



Australian Government

PMASUP246 Disconnect and reconnect non-flared tube fitting joints

Release: 1

PMASUP246 Disconnect and reconnect non-flared tube fitting joints

Modification History

Release 1. Supersedes and is equivalent to PMASUP246A Disconnect and reconnect non-flared tube fitting joints

Application

This unit of competency covers the skills and knowledge required to disconnect and reconnect non-flared tube fitting joints using hand tools.

This unit of competency applies to operators who are required to identify requirements for the work, ensure they are working within their skill level, confirm isolations are in place, apply procedures to disconnect and connect tube fitting joints, undertake checks and inspections, complete records, and identify problems and take appropriate action.

This unit of competency 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.

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

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Support

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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

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| | | 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 required checklists and records |
| 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 pipe to ensure contents are not contaminated or damaged |
| | | 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, as 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 action |
| 4 | Reconnect tube fitting in accordance with | 4.1 | Check components are to specification |
| | | 4.2 | Apply sealants/seals as required |

	procedures	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

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Regulatory framework

The latest version of all legislation, regulations, industry codes of practice and Australian/international standards, or the version specified by the local regulatory authority, must be used, and include one or more of the following:

- legislative requirements, including work health and safety (WHS)
- industry codes of practice and guidelines
- environmental regulations and guidelines
- Australian and other standards
- licence and certification requirements

All operations to which this unit applies are subject to stringent health, safety and environment (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.

Procedures All operations must be performed in accordance with relevant procedures. Procedures are written, verbal, visual, computer-based or in some other form, include one or more of the following:

- emergency procedures
- work instructions
- standard operating procedures (SOPs)
- safe work method statements (SWMS)
- formulas/recipes
- batch sheets
- temporary instructions
- any similar instructions provided for the smooth running of the plant

Hazards Hazards include one or more of the following:

- gases and liquids under pressure
- structural hazards
- equipment failures
- industrial (machinery, equipment and product)
- equipment or product mass
- plant services (steam, condensate and cooling water)
- limited head spaces or overhangs
- working at heights, in restricted or confined spaces, or in environments subjected to heat, dusts or vapours
- flammability and explosivity
- hazardous products and materials
- unauthorised personnel
- sharp edges, protrusions or obstructions
- slippery surfaces, spills or leaks
- extreme weather
- other hazards that might arise

Work requirements Work requirements may include one or more of the following:

- 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 come from briefings, handovers, and work orders and include one or more of the following:

- 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 includes identifying one or more of the following:

- location
- authorisations required
- access and egress needs
- hazards
- recent work undertaken on joint
- fitting type (matches specification)

Implementing hazard controls

Implementing hazard controls includes one or more of the following:

- selection and use of appropriate personal protective equipment (PPE)
- obtaining appropriate authorisations
- checking required isolations
- controlling other work in area
- controlling access to area
- using gas tester
- verifying and confirming isolation
- safe fitting breaking procedure (line of fire)

Inspecting components

Inspecting tube fitting components includes one or more of the following:

- 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 includes, but are not limited to, one or more of the following:

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

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

Checklists and records Checklists and records include one or more of the following:

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

Action Action in response to problems includes the following:

- 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

Action includes one or more of the following:

- 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

Routine problems

Routine problems must be resolved by applying known solutions.

Routine problems are predictable and include one or more of the following:

- 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

Known solutions are drawn from one or more of the following:

- procedures
- training
- remembered experience

Non-routine problems must be reported according to according to relevant procedures.

Unit Mapping Information

Release 1. Supersedes and is equivalent to PMASUP246A Disconnect and reconnect non-flared tube fitting joints

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=9fc2cf53-e570-4e9f-ad6a-b228ffdb6875>

Assessment Requirements for PMASUP246 Disconnect and reconnect non-flared tube fitting joints

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria, and include the ability to:

- replace existing components with new components
- carry out minor maintenance within own skill level
- identify and report problems outside own competence
- identify and control hazards related to tube fitting joints
- inspect job site to confirm:
 - location
 - authorisations required
 - access and egress needs
 - recent work undertaken on joint
 - tube fitting type matches specification
- inspect non-flared tube fitting components to check for:
 - contaminants
 - signs of damage, defects or deterioration in all components
 - cleanliness and correct surface roughness of mating surfaces
 - alignment
 - correct specifications.

Knowledge Evidence

Evidence must be provided that demonstrates knowledge of:

- tube connection types as applicable
- principles of how non-flared tube joints seal
- tool types and applications
- organisation's tube fitting procedures
- hierarchy of control
- communication protocols (e.g. radio, phone, computer, paper and permissions/authorities)
- routine problems, faults and their symptoms, and the corrective action to be taken
- process materials and conditions at the location of the fitting
- relevant environmental requirements.

Assessment Conditions

- The unit should be assessed holistically and the judgement of competence based on a holistic assessment of the evidence.
- The collection of performance evidence:
 - should occur over a range of situations which include typical disruptions to normal, smooth operation of an operating plant
 - will typically include a supervisor/third-party report focusing on consistent performance and problem recognition and solving. A supervisor/third-party report must be prepared by someone who has a direct, relevant, current relationship with the person being assessed and who is in a position to form a judgement on workplace performance relevant to the unit of competency
 - must include the disconnecting and reconnecting of at least two (2) non-flared tube fitting joints, the use of appropriate tools, equipment and safety gear requiring demonstration of preparation, operation, completion and responding to problems
 - may use industry-based simulation for all or part of the unit particularly where safety, lack of opportunity or significant cost is an issue.
- Assessment should occur in operational workplace situations. Where this is not possible, or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment reflecting realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Assessment in a simulated environment should use evidence collected from one or more of:
 - walk-throughs
 - pilot plant operation
 - demonstration of skills
 - industry based case studies/scenarios
 - ‘what ifs’.
- Knowledge evidence may be collected concurrently with performance evidence (provided a record is kept) or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept).
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications associated with this unit.
- The regulatory framework will be reflected in workplace policies and procedures and is not required to be independently assessed.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.

- In addition, the assessor or anyone acting in subject matter expert role in assessment must demonstrate both technical competency and currency. If the assessor cannot demonstrate technical competency and currency they must assess with a subject matter expert who does meet these requirements.
- Technical competence can be demonstrated through one or more of:
 - relevant VET or other qualification/Statement of Attainment
 - appropriate workplace experience undertaking the type of work being assessed under routine and non-routine conditions
 - appropriate workplace experience supervising/evaluating the type of work being assessed under routine and non-routine conditions
- Currency can be demonstrated through one or more of:
 - being currently employed undertaking the type of work being assessed
 - being employed by the organisation undertaking the type of work being assessed and having maintained currency in accordance with that organisation's policies and procedures
 - having consulted/had contact with an organisation undertaking the type of work being assessed within the last twelve months, the consultation/contact being related to assessment
 - conducting on-the-job training/assessments of the type of work being assessed
 - being an active member of a relevant professional body and participating in activities relevant to the assessment of this type of work.

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