HOBART INSTITUTE OF WELDING TECHNOLOGY

WELDING TRAINING MATERIALS CATALOG 2019

Oxyacetylene Welding, Brazing and Cutting
Instructor Guide

Toll Free: 1.800.332.9448
Phone: 937.332.9500
FAX: 937.332.9550
orders@welding.org

Hobart Institute of Welding Technology®,
400 Trade Square East, Troy, Ohio 45373 USA
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20% Educational Discount applies to non-profit schools with 501(c)3 status. Some exceptions apply.
**Shielded Metal Arc Welding**

The Shielded Metal Arc Welding program is a complete training program. The fundamentals of shielded metal arc welding are covered in the basic program. It provides training in all positions, on mild steel with single and multipass welds. SMAW-1 (Structural) teaches welding on single V-groove welds on carbon steel with multipass welds in all positions with backing strips. SMAW-2 (Pre-pipe) teaches welding on single V-groove welds with open root on carbon steel with multipass welds in all positions. SMAW-2 is in preparation for the transition to pipe welding. There are three pipe welding courses; 2" Pipe Uphill, 6" Pipe Uphill and 6" Pipe Downhill.

SMAW is an electric arc welding process where the heat for welding is generated by an electric arc between a covered metal electrode and the work.

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**Shielded Metal Arc Welding Basic**

Complete Course: 4 DVDs (3 hrs. 33 min); 1 Instructor Guide; 5 written tests, 50 copies each

**Item No.**

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<td>5 written tests, 50 copies ea.</td>
<td>V01.41</td>
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<td>Instructor guide*</td>
<td>V01.40</td>
<td>$59.00</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for tests

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**Shielded Metal Arc Welding – Structural (Advanced 1)**

Complete Course: 3 DVDs (1 hr. 58 min); 1 Instructor Guide; 4 written tests, 50 copies each

**Item No.**

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<td>Instructor guide*</td>
<td>V02.40</td>
<td>$59.00</td>
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*Includes 1 student workbook, 1 technical guide & answer keys for tests

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**To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org**
Shielded Metal Arc Welding – Pre-pipe (Advanced 2)

Complete Course: 3 DVDs (1 hr, 58 min); 1 Instructor Guide; 4 written tests, 50 copies each

Recommended as an advanced curriculum to prepare students for SMAW – open root – pipe welding.

Topics
1. Shielded Metal Arc Welding Pre-pipe - Course Overview
2. Introduction to Shielded Metal Arc Welding
3. Safety & Health of Welders
4. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
5. Weld Size & Profile
6. Procedure & Welder Qualification
7. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position, Destructive Test
8. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
9. Destructive Testing
10. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
11. Nondestructive Testing
12. Single V-Groove Weld, Butt Joint, Vertical Down (3G) Position
13. Air Carbon Arc Cutting & Gouging
15. Single V-Groove Weld, Butt Joint, Vertical (3G) Position, Destructive Test
16. Metals Identification Of Welding
17. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
18. Welding Cast Iron & Hard Surfacing Welds
19. Single V-Groove, Butt Joint, Flat (1G) Position

Product | Item No. | List Price
--- | --- | ---
Complete SMAW-2 course | DV05 | $1,125.00
4 written tests, 50 copies ea. | V08.41 | $40.00
Instructor guide | V05.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V03.50 | $500.00

Shielded Metal Arc Welding 6-Inch Pipe Uphill

Complete Course: 2 DVDs (1 hr, 57 min); 1 Instructor Guide; 5 written tests, 50 copies each

Topics
1. Shielded Metal Arc Welding 6" Pipe Uphill - Course Overview
2. Introduction to Shielded Metal Arc Welding Pipe
3. Safety & Health of Welders
4. Weld Quality: Reading the Puddle
5. Preparation & Assembly of an Open Root Pipe Joint
7. Standard Destructive Test - Schedule 80 Pipe
8. Methods of Applying the Root Pass
9. Single V-Groove Weld, Butt Joint, (5G) Pipe - Schedule 80
10. How to Read & Apply Welding Procedures
12. Preheat & Interpass Temperatures

Product | Item No. | List Price
--- | --- | ---
Complete SMAW 6" Pipe Uphill | DV06 | $1,125.00
5 written tests, 50 copies ea. | V06.41 | $40.00
Instructor guide | V06.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V06.50 | $500.00

Shielded Metal Arc Welding 2-Inch Pipe Uphill

Complete Course: 2 DVDs (1 hr, 54 min); 1 Instructor Guide; 2 written tests, 50 copies each

Topics
1. Shielded Metal Arc Welding 2" Pipe Uphill - Course Overview
2. Introduction to Shielded Metal Arc Welding Pipe
3. Safety & Health of Welders
4. Weld Quality: Reading the Puddle
5. Preparation & Assembly of an Open Root Pipe Joint - Double Extra Strong (XX Strong)
7. Standard Destructive Test - Double Extra Strong Pipe (XX Strong)
8. Single V-Groove Weld, Butt Joint, (5G) Pipe - Double Extra Strong (XX Strong)
10. Preparation & Assembly of an Open Root Pipe - Schedule 80
11. Single V-Groove weld, Butt Joint, (2G) Pipe - Schedule 80
12. Standard Destructive Test Schedule 80 Pipe
13. Single V-Groove Weld, Butt Joint, (5G) Pipe - Schedule 80

Product | Item No. | List Price
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Complete SMAWPD | DV04 | $1,125.00
2 written tests, 50 copies ea. | V04.41 | $30.00
Instructor guide | V04.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V04.50 | $500.00

