Pipefitting

L1 PIPEFITTING

MODULES
- 152.5 Hours
- Includes 72.5 hours of Core, which is a prerequisite for Level 1 completion and must be purchased separately.
- Core Introduction to Rigging module is required for the Level 3 credential.
- Updated in 2019.
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.
- A Spanish translation is available. Please see NCCER’s online catalog for more information.

PAPERBACK ISBN
Individual Modules: $24.99 see module list

L2 PIPEFITTING

MODULES
- 162.5 Hours
- Updated in 2019.
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK ISBN
Individual Modules: $24.99 see module list

Oxyfuel Cutting (17.5 Hours)
(Module ID 29102) Explains the safety requirements for oxyfuel cutting. Identifies oxyfuel cutting equipment and setup requirements. Explains how to light, adjust, and shut down oxyfuel equipment. Trainees will perform cutting techniques that include straight line, piercing, beveling, washing, and gouging.

Ladders and Scaffolds (12.5 Hours)
(Module ID 08105) Describes hazards and safety procedures governing the use of stepladders, extension ladders, fixed scaffolds, and rolling scaffolds. Includes general procedures for scaffold assembly and use.

Motorized Equipment One (10 Hours)
ISBN 978-0-13-580999-0
(Module ID 08106) Explains the safety factors, operator maintenance, and operating procedures associated with motorized equipment used on job sites. Covers electrical generators, air compressors, aerial lifts, forklifts, trenchers, backhoes, mobile cranes, and portable equipment including welding machines, pumps, and compactors.

Excavations (10 Hours)
(Module ID 08208) Explains soil and trenching hazards involved in excavations, as well as the use of shoring and shielding systems per OSHA standards, sloping requirements by soil type, and combined systems for trench reinforcement. Covers how to determine grade and elevation, how to use a laser level, and how to backfill.

Underground Pipe Installation (20 Hours)
(Module ID 08209) Explains pipe installation procedures and guidelines, including the procedures for cast iron, ductile iron, concrete, steel, fiberglass, and thermoplastic pipe. Includes an introduction to horizontal directional drilling for pipe installation, and the use of a weak link for plastic pipe.

Identifying and Installing Valves (20 Hours)
(Module ID 08203) Identifies different types of valves, including those that start and stop flow, regulate flow, regulate flow direction, and relieve pressure, and describes their installation as well as proper storage and handling procedures. Covers common valve operators and actuators.

Pipefitting Trade Math (15 Hours)
(Module ID 08204) Explains how to use ratios and proportions, solve basic algebra, area, volume, and circumference problems, and solve for right triangles using the Pythagorean theorem.

Threaded Pipe Fabrication (15 Hours)
(Module ID 08205) Describes the materials used in threaded piping systems. Explains how to determine pipe lengths between threaded pipe fittings, prepare the pipe and fittings for fit-up, and assemble the piping system. Includes how to calculate simple and rolling offsets.

Socket-Weld Pipe Fabrication (25 Hours)
(Module ID 08206) Describes the fittings and materials involved in socket-welds, interpreting drawings, determining pipe lengths between fittings, aligning pipe and fittings, and cutting out a socket weld to save the structure.

Butt-Weld Pipe Fabrication (37.5 Hours)
(Module ID 08207) Describes materials, fittings, drawings, calculating takeouts, determining pipe lengths between fittings, beveling pipe, aligning components for welding, performing alignments, and cutting a butt weld to save the structure.

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L3 Pipefitting

Curriculum Notes
- 152.5 Hours
- Updated in 2019.
- Downloadable instructor resources that include module tests, PowerPoints®, and performance profile sheets are available at www.nccer.org/irc.

PAPERBACK ISBN
Individual Modules: $24.99

Modules
The modules listed below are included in the Trainee Guide. The following ISBNs are for ordering individual modules only.

Introduction to Basic Rigging (7.5 Hours)
(Module ID 08301) Provides basic information related to rigging and rigging hardware, such as slings, rigging hitches, and hoists. Emphasizes safe working habits in the vicinity of rigging operations.

Introduction to Basic Rigging and Hoists (20 Hours)
ISBN 978-0-13-83240-0
(Module ID 08307) Discusses the safe and proper use of scissors lifts, telescoing boom lifts, cable lifts, drain cleaners, and snubbers.

Pipe Hangers and Supports (50 Hours)
(Module ID 08309) Discusses the importance of safety and following procedures with testing and inspections. Topics include pretest requirements, visual weld inspections, service flow tests, head pressure tests, hydrostatic tests, and steam blow tests.

Introduction to Aboveground Pipe Installation (25 Hours)
(Module ID 08306) Identifies various types of pipe, flanges, gaskets, and bolts. Covers the fabrication of gaskets, assembling and installing flanged and grooved pipe, fabricating and installing pipe spools, and installing pipe sleeves and floor penetrations.

Field Routing and Vessel Trim (15 Hours)
(Module ID 08307) Explains how to secure the work area and determine field run specifications, load weights for erection equipment, and support needs. Provides details on evaluating the run, assembling the field run, installing test blinds, working with instruments, and how to erect vessel trim.

Field Routing and Vessel Trim (25 Hours)
(Module ID 08305) Describes the safe and proper use of scissors lifts, telescoing boom lifts, cable lifts, drain cleaners, and snubbers.

Pipe Hangers and Supports (25 Hours)
(Module ID 08308) Explains the roles of pipe hangers and supports, with details on clevises, saddles, U-bolts, clamps, tumbuckles, rods, welded beam attachments, spring cap supports, travel stops, and snubbers.

Testing Piping Systems and Equipment (20 Hours)
(Module ID 08309) Discusses the importance of safety and following procedures with testing and inspections. Topics include pretest requirements, visual weld inspections, service flow tests, head pressure tests, hydrostatic tests, and steam blow tests.

Advanced Pipe Fabrication (50 Hours)
(Module ID 08402) Explains the use of ordinate tables and trigonometry in creating fittings and pipe assemblies for process applications. Details are provided on calculating piping offsets, fabricating miter turns, laying out and fabricating saddles and supports made out of pipe, and laying out laterals, wyes, ninety-degree intersections, and supports without using references.

In-Line Specialties (20 Hours)
(Module ID 08405) Presents methods of safely working with specialty devices used in pipelines, including: snubbers, ball joints, bleed rings, drip legs, steam traps, expansion joints, filters, strainers, flowmeters, level measurement devices, flow pressure switches, rupture discs, thermowells, and desuperheaters.

Special Piping (25 Hours)
(Module ID 08406) Discusses methods of assembling copper tubing with flared and compression joints. Introduces brazing and soldering and explains the differences between these two procedures. Also describes bending pipe, working with glass-lined piping, handling hydraulic compression joints, and managing grooved piping systems.

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