Australian Government

PMASUP246A Disconnect and reconnect non-flared tube fitting joints

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

PMASUP246A Disconnect and reconnect non-flared tube fitting joints

Modification History

New unit - Release 1

Unit Descriptor

This unit of competency covers the skills and knowledge needed to disconnect and reconnect non-flared tube fitting joints using hand tools. It also includes solving problems with non-flared tube jointing processes and equipment.

Application of the Unit

This unit applies to an operator who has a responsibility for disconnecting and reconnecting non-flared tube fitting joints (e.g. for isolation purposes) in accordance with procedures. The operator would further:

- ensure they were working within their skill level
- ensure the nature of the intervention was clearly understood before work commenced
- make certain the site was accessible and safe and that all necessary authorities had been obtained
- monitor the progress of the work and refer any escalation
- recommission the tube fitting joint after the work and inspection is completed.

This unit applies to an individual working alone or as part of a team or group and working in liaison with other shift team members and the control room operator as appropriate.
It may be appropriate to access other units with this unit, such as:

- PMASUP244A Prepare and isolate plant

This unit **does not** cover the initial installation of tube fittings, high pressure fittings or cone fittings.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1	Plan and prepare for job	1.1	Identify work requirements
		1.2	Inspect job site
		1.3	Confirm isolations have been completed to standard
		1.4	Confirm hazard controls
		1.5	Coordinate with appropriate personnel
		1.6	Select appropriate tools
		1.7	Re-check that work requirements fit within skill level
		1.8	Complete checklists and records as required
2	Disconnect tube fitting in accordance with procedures	2.1	Implement hazard controls
		2.2	Prepare tools, drip trays, and so on with appropriate care
		2.3	Undo support clamps as required
		2.4	Vent as required
		2.5	Break joint and drain tube as required
		2.6	Identify any skills escalation required
		2.7	Manage open tube
		2.8	Complete checklists and records as required

3	Inspect tube and components	3.1	Inspect fittings and tube
		3.2	Assess degree of misalignment and refer if required
		3.3	Clean fittings as required
		3.4	Identify any damage or defects
		3.5	Confirm compliance of components and refer as required
		3.6	Identify any problems and take appropriate action
4	Reconnect tube fitting in accordance with procedures	4.1	Check components are to specification
		4.2	Apply sealants/seals as required
		4.3	Assemble the joint to procedures
		4.4	Re-check alignment
		4.5	Reattach support clamps as required
		4.6	Complete checklists and records as required
5	Finish the job	5.1	Make a final check of joint alignment
		5.2	Organise required checks
		5.3	Confirm joint integrity as required
		5.4	Complete checklists and records as required

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- using a limited range of hand tools
- Identifying tube fitting types
- recognising conditions which will lead to a poor joint
- implementing enterprise procedures within time constraints and in a manner relevant to the correct use of the equipment
- conveying information relevant to the operation clearly and effectively
- maintaining appropriate levels of quality assurance
- reading and numeracy to interpret/complete workplace documents and technical information
- applying mathematics as required

Required knowledge

Required knowledge of non-flared tube fitting jointing principles and typical problems to a level needed to disconnect and reconnect non-flared tube fitting joints using hand tools, includes:

- all tube connection types
- all sealing methods and types
- various lubricants and their respective uses
- hazards related to disconnecting pressurised fittings
- compatibility of materials
- incompatibility of different manufacturer's components
- manufacturer instructions
- allowable number of disconnects and reconnects
- thread engagement
- tool types and applications
- organisation's tube fitting procedures
- duty of care obligations
- hierarchy of control
- communication protocols, e.g. radio, phone, computer, paper and permissions/ authorities
- typical issues causing problems and the resolution of those problems
- routine problems, faults and their symptoms and the corrective action to be taken
- process materials and conditions at the location of the fitting

- function and troubleshooting for addressing leaks
- relevant environmental requirements

