



Australian Government

MEM20028 Plan and prepare a master key system

Release: 1

MEM20028 Plan and prepare a master key system

Modification History

Release 1. Supersedes and is equivalent to MEM20007 Plan and prepare a masterkey system.

Application

This unit of competency defines the skills and knowledge required to create a new master key system for in-line pin tumbler cylinders up to and including a hierarchical great grand master key (GGMK) system and maisonning. It applies to manually developing a standard (even cut) progression in-line master key system and using a computer master keying package.

Where a security survey or site assessment is required unit MEM20035 Perform a site security survey should also be selected.

Where cross keying, sub-master keying and selective keying is required unit MEM20029 Develop and implement a master key system should also be selected.

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

Band: A

Unit Weight: 4

Pre-requisite Unit

MEM12024 Perform computations

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

MEM18001 Use hand tools

MEM20023 Assemble and test lock mechanisms

MEM20015 Produce hand cut keys

MEM20016 Produce keys by cutting to code

MEM20017 Produce keys by duplication

Competency Field

Locksmithing

Elements and Performance Criteria

Elements	Performance Criteria
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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Identify job requirements from specifications
2. Assess customer requirements	2.1 Discuss and confirm client requirements 2.2 Review levels of security and access including customer assets, activities and existing security arrangements 2.3 Interpret architectural plans, floor plans and charts when planning and preparing a master key system in line with scope of job requirements 2.4 Prepare door and lock schedules and other appropriate documentation in accordance with SOPs 2.5 Match customer requirements to the mechanical possibilities and limitations of master key systems 2.6 Identify personal limitations in assessing design requirements for key systems and master key systems with supervisor in accordance with SOPs
3. Design master key system	3.1 Apply principles of master keying in accordance with industry practice and organisational requirements 3.2 Develop keying matrix to customer requirements, allowing for future system expansion and mechanical capabilities of system 3.3 Produce key codes (code matrix) from mathematical permutations and calculations according to customer requirements 3.4 Select key codes from matrix that maximise system security 3.5 Develop key cutting and cylinder pinning charts 3.6 Identify incidental master keys within progression charts 3.7 Check and confirm there are no phantoms in the system
4. Finalise system design	4.1 Review final system design and keying requirements and confirm with appropriate personnel in accordance with SOPs 4.2 Prepare documentation, and process and store in accordance with client, legislative and SOPs

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.

Specifications include one or more of the following:	• drawings • job sheets • work instructions • work orders.
Review of existing levels of security and access includes one or more of the following:	• physical inspection • off the plan.
Customer requirements includes:	• specific client requirements and quantities • job requirements and tasks • work health and safety (WHS) requirements Plus one or more of the following: • completion times and dates • signature authorities • company requirements • compliance with relevant manufacturer requirements • warranties and service information.
Key systems include one or more of the following:	• restricted, semi-restricted and non-restricted system numbers • manufacturer restricted • locksmith restricted or managed • association restricted • tiers, including: • keyed different (KD) • keyed alike (KA) • master key (MK) • grand master key (GMK) • great grand master key (GGMK).
System expansion	• lost keys

includes creation of excess codes to allow for one or more of the following:	• unusable codes • customer future expansion requirements • multi-broaching.
Documentation includes one or more of the following:	• master key plans that may involve key and door schedules, code matrices and pinning charts • job sheets • manufacturer documentation.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM20007 Plan and prepare a masterkey system.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

Assessment Requirements for MEM20028 Plan and prepare a master key system

Modification History

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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:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- discussing customer requirements and reviewing appropriate levels of security and access
- interpreting architectural plans, floor plans and charts when planning and preparing a master key system
- recognising personal limitations in assessing design requirements for key systems and master key systems with supervisor in accordance with SOPs
- identifying the appropriate key system and levels according to customer requirements on at least two occasions
- undertaking numerical operations and calculations, including mathematical patterns associated with planning and preparing a master key system
- developing a master key system and key matrix on at least two occasions, allowing for future expansion
- developing and reading code matrix and selecting codes that maximise system security on at least two occasions
- select a group of codes to form a maison cylinder, including the identification of any ghost codes that will operate in the cylinder on at least two occasions
- completing all documentation in accordance with SOPs.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- record keeping and management
- types of manufacturer standards, Australian Standards and building standards that impact master key work
- product knowledge and limitations
- code matrices, key and door schedules
- allowances for expansion

- operation and limitations of master key systems
- tiers of systems including:
 - keyed different (KD)
 - keyed alike (KA)
 - master key (MK)
 - grand master key (GMK)
 - great grand master key (GGMK)
- door handing and cylinder types
- criteria for key suitable key selection for interchange and incidental masters
- strategies for checking key systems for interchange and incidental masters
- strategies for checking key systems for phantoms
- principles of maison keying.
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Assessment Conditions

- Assessors must:
 - have vocational competency in planning and preparing a master key system at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the Standards for Registered Training Organisations 2015 or its replacement and comply with the National Vocational Education and Training Regulator Act 2011, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must 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 that reflects 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.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications.
- 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.
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