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رؤيـــة VISION
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Metals

Short Courses

Approved By

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المؤسسة العامة
للتدريب التقني والمهني
Technical and Vocational
Training Corporation

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1

Using Pipe Fabrication Drawings

12 Minimum participants

5 days

Course Overview

This course introduces trainees to welded, threaded and socket fitting symbols as well as single and two-plane pipe spools drawings and also show how shading is used to identify vertical and horizontal offsets.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Identify Fitting Symbols
- Demonstrate Changes in Single-Plane Isometric Drawings
- Demonstrate Changes in Two-Plane Isometric Drawings
- Interpret Shading in Isometric Drawings
- Identify Piping System Components and Symbols

2

Safe Performance in Oxyacetylene Cutting Operations

12 Minimum participants

5 days

Course Overview

To introduce the safe operation and performance of cutting with Oxyacetylene.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Cutting Safety Practices and PPE
- Setup an Oxyacetylene Station
- Use Oxyacetylene Equipment
- Manual Cutting & Gas Welding
- Oxyacetylene Cutting Equipment

3

Maintain Piping Systems

12 Minimum participants

5 days

Course Overview

To train workers on how to identify piping components and then go onto dismantle, inspect, repair and replace a threaded component in a piping system.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Identify Piping System Components & Symbols
- Identify Pipe Supports
- Inspect Piping Systems
- Remove and Install Threaded Valves
- Remove and Install Pipe Spools

4

Perform Pipe Bending

12 Minimum participants

5 days

Course Overview

To introduce the skills needed for pipe bending both cold and hot. Trainees will perform calculations for both cold and hot pipe bending. Cold bending will then be conducted with a Hydraulic Bender and Hot Bending using an Oxyacetylene station. Participants must have attended the Oxyacetylene Course above or have job-related experience before commencing this course.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Understand transformer Name Plate Data
- Identify Pipe Bending Materials and Equipment
- Perform Manual Pipe Bending
- Perform Cold Bending with a Hydraulic Bender
- Perform Hot Bending with an Oxyacetylene Station

5

Fabricate Welded Pipe Spools

12 Minimum participants

5 days

Course Overview

To introduce common butt welds and the materials and applications of welded piping systems.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Fabrication Area Safety Practices
- Identify Welded Pipe Systems
- Identify Pipe and Applications
- Identify Welded Pipe Materials
- Prepare Butt Weld Pipes

6

Fabricate Assemblies with Simple Offsets

12 Minimum participants

5 days

Course Overview

Trainees will learn how to correctly calculate, mark, cut, bevel and prepare pipe and set up components for a 45° simple offset with the correct configuration for tack welding to set standards and required specifications.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Perform pipe spool calculations
- Determine pipe & fittings requirements
- Complete a materials & cutting list
- Cut, ream and thread the pipe to set standards
- Assemble the pipe to required specifications

7

Fabricate Assemblies with Rolling Offsets

12 Minimum participants

5 days

Course Overview

Trainees will learn how to correctly calculate, mark, cut, bevel and prepare pipe and set up components for a 45° rolling offset with the correct configuration for tack welding to set standards and required specifications.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Perform pipe spool calculations
- Determine pipe & fittings requirements
- Complete a materials & cutting list
- Cut, ream and thread the pipe to set standards
- Assemble the pipe to required specifications

8

Fabricate Socket Weld Spools

12 Minimum participants

5 days

Course Overview

Trainees will learn how to identify pipes, fittings and flanges in spool drawings and calculate the cutting lengths for all the pipe sections. They will then go on to create socket weld fit-ups with precut pipe sections given provided fittings. Finally they will fabricate socket weld spools by cutting and finishing the pipe sections.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Identify Measurements for Socket Weld Fittings and Spools;
- Calculate Measurements for Socket Weld Fittings and Spools;
- Make Socket Weld Fittings-to-Pipe Setups;
- Fabricate Socket Weld Spools.

