-type: none"> • Two (2) pieces of cable tray that are 12 x 4 x 14" long • Two (2) tray connectors • Eight (8) 3/8 nuts, bolts washers, lock washers <p>Tools Needed:</p> <ul style="list-style-type: none"> • Bandsaw • Drill • 3/8 bit • Tape measure • Marker • Speed Square • File or grinder • Socket set • Adjustable wrench
<p>How to Pass:</p> <ul style="list-style-type: none"> • Finish the task in under 15 minutes • Cable tray is cut straight and ends are filed • Overall length is 24" (tolerance of 1/4") and both pieces are even (tolerance of 1/4") • You may only ask for inspection and signature ONCE 	