15. Pipe Scheduling & Tubing Dimensions

To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
**Gas Metal Arc Welding Basic**

Complete Course: 3 DVDs (2 hrs. 10 min); 1 Instructor Guide; 2 written tests, 50 copies each  
**ITEM NO.** DV10

Based on AWS® Entry-Level SENSE (QC10 and EG 2.0)

Topics
1. Gas Metal Arc Welding Basic - Course Overview
2. Introduction to Gas Metal Arc Welding
3. Safety & Health of Welders
4. Installation, Setup & Maintenance of Equipment
5. Surfacing Welds, Flat Position
6. Square Groove & Fillet Welds, Butt, Lap & T-joints, Flat Position
7. Square Groove & Fillet Welds, Butt, Lap & T-joints, Horizontal Position
8. The Quality of Welds
9. Square Groove & Fillet Welds, Butt, Lap & T-joints, Vertical Position, Down
10. Square Groove & Fillet Welds, Butt, Lap & T-joints, Vertical Position, Up
11. Metal Transfer & Shielding Gases
12. Square Groove & Fillet Welds, Butt, Lap & T-joints, Overhead Position
13. Square V-Groove, Butt Joint, Horizontal Position
14. Square V-Groove, Butt Joint, Horizontal Position, Guided Bend Test
15. Square V-Groove, Butt Joint, Vertical Position, Down
16. Square V-Groove, Butt Joint, Vertical Position, Down, Guided Bend Test
17. Square V-Groove, Butt Joint, Vertical Position, Up
18. Square V-Groove, Butt Joint, Flat Position
19. Square V-Groove, Butt Joint, Overhead Position
20. Fillet Welds, Lap & T-joints, Horizontal Position
21. Fillet Welds, Lap & T-joints, Vertical Position, Down
22. Fillet Welds, Lap & T-joints, Flat Position with Spray Transfer
23. Fillet Welds, Lap & T-joints, Horizontal Position with Spray Transfer
24. Single V-Groove Weld, Flat Position with Spray Transfer

**Gas Metal Arc Welding Advanced**

Complete Course: 2 DVDs (1 hr. 52 min); 1 Instructor Guide; 2 written tests, 50 copies each  
**ITEM NO.** DV11

Topics
1. Gas Metal Arc Welding Advanced - Course Overview
2. Introduction to Gas Metal Arc Welding - Spray & Pulse Spray Transfer
3. Safety & Health of Welders
4. Equipment Set-Up, Operation & Shut-Down
5. Single V-Groove Weld, Butt Joint, (1G) Position - Spray
6. Introduction to Pulse Spray Transfer
7. Single V-Groove Weld, Butt Joint, (2G) Position - Pulse
8. Standard Destructive Test
9. Weldability of Aluminum Alloys
10. Fillet Weld, Lap & T-joint (2F) Position
11. Fillet Weld, Lap & T-joint (3F) Position
12. Single V-Groove Weld, Butt Joint, (3G) Position
15. Fillet Weld, Lap & T-Joint (2F) Position

**Gas Metal Arc Welding Pipe**

Complete Course: 2 DVDs (1 hr. 10 min); 1 Instructor Guide; 2 written tests, 50 copies each  
**ITEM NO.** DV15

Topics
1. Gas Metal Arc Welding Pipe - Course Overview
2. Introduction to Gas Metal Arc Welding
3. Safety & Health of Welders
4. Equipment Setup, Operation & Shutdown
5. Preparation & Assembly of an Open Root Pipe Joint
6. Single V-Groove Weld, Butt Joint, (2G) Position
7. Weld Quality: Visual Inspection
8. Standard Destructive Test - Schedule 80 Pipe
10. Single V-Groove Weld, Butt Joint, (5G) Position Downhill Root, Uphill Fill & Cover

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete GMAW pipe course | DV15 | $1,125.00
2 written tests, 50 copies ea. | V15.41 | $30.00
Instructor guide* | V15.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V15.50 | $500.00

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To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
**Flux-Cored Arc Welding**

The Flux Cored Arc Welding training program provides the student with a thorough understanding of the Flux Cored Arc Welding process. It provides training in all positions, on carbon steels, with and without shielding gas, using small and large diameter flux cored electrodes.

**Gas Tungsten Arc Welding**

The Gas Tungsten Arc Welding program is a complete training program. The fundamentals of Gas Tungsten Arc Welding are covered in the basic program. It provides training on mild steel, stainless steel and aluminum, using both direct and alternating current. Gas Tungsten Arc Welding Pipe is divided into two programs. Gas Tungsten Arc Welding 2-inch Pipe prepares the student for pipe welding, and teaches the student to weld on 2-inch Sch. 80 pipe, in all positions. Gas Tungsten Arc Welding 6-inch Pipe provides training on 6-inch pipe using GTAW to deposit the root and second pass; and SMAW to complete the weld. Students also weld on stainless steel pipe and with a consumable insert.
**COMPLETE DVD COURSES**

29. Fillet Weld, Lap Joint, Horizontal & Flat Positions (Aluminum)
30. Square-Groove Weld, Butt Joint, Flat Position (Aluminum)
31. Fillet Weld, T-Joint, Horizontal & Flat Positions (Aluminum)
32. Fillet Weld, T-Joint, Vertical Position, Up (Aluminum)
33. Visual Inspection Test, Aluminum

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete GTAW course (DVD) | DV20 | $1,125.00
4 written tests, 50 copies ea. | V20.41 | $30.00
Instructor guide* | V20.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V20.50 | $500.00

