

# *HANDS-ON PRINT READING FOR WELDERS*

*WORKBOOK*

Michael Mohn, CWI  
Technology Education Resources, LLC  
Monroe, Michigan

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Technology Education Resources, LLC

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## INTRODUCTION

Welding symbols and print reading are indispensable skills for the modern welder. This hands-on course was developed and fine-tuned over a ten-year period at Monroe County Community College (MI) for the Welding Technology program.

The hands-on nature of this course makes it unique among typical print reading courses. In most textbook-based courses, students simply look at numerous sample prints and answer various questions in hope that they will learn to read prints. In this course, however, building weldment models according to prints leaves no doubt as to print reading ability. Using foam instead of steel, and glue instead of filler metal, allows the student to make both simple and advanced weldments while concentrating on building print reading skills. The course finishes with three weldment samples which match the AWS QC7 Certified Entry-Level Welder test weldments. Those welding students going on to take the AWS QC7 certification course will find this aspect *Hands-On Print Reading for Welders* especially valuable.



## TOOLS AND SUPPLIES

For this hands-on course, you will be constructing ten weldment projects from expanded polystyrene foam board, PVC pipe, and hot-melt glue. In addition to the prints in this workbook, the following supplies and tools will be used for constructing the models in this course:

### Expendable Supplies

- 11" x 17" x  $\frac{3}{16}$ " (5mm) expanded polystyrene foam, 4 sheets. Refer to the cutting sheet to ensure that you will be able to obtain all the needed pieces from the 5 sheets. There will be a little left over for rework if needed.
- 11" x 17" x  $\frac{5}{8}$ " (16mm) expanded polystyrene foam, 1 sheet. For two of the projects, you will be gluing three layers of  $\frac{5}{8}$ " foam together with PVA (white glue) to make a thicker block.
- $\frac{3}{4}$ " Schedule 40 PVC pipe, 7 pieces of assorted lengths.
- PVA (white glue).
- Low temperature glue sticks. Don't use high temperature glue sticks on polystyrene foam—it will melt the foam.

### Tools

- Safety Glasses. Always wear safety glasses when working with tools.
- Basic drafting kit, including compass and protractor.
- 12" combination square with metal head. Plastic square heads will melt in the welding shop.
- Inch/metric tape measure.
- Cutting board. Always use the cutting board when cutting foam with a razor knife. Don't use this board for food, especially after using it in the shop.
- Razor knife.
- Hole saw. You can use the hole saw by hand to cut foam, or chuck it into a drill press (not included).
- Coping saw. Good for cutting thick foam pieces.
- Low temperature glue gun. Use with the low-temperature glue sticks for "welding" the models together.

