

Title	Plan and prepare a master key system for in-line pin lock cylinders		
Level	4	Credits	10

Purpose	People credited with this unit standard are able to: assess customer requirements for security and access; design master key systems manually and using a computer; and finalise system design, produce and store records.
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Classification	Mechanical Engineering > Locksmithing
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Available grade	Achieved
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Guidance Information

- 1 Unit 22455, *Assemble and test key mechanisms*; and Unit 12912, *Design residential and light commercial locking systems* are recommended for entry into this unit standard.
- 2 Legislation
Health and Safety at Work Act 2015.
- 3 Definitions
Master key system is a generic term to describe a group of cylinders operated by more than one key.
The following terms are used in this unit standard:
KD – keyed to differ
KA – keyed alike
MK – master keyed
GMK – grand master keyed
GGMK – great grand master keyed.
Worksite procedures refers to the documented and/or verbal procedures that include: worksite rules, business procedures, equipment operating instructions, quality management systems, and health and safety requirements.
- 4 Assessment information
All work practices must meet recognised codes of practice and documented worksite safety procedures (where these exceed any applicable code) for personal, product, and worksite safety, and must comply with current legislation.

Outcomes and performance criteria

Outcome 1

Assess customer requirements for security and access.

Performance criteria

- 1.1 Customer needs are discussed and clarified according to worksite procedures.
- 1.2 Appropriate levels of security and access are reviewed with respect to customer assets, activities, and existing security arrangements.
- Range on site survey, drawings and/or plans.
- 1.3 Door and lock schedules and other appropriate documentation are prepared according to worksite procedures.
- 1.4 Customer requirements are matched to the mechanical possibilities and limitations of master key systems.
- Range specific client requirements and quantities, completion times and dates, job requirements and tasks, signature authorities, compliance with relevant manufacturer's specifications, warranties and service information.
- 1.5 Options are identified and customer is advised of options and alternatives.
- 1.6 Personal limitations in assessing requirements for key systems and master key systems are identified and assistance is sought from appropriate person(s) according to worksite procedures.
- Range key systems may include – restricted, semi-restricted and non-restricted system numbers, manufacturer restricted, factory restricted, locksmith restricted/managed, association restricted levels (KD, KA, MK, GMK, GGMK).

Outcome 2

Design master key systems manually.

Performance criteria

- 2.1 Keying matrix is developed to customer requirements, allowing for future system expansion and mechanical capabilities of system.
- 2.2 A key code progression chart is produced from mathematical permutations as per customer requirements.
- 2.3 Key codes that maximise system security are selected from progression chart.
- 2.4 Key cutting and cylinder loading charts are accurately developed.
- 2.5 Selected incidental master keys are identified within progression charts.
- 2.6 Principles of master keying are applied according to industry practice and worksite procedures.

Outcome 3

Design master key systems using a computer.

Performance criteria

- 3.1 Keying matrix is developed to customer requirements, allowing for future system expansion and mechanical capabilities of system.
- 3.2 A key code progression chart is produced from mathematical permutations as per customer requirements.
- 3.3 Key codes that maximise system security are selected from progression chart.
- 3.4 Key cutting and cylinder loading charts are accurately developed.
- 3.5 Selected incidental master keys are identified within progression charts.
- 3.6 Principles of master keying are applied according to industry practice and worksite procedures.

Outcome 4

Finalise system design, produce and store records.

Performance criteria

- 4.1 System design and keying requirements are reviewed and confirmed with customer and supervisor.
 - 4.2 Final system design is explained to customer and confirmed that it meets with customer requirements.
 - 4.3 Documentation is accurately prepared and processed and stored according to customer and legislative requirements, and worksite procedures.
- Range materials used, key and cylinder coding, identified faults, warranties and recommendations, costs.

Replacement information	<p>This unit standard was replaced by unit standard 30965, unit standard 30969, and unit standard 30970.</p> <p>This unit standard and unit standard 22455 replaced unit standard 12918.</p>
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	19 May 2006	31 December 2022
Registration	1	25 September 2006	31 December 2022
Review	2	1 March 2018	31 December 2022

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

This unit standard is expiring