Australian Government

Department of Education, Employment and Workplace Relations

LMFPT3011A Tune unisons aurally to a beatless condition

Revision Number: 1

LMFPT3011A Tune unisons aurally to a beatless condition

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the skills and knowledge required to tune unisons aurally so they achieve an even and accurate pitch.

Application of the Unit

Application of the unit	This unit applies to the skills and knowledge required to tune unisons aurally to a beatless condition, ensuring an even and accurate pitch is achieved, and may include the use of hammers and stabilisation techniques. The unit applies in a workplace and on-site environment and may be conducted in a small to large scale enterprises.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		
	LMFPT3007A	*Regulate actions, keys and pedals of grand pianos*

Employability Skills Information

Employability skills	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 unisons aurally	1.1. ***OHS requirements***, ***legislative requirements*** and ***workplace practices*** relevant to repairing pianos are verified and complied with. 1.2. Customer requirements are received, analysed and confirmed with appropriate personnel. 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. 1.4. Written instructions are followed.
2. Prepare to tune unisons	2.1. ***Tools and equipment*** are selected consistent with the needs of the job. 2.2. Selected tools and equipment are checked for service ability and safety and any faults repaired and reported according to workplace practices 2.3. ***Personal protective equipment*** is correctly fitted and used
3. Set a string	3.1. Correct ***posture*** for tuning is demonstrated, which minimizes fatigue and promotes muscular control. 3.2. Tune the ***fundamental string aurally*** to a ***pitch standard*** 3.3. Given an external pitch standard, match frequency of one string to that pitch to within ± .5 cent. 3.4. Tuned string is stabilised using correct ***hammer techniques***
4. Tune an ***adjacent string*** in unison to the fundamental string	4.1. Adjust pitch of unison string to fundamental string, employing ***stabilisation techniques***, to a ***beatless condition***. 4.2. Remaining strings are tuned according to above process.
5. Clean up work area	5.1. All tools, materials and other equipment are checked, cleaned and returned to their appropriate location. 5.2. Work area is cleared and waste removed 5.3. ***Workplace documentation*** 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 from customer on tuning requirements
- work with customer to determine tuning requirements
- identify, diagnose and rectify faults, particularly if false string or stability problems exist
- assess and take appropriate action to minimize risks
- plan work requirements for self and others to meet tuning schedules
- plan own time to achieve outcomes
- research and apply new techniques in aural tuning
- use pitch standard to set fundamental string

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice 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 regulate actions, keys and pedals 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 unisons aurally on upright and grand pianos
	• Identify tools and equipment used in unison tuning
	• Select, set up and maintain equipment in accordance with manufacturer specifications and workplace practices
	• Tune a minimum of two unisons aurally 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 regulation and repair
	• 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 and repair of pianos • materials used in the tuning and repair of pianos • safety and personal protective equipment • holding and supporting equipment • workplace location or simulated workplace

EVIDENCE GUIDE	
	• upright and grand pianos
Method of assessment	Assessment must confirm consistency (over time and in a range of workplace relevant contexts) in application of skills and knowledge when: • organising work • completing tasks according to instructions • working systematically with attention to detail • identifying improvements and avoiding damage • using workplace practices • using OHS practices • assessing operational readiness of tools and equipment • recognising and adapting to cultural differences in the workplace, including modes of behaviour and interactions Assessment must include a variety of project or work activities that allow the candidate to demonstrate competency in the unit Assessment should be by direct observation of tasks and include questioning on required knowledge and skills to ensure correct interpretation and application. Assessment should be conducted over time and may be in conjunction with assessment of other units of competency

Range Statement

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.	
Legislative/regulatory requirements	All work must comply with relevant Federal and State or Territory legislative or regulatory requirements.
OHS requirements may include:	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.
Legislative requirements may include:	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.
Workplace practices may include:	Site guidelines, policies and procedures relating to own role, quality assurance, procedural manuals, tool manufacturer's recommendations, ethical standards, recording and reporting, equipment use, maintenance and storage, environmental management (waste disposal, recycling, re-use).
Tools and equipment may include:	• pitch standard • tuning lever/hammer • temperament strip • mutes and wedges • tip wrench • tuning tips and heads
Personal protective equipment may include:	Safety glasses, goggles, hearing protection, safety footwear, protective clothing, gloves, respiratory protection

RANGE STATEMENT	
Correct posture may include:	• Standing or seating, according to type of piano and height of individual • Even distribution of body weight between both feet while standing, to reduce fatigue • Rest arm where available to aid control during tuning and reduce tiredness
Definitions	• ***Aurally*** is the ability to hear differences in frequency between strings within Â± .5 cent without the aid of an electronic device where the fundamentals are matching with no audible interfering patterns • The ***Fundamental String*** is the first string of a given note that is tuned to an external pitch standard. • The ***Adjacent String*** is the string closest to fundamental string. • In a ***Bicord***, the string selected can be either side of the Fundamental, while in a ***Tricord***, three adjacent strings are tuned. • ***Beatless Condition*** is where two strings are at the same frequency.
Pitch standard may include:	• piano • electronic keyboard • electronic tuning device (etd) • tuning fork
Hammer techniques may include:	• selection of tuning tip and angle • jerking movements • positioning hammer on pin at correct angle to avoid bending of tuning pin
Stabilisation techniques may include:	• use of firm key blows in conjunction with placement of pin • calculation of string stretch
Workplace documentation may include:	Time sheets, customer cards, work orders including job sheets, cutting lists, plans, drawings and designs, tool maintenance records and schedules

Unit Sector(s)

Unit sector	Piano Technology

Competency field

Competency field	

Co-requisite units

Co-requisite units		