9

Fabricate Threaded Pipe Spools

12 Minimum participants

5 days

Course Overview

Trainees will learn how to fabricate a closed threaded pipe spool with the appropriate tools, equipment and materials to a given specification and to listed tolerances.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Identify Threaded Pipe Spools
- Cut, ream and thread Pipes with Hand Tools
- Cut, ream and thread Pipes with Power Tools
- Fabricate Closed Threaded Pipe Spools

10

Fabricate Threaded Pipe Spools with Simple Offsets

12 Minimum participants

5 days

Course Overview

Trainees will learn how to fabricate a pipe spool with a simple 45° offset given the appropriate tools, equipment and materials to a set specification and to listed tolerances.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Identify Threaded Pipe Spools;
- Cut, ream and thread Pipes with Hand Tools;
- Cut, ream and thread Pipes with Power Tools;
- Fabricate Pipe Spools with a simple 45° offset.

11 Fabricate Threaded Pipe Spools with Rolling Offsets

12 Minimum participants

5 days

Course Overview

Trainees will learn how to fabricate a pipe spool with a rolling 45° offset given the appropriate tools, equipment and materials to a set specification and to listed tolerances.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Identify Threaded Pipe Spools
- Cut, ream and thread Pipes with Hand Tools
- Cut, ream and thread Pipes with Power Tools
- Fabricate Pipe Spools with a simple 45 offset

12 Fabricate Non-metallic Pipes

12 Minimum participants

5 days

Course Overview

To introduce the practical application and preparation of non-metallic pipes. Attendees will learn how to prepare an ABS joint for bonding of non-pressurized pipes as well as how to fabricate a pipe spool for pressurized service. Trainees will use CPVC pipe and fittings as these can be used for above and below ground pressurized domestic water service (hot or cold).

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Identify non-metallic pipes and fittings
- Cut non-metallic pipes
- Fabricate Plastic Pipe Spools for non-pressurized
- Fabricate Plastic Pipe Spools for pressurized

13

Maintain Fixed Tube Heat Exchangers

12 Minimum participants

5 days

Course Overview

To train trainee on maintain fixed tube heat Exchangers.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Identify Fixed Tube Heat Exchangers and their parts
- State the basic operation of Fixed Tube Heat Exchangers
- Maintain single-pass Heat Exchangers
- Maintain double-pass Heat Exchangers
- Repair Heat Exchangers