**Gas Tungsten Arc Welding 2-Inch Pipe**

Complete Course: 2 DVDs (1 hr. 30 min); 1 Instructor Guide; 1 written test, 50 copies each

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete GTAW 2" Pipe | DV22 | $1,125.00
1 written test, 50 copies ea. | V22.41 | $24.00
Instructor guide* | V22.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for test
Site License | V22.50 | $500.00

**Gas Tungsten Arc Welding - Shielded Metal Arc Welding 6-Inch Pipe**

Complete Course: 2 DVDs (1 hr. 57 min); 1 Instructor Guide; 2 written tests, 50 copies each

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete GTAW-SMAW Pipe | DV26 | $1,125.00
2 written tests, 50 copies ea. | V26.41 | $30.00
Instructor guide* | V26.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for tests
Site License | V26.50 | $500.00

**Oxyacetylene Welding, Cutting & Brazing**

The Oxyacetylene Welding, Cutting and Brazing program is a complete training program. It teaches the student to flame cut plate, braze mild steel, cast iron and copper. There is related information on weld quality and applications of fuel gases, not used in this course.

**Product** | **Item No.** | **List Price**
--- | --- | ---
Complete Oxyacetylene Welding, Cutting & Brazing | DV30 | $1,125.00
1 written test, 50 copies ea. | V30.41 | $24.00
Instructor guide* | V30.40 | $59.00
*Includes 1 student workbook, 1 technical guide & answer keys for test
Site License | V30.50 | $500.00

**Topics**
1. Oxyacetylene Welding, Cutting & Brazing - Course Overview
2. Introduction to Oxyacetylene Welding, Cutting & Brazing
3. Oxyacetylene Welding Safety
4. Safety & Health of Welders
5. Equipment Setup, Operation & Shutdown
6. Weld Quality: Controlling the Welding Variables
7. Stringer Bead, Bead on Plate - With & without Filler Metal, Flat Position
8. Fillet Weld, Lap Joint, Horizontal (2F) Position
9. Fillet Weld, Inside Corner Joint, Horizontal (2F) Position
10. Fillet Weld, Lap Joint, Vertical (3F) Position
11. Fillet Weld, Inside Corner Joint, Vertical (3F) Position
12. Square Groove Weld, Butt Joint, Vertical (3G) Position
13. Introduction to Oxyacetylene Flame Cutting
14. Standard Destructive Test, Visual Inspection & Guided Bend Test
15. Square Groove Weld, Butt Joint, Flat (1G) Position
16. Square Groove Weld, Butt Joint, Overhead (4G) Position
17. Square Groove Weld, Butt Joint, Horizontal (2G) Position
18. Application of Fuel Gases
20. Square-Groove, Bevel & Hole Cuts - Visual Inspection
21. Single V-Groove Weld, Butt Joint, Vertical (3G) Position
22. Single V-Groove Weld, Butt Joint, Flat (1G) Position
23. Single V-Groove Weld, Butt Joint, Overhead (4G) Position
24. Single V-Groove Weld, Butt Joint, Horizontal (2G) Position
25. Single V-Groove Weld, Butt Joint, (5G) Position, 2" Pipe
27. Introduction to Soldering, Brazing & Braze Welding

To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
28. Fillet Weld, Lap Joint, Square-Groove, Butt Joint, Braze Weld, Horizontal (2F) & Flat (1G) Position
29. Socket Joint, Brazed Copper (2F) Position
30. Socket Joint, Brazed Copper (5F) Position

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**Welding Procedures & Qualification**

**Complete Course:** 1 DVD (26 min); 1 Instructor Guide; 1 written test, 50 copies **ITEM NO.** DV86.3

**Topics**
1. Purpose of Welding Procedures & Qualification
2. Welding Procedure Specifications
3. Procedure Qualification Records
4. Performance Qualification
5. Maintaining Qualification Records

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<td>Instructor guide* .................................. V86.73</td>
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**Destructive Testing Methods**

**Complete Course:** 1 DVD (43 min); 1 Instructor Guide; 1 written test, 50 copies **ITEM NO.** DV86.5

**Topics**
1. Introduction to Destructive Testing
2. Tensile Tests
3. Impact Tests
4. Guided Bend Tests
5. Nick Break Tests
6. Fillet Weld Break Tests
7. Etch Tests

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<td>Instructor guide* .................................. V86.75</td>
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**Nondestructive Testing Methods**

**Complete Course:** 1 DVD (45 min); 1 Instructor Guide; 1 written test, 50 copies **ITEM NO.** DV86.6

**Topics**
1. Introduction to Nondestructive Testing
2. Principles of Visual Inspection
3. Principles of Liquid Penetrant Testing
4. Principles of Magnetic Particle Testing
5. Principles of Ultrasonic Testing
6. Principles of Radiographic Testing

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<td>Instructor guide* .................................. V86.76</td>
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**Student Workbooks are listed on Page 12**

To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
Common Arc Welding Processes

Topics
1. Introduction to Common Arc Welding Processes
2. Safety and Health of Welders
3. Introduction to Shielded Metal Arc Welding
4. SMAW Electrode Selection
5. Introduction to Gas Metal Arc Welding
6. GMAW Metal Transfer and Shielding Gases
7. Introduction to Flux Cored Arc Welding
8. FCAW Electrode Classification and Selection
9. Introduction to Gas Tungsten Arc Welding
10. The Essentials of GTAW

Product | Item No. | List Price
--- | --- | ---
Complete Course | DV85 | $500.00
2 written test, 50 copies | V85.41 | $30.00
Instructor guide | V85.40 | $59.00
Site License | V85.50 | $500.00