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria required skills and knowledge range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	Critical aspects for assessment and evidence include: • the disconnecting and reconnecting of a non-flared tube fitting joint in accordance with the organisation's procedures • recognising own skill limits and when to refer to another person.
Context of and specific resources for assessment	Assessment of this competency will occur over a range of situations which will include typical disruptions to normal, smooth operation. This will require access to a plant over a period of time, or a suitable method of gathering evidence of operating ability. Where safety, lack of opportunity or significant cost is an issue, an industry-based simulation may be employed to assist the process.
Guidance information for assessment	Assessment processes and techniques must be appropriate to the language, competency and safety requirements of the site and consistent with workplace systems or procedures.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Context

This competency includes disconnecting and reconnecting non-flared tube fitting joints using hand tools. It **does not** include:

- the initial installation of tube fittings
- high pressure fittings
- cone fittings

Work requirements

Work requirements may include but are not limited to:

- fitting, tubing and thread specifications
- fitting brand
- specific sealing method and type
- process line and process materials
- parts and equipment required
- local detectors requiring isolation
- required skill level
- conflicting work

Work requirements may come from briefings, handovers, and work orders and may include:

- compliance documentation
- product specifications
- nature and scope of tasks
- achievement targets
- operational conditions
- lighting conditions
- plant or equipment defects
- hazards and potential hazards
- coordination requirements or issues

Job site

Inspecting job site may include but is not limited to identifying:

- location
- authorisations required
- access and egress needs
- hazards
- recent work undertaken on joint

- fitting type (matches specification)

Control hazards

Control hazards may include but are not limited to:

- selection and use of appropriate personal protective equipment
- obtaining appropriate authorisations
- checking required isolations
- controlling other work in area

Implement hazard controls

Implementing hazard controls may include but is not limited to:

- controlling access to area
- using gas tester
- verifying and confirming isolation
- safe fitting breaking procedure (line of fire)

Inspect components

Inspecting tube fitting components may include but is not limited to checking:

- full tube insertion
- orientation of ferrules
- correct tube deburring
- for signs of damage, defects or deterioration in all components
- confirming compliance of components

Components

Components may include but are not limited to:

- fitting body
- fitting nut
- front ferrule
- rear ferrule
- tube
- tube clamps and support saddles

Manage open tube

Manage open tube includes:

- all those actions required once the joint is broken to ensure the tube and its contents are not contaminated or damaged

Refer

Refer means to refer the issue to the person with the required skills, knowledge and/or authority to deal with the matter

Procedures

Procedures may be written, verbal, computer-based or in some other form. They may include but are not limited to:

- tube fitting procedures

- all work instructions
- standard operating procedures
- temporary instructions
- any similar instructions provided for the smooth running of the plant
- good operating practice as may be defined by industry codes of practice

Procedures would be expected to comply with any relevant government regulations.

Checklists and records

Checklists and records may include:

- paper or electronic based verbal/radio reports
- reporting items found which require action

Appropriate action

Appropriate action includes but is not limited to:

- determining problems needing action
- accessing and applying relevant technical and plant data
- applying appropriate problem solving techniques to determine possible fault causes
- rectifying problem using appropriate solution within area of responsibility
- following through items initiated until final resolution has occurred
- reporting problems outside area of responsibility/ability to resolve to designated person

Typical problems

Typical problems may include but are not limited to:

- fitting leaks
- blockages/build-up/fouling
- erosion/wear
- ancillary equipment problems
- support clamps incorrectly attached
- worn threads
- misalignments
- lack of full tube insertion
- ferrule missing or reversed
- incorrect installation

Remedial actions

Remedial actions may include but are not limited to:

- replacing existing components with new components

- carrying out minor maintenance within operator's skill level
- identifying and reporting problems outside operator's competence
- identifying and controlling hazards related to tube fitting joints

Health, safety and environment (HSE)

All operations to which this unit applies are subject to stringent HSE requirements, which may be imposed through state/territory or federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between Performance Criteria and HSE requirements, the HSE requirements take precedence.

Unit Sector(s)

Competency field

Unit sector Support

Custom Content Section

Not applicable.