



Australian Government

Department of Education, Employment and Workplace Relations

LMFPT3005A Re-string and re-pin a piano

Revision Number: 1

LMFPT3005A Re-string and re-pin a piano

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit describes the skills and knowledge to remove existing strings and pins and replace with new.
------------------------	--

Application of the Unit

Application of the unit	This unit applies to the skills and knowledge required to remove existing strings and pins from upright and grand pianos and replace them with new strings and pins. The unit applies in a workplace and onsite environment and may be conducted in a small to medium scale enterprise. The type of work tasks performed when re-stringing and re-pinning a piano may include disassembling and reassembling piano, assessing piano suitability for restringing, detuning piano, chipping up and measuring strings and pin positions for replacement.
--------------------------------	---

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units	Nil	

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 re-stringing and re-pinning	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 for repair	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 2.4. Materials required for the re-stringing and re-pinning of piano are selected
3. Assess piano	3.1. Correct posture for repairing is demonstrated which minimizes fatigue and promotes muscular control 3.2. Case parts are removed and stored 3.3. Measurements of all string sizes are taken throughout piano 3.4. Position of all pressure bars, duplex bars and under-stringing felts are noted 3.5. Inspect base strings for tone and quality, noting those needing replacement
4. Prepare piano for re-stringing	4.1. Length of strings are measured and recorded 4.2. Detune piano 4.3. Pressure bars / agraffes are removed 4.4. Strings are removed by unwinding in order 4.5. Bass strings are tagged for identification purposes using a wire guide to store until needed 4.6. Tuning pins are removed and assessed for reusability 4.7. Samples of tuning pins, felts and eye strings are retained 4.8. Size of new pins and drill holes are calculated for appropriate tension requirements

ELEMENT	PERFORMANCE CRITERIA
5. Re-pin and re-string piano 6.	6.1.Stringing scale is re-calculated 6.2.Agraffes are replaced in accurate position, as required. 6.3.Pins and treble strings are replaced in required order, with <i>under stringing felt</i> inserted. 6.4.Pins and base strings are replaced in required order 6.5.Pressure bars are replaced in accurate position
7. Chip Up	7.1.Establish <i>Pitch Standard</i> 7.2.Pluck and tune strings individually against Pitch Standard 7.3.Rub down strings and repeat process until strings stabilised
8. Re-assemble piano	8.1.Piano is re-assembled 8.2.Tools and equipment are maintained, cleaned and stored safely in designated location 8.3.Records are maintained in accordance with enterprise requirements or industry practice
9. Clean up work area	9.1.All tools, materials and other equipment are checked, cleaned and returned to their appropriate location. 9.2.Work area is cleared and waste removed 9.3. <i>Workplace documentation</i> 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

- 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
- work with others and in a team to assess tuning and repair requirements
- apply knowledge of tuning and repair processes to problem solving
- assess and take appropriate action to minimize risks
- collect and organize information for the purpose of:
 - planning tasks and identifying task outcomes
 - planning use of resources
 - assessing and prioritizing tasks
 - managing time and resources
- 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
- apply mathematical applications for estimation and measurement
- use calculators and measuring devices to take measurements and estimate material requirements

Required knowledge

- State or Territory OHS legislation, regulations, standards and codes of practice relevant to the full range of processes for restringing and re-pinning upright and grand pianos
- organisational and site standards, requirements, policies and procedures for restringing and re-pinning upright and grand piano
- 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 restringing and re-pinning
- types of tools and equipment used to restring and re-pin pianos and procedures for their safe use, operation and maintenance
- problem identification and resolution
- set up and operation of tools and equipment used for restringing and re-pinning

REQUIRED SKILLS AND KNOWLEDGE

- 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 restring and re-pin a piano
- Identify tools and equipment used in restringing and re-pinning a piano
- Select, set up and maintain equipment in accordance with manufacturer specifications and workplace practices
- Restring and re-pin a minimum of two 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 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 repair and manufacture of pianos
- materials used in the repair and manufacture of pianos
- safety and personal protective equipment

EVIDENCE GUIDE	
	• holding and supporting equipment • workplace location or simulated workplace • 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.

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:	• micrometer, Tuning hammer, Tuning fork, Pitch standard, T hammer, String lifter, Drills and bits, Tension wrench, Hammers and punches, Wire cutters, Pliers, Vice grips, Stringing tools, measuring equipment, re-scaling tools, knives, glue, plectrum, glove
Personal protective equipment may include:	• safety glasses, goggles, hearing protection, safety footwear, protective clothing, gloves, respiratory protection
Materials may include:	• treble and bass strings • tuning pins • understringing felt • agraffes
Identification purposes may include:	• name and address • brand name, style, size or serial number of

RANGE STATEMENT	
	piano strings per note
Eye strings may include:	- single wound german - double wound german - french eye
Understringing felt may include:	- string pillows - bearing felt - listing felt - pressure bar felt
Pitch standard may include:	- piano - electronic keyboard - electronic tuning device (etd) - tuning fork
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		