Symbols for Welding

Topics
1. Introduction
2. Basic Elements of the System
3. Weld Symbols for Length and Arrangement
4. Supplementary Symbols and Reference
5. Plug and Slot Welds
6. Spot Welds and Seam Welds
7. Groove Weld Symbols
8. Backing, Back, Melt-thru, and Surfacing Symbols
9. Edge Weld and Combination Weld Symbols

Product | Item No. | List Price
--- | --- | ---
Complete Symbols for Welding Course | DV80 | $500.00
Instructor guide | V80.40 | $59.00
*Includes 1 student workbook & answer keys for test
Site License | V80.50 | $500.00

Basic Metallurgy

Included in complete GTAW course (DV20.0)

Topics
- The metallurgy & weldability of carbon steel
- The welding characteristics of stainless steel
- The welding characteristics of aluminum

Product | Item No. | List Price
--- | --- | ---
Basic Metallurgy (DVD) | DV40 | $500.00

To order, use form on page 17, Call 800.332.9448 Ext. 9509 or visit www.welding.org
Blueprint Reading for Welders & Fitters

Complete Course: 2 DVDs (1 hr. 40 min)
1 Instructor Guide

ITEM NO. DV81

Topics
1. Introduction to blueprint reading for welders and fitters
2. Review of mathematics
3. Metrics and metric conversions
4. Review of welding symbols
5. Orthographic views
6. Standard drawing lines and symbols
7. Interpreting blueprint information
8. Surface and centerline relationships
9. Auxiliary views
10. Scale drawings
11. Dimensional tolerance and stock allowance
12. Set-up tools
13. Set-up applications

Product Item No. List Price
Complete Blueprint Reading Course ........... DV81 $500.00
Instructor guide* ........................................ V81.40 $59.00
*Includes 1 student workbook & answer keys for test
Site License ................................................ V81.50 $500.00

Advanced Blueprint Reading

Complete Course: 1 DVD (46 min)
1 Instructor Guide

ITEM NO. DV83

Topics
1. Development of Blueprints and Drawings
2. Standards, Codes and Specifications
3. Standard Plates and Shapes
4. Blueprint Reading
5. Calculating Measurements and Common Layout Tools
6. Pipe Essentials
7. Role of the Welder in Quality and Safety
8. Fabrication Tools

Product Item No. List Price
Complete Advanced Blueprint Reading Course ................... DV83 $500.00
Instructor guide* ........................................ V83.40 $59.00
*Includes 1 student workbook & answer keys for test
Site License ................................................ V83.50 $500.00

Pipe Layout for Pipefitters & Welders

Complete Course: 2 DVDs (1 hr. 50 min)
1 Instructor Guide

ITEM NO. DV82

Topics
1. Introduction to Pipe Layout for Pipefitters and Welders
2. Review of Basic Shapes & Pipefitter Terminology
3. Review of Basic Mathematic Calculations
4. Review of Decimals
5. Review of Geometric Calculations
6. Angles & Angular Layout
7. Calculated Welded Offsets
8. Offsets Other than 45o & 90o
9. Welded Offsets
10. Multiple Turn Layouts
11. Two Piece Parallel Offsets
12. Offsets Around Obstructions
13. Rolling Offsets
14. Fabricated Tees
15. Lateral Tees
16. Circumferential Sleeves
17. Pipe Blanking
18. Elliptical Holes & Blind Flanges
19. Fabricating Brackets

Product Item No. List Price
Complete Course ............................................. DV82 $1,195.00
Site License – Pipe Layout for Pipefitters & Welders.......................... V82.50 $500.00

Additional Pipe Layout Instructor Guides
Includes 1 student workbook & answer keys for tests ...
V82.40 $59.00

SITE LICENSE (SL)

In response to requests to place DVD’s on company and school intranets (private networks) a site license (SL) at an additional cost of $500.00 per program is now available for each DVD program purchased from Hobart Institute of Welding Technology (HIWT). DVD programs may contain multiple DVD’s. A separate site license is required for each program you intend to distribute.

The site license, granted for a three year period, includes a signed document authorizing the electronic distribution of HIWT training materials to others within your organization’s secure network. The intranet distribution of Hobart Institute DVD’s without a site license is prohibited.

Test are included with each student packet on page 13, not DVD programs.
Student Workbooks

Workbooks follow the DVDs topic-by-topic, and take a step-by-step approach to practice sessions, featuring objectives; set-up instructions; materials and machine settings; and summaries of essential theory with lots of illustrations. All destructive tests are based on AWS®, ASME or API codes.

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<th>Product Description</th>
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<td>Oxyacetylene Welding, Cutting &amp; Brazing</td>
<td>EW-369 OAW</td>
<td>$23.00 ea.</td>
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<td>Shielded Metal Arc Welding Basic</td>
<td>EW-369 SMAWB</td>
<td>$23.00 ea.</td>
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<tr>
<td>Shielded Metal Arc Welding Structural (Advanced 1)</td>
<td>EW-369 SMAWA-1</td>
<td>$23.00 ea.</td>
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<tr>
<td>Shielded Metal Arc Welding Pre-pipe (Advanced 2)</td>
<td>EW-369 SMAWA-2</td>
<td>$23.00 ea.</td>
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Programmed Learning Courses
from Hobart Institute of Welding Technology

These courses provide a simple yet complete method for students to learn and understand the principles of welding symbols, symbols for nondestructive examination, blueprint reading and pipe layout. Each page is designed to teach a small amount of information which is reinforced through an action/problem and self-check (see illustration at right). Each page builds for the next as the student learns in an efficient and rewarding manner.

