



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **LMFPT3014A Tune a piano aurally and/or electronically within time and accuracy constraints**

**Release: 1**

## LMFPT3014A Tune a piano aurally and\_or electronically within time and accuracy constraints

### Modification History

Not applicable.

### Unit Descriptor

|                        |                                                                                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unit descriptor</b> | This unit describes the skills and knowledge required to tune an upright and grand piano to a set level of accuracy within a specified timeframe. |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

### Application of the Unit

|                                |                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Application of the unit</b> | This unit applies to the skills and knowledge required to develop a level of accuracy using either aural or electronic tuning devices to tune a piano within time and accuracy constraints. Electronic Tuning Devices (ETD) may include computer software or a hardware device.<br>The unit applies in a workplace and onsite environment, and may be conducted in a small to large scale enterprise. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

| <b>Prerequisite units</b> |            |                                                           |
|---------------------------|------------|-----------------------------------------------------------|
|                           | LMFPT3007A | <i>Regulate actions, keys and pedals of grand pianos</i>  |
|                           | LMFPT3008A | <i>Understand piano tuning theory and basic acoustics</i> |
|                           | LMFPT3009A | <i>Develop control of tuning hammers</i>                  |
|                           | LMFPT3010A | <i>Pitch raise</i>                                        |

## Employability Skills Information

|                             |                                          |
|-----------------------------|------------------------------------------|
| <b>Employability skills</b> | 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. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide. |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Elements and Performance Criteria

| ELEMENT                                     | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Plan for tuning a upright or grand piano | <p>1.1. <b>OHS requirements, legislative requirements</b> and <b>workplace practices</b> relevant to repairing pianos are verified and complied with.</p> <p>1.2. <b>Customer requirements</b> are received, analysed and confirmed with appropriate personnel.</p> <p>1.3. Communication with others involved with the work is established and maintained to ensure efficient workflow, coordination, personnel cooperation and safety throughout the application of this competency.</p> <p>1.4. Written instructions are followed.</p>                                                                 |
| 2. Prepare to tune a upright or grand piano | <p>2.1. <b>Tools and equipment</b> are selected consistent with the needs of the job.</p> <p>2.2. Selected tools and equipment are checked for service ability and safety and any faults repaired and reported according to workplace practices</p> <p>2.3. <b>Personal protective equipment</b> is correctly fitted and used</p>                                                                                                                                                                                                                                                                         |
| 3. Dismantle piano                          | <p>3.1. <b>Procedure for dismantling piano</b> is determined.</p> <p>3.2. Piano is dismantled to allow access to internal components during the tuning process.</p> <p>3.3. Correct OHS procedures are followed throughout dismantling process.</p> <p>3.4. Safe storage of all piano parts while tuning is demonstrated.</p>                                                                                                                                                                                                                                                                             |
| 4. Tune piano                               | <p>4.1. Correct <b>posture</b> for tuning is demonstrated, which minimizes fatigue and promotes muscular control</p> <p>4.2. <b>Start note</b> is tuned accurately to a <b>pitch standard</b>.</p> <p>4.3. Temperament octave F33-F45 is tuned to desired standard.</p> <p>4.4. Octaves and unisons are tuned to desired standard in accordance with customer specifications.</p> <p>4.5. <b>Interval checks</b> are used to assess accuracy throughout tuning process</p> <p>4.6. Stable tuning is achieved in an <b>industry acceptable timeframe</b> without <b>damage to the piano components</b></p> |
| 5. Reassemble piano                         | <p>5.1. Case parts are identified and placed for reassembly.</p> <p>5.2. Case parts are reassembled according to workplace practices.</p> <p>5.3. Correct <b>OHS practices</b> are followed throughout assembly process</p>                                                                                                                                                                                                                                                                                                                                                                               |
| 6. Clean up work area                       | <p>6.1. All tools, materials and other equipment are checked, cleaned and returned to their appropriate</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| ELEMENT | PERFORMANCE CRITERIA                                                                                                   |
|---------|------------------------------------------------------------------------------------------------------------------------|
|         | location.<br>6.2. Work area is cleared and waste removed<br>6.3. <b>Workplace documentation</b> is completed and filed |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- ask questions to gain information
- communicate ideas and information to enable confirmation of work requirements, plans and specifications, coordination of work with other workers and customer, and report of work outcomes and problems
- apply effective listening techniques
- complete written documents, job cards, forms, timesheets and quotations
- work with others and in a team to assess tuning requirements
- work with customer to determine their tuning requirements
- identify team performance required to meet customer needs
- reinterpret customer statements of problems into solution
- resolve conflict through negotiation to ensure customer is happy with sound of piano
- determine opportunities to improve processes
- plan and organize activities to avoid any backtracking, workflow interruptions, re-work or wastage, including preparation and layout of the worksite and selection of tools and equipment
- participate in continuous improvement processes
- manage own time to complete tuning and repair against set deadlines, especially where piano is required for performances
- use feedback from customer to improve work performance in tuning
- take responsibility and display confidence in own ideas
- prioritise own work to meet customer requirements regarding completion time
- manage own work performance to:
  - follow OHS and workplace practices
  - plan and organize work schedules and routines
  - maintain required production output
  - assess quality of own work
- assess own skills and knowledge
- be open to learning and accommodate change
- apply reflective skills
- use workplace technology related to piano technology, including specified tools, equipment, calculators and measuring devices for piano tuning
- use technology relevant to tuning pianos

#### Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice

## **REQUIRED SKILLS AND KNOWLEDGE**

- relevant to the full range of processes for tuning pianos
- organisational and site standards, requirements, policies and procedures for tuning pianos
- reading and interpreting workplace documents including work orders, work instructions and operator instructions
- environmental protection requirements relating to the disposal of waste material
- established lines of communication and protocols
- types, characteristics, uses, limitations and preparation of materials and equipment used in piano tuning
- types of tools and equipment used to tune pianos and procedures for their safe use, operation and maintenance
- problem identification and resolution
- set up and operation of tools and equipment used for tuning pianos
- storage systems and labelling
- procedures for the recording, reporting and maintenance of workplace records and information
- appropriate mathematical procedures for estimation and measurement

## Evidence Guide

### 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

- Interpret work order, locate materials and use information to complete tasks to tune both upright and grand pianos aurally and/or electronically
- Identify tools and equipment used in piano tuning
- Select, set up and maintain equipment in accordance with manufacturer specifications and workplace practices
- Tune a minimum of two pianos aurally and/or electronically within industry specified time and accuracy constraints, on both upright and grand pianos
- Modify activities to cater for variations in workplace contexts and environment
- Communicate and work with others in the work area
- Apply safe handling practices and safe operating procedures for equipment, products and materials to:
  - minimise the risk of injury to self or others
  - prevent damage to goods, equipment and products
- Clean tools, equipment and work area
- Maintain and repair a range of hand and power tools used in piano tuning
- Apply OHS practices when using hand and power tools, holding and support equipment, products and materials, including use of personal protective equipment

#### Context of and specific resources for assessment

Assessment may occur on the job or in a simulated workplace environment in accordance with work practices and safety requirements  
 Assessment is to occur under standard work practices, and to comply with legislative and regulatory requirements.  
 The following resources should be made available:

- hand and power tools used in the tuning of pianos
- materials used in the tuning of pianos
- safety and personal protective equipment
- holding and supporting equipment
- workplace location or simulated workplace

| <b>EVIDENCE GUIDE</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | <ul style="list-style-type: none"> <li>• upright and grand pianos</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Method of assessment</b> | <p>Assessment must confirm consistency (over time and in a range of workplace relevant contexts) in application of skills and knowledge when:</p> <ul style="list-style-type: none"> <li>• organising work</li> <li>• completing tasks according to instructions</li> <li>• working systematically with attention to detail</li> <li>• identifying improvements and avoiding damage</li> <li>• using workplace practices</li> <li>• using OHS practices</li> <li>• assessing operational readiness of tools and equipment</li> <li>• recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions</li> </ul> <p>Assessment must include a variety of project or work activities that allow the candidate to demonstrate competency in the unit</p> <p>Assessment should be by direct observation of tasks and include questioning on required knowledge and skills to ensure correct interpretation and application.</p> <p>Assessment should be conducted over time and may be in conjunction with assessment of other units of competency</p> |