14

Maintain Floating Head Heat Exchangers

12 Minimum participants

5 days

Course Overview

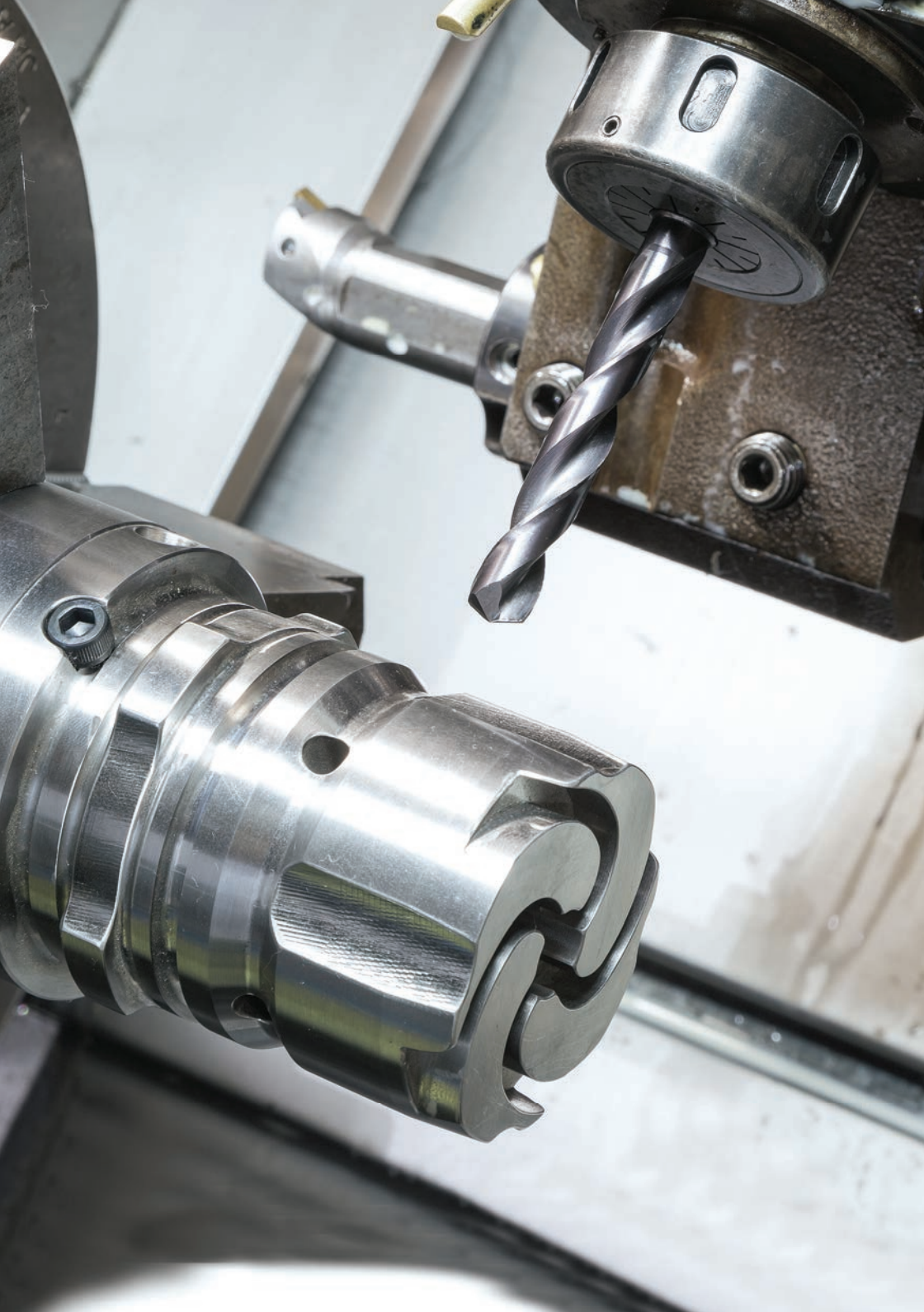
To train trainee on Maintain Floating Head Heat Exchangers.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Identify Floating Head Heat Exchangers and their parts
- State the basic operation of Floating Head Heat Exchangers
- Maintain split-ring Heat Exchangers
- Repair Heat Exchangers



15

Maintain Fin-fan Coolers

12 Minimum participants

5 days

Course Overview

To train trainee on maintain Fin-fan Coolers.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Disassemble a fin-fan cooler
- Clean a fin-fan cooler
- Inspect a fin-fan cooler
- Repair a fin-fan cooler
- Reassemble a fin-fan cooler

16

Pipe Welding

12 Minimum participants

5 days

Course Overview

To train trainee on pipe welding.

Who Should Attend?

Welders, Pipefitters and Fabricators

Enabling Objectives:

- Pipe Welding Rotated (1G)
- Pipe Welding Horizontal (2G)
- Pipe Welding Vertical (5G)
- Pipe Welding Inclined (6G)

17

Butt Joints

12 Minimum participants

5 days

Course Overview

To train workers on butt joints.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Flat Butt Joints
- Horizontal Butt Joints
- Vertical Butt Joints
- Overhead Butt Joints

18

WELD SMALL BORE CARBON STEEL PIPE (SMAW)

12 Minimum participants

5 days

Course Overview

To train workers on Shielded Metal Arc Welding (SMAW).

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- SMAW Horizontal (2G)
- SMAW Vertical (3G)
- SMAW Overhead (4G)
- SMAW Vertical (5G)

19

ARC WELDING

12 Minimum participants

5 days

Course Overview

To train workers on arc welding.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Arc Welding Safety and PPE;
- Electrodes;
- Stringer Beads & Weld Positions;
- Pre-weld and Post-weld Heating;
- Welding Bead Pads

20

FILLET WELDS

12 Minimum participants

5 days

Course Overview

To train workers on fillet welds.

Who Should Attend?

Welders, Pipefitters and Fabricators.

Enabling Objectives:

- Arc Welding Safety and PPE
- Fillet Welds
- Single Run Fillet Welds
- Multiple Run Fillet Welds

NITI

NATIONAL INDUSTRIAL TRAINING INSTITUTE
Kingdom of Saudi Arabia, Al Hasa, Airport Road
P.O. Box 550, Al Hasa 31982 +966 13 5955103

niti.edu.sa