Symbols for Welding
The symbols for welding course is based on the AWS® A2.4 Symbols for Welding and Nondestructive Examination Standard. This system of communication provides the vital link between the designer and people responsible for producing and planning welding. 3 Tests are included with each student packet. 113 pages.

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<td>EW-342</td>
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<tr>
<td>Key to tests</td>
<td>EW-343</td>
<td>$9.95</td>
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Symbols for Nondestructive Examination
This course is designed to teach students how to interpret nondestructive examination symbols based on AWS 2.4. For the benefit of students not familiar with welding symbols, the first part of the course serves as an introduction. 1 Test is included with each student packet. 38 pages.

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<td>Key to tests</td>
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Blueprint Reading for Welders & Fitters
The blueprint reading for welders and fitters course contains valuable information on mathematics and metrics, Blueprint reading for the welder, blueprint reading for the fitter, setup tools, and set-up applications. 5 Tests are included with each student packet. 170 pages.

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Advanced Blueprint Reading
This two packet course covers the design procedure; interpretation of blueprints and shop drawings as well as applying this information; the use of measuring tools in layout and assembly; having a basic understanding of codes, specifications and standards and to be aware of the responsibility of a welder in quality control. 11 tests included with the packets.

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<td>Key to Tests</td>
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Pipe Layout for Pipefitters & Welders
This 10 section, self-study, programmed learning course includes: Pipefitter terminology, mathematics & plane figures, angles and angular layout, calculated welded offsets, tees, laterals & circumferential sleeves, pipe blanking, elliptical holes, brackets and pipe flanges. Based in part on Thomas W. Frankland's "The Pipe Fitters and Pipe Welder's Handbook," and "Pipe Trades Pocket Manual." 10 Tests are included with each student packet.

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Technical Guides

These guides contain extensive welding information on individual welding processes and welding subjects. They supplement the student workbooks for welding training and have application for manufacturing engineering and quality control. Books are in full color.

Welding Guide — Provides general welding information including common arc welding process descriptions, weldability of metals, non-destructive testing process descriptions, welding data charts and tables, and metric conversion. 116 pages.
Item No. EW-385 ................................................................. List Price $27.00

Gas Tungsten Arc Welding — Covers the process in detail, equipment, applications, procedures, welding training and safety. 100 pages.
Item No. EW-470 ................................................................. List Price $27.00

Shielded Metal Arc Welding — Describes the SMAW process, procedures and applications, electrode selection charts, welding safety and explains equipment used. 80 pages.
Item No. EW-472 ................................................................. List Price $27.00

Gas Metal Arc Welding — The GMAW process, equipment, applications, procedures, safety and welding symbols are all explained in detail. 108 pages.
Item No. EW-473 ................................................................. List Price $27.00

Flux-Cored Arc Welding — This guide describes the self-shielded and gas shielded processes, equipment, methods of application, safety and procedures. 104 pages.
Item No. EW-492 ................................................................. List Price $27.00

Safety & Health of Welders — A valuable guide to protection against the hazards associated with welding. 23 pages.
Item No. EW-607 ................................................................. List Price $18.00

Oxyfuel Welding, Cutting & Brazing — This guide covers the process, equipment, and safety. 82 pages.
Item No. EW-480 ................................................................. List Price $27.00
AWS® Books

Certification Manual for Welding Inspectors — A great study aid for the AWS CWI/CWE exam. Reduce those day-of-test jitters by putting yourself in command of the material that everyone must know to succeed on the CWI® exam. Over 360 questions and answers. 300 pages.
Item No. EW-475 .... List Price $200.00

Welding Inspection — Essential information or the CWI® on manual arc welding inspection techniques including destructive testing and nondestructive examination methods. 222 pages.
Item No. EW-223 ......................................................... List Price $92.00

Welding Terms & Definitions — The comprehensive and official listing of welding and cutting terms and definitions. 128 pages. (ANSI/AWS A3.0)
Item No. EW-291 ......................................................... List Price $132.00

Pipe Welding & Pipe Layout Books

Pipefitters Handbook — A comprehensive reference including tables for pipe bends, offsets, mitered joints and other useful information for shop and field use. Leatherette bound. 410 pages.
Item No. EW-389 ......................................................... List Price $32.00

Pipe Trades Pocket Manual by Frankland — Tables for bending, offsets, miter turn fittings, elbow offsets, solving angles with steel square and more. Leatherette bound. 262 pages.
Item No. EW-390 ......................................................... List Price $26.95

The Pipe Fitters & Pipe Welders Handbook by Frankland — Pocket size booklet containing layout information for making all types of pipe joints. Leatherette bound. 175 pages.
Item No. EW-234 ......................................................... List Price $26.95

Pipe Welding Procedures by H. Rampaul — Written for the welder, describes in detail the manipulative procedures used to weld pipe joints. 208 pages.
Item No. EW-436 ......................................................... List Price $46.00

Pipe Trades Handbook — Covers basic data on tube and pipe, national standards, fittings, valves, joints, offsets, pipe layout, mathematics and pipe welding. 498 pages.
Item No. EW-696 ......................................................... List Price $26.95

Pipe Fitters Bluebook — Contains charts, tables, drawings, instructions on pipe joints and layout.
Item No. EW-697 ......................................................... List Price $25.00

Pipe Layout for Pipefitters and Welders — This 10 section, self-study, programmed learning course from the Hobart Institute of Welding Technology includes pipefitting terminology, mathematics & plane figures, angles and angular layout, calculated welded offsets, tees, laterals & circumferential sleeves, pipe blanking, elliptical holes, brackets and pipe flanges. 10 tests are included with each copy. 249 pages.
Item No. EW-517 ......................................................... List Price $44.00