## Range Statement

| <b>RANGE STATEMENT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>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.</p> |                                                                                                                                                                                                                                                                                                   |
| <b>Legislative/regulatory requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.                                                                                                                                                                                         |
| <b>OHS requirements may include:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevant Federal, State or Territory OHS legislation, regulations, standards and codes of practice, and workplace policies and procedures, including the use of personal protection equipment, hazard and risk control and manual handling                                                        |
| <b>Legislative requirements may include:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevant Federal, State or Territory legislation, including award and enterprise agreements, industrial relations, Australian Standards, confidentiality and privacy, the environment, equal opportunity, anti-discrimination, industry codes of practice.                                        |
| <b>Workplace practices may include:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              | Site guidelines, policies and procedures relating to own role, quality assurance, procedural manuals, tool manufacturer recommendations, ethical standards, recording and reporting, equipment use, maintenance and storage, environmental management (waste disposal, recycling, re-use).        |
| <b>Customer requirements may include</b>                                                                                                                                                                                                                                                                                                                                                                                                                                             | <ul style="list-style-type: none"> <li>• level of playing required, such as <ul style="list-style-type: none"> <li>• standard of pianist</li> <li>• time piano is used</li> </ul> </li> <li>• environment</li> <li>• location of piano</li> <li>• pitch requirements</li> <li>• budget</li> </ul> |
| <b>Tools and equipment may include</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• pitch standard</li> <li>• tuning lever/hammer</li> <li>• temperament strip</li> </ul>                                                                                                                                                                    |

| RANGE STATEMENT |                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|
|                 | <ul style="list-style-type: none"><li>• mutes and wedges</li><li>• tip wrench</li><li>• tuning tips and heads</li></ul> |

| <b>RANGE STATEMENT</b>                             |                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal protective equipment may include:</b>  | Safety glasses, goggles, hearing protection, safety footwear, protective clothing, gloves, respiratory protection                                                                                                                                                                                                  |
| <b>Procedure for dismantling piano may be:</b>     | <ul style="list-style-type: none"> <li>• Upright <ul style="list-style-type: none"> <li>• removal of top front board and fall board</li> <li>• lift lid</li> </ul> </li> <li>• Grand <ul style="list-style-type: none"> <li>• removal of fall board and music disk</li> <li>• lift lid</li> </ul> </li> </ul>      |
| <b>Correct posture may include:</b>                | <ul style="list-style-type: none"> <li>• Standing or seating, according to type of piano and height of individual</li> <li>• Even distribution of body weight between both feet while standing, to reduce fatigue</li> <li>• Rest arm where available to aid control during tuning and reduce tiredness</li> </ul> |
| <b>Start note may include:</b>                     | <ul style="list-style-type: none"> <li>• the note in the temperament octave that corresponds to the note tuned from the pitch standard.</li> <li>• the first note tuned on piano from pitch standard generally accepted as being A49/C52 or corresponding notes one octave below, which are A37/C40.</li> </ul>    |
| <b>Pitch standard may include:</b>                 | <ul style="list-style-type: none"> <li>• piano</li> <li>• electronic keyboard</li> <li>• Electronic Tuning Device (ETD)</li> <li>• tuning Fork</li> </ul>                                                                                                                                                          |
| <b>Interval checks may include:</b>                | <ul style="list-style-type: none"> <li>• thirds, fourths, fifths, sixths, sevenths and tenths</li> </ul>                                                                                                                                                                                                           |
| <b>Industry acceptable timeframe may be:</b>       | <ul style="list-style-type: none"> <li>• up to 2 hours.</li> </ul>                                                                                                                                                                                                                                                 |
| <b>Damage to the piano components may include:</b> | <ul style="list-style-type: none"> <li>• bent tuning pins</li> <li>• broken strings</li> <li>• elongated tuning pin holes</li> <li>• damaged bearings</li> </ul>                                                                                                                                                   |
| <b>OHS practices may include:</b>                  | <ul style="list-style-type: none"> <li>• hazard identification and control, risk assessment and implementation of risk reduction measures specific to the tasks described by this unit, and may relate to: <ul style="list-style-type: none"> <li>• manual handling techniques</li> </ul> </li> </ul>              |

| <b>RANGE STATEMENT</b>                      |                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             | <ul style="list-style-type: none"> <li>• standard operating procedures</li> <li>• personal protective equipment</li> <li>• safe materials handling</li> <li>• taking of rest breaks</li> <li>• ergonomic arrangement of workplaces</li> <li>• following marked walkways</li> <li>• safe storage of equipment</li> <li>• housekeeping</li> <li>• reporting accidents and incidents</li> <li>• environmental practices</li> </ul> |
| <b>Workplace documentation may include:</b> | Time sheets, customer cards, work orders including job sheets, cutting lists, plans, drawings and designs, tool maintenance records and schedules                                                                                                                                                                                                                                                                               |

## Unit Sector(s)

|                    |                  |
|--------------------|------------------|
| <b>Unit sector</b> | Piano Technology |
|--------------------|------------------|

## Competency field

|                         |  |
|-------------------------|--|
| <b>Competency field</b> |  |
|-------------------------|--|

## Co-requisite units

|                           |  |  |
|---------------------------|--|--|
| <b>Co-requisite units</b> |  |  |
|                           |  |  |
|                           |  |  |