Answer Key
Item No. EW-519 ......................................................... List Price $11.95

Welding Process Calculator Set

This compact set of three calculators (one each for SMAW, GMAW and GTAW), in a handy vinyl carrying case, is designed to help you work more efficiently across your full range of welding applications.
Item No. EW-700 ....... List Price $4.95
General Welding Books

WELDING: A Journey to Explore its Past by Andre A. Odermatt – What is this simple but complex process called welding? When did it begin? This book is a humble attempt to answer just a few questions about the origins of welding. It is not a textbook or an academic paper. It aims to give the reader some basic knowledge of a few aspects of the history of welding and its problems and its contribution to society, from antiquity to modern times, from brazing and forging to gas welding and electric welding.
Item No. EW-806 1st Edition 184 Pages ................. List Price $17.95
Item No. EW-807 2nd Edition 213 Pages ................. List Price $29.95

Pocket Welding Guide, 32nd Edition — Known as the “Welder’s Bible”, and widely used by students, teachers, hobbyists and professionals as a handy reference, this updated edition features: overviews of all welding processes, examples of good and bad weld beads, causes & cures of common welding problems, welding symbols, guidelines for the identification of metals & calculating filler metal consumption, oven storage & reconditioning of filler metals, shielding gases & their uses, AWS® filler metal classifications & comparative indices, GMAW welding parameter, complete listing of filler metals with operating ranges, filler metal selector guide for welding ASTM steels, troubleshooting guides for semiautomatic wire & equipment, welding terms & definitions, metric conversion tables, and more. 164 pages. 4” x 7” format.
Item No. EW-609 ........................................... List Price $8.00

Properties and Uses of Ferrous and Non-ferrous Metals by Weiss & Leuchtman. 112 pages.
Item No. EW-220 ........................................... List Price $24.95

Total Welding Management by Jack R. Barckhoff, P.E. — Providing a system focused on improvement. It includes management principles, and a planning process with a structured approach. When adopted by a company, it can improve welding quality and productivity, thus helping the company to be- come more competitive and more profitable. 189 pages with index and glossary.
Item No. EW-804 ........................................... List Price $49.95

The Metal Trades Handbook — A book covering all aspects of the metal trades from roping to welding. 458 pages.
Item No. EW-676 ........................................... List Price $26.95

Blueprint Reading for Welders & Fitters — This 5 section self-study, programmed learning course from the Hobart Institute of Welding Technology features sections on mathematics and metrics, print reading for welders, print reading for fitters, set up tools and their uses, and set up applications. 5 tests included with each copy. 176 pages.
Item No. EW-459 ........................................... List Price $28.00
Item No. EW-460 ........................................... List Price $10.95
Answer Key

Advanced Blueprint Reading — This two packet course will enhance the knowledge and abilities entering the welding industry. It will help gain knowledge of the design procedure; interpret blueprints and shop drawings as well as applying this information; the use of measuring tools in layout and assembly; having a basic understanding of codes specifications and standards and to be aware of the responsibility of a welder in quality control.
Advanced Blueprint Reading (2 Packets)
Item No. EW-462 ........................................... List Price $52.00
Keys to Test
Item No. EW-463 ........................................... List Price $10.95

Welding Codes & Specifications

Welding Procedure and Performance Qualification — Standard method of qualifying according to AWS® requirements. 219 pages.
Item No. EW-230 ........................................... List Price $284.00

API Standard 1104, Standard for Welding Pipelines and Related Facilities 21st Edition — This code book published by the American Petroleum Institute provides the complete and detailed information needed by welders, inspectors and engineers.
Item No. EW-264 ........................................... List Price $345.00

AWS® Structural Welding Code, D1.1 — Complete structural welding code for buildings, bridges, and other welded structures. Welding engineers, inspectors and others involved with design and quality control of welded structures should have this book for guidance and reference.
Item No. EW-531 ........................................... List Price $576.00
## TRAINING MATERIALS ORDER FORM

**MAIL TO:**  
Attn: Publication Dept.  
Hobart Institute of Welding Technology  
400 Trade Square East  
Troy, OH 45373 U.S.A.  

**PHONE:**  
(800) 332-9448 Ext. 9509  
(937) 332-9509  

**FAX:**  
(937) 332-9551  

**INTERNET:**  
www.welding.org  

**EMAIL:**  
orders@welding.org

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- [ ] Discover  
- [ ] Visa  
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Card No.  
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Subtotal:  
Shipping:  
Total Amount:  

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- **Digital Video Discs (DVDs):** Any request for return must be received within thirty (30) days of the original invoice date. The original invoice number must be indicated on the request for return.

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**Discounts:** A 20% educational discount applies to all non-profit schools with 501(c)3 status.

**Prices:** All prices are in U.S. dollars. Prices subject to change without notice.
35” x 23” size for good shop or classroom visibility... have plastic surface for durability, easy cleaning

Spiff up your shop or classroom, and send the “quality” message with a complete set of these attractive and instructive, full-color, welding-related posters.

Shielded Metal Arc Welding (SMAW) .................................................. EW-901 $8.00
Types of Welds ................................................................. EW-902 $8.00
Gas Tungsten Arc Welding (TIG) (GTAW) ................................ EW-903 $8.00
Gas Metal Arc Welding (GMAW) (MIG) .................................. EW-904 $8.00
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Electrode Selection and Identification ................................ EW-908 $8.00
Plasma Arc Welding (PAW) ..................................................... EW-909 $8.00
Oxyacetylene Welding (OAW) ................................................ EW-910 $8.00
Examples of Good and Bad Beads ....................................... EW-911 $8.00
Causes and Cures Common Welding Trouble ...................... EW-912 $8.00
Good and Bad Welds — FCAW ............................................. EW-913 $8.00
Complete Set of Posters ....................................................... WP-13 $104.00

Fillet Weld Gauge
A valuable tool for measuring both convex and concave fillet weld dimensions.

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WP11
Set of 11 Posters: $40.00
Size: 11” X 17”
Set includes:
- Common Terms Applied to a Weld
- Arc Length
- Diagram of Shielded Metal Arc Welding
- Learn to Read the Puddle
- Electrode Angle
- Tungsten Electrode Preparation
- 5 Essential
- 5 Methods of Control
- Travel Speed
- The Fire Tetrahedron
- Fire Extinguisher Ratings

To See pictures of our wall posters, visit our website at www.welding.org

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Size: 11” x 17” $5.00 each

Sciences in a Weld
Item No. EW914

Welding & Joining Processes
Item No. EW915

Industrial Sectors Using Welding
Item No. EW916

Spark Testing of Metals
Item No. EW917

Iron-Carbon Equilibrium Diagram Poster
Item No. EW918

Changes in Carbon Steel Poster
Item No. EW919

Pearlite-Martensite Poster
Item No. EW920
OL-001  Symbols For Welding Online Course
1.0 CEU  $195.00  SELF-PACE

This online version of the Symbols for Welding course is based on the AWS A2.4 Symbols for Welding and Nondestructive Examination Standard. This system of communication provides the vital link between the designer and the people responsible for producing and planning welding.

Within the online course you will have the opportunity to download the EW-342 Symbols for Welding Learning Packet and work on specific problems; view the Symbols for Welding videos which are broken down into topic sections; take each of the 3 required tests. Each test may be taken two times.

Your password is good for a period of one year with unlimited log-ins during that time. Completion time for the course varies with each individual. Take into consideration the time to watch the videos plus the time to work through the learning packet plus the time to take the tests. You may start and stop at any point.

Upon purchase of the course, you will receive an email of your online receipt of purchase and a separate email with account access instructions and a link to the online course.

You may add the optional paper version of the Symbols for Welding Programmed Learning Packet (EW342) containing 113 pages, which will be mailed to you. Three tests are included with each student packet.

OL-002  Visual Inspection Welding Online Course
1.4 CEU  $195.00  SELF-PACE

This course concentrates on the single most used method of welding inspection — what we can see with the naked eye. Anyone involved with arc welding inspection, quality control, engineering or supervision should know the fundamentals of what to observe, prior to, during and after welding.

Contains 5 video segments totaling a run time of 60 minutes.

During this course you will learn about common weld gauges, temperature indicators, marking repair welds, visual inspection prior to, during, and after welding, terminology of weld defects, general requirements for equipment and workmanship standards, and a visual inspection checklist.

At your own pace from your computer you will view videos and will be able to take (and retake) online competency exams.

OL-003  Welding Discontinuities & Defects Online Course
1.0 CEU  $195.00  SELF-PACE

This course concentrates on defects and discontinuities related to welding and is intended to assist anyone involved in arc welding inspection, quality control, engineering or supervision. The objective is to be able to identify and determine the common causes of weld discontinuities and defects.

Contains 5 video segments totaling a run time of 70 minutes. Quizzes are provided to measure progress along the way with a final test to obtain a certificate of completion.

*IMPORTANT*

HIWT reviews each order for accuracy and to protect you and HIWT from fraud. After authorization and capture of your payment by HIWT personnel, you will be sent an email (typically within 1 business day) with access instructions for your course. Make sure to watch your incoming mail and spam folder. When you score 76% or higher, a Certificate of Completion will be issued for you to print that will contain the continuing education units earned for the online course. In addition, please add “welding.org” to your trusted/safe sender's list.
OL-004  Destructive Testing Methods Online Course
1.0 CEU  $195.00  SELF-PACED

This course concentrates on the various destructive testing methods used to evaluate welds including tensile and impact tests, guided bend tests, nick break tests, fillet weld break tests, and etch tests. It is intended for those involved in welding inspection, quality control, engineering or supervision. The objective is to be able to perform tests and determine the weld defects.

Contains 7 video segments totaling a run time of 43 minutes. Quizzes are provided to measure progress along the way with a final test to obtain a certificate of completion.

OL-005  Nondestructive Testing Methods Online Course
1.0 CEU  $195.00  SELF-PACED

This course concentrates on the various nondestructive testing methods used to evaluate welds including visual inspection, liquid penetrant testing, magnetic particle testing, ultrasonic testing, and radiographic testing. It is intended for those involved in welding inspection, quality control, engineering or supervision. The objective is to be able to evaluate welds and determine the weld defects.

Contains 6 video segments totaling a run time of 45 minutes. Quizzes are provided to measure progress along the way with a final test to obtain a certificate of completion.

OL-006  Welding Characteristics Of Steel, Stainless Steel, & Other Metals
1.0 CEU  $195.00  SELF-PACED

This course will provide the non-metallurgist with basic knowledge of various metals and their weldability. Anyone involved with welding will benefit from the better understanding of welding the different metals. Students will learn the basic principles of metal properties, heat input, preheating, postheating, selecting filler metals plus many more topics including: Welding carbon and low alloy steels

- Welding stainless steels
- Welding tool and die steels
- Welding aluminum alloys
- Welding magnesium alloys
- Welding cast iron
- Hard surfacing
- Metals identification for welding

The course consists of 4 main topics:
1. The Metallurgy & Weldability of Carbon Steel
2. The Welding Characteristics of Stainless Steel and Tool Steels
3. The Welding Characteristics of Aluminum and Magnesium
4. Welding Cast Iron and Hard Surfacing Welds

Each topic contains slide segments, video segments and quizzes. The total running time for the video segments is approximately 60 minutes. Once you have completed the 4 topic quizzes and achieved at least a 76% you will then be able to generate a Course Completion Certificate.

OL-007  Welding Procedures & Qualification
1.0 CEU  $195.00  SELF-PACED

This course concentrates on the steps typically followed when developing and qualifying Welding Procedure Specifications (WPS). Additionally, Welder and Welding Operator Performance Qualification will be discussed.

Contains 1 main topic covering Welding Codes, Procedures, and Welder Qualification plus 5 video segments totaling a run time of 25 minutes. Quizzes are provided to measure progress along the way with a final test to obtain a certificate of completion.

At your own pace from your computer you will view videos and will be able to take (and retake) online competency exams.
**HIWT WORLD-CLASS CURRICULUM MATERIALS ON ALL**

**Aligned with AWS® SENSE Objectives & Curriculum Guidelines**

The American Welding Society (AWS®) has published standards and curriculum guidelines for entry-level, advanced and expert welders as part of the SENSE program (Schools Excelling through National Skill Standards Education).

SENSE standards and curriculum guidelines, based on input from industry, labor and educators were first introduced in 1995. The goal of the SENSE program is to bring welding education in line with today’s increasingly complex industrial environment.

The Level 1 standard (Q1C10) and the corresponding Curriculum Guidelines (EG2.0) have recently been modularized. This means that your students can receive credentials for each welding process completed – Great news if you’re teaching in a high school setting.

Hobart Institute of Welding Technology curriculum materials are developed around SENSE standards, curriculum guidelines and qualification tests.

So, whether you’re aligning your welding program with SENSE, or whether you just want to turn out welders with the skills required to succeed in today’s global market, HIWT curriculum materials are carefully designed to deliver results.

**Student Workbooks Designed to Facilitate Skill Transfer**

Demonstrations featured in the DVD modules are broken down into step-by-step practice sessions in the student workbooks. Workbooks also include summaries of essential theory with lots of illustrations.

All destructive tests are based on AWS®, ASME, or API codes. Each practice session includes objectives, set-up instructions, a list of required equipment and materials, and high-resolution images taken directly from the video to facilitate skill transfer.

**Modular Design for Flexible Implementation**

Each course is divided into skill and theory modules or “topics”. Each skill topic includes a video segment that demonstrates the welds students are expected to perform. Separate modules cover essential theory. Even the Instructor Guide is broken into modules. So, you have the flexibility to customize implementation to address the needs of your region or industry.

**AWS® Terms & Definitions Used Throughout**

Each workbook includes a glossary of AWS® terms and definitions, and proper AWS® terms and definitions are used in all curriculum materials. So, students learn the essential vocabulary they need to succeed.

**Best Arc Shots in the Business**

All skill modules feature close-up arc shots from the welder’s perspective. We filter out all the flare, so students get a clear, under-the-hood view into the puddle, and they hear the sound of the arc so they develop a sense of what a good arc sounds like.

**Perfect for Open Entry/ Open Exit Programs**

HIWT curriculum materials are perfect for open entry/ open exit environments because they’re modular. Since video modules are designed to present core information and model proper techniques, students entering your program can work through the videos and practice sessions independently, with the aid of their workbooks and coaching from you.

**Designed with Input from Welding Instructors Across the Country**

We consult with welding instructors across the country during the development phase to make sure that our curriculum materials do the job you need them to do.

**Put 85 Years of Welding Training Experience to Work for you**

Since 1930, HIWT has trained over 100,000 welders and thousands of welding inspectors and welding educators. We’ve learned a lot about training welders how to weld, and you can put what we’ve learned to work for you by adopting our curriculum materials.
### Individual Hobart Institute Technical Guides are available on these subjects:
- Gas Tungsten Arc Welding (EW-470)
- Shielded Metal Arc Welding (EW-472)
- Gas Metal Arc Welding (EW-473)
- Flux Cored Arc Welding (EW-492)
- Welding Guide (EW-385)
- Safety and Health of Welders (EW-607)
- Oxyfuel Welding, Cutting and Brazing (EW-480)

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**EW-470 Technical Guide**

**GAS TUNGSTEN ARC WELDING**

**A STEP-BY-STEP METHOD FOR ACQUIRING THE BASIC SKILLS REQUIRED TO WELD CARBON STEEL, STAINLESS STEEL, AND ALUMINUM IN ALL POSITIONS WITH THE GAS TUNGSTEN ARC WELDING PROCESS.**

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### One Student Workbook

Featuring easy to follow practice sessions based on video demonstrations and summaries of essential theory.

### One Technical Guide

An individual resource for instructors and students, each technical guide contains process specific information on equipment, process variables, weldability, pre- and post-weld procedures, shielding gases, electrodes, safety, and more.

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**Hobart Institute of Welding Technology®**, 400 Trade Square East, Troy, Ohio 45373 USA

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**EW-470 Technical Guide**

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**A STEP-BY-STEP METHOD FOR ACQUIRING THE BASIC SKILLS REQUIRED TO WELD CARBON STEEL, STAINLESS STEEL, AND ALUMINUM IN ALL POSITIONS WITH THE GAS TUNGSTEN ARC WELDING PROCESS.**

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